THE ROLES OF VIRTUAL CHALLENGE AND DIVERSION IN PAY TO PLAY (P2P) PRACTICES AMONG INDONESIAN MOBILE GAMERS

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ABSTRAK

Penelitian ini bertujuan untuk mengetahui faktor-faktor yang mempengaruhi niat bermain dan membayar (P2P) pada game seluler. Pasar game seluler sedang tumbuh dan menguntungkan. Dalam hal pendapatan, Indonesia adalah salah satu pasar game terbesar di Asia Tenggara. Namun, perusahaan game lokal hanya memiliki persentase pasar yang sangat kecil. Beberapa konsep yang terkait dengan P2P dimasukkan dalam penelitian ini, yaitu fleksibilitas waktu, pengalihan, dan tantangan. Penelitian kuantitatif ini menggunakan teknik purposive sampling dan berhasil mengumpulkan 324 mobile gamer bergenre Strategy, Multiplayer Online Battle Arena (MOBA) dan Action. Untuk menganalisis data, penelitian ini menggunakan Structural Equation Modeling (SEM) melalui software SPSS dan AMOS. Hasil penelitian menunjukkan bahwa 1) Tantangan memiliki efek positif terhadap niat bermain game seluler dan niat membayar barang virtual 2) Niat bermain game seluler memiliki efek positif terhadap niat membayar barang virtual 3) Pengalihan memiliki efek positif terhadap niat membayar barang virtual dan 4) Niat bermain game seluler memediasi secara parsial hubungan antara tantangan dan niat membayar barang virtual.

Kata kunci: Fleksibilitas Waktu, Pengalihan, Tantangan, Niat Bermain, Niat Membayar

ABSTRACT

This research aims to investigate factors influencing the intention to play and pay (P2P) in mobile games. The mobile games market is growing and lucrative. In terms of revenue, Indonesia is one of Southeast Asia's biggest gaming markets. However, local gaming companies only own a very small percentage of the market. Several P2P-related concepts are incorporated in this research, namely time flexibility, diversion, and challenge. This quantitative research used a purposive sampling technique to recruit 324 mobile gamers from Strategy, Multiplayer Online Battle Arena (MOBA) and Action genres. To analyse the data, this research employed Structural Equation Modelling (SEM) via SPSS and AMOS software. The results show that 1) Challenge has positive effects on the intention to play mobile games and the intention to pay for virtual items 2) The intention to play mobile games has a positive effect on the intention to pay for virtual items 3) Diversion has a positive effect on the intention to pay for virtual items and 4) The intention to play mobile games partially mediates the relationship between challenge and the intention to pay for virtual items.

Keywords: Time Flexibility, Diversion, Challenge, Intention to Play, Intention to Pay

1.   INTRODUCTION

These days, gamers no longer rely on their PCs or consoles to play games. As mobile technology is becoming more sophisticated and powerful, many smartphones and tablets can be used to play immersive games (Yi, Lee, & Kim, 2017). Game developers have observed the shift in gaming platforms and hence, they invested in Research and Development (R&D) to develop new games exclusive for smartphone devices (Budak, 2020). The advancement of digital device technology,

such as smartphones, have promoted e-commerce (Syahrivar, Selamat, & Chairy, 2020). Indonesia is one of Southeast Asia's biggest gaming markets (Syahrivar *et al*., 2022). However, local game developers only owned 0.2% market share in the country, while the rest was dominated by foreign game developers (Budiansyah, 2020).

The freemium business model in the game industry refers to a pricing system where the core game is free but revenues are generated by selling virtual items and premium features (Hamari, Hanner, & Koivisto, 2020; Syahrivar *et al*., 2022). For many online services, the freemium model has become the top choice and has become popular in the game industry. As shown by the previous review in 2015 of the top 300 apps in the App Store, the majority of mobile apps are freemium games (Hamari *et al.*, 2020). However, it is self-evident that no game can exist without continued revenue streams, thus game developers have begun to offer in-game virtual items to gamers to enhance their gaming experience. In-game virtual items may include extra lives, avatar clothing, weapons, artefacts and many more (Hamari, 2015).

The purpose of this research was to investigate factors influencing Pay to Play (P2P) practices among Indonesian mobile gamers. Several relevant concepts connected to P2P were incorporated in this research, namely time flexibility, diversion, and challenge. One of the factors that drive gaming activities is time availability and flexibility (Souza and Freitas, 2017). During the COVID-19 pandemic, many people prefer to spend their time at home, away from the crowds. This means that they have more time than before. Gamers may play games as a way to kill their time and boredom. Moreover, their disposable incomes previously used for travelling or entertainment might be used to finance their gaming activities.

A previous study by Souza and Freitas (2017) suggests that gaming activities are a form of escapism from life problems. Immersing in mobile games enables gamers to distract their minds from current problems hence a diversion. We argue that this diversion mechanism through mobile games is prevalent during the period of lockdown. Their gaming immersion as a form of diversion strategy might be further improved by purchasing virtual items.

A previous study by Syahrivar *et al.* (2022) suggests that competition among gamers was one of the driving factors of P2P practices. Competition breeds challenges. Mobile games are not only for entertainment but also platforms for challenge seekers. Mobile gamers encounter varying levels of difficulties requiring different skills to complete. Certain levels might be hard to complete without purchasing virtual items. Those who seek to minimize their challenges through in-app purchases are called P2P gamers or the *"whale"* if they spend a lot of money. Meanwhile, those who play freemium mobile games for free are called free to play (F2P) gamers.

Our research is fresh for several reasons: First, we examined less explored concepts and relationships in the gaming literature. A less intuitive relationship was also found between diversion and the intention to pay, which is novel. Second, our research focuses on three mobile gaming genres, namely Strategy, Multiplayer Online Battle Arena (MOBA) and Action. The genres of the freemium mobile games under investigation have not been given attention in previous research on this topic (e.g., Yi et al., 2017; Souza and Freitas, 2017; Hamari et al., 2020; Syahrivar et al., 2022). Finally, Indonesian gamers are underrepresented in the gaming literature, particularly in the aforementioned genres.

LITERATURE REVIEW
Mobile games playing intention
Mobile games are games that are played on mobile devices or smartphones. Mobile games become popular among gamers, especially when they can be downloaded for free to play solo or as a group (Lopez-Fernandez *et al.*, 2017). Additionally, mobile games can either be played with or without the internet (Baabdullah, 2018). There are many genres in mobile games, the top three genres in Indonesia are Strategy, Multiplayer Online Battle Arena (MOBA), and Action (Newzoo, 2019).

The technology for mobile gaming has progressed tremendously. Some mobile games may combine the elements of virtual and the real environments, often referred to as augmented reality (AR). For instance, *Pokémon Go*, a location-based AR mobile game, that allow gamers to collect their favourite monsters by interacting with their real environments (Hamari *et al.*, 2019). In terms of graphic and design, today's mobile games are immersive and visually mesmerizing. For example, *Honor of Kings*, a MOBA game from *Tencent* (China), allows players to customize the graphic quality based on the capabilities of their gaming devices (e.g., smartphones, PCs). Moreover, various promotional animations (combined with real actors) have been launched to promote the game (Jiang & Chung, 2021).

According to Ajzen (1991), the intention is the degree to which people are willing to try or make efforts to perform certain behaviours. The author argued that numerous elements, including opportunities and resources (e.g., time and money), might influence how close their intentions were to their actual behaviour. In the context of gaming, Wu and Hsu (2018) defined the intention to play games as gamers' predisposition to play online games more in the future. Similarly, Souza and Frietas (2017) stated that the intention to play indicated the gamers' willingness to play or keep playing a game.

Time flexibility
The idea of mobile gaming is that mobile games be played anytime and anywhere. However, some mobile games are so competitive and addictive that gamers must invest a lot of time and resources to stay ahead, and hence time wise these games are not flexible. According to Li *et al*. (2018), having time flexibility means that players can control their gaming frequency and playing duration. In this research, the degree to which gamers believe they may play mobile games whenever they want is referred to as time flexibility.

Mobile devices such as smartphones and tablets can be used for different activities and purposes, such as playing mobile games. How much time to invest for a mobile game to excel from other gamers often becomes an issue, especially when gamers have more important priorities such as to study or to work. On the other hand, having a lot of free time is also associated with boredom and lack of mental involvement, in which playing games can be the solution (Leung, 2020). Previous research on the relationship between time flexibility and the intention to play have been contradictory. For instance, Wei and Lu (2014) found a significant and positive relationship between time flexibility and the intention to play. Meanwhile, Souza and Frietas (2017) found an insignificant relationship between the two variables. We planned to retest the relationship between two variables in the context of Strategy, MOBA and Action mobile game genres. Therefore, the first hypothesis was formulated as follows:

H1: Time flexibility has positive effect on the intention to play mobile games.

Diversion

Previous research suggests that mobile games are a form of relaxation and a mode of escapism from problems and responsibilities (Souza & Freitas, 2017; Syahrivar *et al*., 2022). Previous research also discussed the state of flow (Jin, 2012; Hamari *et al*., 2016; Leung, 2020) that denotes an immersion in certain activities (e.g. gaming activities) that people often ignore their surroundings. In this research, diversion is defined as the use of gaming activities to distract gamers' attentions from their socio-psychological problems or stressors, remove them from their mundane daily activities or as a way to kill time.

During the COVID-19 pandemic, people may experience all sort of mental issues, such as depression and anxiety (Syahrivar *et al*., 2021). Previous studies suggest that gaming activity has increased during the lockdown time (Amin *et al*., 2020; Fazeli *et al*., 2020). Meanwhile, Maroney *et al*. (2019) argued that excessive gaming activities and gaming addiction were a form of coping mechanism against stressors. Playing mobile games can be utilized as a distraction from problems at hand and a way of relaxation to alleviate tension and anxiety. Therefore, the second hypothesis was formulated as follows:

H2: Diversion has positive effect on the intention to play mobile games.

Challenge

A previous study by Syahrivar *et al*. (2022) suggests that competitions among gamers are the driving factor in online gaming. Competitions are closely related to challenges as gamers attempt to overpower each other and "stay alive" as long as possible (Souza & Freitas, 2017). Game challenges are intended to stimulate players to perform tasks or complete the game to make progress or reach the next level (Denisova, Guckelsberger, & Zendle, 2017). However, the degree of challenge must be managed because it may affect gamers' engagement with the game. If the game is perceived to be too difficult, it will generate anxiety, stress, and ultimately resignation; whereas if the game is perceived to be too easy, it will lead to boredom (Alexiou & Schippers, 2018). In this research, the game challenge is defined as the positive feelings gamers experience for overcoming game difficulties and progressing in games.

Challenge is one of the primary game elements. Gamers are virtually rewarded for progressing in games by completing each challenge with different levels of difficulty. The presence of challenges in games require gamers to stay focus thus improving their engagement and immersion (Hamari *et al*., 2016; Souza & Freitas, 2017; Liao & Teng 2017). We argue that certain mobile game genres, such as Strategy, MOBA and Action, are specifically sought after by gamers because they offer challenges that, otherwise, cannot be found in real life. Therefore, the third hypothesis was formulated as follows:

H3: Challenge has positive effect on the intention to play mobile games.

Mobile games paying intention

Customer intention is frequently used by marketers to forecast the sales of new goods or the repeated purchase of existing products (Curvelo, Watanabe, & Alfinito, 2019). Intention may reflect consumers' willingness to act on marketing offerings. Consumers may form their intention to pay based on factors, such as perceived product values and benefits. Various factors may also change their intention to pay, such as personal values, information and knowledge, and

product availability (Kotler & Armstrong, 2018). In this research, the intention to pay is defined as gamers' willingness to spend their resources (e.g. money) for virtual items.

Previous studies in online games have affirmed the positive relationship between the intention to play and the intention to pay (Hamari *et al.*, 2020; Syahrivar *et al.*, 2022). The willingness to try a product may eventually result in the willingness to pay. Gamers who find positive benefits in gaming may attempt to improve their overall gaming experiences by investing (i.e. spending their money) in their favourite games.   Therefore, the forth hypothesis was formulated as follows:

H4: *The Intention to play has positive effect on the intention to pay for virtual items.*

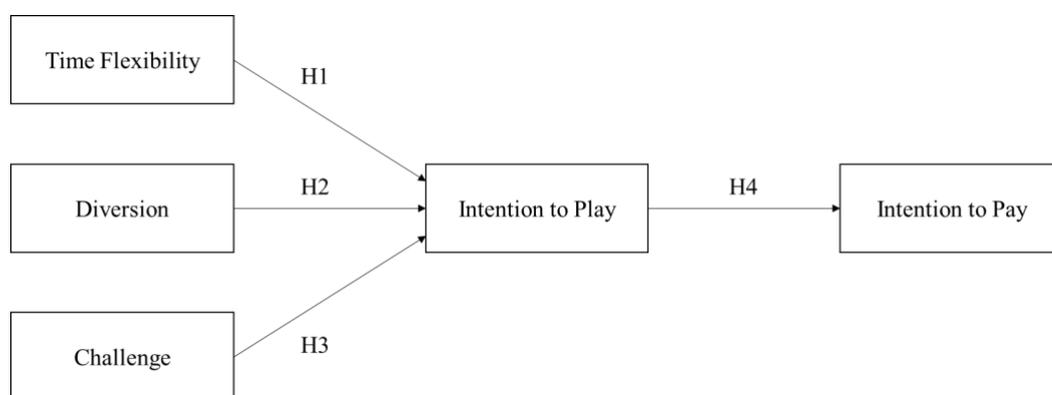The theoretical framework of this research is illustrated in Figure 1.

Figure 1. Theoretical Framework

2.   RESEARCH METHODOLOGY

This research employed a purposive sampling technique by targeting mobile gamers of Strategy, Multiplayer Online Battle Arena (MOBA) and Action genres, the three most prominent mobile game genres in Indonesia. This research successfully gathered 324 mobile gamers through online survey spread to popular online gaming clubs in Indonesia. The respondent profile is shown in **Table 1**.

Table 1. Respondent Profile

		Total	**%**
Gender	Male	177	54.6
	Female	147	45.4
	Total	324	100
Age	17 – 20 years old	108	33.3
	21 – 25 years old	216	66.7
	Total	324	100
Educational Background	Bachelor Degree	147	44.8
	Non-bachelor Degree	177	55.2
	Total	324	100
Most Played Mobile Games	Strategy	57	17.6
	MOBA	141	43.5
	Action	126	38.9

	Total	324	100
Frequency of Playing Mobile Games	Once or Twice a Month	46	14.2
	Once or Twice a Week	39	12
	Three times or Four Times a Week	57	17.6
	Once a Day	65	20.1
	More Than Once a Day	117	36.1
	Total	324	100
Time Range Spent on Playing Mobile Games	10 – 50 minutes	85	26.2
	1 hour – 1 hour and 50 minutes	111	34.3
	2 hours – 2 hours and 50 minutes	67	20.7
	3 hours – 5 hours and 50 minutes	46	14.2
	6 hours or more	15	4.6
	Total	324	100

We employed several measurement scales: a 5-item time flexibility scale was adapted from Wei and Lu (2014) and Souza and Frietas (2017); a 5-item diversion scale was adapted from Souza and Frietas (2017) and Liu *et al*. (2018); a 5-item challenge scale was adapted from Souza and Frietas (2017) and Denisova *et al*. (2017); a 5-item intention to play scale was adapted from Wu and Liu (2007) and Souza and Frietas (2017); finally, a 5-item intention to pay scale was adapted from Chang *et al*. (2013) and Souza and Frietas (2017). All items were scored on a 5-point Likert scale, with 1 indicating strong disagreement and 5 indicating strong agreement. The reliability of each measurement scale is shown in **Table 2**.

Table 2. Measurements

Variables	Items	Cronbach's Alpha
Time Flexibility (TMF)	1. I can play mobile games any time. 2. I can control the time playing mobile games by myself. 3. I can begin and stop playing mobile games at any time. 4. I play mobile games to spend time. 5 I play mobile games when I have nothing to do.	.646
Diversion (DVS)	1. I play mobile games when I have other things to do. 2. I play mobile games instead of other things I should be doing. 3. When I feel bored, I will consider playing a mobile game. 4. When I am waiting, I will consider playing a mobile game. 5. I think that playing mobile games is a good way to kill time.	.879
Challenge (CLG)	1. I feel proud when I master an aspect of a mobile game. 2. I find it very rewarding to get to the next level. 3. I enjoy finding new and creative ways to work through a mobile game. 4. I play until I complete a level or win a game. 5. The difficulty level in mobile game makes me feel more challenged.	.783

Intention to Play (PLY)	1. I am willing to play mobile games. 2. I will give playing mobile games a try. 3. I will take the initiative to play mobile games. 4. I will play mobile games frequently in the future. 5. I will play mobile games for a long time.	.898
Intention to Pay (PAY)	1. There is a big probability that I spend money in-game virtual items. 2. I intend to buy in-game virtual items in the future. 3. I predict that I will buy in-game virtual items in the future. 4. I hope to buy in-game virtual items soon. 5. I have strong urge to buy in-game virtual items.	.950

To analyse the data, this research employed Structural Equation Modelling (SEM) through SPSS and AMOS Software. Several important fit indices, such as Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Square Residual (SRMR), Goodness of Fit Indices (GFI), Normal Fit Index (NFI), Tucker-Lewis Index (TLI), and Comparative Fit Index (CFI). We used the work of Schreiber *et al.* (2006) to guide our research.

3.   RESULTS AND DISCUSSIONS
The descriptive statistics of the data is shown in **Table 3**.

Table 3. Descriptive statistics

	N	MIN	MAX	MEAN	S.D.
TMF1	324	1.0	5.0	3.833	1.1280
TMF2	324	1.0	5.0	4.077	1.0094
TMF3	324	1.0	5.0	4.228	1.0976
TMF4	324	1.0	5.0	3.849	1.1666
TMF5	324	1.0	5.0	4.426	.8461
DVS1	324	1.0	5.0	2.315	1.1854
DVS2	324	1.0	5.0	2.176	1.2228
DVS3	324	1.0	5.0	4.080	.9039
DVS4	324	1.0	5.0	3.549	1.1568
DVS5	324	1.0	5.0	3.503	1.1114
CLG1	324	1.0	5.0	4.071	.9881
CLG2	324	1.0	5.0	3.827	1.0707
CLG3	324	1.0	5.0	4.204	.8594
CLG4	324	1.0	5.0	3.802	1.1340
CLG5	324	1.0	5.0	4.105	.9740
PLY1	324	1.0	5.0	4.321	.7959
PLY2	324	1.0	5.0	4.275	.8301
PLY3	324	1.0	5.0	4.093	.9231
PLY4	324	1.0	5.0	3.204	1.2349
PLY5	324	1.0	5.0	2.972	1.2722
PAY1	324	1.0	5.0	2.864	1.3584
PAY2	324	1.0	5.0	2.873	1.3785
PAY3	324	1.0	5.0	2.864	1.3855
PAY4	324	1.0	5.0	2.648	1.4163
PAY5	324	1.0	5.0	2.673	1.4266

TMF = Time Flexibility, DVS = Diversion, CLG = Challenge, PLY = Intention to Play, PAY = Intention to Pay, N = Number of Respondents, MIN = Minimum, MAX = Maximum, S.D. = Standard Deviation,

To measure the sampling adequacy for the exploratory factor analysis (EFA), we conducted KMO (Kaiser-Meyer-Olkin) and Bartlett's Test (see **Table 4**). The results suggest that the samples are adequate (> .80), and hence we could continue the analysis.

Table 4. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		**.833**
Bartlett's Test of Sphericity	Approx. Chi-Square	3301.576
	df	105
	Sig.	.000

We conducted Factor Analysis to measure the convergent validity. The results are shown in **Table 5**. Unfortunately, some items from each construct had to be excluded because they either had low loading values. Although variable time flexibility and diversion, each only has two items, the loading value of each item in each factor is above .80, the average variance extracted (AVE) of each factor is above .70 and the composite reliability of each factor is above .80. This means that the two-item factors are acceptable.

Table 5. Factor Analysis

	Component					**AVE**	**C.R.**
	1	2	3	4	5		
TMF2					.836	.723	.839
TMF3					.864		
DVS1				.908		.835	.910
DVS2				.919			
CLG1			.823			.621	.830
CLG2			.810				
CLG3			.727				
PLY1		.902				.772	.910
PLY2		.890					
PLY3		.843					
PAY1	.876					.786	.948
PAY2	.922						
PAY3	.918						
PAY4	.839						
PAY5	.876						

TMF = Time Flexibility, DVS = Diversion, CLG = Challenge, PLY = Intention to Play, PAY = Intention to Pay, AVE = Average Variance Extracted, C.R. = Composite Reliability

After ensuring that the data was valid and reliable, we continued with SEM analysis. The final model was shown in **Figure 2**. The squared multiple correlations (R2) value of the intention to play suggests that 30.9% of variance can be explained by the exogenous variables included in the model. The R2 value of the intention to pay suggests that 25.8% variance can be explained by the exogenous variables and the mediator included in the model.
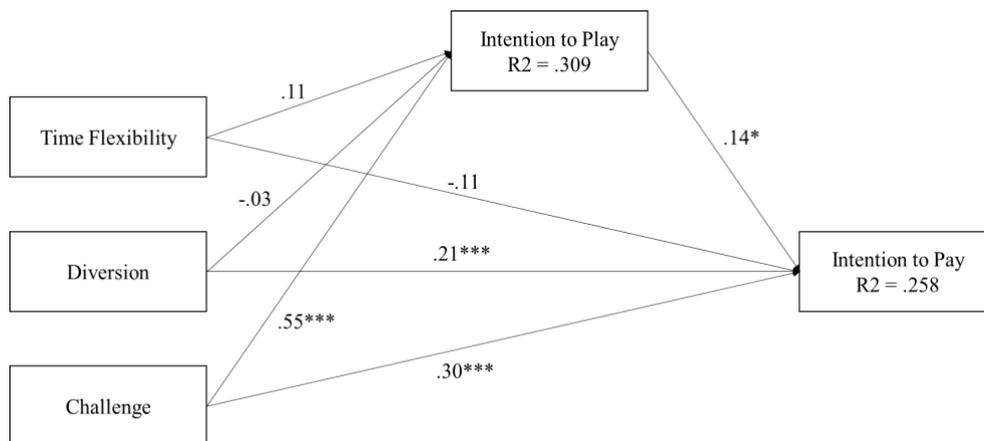
Figure 2. Final SEM Model (* < 0.05, ** < 0.01, *** < 0.001)

To determine the model fitness, several fit indexes are given in **Table 6**. Based on the results, we determined that the above model has a good fit.

Table 6. Model Fit Index

Fit Index	Recommended Threshold	Value	Note
RMSEA	< 0.08	0.067	Good Fit
SRMR	< 0.08	0.038	Excellent Fit
GFI	> 0.95	0.924	Good Fit
NFI	> 0.95	0.941	Good Fit
TLI	> 0.95	0.953	Excellent Fit
CFI	> 0.95	0.964	Excellent Fit

RMSEA = Root Mean Square Error of Approximation, SRMR = Standardized Root Mean Square Residual, GFI = Goodness of Fit Indices, NFI = Normal Fit Index, TLI = Tucker-Lewis Index, CFI = Comparative Fit Index

The effects among the variables are presented in **Table 7**.

Table 7. Regression Weights

			Estimate	S.E.	C.R.	P
PLY	<---	TMF	.092	.059	1.554	.120
PLY	<---	DVS	-.019	.041	-.459	.646
PLY	<---	CLG	.470	.058	8.062	***
PAY	<---	PLY	.230	.111	2.073	.038
PAY	<---	TMF	-.144	.092	-1.569	.117
PAY	<---	CLG	.426	.108	3.946	***
PAY	<---	DVS	.232	.066	3.500	***

TMF = Time Flexibility, DVS = Diversion, CLG = Challenge, PLY = Intention to Play, PAY = Intention to Pay, S.E. = Standard Error, C.R. = Critical Ratio, P = Significant.

Although not the main interest of this research, we also conducted the mediation analysis using Sobel Test (Sobel, 1982). The results are presented in **Table 8**.

Table 8. Mediation Analysis

					Test Statistics	S.E.	P
PAY	<---	PLY	<---	TMF	1.228	.017	.219
PAY	<---	PLY	<---	DVS	-.475	.010	.635
PAY	<---	PLY	<---	CLG	2.007	.054	.045*

TMF = Time Flexibility, DVS = Diversion, CLG = Challenge, PLY = Intention to Play, PAY = Intention to Pay, S.E. = Standard Error, P = Significant, * Significant < .05

DISCUSSIONS

In this research, we were unable to find evidence for a positive relationship between time flexibility and the intention to play mobile games (H1 is rejected). Our findings support Souza and Frietas (2017) who also found an insignificant relationship between time flexibility and the intention to play. We argue that the genres of mobile games (e.g. Strategy, MOBA, Action) might affect the results. For example, the Multiplayer Online Battle Arena (MOBA) genre, in which two or more players engage in a predefined arena, is usually a fast-paced game with little time flexibility. Future research may retest this relationship by incorporating game genre as a moderator.

In this research, we were unable to find evidence for a positive relationship between diversion and the intention to play (H2 is rejected). Our findings vary from those of Souza and Frietas (2017), who found that diversion had a positive effect on the intention to play. We argue that certain mobile game genres, such as Strategy, MOBA, and Action, are so intense and competitive that they were unfit for a mode of diversion. Gamers, thus, must find their spare time if they want to perform well in these game genres.

In this research, we were able to find evidence for a positive relationship between challenge and the intention to play mobile games (H3 is accepted). Our findings support the previous research, such as Souza and Frietas (2017). Indeed, Strategy, MOBA, and Action game genres are all highly associated with the challenge element that appeals to gamers.

In this research, we were able to find evidence for the positive relationship between the intention to play mobile games and the intention to pay for virtual items (H4 is accepted). Our findings support the previous research, such as Souza and Frietas (2017) and Syahrivar *et al*. (2022), which found that the intention to play had a positive effect on the intention to pay. It means that as gamers get immersed in the games, they are also willing to invest (e.g. purchase virtual items) to improve their gaming experience.

Although it was not the primary goal of our research, we discovered that diversion has a positive effect on the intention to pay for virtual items. This relationship occurred despite diversion had no significant effect on the intention to play mobile games. Syahrivar *et al*. (2022) mentioned a phenomenon known as "symbolic gaming," in which gamers who were originally uninterested in specific games were willing to invest their resources (e.g. money and time) to join a social group. Moreover, we also found that the intention to play mobile games partially mediates the relationship between challenge and the intention to pay for virtual items.

4. CONCLUSION AND SUGGESTION

Our research presents some motives in Pay to Play (P2P) practices among mobile gamers. Our research reveals that the primary motive of P2P practices is the (game) challenge. The difficulty levels and gamers' abilities to overcome these virtual difficulties may boost their pride thus

keeping them engage with their favourite games. However, since challenge may be connected with gamers' pride and that gaming activity may be a mode of escapism for gamers, game developers may want to manage the difficulty levels in such a way so as to not become stressors to gamers.

This research has several limitations: First, our respondents mostly played mobile games in Strategy, MOBA, and Action genres. We recognized that different mobile game genres, such as puzzles, might exhibit different responses. Future research may compare mobile gamers' responses in P2P practices relative to game genres. Second, this research focused on gamers between 17 to 25 years old. We recognized that older gamers (e.g. X generation) might exhibit different responses. Future research may compare mobile gamer's responses in P2P practices relative to their ages.

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