

MOTIVES OF FREE-TO-PLAY MOBILE GAMES USAGE AND ITS IMPACT ON IN-GAME PURCHASE BEHAVIOUR

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Abstract *Playing Free-to-Play (F2P) mobile games has become a sensation gaining massive revenues worldwide from smartphone users in the last decade. However, few studies have explored the root behind the increasing usage and in-game purchase behaviour of F2P mobile games. The present research investigated the motives behind F2P mobile games usage and how it may impact the in-game purchasing behaviour of these mobile gamers by adopting the Uses and Gratification (U&G) Theory Model. In studying this issue, a survey of 383 Malaysian smartphone users was conducted. Three form of media gratifications were taken from U&G which were Entertainment (Entertainment), Social (Network Externalities) and Utilitarian (Game's Challenge & Reward) gratification. These gratifications were considered as the motives of playing F2P mobile games. According to the findings of the multiple linear regression analysis, only entertainment and game's reward that have significant relationship with F2P mobile games usage while the latter network externalities and game's challenge have negative relationship. It was revealed that, entertainment was the most vital in determining F2P mobile games usage. Furthermore, a simple regression analysis was done to evaluate the influence of F2P mobile games usage towards the in-game purchase behaviour. However, the findings indicated that, the two variables have negative relationship. A research using the Hayes PROCESS Model (2013) with similar variables is recommended for future study.*

Keywords: *free-to-play, in-game purchase, mobile games, motives of playing mobile games, purchase behaviour of mobile games.*

INTRODUCTION

Free-to-play (F2P) games (or Freemium business model) as it is known in the gaming world applies to any sort of product strategy whereby the core product is given for free, however income is generated from it additional or it's so-called "premium" contents (Kumar, 2014). Most mobile games are being provided in the Play/App Store as F2P at this current time. On paper, F2P games may be downloaded and installed to be played for free. The F2P strategy is used to gain the highest number of users as possible and as soon as the plan has succeeded, players are given the option of spending real world money to spend on their In-App Purchasing system. Mobile games developers are using this freemium strategy whereby they are charging for "Upgrades" for their core package or a way to enhance their experience while playing the game. Publishers are selling various items for revenues in the form of cosmetics, seasonal pass and boosting systems or even an alternative to get rid of advertisements.

As for F2P mobile games, the biggest challenge for researchers is to understand the idea of consumers playing it and how a conversion from non-spending players to spending players happened. There should be no reason for users to pay because the item is already given for free. Nonetheless, some of them are willing to do it hence a systematic study must be conducted to understand how motives of playing F2P mobile games influence mobile games usage and how it affects the in-game purchasing behaviour. An early study by (Hafizullah, Hafizah & Ayuni 2007) had been made towards finding the number of mobile usage of students in Malaysia. However, the study does not explain whether the respondents would spend money on the game itself and further, the mobile games industry has rapidly changed its marketing strategy throughout the years inducing different attitudes from gamers.

This study aims to contribute a higher depth of understanding on the motives of playing mobile games (network externalities, entertainment, game's challenges and rewards) and its effects on the in-game purchase behaviours among Malaysian smartphone users. Theoretically, the significance of this study will contribute to the application of Uses & Gratification Theory, verifying the legitimacy of its grounds in the context of mobile games. It is stated that quite a number of studies being conducted on what is the reason that consumers buy In-Game Purchase items such as (J. Hamari et al, 2017) and (Fabian et al, 2015), there has been an absence of U & G study towards mobile games' In-Game Purchase items.

RESEARCH OBJECTIVES

There are two research objectives that this research is proposing:

1. To understand the motives of playing mobile games and the F2P mobile games usage.
2. To examine the relationship between F2P mobile games usage and in-game purchasing behaviour of Malaysian Smartphone users.

RESEARCH QUESTIONS

The research questions of this study are as follows:

1. Are motives of playing mobile games impact the F2P mobile games usage?
2. Is there a relationship between frequency of F2P mobile games usage towards the in-game purchasing behaviour of Malaysian Smartphone users?

LITERATURE REVIEW

Mobile games are defined as any type of video game that can be installed and played on smartphones or tablets. Quite possibly the most outstanding impact of the F2P business model is changes through its core service idea. Though the traditional selling strategy model does not need additional payment for its product and services, the products are intended to attract consumers to make extra purchases using the F2P business model. As a result, advertising for the services is only focused on a plan baiting consumer to buy additional content (Hamari, Alha et al., 2017). This perspective makes the paradox a fascinating subject of study, both in the areas of marketing and information systems.

F2P games may be downloaded, played, and installed with no charge, but players are given the option of considering and buying In-Game Purchase items. For instance, PUBG Mobile which is considered as one of the most played F2P mobile games currently even in Malaysia offers appealing cosmetic items for their in-game characters and the items are constantly updated to further boost player's interest to shop. Moreover, PUBG Mobile also allows players to purchase their seasonal 'Royale Pass' which usually would last around 1-2 months. Players will get the chance of boosting and gaining rewards by acquiring the Pass throughout the season. The similar strategy is being used in all successful F2P games that are being offered in the App/Play Store.

With the rapid emergence of information and communication technologies all over the map, it is remarkable that there is still a gap in literature study of the mobile games industry in

Malaysia in business terms. An early study conducted by Hashim, Hamid & Rozali in 2007, examining usage of mobile games among Malaysia's university consumers indicates that only 54% from the 129 respondents inclined to pay for playing games on mobile phones (Hashim, Hamid & Rozali, 2007, p.44). Such findings are understandable, given the fact that there were no smartphones in 2006 which conveys to no F2P games being provided. Plus, university students have a high potency of playing mobile games as told in the study. Potential players must pay to gain access for a mobile game such it will reflect immensely on their willingness to pay as studied in (Davidovici & Myriam, 2014).

The surging numbers of mobile gamers in Malaysia can be said due to the increasing of smartphone users over the years. According to Newzoo's 2015 ASEAN mobile games report, Malaysia had 14.3 million of mobile gamers from total of 30.2 million population (70.9%) and on top of that, almost half of the figure (46.2%) were paying gamers, generating a whopping USD 214.2 million in revenue for 2014, representing second highest revenue gain from all five major ASEAN countries. The conceptual framework which was derived from the literature is presented in Figure 1 below.

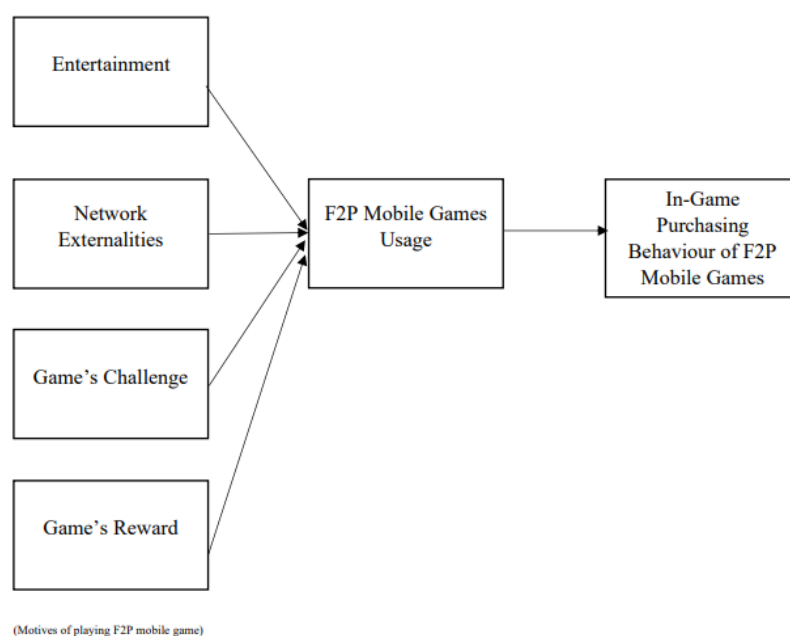


Figure 1: The Conceptual Framework

The Uses and Gratification Theory (U&G) Paradigm

Uses & Gratification Theory originally was created to understand the needs for radio quiz or medium for its audience during the 1940's era (Luo, 2002). The theory was then applied to determine why people seem to prefer distinct communication mediums that meet their obligations in a simulated environment.

Wu, Wang & Tsai (2010) identified 3 types of internet-based video game gratifications together in a previous study: social interaction, entertainment, and achievement. The desire for using hedonic information systems has also been demonstrated to be strongly influenced by enjoyment (Heijden, 2004). Social interaction entails interacting with someone and forming bonds among them (Koo, 2009). The urge to increase in gaming skills, collect precious experience points, and compete successfully with other gamers are all part of the achievement factor in games (Hartmann and Klimmt, 2006). Games installed on smartphone created as a

type of laid-back activity concentrated on a way to pass time with ease as opposed to the long-haul accomplishment of typical hardcore games. (Engl and Nacke, 2013). On top of that, Engl and Nacke (2013) also found that, several respondents were determined to challenge themselves in playing these games, thus this research proposed to study on the game's challenge and reward as it is considered the key determinants of playing.

Motives of Playing Free-to-Play (F2P) Mobile Games

Network externalities portray how an individual utilization of any products or services adjusted as per what they perceived the figure of other clients that are using the same thing. Plus, with network externalities it is believed that more different clients a using it the higher the chance of an individual to use it as well (Katz & Shapiro, 1985). At present, F2P mobile games are created with a communication channel that facilitate socialisation with unfamiliar people and their own friends. Mobile gamers are able to talk and interact easily with other players, in result players are able to create new friends whilst playing their favourite games. On top of that, almost all mobile games include an option for players to share their accomplishments or gaming experiences through their own social media accounts effort of fulfilling players' social gratification. Thus, increasing the motives of smartphone users playing mobile games. Hence, the following hypothesis was tested in this study:

H1: Network externalities will positively affect the F2P mobile games usage.

The U&G theory states that Hedonic or Entertainment Gratification is significant factor that will influence utilization of specific media medium (Luo, 2002). Moreover, a study by McQuail mentioned that "The significance of entertainment from media exists through their capacity of satisfying clients' needs to emotional/stress release and hedonistic pleasure" (McQuail, 1983). Nonetheless, a developing study on in-game purchases prevails fairly uncertainty on whether Entertainment Gratification for F2P mobiles games affect positively on in-game purchase or maybe negatively. Based on this premise, the following hypothesis was tested:

H2: Entertainment factor will positively affect the F2P mobile games usage.

Past enjoyment gratifications that numerous mobiles games provide, in some games, challenges are an important feature. In prior mobile gaming study, challenge has already been recognized as among the most prominent motives influencing the participant's inclination to participate (Sherry et al., 2006). On top of that, mobile games with more challenge commonly give more delightful rewards of playing. Benefits gained or experienced while playing the mobile game are considered to as rewards. Players in many mobile games get larger virtual perks as they progress, such as game points or virtual money/products, as they advance. These incentives can improve the player's game play while also increasing perceived value and consumer loyalty. Based on this assumption, the following hypotheses were tested:

H3: Game's challenge of playing will positively affect the F2P mobile games usage.

H4: Game's reward given will positively affect the F2P mobile games usage.

In-game Purchasing Behaviour with U&G

Purchasing behaviour address the probability of a purchase of a product or service by clients (Dodds, Monroe, & Grewal, 1991). In this study, purchase behaviour regarding virtual items in F2P mobile games were investigated. Prior research has not broadly analysed the connection

between various U&G of mobile games and purchase behaviour regarding virtual goods. The restricted previous study display that the enjoyment and entertainment U&Gs and the social interaction U&G (Aluri et al., 2016) substantially influence purchase behaviour. Since in-game items that are up for sold are only available to existing customers of F2P mobile games, persistent use of the freemium service has been deemed a fundamentally significant need of profitability for F2P services in-game purchases could be considered its next phase in the development of such a client relationship (Mantymaki & Salo, 2011). However, it is possible that the pleasures derived from the game experience may have a direct impact on in-app purchases. Hence, the following hypothesis was derived:

H5: F2P mobile games usage will positively affect the in-game purchasing behaviour of Malaysian smartphone users.

METHODOLOGY

The present study employed a quantitative research to assess the impact of the uses and gratifications framework on the development of F2P mobile game usage frequency and in-game purchasing behaviour. A survey is used whenever a large portion of participants is conveniently available to answer particularly well, according to Beal and Dawson (2007).

This study collected quantitative data from 383 respondents through a survey. Such sample size was determined using Cochran's (1977) formula for sampling techniques. Z-value of 1.960 (95%) was chosen, the population variance was estimated to be 50% and margin of error was 5%. Due to limitations, Klang Valley was chosen as the data collection setting as it is considered as the capital of Malaysia which also include suburban and urban living areas. The total population of Klang Valley was 7.2 million people (DOSM, 2019), divided with 76% of smartphone users (MCMC, 2017) among them would equal to 5.472 million smartphone users.

Purposive sampling method was employed in this study due to large population of 5.472 million people. The questions which was included in the survey are multiple choice, screening, and matrix questions. The screening questions included were; are you a smartphone user? and do you play any F2P mobile games?.

There were four Independent Variables for this study and all of them were measured using three items respectively. Question items were adapted from Wei & Lu (2014) and Hamari, Malik, Koski and Johri, (2018). The questions were asked using the five-point Likert scale, where responses ranged from strongly disagree to strongly agree.

The survey instrument was devised and distributed using Google Form, a web-based application used to create forms for efficient data collection. IBM SPSS version 26 was used to calculate the descriptive analysis, multiple linear regression and simple linear regression. As for the pilot study, 40 respondents were invited to participate. This was to ensure the reliability of the instrument. The result of the pilot study indicated that each variable had the acceptable Cronbach's Alpha value of 0.7 and above.

Due to the ongoing COVID-19 pandemic during the time of data collection, the survey was conducted online. The study was promoted on various Malaysian based Facebook mobile gaming groups. Google Form hyperlink was included to enable potential respondents to participate in the study. Involvement in the study was voluntary, and the respondents were free to withdraw from the study at any time before submitting the survey. There was no reward provided to the respondents.

FINDINGS

The demographic data of the participants is summarized in Table 1. As for their age, the participants (90.3%) were mainly in the under the 40 years age group category. The highest percentage was those aged 18-24 years old (37.6%), followed by 25-30 years old (35.5%) and 30 to 40 years old (17.2%). The highest number of participants were male (74.9%), while female participants consisted of the remaining 25.1%. This may possibly be influenced by the channels of getting the participants, i.e., social media groups of Malaysian mobile gamers which have more male members than female.

Demographic Data

Table 1: Demographic Data

Demographic Item	N	%	Demographic Item	N	%
Age			Occupation		
18-24	144	37.6	Professional		
25-30	136	35.5	Non-Professional		
31-39	66	17.2	Student		
40-50	12	3.1	Unemployed		
50-	25	6.5			
Gender			Number of F2P mobile games currently playing		
Male	287	74.9	One	160	41.8
Female	96	25.1	Two	89	23.2
Occupation			More than two	134	35.0
Professional	145	37.9			
Non-Professional	81	21.1			
Student	118	30.8			
Unemployed	39	10.2			

As for the work status, the findings revealed that 37.9% are professionals, students (30.8%), non-professionals (21.1%) and unemployed (10.2%). This may possibly suggest a disparity in buying power due to the high variety of occupation status. When asked about the mobile games they played, 41.8% of the participants revealed that they played one game, three or more games (35%) and two games (23%).

Descriptive Data

Next, a descriptive analysis was conducted on each motive of playing F2P mobile games variables (Table 2). Entertainment had the highest total mean score $M=4.124$, compared to other variables. The highest scored item for entertainment was “I find that my hours of playing a F2P mobile games depends on the level of entertainment it brings” ($M=4.180$, $SD=0.910$) and “I find it entertaining to play F2P mobile games” ($M=4.097$, $SD=0.956$). The lowest scored item was “I feel that different F2P mobile games give me distinctive level of entertainment” ($M=4.090$, $SD=0.953$).

Table 2: Descriptive Analysis

Item	Mean Score	Standard Deviation	Total Mean Score
Entertainment			4.124
ENT1	4.097	0.956	
ENT2	4.090	0.953	
ENT3	4.180	0.910	
Network Externalities			3.792
NE1	3.755	1.170	
NE2	3.961	1.133	
NE3	3.661	1.135	
Game's Challenge			3.759
CHA1	3.762	1.010	
CHA2	3.680	1.089	
CHA3	3.830	1.008	
Game's Reward			3.845
REW1	3.820	1.006	
REW2	3.914	1.061	
REW3	3.802	1.037	

The second variable for this study was network externalities (M=3.792). The item “I feel that I spend more hours playing a F2P mobile game if my friends or acquaintances are playing as well” had the highest score (M=3.961, SD=1.133), followed by “I find that I play a F2P mobile game if I realize the game has many users playing it” (M=3.755, SD=1.170). The item “I feel socializing is important for a F2P mobile game” had the lowest score (M=3.661, SD=1.135).

Game’s challenge was the third variable for this study (M=3.759). The item “I find that I spend more time playing games that are challenging yet rewarding” had the highest score (M=3.830, SD=1.008), followed by “I find that challenging F2P mobile games is appealing” (M=3.762, SD=1.010). The item “I feel that I spend more hours playing a F2P mobile game if it is challenging” had the lowest score (M=3.680, SD=1.089).

The fourth variable for this study was game’s reward (M=3.845). The item “I find that rewards in F2P mobile games are important to players” had the highest score (M=3.914, SD=1.061), followed by “I feel that rewards or benefits given to players impact how I view the F2P mobile game” (M=3.820, SD=1.006). The item “I feel that my gaming hours will be affected if a F2P mobile game has more/less rewards towards players” had the lowest score (M=3.802, SD=1.037).

Multiple Regression Analysis

Multiple regression analysis was employed to investigate the relationships between the independent variables (motives of playing F2P mobile games) and the dependent variable. The analysis was generated with regard to the entertainment, network externalities, game’s challenge and game’s reward with free-to-play (F2P) mobile games usage.

Table 3: Multiple Regression Analysis

IV	β	t	Sig.
Entertainment	0.253	4.143	0.000
Network Externalities	0.047	0.837	0.403
Game's Challenge	0.050	0.758	0.449
Game's Reward	0.166	2.630	0.009
R ²			0.183

Based on the results of the multiple regression analysis, entertainment was considered to be the best predictor due to its highest β value of 0.253 followed by game's reward ($\beta = 0.166$). The R square value of 18.3% signifies the overall dependent variable investigated in this study. On top of that, it also suggested that another 81.7% of the model can be studied more on other predictors. The findings only supported H1 and H4, while H2 and H3 were not supported. The findings based on the multiple regression analysis is shown in Table 3 above.

Simple Linear Regression Analysis

Simple linear regression analysis was employed to analyze the relationship between F2P mobile games usage towards in-game purchase behaviour using the monthly time frame. The monthly time frame data was used in this study due to it being the largest time frame available. Here, free-to-play F2P mobile games usage was employed as the independent variable, while the in-game purchase behaviour was the dependent variable. The result of the simple regression analysis indicated a positive significant relationship of ($p < 0.05$) between free-to-play (F2P) mobile games usage and in-game purchase behaviour, with a 0.358 unit increase in purchasing behaviour for each one unit of F2P mobile games usage. Therefore, the alternative hypothesis was accepted. The result based on the simple linear regression analysis is shown in Table 4 below.

Table 4: Simple Linear Regression Analysis

IV	Unstandardized β	β	t	Sig.
Free-to-Play (F2P) mobile games usage	0.358	0.310	6.368	0.000
r ²				0.096

DISCUSSION

This study looked into the motives that influence an individual's use of a particular entertainment or hedonic pleasure product – in this example, F2P mobile games – and attempts to explain the link between F2P mobile game usage and in-game purchasing behaviour. The findings revealed that, three categories of gratification influence F2P mobile game usage: entertainment gratification (enjoyment), social gratification (network externalities), and utilitarian gratification (achievement).

This particular study found that, entertainment gratification (enjoyment) was the most important factor in anticipating F2P mobile game usage, which was evident in entertainment gratification research, because it is assumed that F2P mobile game is primarily used for fun. Similar to previous research findings, entertainment was found to be the most important element in determining the entertainment gratification of gamers who wanted to keep playing a free-to-play mobile game.

Users can attain happiness by playing F2P mobile games. The F2P mobile games are easy to play and contain common themes, such as creating farms and towns. Users can also engage in certain activities and play various roles in the virtual world of F2P mobile games, allowing them to do things they could not do in real life, such as using unique avatar. Users also can escape reality and put real-world difficulties aside. These characteristics meet users' need for instant gratification, which promotes the use of F2P mobile games.

The importance of social gratification (network externalities) in deciding F2P mobile game usage was found to be not significant. Social user interface that is integrated into mobile games allows users to connect and engage with one another (Shin & Shin, 2011). Individual players have numerous options for sharing their gaming experiences such as with friends or family members who are connected through social networking sites and by using the given sharing tools provided by the game developers. Players of F2P mobile games can also leverage their existing friends as resources in the game, gain virtual harvests from their friends' farms or receive more incentives if their friends have higher game levels (Consalvo, 2011). Players of F2P mobile games can also request others to play, including their friends or family members (Lee et al., 2012). F2P mobile gamers often feel physically and deeply connected with individuals in their social circles because of the social contact and communication. The findings demonstrated that, while social gratification is minimal, it does have a substantial link with the use of F2P mobile games. As a result, social pleasure (network externalities) can be considered to have an adverse effect on socio-psychological demands and it stimulates smartphone users to play harder.

In this study the researchers divided utilitarian gratification (achievement) into two major variables which are game's challenge and game's reward. Game's reward proved to have a positive effect. However, game's challenge indicated a weak but significant relationship on F2P mobile games usage. Individual players typically enjoy the basic elements of the F2P mobile games in their early stages. As players of F2P mobile games explore new aspects that meet their utilitarian demands, such as growing power, amassing abilities by competing with other players, and upgrading their status in the games, utilitarian fulfilment emerges.

The present research also investigated the relationship between F2P mobile games usage towards the in-game purchasing behaviour. The findings indicated that, there is a relatively weak but significantly positive relationship between F2P mobile games usage and in-game purchasing behaviour. The influence of F2P mobile games usage is weak because only 56.4% of the total participants spend money on games while the others do not. Another reason could be that Malaysian smartphone users are still penny-pinching with their F2P mobile games as they are more inclined to play for free. However, in the future, it is expected that the spending on F2P mobile games will increase. As Kleinment and Das (2020) indicated, many F2P games have gambling-like characteristics which contribute to greater playtime. As for example, some games contain "near miss" circumstances that boost physiological arousal and produce a want to keep on playing, comparable to "near miss" scenarios that encourage ongoing slot machine playing (Kleinment & Das, 2020).

CONCLUSION

In this study, the researcher focused primarily on the unexplored topic related to F2P mobile games. The study attempted to understand Malaysian consumers' behaviour, specifically with regard to the motives for playing F2P mobile games are linked to their usage and how it affects in-game purchasing behaviour. The study employed Uses & Gratification (U&G) Theory to come up with different motives to play F2P mobile games and the variables of usage and in-game purchase behaviour were identified through past studies. The study found that, entertainment (entertainment gratification) and game's reward to be significant motives for playing F2P mobile games. This indicates that, players value the enjoyment and reward in F2P mobile games, which can lead them to play more.

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