

How Gacha Games Developers Make Players Spend more Money: Insights from Indonesian University Students

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Abstract. In this era of gaming, Gacha dominated the market. These "free-to-play" games are made with a lottery-pool system, in which Players spend in game currency to obtain the items they desire. Genshin Impact and Mobile Legends are two of the richest games by revenue from gacha. Their gacha design is considerably strong, persuading Players to spend more for the main prize on the pool. The main goal for this research is understanding how gacha works, and the unthinkable strategies behind it. This research is done by analyzing data and patterns for gacha activities in games, then analyzing the development strategies of gachas. Then we can understand the strategy is as simple as using urgency - a now or never chance to push people to spend more, or gain nothing by passing the gacha opportunity. This research aims to build a clear insight on how to build a strategy to maximize the effectiveness of gacha as a source of income for gaming developers.

Keywords: Gacha, game, develop, spend, in-game currency.

INTRODUCTION

Gacha games are a type of gaming that uses a randomized reward system inspired by capsule toy vending machines in Japan, where players spend money or in-game currency for a chance to obtain various prizes. This concept has become central to the business model of many mobile games, making them both highly popular and profitable. Gacha mechanics appeal to players' desire to collect unique characters or items, often leveraging limited-time events and exclusive rewards to keep them engaged (Kesuma & Elfindah, 2024). This paper explores the origins, evolution, and psychological appeal of gacha games, with a focus on how these games have become financially successful by encouraging repetitive play through a carefully crafted design.

The history of gacha dates back to Japan in the early 1960s, when the first capsule toy machines were introduced by companies like Bandai. Known as "Gachapon," these machines derived their name from the Japanese sounds "gacha" (the turn of the handle) and "pon" (the capsule dropping). Initially, players were drawn to the thrill of collecting random toys, and this excitement drove them to keep trying for new items to complete their sets (Kesuma & Elfindah, 2024). Gachapon machines are still common in Japan, offering small collectibles that people enjoy hunting for even today.

Gacha mechanics entered the gaming industry around 2011 through Japanese mobile games, quickly becoming a significant part of the market. Gacha games differ slightly in execution, but they generally involve obtaining characters, cards, or other in-game items through randomized draws. Many games link these draws to limited-time events, which adds urgency and promotes in-game purchases as players feel compelled to act quickly. These purchases, or "pulls," align with the broader

rise of free-to-play games, where players are not required to buy the game outright but are encouraged to spend money on optional items (Rentia et al., 2022; Zahraputeri & Kusdiby, 2021). This free-to-play structure has given rise to a sense of competitiveness, as players often seek rare items to stay ahead of others in the game (Wohn & Freeman, 2019).

The appeal of gacha games lies in the combination of chance and reward, where players spend currency to pull from a prize pool of items that vary in rarity. For example, in *Genshin Impact*, items are categorized by star ratings, with 1-star items being the most common and 5-star items being the rarest. Players often seek out these high-value items, which can include skins, characters, and exclusive weapons. The uncertainty of winning creates excitement, and obtaining rare items can feel like a major accomplishment. Yet, this reward system is also inherently addictive. Gacha mechanics tap into the dopamine responses in players' brains, reinforcing the urge to keep playing to capture that next "high" of obtaining a desired item (Almodovar Alegria, 2022). Limited-time events, daily logins, and exclusive rewards further drive players, leveraging the "fear of missing out" (FOMO) to push them into spending more time and money within the game (Lakić et al., 2023).

Rolling in gacha games is a game of chance; if players want specific items or characters, they often invest more time and money. This random aspect heightens the brain's reaction when they succeed, leading to a potential gambling addiction. Gacha games frequently introduce limited-time events and rewards, further intensifying the pressure to play and spend. This urgency, driven by the fear of missing out, encourages players to invest more resources to chase that rewarding dopamine rush. When players roll for items, they can progress in the game, and achieving these goals releases dopamine, creating a pleasurable association with rolling.

Gacha games masterfully combine human psychology and game design to create an addictive experience. Addiction itself is a medical disorder, defined as a chronic, relapsing disorder in which individuals seek out their object of addiction, even in despite of serious consequences, whether it be to themselves or others around them (NIDA, 2011). Every pull offers a tiny chance of a desired result, which encourages actions that keep players interested and frequently investing money. As players purchase more in-game currency to stay competitive, developers benefit from a consistent flow of income, while players must commit more resources to improve their chances. This research aims to understand the causes and factors that encourage players to spend more money on gacha. It will also address the challenges presented by the varying behaviours of individual players, connected to the release of dopamine in their brains. To effectively analyze these differences, a mixed-method approach combining quantitative analysis and open questions will be employed to extract meaningful insights from the results.

As previously stated, gacha is connected strongly with human's body behaviour. Every single player has their own version for this kind of behaviour, even some Players in a very exact same gacha situation has their own version of experience regarding this behaviour. These differences in one very person, are connected to the release of dopamine and the reaction happened because of it. As this difference occurs, research faces some challenge. To counter and handle this, a special method needs to be used, combining quantitative method using open questions and data analysis to successfully extract every ounce of information stored within each part of the results.

METHODS

The method used in this research is quantitative method, with the process included data collection and analysis. The particular reason of using this method is to reach wider target of Respondents. The survey was done using "Google Forms" to make data collection and processing easy. In the process, 36 Respondents were successfully submitted their answers. In order to improve the accuracy of submitted answers, only relevant answers were counted. Any answer that indicates irrelevancy or invalidity will be skipped and were not counted as results. The result was all 36 answers were valid and is able to be analysed. The survey was published on Discord server, Telegram gaming community, and other gaming communities in various platforms. Only members of these servers were interviewed, meaning that all of the Respondents is actively or at least have played one gacha game. It was published on the 23rd of Oktober 2024, and the survey remained open for 48 hours. After those 2 days, there were enough participants to conduct the study.

The form used for this research contained a number of questions categorized with segments. Forms were split into three parts of the questions: General identity (without very personal information), scaling questions, and open filled-answers questions. Special for scaling, researches use two types of scale. First, Liker-5 scale is used. The concept for this scale is Participants are asked to show their level of agreement (from strongly disagree to strongly agree) with the given statement (items) on a metric scale (Joshi, Chandel, & Pal, 2015), 1 to 5 for this case. For other questions, common conditional scaling based for specifically described questions that is considered ineffective using Likert-5 Scale. Principal for this scale is identical with Likert scales, just with modification to suit best for the given answer. First segment is use to understand the common background information of each respondent. Second segment is questions with scale from lowest-to-highest ratio to conclude a rating for how intense the respondent behaviour for each question. The third and the last segment is an open filled-answers designed to catch the Respondents' opinion. In addition, some questions were designed to make impossible for a respondent to fill with more than one answer.

This research is using quantitative method by data-analysing the collected answers trough a form-styled open interview. The participants are Players who play games with gachas, actively and routinely using in game currencies form drawing gachas. The interview is written and shared using forms. Participants will be required to fill a number of questions, designed to indicate their behaviour about gacha, roulette, lottery, and other similar type of activities. Analysis is done by analysing the answer, one per one. Then, the pattern and any identical answer will be considered as factors. Finally, the results of this research will be based on these analyses.

Result and Discussion

Submitted answers indicated a lot of information. First, analysis is done by analysing each answer submitted for each question. For the first segments, Respondents were asked about what games with gachas that they have played. Still on the first segment on the next question, Respondents' ages were asked in a multiple choice containing ranged answers. The results for this segment were as follows. As shown in Table 1 below, note that each of Respondents could write more than one games, since it is very possible that one respondent plays more than one game with gachas.

Table 1: Games with gachas played by Respondents.

Games	Number of Respondents
Genshin Impact	7
Mobile Legends: Bang-Bang	9
CS: GO	1
Zenless Zone Zero	7
PUBG and PUBGM	3
War Thunder	1
Line – Let's Get Rich	2
E-Football 2025	1
Honkai: Star Rails	8
Honkai Impact	1
Guardian Tales	1
Puzzle & Dragons	1

Project Sekai	3
World Of Tanks and WoTB	1
Arknights	3
Blue Archive	1
Tears Of Themis	1
Reverse 1999	2
Identity V	2

Table 2: Respondents age distribution.

Age	Number of Respondents	Percentage
16 – 20	21	61.8 %
21 – 25	12	35.3 %
25 – 30	1	2.9 %
30 – 40	0	0 %
Above 40	0	0 %

Second segments are consisted of multiple choices answers with ranged answers. First question is designed to understand how often Respondents participated in a gacha. For the first question, choices of answers were ranged sequentially from 1 (as the lowest) and 5 (highest). With this, frequencies of Respondents' participant in a gacha could be measured. The detailed results is as follows in a data.

Table 3: Frequencies of gacha.

Frequencies of Gacha	Number of Respondents	Percentage
1	3	8,3%
2	5	13,9%
3	10	27,8%
4	10	27,8%
5	8	22,2%

Still in the same segment, the next question is about how often is each respondent topped-up their in-game currency in order to be able to gacha. Choices of answer has 4 options: never, just once, rarely, and often. Respondents are free to choose based on their own perspective of how often they were making TopUps.

Table 4: Frequencies of TopUps to be able to gacha.

Frequencies of TopUps	Number of Respondents	Percentage
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Never	5	13,9%
Just Once	4	11,1%
Rarely	22	61,1%
Often / Routine	5	13,9%

The last question from the second segment is about how often each respondent is actively following and participating in a gacha event. This means that the frequencies of each respondent is measured by how often they were doing gachas, but only gachas in a limited event were counted. Researchers have informed to the Respondents, that any gachas conducted out of a specialised gacha event were not considered. The followings are results submitted by Respondents.

Table 5: Frequencies of actively doing gachas in gaca events.

Frequencies of Active in a gacha event	Number of Respondents	Percentage
Never	2	5,6%
Just Once	1	2,8%
Rarely	15	41,7%
Often / Routine	18	50%

The third (also the last) segment of the interview consisted of open questions, which made to openly collected the answer based on each Respondents' point of view and opinion. There are only two questions of this segment. First question is "What makes you excited in doing gachas". The results for this question are categorised in a group, with each group consisted of group with answers of same patterns, to made analysis easier. For Table 6, a special consideration is noted that each respondent could chose or explain in one or more category of answers, so that it is fair that the number of Respondents exceed the total amount of all Respondents.

Table 6: What makes respondents excited in doing gachas.

Answers	Number of Respondents
Gacha bring happiness, especially in winning	3
Gacha bring curiosity in winning the very main price	4
Chance to win in-game items (skin, characters, collections, etc)	19
In need of more in-game resources	3
Urgencies of Showing Offs	2
Fear of missing out an updated situation	2
Encouraged to play the game more	2
Pure Personal Satisfaction	4
To boost competitiveness against other Players	3
Freely earn exclusive rewards	2

Just trying / using free chances	1
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The second or the last question for the third segment is also an open question to collect answers of possible subjectivity based on each respondent's feel. The question is about the reaction that each respondent has when successfully obtained the prize that they desired from the prize pool. Answers is also categorised based on patterns of the answers to make analysis easier.

Table 7: Reaction on winning gachas.

Answers	Number of Respondents	Percentage
Intense/ extreme feel of happiness, luckyness, or joy	15	40.54 %
Happy/ Fun/ Excited/ Satisfied/ Feeling Lucky	12	32.43 %
Nothing Special	1	2.70 %
Arrogant/ Proud/ Overbearing	2	5.41 %

With all the results successfully submitted by Respondents, thus successfully collected by Researchers, discussion could be started. Discussion starts by extracting informations stored within each result. With all the multiple choices answers counted and with all the filled-answers grouped into category, discussion could be done a lot easier. To sort the discussion neatly, topics will be based on the order of each question on the form. First, this research will discuss each of the games which Respondents played, followed by the age group that indicate Respondents' age.

As shown in Table 1, top 3 games with gachas played by Respondents were Mobile Legends: Bang-Bang (9 Players) on first place followed by Honkai: Star Rails (8 Players). The 3rd spot was filled with two games, which is Genshin Impact and Zenless Zone Zero, both with 7 votes from the Respondents. We could indicate that Mobile Legends: Bang-Bang was the most played games with gacha from all of the Respondents. Mobile Legends: Bang-Bang was also the only MOBA game in the top 3 spot, with the others came from RPG - Adventure genre. This 1st spot by Mobile Legends: Bang Bang is also included both played in mobile and desktop (PC), since Researchers did not include neither original nor emulated version of the games as options.



Figure 2: Top 3 games with gachas played by respondent.

After completing analysis for the games played by Respondents, we could move to the next question about the age of the Respondents in group. Sorted from the results, majority of Respondents come from the group age of 16 - 20 years old making 61% of all the Respondents, followed by group of 21-25 with around 35% of all Respondents (as shown in Table 2). This group of age of 16-20 years old, is mostly consisted of students, aged between high schools or early universities age. Another group, 21-25 years old, is mainly consisted of high-year universities students and carrier group. Based on these results, the age group with most of its member playing gacha games is the age group of 16-20. In simple, most of the Respondents who plays games with gachas are aged between 16 and 20 years old.

To make the age distributions of this research fair, Researchers compared data on the results with one data from a statistics study posted on Reddit website. The statistics is similar with the topics

of the study is about age distribution of gacha games Players. The data (on Figure 3 and Figure 4) shows that most common age who played gacha were around 17 to 20 years old. This has a lot of similarity with the data shown in Table 2 above, which supported to correct the age distribution obtained from this research.



Figure 3 : Most Common Age Plays Gacha

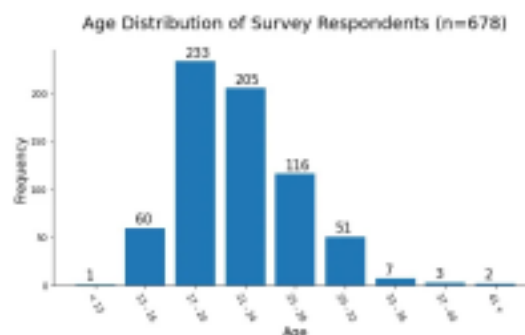


Figure 4: Age Distribution of Respondents Who Played Gachas

Since the first segment is consisted of only one question, research could be moved to the discussion for the second segment. First, analysis starts with analysis about gacha frequencies that Respondents is doing. The distribution of the data is depicted in Figure 5 as follows.

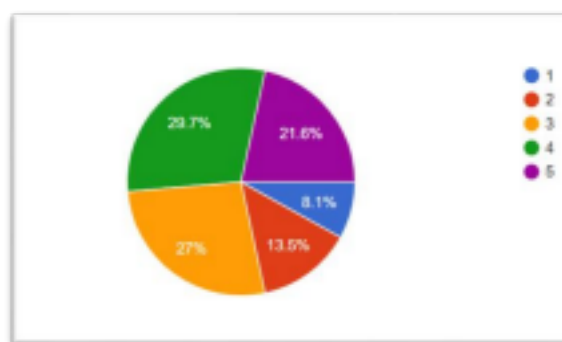


Figure 5: Distribution for Frequencies of Gachas

Based from the data above, we can conclude that from the Likert scale of 1 to 5 (with 1 as the lowest), most answers pointed in "4" option, covering almost 30% of the Respondents. Answer option "5" is most-voted in next spot, and the 3rd spot is option "4". All of the top 3 votes were above 20% Respondents. From these patterns, we can conclude that most Respondents doing gacha with oftenity rate of 3 (middle rating), 4 (middle-high), and also rate of 5 (highest). This leads to a conclusion that majority of the Respondents (around 70% in total) played/participate in gacha with high frequencies. We can also conclude this simply with most of the Respondents are not doing gachas rarely, but more to the frequencies of often.

Moving to the 2nd question, we could analyse the frequencies of TopUps made by Respondents for gachas purpose. As shown on Figure 6 below, answers were rated with four options: *Tidak Pernah* (Never), *Hanya Sekali* (Just once), *Jarang* (Rarely), and *Sering* (Often). The results were most of the Respondents are doing gachas rarely. To the 3rd question, which is about how often each of the Respondents are actively following/ routinely participating in gacha events share similarity with the

frequencies of gachas as shown in the previous question. These two questions indicate that most of the respondents were doing gachas not in often frequencies, but also not as Players that never done gachas.

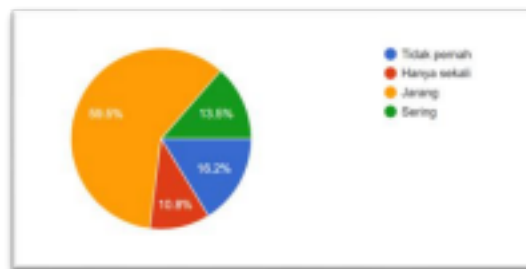


Figure 6: Frequencies of Respondents doing TopUps for gacha purposes.

For the 2nd segment of questions, analysis could be completed by analysing the results of those three questions that are present in the 2nd segment. Results shows that most Respondents are average to-often participate on gachas (based on frequencies, showed in Figure 2), but in the other side were not neither actively topped-up nor actively or routinely participate in gacha events. In particular, it can be concluded that most of the Respondents often doing gachas, but rarely doing top-ups, and not actively/routinely participate in gacha events.

Analysis for segment 3 could be done using data grouped on Table 6 and Table 7 above. From the analysis in segment 3, it can be concluded that answers with most voted is "Chance to win in-game items (skin, characters, collections, etc). The next second-highest vote is for "Pure Personal Satisfaction" answer. The next highest vote is on "Curiosity in winning the very main prize ". This shows that intense spirit and enthusiasm felt by Players when playing gacha, is based on the excitement level of that very gacha event. Developer can make more excitement in gachas, using more persuasive chance to win the main prize on the pool. With that, Players are encouraged to play more and spend more, in promise of

the very main prize that is considered most-desired. Excitement and Enthusiasms pushes higher desire to a continued will of gacha. And because of this excitement, Players willingly spend resources to play, never to stop until main prize is obtained. In particular, Players is not too worried to lose resource or real money to play.

Next analysis is about the results shown in Table 7. Based on data shown in Table 7, it can be concluded that most of the Respondents showed intense or extreme feel of happiness, luckyness, or joy when winning the main prize. There is only 3 Respondents who did not vote to indicate happiness or joy. In simple almost all the Respondents feels happiness, fun, or joy at intense or normal level after successfully obtained the main prize, with only 3 Respondents not showing any of it on their asnwers

Moreover, segment 3 indicate that the feeling which comes with winning a grand prize or a rare prize in gacha game is also one of the main factors that Players will never stop to continue trying their luck in doing gacha. After getting the grand prize of a rare prize, Players would feel happy and proud of their achievement. The feeling can make Players' moods happy and may last for several hours after they win a grand prize or a rare item in the gacha event they participate in. Some Players even won't feel satisfied or at ease if they haven't yet obtained a rare item or the main prize in the gacha event, prompting them to keep finding ways to continue the gacha and obtain the reward they desire in that event.

CONCLUSION

Based on a survey that was conducted from October 23 to October 25, 2024, we conclude that gacha game developers make Players who play their games addicted to doing gacha. The strategy used by these Developer is none other than use the characteristics of the gacha system itself, such as probability, price, and prize value which are designed persuasively to be able to tempt Players continuous and unstoppable. In line with the system design that has been implemented, developers also utilize a psychological strategy regarding player feelings once the Players get what they want,

they will get a feeling of satisfaction due to the hormone called dopamine released by their brain, causing them to gacha continuously to get that feeling of satisfaction. In addition, the player's ego also contributes greatly to Players in doing gacha, where when they see other people or their friends have rare or good in-game items, there will be envy and a desire to have the same or even better items, with this ego Players will spend their time and money to get these items.

The strong reasons (from the player's point of view) as written, and the results analysed in Segment 3 showing why players find interest to do gacha based on their experiences. Results showed that Those are in line with research about gacha by Rentia (as cited above in Introduction), that Players feel an encouragement strong enough to make them spend more money, although the game itself did not require gacha as a requirement to win. The majority of answers show a strong desire to win the main prize, as well as an intense sense of pleasure if they succeed in getting something they wanted. This result is in line with the analysis of segment 2, which indicates that many Respondents perform gacha frequently in the medium to most frequent level (scale 3 to 5). Based on these results, the researcher can make the ultimate conclusion of this research. For the final conclusion, also answering the problem question as well as the title of this study, developers make Players spend a lot of money in gacha by utilizing typical gacha features, and making it a very interesting persuasive aspect so it can make Players unable to stop gacha at limited time events held by game developers.

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