Unraveling the Compensatory Mechanism: Pay to Play in Freemium Mobile Games

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Abstract

Purpose: The freemium business model has gained popularity in the past decade, particularly in online retails. This model involves a free primary service with money made through supplemental goods and premium services. The freemium model is particularly popular in the gaming sector, with most downloadable applications using this model. This paper investigate the factors influencing adoption of Pay to Play (P2P) practices among mobile gamers in Sarawak.

Design/methodology/approach: An online questionnaire was utilized to collect data for this quantitative study. Purposive sampling was used to choose 360 mobile players in Sarawak. This study takes into account seven different Pay to Play (P2P) concepts: social interaction, fun, challenge, diversion, fantasy, intention to play free mobile games, and desire to spend real money on virtual products. AMOS software was employed in structural equation modelling (SEM) in this study to evaluate the hypotheses.

Findings: The results shows that (1) male gamers is more motive in the five variables and exhibit more play and payment intentions than female gamers, (2) social interaction, fun, diversion and fantasy are significant towards the intention to play, (3) intention to play freemium games has positive effect on the intention to pay for virtual items, (4) intention to play freemium games partially mediates the relationship between social interaction, fun, and fantasy with the intention to pay for virtual items, (5) diversion has the opposite effect on the intention to pay for the virtual items.

Research limitations/implications: This study has few limitations, including an uneven distribution of ethnic backgrounds among respondents, a significant portion of the respondents being students whose gaming expenses depend on parental support, and potential biases in the assessment of respondents' willingness to pay for virtual goods.

Practical implications: This study provides valuable insights for game developers on the future of freemium gaming. It explores five P2P practices: social interaction, fun, challenge, diversion, and fantasy. It highlights that games that encourage social interaction and fun, diversion, and fantasy are more popular among gamers. The study also emphasizes the importance of designing challenges strategically to align with gamers' preferences and behaviors, potentially reshaping game development.

Originality/value: The purpose of this study is to fill in the knowledge gaps and learn more about the impact of P2P ideas (social interaction, fun, challenge, diversion, and fantasy) on the intention to play and pay since this topic has not received as much attention in other studies. Also included in this study is the topic of compensatory consumption, which a second area

of discussion. The compensatory consumption idea is indirectly quantified by taking into account various P2P-related game components. Third, there is a lack of Sarawakian players in the literature on gaming. There is barely any research explaining game conduct among Sarawak freemium mobile gamers. Given the importance of the games market in the current environment, it is essential to conduct this research in order to better understand the factors that affect the behaviour of the gaming community in the Sarawakian market, specifically with regard to their intention to play freemium games and pay for in-game virtual goods.

Keywords: freemium, mobile games, virtual goods, intention to play, intention to pay

Introduction

Nowadays, customers can access games through a variety of ways, and there are indications that online game sellers are competing on pricing. For instance, Microsoft Store has reduced its commission rates from 30 to 12% in an effort to entice game creators to their online retail platforms (Warren, 2021). Similar to this, online retailers that focus on mobile games and apps, such Google Play Store and Apple App Store, have decreased their commission rates from 30% to 15% (Sing, 2021). The emphasis switches to growing the user base and making in-game purchases easier in order to guarantee a consistent cash stream. As a result, it is crucial for both developers and retailers to comprehend why players choose to play and make purchases.

The "freemium" business model has become popular over the past ten years, especially in the online world, in a variety of industries, including music (Dewan & Ramaprasad, 2014; Oestreicher-Singer & Zalmanson, 2013; Sinclair & Tinson, 2017; Wagner, Benlian, & Hess, 2014), magazines, social networks (Vock, Dolen, & Ruyter, 2013), cloud services (Kumar, 2014). The term "freemium business model" refers to a product/pricing structure where the primary service is free but money is made through the sale of supplemental goods and premium services (Kumar, 2014). This model is also referred to as "free-to-play" in the game industry. According to research, the freemium business model has taken the lead for many online businesses, and it has been particularly popular in the gaming sector. The majority of downloadable applications are games using the free-to-play model, according to a recent research of the top 300 apps in the Apple app store (Brockmann, Stieglitz, & Cvetkovic, 2015).

The freemium model is fascinating since it is fundamentally different from the conventional retail model. The interaction between the free core service and the premium products within the freemium model must be carefully configured in order to add value to the products (Baird & Raghu, 2015; Hamari & Lehdonvirta, 2010; Oestreicher-Singer & Zalmanson, 2013; Wagner et al., 2014; Wu et al., 2013).

Naturally, one of the key factors affecting customer surplus has always been the cost of goods and services. It's critical to comprehend how users view the economic worth of freemium services. While traditional retail models' upfront payments provide a straightforward evaluation, freemium services' complicated service structures and pricing strategies might erode their economic viability. This is particularly true with free-to-play games where the premium content is frequently divided into a large number of different, separately purchaseable components. A wide range of conceivable client behaviour patterns and variations in the total cost of the service might result from this content slicing.

In the game industry, the so-called "freemium" business model has recently grown in favour. Many potential players are asked to play the games for free under the freemium business model,

but only a small portion of this group will pay for the game's premium content, which is how game developers and online merchants profit (Geng et al., 2015). Players use the Internet to browse, select, and buy a variety of virtual products such as game coins (virtual money), weaponry, artefacts, and skins (costumes) (Ozuem et al., 2017; Balakrishnan & Griffiths, 2018). This in-game purchase, also known as a microtransaction, is comparable to online retailing. In exchange for commission fees that equal a percentage of the selling price, these virtual commodities are offered through online retail stores (Chernonog, 2020). In fact, a growing number of mobile game and app developers are exploring for ways to charge customers for previously uncharged content (Punj, 2015). These developers must choose the consumers of previously free content (Punj, 2015). These developers must decide whether to offer paid or free content based on in-app advertising revenue (Lambrecht et al., 2014).

The objective of this study to investigate the factors for the adoption of Pay to Play (P2P) practices among mobile gamers in Sarawak. Specifically, the investigation will focus on the intention of playing freemium games and their intention to purchase in-game virtual goods. Moreover, the study will undertake a comparative analysis of male and female gamers in Sarawak, the largest state in Malaysia. The study incorporates important P2P-related practices such social interaction, fun, challenge, diversion, and fantasy.

The game market is divided into four segments, namely online and mobile games, console and PC games, internet-delivered games, and series games (Gedigames, 2014). Casual players like simpler and easier games, whereas console and PC gamers favour more complicated and challenging games. As a result, there are various game genres and game aims, thus it is critical to comprehend the factors that influence customer decision-making while selecting a game. The issue is also discussed in the context of compensatory consumption in this study. By taking into account gaming elements including social interaction, fun, challenge, diversion, and fantasy, the compensating consumption notion is indirectly measured. To the best of our knowledge, this study is the first to link P2P related concepts, online retailing, and compensatory consumption.

Literature Review
Freemium Gaming: Exploring Online Retailing Dynamics
The impact of smartphones and mobile technologies on future retail was highlighted by Grewal et al. in "The Future of Retailing" (Grewal et al., 2021). Mobile apps are used to sell a variety of items, some of which are virtual or intangible (Laroche et al., 2005). Virtual goods in online games can be anything, including cash, items that increase players' competitiveness, guns, gear, and recuperation supplies. When players look through the numerous virtual products that the game producers are offering and decide whether they are worthwhile purchasing, they are engaging in a form of online shopping and retailing known as the purchase of virtual goods in freemium games (Lee et al., 2019). Online retail stores, like Google Play Store, facilitated the online transactions for safe and dependable in-game purchases in exchange for commission fees (Chernonog, 2020). Online buying, according to Trevinal and Stenger (2014), may be a symbolic and ritualistic activity where the entire experience is tied to the values of the consumer. It can go beyond the products and services provided by shops. To promote online transactions, virtual products in freemium games are frequently associated with well-known events or holidays.

Gaming as a compensatory mechanism

Previous research suggests that purchasing and playing video games is a coping mechanism or strategy. When a need cannot be met directly and a consumer seeks an alternative and symbolic fulfillment instead, they are engaging in compensatory purchasing. Under pressure to do so, they may indicate to others their expertise or competence in specific fields. (Fotheringham et al., 2019; Syahrivar & Pratiwi, 2018; Koles et al., 2018; Lisjak et al., 2015; Syahrivar, 2021). A man who felt intellectually intimidated by others and that they were diminishing his intelligence may purchase a pointless board game to demonstrate to them that he was intelligent, according to Lisjak et al. (2015). According to Cannon and Rucker (2019), someone who learns that participating in academic pursuits is pointless for their progress may turn to gaming. According to Van Houtum and Van Dam (2002), "symbolic gaming" is the practise of using games to signal and validate one's identity and social status. Some studies (Guo and Barnes, 2012; Hsiao and Chen, 2016; Gainsbury et al., 2016; Kim et al., 2017; Hamari et al., 2017; Wang et al., 2020) have focused on psychological factors that explain why players purchase premium contents in free-to-play game apps. According to Guo and Barnes (2012) and Hamari et al. (2017), the most frequently reported reasons or motivations for purchasing premium material in freemium games are to allow players to play constantly or without interruptions (e.g., lack of in-game points and obtrusive in-game commercials), to unlock goods, or to speed up games. According to Hsiao and Chen (2016) and Hamari et al. (2017), premium content has the potential to speed up game progress, let players keep playing without being interrupted by adverts, and unlock new features.

According to the consumption value theory, different consumption values influence consumer behaviour, and different contexts place different values at different levels of priority (Teng, 2018). Subsequent studies suggested numerous consumption value structures to reflect the unique features of distinct research settings. By removing the epistemic and conditional values and combining the functional value into two dimensions—quality and price—Sweeney and Soutar (2001), for instance, extended Sheth et al. (1991) paradigm to durable commodities. Pura (2005) examined electronic directory services and offered value in terms of pricing and convenience. When analysing the uptake of mobile phone ringtones, Turel et al. (2010) highlighted four value components: visual, social, fun, and monetary value.

The value components in the current study are contextualised to meet the characteristics of free-to-play multiplayer online battle arena (MOBA) games. Not all value components in mobile games are thought to have a significant impact, according to studies. According to Teng (2018), for instance, the conditional value of the original consumption value theory is no longer relevant for mobile games because players can buy in-game things whenever they want, anywhere. Additionally, according to its definition, the epistemic value does not apply to the context of MOBA games (Park & Lee, 2011). Players can boost their characters' power and strength in free-to-play MOBA games, which makes them more competitive.

Additionally, due to these goods are uncommon or because they want to elevate their social status in the virtual world, players buy in-game decorations for their characters (Marder et al., 2019). Due to their affordability and effectiveness, in-game products are also available for purchase by gamers. In some circumstances, purchasing virtual goods might be seen as an investment; afterwards, gamers may profit by trading these goods (Lin & Sun, 2011). The phrase "good value for money" refers to financial incentives that might be significant for online shopping. The studies mentioned above suggest that products in free-to-play MOBA games might have amusement, social, and financial values. The monetary value is a new addition

when compared to the original theory of consumption value, whereas the enjoyment value is identical to the emotional value. According to earlier research (Mantymaki & Salo, 2015; Park & Lee, 2011; Sweeney & Soutar, 2001; Turel et al., 2010), the utility obtained from the premium item's capacity to raise the social standing of its users is regarded the social value of free-to-play MOBA games. The utility gained from the emotions or affective states that a paid item produces is known as enjoyment value. The usefulness gained from purchased things as a result of the reduction in their perceived short- and long-term costs is referred to as their monetary worth.

The development of the freemium mobile game industry in Malaysia has fueled the country's growing population of mobile game players who are willing to pay money to access the features found in freemium online mobile games. This is due to the rapid spread of information and communication technologies throughout the world. It is astounding that there is still a lack of business-related literature on Malaysia's mobile games industry. A total of 54% of the 129 respondents in an early study on the use of mobile games by Malaysia's university students indicated that they would be willing to pay for playing games on their phones (Hashim, Hamid, & Rozali, 2007). Given that there were no smartphones in 2006 and no freemium games were available, the results seem understandable. Additionally, the study found that university students play a lot of mobile games. According to research by Davidovici (2014), the fact that prospective players must pay to access a mobile game will have a significant impact on their desire to pay.

The rising number of smartphone users in Malaysia over time can be attributed to the rising number of freemium mobile gamers there. According to Newzoo's 2015 ASEAN mobile games report, Malaysia had 14.3 million mobile gamers out of a total population of 30.2 million (70.9%) and nearly half of that number (46.2%) were paying players, generating a staggering USD 214.2 million in revenue for 2014, ranking second among the five major ASEAN nations in terms of revenue growth.

As the effects of P2P concepts (social interaction, fun, challenge, diversion, and fantasy) on the intention to play and pay are not fully investigated in previous studies, this research aims to fill in the gaps and learn more about gaming behaviour. Second, this paper discusses the problem in the context of compensating consumption. These P2P-related game components allow for the indirect measurement of the compensatory consumption concept. Thirdly, the lack of those studies was not conducted in Sarawak gaming literature. This study will investigate the ideas and purchasing behaviour of gamers in Sarawak.

The role of social interaction

Social interaction serves as a motivating factor that prompts gamers to engage with specific games. This aspect of social interaction is particularly evident during gaming competitions. It's important to note that competition is not the sole driving force for interaction among gamers. They also collaborate and communicate within games, fostering a sense of cooperation within the group (McGloin, Hull, & Christensen, 2016). This cooperation, in turn, enhances their competitive success, thereby extending their engagement with games. The robust unity observed within online gaming communities underscores the value of interaction and communication among players (Kollock, 1999). Sweetser and Wyeth (2005) noted that social interaction significantly influences game immersion. Individuals who place importance on sharing narratives, forming connections, cultivating relationships, socializing, and experiencing a sense of group belonging are recognized for their robust social interaction

tendencies. In simpler terms, engaging with fellow individuals stimulates players (Pe-Than et al., 2014; Shelton, 2010; Sherry et al., 2006). This underscores the relevance of social interaction as a captivating element within this research. Pertaining to this aspect, Dalisay, Kushin, Yamamoto, Liu, and Skalski (2015) observed that social interaction within games extends beyond the game itself, encompassing information exchange and interactions with other players. Hence, the following hypotheses are proposed:

H1. Social interaction has a positive effect on the intention to play freemium games.
H2. Social interaction has a positive effect on the intention to pay for virtual goods.
H3. The intention to play freemium games mediates the relationship between social interaction and the intention to pay for virtual goods.

The role of fun

Games can be played for enjoyment, amusement, gratification, and pleasure. The expectations of players related to their experience of playing online games are a sort of satisfaction that is entertaining. If customers have a positive experience, they will be encouraged to use it frequently (Hoffman & Novak, 1996; Scarpi, 2012). They are more likely to grow their intention to play the games if they try them out and enjoy themselves while doing so. The gamers who are in demand typically played the games because they were having fun (Chang et al., 2014). Additionally, it will be entertaining and draw players to play online games with one another when there are more individuals playing the games. Players like the scenario when they are managing and playing a character, or when they feel like they are a part of the game (Cohen, 2014; Jin, 2014; Pe-Than et al., 2014; Shelton, 2010; Wei & Lu, 2014), which suggests that enjoyment is a construct that may influence the intention to play. After all, the primary goal of creating games is to amuse players. As a result, it may be anticipated to be one of the key factors influencing the market for video games. It would seem reasonable to assume that players won't be drawn to games that don't entertain them. Fun is a motive that differs considerably from person to person, though, since it relies on how the player interacts with the game (Caroux et al., 2015; Bowman et al., 2016). The hypothesis regarding fun are expressed as follows.

H4. Fun has a positive effect on the intention to play freemium games.
H5. Fun has a positive effect on the intention to pay for virtual goods.
H6. The intention to play freemium games mediates the relationship between fun and the intention to pay for virtual goods.

The role of challenge

According to a prior research by Syahrivar et al. (2022), online gaming is driven by player contests. As players try to outwit one another and "stay alive" for as long as they can, competitions and challenges are strongly connected (Souza & Freitas, 2017). Gaming challenges are meant to motivate players to carry out tasks or finish the game in order to advance or go on to the next level (Engl & Nacke, 2013; Denisova, Guckelsberger, and Zendle, 2017; Jin, 2014; Pe-Than et al., 2014; Shelton, 2010; Bowman et al., 2013). The level of difficulty must be controlled, though, as it may have an impact on players' interest in the game. In contrast, if the game is thought to be too simple, it will result in boredom (Caroux, Isbister, LeBigot, and Vibert, 2015; Alexiou & Schippers, 2018). If the game is thought to be too challenging, it will cause worry, tension, and eventually resignation. In this study, the term "game challenge" refers to the satisfying experiences that players get from overcoming obstacles and making progress in games. One of the main aspects of a game is the challenge.

By successfully completing each task with varying degrees of difficulty, gamers are digitally rewarded for moving forward in games. Gamers' involvement and immersion are increased when difficulties are included in games (Hamari et al., 2016; Hung, Sun, & Yu, 2015; Souza & Freitas, 2017; Liao & Teng, 2017). As a result, challenging games improve players' desire to play (Boyan & Sherry, 2011). The third hypothesis is formulated.

H7. Challenge has a positive effect on the intention to play freemium games.
H8. Challenge has a positive effect on the intention to pay for virtual goods.
H9. The intention to play freemium games mediates the relationship between challenge and the intention to pay for virtual goods.

The role of diversion

Mobile games are viewed as a kind of relaxation and an escape from the responsibilities and stress of daily life. They could be employed to draw attention away from anything else. Giammarco, Schneider, Carswell, and Knipe (2015); Jin (2014); Shelton (2010); Sherry et al. (2006); Souza & Freitas (2017); Syahrivar et al. (2022). Diversion is what academics refer to it as, and it occurs in people who want to escape from mundane chores, have fun, and decompress (Sherry et al., 2006). Some individuals consider games to be addictive because they have the power to capture players' attention and release them from daily responsibilities. According to Maroney et al. (2019), excessive gaming and gaming addiction were coping mechanisms for stresses. Mobile game play may be used as a stress reliever to reduce tension and anxiety and as a diversion from current issues. Previous studies have also covered the concept of flow (Jin, 2012; Hamari et al., 2016; Leung, 2020), which refers to a condition in which a person is so absorbed in an activity—for example, gaming—that they frequently lose track of their surroundings. People may experience a variety of mental health problems during the COVID-19 pandemic, including anxiety and depression (Syahrivar et al., 2021). Previous research (Amin et al., 2020; Fazeli et al., 2020) suggested that gaming activity has increased throughout the lockdown period. In this study, "diversion" is defined as the use of gaming activities to divert players' focus away from socio-psychological issues or stresses, get them away from boring everyday tasks, or just to pass the time. Therefore, the following hypotheses are proposed:

H10. Diversion has a positive effect on the intention to play freemium games.
H11. Diversion has a positive effect on the intention to pay for virtual goods.
H12. The intention to play freemium games mediates the relationship between diversion and the intention to pay for virtual goods.

The role of fantasy

Fantasy encompasses the realm of fictional digital environments that enable players to engage with virtual worlds. Previous studies within the domain of online gaming have underscored fantasy as a pivotal element influencing players' inclination to participate in online games (Jansz et al., 2010; Lucas & Sherry, 2004). This is attributed to the capacity of gamers to explore diverse identities, roles, and imaginative characters, while also engaging in activities that transcend the boundaries of reality. Literature also acknowledges the potential for imagining fictional characters as a possible driving force behind the impulse to play. Games are particularly enticing because players may realise their desires, such as becoming a super-hero, controlling a Formula 1 vehicle, or just living a new life through role playing (Jin, 2014; Shelton, 2010; Sherry et al., 2006). Games become a means of escaping the actual world through imagination (Kahn et al., 2015). The development of fictitious settings or tales that

appear to have been concocted by Hollywood filmmakers is another aspect of fantasy. Hence, according to Giammarco et al. (2015), games encourage imagination and creativity. They are referred to as "digital make-believe" by Wang et al. (2021) because they let players engage with the virtual environment. According to Huizinga (1993), games have a liberating quality since they provide as a momentary diversion from reality. All of this imagination aids players in being more fully immersed in games, which is thought to improve the desire to play. Collectively, the following hypotheses are proposed:

H13. Fantasy has a positive effect on the intention to play freemium games.
H14. Fantasy has a positive effect on the intention to pay for virtual goods.
H15. The intention to play freemium games mediates the relationship between fantasy and the intention to pay for virtual goods.

From play to pay
According to Curvelo, Watanabe, and Alfinito (2019), marketers routinely utilise customer intention to estimate sales of new items or repeat purchases of current ones. The discovered constructs relate to customers' desire to play games or play them more frequently. According to Wei and Lu (2014), the driving construct is the will to play. It conveys the user's willingness—or lack thereof—to engage in or continue playing a particular game. Consumers may base their intent to purchase decisions on things like perceived advantages and product values. Personal beliefs, information and expertise, and the availability of the goods are only a few examples of the variables that might alter someone's willingness to pay (Kotler & Armstrong, 2018). In this study, the readiness of gamers to part with their money for virtual goods is referred to as the intention to pay. The correlation between the intention to play and the intention to pay for an online game is positive, according to earlier studies (Hamari et al., 2020; Syahrivar et al., 2022). The readiness to spend may follow the willingness to test a product. Gamers that enjoy gaming may try to enhance their overall gaming experiences by spending money on their preferred games (premium). While it is possible to play for free, there are advantages to paying that are not offered in the free version. As a result, (Chou & Kimsuwan, 2013; Gedigames, 2014; Park & Lee, 2011) the intention to play may influence the intention to pay.

Gamers who want to play freemium games need probably also acquire the desire to pay for premium content or virtual items (Hamari, 2015; Hamarie et al., 2019a, b). Previous research by Chin-Sheng and Chiou (2007) and Schmierbach (2010) revealed that players engaged in competitive behaviour when playing online games that offered a variety of extrinsic benefits (such as money and fame). Gamers are aware that in order to succeed, they must make some concessions by using microtransactions (Evers et al., 2015). The desire to play freemium games was a positive predictor of the intention to pay for virtual goods, according to previous studies who discovered characteristics that led consumers to play online games and purchase premium contents (De Souza & De Freitas, 2017; Boric & Strauss, 2022). To support game creators after playing is another justification for making a real-world purchase (Marder et al., 2019). Therefore, we propose the following hypothesis:
H16. The intention to play freemium games has a positive effect on the intention to pay for virtual goods.

Based on the aforementioned hypotheses, Figure 1 shows the conceptual framework of this research. As seen in the literature, a set of constructs influence the intention to play, and this intention, in turn, has a direct influence on the intention to pay. Based on the conceptual

framework, it is possible to understand which constructs have impact on the intention to play, and their relationship with the intention to pay, in the Sarawakian freemium mobile games market.
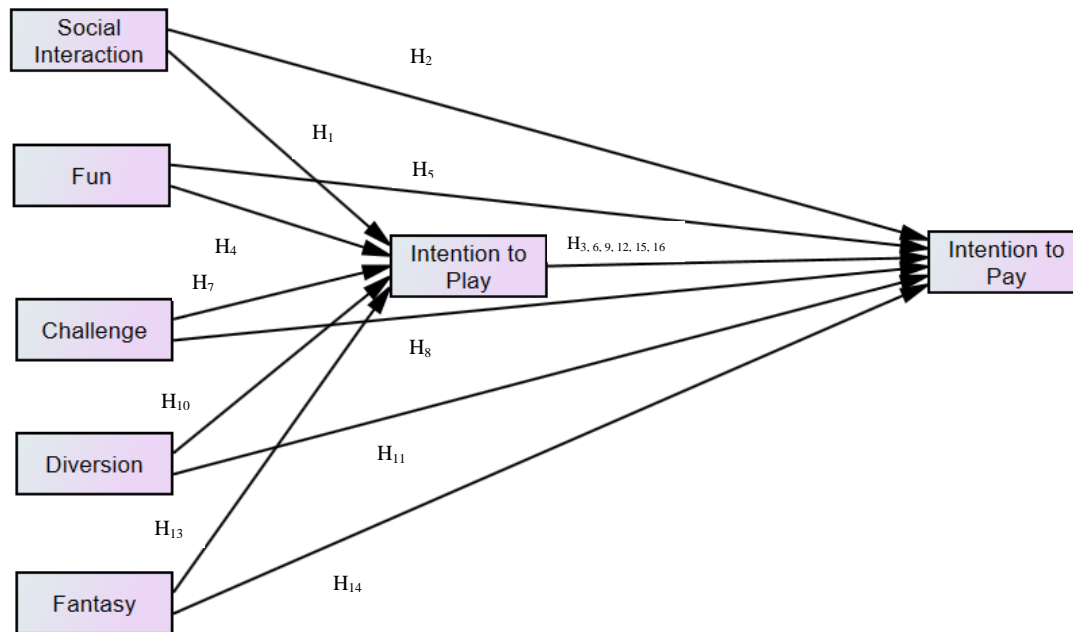

Figure 1: Conceptual Framework

Method

Mobile gamers in Sarawak were the focus of an online survey that used purposive sampling to acquire data. This objective was achieved by focusing on a number of regional social media platforms where players could share gaming advice and promote their online successes. The users who had made use of freemium game microtransactions were included in the cross-section survey using a filter question. In the end, 360 valid data points were gathered, with 53.1% men and 46.9% women between the ages of 16 and 54.

The idea was measured indirectly in this context since a compensating consumption scale was unavailable. In this research, the P2P related variables associated with lack of belongingness (social interaction), amusement (fun), the need for virtual achievements or online recognitions (challenge), relaxation and escapism from problems (diversion) and imaginary creation (fantasy). The instrument is constructed by adapting the scales from previous studies.

The variables were matched with questions from earlier studies that had high factor loadings, and some questions underwent modest revisions to fit the context of this study (using "freemium games" instead of "games" as an example). The 26 items were then retested using exploratory factor analysis (EFA) to see if they still belonged to the concepts they were meant to measure. The social interaction measures were used by Sherry et al. (2006) and Wu, Wang, and Tsai (2010) with five items each. Next, Wu, Wang, and Tsai (2010) and Jin (2014) measured fun using four different metrics.

Furthermore, Sherry et al. (2006) and Refiana, Mizerski, and Murphy (2005) each used five items for their challenge measurements. Four elements made up the diversion metrics used by

Sherry et al. (2006), Jin (2014), and Hou (2011). Four more items that Hou (2011) adopted are included in the measurements of fantasy. Apart from that, Wei and Lu (2014) and Chen, Lu, and Wang (2016) developed and used four items to measure play intention. Last but not least, de Souza and de Freitas (2017), Chou and Kimsuwan (2013), and Park and Lee (2011) all used assessments of the intention to pay that included four items. A five-Likert scale (1 = Strongly disagree, 5 = Strongly agree) was used in the investigation.

The survey that was used to collect the core data is self-administrated. The people of Sarawak come from a wide variety of racial and ethnic backgrounds. There are more than 40 sub-ethnic groups in Sarawak, and each has its own unique language, culture, and way of life. The questionnaire for this study has been written in both English and Bahasa Malaysia. The majority of Malaysians can communicate in English, one of the official languages, which they learned in elementary and secondary school (Darmi & Albion, 2013). Multiple languages enable researchers to ask questions in the preferred tongue of the intended audience. As a result, respondents who do not speak English as their first language can understand both the questions and the answers. Respondents are free to respond in the language of their choice. As a result, respondents can better comprehend the questions and provide answers that are more accurate.

Ten gamers took part in a pre-test to see if the questionnaire was understandable and relevant for this research. The findings indicated that the questionnaire was appropriate and clear. Thirty gamers participated in a pilot test to determine how well the components clustered and whether they were consistent with the literature. In order to assess the pilot test, exploratory factor analysis was carried out. It should be noted that the 360 respondents who made up the final sample did not include pretest or pilot test participants. Cronbach's alphas of the measurement scales range from 0.772 to 0.897, as shown in Table 2.

The hypotheses in this research were tested using structural equation modelling (SEM) with the aid of the AMOS programme. The proposed model's fitness was evaluated using the root mean square error of approximation (RMSEA), standardised root mean square residual (SRMR), goodness of fit index (GFI), adjusted goodness of fit index (AGFI), normed fit index (NFI), Tucker-Lewis index (TLI), and comparative fit index (CFI). In this study, a guideline from Schreiber et al. (2006) was applied.

Findings
Among the 360 valid questionnaires, 77% were under 24 years old and majority of the respondents were students (70%) from different institutions in Sarawak and the remaining are employees (30%). The game genres that they mostly played were the role-playing games and action-adventure games. Among the respondents, they usually play the games with real-life friends (44.7%) and online friends (32.7%). In addition, they were also asked about the amount they ever spent on the purchase of virtual goods. Findings show that 226 (62.8%) spent below RM300, 59 (16.4%) spent RM301 to RM500, 32 (8.9%) spent between RM501 and RM700, 27 (7.5%) spent between RM701 and RM900 while only 16 (4.4%) spent above RM900 in purchasing the virtual goods in freemium games. Most of the respondents indicated that buying fancy skins or items for the appearance of characters is the main motivation they spent money on freemium games. The demographic profile of the respondents are shown in Table 1.

The relationship between gender identities and the research's questionnaire items was examined using a chi-square test. The results are displayed in Table 3. The findings in Table 3 demonstrate that gender differences do indeed account for the disparities in mean values of the

variables. For instance, male gamers score higher in all social interaction (SOC) items such as "My friends and I use online games as a reason to get together." (S1). The results also suggest that male gamers exhibit a higher motive in "I play online games because it is fun." (F1) than female gamers do. The results suggest that male gamers are more competitive (C) than female gamers as "I feel proud when I master an aspect of a game." (C3). The finding also shows that male gamers score higher in all diversion (D) items such as "I like to play online games because I can take a break and it is relaxing." (D1) than female gamers. Male gamers exhibit more play and payment intentions than female gamers (PLAY and PAY, respectively).

Table 1: Demographic profile of respondents

Demographic Variable	Category	Frequency	Percentage (%)
Gender	Male	191	53.1
	Female	169	46.9
Age	Below 16 years old	1	0.3
	16 to 24 years old	276	76.7
	25 to 34 years old	76	21.1
	35 to 44 years old	6	1.7
	45 to 54 years old	1	0.3
Ethnicity	Malay	24	6.7
	Chinese	288	80.0
	Iban	43	11.9
	Indian	2	0.6
	Others	3	0.8
Employment	Student	252	70.0
	Homemaker	4	1.1
	Self-employed	28	7.8
	Managerial	24	6.7
	Technical	14	3.9
	Professional	18	5.0
	Administrative	20	5.6
Typical gaming partners	Family members	83	12.8
	Real-life friends	289	44.7
	Relatives	56	8.7
	Online friends	211	32.7
	Others	7	1.1
Amount spent on freemium games	Below RM300	226	62.8
	RM301 – RM500	59	16.4
	RM501 – RM700	32	8.9
	RM701 – RM900	27	7.5
	Above RM900	16	4.4

Figure 2 shows the proposed conceptual framework designed on AMOS v.21. It should be noted that social interaction, fun, challenge, diversion and fantasy constructs are exogenous and cause the intention to play, which in turn influences the intention to pay. Therefore, the intention to play construct is a mediator between exogenous constructs and the intention to pay. According to Byrne (2013), the model should be presented without the correlations and errors associated to construct variables.

Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were conducted to test and validate the constructs of the variables included in the SEM model. F4, C2, C5 AND FANT3 items were removed to generate a good model fit. Meanwhile, the scores of average variance extracted (AVE) of social interaction, fun, challenge, diversion, fantasy, intention to play and intention to pay are 0.624, 0.597, 0.538, 0.672, 0.739, 0.632 and 0.601 consecutively. AVE measures the amount of variance represented by a construct that requires it to be greater than 0.50 (Fornell & Larcker, 1981). The final SEM model is presented in Figure 3.

Table 2: The questionnaire items and construct reliability

Variables	Code	Items	Mean	SD	CR
Social Interaction	SI1	My friends and I use online games as a reason to get together.*	3.8667	0.98116	0.860
	SI2	A group of friends and I will often spend time playing online games.*	3.7500	1.07840	
	SI3	I open up more to people online than in other communication modes.*	3.6139	1.01429	
	SI4	Going online has made it easier for me to make friends.*	3.6694	0.99534	
	SI5	I have a network of friends made from online games.*	3.4472	1.17186	
Fun	F1	I play online games because it is fun.*	4.1833	0.80372	0.896
	F2	Playing online game is exciting.*	4.1917	0.74597	
	F3	Playing online games gives me a lot of pleasure.*	4.0806	0.86186	
	F4	I enjoyed playing online games.	4.2056	0.74786	
Challenge	C1	I feel challenged while playing online games.*	3.9194	0.88734	0.847
	C2	I feel passionate about winning the games.	4.0556	0.82254	
	C3	I feel proud when I master an aspect of a game.*	4.0278	0.82056	
	C4	I play until I complete a level or win a game.*	3.9000	0.92685	
	C5	I enjoy finding new and creative ways to work through online games.	3.8472	0.89349	
Diversion	D1	I like to play online games because I can take a break and it is relaxing.*	4.1833	0.76464	0.772
	D2	I play online games to escape from reality.*	3.6167	1.05964	
	D3	I will forget some of the real-life problems I have while playing online games.*	3.7083	1.00746	
	D4	I will vent and relieve stress from the day while playing online games.*	4.0111	0.87037	
Fantasy	FANT1	I will be able to do things that I can't do in real life while playing online games.*	3.6639	0.91769	0.838
	FANT2	I will be able to pretend I am someone/somewhere else while playing online games.*	3.5611	1.02701	
	FANT3	I will like to do something in online games that I could not normally do in real life.	3.5583	0.99969	
	FANT4	I will enjoy the excitement of assuming an alter ego in online games.*	3.7389	0.92242	
Intention to Play	PLAL1	I will give playing online games a try.*	4.1194	0.79319	0.885
	PLAY2	I intend to play online games in the future*.	4.0333	0.89816	
	PLAY3	I intend to play online games as much as possible.*	3.8333	1.00970	
	PLAY4	I think I will play online games frequently in the future.*	3.7778	1.00170	
Intention to Pay	PAY1	I will recommend items of online games to my family or friends.*	3.6528	1.00638	0.897
	PAY2	There is a big probability that I will waste money on items of online games.*	3.2694	1.24321	
	PAY3	I intend to purchase online games items/premium content in the future.*	3.2194	1.23512	
	PAY4	I predict that I will buy online games items/premium content in the future.*	3.2444	1.22927	

Note(s): SD = Standard deviation, CR = Composite reliability and *Retained items in the final SEM model

Table 3: The relationship between gender identities and the questionnaire items

| Code	Items	Male means	Female means	Sig.
S1	My friends and I use online games as a reason to get together.	4.0524	3.6568	0.001
S2	A group of friends and I will often spend time playing online games.	4.0419	3.4201	0.000
S3	I open up more to people online than in other communication modes.	3.8010	3.4024	0.001
S4	Going online has made it easier for me to make friends.	3.8220	3.4970	0.001
S5	I have a network of friends made from online games.	3.7277	3.1302	0.000
F1	I play online games because it is fun.	4.2723	4.0828	0.012
F2	Playing online game is exciting.	4.2565	4.1183	0.108
F3	Playing online games gives me a lot of pleasure.	4.1832	3.9645	0.050
F4	I enjoyed playing online games.	4.2565	4.1479	0.033
C1	I feel challenged while playing online games.	4.0419	3.7811	0.021
C2	I feel passionate about winning the games.	4.1099	3.9941	0.216
C3	I feel proud when I master an aspect of a game.	4.1414	3.8994	0.059
C4	I play until I complete a level or win a game.	4.0209	3.7633	0.030
C5	I enjoy finding new and creative ways to work through online games.	4.0157	3.6568	0.001
D1	I like to play online games because I can take a break and it is relaxing.	4.2199	4.1420	0.449
D2	I play online games to escape from reality.	3.7749	3.4379	0.006
D3	I will forget some of the real-life problems I have while playing online games.	3.8220	3.5799	0.004
D4	I will vent and relieve stress from the day while playing online games.	4.1152	3.8935	0.137
Fant1	I will be able to do things that I can't do in real life while playing online games.	3.7539	3.5621	0.238
Fant2	I will be able to pretend I am someone/somewhere else while playing online games.	3.6545	3.4556	0.172
Fant3	I will like to do something in online games that I could not normally do in real life.	3.6963	3.4024	0.038
Fant4	I will enjoy the excitement of assuming an alter ego in online games.	3.8534	3.6095	0.168
Play1	I will give playing online games a try.	4.2147	4.0118	0.008
Play2	I intend to play online games in the future.	4.1780	3.8698	0.010
Play3	I intend to play online games as much as possible.	4.0524	3.5858	0.001
Play4	I think I will play online games frequently in the future.	3.9791	3.550	0.001
Pay1	I will recommend items of online games to my family or friends.	3.8534	3.4201	0.002
Pay2	There is a big probability that I will waste money on items of online games.	3.6126	2.8817	0.000
Pay3	I intend to purchase online games items/premium content in the future.	3.4921	2.9112	0.000
Pay4	I predict that I will buy online games items/premium content in the future.	3.5445	2.9053	0.000

Note(s): *Significant relationships
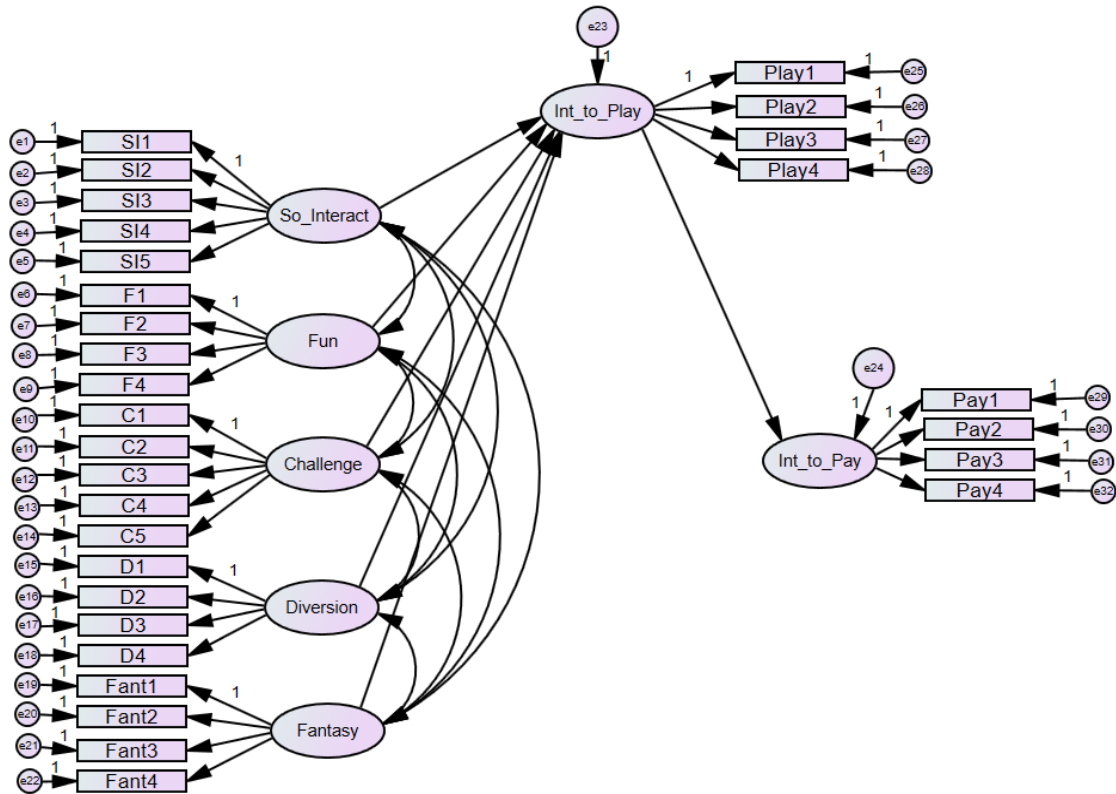
Figure 2: Structural model

Next, the model fit of the final SEM model is measured based on six criteria which are RMSEA, standardized SRMR, GFI, AGFI, NFI, TLI and CFI. The thresholds recommended by Schreiber et al. (2006) is used in this study. Table 4 suggests that there is a good fit between the theoretical model and the data.
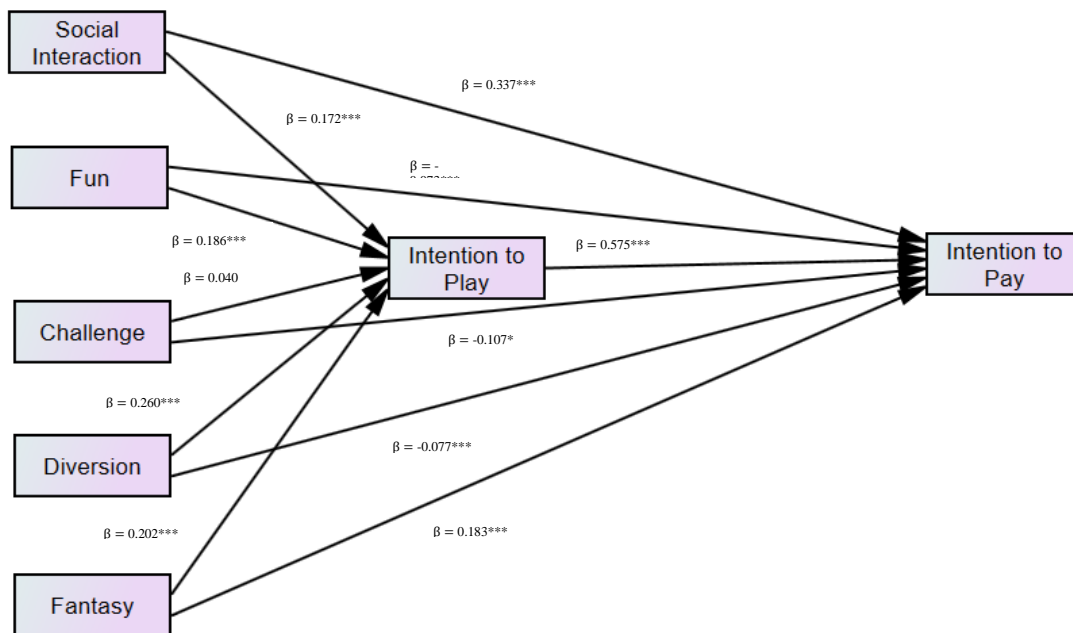
Note(s): β = the standardized beta, $* = P(\text{sig.}) < 0.05, *** = P(\text{sig.}) < 0.001$

Figure 3: The final SEM model

Table 4: Model fit of the SEM model

Fit index	Recommended threshold	Result	Note
RMSEA	<0.08	0.044	Good fit
SRMR	<0.08	0.041	Good fit
GFI	>0.95	0.961	Good fit
NFI	>0.95	0.947	Moderate fit
TLI	>0.95	0.935	Moderate fit
CFI	>0.95	0.952	Good fit

Note(s): RMSEA = Root mean squared error of approximation; SRMR = Standardized root mean square residual; GFI = Goodness of fit; NFI = Normed fit index; TLI = Tucker–Lewis index; CFI = Comparative fit index

Based on the results of SEM analysis, it is estimated that the predictors of the intention to play freemium games explain 46.4% of its variance. In other words, as high as 53.6% of the variance in the intention to play freemium games were explained by variables that were not included in the model. Meanwhile, it is estimated that the predictors of the intention to pay for virtual goods explain 45.7% of its variance. In other words, as high as 54.3% of the variance in the intention to pay for virtual goods were explained by variables that were not included in the model. Using the standardized regression weight, the power estimate of diversion toward intention to play freemium games is 26%, fantasy toward intention to play freemium games is 20.2%, and fun towards the intention to play freemium games is 18.6%. The intention to play freemium games towards the intention to pay for virtual goods is 57.5%, social interaction towards the intention to pay for virtual goods is 0.337%, and fantasy towards the intention to pay for virtual goods is 18.3%. The relationships among the variables are presented in Table 5.

Table 5: Regression weight of the SEM Model

		Estimate	S.E.	C.R.	P
PLAY	<--- SI	0.131	0.029	4.461	***
PLAY	<--- FUN	0.216	0.045	4.817	***
PLAY	<--- CHALL	0.037	0.036	1.027	0.305
PLAY	<--- DIV	0.290	0.043	6.726	***
PLAY	<--- FANT	0.204	0.039	5.230	***
PAY	<--- PLAY	0.485	0.069	7.022	***
PAY	<--- SI	0.308	0.040	7.780	***
PAY	<--- FUN	-0.102	0.061	-1.679	0.093
PAY	<--- CHALL	-0.121	0.047	-2.546	0.011
PAY	<--- DIV	0.103	0.060	1.725	0.084
PAY	<--- FANT	0.222	0.053	4.184	***

Note(s): SI = Social Interaction, FUN = Fun, CHALL = Challenge, DIV = Diversion, FANT = Fantasy, PLAY = Intention to play, PAY = Intention to pay, ***p<0.01.

Discussion
Based on the findings, the scale showed satisfactory results for unidimensionality, based on the results for Cronbach's alpha and CR and squared correlations. Therefore, the scales for all the

variables are all appropriate tools to assess these constructs, regarding the behavior of electronic games' consumers.

In terms of direct effects, the measurement model had satisfactory results, which shows that the proposed model based on the theoretical framework is appropriate. The structural model proved to fit with suitable values (Byrne, 2013; Hair et al., 2013). Based on the hypotheses test, five out of six hypotheses were confirmed.

H1 hypothesis stated that social interaction has a positive effects on the intention to play freemium games (Pe-Than et al., 2014; Shelton, 2010; Sherry et al., 2006; Souza & Freitas, 2017; Yin et al., 2019). This hypothesis was accepted. According to the finding of Tan, Yeh and Chen (2015), social interaction can drive the gamers to participate in online games especially the Massively Multiplayer Online Role-playing Games (MMORPGs) as this kind of game requires team effort to complete certain tasks. According to Choi and Kim (2004), social interaction is considered as providing suitable communication tools or places for the players to interact with each other which can act as a motivator to ensure that the players continue to play online games. The social interaction can affect the intention to play directly as communication is important in online games.

H4 hypothesis argued that fun has a positive effects on the intention to play freemium games (Cohen, 2014; Jin, 2014; Pe-Than et al., 2014; Shelton, 2010; Wei & Lu, 2014; Jang et al., 2021). This hypothesis was accepted. The finding is consistent with the study of Erturkoglu, Zhang and Mao (2015) where the fun has strong influence towards the intention to play freemium games. Fun acts as an internal motivation for the gamers to play games as proposed by Yoon, Duff and Ryu (2013). The Sarawak gamers decided to play online games because it can provide them with fun and pleasure which is consistent with the research of Lee and Tsai (2010).

H7 hypothesis claimed that challenge has a positive influence on the intention to play fremium games (Engl & Nacke, 2013; Jin, 2014; Pe-Than et al., 2014; Shelton, 2010; Sherry et al., 2006). This hypothesis was rejected. The Sarawak gamers may not like challenges because it increases their time and difficulties to complete certain tasks. It will cause annoyance to the gamers if they stuck at the same level or rank for a very long time. This finding is consistent to the study of Yoon, Xu and Lim (2018) as it presented that challenge has no significant effect on the gamers' intention to online games among Chinese gamers. If the challenges of the freemium games are too easy or too difficult, players might not have perceived them as meaningful enough to affect their intentions to play. The balance between difficulty and satisfaction is crucial in determining how challenges influence player engagement.

H10 hypothesis stated that diversion positively affect the intention to play freemium games (Jin, 2014; Shelton, 2010; Sherry et al., 2006; Rizky et al., 2022). This relation showed the most standardized effect, which indicates that this construct is the most influential on the intention to play freemium games. Therefore, the main reason to play freemium games is diversion. A study found that diversion can stimulate the gamers to have their intention to play online games continuously as they are able to escape from reality during their break time (Liu et al., 2018). It can form the behavioural intention as the gamers may divert themselves from reality or play games to kill their times. Research had done by Souza, Freitas, Heineck and Wattes (2021) in which diversion is a crucial variable in stimulating the intention to play online games. They studied that diversion is very important especially for players who are bored

because their intention to play online games is to release stress and relieve themselves from the real world.

H13 hypothesis claimed that fantasy positively affect the intention to play freemium games (Jin, 2014; Shelton, 2010; Sherry et al., 2006, Mikail et al., 2022). The ability to act in ways that are not permitted in real life is one of the characteristics that draws people to games. Fantasy will improve the gamers' experiences in games because the simulation games provide them with tools to build up their own virtual world (Griebel, 2006). The result is in accordance with a study that found that players are more likely to play online games when those games have fantastical narrative or images that allow them to immerse themselves in a fantasy world (Wood et al., 2004). The adoption of this hypothesis suggests that it is critical for games to offer this fantastical setting that creates a straightforward and intentional portrayal of reality.

Analysis of the result shows intention to play has positive effect on the intention to pay for virtual items. After spending a significant amount of time with a game, players who intend to play it will happily pay for it. This findings was supported by the past researches, Souza and Freitas (2017), Syahrivar et al. (2022), and Yu and Huang (2022) the intention to play has a favourable impact on the intention to pay. This construct is connected to the previously described factors of social interaction, fun, challenge, diversion and fantasy. These factors may have an impact on the intention to play before directly influencing the intention to pay. With the intention to pay as the challenge is less significant towards the intention to play, the intention to play construct as a mediator to mediate the relationship between social interaction, fun, diversion, and fantasy. Hence, in order to comprehend the impact that independent factors related to intention-to-play have on intention to pay, mediation analysis were carried out. The following independent variables were tested: social interaction, fun, challenge, diversion, and fantasy.

Table 6: Mediation Analysis

					Test Statistics	S.E.	P
PAY	<---	PLAY	<---	SI	1.374	0.103	***
PAY	<---	PLAY	<---	FUN	0.132	0.193	***
PAY	<---	PLAY	<---	CHALL	-0.397	0.006	0.352
PAY	<---	PLAY	<---	DIV	2.047	0.962	0.013
PAY	<---	PLAY	<---	FANT	1.394	0.237	***
Note(s): SI = Social Interaction, FUN = Fun, CHALL = Challenge, DIV = Diversion, FANT = Fantasy, PLAY = Intention to play, PAY = Intention to pay, ***p<0.01.							

The mediation analysis found that the intention to pay is influenced by social interaction, fun, and fantasy constructs, and there is partial mediation of the intention to play in these relationships. These connections occurred despite the fact that these factors had little or no influence on gamers' intentions to play freemium games. Since the direct effect with mediation is bigger than the direct effect without mediation, intention to play has a positive impact on intention to pay. The diversion construct, on the other hand, has the opposite impact, lowering the intention to pay for the virtual goods. This occurs because, in the absence of the mediating variable intention to play, diversion has a stronger impact on the intention to pay. The gamer must intend to play in order to purchase the virtual items associated with the freemium game; yet, if the game is viewed only as a form of amusement to release stress, playing reduces the intention to pay.

Theoretical contributions and managerial implications
In this study, several theoretical contributions are discussed in this section. First, literature in online retailing and compensatory consumption theory is extended, especially in the context of freemium games among Sarawak gamers which is less explored. Five pay-to-pay (P2P) constructs are suggested such as social interaction, fun, challenge, diversion and fantasy to investigate on their influence towards the intention to play and intention to pay. These constructs were taken into consideration for this study after investigating on several researches. By adopting the constructs, the future researchers are able to investigate on how they bring exact influences towards the intention to play and to pay by the gamers. The future researchers can understand on how the behaviour (intention to play and intention to pay) of Sarawak freemium gaming community can be affected by the internal motivation (social interaction, fun, challenge, diversion and fantasy). Therefore, this study contributes theoretically to support the field of behavioural researches and ensures the researchers to look at the intention to play and to pay from a different perspective by investigating deepen into the constructs proposed.

Second, our findings offer intuitively new insights for gender disparity of playing games between male and female Sarawak gamers. According to the chi-square analysis, the finding shows that male gamers is more motive in the five variables and exhibit more play and payment intentions than female gamers. In this study, social interaction, fun, diversion and fantasy have positive effects on the intention to play except for challenge. The gamers are most likely to enjoy their time of playing freemium games by socializing, having fun, escaping from reality and to live in a fantasy world as it allows them to do whatever they cannot do in real life. Thus, the intention to play can be enhanced by the factors like social interaction, fun, diversion and fantasy as internally, they can influence on each other as they have reciprocal causation. In addition, the result also shows that intention to play has positive effect on the intention to pay for virtual items.

Third, this research reveals the mediation effects that were seldom focus in the past researches. For instance, the findings in this research found that the intention to play freemium games partially mediates the relationship between fun and fantasy with the intention to pay for virtual items. This mediation effect was not incorporated in the previous studies (e.g. Hamari, 2015; Hamari et al., 2017, 2019a, b; Syahrivar et al., 2020). In the mediation analysis, the intention to pay is influenced by social interaction, fun, and fantasy constructs, and there is partial mediation of the intention to play in these relationships. These connections occurred despite the fact that these factors had little or no influence on gamers' intentions to play freemium games. Intention to play has a favourable influence on intention to pay because the direct effect with mediation is greater than the direct effect without mediation. However, the diversion construct has the opposite effect, decreasing the intention to pay for the virtual goods. This happens because diversion has a bigger effect on the intention to pay when the mediating variable intention to play is absent. However, if the game is just played as a kind of stress relief, playing lessens the intention to pay. The gamer must intend to play in order to acquire the virtual items in the freemium games.

Forth, this research also highlight that the study of freemium games in the context of Sarawak is less explored as Sarawak is the largest state in Malaysia (Tang, 2020). there is a lack of Sarawakian players in the literature on gaming. There is barely any research explaining game conduct among Sarawak freemium mobile gamers. Hence, this research has contributed to the population gap and a stepping stone towards future research in this contexts.

In term of managerial implications, this study holds the potential to significantly contribute to the development and design of freemium games within the future market. It serves as a guiding resource for game developers, enabling them to gain a comprehensive understanding of the prevailing freemium gaming trend among Sarawak gamers. By investigating five Pay to Play (P2P) practices—social interaction, fun, challenge, diversion, and fantasy—this study equips game developers with the tools to craft games that effectively incorporate these five elements, ultimately attracting a larger audience to engage with freemium games.

Interestingly, games that facilitate communication and social interaction consistently demonstrate heightened levels of both freemium game play and virtual items purchases. Additionally, recognizing the vital roles of fun, diversion, and fantasy in gamers' preferences for freemium games, developers must strategically include these components to create games that serve as engaging escapes for gamers. It is important for developers to exercise prudence when designing challenges, given that the study finds challenges to exert a relatively limited impact on the intention to play freemium games and pay virtual items among Sarawak gamers. Therefore, this research has the potential to reshape the landscape of game development, enhancing the engagement of freemium games by aligning with gamers' preferences and behaviors.

Limitations and future research
This study acknowledges the presence of several limitations that need to be addressed to aid future researchers in navigating these challenges. Firstly, a notable limitation pertains to the uneven distribution of respondents' ethnic backgrounds in the survey responses. This situation arises from the data presented in Table 4.1, which reveals that the Chinese demographic constitutes a substantial majority of 80.0% out of 360 respondents, while the Malay and Iban ethnic groups contribute only 6.7% and 11.9%, respectively. This ethnic disparity raises concerns about the study's ability to accurately represent the entire population of Sarawak, as the Iban ethnic group is recognized as the largest in the region.

Secondly, a significant portion of the respondents, over 50%, comprises students whose gaming expenses may be contingent upon the financial willingness of their parents or guardians to support their gaming activities. This aspect introduces potential biases into the study's assessment of the respondents' willingness to pay for virtual goods. Muzellec et al. (2016) underscore the influence of parental involvement in children's gaming experiences. Parents are inclined to compare their parenting choices, including decisions related to food, games, and sports, a phenomenon known as social comparison (Hogreve et al., 2021). To enhance the accuracy of future research findings, it is recommended that investigations targeting non-working respondents encompass additional moderating variables, such as the role of parental support, to provide a more comprehensive and nuanced understanding of the subject matter.

Conclusion
In the perspective of online retailing, freemium mobile games might be seen as a recent development. For game developers and merchants, the freemium business model has become a common source of revenue. This study extends the body of knowledge in online retailing and compensatory consumption theory, particularly in the setting of freemium games among gamers in Sarawak. Five pay-to-pay (P2P) constructs are suggested such as social interaction, fun, challenge, diversion and fantasy to investigate on their influence towards the intention to play and intention to pay. These constructs were taken into consideration for this study after investigating on several researches. By adopting the constructs, the future researchers are able

to investigate on how they bring exact influences towards the intention to play and to pay by the gamers. The future researchers can understand on how the behaviour (intention to play and intention to pay) of Sarawak freemium gaming community can be affected by the internal motivation (social interaction, fun, challenge, diversion and fantasy). Therefore, this study contributes theoretically to support the field of behavioural researches and ensures the researchers to look at the intention to play and to pay from a different perspective by investigating deepen into the constructs proposed.

According to the chi-square analysis, the finding shows that male gamers is more motive in the five variables and exhibit more play and payment intentions than female gamers. In this study, social interaction, fun, diversion and fantasy have positive effects on the intention to play except for challenge. The gamers are most likely to enjoy their time of playing freemium games by socializing, having fun, escaping from reality and to live in a fantasy world as it allows them to do whatever they cannot do in real life. Thus, the intention to play can be enhanced by the factors like social interaction, fun, diversion and fantasy as internally, they can influence on each other as they have reciprocal causation. In addition, the result also shows that intention to play has positive effect on the intention to pay for virtual items.

In the mediation analysis, the intention to pay is influenced by social interaction, fun, and fantasy constructs, and there is partial mediation of the intention to play in these relationships. These connections occurred despite the fact that these factors had little or no influence on gamers' intentions to play freemium games. Intention to play has a favourable influence on intention to pay because the direct effect with mediation is greater than the direct effect without mediation. However, the diversion construct has the opposite effect, decreasing the intention to pay for the virtual goods. This happens because diversion has a bigger effect on the intention to pay when the mediating variable intention to play is absent. However, if the game is just played as a kind of stress relief, playing lessens the intention to pay. The gamer must intend to play in order to acquire the virtual items in the freemium games.

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