

# Exploring the game-of-chance elements in F2P mobile games - Insights of player's emotions from qualitative analysis -

フリーミアム型モバイル・ゲームの確率変動要素の考察  
— 定性分析によるユーザーの感情に着目して —

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Free-to-play (F2P) mobile games are based on a business model which allows the majority of players to play the game for free while only a small percentage (2-5%) is actually paying for the game (mostly through the purchase of virtual in-game items). Monetization is done through so called micro-transactions within the game where players can acquire virtual items and tools. To grow revenue and profit, game makers must motivate the limited amount of paying players to purchase more or to convert non-payers into payer. This is done by combining an attractive game-play with settings/elements that entice players to make in-game purchases. Especially, the above monetization mechanism could be boosted by the introduction of "game-of-chance" elements, or Gacha in F2P mobile games in Japan. Gacha can lead to irrational overspending among some part of paying players since game developers deliberately (mis-)use its mechanics to increase their revenue and profit with these players.

This paper first outlines a basic framework of Gacha, its different mechanics and elements as well as its core issues based on literature research and interview research on players and developers. A special focus is on the emotional involvement of paying players and on learning from game developers and game expert about the role of this involvement for revenue generation. There are previous studies related to above F2P games but less focusing on its mechanism and its emotional elements. Artful combination of game design and monetization is especially effective for Gacha which can be found in the most profitable F2P mobile games in Japan. The overall business model is questioned in terms of its sustainability as it depends on limited percentage of payers. This was also confirmed by several developers and analysts who were being interviewed.

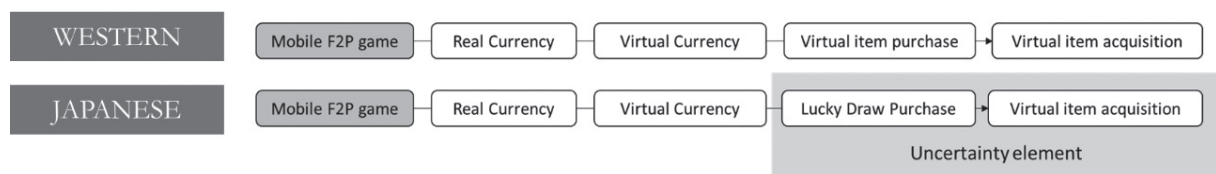
Keywords: Gacha, freemium, mobile games, price discrimination, behavioral economics

## 1. Introduction\*1

With the increased penetration of smartphones, mobile gaming apps have been on the rise globally. The mobile free-to-play (F2P) games space accounts for the major revenue within the global mobile apps economy. However, despite the popularity of these games, only 2% of users actually make in-game purchases (Swerve, 2016). Within the global mobile game market, Japan occupies a leading position in terms of revenues, generating \$6.2 billion dollars in 2016 and in terms of spending per player, where it ranks first in the world (SuperData Research, 2016). It has been suggested that one of the main drivers of revenues in the Japanese free-to-play mobile apps market is "Gacha", a game-of-chance based in-game payment mechanism. Gacha seems to motivate players to spend more money in mobile F2P games. (Teramoto, Shibuya, & Akiyama, 2014). It means that payers of Gacha accept a kind of price discrimination in F2P

even though the price is affected by chance depending on the setting of winning percentage by mobile game providers. This is different from typical Western F2P games, where virtual items can be purchased directly through in-game currency with a fixed price. Japanese games often feature a "Gacha" in the form of a refined lottery system where users choose to pay for a chance to enter a real-time "lucky draw" to acquire these items (See Figure 1). In fact, the behavioral impact of Gacha upon Japanese game players has been so significant, that several controversies have erupted between developers, players and regulators in Japan because of its perceived relationship to over-spending. The Japanese F2P game market and Gacha have been only briefly analyzed in English-language academic literature. (Askeloef, 2013; Kanerva, 2015; Yamakami, 2012b, 2013a, 2013b, 2014; Shibuya & Teramoto, 2015).

Figure 1: Difference between Western and Japanese F2P monetization: Adding the game-of-chance element to virtual item acquisition



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## 2. Research Question

From the game publisher side, it seems natural to adopt Gacha as a mechanism for price discrimination allowing them to maximize revenues for certain mobile game titles. Gacha mechanisms work well and they are deeply intertwined within Japanese mobile game design. From the user's perspective, however, how the game-of-chance element in virtual environment affects users is not well investigated. One key question here is why do some players pay more for Gacha drawing and others do not? From an Economics standpoint of view, the same virtual item obtainable by Gacha has a different value for different players. To answer this question, this paper will depict the characteristics of Gacha based on Japanese mobile game market information and related regulatory and self-regulatory measures for consumer protection. Then this paper examines several analytical approaches followed by the main part, which looks at players and professionals insights and show issues and possibilities for further studies. In that sense, this paper is a preliminary one for further research on how Gacha elements, game-of-chance or artificial uncertainty to obtain virtual goods, affect usage and payment in freemium online services.

## 3. Gacha as a game of chance element in freemium services

### 3.1. What is Gacha - gambling or lottery/lucky draw?

According to previous studies, Gacha in online freemium services seems similar to either gambling or lucky draws. Shibuya describes Gacha as "...similar in screen appearance to vending machines that dispense children's toys, and lucky players can win valuable gaming items this way... Gacha can be played for free, however, extremely rare and/or valuable gaming items can also be obtained through monetary purchases of online Gacha products." (Shibuya & Teramoto, 2015, p.3). Yamakami describes it as "Japanese game vendors have made huge revenues using Gacha. Gacha is a kind of gambling for special items." (Yamakami, 2013a, p.268) and also as "...a mechanism to provide a randomly picked item, sometimes free and sometimes as paid items. Gacha is a great framework to introduce gambling spirits into mobile social games. It also obscures the high price to premium items because one attempt of Gacha can be cheap." (Yamakami, 2013b, p.738) or in more detail "The price is one or two dollars. Some of the contents come in a set, and therefore, users continue buying Gacha, trying their luck at getting a full set (Yamakami, 2012a, p.1233).

Despite its similarity to gambling, Gacha could be understood as a lottery or lucky draw mechanism in a virtual world<sup>1</sup>. Gambling is about betting money or valuable assets to get higher return than the betting amount. Gacha is about pulling a lottery to get randomly allotted items. At gambling, player will lose when they get less than their bet. At Gacha drawing, player will lose when they fail to get an item they desired. Therefore, in this paper, we would like to understand Gacha as kind of lottery mechanism. This is also in-line with the regulatory perspective. The Japanese government had

regulated Gacha through the Law for Preventing Unjustifiable Extras or Unexpected Benefit and Misleading Representation. The law was enacted in 1962 to protect consumers from misleading labeling of goods and services (CAA, 1962).

### 3.2. What is Gacha - a lottery system of virtual items as prize / premium

Lottery is common all over the world. Gacha, however, has several characteristics which are different from a real world lottery: low cost for the production and replication of prize items, flexibility of probability setting and a limited scope of value restricted to the (in-game) online world. In the real world, there are many kind of lotteries, from government-run lotteries to marketing promotions which offer premium goods for winners, which are randomly selected from the participants. The real-world prize is more costly than virtual goods. As the prizes are real goods, the probability of winning is determined by the number of participants and prize goods. In virtual world, a virtual item could be tremendously rare to obtain by setting the probability nearly zero. The value of a virtual item is generally contextual. For example, a virtual game item is not usable in a different game no matter how rare and "valuable" the item is.

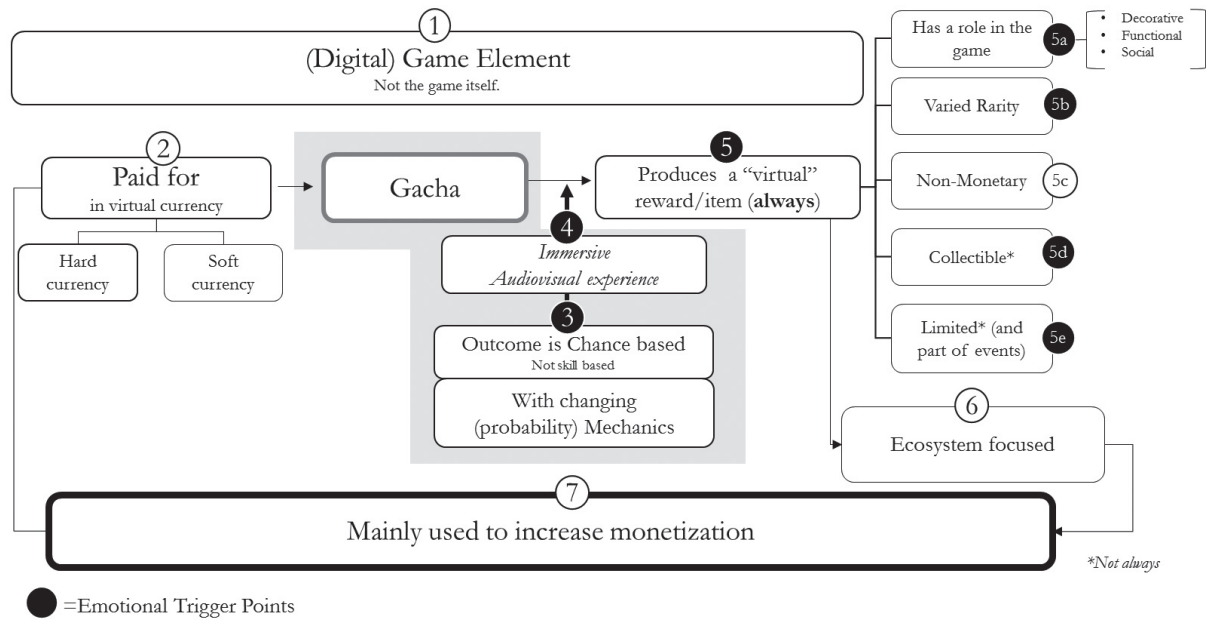
Real world lottery and virtual world lotteries like Gacha also have similarities: The variety of offerings of chances to get items. Both could be obtained through non-monetary and monetary ways. And the winning possibility is largely determined by the provider's setting. Both are also often utilized as marketing promotion tools. Therefore, there are several elements such as the selection of the winning prizes, probability to win and opportunity to participate in the lottery which affects the design of the mechanisms of a lottery. By combining these elements, a variety of lotteries can be created.

### 3.3. Elements and variation of Gacha in Japanese mobile games

Looking at the literature, actual gameplay and mobile game analysis reports (Spicemart, 2016) Gacha can be seen as being composed of the following points (Figure2):

- It is a key game element and not the game itself (1)
- It is paid for using an in-game virtual currency either by soft or hard currency (real money) (2)
- It is game-of-chance based including varied and advanced chance mechanics and probabilities (3)
- It uses elaborate audiovisual experiences during the draw/revealing process (4)
- It always provides a (virtual) reward (5)
- Plays a role in the game (decorative, functional, social) (5a)
- Available in different levels of rarity/limitedness (5b)
- Non-monetary (no real money trading) (5c)
- Is often collectable (5d)
- There are limited edition items that are often offered during real time in-game events (5e)
- It is only of value within the game and it is an essential part of the game ecosystem (6)
- It is mostly used to increase monetization for the game provider (7)

Figure 2: Outline of Gacha elements in Japanese mobile F2P games highlighting trigger points of emotional attachment



It needs to be mentioned there are several trigger points of players emotions in there that help to increase the emotional state or emotional involvement of the player:

The draw: The way the Gacha draw is presented/animated, the uncertain, chance based outcome of the draw using advanced mechanics which will be covered later in this paper.

The reward: The draw will always result in winning a price in the form of a virtual item. This item can help the player to decorate/personalize his character, make it stronger and also can serve for social functions in the game community. Furthermore, it comes in different levels of rarity, can often be collected and can be limited and the draw can be tied to special time-limited in-game events where these items are being offered. All these components can affect the players emotions and can trigger impulse, non-logical decision making.

There are several Gacha mechanics which are being used in Japanese mobile games. Our initial research in the literature, in reports and games and through interviews have shown over 10 different Gacha types/mechanics. Here is a small overview of some of them.

- Kompu Gacha: Players need to acquire a set of items to unlock a special rare item (Banned in 2012 because of the issue of unknown probability).
- Box Gacha: Virtual box of set items with known probabilities (Figure 3) .
- Sugoroku Gacha: Combining Gacha with a boardgame. A Gacha acts like a dice which then allowed the player to move on a board to unlock special items.
- Redraw Gacha: Users can do a redraw of a Gacha (sometimes for free, sometimes for a fee).

- Consecutive Gacha: Purchasing Gacha in bulk increases the overall probability of getting rare items (Figure 4).
  - Open/Closed Gacha: A Gacha showing the probability of acquiring a specific item.
  - Discounted Gacha: Special campaigns where users pay less for a Gacha draw.
- (Sources: Yamakami, 2012b; Teramoto, Shibuya, and Akiyama, 2014; Spicemart Report, 2016; Toto, 2016; Interviews; Gameplay by authors)

Figure 3: Examples of Box Gacha Mechanics

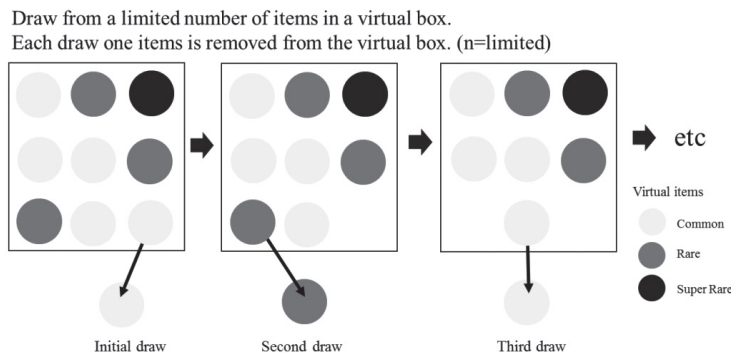
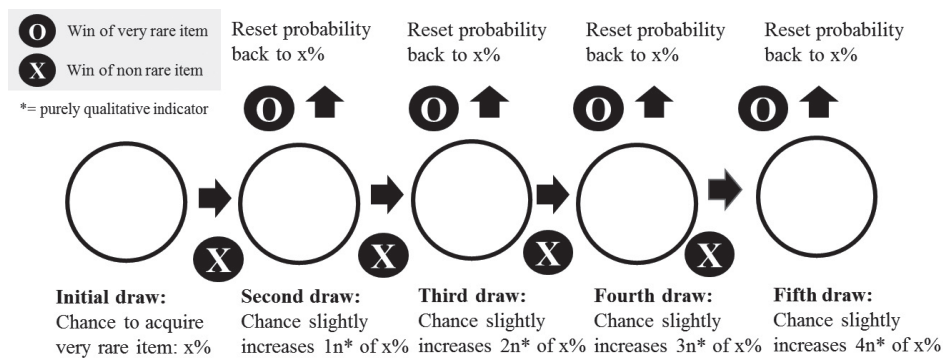


Figure 4: Consecutive Gacha Mechanics



## 4. How Gacha became controversial and (self-) regulated in Japan

### 4.1. Government Regulation: Kompu-Gacha case

Despite the fact that Gacha has existed in mobile games in Japan since around 2004 with one of the first games being Maple Story. (4Gamer 2007), complaints to the Consumer Agency in Japan had increased in 2011 (Machida, 2012). The main issue was the so-called mechanics of "KompuGacha" which had been previously mentioned in the paper. The name comes from the word KOMPURETO in Japanese which means "to complete". This mechanic requires the player to first collect a series of items (complete set) before being able to unlock a specific, rare item without a clear outline of winning probabilities. The Consumer Affairs Agency in Japan (CAA) banned the practice of "KompuGacha" in 2012 for the reason, that it corrupts the game experience as the system makes it difficult to understand the probability to win a prize (CAA, 2012). Game companies had to abandon these mechanics and switched to other kind of Gacha or invented new ones. Over the course of time game developers introduced several new Gacha mechanics (for example the above "Box Gacha"), several of them with hidden probabilities and hidden total costs for acquisition by just hinting how rare some items are.

### 4.2. Self-regulation: Through probability guidelines

Then in 2015 another Gacha related issue became public, this time associated with a specific game (Grandblue Fantasy, for example) and its lack of providing correct probabilities/costs for acquiring specific items (Nakajima, 2016). As a reaction to this, the Association of Japanese game developers (CESA) issued a guideline in 2016 asking their members to provide more transparency for Gacha mechanics within their games. The guidelines require game makers to implement one of the following 4 standards:

- The limit on the estimated price (the price calculated as an expected value according to the set distribution rate) to obtain any rare Gacha item should be within 100 times the price of a single paid Gacha, and in the case that this limit is exceeded, that estimated price or its multiplying factor needs to be displayed on the Gacha page.
  - The estimated price limit to obtain any rare Gacha item should be within 50,000 yen, and in the case that this limit is exceeded, that estimated price needs to be displayed on the Gacha page.
  - The upper limit and lower limit of distribution rates for rare Gacha items are to be displayed.
  - The distribution rates for each type of rare Gacha item are to be displayed.
- (Spicemart 2016, p.6)

CESA member game companies only had to fulfill one of above conditions since it did not require to adhere to of all of them.

## 5 Analytical Framework consideration

### 5.1. Previously applied frameworks in the virtual item / F2P context

In the field of (Western) Free-to-play games and virtual item purchase several analytical frameworks have been applied so far in studies. The most frequent being the Technology Acceptance Model (Davis, 1989; Davis, Bagozzi, & Warshaw, 1989) which can be found in several studies on virtual item purchases (Mäntymäki, Salo, 2011; Shin, 2008; Cheon, 2013; Hsu, 2004) and the Unified Theory of Acceptance and Use of Technology (Venkatesh, Morris, Davis & Davis, 2003) which had also been utilized for virtual world and virtual item purchases (Mäntymäki, & Salo, 2013; Guo, & Barnes, 2011; Guo, Barnes, 2012) followed by papers applying a value based theory framework. (Han & Windsor, 2013; Kim, Gupta, & Koh, 2011; Park, & Lee, 2011).

The role and function of virtual items have been outlined by several authors such as Lin and Sun talking about their roles as functional tools and decorative tools (Lin, & Sun, 2007) or Lehdonvirta dividing them into separate categories based on functional, emotional, and social attributes (Lehdonvirta, 2009).

Virtual items and virtual worlds have also been studied recently more from an economic perspective leading to the concept of virtual economies put forward mainly by Castronova and Lehdonvirta. According to them a virtual economy can be analyzed similar to a real economy. Users treat virtual goods and virtual money similar to real goods and real money (Lehdonvirta, & Castronova, 2014).

Yet these above studies have not covered Gacha and its possible effects because research has been mostly focused on Western game titles.

### 5.2. Behavioral economics and probability weighting function

One of interesting theoretical angles comes from Behavioral Economics on lottery analysis. The topic of Behavioral Economics bias elements and how they might impact (mobile) Free-to-play-games have already been briefly outlined by Hamari (Hamari, 2011) and have been discussed for the games/mobile app environment (Paavilainen et al., 2013; Reiners & Wood, 2015; Stockinger et al., 2015; Heimo, Harviainen, Kimppa, et al., 2016; Zagal et al. 2013). As these thoughts are based on Western games, they did not look at Gacha game-of-chance elements. On the other hand, Behavioral Economics have shown that game-of-chance/lottery elements in general can help change or enforce a behavior better than fixed incentives (Kearney, Tufano et al, 2010; Kimmel, Troxel et al, 2012; Goette, Stutzer, 2008; Nqvist, Corno, et al. 2015; Volpp, Troxel, et al. 2008) .

Basically, Behavioral Economics explains the reason of lottery buying through the "probability weighting function" (Gonzalez, & Wu, 1999). Game players might be less inclined to pay for acquiring specific items or content when they are associated with Gacha mechanisms rather than a fixed price. Gacha, however, is different from lottery as payers seem to value rarity or collectability of the virtual items itself which could be obtained by Gacha and not an actual monetary value it represents. Gachas have a rarity element which

makes a virtual item more attractive for players. Additionally, the probability of Gacha for obtaining a certain rare item is not static but changeable by the game providers. During so called "real-time events" game providers offer an increased probability of obtaining specific rare items or introduce limited edition items for this event. How this kind of artificial probability and rarity could affect users needs more analysis as serious research has just started for its short history.

How Gacha is perceived by players and game professionals provides another interesting opportunity to look at the topic.

## 6. Gacha perception by users and developers

To learn more about the underlying emotional elements related to F2P games and Gacha, interviews with players as well as game industry professionals had been conducted. In previous studies, interviews with Japanese mobile F2P players and professionals in English academic literature are still rare. (For example, in the thesis by Askeloef, 2013; Kanerva, 2015)

### 6.1 Methodology

To achieve a better understanding of the above and to unearth more in-depth insights, the authors applied a qualitative approach using semi-structured interviews. This decision was shaped by the following antecedents:

- 1) In F2P games only around 2% of players pay for virtual items according to a study of Swrve (Swrve, 2016). This makes it very costly and time intensive to collect quantitative survey insights from paying players.
- 2) Quantitative methods sometimes do not allow an insight into deeper issues and it is necessary to take a more explorative approach (Schensul, Schensul, & LeCompte, 1999; Bernard, 2017; Harrell, & Bradley, 2009). When it comes to F2P, recent research has pointed out that quantitative surveys among F2P players on in-game items (re)-purchase do not always reflect their true intentions and motives well. Instead researchers should look more into actual game data and unconscious motives (Lee et al., 2015).
- 3) Game companies are rather reluctant to share their game data with outside parties because this data is most valuable to them for their monetization and they do not want competitors to know about their data (Sifa, Drachen, & Bauckhage, 2018).
- 4) The authors wanted to also learn more about the professional' s perspective. While looking at the limited F2P research literature they found that a qualitative interview approach has already had been successfully used for understanding Western players as well as game developers insights (Paavilainen et al., 2013; Alha, Paavilainen, Hamari, Kinnunen, & 2014).

After talks with one game industry analyst and two players the authors developed two semi-structured interview guidelines. One for player and one for game industry professionals. The interview length was set to 60-90 minutes for each participant. Because of privacy concerns the interviews were not recorded and instead the interviewers took notes during the session and the names were replaced

by initials in this paper. The subject was asked if he or she was comfortable to do the interview in English. If not the interview was done in Japanese and English notes were taken and then reconfirmed with the subject in Japanese. If possible, interviews were done face-to-face. As the goal of the interviews was to unveil more in depth insights into players and professionals thinking and perspective, the overall framework of the questions was supposed to be used in a flexible manner to allow respondents to express themselves freely and to also touch upon topics mentioned by them that were not part of the questions but were seen as valuable in discovering new findings. The interviews were conducted over a period of 24 months from April 2016 - April 2018.

The authors tried to replicate the gender distribution of smartphone players in Japan by including an equal amount of male and female players. According to a study by Sega 51.9% of smartphone players are male and 48.1% are female (Sega, 2017). Players were recruited through the authors personal networks as well as through social media and online game forums with the goal to identify F2P players who had experience in playing Gacha games and have had experience in paying for Gacha. In total 10 players were interviewed. Out of them 9 had experience with paying for Gacha. Interviews for 6 interviewees were conducted

in Japanese and 4 in English. 6 were identified as casual gamers and 4 as hardcore gamers. All interviews were conducted face to face (Chart 1, Chart2).

The player interviews were structured into 5 main sections. The first section explained about the overall research goals to make the participants understand the setting. The second section focused on collecting basic demographic data and then in the third section the players were asked in an open setting about their past gaming experiences including mobile games and their game preferences, to build rapport and to learn more about their gaming behavior. After that the in the fourth section the interviewer focused more on their mobile gaming and Gacha experiences including what games they play, where they play, why they play as well as how they found out about the game and how they got into that game. Based on the games they play or have played the questions then focused on their experience with Gacha and paid Gacha as well as their emotional attachments to the games and to Gacha. This also included their very personal thoughts about Gacha in general, why they purchase Gacha and when/in what setting they purchased it. The interview then closed with the fifth section asking the participants if they had any other thought or comments to add.

Chart 1: List of interviewees of players and basic attributes (anonymized) with interview date

Name	Gender	Age	Interview done in	Company	Profession	Interview Type	Date	Player Type
I.Y.	Male	52	Japanese	Ad Agency	Planner	F2F	1/10/17	Gamer
Y.K.	Male	31	Japanese	Event Planning	Client Services	F2F	11/16/16	Casual Player
T.I.	Male	25	English	IT Services	PR Department	F2F	11/10/17	Gamer
M.T.	Male	50	Japanese	Agency	Planner	F2F	8/10/17	Casual Player
C.K.	Female	41	English	Health Company	Client Services	F2F	10/25/17	Casual Player
M.S.	Female	38	English	IT company	Planner	F2F	9/20/17	Casual Player
M.W.	Female	36	English	Health Services	Counsellor	F2F	2/5/17	Gamer
S.I.	Male	35	Japanese	Production House	Planner	F2F	7/19/17	Casual Player
M.A.	Male	36	Japanese	IT company	Client Services	F2F	3/4/18	Gamer
C.W.	Female	31	Japanese	Beauty Company	Director	F2F	2/5/18	Casual Player

\*F2F:Face to Face

Chart 2: List of interviewees of game professional and basic attributes (anonymized) with interview date

Name	Gender	Age	Interview done in	Company	Profession	Interview Type	Date
Y.O.	Male	37	Japanese	Mobile Game Analysis Company	Game Market Business Analyst	F2F	5/4/16
C.T.	Male	32	English	Mobile Game Developer	F2P Game Developer	F2F	11/6/17
Y.A.	Male	35	Japanese	Mobile Game Developer	F2P Game Developer	F2F	11/10/16
G.K.	Male	37	English	Mobile Game Developer	F2P Game Developer/Planner	Skype	12/2/16
S.T.	Male	42	English	F2P Game Analysis Company	Game Analyst	F2F	5/28/16
K.N.	Male	39	English	Japanese Newspaper	Game Journalist	F2F	11/21/17
J.D.	Male	52	English	Financial Analysis Company	Game Industry Analyst	F2F	7/31/18

Also, Japan market game industry professionals were selected through looking at online articles, research reports and blog entries published by them or about them. The focus here was on their expertise in F2P games and Gacha. The authors then reached out to them explaining about the research and asking for an interview. 10 professionals were contacted and 6 initially agreed to be interviewed. Four of the interviews were conducted in English and 2 interviews were conducted in Japanese. Except for one interview all were conducted face-to-face. An additional industry expert interview had been conducted in July 2018 after receiving a belated positive agreement for an interview.

The professional interviews were structured into 5 sections. The first section explained about the overall research, the second section asked for basic demographic data. The third section asked about the persons past career up to now for rapport building and to learn more about their roles and experiences. In the fourth section the interviewers tried to have an open talk about the professional' s exposure to Gacha in their career, their thought on the role of Gacha in monetization in Japan, issues they see, if possible a comparison to other markets in Asia and the West, and their outlook of Gacha in general. The fifth section then asked about any additional insight they would like to share that had not been covered in the previous discussion.

## 6.2 Player Insights

An insightful interview was with a 52 years old Japanese male player who, according to this own statement, was spending over 100,000 Yen per month on Gacha in mobile games. When asked why he is spending this amount of money he mentioned that Gacha is a self-rewarding experience for him that helps him to unwind and that he would feel less excited about Gacha if it was free of charge. He does not care about looking at the probability of acquiring a specific item yet he is acquiring most of the paid Gacha during real-time events when the game offers increased probability and/or special limited items. But he also mentioned that he is becoming tired of Gacha as he proceeds in the game and acquires rare items as there is not so much to look forward to anymore.

On the contrary, a 31 years old male player pointed out that he is not willing to pay for Gacha. He saw Gacha as a tool to try and challenge his own luck and he gets excited about the upcoming result and it makes him feel good to acquire a rare item by chance. If he was to pay for it he wanted to know the chance of winning specific items to make sure if it is worth it or not.

In an interview with a 25-year-old male player he pointed out that for him one of the key attraction points of items he can acquire through Gacha is their rarity and the fact that some of them are only available for a limited amount of time. Owning a (virtual) item that is rare and only a few other people have, was seen as a valuable asset for him. He also stated that for him this was one important motivation to

spend more money on acquiring these items. If the chances to acquire these rare items increased during special events he was more willing to invest his money into it because of the increased chance of acquiring them.

A 50 year old male player who used to spend around 50,000 yen a month on Gacha pointed out that he got into a specific game because of the characters featured in there. There was also an Anime series with these characters and he started watching it and purchased also several merchandise articles. His main motivation for Gacha purchase was to acquire new limited-edition outfits for the in-game characters. For him this experience was very emotional making it sometimes hard to control his spending.

A female player in her early 40s who mostly played casual F2P titles mentioned she did not like it when games make players wait until they pay to be able to move forward in the game. The game she played were introduced to her through her friends and colleagues. She sometimes pays for Gacha to get limited edition items and characters but she is worried about overspending and getting into financial troubles.

The worry of spending too much was also brought up by another 36 year old female player. Her worry was that she would get into a game too much and become too attached and then ends up spending more than she can afford. In her case she was playing a more casual F2P game and a more complex F2P RPG game. The spending on the RPG game was, what she was worried about, as she mentioned it keeps her much more emotional involved and attached and she cannot trust herself anymore in such a state.

Another male player in his mid 30s who was also a big fan of mobile F2P RPGs stated that he stopped playing a specific game because of time restraints but also because he heard in the news about the game company behind the game telling lies to players about the chances of acquiring specific rare item. He felt cheated by that company and felt they had been tinkering with his enjoyment and love for the game.

Furthermore another male player in his 30s talked about his worry about F2P games in general. He always needs to be online to play. There are so many F2P games out there. Some are gone after less than a year. He is worried about losing all his achievements and items he paid for once a game is no longer popular and the game servers were shut down. He was worried the game provider would let him down.

7 out of the 10 players interviewed were introduced to the game they played through their friends. Game progress and achievements were a popular discussion topic for them. Especially for the male players

8 out of the 10 players interviewed stated "rarity" and a temporal increased winning probability during special campaigns as their key motivators for paying for Gacha. When being asked what increased probability means for them they mentioned they "feel" their chance of winning will be higher, they will be double or triple but none of them was talking about any percentages.

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### 6.3 Professionals Insight

According to a 37 years old Game Market Business Analyst, Gacha is used mainly for increasing the spending of the few paying players and the different Gacha mechanics and frequent new (rare) item content combined with in-game real time events help to increase the spending. Players enjoy the “luck” moment of the Gacha draw, which is a different emotional experience from simply paying for an item. Developers are becoming more creative about inventing new item designs to increase their sales. But also it is important to be more clear about the cost and/or chances of acquiring items in the future to not upset players.

A 32 years old former F2P Game Developer emphasized that Gacha, game design and payment are closely intertwined and cannot be separated. He called it ‘The holy trinity’ of F2P game design in Japan” .

He also stressed that Japanese players want Gacha in their games as an extra level of entertainment. Without the Gacha element, item acquisition would lose its attractiveness. A 35 years old former Mobage Developer supported this statement mentioning that without Gacha players would not see it as entertaining.

Furthermore he pointed out that many Japanese game developers got addicted to making quick money with Gacha in the past. Back in the early days the main devices were feature phones and the game developers also owned the platforms. Making money with F2P games was easy and cheap. But with the success of smartphones the situation had changed. Game development costs have increased drastically, and developers need to give away 30% of their revenue to Google or Apple. So some developers feel they want to get their money back and start to look for many new ways to increase the spending of players and increase their own profits. Sometimes these practices can become dangerous and hurt the player and also the game developer. The social element is also important for monetizing Gacha. Peer pressure can motivate others to pay for Gacha and to acquire unique items others already got.

Another F2P game designers in his late 30s stressed that Gacha takes a lot of hints from Pachinko (a popular Japanese Slot-Machine variant). He mentioned that lights and other mechanics that announce something will happen are important including exciting animations before special results. He pointed out that the top monetizing games feature very elaborate Gacha animations. Visual feedback and visual experience is important to players. He explained, that Gacha animations are usually for heavy spenders only. Also, if players purchase Consecutive Gacha (for example 10 Gacha in a row) the Gacha animation is also different.

According to him Japan was the first country in the world to develop the concept of Games as “Software as a Service” . Games are built to last for about 2-3 years and so called “gates” are built into the core concept of these games as artificial borders for players to drive monetization. In the end it is about collecting as much money as possible from

players. He also brought up the fact that around 90% of Gacha purchases happen during the beginning of the month as this is when people get their salary.

When the discussion came to recent regulations and ways how to improve monetization one former developer mentioned that currently game maker have become very careful about playing around with probabilities or new types of Gacha mechanics. Instead they are focusing on developing a broader variety of rare items as well as limited edition items and offer them through in-game campaigns. According to him this was seen as a very profitable approach as the demand for these items is high and players are willing to invest more to acquire them.

Another F2P developer mentioned that without Gacha players would not see the game as entertaining. Playing a Gacha creates an extra level of sensation and of high stakes. This is something very emotional and has nothing to do with any logical process. It is more like a skinner box. So showing the odds of winning items does not matter to players. He also said he thinks they cannot understand what a probability of 0.001% means. He compared it to buying a lottery ticket. The buyer thinks of winning the lottery but not about the chance of winning it. Similar to this several Gacha payers are in for the thrill of winning.

A F2P Game Analyst pointed out that in Japan Gacha is a purely money-making phenomenon. Companies try to come up with many ways and mechanics to get more money from the paying players. Once a player is hooked on a specific game it is easy to make him pay again and again. The developers come up with new items, special purchase events. They have a clear picture of what is needed to make players buy more. Often the player is not aware how much he needs to spend to get some especially rare goods. This lead to several issue and government had to intervene. But according to him not much had changed. Yet Gacha only works if the game design, character design and story is good. If players stop enjoying, they stop playing.

Talking to a Japanese game journalist he mentioned that the gambling aspect is the key attraction behind Gacha. People can feel excited about it but game makers take too much advantage of it. Gacha can be very frustrating if players want to get an item but cannot get it. Youtubers in Japan often take videos of their desperate attempts. This is also what lead to the GrandBlue scandal. To get a rare character or item chance is only about 1%. The bad fact is that players could pay an unlimited amount of money. With Gacha being more like a challenge of luck it can create addition friction in players leading to overspending. According to him, paid Gacha is an unhealthy business model and should be replaced with other business models. He suggested a monthly subscription model for F2P games but he feels game companies are too greedy to do this. He also plead that there should be a spending cap on games per month.

A recent interview with a financial analyst for the game industry added some extra insights. He stated that most F2P



players who use Gacha do not pay for it. They use “free” Gacha draws. He also explained about Japanese Gacha games abroad. According to him many Japanese Gacha games have failed abroad. Only some are successful. The ones who are successful are the ones who have a good balance between game play and payment. If the game is focusing too much on paywalls and making players pay to get ahead in the game it's not fun anymore. The game-of-chance element adds another barrier for players. But if the game itself is entertaining then this barrier can activate some players who are prone and weak for gambling like experience and help with increasing the overall games revenue with them.

#### 6.4 Findings from Interviews

We can see that for paying players rare and limited-edition items, collectability combined with campaigns and events has an impact on their Gacha purchasing behavior. Also Gacha seems to be an extra emotional experience for them to test their luck. Further more their social peers play a role in what game they play, how long they play it and if they invest in paid Gacha or not. But at the same time the game itself, its design, content and their emotional attachment to it appears to be a key shaping factor in their commitment to invest time and money into a game. Some players are worried about not being able to control their spending and some felt remorse about overspending.

From the professional perspective it seems like developers are very well aware of the emotional impact Gacha has on paying players. The desire to increase profits lets developers experiment with many new limited edition items and elaborate animations to hook players into paying. One developer even called Gacha an elaborate skinner box used by game companies to increase individual payments.

Also analysts seem to be worried about the future sustainability of the business model. Short term profit games might scare away players in the long term. So striking a good balance between monetization desires and gameplay can be a key factor of long term success.

### 7. Summary

Free-to-play (F2P) mobile games are based on a business model which allows the majority of players to play the game for free while only a small percentage (2-5%) is actually paying for the game (mostly through the purchase of virtual in-game items). This requires the game providers to focus on the monetization of a small group of users.

Gacha -as a special game-of-chance based purchase of virtual in-game items- has been outlined as one of the key drivers for this monetization in Japan. While some Gacha draws do not require the payment of real money, some do.

In the eyes of several Japanese researchers Gacha can be seen as a virtual lottery system. Different from a real lottery, it offers a flexible probability, (virtual) prizes items can be expanded and reproduced at very low costs and only have

a value within the game ecosystem. Similar to real lotteries there are free and paid options and the provider sets the probability of winning and the range of items to be won.

Because of its virtuality it is possible to develop and experiment with many different types of Gacha mechanics as well as changing rarities to help increase the games monetization. Some of them without providing any probability of winning/acquiring a specific item.

These mechanics have led to issues and intervention from regulators. In terms of regulation for Gacha, Japan moved from regulatory to self-regulatory activities.

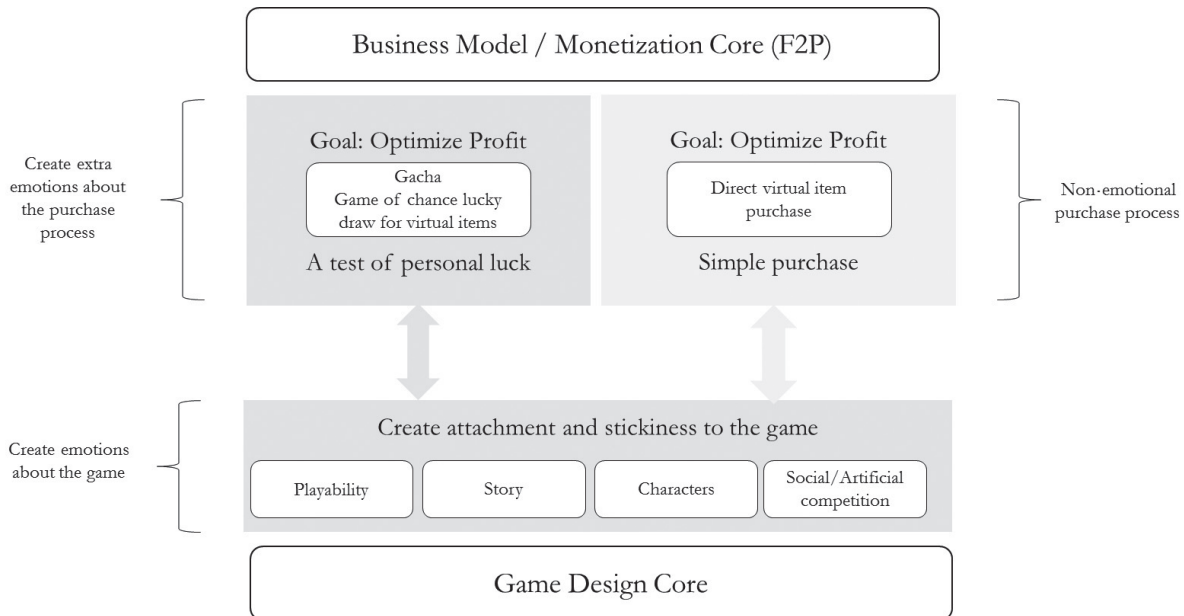
Japanese game developers and analysts see Gacha as a fundamental element of Free-to-Play mobile games in the market, helping to monetize these games and there are players who spend considerable amounts of money for Gacha. The elements of rarity, limited time offers and change of probability help with the monetization.

There are already several frameworks which have been applied to virtual items, F2P games and virtual worlds. Gacha has not been considered in these studies. In the F2P game context Behavioral Economics has been briefly discussed to help explain some of the behaviors of players. Given the lottery mechanics of Gacha, applying Behavioral Economics can add a new angle to the discussion.

This paper found from qualitative analysis that the emotional attachment some players have to paid Gacha can be seen as problematic and these attachments are being artificially nurtured and intensified by the game developer for profit optimization (Figure 5). These issues seem to be inherent to the current major F2P monetization model. While it can be seen as a “good game design” to emotionally engage and motivate players to keep playing a specific game title, exploiting this engagement for monetization by using game-of-chance mechanics can be seen as controversial or as a “bad game design”.

Figure 5: On emotional elements of Gacha and game design:

Gacha creates an extra level of emotionalizing purchase for virtual items in F2P games for some part of players.



## 8. Further analysis and discussion

This paper just gives a preliminary overview of Gacha and the different angles involved from the Gacha mechanics side and its uncertainty element, the regulatory side, developers side and players side and how Gacha could affect freemium online services.

In future papers these different items should be looked at more closely in combination with more quantitative data analysis. Given the fact that Gacha is also gaining momentum in Europe and the U.S. due to the launch of several Japanese mobile games titles with Gacha elements it would be interesting to take a closer look at the regulatory angle and how this could inspire or impact regulation or self-regulation in these markets. Also, the discussion of Gacha as a gambling mechanism could be worth investigating further in this setting from a more global and general perspective.

Another angle that should be investigated further is the effect of Gacha on player's attitude and behavior as this can help to shed more light on the underlying causes of its impact from a consumer's perspective.

### [Note]

\*1 This paper is based on a conference proceedings paper presented at 14th ITS (International Telecommunications Society) Asia-Pacific Regional Conference, Kyoto 2017.

\*2 The origin of "Gacha" naming is a real toy lottery machine, "Gacha Gacha" or "Gacha Pon", capsuled small toy lottery machine. Players of "Gacha Gacha" can turn the machine's lever to get a capsule by paying a few hundred Yen (several dollar) for

a turn. The sound of the turning lever is like "Gacha Gacha" and the sound of opening a capsule is similar to "Pon" thus giving it its name "Gacha Pon". Generally, Gacha Gacha toys cannot be bought anywhere else but through the Gacha Pon machine. Therefore, people who want a Gacha Gacha toy have to try their luck by paying real money and then turning the Gacha Gacha machine lever.

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【論文】

フリーミアム型モバイル・ゲームの確率変動要素の考察  
― 定性分析によるユーザーの感情に着目して ―

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無料プレイ (Free to play: F2P) のビジネスモデルを採用するモバイル・ゲームでは、ごく一部の利用者 (ユーザーの2~5%程度) が課金している (そのうち、多くの場合がアイテム課金である)。モバイル・ゲームの収益は、マイクロトランザクションと呼ばれるプレイヤーによるゲーム内の仮想アイテムや機能の購入 (この購入行為はプレイヤー側からもゲーム開発者側も「課金/課金する」と呼ばれる) により発生する。収益拡大のためには、限られた人数のプレイヤーがより課金するか、もしくは、非課金者に課金させるかの方法がある。そのため、より魅力的なゲーム・プレイ経験と、ゲーム内課金へとプレイヤーを誘導する要素を接合することが行われている。特に、収益化メカニズムは、日本のF2Pモバイル・ゲームにおいて「ガチャ」と呼ばれるくじ要素の導入によって強化されるものである。ゲーム開発者が収益を拡大するため、意図的にガチャのメカニズムを利用し、一部のプレイヤーの非合理的な支払い過多の状態を引き起こしている。

そこで、本論では、文献調査とインタビュー調査から、最初に、F2Pのモバイル・ゲームにおける確率変動要素である「ガチャ」の基本的な枠組み、さまざまなメカニズムと要素、主な課題を概観した。中でも、プレイヤーとゲーム開発者や専門家へのインタビューから、課金プレイヤーの感情的な没入に注目し、この没入が収益化において役割を果たしていることを明らかにした。F2Pにかかる先行研究では、メカニズムや感情要素に着目したものは少ない。多くの収益性の高い日本のF2Pゲームにおいて、ガチャと呼ばれる巧妙なゲーム設計と収益化の組み合わせが効果的に用いられているといえる。一方で、このビジネスモデルは、一部の課金者に依存するという意味で持続可能性が疑問視されている。このことは、ゲーム開発者やアナリストへのインタビューでも指摘された。

キーワード：ガチャ、フリーミアム、モバイル・ゲーム、価格差別、行動経済学