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Predicting Mobile Game Adoption: Integrating Game Features and Theory of Planned Behavior

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Abstract: This study investigates gamers' behavior in adopting mobile games by integrating game features and the theory of planned behavior (TPB). This study used 408 samples of Indonesian gamers. A partial least square is applied to examine the influence among subjective norm, perceived behavioral control, attitude, game features, and intention to play mobile games. The results show that the integration between Game features and TPB gives a deeper explanation of gamers' behavior in adopting mobile games. Considering the factors in gamers' behavior, this study's results give the base to formulate an implementation strategy for the appropriate game features in attracting gamers' interest to keep playing mobile games. It is also the first study that integrates Game features and TPB to assess mobile game adoption.

Keywords: mobile game adoption, game features, TPB model, intention to play mobile games.

Introduction

The mobile game is a game technology application that keeps developing and has become a significant trend in the modern community. In the mobile game market, the number of its users is as many as 42% of the total gaming market, and whereby 2020, it is expected to increase to more than half of the total gaming market. With the Asia Pacific becoming the largest market, the entire Asia (excluding China, Japan, and Korea) is the region with the fastest growth in the forthcoming years with total game revenue set to increase to $10.5 billion by 2020 (Almuhanna et al., 2019). Indonesia is selected because the number of players is expected to keep increasing every year with a total of 9,756,690 people playing online games (APJII, 2019). Therefore, the future of the mobile game sector is very optimistic. Thus, the studies that explain the behavior of gamers in playing mobile games are still limited to be explored. Therefore, it is important to analyze how gamers adopt

mobile games. In addition, this study will contribute to the marketing literature by providing a new understanding of mobile game adoption.

In adopting mobile games, one of the important factors why an individual is attracted to play a game is its features. Over time, game developers have learned to continuously improve game quality by using various game features (Qian et al., 2019). Several previous studies have analyzed the importance of game features in-game adoption (Kim et al., 2015; Rafdinal & Qisthi, 2020). Some other studies have investigated various types of game features that can attract somebody to play the game (Bharathi et al., 2016; Morschheuser et al., 2017; Shackelford et al., 2019). However, there are still very few studies that discuss features in mobile games and their connection with gamers' behavior in adopting them. Thus, this study is planned to fill the gap in important features which can influence gamers' behavior in mobile game adoption.

Previous studies have identified game adoption but are still limited and suggest continuing studies on the factors that influence game adoption (Merhi, 2016; Rafdinal et al., 2020; Yang & Lin, 2019). Some previous studies explain the gamers' behavior in playing games by using the model of the theory of planned behavior (TPB) (Agag et al., 2019; Alzahrani et al., 2017). In analyzing gamers' behavior in mobile game adoption, this study integrates game features and the model of the theory of planned behavior. Game features are the primary reasons why an individual plays a mobile game (Rafdinal et al., 2020), meanwhile, TPB can predict one's behavior to playing a mobile game (Agag et al., 2019). Even though game features and TPB have been largely analyzed previously, surprisingly no study examines both models in analyzing mobile game adoption becoming a comprehensive single model. Thus, the requirements to examine the adoption of mobile games with this model are clear and can offer a better understanding of the mobile games that influence the behavior of gamers to adopt them. Thus, this study can contribute to overcoming the weaknesses that have been observed in the previous literature.

This study provides a cohesive research model in explaining the adoption of mobile games to fill the identified gaps. More specifically, (1) Theoretically, this study assesses the adoption of mobile games using the extended TPB by adding game features to the model, and (2) Practically, this study will convey important game features that will influence gamers' behavior in playing mobile games. In organizing papers, this paper is divided into seven sections. It starts with the introduction and continued with a literature review and hypotheses, method, results, discussion and theoretical implication, managerial implication, limitations, and future research.

Literature Review

Mobile game adoption

Apart from the fast growth of mobile games, there is still very little research about mobile game adoption, and rooms for new studies still exist that assist practitioners and researchers to comprehend factors causing mobile game adoption. In analyzing mobile game adoption, the main predictor is the intention to use (Y. Liu & Li, 2011). An intention can be a desire to play the game for a long time; this can be influenced by the personal and external factors of the gamers (C. C. Liu, 2016). If one enjoys the experience of playing games, they have more positive intentions toward that online game (and games in general)

and it is more possible to adopt and keep using it in the future (Merhi, 2016). With its various advantages, it is important to conduct an in-depth analysis of mobile game adoption that can influence gamers' behavior.

This paper fills the knowledge gap in mobile game adoption by integrating game features and the TPB. Figure 1 illustrates the offered model of mobile game adoption. It confirms that the intention to play a mobile game is the function of game features, attitude, subjective norm, and perceived behavioral control. Game features are the primary antecedent in mobile game adoption. If one is attracted to the features of a game, they will adopt this game (Rafdinal et al., 2020). A few previous studies also have analyzed game adoption by using the TPB model (Agag et al., 2019; Alzahrani et al., 2017). Game adoption has also been examined in some game platforms such as digital games (Wang & Sun, 2016), online games (Merhi, 2016), and VR games (Jang & Park, 2019). However, the understanding is limited to game features that can influence gamers' behavior in adopting mobile games. Therefore, this research analyzes game features as the main predictor of mobile game adoption and integrates them with the TPB model.

Theory of planned behavior

The previous study has focused on behavior in playing games (Agag et al., 2019; Alzahrani et al., 2017; Lee et al., 2010) by applying TPB as their primary conceptual model. TPB (Ajzen, 1991) is developed by widening the previous theory, which is the Theory of Reasoned Action (TRA), by adding a non-volitional dimension, namely Perceived behavioral control. In TPB, the intention is influenced by two volitional variables, that is attitude and the subjective norm, and the non-volitional variable which is behavioral control (Ajzen, 1991). Attitude is a positive or negative opinion toward a behavior, the subjective norm is social pressure experienced from references (e.g. friendship, leadership, friends of the same age, and family) to commit or to not commit an action, and perceived behavioral control is ease experienced or difficulty in acting (Ajzen, 1991). Therefore, this research identifies and discusses TPB which attempts to explain gamers' behavior to illustrate TPB concept application in explaining the process of mobile game adoption.

According to TPB, one behaves based on their intention and perceptions of control over their behavior, while intention toward their turn is influenced by attitude, subjective norm, and perceived behavioral control. In attitude, it refers to how far somebody has evaluated or assessed toward desired behavior, or what is unbeneficial to them (Ajzen, 1991). Perceived behavioral control acts as a perception that one can obtain related resources and the subjective norm is a social pressure that one experienced whether they will be involved in a behavior (Ajzen, 1991). In the context of mobile games, an attitude refers to how far a gamer has evaluated the desired behavior, or what is not beneficial for them in playing mobile games which will then affect their intention to play mobile games. Perceived behavior control is an estimate of whether gamers have the resources, skills, and opportunities needed to play games, which will direct them to play mobile games. Subjective norm explains the social support that supports them to play mobile games which will affect the intention to play mobile games. Previous studies show the relationship between attitude, perceived behavioral control, and subjective norm toward the intention of playing a game (Agag et al., 2019; Alzahrani et al., 2017; Holevová, 2018; Lee et al., 2010). Hence, we assume that gamers' attitudes, gamers perceived behavior, and the

subjective norm will influence the intention to play mobile games, resulting in the following hypotheses:

H1. Attitude has a positive effect on the intention to play mobile games
H2. Subjective norm has a positive effect on the intention to play mobile games
H3. Perceived behavioral control has a positive and significant effect on the intention to play mobile games

Game features

The development of mobile devices, especially smartphones, makes playing online games using mobile devices increasingly popular because it expands the variety of places and times for gamers to play online games (H. Chen et al., 2017). With their facilities, mobile games provide various features for gamers such as multimedia elements (attractive gaming features for attention to gameplay and learning), fun elements (playful gaming features for enjoyable gameplay and learning), and motivational elements (supportive gaming features for meaningful gameplay and learning) (Abdul Jabbar & Felicia, 2015). Another study classifies game features into several groups, i.e. social features, manipulation and control features, narrative and identity features, reward and punishment features, and presentation features (King et al., 2010). A game that possesses high-quality features can provide three benefits to gamers, namely services (solving gamer problems quickly, knowing gamers' needs, and giving friendly answers to gamers' questions), products (game character design, vivid game character, and game story), and gratification (customizing character and playing various roles in the games) (Kim et al., 2015). If a game has good quality features it will affect a person's attitude towards the game which will lead to the intention to play. Previous research discusses various features in a game, resulting that game features being influential toward attitude and intention to play a game (Hamari & Keronen, 2017; Rafdinal et al., 2020; Tseng et al., 2015). These previous studies show the effect of game features on attitude and intention. Thus, the hypotheses proposed are as follows:

H4. Game features have a positive effect on attitude
H5. Game features have a positive effect on the intention to play mobile games

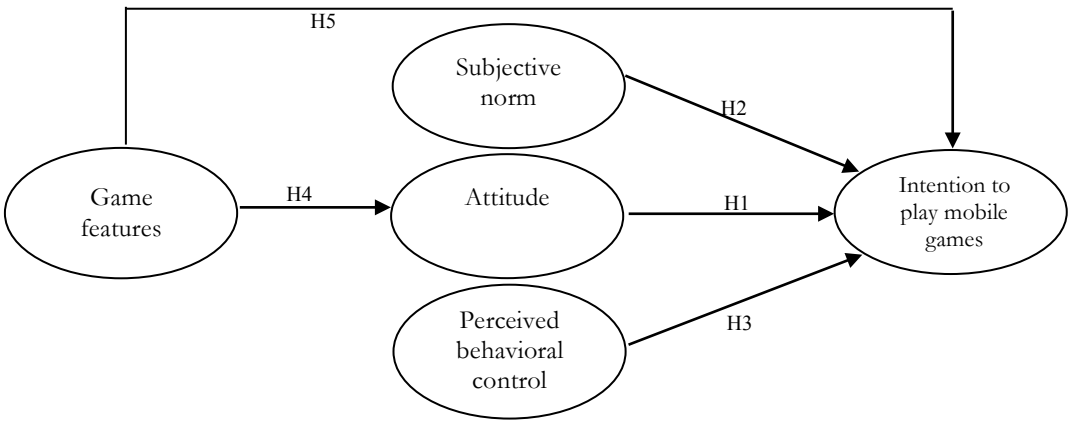


Figure 1. **Conceptual Model**

Methods

Sampling and data collection

The sampling technique in this study used a purposive sampling technique. A self-administered questionnaire was used to examine each item in the TPB model. We have shared questionnaires through an online survey to a game community with 408 people as respondents by using google form. We make sure that the respondents know several types of mobile games and have played at least one of them. This is evidenced through the control questions on the questionnaire. The partial least squares structural equation model (PLS-SEM) requires a minimum number of samples. We used the G*Power statistical tool to calculate the sample size based on statistical power. The value of statistical power for this sample is 0.95, this value is higher than the minimum requirement of 0.8 (Carranza et al., 2020; Hair et al., 2019). Thus, the sample size in this study was accepted.

Research instruments and measurements

The questionnaire was divided into two parts. The first part contained respondents' characteristics consisting of gender, income, frequency of playing games, the most frequently played games, and gameplay experience. The second part contained statements related to the research variables. To improve the quality of data obtained, we have filtered responses with the following criteria: (1) Eliminating responses that have not played mobile games in the past week and (2) Eliminating responses that were not serious through data filtering on two verification questions, is a control question to ensure the seriousness of the respondent in answering the question. We adopted the instrument from a previous study. The intention to play mobile games explain someone's intention to play mobile games, was measured by two items with a 5-point Likert scale, ranging from extremely unlikely (1) to extremely likely (5) (Merhi, 2016). The attitude explain how far a gamer has evaluated the desired behavior, or what is not beneficial for them in playing mobile games. It was measured by four items using a 5-point Likert scale, from strongly disagree (1) to strongly agree (5) (Xiao, 2019). Perceived behavioral control explain the resources, skills, and opportunities needed to play mobile games, it used 3 statement items from strongly disagree (1) to strongly agree (5) (Ajzen, 1991; Lee & Lee, 2009). Game features explain game features commonly found in mobile games, measured by 6 indicators using a scale of not very important (1) to very important (5) (Qian et al., 2019). Several items did not meet the cut-off value of the outer loading (0.708), so we excluded these items from the model that was re-estimated as shown in the results section. Measuring items are presented in Table 1.

Data analysis

This research examined construct validity and reliability by employing the analysis technique Structural Equation Modeling (SEM) variants based (SEM-PLS). In measuring the influence between variables, SEM-PLS has been widely recognized to be able to predict path coefficients in structural models (Hair et al., 2019). SEM PLS analyzed by using the software SmartPLS 3.2. Based on the PLS-SEM analysis literature, a two-step approach was carried out by evaluating the measurement model and structural model (Hair et al., 2019). The measurement model is evaluated by assessing the reliability and validity of the reflective construct, while the structural model is evaluated by R^2, f^2, Q^2 and path coefficients (Hair et al., 2019).

Results

Respondent Characteristic

The survey results have received responses from 408 respondents which can be analyzed further. They consist of 75 percent of male and 25 percent of female respondents. The biggest income is <IDR 3,000,000 as much as 49 percent. The average respondents play a game for 1 hour per day (35 percent) and 2 hours per day (33 percent). The most frequently played games are PUBG (23 percent), mobile legends (21 percent), and other games (26 percent). Most of them have more than 5 years of experience in playing mobile games (55 percent).

Measurement Model

The first phase in SEM-PLS is evaluating the measurement model, as it is conducted to estimate measurement instrument accuracy in giving error-free numbers and how far the scale used reflects the actual gap between the measured object and measurement scale (convergent validity and discriminant) (Hair et al., 2017). Table 1 demonstrates measurement items of this research, that all loading factors are significantly higher in cut-off value by 0.7. Composite reliability (CR) also fulfills the suggested level which is 0.7. The average variance extracted (AVE) is also above the suggested level which is 0.5 (Hair et al., 2017). Thus, convergent validity has been accepted. Convergent validity meets the criteria, which means that the convergent construct is able to explain the variance of the items. Meanwhile, in discriminant validity, Table 2 shows the diagonal square root of AVE of each construct which has a higher value compared to the one from other construct correlations. Hence, discriminant validity is accepted (Hair et al., 2017). Discriminant validity meets the criteria which means that a construct is empirically different from other constructs in the structural model. It can be concluded that the measurement models have met the criteria suggested.

Table 1. **Measurement items**

Constructs	Item	Loading	□	CR	AVE
Game features	Chat room (GFQ1)	0.845	0.912	0.932	0.695
	Stream quality (GFQ2)	0.763			
	Commentary features (GFQ3)	0.836			
	Player characteristics (GFQ4)	0.756			
	Event attractiveness (GFQ5)	0.883			
	Stream traits (GFQ6)	0.909			
Attitude	Playing mobile games is good (ATT1)	0.737	0.773	0.854	0.595
	Playing mobile games is valuable (ATT2)	0.782			
	Playing mobile games is pleasant (ATT3)	0.755			
	Playing mobile games is interesting (ATT4)	0.810			
Subjective norm	I want to play mobile games because I want to belong to the group (SN1)	0.805	0.751	0.855	0.663
	Playing mobile games reflects my personality toward other people (SN2)	0.826			
	I want to play mobile games because people who are important to me (SN3)	0.811			
Perceived behavioral control	Playing mobile games is fully under my control (PBC1)	0.838	0.834	0.901	0.752
	I have the resources, knowledge, and skill to play the mobile game (PBC2)	0.820			

Constructs	Item	Loading	□	CR	AVE
	Whether I play or don't play mobile games is up to me (PBC3)	0.938			
Intention to play mobile games	I intend to play mobile games in the future (INT1)	0.776	0.834	0.889	0.667
	I intend to continue playing mobile games (INT2)	0.804			
	I believe I will play mobile games in the future (INT3)	0.870			
	The mobile game that I play right now is my first choice (INT4)	0.815			

Table 3. ***Fornell-Larcker criteria (Discriminant validity)***

	1	2	3	4	5
1. Game features	**0.834**				
2. Attitude	0.634	**0.771**			
3. Subjective norm	0.576	0.628	**0.814**		
4. Perceived behavioral control	0.256	0.390	0.412	**0.876**	
5. Intention to play mobile games	0.674	0.675	0.807	0.318	**0.817**

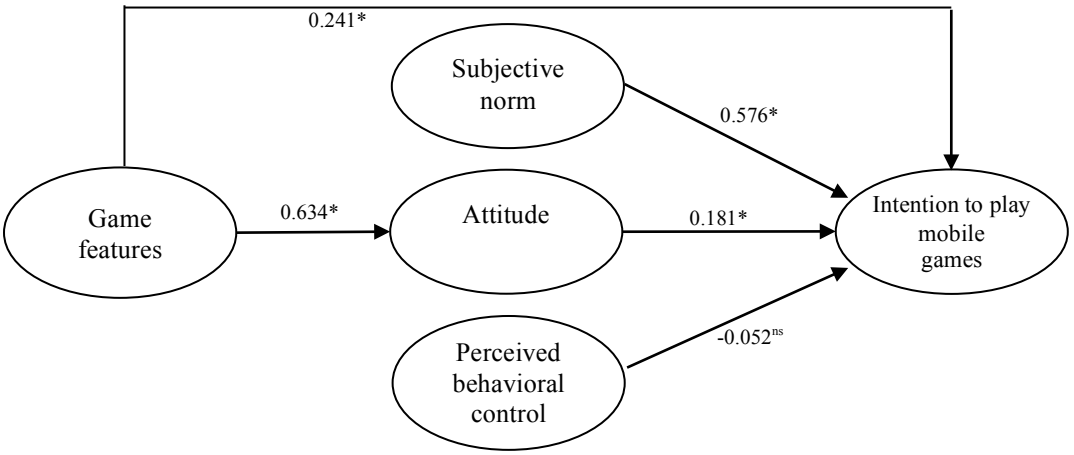
Structural Model

Before analyzing the influence between variables, firstly, it requires analyzing R^2, F^2, and Q^2. R^2 analysis includes attitude, subjective norm, perceived behavioral control, and game features explaining the intention to play mobile games at a substantial level (0.730). In the R^2 analysis of attitude, game features can explain attitude at a moderate level (0.401) (Hair et al., 2017). Other than that, the significance of exogenous variables on the intention to play mobile games and attitude is shown by f^2. The variable with a small effect (<0.02) on the intention to play mobile games is perceived behavioral control (0.008). Meanwhile, the variables with a big effect (>0.35) on the intention to play mobile games are game features (0.672) and subjective norm (0.647). Toward attitude, game features have a moderate effect (0.118) (Hair et al., 2017). In terms of Q^2, all dependent variables have a value greater than 0 meaning that the model has a predictive power (Hair et al., 2017).

Hypotheses testing results show that there is one variable that is not accepted which is perceived behavioral control toward the intention to play mobile games (□ = -0.052; Sig. 0.061), while the intention to play mobile games is influenced by attitude (□ = 0.181; Sig. 0.000), subjective norm (□ = 0.576; Sig. 0.000), and game features (□ = 0.241; Sig. 0.000). Then, game features are influential toward attitude (□ = 0.634; Sig. 0.000). Thus, all hypotheses can be accepted except perceived behavioral control toward the intention to play mobile games. Meanwhile, the highest influence is held by game features toward attitude. On the intention to play mobile games, the highest influence is occupied by the subjective norm.

Table 4. **Hypothesis testing result**

Variable	□	t value	P values	Result
Attitude → Intention to play mobile games	0.181	4.352	0.000	Accepted
Subjective norm → Intention to play mobile games	0.576	12.845	0.000	Accepted
Perceived behavioral control → Intention to play mobile games	-0.052	1.879	0.061	Rejected
Game features → Attitude	0.634	15.934	0.000	Accepted
Game features → Intention to play mobile games	0.241	5.875	0.000	Accepted



Note. Significance *p < .05; ns. Not significant

Figure 2 **Model Results**

Discussion

This research confirms the integration of the game features model and TPB in explaining mobile game adoption. Based on the R^2 value, they can explain the intention to play mobile games by 73% compared to game features (45.5%) and TPB (70.1%) individually. This result shows the strength of the integrated model suggested. Integration of the game features model and TPB are supported by previous studies which scrutinize mobile game adoption by using game features (A. Chen et al., 2016; Merikivi et al., 2016; Qian et al., 2019) and TPB (Lee et al., 2010; Lee & Lee, 2009). However, these studies do not integrate game features and TPB. In contrast to previous studies, this study integrates game features and TPB into a single model in explaining mobile game adoption. Theoretically, this research serves as an insight that game features integration and TPB can improve explorative power in predicting mobile game adoption. Even though there are a considerable number of previous studies related to game features and TPB in the games industry, there has not been a study showing the compatibility of an integrated model for verifying mobile game adoption. Therefore, this study widens the comprehension of technical factors from mobile games regarding their influence on attitude and the intention to play mobile games. It employs several game feature dimensions such as chat room, stream quality, commentary features, player characteristics, event attractiveness, and stream traits. Because of their influence toward attitude and intention to play mobile games, thus these features must be present in every mobile game. This paper also contributes toward literature by recognizing important impacts from game features in mobile game adoption.

In the TPB model, attitude and subjective norm are crucial factors that influence the intention to play mobile games. The results show that they are influential constructs toward the intention to play mobile games. This finding strengthens the previous studies about TPB influence on the intention to play games (Lee et al., 2010; Lee & Lee, 2009). Complementing previous studies on the explanation of TPB in the context of game adoption, this study proves that TPB can contribute to comprehending and predicting gamers' behavior regarding the current most-frequent played games, which are mobile games. The behavior refers to one's positive or negative sentiment regarding committing a target behavior; the subjective norm reflects one's perception that the important thing for

most people is whether they must or must not make this behavior (Ajzen, 1985). Even though there already exist studies related to mobile games, this study can provide empirical support contributing to TPB and its influence on the intention to play mobile games.

This result draws out two pivotal conclusions. Firstly, the built model verifies the explorative power of mobile game adoption. It is proven by the R^2 value in the integrated model which possesses a higher value than game features or TPB individuals. Secondly, it empirically proves that game features and TPB can explain mobile game adoption. It is confirmed from hypotheses testing which is accepted in each influence between constructs. Game features define technology quality factors in a mobile game (Rafdinal et al., 2020), while TPB is developed to illustrate general behavior (Ajzen, 1985). Therefore, this integrated model is suitable to explain game features that become a background of mobile game adoption behavior.

Conclusion

Based on the findings, there are two important conclusions in this study. First, this study confirms the integration of the game feature and TPB model in explaining mobile game adoption. These results demonstrate the strength of the suggested integrated model. Second, the results of testing the hypotheses are not fully supported. The results show that perceived behavior control has no significant effect on the intention to play mobile games. This means that beliefs about the presence or absence of factors that facilitate or hinder playing mobile games are not factors that determine a person's intention to play games. However, what support it are game features, attitude towards games, and social support.

Practically, there are several crucial implications in this study. Firstly, it is necessary to cross-examine interesting game features for gamers. It is believed it can be an alternative for competitive and comparative strategy in competition within the mobile games industry. Collaboration among gamers, game developers, and game technology companies must provide emotional and psychological support to build up game features whose quality must keep improving. Besides, it requires joint efforts by always updating the existing game features. For example, making game quality standards with minimum provisions at national and international levels. Technology standards must also be emphasized to ensure gamers will have an extraordinary gaming experience.

Secondly, it is necessary to shape attitudes and subjective norm which will influence mobile game adoption. Various parties need to mobilize technology development resources by paying attention to gamers' attitudes toward the use of provided game features which can create a positive impression. To make it happen, parties such as game developers and game technology companies are suggested to develop better game features to obtain extraordinary experiences during playing mobile games. It will leave gamers' perception that their experience in playing mobile games is what they expect and worth the cost and time they sacrifice.

Limitations and Future Research

Even though this study has been able to widen the study of mobile game adoption by integrating game features and TPB, however, it still has some limitations. Firstly, every game type has different themes and characteristics which will distinguish gamers who play

them. Future study, it must differentiate themes and games as research focus so that gamers' behavior can be analyzed well. Secondly, the majority of sample distribution originated from Java island which can limit the generalization of this finding. Future study is expected to supplement wider respondents' variation in terms of area to obtain better finding generalization.

References

Abdul Jabbar, A. I., & Felicia, P. (2015). Gameplay engagement and learning in game-based learning : A systematic review. *Review of Educational Research*, *85*(4), 740–779. https://doi.org/10.3102/0034654315577210

Agag, G. M., Khashan, M. A., & ElGayaar, M. H. (2019). Understanding online gamers' intentions to play games online and effects on their loyalty: An integration of IDT, TAM and TPB. *Journal of Customer Behaviour*, *18*(2), 101–130.

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. *Action Control*, 11–39. https://doi.org/10.1007/978-3-642-69746-3_2

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*, 179–211. https://doi.org/10.4135/9781446249215.n22

Almuhanna, N., Alotaibi, H., Al-matham, R., Al-twairesh, N., & Al-khalifa, H. (2019). UMSG : An extended model to investigate the use of mobile social games. *IEEE Access*, *7*, 80277–80286.

Alzahrani, A. I., Mahmud, I., Ramayah, T., Alfarraj, O., & Alalwan, N. (2017). Extending the theory of planned behavior (TPB) to explain online game playing among Malaysian undergraduate students. *Telematics and Informatics*, *34*(4), 239–251.

APJII. (2019). *Hasil survei penetrasi dan perilaku pengguna internet Indonesia 2018*. Asosisasi Penyelenggara Jasa Internet Indonesia. https://apjii.or.id/content/utama/39

Bharathi, A. K. B. G., Singh, A., Tucker, C. S., & Nembhard, H. B. (2016). Knowledge discovery of game design features by mining user- generated feedback. *Computers in Human Behavior*, *60*, 361–371. https://doi.org/10.1016/j.chb.2016.02.076

Carranza, R., Díaz, E., Martín-Consuegra, D., & Fernández-Ferrín, P. (2020). PLS–SEM in business promotion strategies. A multigroup analysis of mobile coupon users using MICOM. *Industrial Management and Data Systems*, *120*(12), 2349–2374. https://doi.org/10.1108/IMDS-12-2019-0726

Chen, A., Lu, Y., & Wang, B. (2016). Enhancing perceived enjoyment in social games through social and gaming factors. *Information Technology & People*, *29*(1), 99–119.

Chen, H., Rong, W., Ma, X., Qu, Y., & Xiong, Z. (2017). An extended technology acceptance model for mobile social gaming service popularity analysis. *Mobile Information Systems*, 1–12. https://doi.org/https://doi.org/10.1155/2017/3906953

Hair, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)* (2nd ed.). Sage publications.

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, *31*(1), 2–24. https://doi.org/10.1108/EBR-11-2018-0203

Hamari, J., & Keronen, L. (2017). Why do people play games? A meta-analysis. *International Journal of Information Management*, *37*, 125–141. https://doi.org/10.1016/j.ijinfomgt.2017.01.006

Holevová, B. K. (2018). The role of prevolitional processes in video game playing: A test of the model of goal-directed behavior and the extended model of goal-directed behavior. *Europe's Journal of Psychology*, *14*(4), 932–948.

https://doi.org/10.5964/ejop.v14i4.1565

Jang, Y., & Park, E. (2019). Telematics and Informatics An adoption model for virtual reality games: The roles of presence and enjoyment. *Telematics and Informatics*, *42*, 101239. https://doi.org/10.1016/j.tele.2019.101239

Kim, S. J., Choi, Y. K., Kim, K. H., & Liu, H. (2015). Country of origin and brand image influences on perceptions of online game quality. *Journal of Consumer Behaviour*, *14*, 389–398. https://doi.org/10.1002/cb

King, D., Delfabbro, P., & Griffiths, M. (2010). Video game structural characteristics: A new psychological taxonomy. *International Journal of Mental Health and Addiction*, *8*, 90–106. https://doi.org/10.1007/s11469-009-9206-4

Lee, M., & Lee, M. (2009). Understanding the behavioural intention to play online games An extension of the theory of planned. *Online Information Review*, *33*(5), 849–872. https://doi.org/10.1108/14684520911001873

Lee, M., Tsai, T., Lee, M., & Tsai, T. (2010). What drives people to continue to play online games? An extension of technology model and theory of planned behavior. *International Journal of Human-Computer Interaction*, *26*(6), 601–620. https://doi.org/10.1080/10447311003781318

Liu, C. C. (2016). Understanding player behavior in online games: The role of gender. *Technological Forecasting and Social Change*, *111*, 265–274. https://doi.org/10.1016/j.techfore.2016.07.018

Liu, Y., & Li, H. (2011). Exploring the impact of use context on mobile hedonic services adoption: An empirical study on mobile gaming in China. *Computers in Human Behavior*, *27*(2), 890–898. https://doi.org/10.1016/j.chb.2010.11.014

Merhi, M. I. (2016). Towards a framework for online game adoption. *Computers in Human Behavior*, *60*, 253–263. https://doi.org/10.1016/j.chb.2016.02.072

Merikivi, J., Tuunainen, V., & Nguyen, D. (2016). What makes continued mobile gaming enjoyable? *Computers in Human Behavior*, *68*, 411–421. https://doi.org/10.1016/j.chb.2016.11.070

Morschheuser, B., Riar, M., Hamari, J., & Maedche, A. (2017). How games induce cooperation? A study on the relationship between game features and we-intentions in an augmented reality game. *Computers in Human Behavior*, *77*, 169–183. https://doi.org/10.1016/j.chb.2017.08.026

Qian, T. Y., Zhang, J. J., Wang, J. J., & Hulland, J. (2019). Beyond the game: Dimensions of esports online. *Communication & Sport 1-27*, *April*, 1–27. https://doi.org/10.1177/2167479519839436

Rafdinal, W., & Qisthi, A. (2020). In-game factors and technology acceptance factors in increasing intention to play online game. *Proceedings of Tourism Development Centre International Conference*, *October*, 281–296. https://doi.org/10.2478/9788395720406-029

Rafdinal, W., Qisthi, A., & Asrilsyak, S. (2020). Mobile game adoption model: Integrating technology acceptance model and game features. *Sriwijaya International Journal of Dynamic Economics and Business*, *4*(1), 43–56. https://doi.org/https://doi.org/10.29259/sijdeb.v4i1.43-56

Shackelford, L., Huang, W. D., Craig, A., Merrill, C., Shackelford, L., Huang, W. D., Craig, A., & Merrill, C. (2019). Relationships between motivational support and game features in a game-based virtual reality learning environment for teaching introductory archaeology. *Educational Media International*, 1–18. https://doi.org/10.1080/09523987.2019.1669946

Tseng, F. C., Huang, H. C., & Teng, C. I. (2015). How do online game communities retain gamers? Social presence and social capital perspectives. *Journal of Computer-Mediated*

Communication, *20*, 601–614. https://doi.org/10.1111/jcc4.12141

Wang, Q., & Sun, X. (2016). Technological forecasting & social change investigating gameplay intention of the elderly using an extended technology acceptance model (ETAM). *Technological Forecasting & Social Change*. https://doi.org/10.1016/j.techfore.2015.10.024

Xiao, M. (2019). Factors influencing eSports viewership: An approach based on the theory of reasoned action. *Communication & Sport*, 1–31. https://doi.org/10.1177/2167479518819482

Yang, H., & Lin, R. (2019). Why do People continue to play mobile game apps? A perspective of individual motivation, social factor and gaming factor. *Journal of Internet Technology*, *20*(6), 1925–1936. https://doi.org/10.3966/160792642019102006022