Research Article

Which Gating System Can Prevent Addiction to Online Games?

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The online game industry has increased time by time. Because of that, many addiction cases emerge in humans. In addition, some factors could make people addicted and mitigate or prevent the addiction. However, this addiction has already created some problems, such as skipping school (mild cases) to murder cases (huge cases). A gating system is a system that could prevent players from experiencing some content in the game after a specific limit has been reached. This study is aimed at identifying which gating systems in online games could make players more addicted and which systems are the most appropriate to mitigate or prevent addiction to online games. The study is done with a survey from online game communities with 458 samples in Indonesia. The result of the study shows that resource is the factor that affects addiction, and the stamina gating system is the one that affects resource as mitigation of addiction. This research shows that the stamina gating system will affect how players manage their resources in real life so that they will not be addicted to the game.

1. Introduction

The mobile game industry has been developing for more than a decade globally. One of the global targets is Indonesia, one of the biggest game markets. Since the pandemic began, Indonesia’s players have increased twice as much because many people seek entertainment to kill their time [1, 2]. However, behind those fun entertainments, we could face some losses from playing games. People play the game longer than usual and more than it should be. Thus, pandemic situation creates addiction on gaming. Due to addiction, some cases could cause some losses due to the addiction. Some of the cases are mild, and some of the cases are huge [3], such as skipping school [4], money thief [5], or even massive crimes like burning a house [6]. This proved that addiction of playing game is causing bad impact on society.

To prevent such a thing, there needs to be a certain system inside the game that could prevent the players from having an addiction to the game without disrupting the business. This is called gating system. A gating system is a certain limitation that prevents the players from doing certain activities inside the game. Based on past research [7], with holistic approach to determine which system are the most popular among gating system existed [8], there are four gating systems that are more popular between others. They are stamina, where the players cannot do some activities when the stamina reaches zero; time-gate, where the players cannot do some activities when the time does not arrive yet; chapter gate, where the players cannot do certain activities when the stories have not been completed yet; and luck-based, where the players cannot get their items without luck [7, 9]. These gating systems, where the game developers could make the players become less addicted, are the keys to preventing addiction from the inside. This study proposes that gating systems could prevent gaming addiction from the product itself.

The aim of this study is to identify which gating system that could make players become more addicted to the game and which gating system could prevent the players become less addicted to the game [7] based on the two addiction factors [10, 11].

To make our measurement, first, we did 12 interviews with online game representatives. After that, the measurement is developed and utilizes five scales. In order to test...
our model, we conducted a survey of online game communities on some social media (Facebook and Discord). Second, using that scale, 468 samples of Indonesian online game players were collected and input into partial least square (PLS) analysis. The result shows that some gating systems might affect players to become more addicted or less addicted, and it also explains that there is a difference in time for addiction factors (both motivation and mitigation).

The organization of this paper is as follows. Literature Review reviews some literature about the general of online games, gating system, general user behavior, online game addiction, and hypothesis development in this research. Method describes how we developed the survey and how we gathered the data. Analysis and Result provides information about the findings of this research. Discussion summarizes the result with the theoretical implication and practical implications and acknowledges limitations while providing information about future studies. Appendix provides information in detail regarding data and instruments.

2. Literature Review

2.1. Online Game. Gamers are considered one main point in the online game industry. Usually, gamers are divided into three types depending on how long they play the game [2].

(1) Committed Gamer. A player that often plays games. Usually, the players play more than one game. These players tend to use most of their time playing games. Sometimes they play purely just for fun, and sometimes they play the game seriously until they become pro players

(2) Regular Gamer. A player that plays games according to the situation they have. Usually, they play once a week, depending on their situation

(3) Occasional Gamer. A player that rarely plays the game. They play the game once a month and only play the game purely for fun

Furthermore, the main reason why people play games is mostly for entertainment and relaxation [1]. This has proven the previous research that entertainment and relaxation elements could create addiction like cocaine does to humans [12–14].

A game developer is one of the most important roles in the online game industry. The developer is the main source where systems inside the game are created [15]. In online game production, especially in the online game ecosystem, the system part is in the production stage, which is the first stage of game development [16]. The production stage consists of the creation of the game, using the existing engine, adding some systems, doing the marketing strategy, dealing with publishers, creating the application of the game, and voicing via the studio.

The next stage of developing a game is about the distribution of the game. This is a stage where the game is already built and tested. So, the developer’s job is to focus on the distribution of the game, which involves the player’s data, the billing vendors, the server (Internet), and the sensors if any. And finally, as shown in Figure 1, the developer creates interaction between the end user (players) and the company, usually in the form of digital, such as client, device, or hardware/cloud system.

2.2. Gating System. A gating system is a certain system inside a game that could prevent the players from doing some activities when the features are being gated. Gating system becomes popular day by day in the online game industry [7]. The systems that are popular today are the following:

(1) Time-gate: some features are locked when the time that has been set by developers has not arrived yet. Sometimes, the time that has been set can be bypassed through another feature inside the game [7]. Time is an important concept when playing games that could be motivated or disrupted by tangible things. It shows that time inside the game is a matter that could make players become more addicted or could prevent/mitigate the addiction [17]. Meaning, it also shows that the time factor inside the game could whether drive addiction or prevent/mitigate the addiction element inside the game. Motivation factors are either the player’s want to master everything in the game or the need to become related to other people in the community. At the same time, the prevention factors are either people being educated by external parties or having the resources (such as perceived cost, application management, or device management) being monitored [10]. Hence, the following are hypothesized:

(2) Stamina: some features are locked when the stamina gauge reaches zero. Stamina is one of the gating systems that could gate players to access a certain extent of content inside a game. It is a concept that gives players a limitation in the form of a gauge or number to limit the player’s action when it reaches zero [7]. Even so, many games that have implemented a stamina gating system in their game, besides mitigating or preventing addiction in their game, could also drive more addiction to the game. Games such as Genshin Impact and Arknights have a feature that players can buy stamina so they can do more content in the game. Thus, it could also drive more addiction to the game. This also supports both addiction motivation and mitigation factors [10]. Hence, the following are hypothesized:

(3) Chapter gate: some features are locked when the players have not finished a certain story in the game. Chapter gate is one of the gating systems that could limit the player’s action to play some content in the game. The limitation is story based. So when the players have not finished their story, they cannot
access some features in the game [7]. A story inside a
game is one product that has been a favorite for
many players. Thus, it has been discovered that the
story component in the game excites some players
to some extent that they want to play longer for the
stories provided [18]. Thus, it is known that chapter
gate is a gating system that could drive players to
become more addicted to the game or mitigate/pre-
vent the addiction to the game. Hence, the following
are hypothesized:

(4) Luck-based (gacha): some features are locked behind
the luck-based category. So when the players are not
lucky, those players cannot unlock certain content in
the game (such as character or weapon). Gacha is a
certain gating system that is based on luck. So when
players have no luck, they cannot access some con-
tent in the game. Usually, this luck-based is imple-
mented in the form of items or characters. Mostly
luck-based gating system is implemented in free-to-
play games, where their main source of income is
from this gating system. So players tend to use their
resources in the game in order to do the gacha [19].
Thus, people might become addicted to the game
even further because they are not lucky enough. So
they want to play more or even spend more in order
to get more resources for gacha. Alternatively, people
might become less addicted to the game because they
are not lucky enough and become lazy to play.
Hence, the following are hypothesized:

**Hypothesis 1.** Time-gate system could give the motivation to
be more addicted to the game through the mastery concept.

**Hypothesis 2.** Time-gate system could give the motivation to
be more addicted to the game through relationships.

**Hypothesis 3.** Time-gate system could mitigate or prevent
addiction through education about the gating system.

**Hypothesis 4.** Time-gate system could mitigate or prevent
addiction through the limitation of the resource.

**Hypothesis 5.** The stamina system could give the motivation
to be more addicted to the game through the mastery
custom.

**Hypothesis 6.** The stamina system could give the motivation
to be more addicted to the game through relationships.

**Hypothesis 7.** The stamina system could mitigate or prevent
addiction through education about the gating system.

**Hypothesis 8.** The stamina system could mitigate or prevent
addiction through the limitation of the resource.

**Hypothesis 9.** The chapter gate system could give the motiva-
tion to be more addicted to the game through the mastery
concept.

**Hypothesis 10.** The chapter gate system could give the moti-
tivation to be more addicted to the game through relationships.

**Hypothesis 11.** The chapter gate system could mitigate or
prevent addiction through education about the gating
system.

**Hypothesis 12.** The chapter gate system could mitigate or
prevent addiction through the limitation of the resource.

**Hypothesis 13.** Gacha system could give the motivation to
be more addicted to the game through the mastery concept.

**Hypothesis 14.** Gacha system could give the motivation to
be more addicted to the game through relationships.

**Hypothesis 15.** Gacha system could mitigate or prevent
addiction through education about the gating system.

**Hypothesis 16.** Gacha system could mitigate or prevent
addiction through the limitation of the resource.
2.3. User Behavior. In the development of system information, one of the most important things that need to be noticed is user behavior [20]. The ease to access any information, including in a gaming environment, such as watching live streams or playing the game itself. Because of that, there is a negative impact that could make humans become addicted when they have easy access to something they like [21]. However, this negative impact could be prevented or at least mitigated by certain factors. Besides being prevented or mitigated, this negative impact also could be driven even further by some factors [10].

Mostly, teenagers are the ones who easily become addicted to online games [22]. This is caused by the ease of accessing the information [21]. Thus, that creates the feeling of having less motivation to do education, using most of the productive time to play games, having low grades, or even having sleep disturbance. So the players will think that when they play online games, they feel more rewarded than in real life, having more pride from the game, and thinking that rewards inside the online game are better than in real life [20, 23–25].

2.4. Addiction. Addiction is divided into two factors: the factors that could mitigate or prevent the addiction itself and the factors that could drive addiction [10, 11]. The factors that could mitigate or prevent addiction are as follows:

Education: people are less addicted to online games because they are being educated about gaming addiction. Usually, this is done by parents or school instances

Resource limitation: when people do not have a particular resource even to play the game itself, they tend not to have an addiction to the game.

The factors that could drive addiction even further are as follows:

Mastery: Sometimes the player wants to be a master in the game, either they want the power, the prestige, knowing all the lore, or just getting wealthy inside the game. This could drive people to become more addicted because they tend to play longer than they should in order to master the skill in the game.

Relationship: player tends to seek a certain relationship with other players in the game so they can bypass certain activities that have been locked by the gating system. Furthermore, relationship terms also cover actual relationships, like becoming friends or a girl/boyfriend.

A study found that mastery and relationship factors can actually make players become addicted to the game in China. This means the study showed that players become more addicted to the game because they want to master a particular skill inside the game. And also, the players become more addicted because they want to socialize more inside the game [10]. While in Indonesia, the study found that instead of both mastery and relationship that could drive players into addiction, it is only the relationship factor that drives players to become addicted to the game [11]. It shows that relationship is one of the most affected factors that could drive addiction when playing an online game. Meanwhile, in China, the resource factor is the one that could mitigate or prevent addiction when playing online games [10], and in Indonesia, the education factor is the one that could mitigate or prevent addiction when playing online games [11]. Thus, this shows that those two factors could possibly prevent or at least mitigate the addiction element when people play online games.

Based on the gating system we have seen, it shows that the gating system could not make players retain the game they played before. But, it also could make the players play longer or spend more than they should have [7]. Meanwhile, addiction also has two factors that could make players become more addicted to the game and mitigate the addiction to the game [10, 11]. Thus, these two pieces of research could be combined, where the gating system might affect the addiction of the players who play online games. So gating system could either make the players become more addicted to the game or mitigate/prevent the addiction.

A gating system could become a system that prevents players from becoming addicted to the game from the product (game) itself [7]. In the current pandemic situation, people tend to play the game longer because of the government rules to prevent COVID-19 spread [2, 26].

Hence, the following are hypothesized:

Hypothesis 17. Mastering everything inside the online game could drive addiction to the players.

Hypothesis 18. Relationship elements could drive addiction to the players.

Hypothesis 19. With education, players could have less addiction or prevent addiction when playing online games.

Hypothesis 20. Scarcity of resources (such as money, device, or Internet connection) could make players become less addicted or even prevent addiction when playing online games.

Based on those hypotheses, Figure 2 shows the constructed research model in this study. The model is based on Xu’s research about addiction factors combined with gating systems. So, in this model, the four gating systems (chapter gate, time-gate, stamina, and gacha/luck-based) are hypothesized to affect the addiction factors (mastery, relationship, education, and resources), while the addiction variables are hypothesized to affect addiction variable.

In terms of online gaming addiction, it is really complex on the psychological side. The previous research is focused on the psychological side of the addiction to online gaming [9, 15, 16, 20, 23], while only one research did study the gating system, and it was studying customer retention [7]. This study proposes a combination of both types. So, game developers can optimize the best gating system to identify which gating system that drives players to become more addicted to the game and which system mitigates addiction from the game itself.
3. Methodology

3.1. Indicator Measurement. This study method is partial least square structural equation modelling (PLS-SEM) [27, 28]. The gating system’s indicators are developed through interviews with the triangulation method [29]. Table 1 shows the factors and variables which are adopted through previous studies [10, 11].

3.2. Data Gathering. The sample number of this research is 468 samples, above the minimum threshold of Israel’s theory and Slovin’s formula [28]. The data were gathered through an online survey on Facebook and Discord platforms. A random sampling technique and 5 Likert scale measurements are being used for this research [30].

3.3. Data Clarity. The data were gathered from different demography. From the age of the samples, majority who participate the survey are around 21-30 years old and live in West Java. This shows that the majority of online gamers in Indonesia are teenagers and live around West Java. For gating system questionnaire, first, the author did a small interview to build the survey questions. The author questioned some gamers in Indonesia who played online games that at least have certain gating system. And finally, the author matched the interview answers on previous research [7]. While the addiction part, the questionnaire questions are based on previous research as well [10, 11].

3.4. Validity Test. Data results are considered valid to be used for research when the data meets certain criteria [31]. Some indicators are being deleted because the result shows that they are invalid. Table 2 shows the average variance extracted (EVA) value for every variable. The variable is considered valid when the EVA value is more than 0.5. Two additional indicators that have the lowest value for each variable were deleted because it was invalid. For discriminant validity, another criterion that needs to be fulfilled in order to make sure a variable is valid is to observe the cross-loading result. The cross-loading value needs to be more than the constructed value in order to be considered a valid variable. Table 3 shows the result of cross-loading.

3.5. Reliability Test. For reliability testing, we are observing the value of Cronbach’s alpha and composite reliability value. The variable that has more than 0.5 on both indicators can be considered reliable [28]. In this study, all variables are considered reliable because both results are more than 0.5, as shown in Table 4.

3.6. Result and Discussion. Table 5 shows the results of the hypotheses tested in this study. It shows the path for each variable and the P value and the hypothesis decision. Meanwhile, Table 6 shows the $R^2$ -squared result for addiction factor variables and addiction variables.

3.7. Theoretical Implication. This research proposed a deeper analysis of the new online game addiction model that could drive players to become more addicted or mitigate/prevent players from becoming addicted through the in-game system that can lock players to a certain extent (gated). With those two topics combined, this study could make game development become closer to CSR strategy [20] in the future. Additionally, this study also shows that addiction is not only from external sources (outside the game). But addiction can also be raised from inside the game itself, even though it was intended to mitigate addiction. So instead of doing the correct CSR strategy, it will increase players’ addiction.

Furthermore, this study also contributes to previous findings, where in Indonesia, the need to master everything in the game would drive players to become addicted to the game [11], and a chapter gate system could make people have longer play time [7]. This study finds that both factors are not making players become addicted to the game. Instead, what players have, and a stamina gating system is a key to mitigating or preventing the players from becoming addicted. The context of this resource factor is all about what players have. So when the player does not even have enough resources, such as the Internet or proper device, to play the online game, they will not be addicted to the game. Additionally, even though they barely have enough resources to play the game, their gameplay usually is locked from stamina gating system.
For future studies, additional factors (for both motivation/drivers and mitigation/prevention) to addiction and gating systems could be done. Because when game developer focuses on a gating system, sometimes it could ruin their game when the developer has the wrong strategy. Sometimes, it will make the players become bored and have lower customer (player) retention. Some additional gating systems that need to be developed might be useful for future studies. It is recommended to focus on the mastery variable and education variable for future studies regarding addiction factors because the addiction factors may vary at different times. This study’s findings, relationships, education, and resource have different results than in previous studies (Chandra, 2014). Thus, future studies need to keep researching this kind of topic.

### 3.8. Practical Implication

Our findings could provide a certain solution to online gaming addiction, where the solution for Indonesia’s online gaming addiction problem is inside the game itself. First of all, even though Indonesia is one of the biggest online game markets in the world, Indonesia tends to have a lower capability for high-end devices. Second, even though Indonesia’s players tend to master some games to a certain extent, they will not be so addicted that it will negatively affect their lives. So when we are focusing on mitigation or prevention of addiction factors, we need to focus on Indonesia’s resources on device or Internet capability. This could be done by a certain degree of budgeting for devices or the Internet for children. For instance, the parent should increase the perceived cost of playing online games, such as controlling their allowance, monitoring the online payment, monitoring the device uses, or limiting the usage of the Internet from children’s devices with a certain application.

While from a game developer’s perspective, to do a CSR strategy (mitigate or prevent addiction to their product) without ruining their business, they need to build a proper stamina system that could gate the player based on their resources. Usually, game developers tend to add additional purchases to the stamina system they implement into the game. To further mitigate or prevent addiction to their product, they need to increase the perceived cost of refilling the stamina system. So, when the player wants to play longer, they tend to think more. Instead, the game developer should...
find another way to develop their game so the player will not
tend to get bored so easily when they run out of stamina. Like this
study’s findings, the developer could develop certain multi-
player content to keep the player in touch with their
product.

3.9. Limitation. Some limitations should be acknowledged
for this paper. First, this research is done by adopting some
of the addiction factors (for both motivation and mitigation)
and only some relevant gating systems that are being used
[7, 10, 11]. So, additional factors for addiction and additional
systems for gating systems should be considered for future
studies, such as gamer’s psychology, gaming business, and
gating system for future games.

Second, this study is also being done in Indonesia.
Meaning, it only covers one country. So to increase the gen-
eralizability, future studies could start research on other dif-
ferent countries.

Third, even though in our findings, some gating systems
are not making players become addicted, game developers
should stay in touch and keep having CSR strategies for their
customer’s health (mentally and financially). Different
research methods and theories could have different results
for gaming addiction based on the gating system.

<table>
<thead>
<tr>
<th>Table 3: Cross-loading.</th>
<th>Cross-loading value</th>
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<tbody>
<tr>
<td>CG 2</td>
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</tr>
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<td>CG 3</td>
<td>0.719</td>
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<tr>
<td>CG 5</td>
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<tr>
<th>Table 4: Reliability test.</th>
<th>Cronbach’s alpha</th>
<th>Composite reliability</th>
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<tbody>
<tr>
<td>Chapter gate</td>
<td>0.734</td>
<td>0.848</td>
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<tr>
<td>Time-gate</td>
<td>0.644</td>
<td>0.664</td>
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<tr>
<td>Stamina</td>
<td>0.793</td>
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<td>Gacha</td>
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<table>
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<tr>
<th>Table 5: Hypothesis testing.</th>
<th>P value</th>
<th>Result</th>
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<tr>
<td>Time-gate → mastery (Hypothesis 1)</td>
<td>0.003*</td>
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<tr>
<td>Time-gate → relationship (Hypothesis 2)</td>
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<td>Time-gate → education (Hypothesis 3)</td>
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<tr>
<td>Time-gate → resource (Hypothesis 4)</td>
<td>0.626**</td>
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<td>Stamina → mastery (Hypothesis 5)</td>
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<tr>
<td>Stamina → relationship (Hypothesis 6)</td>
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<td>Stamina → education (Hypothesis 7)</td>
<td>0.031*</td>
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<td>Stamina → resource (Hypothesis 8)</td>
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<td>Chapter gate → mastery (Hypothesis 9)</td>
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<td>Chapter gate → relationship (Hypothesis 10)</td>
<td>0.007*</td>
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<tr>
<td>Time-gate → education (Hypothesis 11)</td>
<td>0.812**</td>
<td>Rejected</td>
</tr>
<tr>
<td>Gacha → mastery (Hypothesis 12)</td>
<td>0.000*</td>
<td>Accepted</td>
</tr>
<tr>
<td>Gacha → relationship (Hypothesis 13)</td>
<td>0.000*</td>
<td>Accepted</td>
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<td>Gacha → education (Hypothesis 14)</td>
<td>0.001*</td>
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<td>Gacha → resource (Hypothesis 15)</td>
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<td>Mastery → addiction (Hypothesis 16)</td>
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<tr>
<td>Resource → addiction (Hypothesis 19)</td>
<td>0.000*</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

* P value < 0.05. ** P value > 0.05.

<table>
<thead>
<tr>
<th>Table 6: R-squared value.</th>
<th>R square</th>
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</thead>
<tbody>
<tr>
<td>Addiction</td>
<td>0.106</td>
</tr>
<tr>
<td>Education</td>
<td>0.080</td>
</tr>
<tr>
<td>Mastery</td>
<td>0.333</td>
</tr>
<tr>
<td>Relationship</td>
<td>0.135</td>
</tr>
<tr>
<td>Resource</td>
<td>0.035</td>
</tr>
</tbody>
</table>

3.9. Limitation. Some limitations should be acknowledged
for this paper. First, this research is done by adopting some
of the addiction factors (for both motivation and mitigation)
and only some relevant gating systems that are being used
[7, 10, 11]. So, additional factors for addiction and additional
systems for gating systems should be considered for future
studies, such as gamer’s psychology, gaming business, and
gating system for future games.

Second, this study is also being done in Indonesia.
Meaning, it only covers one country. So to increase the gen-
eralizability, future studies could start research on other dif-
ferent countries.

Third, even though in our findings, some gating systems
are not making players become addicted, game developers
should stay in touch and keep having CSR strategies for their
customer’s health (mentally and financially). Different
research methods and theories could have different results
for gaming addiction based on the gating system.
Finally, even though education is not making players become less addicted based on our findings, caution needs to be exercised. Education can be one of the foundations to keep people become addicted to certain things, including online games. Future study also needs to focus on education for the gating system in the game to keep game developers doing CSR and keep having profits.

3.10. Implementation Cost. This proposed research has cost around $34 for giveaway reward to five random people after they finished filling the questionnaire. For the implementation cost of this proposed research result, it may vary. Especially when we are talking about opportunity cost for player’s purchase when they ran out of stamina (game developer’s perspective), the behavior of government towards gaming industry and the effect of addiction, and finally, about the application that can help to mitigate gaming addiction, some developers also could develop a certain application. This will be discussed in future research.

4. Conclusion

This study proposed that with a gating system, people could not become addicted to the game. The key finding is to monitor the player’s resources so the players will not become addicted to the game, such as monitoring Internet usage, budgeting the allowance or learning about budgeting, increasing the perceived cost of the game’s product, and monitoring device usage. Given the huge growth of the online game industry, more future studies about gaming addiction and gating systems are needed.

Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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