

## **Determinants of Online Game Player Loyalty Among Millennials: A PLS-SEM Approach**

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### **Abstract**

Online game loyalty has become a concern for many companies and game developers since the high competition in the gaming industry. This study aims to determine the influencing factors of online game loyalty. The questionnaires were distributed to 350 respondents using a purposive sampling technique, but only 173 were usable for further analysis. The study finds that social, game challenge, price, and game design factors are the determinants affecting customers' online game loyalty. The study findings contribute to everyone, such as game developers and marketers. Game developers need to consider these factors to create a competitive edge in this multi-million-dollar industry.

**Keywords:** loyalty, game players, game challenge, game design, Malaysia

### **1.0 Introduction**

Millennials may be fickle about their food, fashion, or lifestyle choices. However, millennials love gaming. In recent years, gaming patterns have seen a clear shift towards online platforms. Millennials have discovered that online gaming offers various benefits that can increase their personal experiences. Online games have made it easier for millennials to communicate and socialise via multiplayer gaming platforms. Other than that, millennials have discovered that online games can be educational, and teach them essential skills like improving mathematical skills, sharpening their brain, and increasing

their long-term memory (SNS, 2019). Thanks to smartphones, online gaming has become quite convenient without elaborated equipment.

The rising popularity of online gam—s has made it one of the fastest-growing industries today, and this trend will continue to grow in the near future. According to The Malaysian Reserve (TMR) (2018), a business news and information provider, the online game industry garnered a profit of about RM423 billion in the year 2017 alone. Kevin (2018) reported that in 2014, the local game development industry managed to rake in about RM246 million compared to RM420 million in 2016, proving how fast the industry grew compared to other entertainment sectors. Thus, it comes as no surprise that the industry has attracted many investors keen on developing highly appealing games to create a competitive edge.

According to the co-founder of Magnus Games Studio Sdn Bhd, Gan Dong Chee, Malaysia has one of the world's biggest consumers willing to spend a lot of money on online games. It has been estimated that 14 million of the 32 million Malaysians are active online gamers. Mobile phones are the most popular platform for playing online games surpassing computers and console games. The mobile games industry, which includes other devices such as tablets which contributes 42 per cent of the Malaysian gaming market's revenue, according to Statista (2018), compared to computer games that only account for 4 per cent of the country's revenue. In other words, as mobile games contribute the most revenue in the online gaming industry, many game developers are aiming to venture into this sector. Tablet games and mobile games offer the same games. This phenomenon is attributed to online mobile and tablet games' flexibility as they do not require any remote control to play the games and can be accessed anytime and anywhere. Furthermore, mobile online games have a more creative and exciting function known as AR integration, which bridges the digital and physical world gap by immersing gamers in a virtual world. The mobile online game 'Pokemon Go' is one of the mobile online games which contains the AR integration function and has attracted a strong following of online gamers in Malaysia. Hence, it is no wonder that the number of mobile online game users in Malaysia is increasing gradually every year.

Statista (2018) showed the number of gamers in Malaysia reached an astounding 7.1 million in 2021, causing the gaming industry's market size to expand rapidly. This makes the industry highly competitive and more game developers have moved into this market.

With many online games to choose from, game developers compete to attract and sustain their customers' interest and loyalty. Thus, a wide selection of games in various genres is created to keep games in tune ahead for their survival in the industry and retain their loyal customers. Since online game users are now given many choices, game developers need to determine the factors that compel gamers to willingly spend money to continue playing their games to retain and sustain gamers' interest and loyalty. Gamers' willingness to spend on online games ensures the survival of the games and the gaming companies in this volatile industry.

Despite having to deal with the challenges of continually keeping up with the wants and desires of millennials' unpredictable nature, many gaming companies and game developers view this challenge as a worthy investment of their time and monetary resources. Statista (2018) stated that the average revenue per user reached a peak of over USD 20 million in 2021, underscoring the potential growth market of online gaming. As a result, there is a need to understand gamers' behavioural patterns to cater to their needs and requirements. Gaming developers need to know what makes online gamers tick.

Revenues gained from online games are now evenly distributed among various genres. Massively multiplayer online role-playing games (MMORPG) generated the highest revenues than other online games with mobile phones, becoming the leading gaming platform among gamers. Statista (2018) reported that the mobile games market revenue amounted to USD100 million in 2015 and increased 8 per cent every year until it reached USD162 million in 2021. These figures prove that millennials love gaming.

Still, it would be naive to suggest that the gaming industry's significant growth is attributed to the content of online games alone. In truth, game developers need to master the art of appealing to millennials, using successful marketing techniques to attract and retain millennial audiences. Millennials are notorious for being too discerning. Thus, to further understand how gaming companies can cater to the infamously picky millennial audience, they need to understand the factors that attract and retain their loyalty and attention especially the online gamers. Online gamers' loyalty is very important to a company because it helps retain customers and increase sales. According to Wei et al. (2017), online game loyalty refers to the gamers' strong preference for the games they are playing.

This study acknowledges the gaps in the past literature due to the changing trends in online gamers and aims to examine the factors that impact gamers' loyalty to online games. The findings this study could help game developers better understand gamers' behaviour.

## **2.0 Literature Review**

### **2.1 Social Factors and Online Game Loyalty**

Like social media, online games create gamers' opportunities to make new friends. The community and social activities formed in online games attract and motivate online gamers to meet online and play for fun and enjoyment. This implies a positive relationship between the in-game friends and the number of times gamers are willing to invest in the game (Blinka & Mikuska, 2014). Players who share a social connection will continue to play a particular online game with other active and responsive players (Zuo, 2016). According to Kim (2017), social interaction is an important factor that helps increase online game loyalty. Most gamers immerse themselves in the online game to escape loneliness and overcome their isolation and social anxiety. Social interaction can help online gamers form a positive attitude towards online games and retain online game loyalty. Social value can also fulfil the online gamers' needs to complete the game's tasks more effectively via teamwork, thus increasing online game loyalty (Teng, 2018). The more frequent gamers interact with each other in online games, the higher the quality of user flow experience and online game loyalty (Chen & Wu, 2015). Thus, the social factors of an online game can help improve the loyalty of online gamers. H1 is formulated as follows:

H1: There is a relationship between social factors and online game loyalty.

### **2.2 Game Challenges and Online Game Loyalty**

An online game without any challenge wastes the time and effort of the gamers and could cause them to leave the game. Game challenges aim to make gamers play the games repeatedly until they achieve their goals. Based on Su et al. (2016), gaming skills and challenges are the main factors that affect online gamers' emotional and flow experiences. The game challenges that are programmed into online games can make or break a game. A game with high skill requirements but low challenge demands will lead gamers to boredom.

In contrast, a high challenge game but low skill demands can make online gamers more anxious and pay more time on the online games. On the one hand, when a game progression starts weak and unappealing, gamers may get bored and lose interest in the game. On the other hand, if the game challenges are too difficult to attain, online gamers will give up, negatively affecting online game loyalty. Thus, game challenges that enable players to gain a progression advantage at the onset and motivates them to continue from one level to the next will increase online game loyalty. Thus, H2 is as follows:

H2: There is a relationship between game challenges and online game loyalty.

### 2.3 Price Factors and Online Game Loyalty

The price of online games is one of the important factors affecting online game loyalty. According to Hsiao (2016), price refers to the utility derived from online games because of a reduction in its perceived short-term and long-term costs. Price can be used to measure customers' loyalty when they obtain a product. In this case, Yoon and Thanh (2011) found that there is a relationship between customer loyalty and online game's price. Furthermore, Yasir and Agus (2021) note that the purchase of digital products such as paid features in games would rely not only on gamers' loyalty but also on the pricing factor. Price is a critical component that hugely impacts consumer happiness and, ultimately, brand loyalty (Javed et al., 2021). Online game loyalty refers to the game or games whose players are willing to pay more for the items or game tokens of the online games because of their unique values are not found in other games. When the game players view the price tags attached to these items as reasonable, they willingly invest their money to purchase them. In addition, each time players perform any act of purchase, their loyalty to the game increases. Conversely, if the price is deemed unreasonable (ranging between RM44.90 to RM59.90), the game players will refuse to purchase, thus making it highly possible for them to leave the game. Needless to say, this will directly cause a negative effect on online game loyalty. Thus, H3 is formulated as follows:

H3: There is a relationship between price factors and online game loyalty.

## 2.4 Game Design and Online Game Loyalty

High-quality game designs can attract online gamers to continue playing, retaining their loyalty to the games. Most online game players will analyse the game design of an online game first before deciding to play or not. If a game design appeals to the gamers, signalling that it is worth their time and effort to play the game, it will motivate them to make the purchase and play. Game design elements are the basic building blocks in an online game. When a game is well-designed with elements including points, badges, leaderboards, meaningful stories, and avatars, it can increase online gamers' interest and motivate them to continue playing for a longer time (Werbach & Hunter, 2012). The significance of game design features and playability in driving gamers' reported pleasure enhances gamer loyalty to continue playing (Cheung et al. (2021). Additionally, according to Whittaker et al. (2021), good game designs can create a flow experience that will increase consumer engagement and, as a result, stay loyal (e.g., app replay). In short, the high quality of a game design can positively affect online game loyalty. Thus, H4 is as follows:

H4: There is a relationship between game design and online game loyalty.

## 3.0 Methodology

This study employed non-probability purposive sampling. The purposive sampling is the most suitable for this study because online game players are better positioned to provide the information required for this study. The questionnaires were distributed to 350 respondents in the southern region of Malaysia, which comprises of Melaka, Negeri Sembilan and Johor Bahru, from October 2018 to January 2019. The questionnaires were personally distributed to universities and gaming outlets after gaining permission from their management. The unit analysis for this study was millennials who played online games. A total of 175 questionnaires were returned, and only 173 were usable for further analysis.

The measures used to operationalise the constructs included in the investigated models and the questionnaires were adapted from previous studies. The independent variables, which were social factors and game designs, comprised of four items adapted from Wei et al. (2017) and Werbach & Hunter (2012) respectively. Whereas price

factors and game challenges comprised three items which were adapted from Hsiao and Chen (2016) and Zhu et al. (2016) respectively. Meanwhile, online game players' loyalty measurements which comprised of four items were adapted from Wei et al. (2017). A five-point Likert scale was deployed to gauge the level of agreement or disagreement on each element in the measurement. All items were measured using a five-point Likert-type scale with anchors on 1 = strongly disagree and 5 = strongly agree.

The Structural Equation Modeling (SEM) technique was employed to test the hypotheses of this study, while the Smart-PLS Version 3 analysis tool was used to analyse the data. The PLS-SEM technique involved a separate assessment of the measurement and structural models (Hair, Ringle & Sarstedt, 2013). The evaluation of the measurement model aimed to assess the model's reliability and validity, whereas the evaluation of the structural model aimed to evaluate the significance of the proposed relationships and the amount of variance explained.

#### **4.0 Findings**

A total of 350 questionnaires were distributed to universities and gaming outlets in the first week of October 2018. It took four months to complete the data collection process. However, after the stipulated period, 175 questionnaires were returned. Two out of 175 questionnaires were found unusable due to incomplete information. No more questionnaires were received after the deadline. Hence, the response rate was recorded as 49.4 per cent

Half of the respondents were male (51.4 %), and 42 per cent of the male respondents were Chinese. As for the age group, the majority of them were between 18 – 19 years old (38.7 %), followed by those aged between 20 - 21 years old (30.6 %), and only 2.3 per cent were 25 years old and above. Regarding the respondents' platforms for playing online games, 45.7 per cent of the respondents played on their smartphones and 1.7 per cent responded that they played on game consoles. Among those who played online games via smartphones, 51 per cent said they played at home and normally spent about seven hours on the game. A summary of the participated companies' profiles is presented in Table 1.

Table 1 : Frequencies of Demographic Profile

<b>Demographic Profile</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>Gender</b>		
Male	89	51.4
Female	84	48.6
<b>Ethnicity</b>		
Malay	29	16.8
Chinese	115	66.5
Indian	29	16.8
<b>Age</b>		
Under 18 Years Old	12	6.9
18-19 Years Old	67	38.7
20-21 Years Old	53	30.6
22-23 Years Old	30	17.3
24-25 Years Old	7	4.0
Above 25 Years Old	4	2.3
<b>Device To Play Game</b>		
Smartphone	79	45.7
Desktop Computer	23	13.3
Laptop	32	18.5
Tablet	36	20.8
Game Console	3	1.7
<b>Place Playing Game</b>		
Internet Shop	4	2.3
Café Shop	36	20.8
At Home	110	63.6
At School	23	13.3
<b>Time Spending on Game Per Day</b>		
1 Hour – 3 Hours	49	28.3
4 Hours – 6 Hours	59	34.1
7 Hours – 9 Hours	58	33.5
More Than 10 Hours	7	4
<b>Money Spend on Game</b>		
Play for Fun, Not Spend Any Money	6	3.5
RM1 – RM50	33	19.1
RM51 – RM200	54	31.2
RM200 – RM400	61	35.3
RM400 and above	19	11
<b>When Do You Spend Money on Online Game</b>		
Did Not Spend Any Money	6	3.5
Anytime When Prefer	26	15
For New Events in the Game	111	64.2
Promotion Program	30	17.3



#### 4.1 The Reflective Measurement Model

The first step in PLS-SEM analysis is to evaluate the measurement model to determine how well the items are loaded on the hypothetical construct. This involves examining the reliabilities of the indicators, the latent variables, internal consistency (Cronbach's alpha and composite reliability), construct validity (loadings and crossloadings, convergent validity (average variance extracted), and discriminant validity (Fornell-Larcker criterion and Heterotrait-Monotrait ratio). The loadings of all construct indicators should exceed the recommended value of 0.5 (Hair et al., 2013). Composite reliability was used in the PLS-SEM analysis instead of Cronbach's alpha to assess the consistency of the measurement items employed in this study. The composite reliability (CR) values indicated the extent of the representation of the construct indicators on the latent variables, ranging from 0.838 to 0.959, exceeding the recommended value of 0.7 (Hair et al., 2013). The AVE measured the variance captured by the construct indicators of the measurement error, ranging from 0.633 to 0.872, greater than 0.50 (Hair et al., 2013). Table 2 reveals that the measurement model has adequate construct validity as suggested by Hair et al. (2013).

Table 2 : Convergent Validity Assessment

<b>Construct</b>	<b>Measurement item</b>	<b>Loading</b>	<b>CR<sup>a</sup></b>	<b>AVE<sup>b</sup></b>
<b>Game Challenge</b>	GC1	0.933	0.953	0.872
	GC2	0.932		
	GC3	0.936		
<b>Game Design</b>	GD1	0.917	0.954	0.839
	GD2	0.929		
	GD3	0.911		
	GD4	0.907		
<b>Online Game Players' Loyalty</b>	OGL1	0.898	0.955	0.842
	OGL2	0.938		
	OGL3	0.943		
	OGL4	0.890		
<b>Price Factors</b>	PF1	0.843	0.838	0.633
	PF2	0.765		
	PF3	0.777		

Construct	Measurement item	Loading	CR <sup>a</sup>	AVE <sup>b</sup>
<b>Social Factors</b>	SF2	0.913	0.959	0.854
	SF3	0.924		
	SF4	0.932		
	SF1	0.927		

\*Note: CR<sup>a</sup> (Composite reliability)  $\frac{1}{4}$  (square of the summation of the factor loadings)/{(square of the summation of the factor loadings) + (square of the summation of the error variance)}.

AVE<sup>b</sup> (Average variance extracted)  $\frac{1}{4}$  (summation of the square of the factor loadings)/ {(summation of the square of the factor loadings) + (summation of the error variance)}.

## 4.2 The Structural Model

In PLS analysis, the explanatory power of a structural model is assessed by examining the structural paths and the R-square scores of the endogenous variable. Table 3 shows the results of the statistical significance of the path coefficients of the structural model which was determined using the bootstrap procedure with 5000 resamples, providing the t-values that enable the evaluation of the relationships of the statistical significance in the research model.

Based on the structural model analysis (see Fig. 1), all the hypotheses exhibited a p-value of less than 0.01 (see Table 3). The path coefficient between game challenge and players' loyalty was 5.296 ( $q < 0.01$ ); game design and players' loyalty was 3.285 ( $q < 0.01$ ), price factor and players' loyalty was 3.758 ( $q < 0.01$ ); and social factor and player loyalty was 2.490 ( $q < 0.01$ ) respectively. These findings supported H1, H2, H3, and H4. By and large, the R-square value of the full model explained 92.5 per cent of the variance in players' loyalty. Since the R-square value increased when additional predictor constructs were included, this study also looked at the adjusted R-square value, which controlled model complexity when comparing different model set-ups. Apparently, the adjusted R-square value for players' loyalty was 0.923, indicating the 92.3 per cent of the variance in player loyalty. The percentage was above 0.50 as suggested by Hair et al. (2017), thus indicating a substantial model.

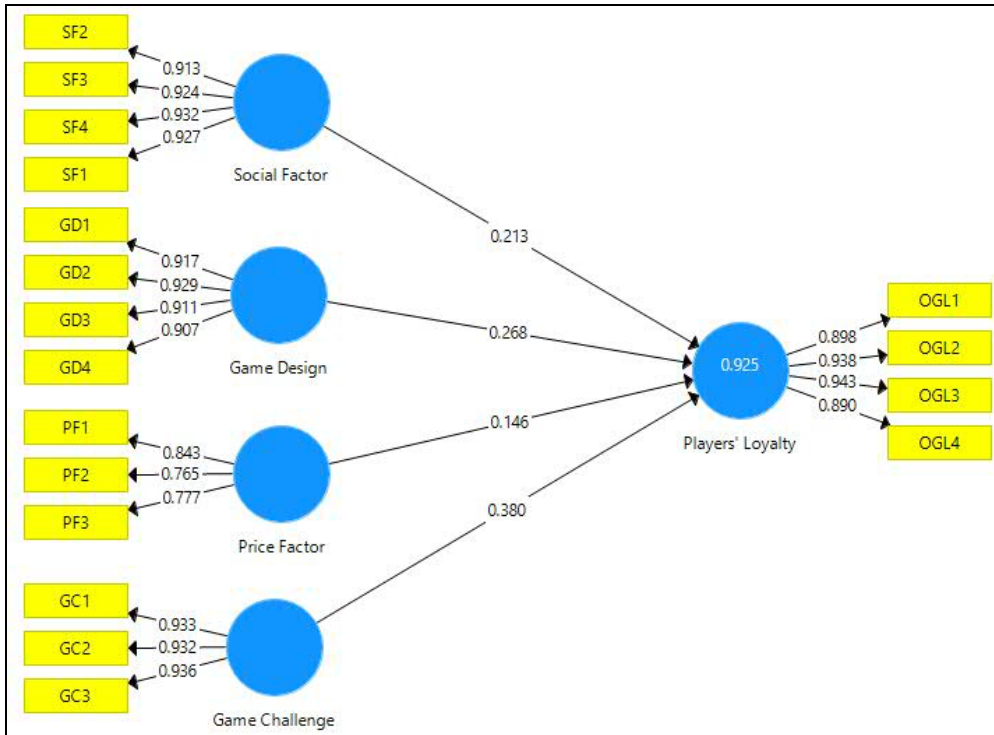


Figure 1 : The Structural Model

Table 3 : Hypotheses Testing

Hypo thesis	Path	Std. Beta	Std. Error	T value	LL	UL	Results
H1	Game Challenge -> Players' Loyalty	0.380	0.072	5.296**	0.233	0.519	Supported
H2	Game Design -> Players' Loyalty	0.268	0.081	3.285**	0.126	0.449	Supported
H3	Price Factor -> Players' Loyalty	0.146	0.039	3.758**	0.068	0.219	Supported
H3	Social Factor -> Players' Loyalty	0.213	0.086	2.490**	0.033	0.360	Supported

Note: \*\*p<0.01, \*p<0.05, Bootstrapping (n=5000)

## 5.0 Discussion

In today's modern world, games are no longer a child's play. Millennials, the first generation to grow up with access to the Internet, are now the main consumers of the huge online gaming industry. About four in five millennials or those aged between 23 and 26 play online games. Also, out of 1,200 millennials polled in 2018 by PUBLICUS Asia

Inc., 81.6 per cent said they played online games while only 18.4 per cent said otherwise (Staff Report, 2019). With myriads of platforms and devices available today, online games are more accessible than ever. The arrival of smartphones brought online gaming to a whole new level propelling it into a multi-million-dollar industry within the last few years. Therefore, it is proven to be lucrative for every game developer to identify the factors that will affect gamer loyalty towards the online games by capturing and sustaining the interest and loyalty of these young users.

Results from a detailed and robust analysis of the data provide evidence that the four factors hypothesised in this study: social factors (H1), game challenge (H2), price factors (H3), and game design (H4), have a positive relationship to online game loyalty. From the data presented in Table 3, the independent variables are the determinants that affect online game loyalty among millennials. According to the testing of the hypothesis, it is accepted when a p-value is less than 0.05 or  $p < 0.05$ . However, it will be rejected if the p-value is more than 0.05 or  $p > 0.05$ . Based on table 3, it is clear that the p-values of social factors, game challenges, price factors, and game design were 0.002, 0.000, 0.000, and 0.000 respectively, signifying a positive relationship between the dependent variables and online game loyalty.

The first determinant that is proven to affect online gamer loyalty is social factors (H1). According to Kim (2017), social interaction is one of the important factors that increases online game loyalty. This is because the more frequent a gamer interacts with others in online games, the higher the quality of the user's flow experience and online game loyalty (Su et al., 2016). In this case, when a gamer plays and interacts with other players in an online game, they socialise and make new friends who share the same interest. This motivates them to play online games for a longer time, thus increasing and maintaining online game loyalty. Based on Blinka and Mikuska (2014), the positive relationship between the in-game friends and the amount of time gamers are willing to invest in the game increases their loyalty to online games. Moreover, when online gamers play games and are connected with their friends, they may be willing to stay on the game for a longer time even though they may need to pay for them (Hsiao & Chen, 2016). When they quit or switch to other online games, they will lose the friends they have connected with within an online game. Therefore, the more game developers look into building opportunities and avenues for

social interactions within a game, the better their chances of retaining gamer online loyalty.

Another determinant that shows a positive relationship to online game loyalty is game challenges (H2). Based on Su et al. (2016), gaming skills and challenges built into a game are the main factors that affect online gamers' emotional and flow experience. Game challenges are the tasks that should appeal to and motivate gamers to continue playing a game. If they find a game lacks challenging tasks, they think it is a waste of time and effort and would thus abort the game. According to Porter and Goolkasian (2019), online game players will feel anxious and dissatisfied when their game skills do not match the challenges, they encounter at every game level. If the tasks are too simple for them, they would soon lose interest in the game. Thus, game developers need to investigate the progression development of online games to retain customers' interest and loyalty throughout the entire game. This is because when players find it challenging, they will keep trying to achieve the goals set at every level, while honing their skills needed for the next level. The relationship between game challenge and game loyalty is strengthened because they are willing to sacrifice their time and effort for the online games (Teng, 2013). Thus, a high and attainable challenge in an online game can make online gamers spend more time on the games and maintain their loyalty.

Besides that, the price factors (H3) can also positively affect online game loyalty among millennials. They will only pay reasonable prices to make purchases in the online games, but the products they purchase must worth their values. Online game loyalty refers to customers willing to pay more for the brands or products because of the unique values that cannot be found in other games, particularly when no alternative is provided. Thus, game developers should produce unique items that are distinct from others and set reasonable prices to increase online gamer loyalty. In an online game, interactions with other players can also increase the connectedness of the games and may enhance the perception of a reasonable price and intention to pay (Hsiao & Chen, 2016). This proves that the consumers are willing to pay for online game products when they feel the games are worth it. Furthermore, in an online game, the perception of price can increase when interacting with others because it will make the games more fun (Wei & Lu, 2014). Thus, the higher the value of the products created in the online games, the more the likelihood of retaining online game loyalty among gamers. According to Yoo (2015), the monetary value of

a product can create a positive effect on gamer intention of the online game and increase their game loyalty.

The last independent variable that affects online game loyalty is the game design (H4). Gamers usually analyse the game design before purchasing an online game to play. A well-designed online game can attract gamers to play and retain them. In this case, game developers must produce high-quality online games with appealing and exciting game designs to attract customers and maintain loyalty. This is because a game design will influence the intention of the customers to play online games. Aesthetic designs consist of the overall attractiveness, layout, and colours of an online game to attract the online gamers to immerse themselves in the game environment (Merikivi, Tuunainen & Nguyen, 2016). If the design of the story matches their interest, their motivation and intention to play the games will increase (Nicholson, 2015). Furthermore, based on Sailer, Hense, Mayr, and Mandl (2017), a game design can influence gamers' intention to start playing online games as well as retain their loyalty. Thus, the higher the quality of the game designs, the greater the online game customer loyalty.

This research provides valuable information for online game developers by showing the factors influencing online game loyalty. Throughout this study, several implications have been discovered regarding online game loyalty to help online game developers increase customer loyalty to online games. Undoubtedly, by improving the variables, which are social factors, game challenge, price factors, and game design, game developers can create online games that expand their sales and revenues.

This study reveals that an online game's strong social factors might be a crucial consideration for online game developers looking to boost consumer loyalty. Based on this research, online game developers can produce online games that are more interactive to attract customers and maintain their online game loyalty. For example, a party with other players in a game to complete a task will make the players build relationships with other players.

Furthermore, game developers should increase the game challenge to retain online gamers. If a game is too easy to reach its goal, online game players will complete the goal within a short time and quit the game. To maintain customer loyalty, game developers should increase the game challenge. Thus, players of the online games would

use longer time to achieve the goal of the game and increase their interests.

Moreover, game developers should set a reasonable price for customers and make their products different from their competitors. Customers will not pay unreasonable prices and they prefer to purchase products that are unique and distinct. When online game players feel that the price is reasonable and worth it, they will purchase the game, which will increase the game's profits. The game developers should also have promotions or offer to increase the gamers' purchase intention.

Finally, game developers also need to create game designs that are of high quality. This is because the game design can influence gamers' intentions and online game loyalty. A well-designed online game can attract gamers to play and retain them. For example, meaningful stories are a game design element that do not relate to a player's performance. However, some players play an online game because of its meaningful storylines and they do not care about their game performance (Kapp, 2012).

## **6.0 Conclusion**

In conclusion, the results of the research indicate that social factors: (H1), game challenge (H2), price factors (H3), and game design (H4), are the determinants that affect customer online game loyalty. Therefore, game developers need to consider all these factors to create a competitive edge in this multi-million-dollar industry. Customer loyalty is an important factor in ensuring the success and survival of a gaming company. Thus, it is vital to understand the factors that can help retain and sustain online gamer loyalty in the industry. Therefore, this study provides information for those who want to investigate the factors influencing customer loyalty in the online game industry.

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