

Research Article

Video Game Engagement: A Passkey to the Intentions of Continue Playing, Purchasing Virtual Items, and Player Recruitment (3Ps)

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People of all ages enjoy playing games, making online gaming a part of the modern lifestyle. Online games as digital products can reach gamers without being hindered by various limitations such as time and location. With a large selection of freemium and premium games in the virtual marketplace, gamers have the opportunity to switch between various games from different genres and make purchases of virtual goods. Therefore, the challenge that developers have to overcome is whether gamers will have the intention to play, pay, and recruit players (3Ps). To manage future behavior intentions, game developers need to ensure that gamers and the games they play have a solid engagement. Data collection comes from the results of distributing questionnaires to Twitter users with the self-reporting method. The amount of data processed was 370 respondents. The model was assessed using the partial least square of structural equation modeling. The results of this study show that video game engagement plays a crucial role as a mediator between gamer experience and the intention to continue playing, purchase game items, and recruit new players. Enjoyment is the strongest predictor of gamer experience, followed by arousal, social interaction, escapism, and challenge.

1. Introduction

With hindsight, games have a long history that is thought to be as old as human civilization. The British Museum's heritage collection features a variety of precious artifacts, one of which is a 2-player Mesopotamian board game called Royal Game of Ur, dating back approximately 4600 years. Fast forward to the present day, video games have transformed dramatically and become an integral part of modern society. With the rapid progress of technology, access to gaming is wide open and not limited by time or space. It was reported by Newzoo in 2022 that the number of gamers is predicted to be 3.5 billion by 2025. The impact on business in 2022 contributes to \$196.8 billion and is estimated to be \$225.7 billion in 2025. The phenomenon of online gaming has attracted the attention of management academics to investigate why the industry has performed so phenomenally.

Researchers in the marketing field discuss various strategies that are carried out to produce or improve video

game marketing performance [1–4]. One facet of marketing studies on games addresses the importance of gamers being engaged so that they not only play but also have a strong engagement with the games they play [3]. In this case, the position of engagement is the key driver of the effect of playing video games [5]. Failure to create engagement with gamers decreases the probability of game developers surviving in today's competitive market. On the other side, success in game engagement has great potential for long-term business success.

Engagement allows gamers to have a positive intention for the future such as the desire to continue playing. Although the study emphasized the importance of engagement for game developers, the study only discussed its impact on continuing to play games [3]. From the perspective of game developers, it is not sufficient because they need gamers to shop for in-game items and expand the market size of game players. For gamers to have engagement, they need to have a quality playing experience that is enjoyable.

Previous studies have shown that there are variations of different views among researchers regarding what predictors are the most appropriate to predict the future behavioral intentions of gamers.

This is as seen in previous studies which showed antecedents of experience such as telepresence, challenge, and focused attention [6]. Meanwhile, another research proposes that the antecedents of experience are role projection, fantasy fulfillment, escapism, arousal, emotional involvement, and enjoyment [7]. However, in these studies [8, 9], social interaction is not included as an antecedent of experience, even though social interaction is one of the main reasons gamers play games. In contrast, a different research study incorporated social interaction as one of the predictors of flow [10]. Another research revealed that social interaction was not regarded as a predictor of flow [11, 12]. As a result of various viewpoints, research on gaming lacks a base model that may serve as a reference to predict intentions. To fill this gap, this research integrates independent variables from the aspects of flow, hedonic value, and social interaction. This empirical research uses a three-theory approach, which includes flow theory, hedonic value, and self-determinant theory. Flow is included in this study because the flow and its predictors are important for game developers in their assessment of consumers. The theory of hedonic value is used because games are hedonic products that prioritize hedonic value over utilitarian value [13]. Then, with current technological advancements that include features to communicate, social interaction plays an important role in improving the optimal experience of gamers [14]. By using an integrated approach, it is expected that these three theories can illustrate what independent variables are needed to conduct a study on games.

Based on the accumulation of practical details and previous research, three research questions are formulated. First, what kind of predictors affect the game experience? Next, to what extent does the gamer experience influence player engagement? Finally, what is the impact of game engagement on future behavior intention? Therefore, to respond to the questions, the objective of the study is to develop a theoretical model of video game engagement as well as its antecedents and consequences. The study synthesizes independent variables derived from the theories of flow, hedonic value, and self-determination theory (SDT). The conceptual model was tested on online game players in Indonesia. The study's novel contribution lies in enhancing our understanding of the inter-related factors that contribute to gamer experience and how such experience impacts other factors. Although much research has been done on the correlations between gamer experience and various factors, this study takes a unique approach by integrating all the variables into a single model and identifying the strongest contributing factor.

2. Theoretical Framework and Hypotheses

2.1. Flow Theory. The term flow is a condition where a person is deeply concentrated on carrying out an activity that the person seems to be immersed in and loses self-consciousness [15]. A flow channel is settled if the balance between challenge and skill exists, while outside the flow is

the region of boredom and anxiety [16]. The term flow which was first coined in flow theory has other names called optimal experience [15, 17], player experience [18], and gamer experience [19]. To get the optimal experience, telepresence is considered an important element [20], a term first coined by Minsky [21]. With the existence of computers and the internet, telepresence (Tele) is defined as a person's experience of being in an environment through communication media equipment [22], or being in a mediated or simulated environment [23]. Presence itself is defined as a psychological state in which a person's subjective experience is created in some form of media technology that shapes this perception [24]. For example, gamers feel the presence in the virtual world while playing games [25]. Past studies have shown that telepresence has a significant effect on the flow [6, 26]. However, results from other studies have contradicted that telepresence does not have a positive effect on the flow experience [27]. Based on the aforementioned research, telepresence is included in this research model as an independent variable.

Another long-term, proven strong predictor in various flow studies is the challenge (Chal). Challenge refers to the extent to which the environment mediated by technology provides an opportunity to take action [28]. Challenge is a major factor in game development, where the difficulty level should be challenging enough to match the gamer's ability [29]. If the in-game challenge is beyond the gamer's capability to complete the mission, it will lead to frustration. Studies conducted on games stated that challenge is a variable that has a significant positive effect on the flow [6, 26, 30, 31]. The model highlights the predictive function of challenge in shaping the gamers' experience.

Focused attention (Focu) is another critical thing to measure experience [32]. People must concentrate on their activities so they stay in the flow. They are extremely occupied and fail to stay aware of time [33]. Focused attention is a necessary condition to achieve flow [34]. Prior studies proved that focused attention has a significant effect on playing games, and even though they are entertainment tools, gamers can keep thinking about other things [6, 31, 35]. Therefore, it is necessary to examine the gamers' opinions regarding their concentration while playing games such as whether time flies while playing a game. As time passes, the player forgets time, which provides an optimal experience. Based on the aforementioned assertions, the following hypotheses were proposed:

H1. Telepresence has a positive effect on the gamer experience.

H2. Challenge has a positive effect on the gamer experience.

H3. Focused attention has a positive effect on the gamer experience.

2.2. Hedonic Theory. The hedonic theory takes a leading role in this research because it has its roots in the field of marketing and research on customer behavior [36]. Hedonic value refers to the extent to which users' emotional needs such as leisure and entertainment, mood relaxation, and internal pleasure are satisfied by playing games. Games fulfill these emotional needs as a hedonic product, prioritizing a higher

level of hedonic value over utilitarian value [13]. The consumption of hedonic products is often based on desired outcomes rather than what they actually experience. The experience of consuming hedonic products is characterized by an experience in the form of a flow of pleasant things, involving aspects of emotion, arousal, enjoyment, and fantasy [37]. Thus, the theory of hedonic consumption derives several variables used in this study such as arousal, emotional involvement, and enjoyment. In the discussion of hedonic consumption, other variables included in the theory of hedonic consumption are role projection, fantasy fulfillment, and escapism [38].

The inclusion of character selection and role projection is a defining characteristic of RPG, enabling players to fully immerse themselves in the virtual world and enhance their overall gaming experience [39]. Although they can foster a deeper connection between the player and the game, it is worth noting that not all RPG games provide the option to select a character. Sometimes, a game has to play a predetermined character with a set background, storyline, and personality. Role projection (RoPr) is defined as a variable that affects the imaginal experience [9]. Then, a study conducted stated that role projection has a positive and significant effect on flow experience [36]. However, the results of other empirical studies show that gamers who play games like this do not seek role projection, and those gamers also cannot project themselves into certain characters in the game [39]. Based on the consideration of various previous studies, role projection is included in the conceptual model as a predictor of gamer experience.

The variable, fantasy fulfillment (Fant), has a significant influence on the imaginative experience of individuals [7]. However, previous studies suggest that gamers who play these types of games are not primarily driven by the desire to fulfill their fantasies, nor are they able to fully bring their fantasies into the game [39]. In a game world with limitless possibilities, players can immerse themselves in activities that are not feasible in the physical world [40]. Given the constraints of the gaming environment, it is unsurprising that gamers engage in imaginative thinking or fantasizing. Ascertaining how gamers react to these fantasy elements within the game and their impact on the gaming experience is of significant importance.

Escapism (Esca) can be an important means of regulating emotional states and making it possible to maintain an unbearable state in a situation or to turn a boring time into an activity that is both cognitively and emotionally interesting [41]. Escapism refers to the mental process of evading a displeasing situation [39]. The challenges and uncertainties of real life can trigger anxiety, leading many people to turn to video games as a popular alternative for relaxation and entertainment. Gamers continue to play because they are looking for a distraction from the real world and the stressful stresses of life [39]. If players get a suitable atmosphere and supportive conditions, they will be very likely to continue playing and repeating the game in the future. Former research confirms escapism has a positive and significant effect on flow experience [36, 42].

In empirical studies, it has been proven that arousal (Arou) has a positive significant effect on the flow variable [26, 43]. Playing games can give you an overwhelming feeling of being excited and motivated. Moreover, it also has the potential to inspire someone. By doing so, gamers feel conveniently glued to their seats for hours. The provision of support that cultivates feelings of excitement during gameplay can enhance the overall quality of the gaming experience, leading to greater satisfaction and engagement among players.

Emotion, as a variable, exerts a positive impact on the flow experience, particularly for novice gamers who lack expertise in game engagement [44]. The contribution of emotions to gameplay may often go unnoticed by gamers, despite their profound effects on the overall gaming experience. While often dismissed as trivial or superficial, games have the power to evoke deep emotional connections among players, drawing them into the game world and encouraging engagement beyond the gameplay session.

As such, designing games that cater to players' hedonic needs for fun and excitement is a crucial consideration for developers. A substantial body of literature supports the notion that enjoyment is a key determinant of gaming behavior, with gaming serving as a means to elicit feelings of relaxation and pleasure among players [45]. The results of empirical studies show that enjoyment (Enjo) has a significant positive effect on flow experience [10–12, 46].

Several factors have been identified as potentially influencing the gamer experience, such as role projection, fantasy fulfillment, escapism, arousal, emotional involvement, and enjoyment, as detailed in the following hypotheses:

H4. Role projection has a positive effect on the gamer experience.

H5. Fantasy fulfillment has a positive effect on the gamer experience.

H6. Escapism has a positive effect on the gamer experience.

H7. Arousal has a positive effect on the gamer experience.

H8. Emotional involvement has a positive effect on the gamer experience.

H9. Enjoyment has a positive effect on the gamer experience.

2.3. Self-Determination Theory. Nowadays, modern electronic games provide a facility to connect and collaborate among players. This feature enables gamers to carry out the missions successfully which in turn increases the rewards obtained. An expression like “we are on the same boat” is common to describe the existence of teamwork in a group. Past literature shows that social value is the second variable after enjoyment value that affects purchase intention [47]. Therefore, extrinsic motivation such as praise or appreciation for someone can be a driving force that will affect a person's experience in carrying out an activity [48]. In self-determinant theory, there is a need for relatedness which is used to explain the desire to establish social interaction. The existence of social interaction allows people to express and determine activities that are fun to do [49].

Gamer communities can be established to enhance communication between players and meet their social needs [3]. Literature shows that social interaction (Soci) has a significant positive effect on flow experience [50–53]. The friendship factor can be a reason for gamers to play games. Various underlying motivations are the desire to communicate or to get useful things. For instance, findings from a prior study indicate that the cognitive and social benefits offered by multimassive online role-playing games (MMORPGs) may be particularly advantageous for individuals with high levels of hostility, which may extend to their relationships outside of the gaming environment [54]. With the existence of social interaction, it is possible to make playing games more fun. Being in the same position is especially important if they are in the same group and have the same goal. Hence, it is predicted that social interaction might experience an increase in gamer experience in the following hypothesis:

H10. Social interaction has a positive effect on the gamer experience.

2.4. Experiential Marketing Theory. Currently, games are digital products capable of reaching gamers quickly; hence, gamer experience plays an important role for game developers. Experiential marketing connects consumers with personally relevant brands in a personally memorable way [55]. It is a challenging activity to find related aspects that can boost the consumption experience. In the context of games, the term flow can also be defined as immersion in playing games [56]. The term immersion is used in the theory of the realm of experience where if someone has active participation and experiences immersion, then that person is said to have escapist experience [57].

The experience (GaEx) known as the flow can be an antecedent of customer engagement in the online environment [58]. According to prior research, playful consumption experience has a significant effect on consumer video game engagement [9]. To have an engagement, the gamer must have a positive experience first. An optimal experience is achieved through a fun, exciting, enthusiastic, or entertaining journey. Therefore, game developers combine various strategies such as creating challenging missions, rich content storylines, and attractive characters. In addition, the visual display and background game music (BGM) are also factors that can enrich the gaming experience. According to the aforementioned affirmation, the following hypothesis was proposed:

H11. Gamer experience has a positive effect on video game engagement.

2.5. Engagement Theory. Engagement is derived from the customer engagement theory [58]. It is a process that goes through repeated interactions with an object at different levels from time to time [58]. In this case, a game is an object that gamers engage with by playing time after time, and there is favoritism for a brand [59]. The gamer may be at a different level than the last time he started playing it, both in terms of level or conditions. Video game engagement (VGen) is important because people can use the application,

even if there is no specific purpose, as long as they have engagement with the application [60].

Furthermore, it also plays a critical role in determining whether gamers have the intention to continue playing the game, buying the virtual item, and recruiting new gamers. Failure to engage causes gamers to quit playing and delete the game. Previous research has established that there exists a favorable correlation between customer engagement and the sustained intention to play games. This assertion is supported by empirical evidence derived from an earlier investigation [3] and sales of a digital video game [61]. The willingness to continue playing games is indicated by playing them regularly and for a significant amount of time [62]. Another research found that video game engagement had a positive effect on the intention to purchase games [63]. However, not only making purchases but also the success of establishing an engagement can make gamers recommend purchases of goods not only to their family but also to their friends.

Hence, it is predicted that future behavior intention increases in intention to continue playing (IntPl) game, intention to purchase game items (IntPur), and intention to recruit new players (IntRec) through video game engagement in the following hypotheses:

H12. Video game engagement has a positive effect on the intention to continue playing game.

H13. Video game engagement has a positive effect on the intention to purchase game items.

H14. Video game engagement has a positive effect on the intention to recruit new players.

Grouping games is not an easy task because of the overlap and ambiguity [64]. The basic function of the genre is to differentiate types of games, which are often divided by the mechanism of the game such as action or role-playing game (RPG). The classification of gaming genres remains an ongoing subject of academic debate and research, with a clear consensus yet to be achieved. This study is aimed at streamlining the classification of gaming genres by categorizing them into two main types based on the level of challenge they present: challenging games and relaxing games. The classification of this genre is relatively straightforward as it is based on the motivations that drive gamers to play games [65]. Literature suggests that the degree of interest in a genre can have a moderating effect on gamers' future behavior intention, extending beyond just the desire to play [64] and impacting their propensity to make virtual item purchases [66].

The type of challenging game consists of two types of genres: action and physical contact. The characteristics are rapid movement, alertness or monitoring, several targets to aim at, and require cognitive ability [67]. Games that fall into the relaxing category are games that are like adventure or sport-type games. This game has the characteristic of doing tasks repeatedly [68], also called grinding. Grinding is a repetitive activity that aims to level up the character by defeating weak enemies that appear periodically and dropping materials used to increase the character's level. After leveling up, the number of materials or types required to advance to the next level is different, depending on the

conditions given in the game. Therefore, the game's genre is a substantial aspect that affects what gamers would like to do in the future.

H15. Game's genre moderates the relationship between video game engagement and intention to continue playing game.

H16. Game's genre moderates the relationship between video game engagement and intention to purchase game items.

H17. Game's genre moderates the relationship between video game engagement and intention to recruit new players.

3. Research Methodology

The questionnaire used in this study was developed by referring to existing literature and adapted to fit the context. The specific indicators used in the questionnaire can be found in Table S1 in the supplementary materials. The Likert scale used is a 7-point Likert-type scale, with a scale of 1 (strongly disagree) to 7 (strongly agree), except for the game's genre, which is categorical data measured in binomial. The questions are divided into 3 sections, namely, the respondent's profile, gamer behavior, and indicators. In the survey assessing respondent behavior, participants were requested to provide the name of the game they played the most frequently. Later, in the Likert scale questions, respondents were informed that game-related questions referred to the preceding inquiry about the online video game that they played most often. Gamer respondents in this study were obtained through the Indonesian gaming community who joined *menfess* on Twitter. *Menfess*, which stands for "mention and confess," is a platform where people can anonymously confess their thoughts, feelings, or even secrets. It is a public forum where individuals can share their experiences and perspectives without revealing their identities. Access to private messaging in the inbox is limited to those who have posted in the group. Members who have not made any posts or are simply reading the discussions cannot be contacted. The messages being sent are soliciting responses to a survey through a link to Google Forms. This research utilized questionnaires that relied on self-reporting from respondents who met specific eligibility criteria. The criteria included being an active gamer who had played games within the past year, being born between 1981 and 2012, and being a current resident of Indonesia. Those living in the same country are likely to share comparable beliefs concerning the value of a product, whether it is deemed pricey or within their budget, and this can impact their purchasing habits. Another prerequisite is the maximum duration of playing 4 hours per day. Playing games every day for more than 5 hours is diagnosed as having internet gaming disorder [69]. Certain data were excluded from the collected respondent data, including individuals who did not engage in gaming activities within the past year, those who lived outside of Indonesia, and those who played games for more than five hours per day. After the screening, it was found that the number of

samples that could be processed was 370 people. Based on the calculation using the inverse square root method, it was found that the minimum sample size required for this study is 160. The method used for this determination was a power assessment with an effect size of 0.04, as the model used in the study was complex, resulting in an effect size that is twice the value of 0.02. Furthermore, Cohen's f^2 coefficient of 0.02 was determined for the study, which was conducted with one independent variable and one dependent variable [70]. A complex model is defined as a model that includes numerous constructs, with a minimum of 6 constructs in this particular case [71]. Such models are typically more intricate and challenging to develop and analyze, as they involve multiple interrelated factors, such as mediating and moderating variables, that contribute to the phenomenon under study.

Another technique employed in this study was power analysis with the aid of GPower 3.1 software [72]. The use of GPower 3.1 to calculate the required sample size for this study resulted in a sample size of 118 based on input parameters of effect size 0.15, predictors = 10, $\alpha = 0.05$, and power = 0.8. This sample size closely aligns with the minimum sample size recommended by the 10-times rule, which suggests a minimum of 100 respondents. However, the 10-times rule is not considered to be a reliable method. Therefore, increasing the probability of successfully rejecting a false null hypothesis to 0.95 would require a larger sample size of 172. A comparison of the inverse square root method and power analysis resulted in a decision to increase the minimum sample size to 172 participants.

4. Result

The biological sex of the respondents was 80% female, indicating a significant gender imbalance in the sample. Conversely, male gamers were a minority, comprising only 20% of the total participants. The questionnaire was distributed via Twitter, and the gender of the respondents was unknown. However, the respondents who participated and completed the survey's extensive 91 questions were mainly female. The largest proportion of respondents in terms of education level was the university level at 59.73%. The age of the respondents was dominated in the range of 17-21 (65.68%). Table 1 also shows that the majority of gamers play games every day as many as 279 people (75.41%) with an average playing time of 2-3 hours (68.65%).

The data processing task was conducted using SmartPLS 3.3 software. To assess the reflective measurement model, the recommended minimum value for the loading score of each reflective indicator was set at 0.708 [73]. Although the initial number of indicators was 91, only 66 questions met the PLS guideline's minimum outer loading requirement of 0.708 and were used for subsequent testing. For a complete list of indicators, see Table S1 in the supplementary material section. All indicators met the minimum outer loading value of 0.7, except for *Focu6*, which was still included in the analysis (0.605). This value is greater than 0.6, and it was decided to keep it because it affects content validity [74]. For internal consistency reliability analysis, a

TABLE 1: Respondent profile.

	Category	Frequency	Percentage
Gender	Male	74	20.00
	Female	296	80.00
Age	17-21	243	65.68
	22-26	106	28.65
	27-31	20	5.410
	32-36	1	0.270
Occupation	High school	32	8.65
	University	221	59.73
	Freelance & part-timer	25	6.76
	Fulltime employee	54	14.59
	Entrepreneur	6	1.62
	Other	32	8.65
Day spent per week	1	15	4.05
	2	9	2.43
	3	11	2.97
	4	21	5.68
	5	23	6.22
	6	12	3.24
	7	279	75.41
Time spent per day	1	44	11.89
	2	136	36.76
	3	118	31.89
	4	72	19.46
Type game played	Physical/action	122	32.97
	Adventure/sport	248	67.03

value above 0.95 indicates a problem, namely, redundancy or an unexpected response pattern [73]. Table 2 shows the range of construct reliability with Cronbach's alpha (CA) from 0.732 to 0.947 in the interval of 0.7 to 0.95. Therefore, the indicators are reliable to measure each construct.

The average variance extracted (AVE) is found larger than 0.5, exhibiting that all values meet the minimum requirement of 0.5 [73, 75]. Thus, it is concluded that all constructs are valid in this study. The discriminant validity established by the HTMT value was found below the threshold of 0.9. The result confirms that all indicators could measure the respective construct specifically.

The quality of the model is assessed by a variance inflation factor (VIF), a coefficient of determination (R^2), f^2 , Q^2 , and Q^2_{predict} . A VIF value above 5 indicates a collinearity issue, 3 to 5 indicates a possible collinearity issue, and below 3 there is no collinearity issue [75]. The results of data processing in Table 2 show the value of no value is above 5. Therefore, there is no collinearity problem, and the test can be passed to the next process.

The results of R^2 for the gamer experience construct of 0.672 indicate moderate predictive accuracy. Next, the R^2 value for the intention to continue playing the game is

0.390, which is included in the weak category. The R^2 value for the intention to purchase game items and the intention to recruit new players is around 0.1. Although the value of R^2 is small, it is still acceptable. In addition, the more paths that lead to the construct, the higher the value of R^2 . Then, the result of R^2 from video game engagement is 0.455 which shows weak predictive accuracy.

Although some of R^2 is weak, the construct itself is important. Value of effect size (f^2) to examine influence when variable removed from the model which is marked by a change in the value of R^2 . The criteria for effect size are small, medium, and large (0.02, 0.15, and 0.35) [76]. The effect size calculation in Table 3 shows the gamer experience path to video game engagement has the highest f^2 value of 0.836. This value shows a large influence because it is above 0.35. Figure 1 shows the path from the video game engagement path to the intention to continue playing the game; it shows a large effect size (0.621). The effect size of video game engagement on the intention to recruit new players is considered to be medium with a value of 0.151. A weak influence with f^2 was found on the video game engagement path to intention to purchase game items.

The value of Q^2 0.526 for gamer experience has large predictive relevance. In this study, the medium predictive

TABLE 2: Cronbach's alpha, composite reliability, and average variance extracted.

	CA	CR	AVE	VIF
Arousal	0.844	0.889	0.617	2.077
Challenge	0.861	0.899	0.641	1.492
Emotional involvement	0.838	0.885	0.659	2.279
Enjoyment	0.876	0.915	0.731	1.751
Escapism	0.907	0.927	0.679	1.934
Fantasy fulfillment	0.880	0.919	0.741	1.993
Focused attention	0.736	0.825	0.543	1.667
Gamer experience	0.876	0.924	0.802	1.000
Intention to continue playing game	0.906	0.934	0.780	—
Intention to purchase game item	0.932	0.947	0.749	—
Intention to recruit new player	0.918	0.942	0.801	—
Role projection	0.914	0.939	0.795	1.596
Social interaction	0.912	0.934	0.739	1.284
Telepresence	0.824	0.895	0.740	1.751
Video game engagement	0.833	0.882	0.601	1.000

TABLE 3: R^2 , Q^2 , and Q^2_{predict} .

	R^2	Q^2	Q^2_{Predict}	Path	f^2
GaEx	0.672	0.526	0.648	GaEx \rightarrow VGen	0.836
IntPl	0.390	0.297	0.222	VGen \rightarrow IntPl	0.621
InPur	0.098	0.071	0.054	VGen \rightarrow InPur	0.092
InRec	0.134	0.100	0.080	VGen \rightarrow InRec	0.151
VGen	0.455	0.267	0.385		

relevance is the variable intention to continue playing games (0.297) and video game engagement (0.267). Meanwhile, the intention to purchase game items and the intention to recruit new players are in the category of small predictive relevance. The results of data processing for $Q^2_{\text{predict}} > 0$ indicate that the structural model has relevant predictions if there is a change in the data.

Predictive power is computed using PLS predict to make a comparison between mean absolute error (MAE) PLS and MAE LM [77]. From the results of data processing in Table S2 in the supplementary material, it shows that out of 22 indicators, only 2 indicators have MAE PLS values greater than MAE LM. With the majority of PLS MAE values less than LM MAE, this indicates that the model has medium predictive power. The next stage is the evaluation of the model through the path coefficient (β). The value of t -statistics is used to determine whether the hypothesis is supported or rejected at a p value of 0.05.

The prevalent approach to determining the acceptance or rejection of H1 is based on a p value threshold of 0.05. Nevertheless, this method's accuracy and controversy have been questioned [78], prompting the adoption of confidence intervals in PLS analysis as per recent guidelines [79]. Table 4 showcases the results of hypothesis tests conducted in this study, indicating that 9 out of the 17 hypotheses tested were supported as their confidence intervals at the

5% and 95% levels did not contain zero. This study has followed established guidelines that have been revised and updated [73, 75, 79, 80]. Predictors of gamer experience that have a positive effect and are supported are challenge (H2), escapism (H6), arousal (H7), enjoyment (H9), and social interaction (H10). Video game engagement is proved as a mediation variable between the gamer experience and the three intentions. Therefore, H11-H14 are supported.

Then, by only considering the path from gamer experience to the 3 intention variables, a mediation test was carried out at this stage to see the indirect and direct effects and determine the role of video game engagement as a target construct. The calculation results in Table 5 show a significant relationship between the direct effect of the gamer experience variable and the intention to continue playing the game. The indirect effect relationship from gamer experience to intention to continue playing games through video game engagement shows a significant relationship. Thus, it can be concluded that video game engagement partially mediates the relationship between the gamer experience and the intention to continue playing games. Then, the direct effect relationship from the gamer experience variable to the intention to purchase game items and from the gamer experience to the intention to recruit new players shows an insignificant relationship. Therefore, video game engagement fully mediates the relationship between gamer experience towards the intention to purchase game items and the intention to recruit new players.

5. Discussion

The result of the study found some important aspects of answering research questions. First, the study confirms previous research that gamer experience is influenced by challenge [6, 30, 81]. While playing the game, the challenges given in the game are getting bigger, which will also be followed by the magnitude of the experience felt by the gamer. Gamers continue to play because they can overcome the challenges at hand. This is in line with the idea that a good game is one that is easy to learn but difficult to become an expert in [82].

The finding of the study is also in line with past research that escapism affects the gamer experience [42]. Games that are easy to play are predicted to be the games that players are looking for, especially when it comes to the current pandemic situation. Gamers continue to play because they want to evade the real world and stressful life pressures [39]. By playing the game, the player will feel an adrenaline rush, be motivated, get more excited, and be enthusiastic. The result confirms previous research that arousal affects gamer experience [43].

The result of the study is in line with previous research which showed enjoyment as a significant predictor [11]. Gamers prioritize the aspect of enjoyment, as the absence of it could result in disinterest towards playing [53]. Gamers continue to play because they can interact with friends, and this social interaction will provide an optimal experience in playing games [14]. Doing activities they enjoy that allow them to exercise self-determination and express themselves through feedback and collective involvement [49].

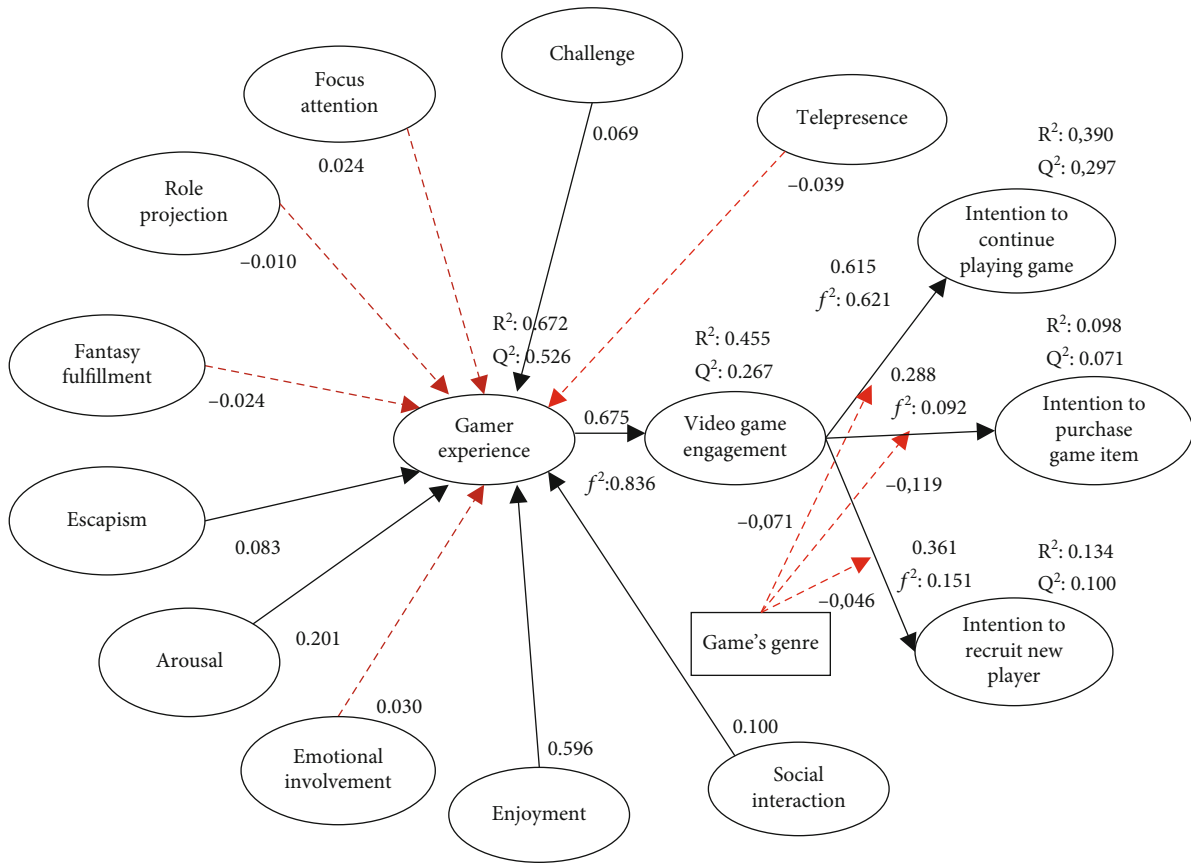
FIGURE 1: PLS result (path coefficient, R^2 , f^2 , and Q^2).

TABLE 4: Result of hypothesis testing.

Hypothesis	Path	β	t -statistic	p value	CI [5%, 95%]	Supported?
H1	Tele → GaEx	-0.039	1.038	0.150	-0.101 0.023	No
H2	Chal → GaEx	0.069	1.785	0.037	0.008 0.135	Yes
H3	Focu → GaEx	0.024	0.621	0.267	-0.036 0.088	No
H4	RoPr → GaEx	-0.100	2.479	0.007	-0.163 -0.031	No
H5	Fant → GaEx	-0.024	0.542	0.294	-0.097 0.047	No
H6	Esca → GaEx	0.083	2.082	0.019	0.020 0.148	Yes
H7	Arou → GaEx	0.201	4.201	$p \leq 0.001$	0.122 0.278	Yes
H8	Emot → GaEx	0.030	0.621	0.267	-0.052 0.107	No
H9	Enjo → GaEx	0.596	13.605	$p \leq 0.001$	0.524 0.668	Yes
H10	Soci → GaEx	0.100	2.772	0.003	0.042 0.161	Yes
H11	GaEx → VGen	0.675	21.546	$p \leq 0.001$	0.623 0.727	Yes
H12	VGen → IntPl	0.615	17.745	$p \leq 0.001$	0.558 0.672	Yes
H13	VGen → IntPur	0.288	6.148	$p \leq 0.001$	0.215 0.369	Yes
H14	VGen → IntRec	0.361	7.635	$p \leq 0.001$	0.284 0.440	Yes
H15	Mod.Ef.Genre: VGen → IntPl	-0.071	1.655	0.049	-0.139 0.002	No
H16	Mod.Ef.Genre: VGen → IntPur	-0.119	2.414	0.008	-0.197 -0.036	No
H17	Mod.Ef.Genre: VGen → IntRec	-0.046	0.981	0.163	-0.124 0.033	No

TABLE 5: Mediation test.

Path	Direct effect	<i>t</i> -statistics	Sig? (<i>p</i> < 0.05)	Direct effect	<i>t</i> -statistics	Sig? (<i>p</i> < 0.05)	Type of mediation
GaEx→InPl	0.110	1.837	Yes	0.415	12.291	Yes	Partial
GaEx→InPur	0.078	1.019	No	0.194	5.758	Yes	Full
GaEx→InRec	0.042	0.608	No	0.244	6.987	Yes	Full

The research found that 5 predictors that did not have a significant effect on gamer experience were telepresence, focused attention, role projection, fantasy fulfillment, and emotional involvement. The results of this study show a contradiction with previous research [6], where in this study focused attention has a positive and significant influence on flow. The majority of respondents are Generation Z who are proficient in using gadgets since they were young [83], so the focus range is very short [84]. Mobile phones have gained significant popularity as the preferred medium of choice for the younger generation today, surpassing previous generations, and are utilized for various purposes, including gaming [85]. Although this study does not explicitly focus on mobile phone games, it is important to highlight that contemporary games, particularly those that are popular, are designed to be playable on multiple platforms [86], such as computers and mobile phones. In addition, most of the respondents play RPG, a type of game that is easy to play with a slow tempo. Consequently, RPG players do not require high-focused attention. On the other hand, a fast-paced game requires high concentration [87].

The results also confirm with previous studies that RPG gamers are not searching for role projection and fantasy fulfillment [39]. The possible reason is based on the characteristics of the respondents. Their age is greater than 17, which means they should mature in the cognitive aspect. Therefore, while encountering fantasy environments and characters, gamers recognize those virtual worlds are far from reality. In early childhood, the habit of children who like to dream is still acceptable. However, the older they are required to be more rational which shows they have self-consciousness. Families, communities, and groups may not accept them if they behave inappropriately for their age.

Furthermore, it is likely that emotional involvement has no effect due to the regulated circumstances. The goals of this setting, such as selecting situations, modifying circumstances, and changing actions related to emotions [88], are to avoid the protracted feelings of frustration experienced by gamers so that gamers may switch to other goals [89] and optimize the gaming experience [90]. For example, game developer like Hoyoverse who created Genshin Impact use the pity system as a well-intentioned controller to safeguard gamers from experiencing negativity such as frustration or unlimited financial losses.

To answer the second research question, the results of this study are in line with previous research which states that gamer experience has a positive effect on video game engagement [9]. Engagement itself is important in the gamer experience [5] because someone will engage with the activities they are doing if they are supported by a pleasant experience [91]. The results of this study are in line with previous

research which states that video game engagement has a positive effect on the intention to continue playing games [3], the intention to purchase game items [63], and the intention to recruit new players [1]. Video game engagement is important because people can use an application, namely, in this case, a game, even if there is no specific purpose, as long as they have engagement with the application [60]. If the game is interesting, they will have intrinsic motivation so that they will be more engaged with the game for their own sake [92].

Ultimately, video game engagement has 3 outcomes, namely, the intention to continue playing the game, the intention to recruit new players, and the intention to purchase game items. The three kinds of intentions are distinctive and have different impact sizes. The largest among them is the intention to continue playing the game. This finding helps the marketing department of game developers because it turns out that the strongest intention is to play, but the weakest is the intention to buy. The intention to play is supported by a strong number, and there is also engagement, but it takes extra effort to get the player to make a purchase.

A successful engagement will result in sales transactions and information obtained [60]. In addition, it will also increase the number of recruited players. People who can be recruited by gamers are usually people they know such as family and friends [28]. However, it is still possible to recruit strangers, namely, those they meet while playing games together. This is possible if gamers feel comfortable with the person or see the potential of that person who may be able to make a positive contribution to gamers or their group.

The contribution of the research is to add thoughts to the previous engagement theory [58]. Engagement is a mental state that occurs as a result of an interactive experience between the subject and the object in a certain situation [58]. The interactive experience is the flow because it has the same meaning [93]. The study flow was said to be a potential antecedent of an engagement [58]. Therefore, interactive experience or flow should be the antecedent of engagement.

In this research on games, engagement plays an important role as a bridge between gamer experience and intention. Then, according to [58], the consequences of engagement are variables such as commitment, trust, and loyalty. Although the variables used are positive, there is no financial impact. It is because currently, most games are generally freemium-type games.

Therefore, even though gamers have commitment, trust, and loyalty to the freemium games they play, game developers do not feel the impact if gamers do not make purchases. In the context of gaming, consequences of engagement need to be added that potentially have an impact on playing continuance in the future, generating profit, and increasing the number of players (playing, profit, and player).

6. Conclusions

This research contributes to the body of knowledge in marketing science, especially in the field of customer behavior. Playing games is a digital consumption experience that provides an interactive experience. Various predictors that can influence gameplay lead into three major groups, namely, flow, hedonic, and social aspects. The most sought-after by gamers is the hedonic factor, namely, for enjoyment.

However, not only emotional factors but playing games can also fulfill the need to complete challenges. Solving the challenge requires thinking; therefore, the challenge can be related to the cognitive aspect. In completing the mission, gamers can also play together so that the will to play also arises from within the gamer. With the interest to achieve one goal and do it together, gamers often spend time together. In this case, one soul and one spirit in one guild enrich the experience of playing games.

The results of the study show that the role of video game engagement is a passkey that opens the three doors of intention. If only looking forward to the intention to continue playing the game, it can go through a direct path from the gamer's experience. However, if game developers want the player to purchase virtual game items and recruit new players, gamers must have engagement with the games they play. In playing games, reaching the engagement stage cannot be completed in just one play. They need to come back to play over and over and get what they are looking for.

Although gamers can play any type of game, they have their tastes. By playing the game that is their preference, the level of engagement will be different. The limitation of the study is that the disproportionate number of male and female gamers in our sample may limit the generalizability of our findings and require further exploration. In this study, despite following standard procedures, there were uncontrollable factors that posed challenges. The diversity of data among respondents, both observable, such as gender, and unobservable, such as personality traits and emotional intelligence, had the potential to introduce heterogeneity into the data. To expand on this research, a heterogeneity test and investigation into the big five personality traits using a larger, more proportionately gendered sample could be conducted.

Future research should prioritize establishing a clear and shared definition or understanding of "Gamer Experience" as an essential step before delving into the complexities of the factors that influence it. In addition, this research was conducted in Indonesia, and of course, the results would differ if tested in other countries that have different cultures, income levels, and others. We suggest that this research be continued by testing those who play movie-based games that use real people. The research outcome might be different since gamers perceive humans as real characters, not unreal ones.

Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

Supplementary Materials

Supplementary materials are provided in a separate file. It consists of two tables. Table S1 describes constructs, indicators, outer loading, and references. Table S2 illustrates the comparison of MAE PLS and MAE LM. (*Supplementary Materials*)

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