PALACKÝ UNIVERSITY OLOMOUC

Faculty of Arts

Department of Asian Studies

BACHELOR'S DIPLOMA THESIS

Comparison of Microtransactions and the Issue of the *Gacha* System in Korean, Japanese, and Chinese Mobile Videogames

Komparace mikrotransakcí a problematiky systému *gacha* v korejských, japonských a čínských mobilních videohrách

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Declaration

I hereby declare that I have elaborated this bachelor's diploma thesis by myself and that I have provided a full list of used bibliography and internet sources.

In Olomouc 6. 5. 2024

Abstract

This paper concerns the microtransactions and *gacha* system of Korean, Japanese, and Chinese mobile videogames. With the ever-increasing popularity and profit of the mobile videogaming market, East Asian game developers started to seek an opportunity to penetrate said market. As a result, the *gacha* system was born. The paper aims at the overall comparison of the economic situation of mobile *gacha* videogames from the three discussed countries as well as the description of the multitude of fiddles and practices which are used to influence a psyche of a player, much like in casinos. The thesis also includes analyses of the *gacha* animation sequences from different mobile videogames done personally by the author to easily address the discussed issue.

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Anotace

Tato práce se zabývá mikrotransakcemi a systémem *gacha* v korejských, japonských a čínských mobilních videohrách. S nárůstem popularity a zisku mobilních videoher se snaží i východoasijské země proniknout do tohoto trhu. Výsledkem se stalo zrození systému *gacha*. Práce cílí k celkové komparaci ekonomické situace mobilních *gacha* videoher ze všech tří projednávaných zemí, a také cílí k popisu množství triků a praktik pomocí kterých tyto videoherní praktiky ovlivňují psychiku jedince, podobně jako v kasinech. Diplomová práce také zahrnuje autorovu analýzu *gacha* animačních sekvencí z různých mobilních videoher sloužící k lehčímu poukázaní na diskutovanou problematiku.

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Editorial Note

Because of the modern nature of this bachelor's diploma thesis' topic, I have chosen a unique way to preserve the unification of the transcription of foreign words and/or names which could appear throughout the text. For the elaboration of this thesis, I am going to be using the normalised Romanization (transliteration to the Roman alphabet) of all three appearing languages. For Korean it is the *Revised Romanization of Korean*, for Japanese the *Hepburn Romanization* and system *Pinyin* for the Chinese characters.

The words (such as the names of the videogames, etc.) which already have their official English counterpart written in the Roman alphabet are going to be listed as such.

Introduction

Mobile videogaming has been the most prominent and profitable part of the gaming market worldwide for quite some time and with the rising usage and popularity of microtransactions and practices associated with them, many scientific and academic researchers as well as gamers and the general public started a heated discourse regarding them.

This thesis, called *Comparison of Microtransactions and the Issue of the Gacha System in Korean, Japanese, and Chinese Mobile Videogames*, is going to concern the ever-controversial microtransactions and mainly the monetization practice of *gacha* which is being implemented in mobile videogames from South Korean, Japanese, and Chinese game developers. As it currently stands, this discussed system is expected to keep appearing in many future videogames from developers worldwide, so a thorough investigation of the legality and prosperity of this practice is needed.

Sources, used throughout this thesis, come from different fields of scientific and academic research ranging from popular researchers of videogaming such as David Greenspan and Dal Yong Jin, to assessments from many law institutions such as the European Parliament. There are also many sources used from analyst companies, such as Sensor Tower or Newzoo.

The motivation of writing this thesis stems from the low number of academical research and studies regarding the monetization practice of *gacha* as well as from the author's personal motivation.

Objectives and Methods

This bachelor's diploma thesis aims to define and compare microtransactions and mainly the underlying monetization practice of *gacha* in mobile videogames from South Korea, Japan, and China. The content of the whole thesis is going to lead and follow two main research questions/fields which are as follows;

- How do Korean, Japanese, and Chinese mobile videogames make profit through the means of microtransactions and *gacha* system? Which country makes the most revenue through the means of *gacha*?

- Why are Korean, Japanese, and Chinese mobile videogames, using the *gacha* monetization practice, popular? How do they influence a person? Do they really constitute gambling?

To properly compare and differentiate each country's market situation of their *gacha* games, the author will use, process, and analyse data by an analytics company called Sensor Tower. However, Gacharevenue.com, a website which publicly provides Sensor Tower's data, does not report data of the revenue from the market in mainland China. Nevertheless, the rough estimate of *gacha* market revenue in 2023 could be of great use in understanding the importance of this fairly new monetization practice for game developers worldwide in the future. One of the goals of this economic framework part is to compare the market revenue of *gacha* games from the three discussed countries and confirm or refute the initial hypothesis of the author stating that China's *gacha* market revenue is the highest.

The author will also analyse self-captured *gacha* animation sequences/cutscenes from three different mobile videogames (from South Korea, Japan, and China, respectively) while referencing the information provided in the theoretical psychological framework. For easier analysing of auditory cues and their tone, the author will use an open-source software called Audacity. The key intention of this part is to support or debunk the allegations regarding *gacha* videogames being a constitute of gambling. Another goal is to compare and discuss if *gacha* game developers of all three countries use similar fiddles and practices to influence a person's psyche.

1 Terminology

For easier navigation of the readers who may not be familiar with the field being discussed, this thesis is going to start off with an explanation of important words regarding the area of mobile videogaming especially the games having the *gacha* system implemented in them.

1.1 Microtransactions

Companies making videogames have made revenue through one-time retail sales of their games for decades, but as more and more videogame developing companies started to make free-to-play games to allow gaming to be available for the public, the lack of profit accumulated from these types of games had to be compensated in a different way. Thus, microtransactions came to be. Microtransactions are a form of monetization practice which is not obligatory to play and enjoy a game but could improve the overall gaming experience of a player.

While players can play free-to-play games without spending any real-life money, they are prompted to engage in microtransactions while doing so. Through microtransactions, people are able to spend a small (micro) amount of real-life money to purchase services available in the game. This amount has ranged around 1 to 18 Euro, but now the end amount of the range can even reach hundreds of Euros. There are many aspects of the player behaviour regarding in-game microtransactions but the biggest one being that people are more willing to spend money on games which are free-to-play rather than spending extra money on videogames which they have already bought once.[1]

Through microtransactions players are allowed to be provided with number of services inside of the game. These include getting in-game currency, in-game items, cosmetic items and/or engaging in chance-based systems such as lootbox and *gacha* which both use the in-game currency to be played nowadays.[2]

[1] Sworup Kumar Behuria, "Microtransactions as a Business Model in Video Gaming Industry: Its comparison with Traditional Model and effect on other Industries" (Master's Thesis, 2022), 11–14.
[2] Ibid.

1.2 Lootbox and *Gacha*

As previously mentioned, lootboxes (LBs) are a chance-based system used in videogames to obtain in-game virtual items by random. LBs require the player to pay a specified amount of in-game currency to buy them. In most games currently, consumers can acquire this currency for free thanks to gameplay but if they wish, they may use a shortcut and buy the currency with real-life money.

Most of the times LBs and their animation sequences are designed to look like a spinning wheel or a treasure chest. This only deepens the feeling of anticipation in a person thus trying to make them buy more and more LBs while spending more real-life money. The correlating characteristics with gambling are apparent making this umbrella term for chance-based systems start a controversial argument amongst experts and regulators.[3]

After the implementation of LBs into the videogaming industry, many gamers started to feel that this monetization practice may constitute gambling and called for regulatory solutions from the law institutions of their respective countries. However, due to different gambling regulatory schemes of different countries, the way to properly solving this issue has proven quite difficult. The Entertainment Software Association of the US has publicly stated that LBs are not gambling, because consumers of games are not required to use and/or purchase them and that they may receive them through the means of gameplay. On the other side, the National Council on Problem Gambling of the US conveyed a more pessimistic statement regarding LBs, especially seeing the overlapping psychological principles of both the monetization practice of LBs and the slot machines or roulette of casinos. Many expert studies also agree with this pessimistic perspective, suggesting that LBs really do share similarities with gambling.[4] The official gambling regulatory law, which is in effect in the US state of California, declares that something is considered an illegal lottery if there are three main elements of gambling present, which are prize, distribution by chance and consideration. All three of those are also apparent in the virtual LBs, which suggests that they are indeed constituents of gambling or a lottery. However, the state of California still does not consider LBs gambling to this day. In many European countries, like Belgium

[3] Annette Cerulli-Harms et al., *Loot boxes in online games and their effect on consumers, in particular young consumers* (Brussels: Policy Department for Economic, Scientific and Quality of Life Policies Directorate-General for Internal Policies of the European Parliament, 2020), 13–14.

[4] For further research see: Aaron Drummond and James D. Sauer, "Video game loot boxes are psychologically akin to gambling," *Nature Human Behaviour* 2(8) (August 2018): 530–532.

or the Netherlands, the lawmakers officially declared that LBs do constitute gambling, thus obliging many game developing companies to follow their countries' gambling laws if they wish to continue providing this service to their residents.[5]

Just like LB, *gacha* is a game-of-chance based system in videogames mainly utilized for getting virtual items through a randomized manner. There are many types of *gacha* but in games of today two prevail all, the types where players use this system to get a desired item by a random manner with a set and shown probability, called open *gacha* and box *gacha*[6]. The origin of this word is rooted in the name of the Japanese toy claw or slot machines called *gachapon*. These machines are purely for entertainment purposes, but they may make consumers want to obtain their desired toy and play with the *gachapon* repeatedly. Making this 'blind purchase' and not knowing what you can get is the sole purpose of both the *gachapon* and the *gacha*, a virtual version derived from the machines.[7]

Figure 1: *Gachapon* machines found all over Japan[8]

[5] Edwin Hong, "Loot Boxes: Gambling for the Next Generation," *Western State Law Review* Vol. 46 #1 (2019): 63–62; 65–66.
[6] More about that in the section 1.2.1 Types of *Gacha.*
[7] Cerulli-Harms et al., *Loot boxes*, 19.
[8] "Gachapons in Japan – 43 Cool Gachapon Capsule Toys," Plan my Japan, last modified April 12, 2023, https://www.planmyjapan.com/cool-gachapon-toys-japan-guide/.

Both systems mentioned above could be seen as synonymous with lootbox being the main umbrella term for all chance-based systems in the videogaming industry. However, to easily categorize and differentiate the practices, we may look at both words in a broader view and call the game-of-chance systems in games from Western companies lootbox and those from Eastern companies *gacha*.

Another difference might be the level of certainty and probability in both systems. While most games with the LB system use a set percentage of acquiring items of a given rarity, *gacha* games mix this randomized probability with certainty. In games with the *gacha* system implemented, players may roll for their specific desired item with a set amount of relative probability to getting it (a percentage). The probability of getting the desired item gets higher with each roll made in the game until reaching a point where a person is guaranteed (the percentage being 100%) to get said item in the next roll. This difference shows that since players of *gacha* games can expect a successful roll, the *gacha* system is not such a predatory gambling service as the LB system. Nevertheless, the *gacha* system is regulated by strict regulatory laws in many Asian countries which also explains the less predatory nature of this monetization practice.[9]

To demonstrate how different the level of certainty and probability in both systems is, we may analyse the monetization chance-based systems and the disclosure of probability and drop rates of items from the pool of rewards of 4 chosen videogames. Two of the chosen videogames are representatives of the lootbox system (from Western developers) and the other two are representatives of the *gacha* system (from Eastern developers).

The first analysed videogame is *Counter-Strike 2*[10] (Valve, 2023), an American game which uses the LB system in a form of "cases". Every one of these boxes, stylised to look like metal or plastic cases, require a key to be opened. Different kind of cases are worth a different amount of real-life money, but the keys all cost 2.35 Euro *(in Czechia)*. Figure 2 depicts how a case in *Counter-Strike 2* may look like. When a consumer decides to unlock it, they are prompted to look at all the virtual items which are contained within the case. Every item is labelled with a different colour, showcasing its rarity. From all the 18 items shown, we may notice that 7 items are of blue rarity, 5 items are of purple rarity, 3 items are of pink rarity, 2 items are of red rarity and there is one yellow/gold item, which is supposed

[9] Based on the author's extensive knowledge
[10] Valve, *Counter-Strike 2*, Valve Corporation. Windows, Linux. 2023.

to be of the highest rarity. However, there is no way to find the true probability rates of each rarity dropping as well as having an offer at knowing when the gold item is going to certainly drop. Since this has been a great issue with the release of this system in countries with strict regulatory law, like China, Valve has been compelled to release the official drop rates online. Figure 3 shows the probability rates provided by Valve even though they are still not disclosed in-game before unlocking a case. Due to this reason, many players believe that these rates are highly speculative.[11]

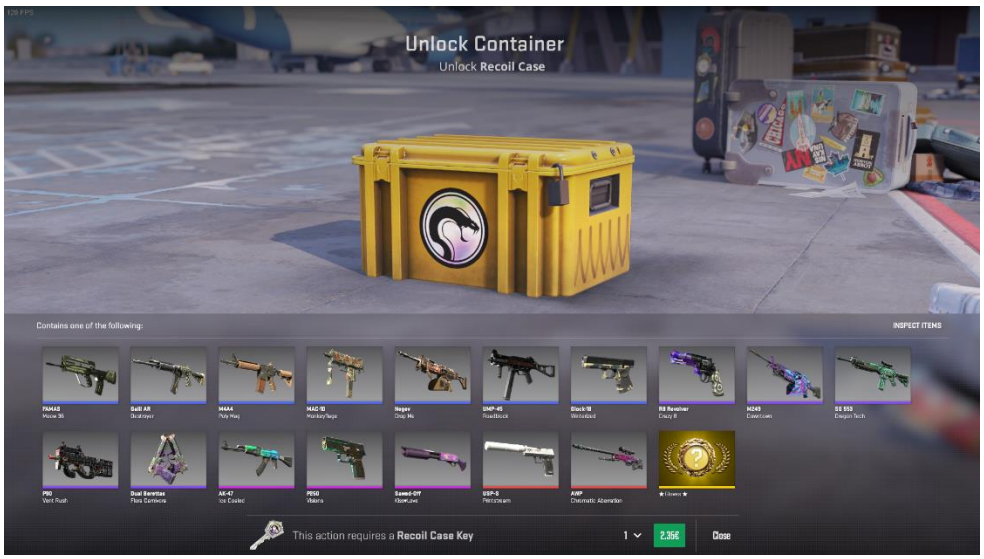

Figure 2: A case from the game *Counter-Strike 2*

Rarity	Color	Odds	Simplified Odds
Mil-Spec Grade	Dark Blue	79.92%	4 in 5
Restricted	Purple	15.98%	1 in 6
Classified	Pink	3.2%	1 in 31
Covert	Red	0.64%	1 in 156
Exceedingly Rare	Gold	0.26%	1 in 385

Figure 3: Drop rates of items from the cases of the game *Counter-Strike 2*[12]

[11] "CS2 Case Odds: The Official Numbers Published By Valve," csgoskins.gg, last modified September 28, 2023, https://csgoskins.gg/blog/csgo-case-odds-the-official-numbers-published-by-valve.
[12] Ibid.

Apex Legends [13] (Respawn Entertainment, 2019) is another American videogame which utilizes the LB system for the gain of profit. The Apex packs, available to gamers for puchase, do show probability rates in-game if a player decides to click on a designated button. Figure 4 illustrates the pop-up window which opens after clicking on that button. As we may see, there are 3 types of Apex packs, each with different pool of rarities which are to be obtained from the pack. The initial premise states that in the case of the LB system, players are not always 100% certain about getting their desired item, but the legendary Apex pack and all of the other packs have a disclosed guaranteed option of getting a virtual item of the highest rarity (100% in the case of legendary Apex packs or in the case of every 30 rare and/or epic Apex packs opened). However, players are still not certain about the specific legendary virtual item they are going to receive upon opening an Apex pack with the guaranteed legendary drop. This, again, alligns with the premise as consumers may never know the number of packs they should buy and open until the point of getting their specific desired item (being a skin, frame, pose or an item of another category shown in Figure 4).

Figure 4: The in-game table of probability rates of the LB system in *Apex Legends*

The first chosen representative of the *gacha* system is a Chinese multi-platform videogame called *Honkai: Star Rail*[14] (Hoyoverse, 2023). The rate-up virtual items obtainable through the means of this chance-based system are portrayed before a player decides to roll for their desired item. As shown in Figure 5, the specific character of the highest rarity (in this case 5-stars) available for a limited-time is the dominant feature of the whole screen. This suggests that a consumer, spending real-life currency to participate in this *gacha*

[13] Respawn Entertainment, *Apex Legends*, Electronic Arts. Windows, PlayStation 4, Xbox Live Arcade. 2019.
[14] Hoyoverse, *Honkai: Star Rail*, miHoYo Co., Ltd. Windows, iOS, Android, PlayStation 5. 2023.

system, most likely aims at getting this new and limited character. But do the players of this game have a chance at knowing how much money they must spend to certainly (100%) get this specific desired character/virtual item? They do as after clicking on the "View Details" button a long article pops up in-game showing all of the items available in the pool of rewards as well as a very detailed text disclosing the precentage probability drop rates of everything. If we examine the contents of this text in Figure 6, we may come across two important pieces of information. In the "Warp Rate" part of the text, there is a disclosure of the guaranteed rate of any 5-star character; "Within 90 Warps, at least one 5-star character is guaranteed." and the first bullet point in the "Boosted Rate" part further mentions and explains the *gacha* system of this game; "The first time you obtain a 5-star character in this Warp event, there is a 50% chance it will be the promotional character X. If the first 5-star character you obtain in this Warp event is not the promotional character, then the next 5-star character you obtain is guaranteed to be the promotional character.".[15] Both of the meanings of these parts suggests that if a player does not get the limited character after 90 warps/pulls, they are guaranteed to get them after another 90 warps/pulls. In addition, players are able to keep track of the number of wraps they have already done in the "Records" tab. All in all, a player is certain that their specific desired virtual item is going to drop after 180 instances of using the *gacha* system of *Honkai: Star Rail*.

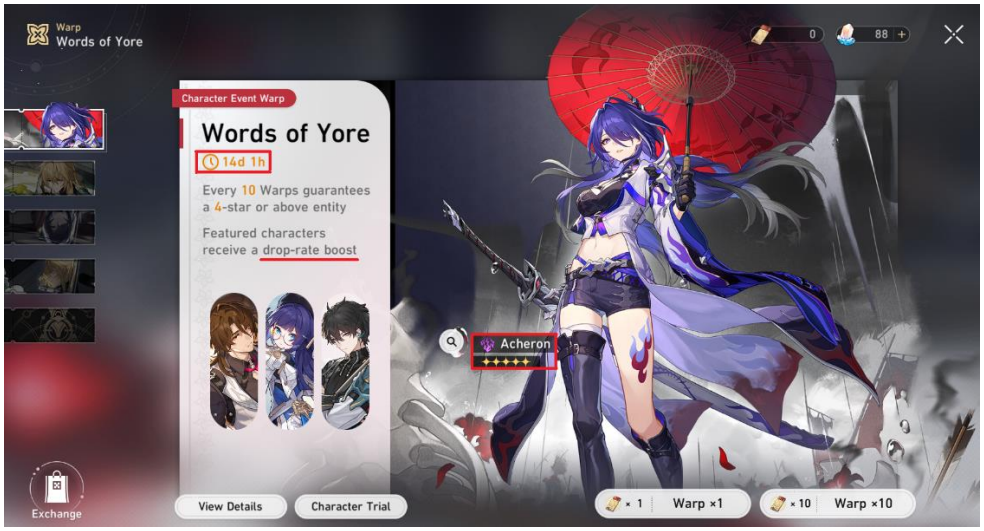

Figure 5: The limited-time banner of the game *Honkai: Star Rail*

[15] Hoyoverse, *Honkai: Star Rail*.

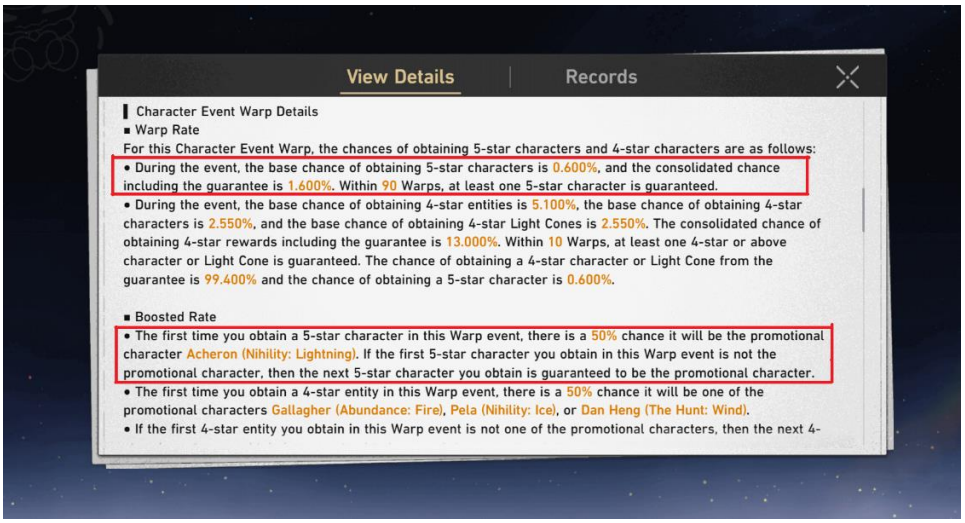

Figure 6: The "View Details" text disclosing the probability drop rates of items in *Honkai: Star Rail*

The last analysed videogame is the South Korean *Cookie Run: Kingdom* (Devsisters, 2021). The developers and distributors of this mobile *gacha* game, released for Android and iOS, also implemented this monetization system into their videogame. Just as in *Honkai: Star Rail*, *Cookie Run: Kingdom* shows a short animation of the rate-up limited-time featured character (cookie) beforehand. However, this character is of "epic" rarity which is not exactly the most valuable rarity in this videogame. After clicking on the "Probabilities" button, players are shown a list of every single item and their drop rate in precentage. The table of probabilities, as stated by Figure 8, reveals the rarity, type of the vritual item and its probability rate. Although, in clash with the initial premise, this time there is no way to see the exact point at which a player is guaranteed to get the specific desired character, in this case the featured rate-up cookie. Every videogame is unique and has its unique set of employees who are behind it so this premise is not going to be true for every LB or *gacha* videogame. Nevertheless, the thorough and exact disclosure of probability drop rates suggests that this is indeed a *gacha* game obliging more to the East Asian legislation and lawmakers.

Figure 7: The featured cookie banner screen from the videogame *Cookie Run: Kingdom*

Figure 8: The probabilities table of the items from the pool of rewards from *Cookie Run: Kingdom*

1.2.1 Types of *Gacha*

Koeder and Tanaka (2018) divide the monetization system of *gacha* into the following types[16];

- Kompu *Gacha* – Players were obliged to get every single item from a set pool of items through the means of *gacha* in order to get one final exclusive reward (due to this system, driven by uncertainty, becoming illegal in Asian countries, it has been discontinued).

- Box *Gacha* – A consumer has a shot at getting a reward from a set pool of items, each with a designated probability shown as a percentage beforehand.

[16] Marco Koeder and Ema Tanaka, "Exploring the Game-of-Chance Elements in Japanese F2P Mobile Game. Qualitative Analysis of Paying and Non-Paying Players Emotions," *DHU JOURNAL* 5 (2018): 18.

- Sugoroku *Gacha* – Popular *gacha* system during seasonal events in videogames. The system is stylized as the Ludo boardgame, where players roll a dice to advance and get the reward depicted on the board.

- Redraw *Gacha* – Consumers may redraw/reroll after getting an item so they have a shot at another reward from the prize pool, which might not always be for the better.

- Consecutive *Gacha* – When players use this system in bulks, they are rewarded with an increased chance of getting the rarest item from the pool of items.

- Open/Closed *Gacha* – If players take part in a closed *gacha*, they are uncertain about the probabilities as this type does not explicitly show any percentage beforehand. On the other hand, just like box *gacha*, open *gacha* presents a percentage probability of acquiring each item. Because of the current law situation in East Asian countries as well as other countries globally, open *gacha* is the legal and widely used variant of the two (closed *gacha* is illegal).

- Discounted *Gacha* – A type of *gacha* used as a marketing strategy, as it is mostly introduced during the release of new updates or events. Consumers are able to pay less virtual currency to partake in this *gacha* for a limited number of draws/rolls.

1.3 Roll/Pull

Roll (sometimes referred to as pull) is one instance of trying to acquire an item through chance-based monetization systems in videogames. After this instance consumers may get an item of a specific rarity based on the probability which is disclosed beforehand. In this thesis, rolls will be categorized into successful and unsuccessful. The former being a roll where a player gets their desired item and/or an item of the highest rarity and the latter being a roll where a player does not get such item.

1.4 Whale

A whale refers to a person, who spends significant amount of real-life money on microtransactions in videogames. The term suggests that for developers, keeping these consumers happy and loyal is much more important for maximalization of profit rather than having many “small fish in the sea” while not accumulating any significant revenue. Players, who are perceived as “fish” refer to themselves as free-to-play players.

Another term used for consumers who spend real-life money but do so cleverly and sparingly is dolphins.[17]

2 Mobile Videogames in East Asia

Videogaming has always been an important part of the East Asian culture being it in the form of PC *bangs*[18] in South Korea or Japanese and Chinese arcades. With the rise of smartphones and tablets, East Asian countries sought after the opportunity to make gaming accessible to a broader audience through mobile technologies while making significant profit. This topic is going to be discussed in the sections below.[19]

2.1 History

With the introduction of mobile gaming and its rising popularity in the early 2000s, consumers of every generation got a chance to enjoy their leisure time with a videogame from the comfort of their sofa or bed through a screen of a smart device, such as a smartphone, tablet, or a PDA (personal digital assistant). But the scope of the meaning of mobile gaming changed with the introduction of several wireless handheld consoles, mostly the PlayStation Portable (PSP) and Nintendo DS (NDS). Handheld gaming is also mobile gaming in theory since players may use these handheld devices anywhere. However, as smartphones became popular, so did mobile gaming. This is the sole reason why mobile gaming is separated from handheld gaming because it followed the trajectory of the development and usage of cell phones and smartphones throughout last decades.[20]

Mobile games were originally intended to be casual for a wider demographic of people. This correlates with the evolution of communication technologies and their parameters. Mobile devices were not always able to run difficult online videogames. Dal Yong Jin describes the announcement and launch of iPhone in 2007 as one of mobile videogaming's most important pillars. The introduction of new apps, properties and the App Store shifted the possibilities of this type of gaming. Fast forward to 2023 and Apple continues to influence mobile gaming

[17] Brian C. Britt and Rebecca K. Britt, "From waifus to whales: The evolution of discourse in a mobile game-based competitive community of practice," *Mobile Media & Communication*, Vol. 9(1) (2021): 6–7.

[18] PC bangs (Korean: PC 방) = Internet and videogame cafés of South Korea

[19] Dal Yong Jin, "Chapter 1: The Emergence of Asian Mobile Games: Definitions, Industries and Trajectories," In *Mobile Gaming in Asia: Politics, Culture and Emerging Technologies*, ed. Dal Yong Jin (Dordrecht: Springer Netherlands, 2017), 3–5.

[20] Ibid, 6.

with its addition of iPhone 15 Pro. Thanks to this device consumers can run system-demanding games (originally released for PC and consoles), such as the remake of Capcom's game Resident Evil 4 or Hideo Kojima's Death Stranding.[21]

Dal Yong Jin further mentions the shift in Nintendo's strategy following the announcement of their plan to invest in videogames for smart phones in March 2015. Nintendo, being the pioneer of console gaming and console-technology research in Japan with a very strong brand and image, was not expected to nest into the worldwide mobile gaming market. Thus, their entry into the global mobile gaming sector was a shock to many and it only supports the truth that the previously popular console gaming is being expansively overshadowed by mobile gaming, especially with South Korean and Chinese videogame-developing companies following suit.

Other important events in the journey of mobile gaming's popularisation may include the introduction of the 5G network in 2017 or the convergence of mobile videogames. Convergence in this sense can be understood as the effort to embed and include a certain form of media into other elements of the age of technology. Since digital PC and console games were an important part of ICT before the mobile ones, many interested parties had to push through and cooperate in the quest to make mobile videogames famous.[22]

Convergence of mobile videogames in East Asia is rooted in the form of mobile social media apps such as KakaoTalk and Line in South Korea or WeChat in China. These instant-messaging providers integrated simple videogames into them, thus giving its consumers the chance to unwind and play from the comfort of their applications. This, together with the rising usage of information technologies and app stores in the countries of East Asia, served as the basis for the rising popularity of mobile videogames across the region.[23]

East Asia is the cradle of many electronics and information technology companies, for example the Chinese Huawei and HCT or South Korean Samsung and LG, so there is no surprise in the rising effort of those countries in the pursuit of being

[21] "First wave of AAA iPhone games sees a big new release—and a notable delay," arstechnica, last modified December 20, 2023, https://arstechnica.com/gaming/2023/12/first-wave-of-aaa-iphone-games-sees-a-big-new-release-and-a-notable-delay/.
[22] Yin, "Chapter 1: The Emergence," 8–10.
[23] Ibid, 11–12.

a significant part of the mobile gaming market, in which they succeeded, because today these nations are one of the biggest in the game.[24]

2.2 Economic Significance

There still lies a question about why mobile gaming became so popular in East Asia since the region has been known for its console gaming (Japan with PlayStation and Nintendo) and online gaming (South Korea with MMORPGs and PC bangs) for decades. The answer is fairly simple, the trend of focusing on the development of mobile videogames is mostly because of significant profit and the rising usage of smartphones in East Asia.

The transition to development of mobile videogames has been simple thanks to the relatively low market barriers, since developers are able to distinguish the target group of consumers and tailor a game to their needs. Mobile videogames are distributed through platforms in which consumers may easily and quickly download games and play them in short sessions throughout the day.[25]

Still as of 2024, the biggest distributor platforms are Apple's App Store and Google's Play Store, which offer a wide selection of apps as well as mobile videogames. However, due to legal reasons these platforms have limited accessibility in China. Big corporations have developed their own 3rd party platforms, such as Tencent's My App which provide the same service as the platforms above but for residents of mainland China. South Korean company Samsung also has their own platform called Galaxy Store. An important thing to realise about East Asia's (and mostly China's) videogaming developers is that they usually release their mobile videogames twice, the first time in the land of their origin (South Korea, Japan, China) and the second time globally through App Store and/or Google Play Store.[26]

Other important fact about mobile gaming is that it has overshadowed console gaming in earnings long ago with China dominating the whole market.[27] The whole revenue of mobile

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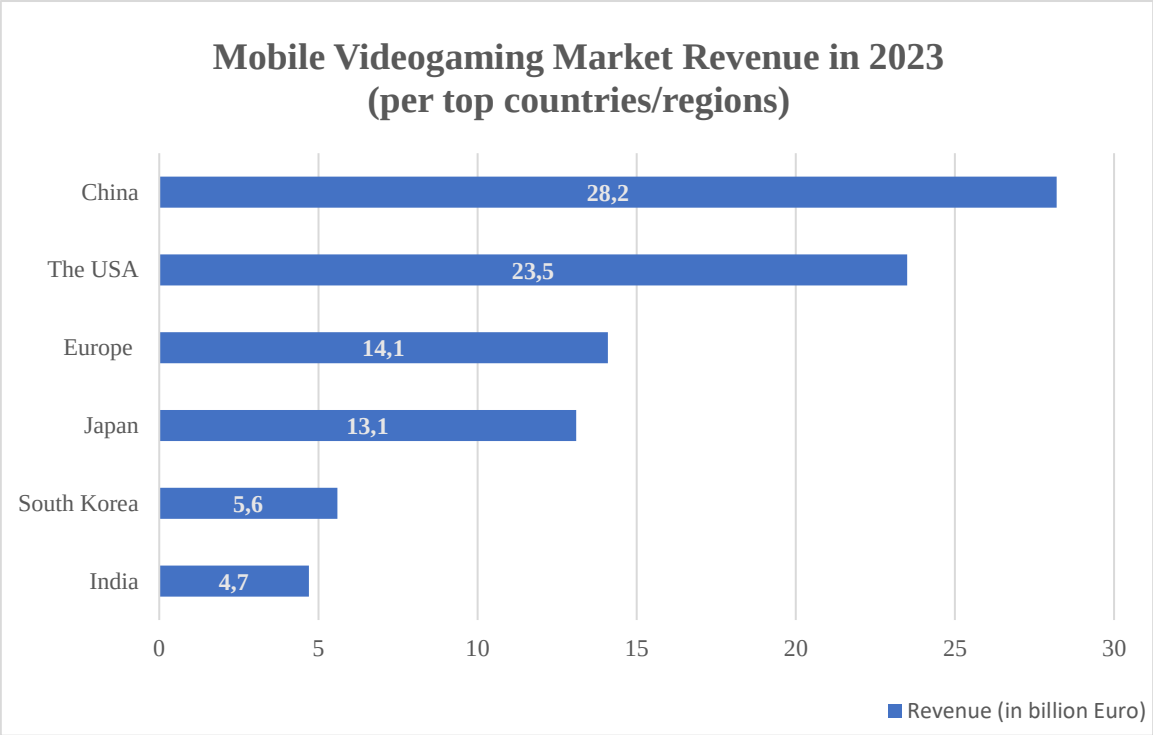
[24] David Greenspan and Gaetano Dimita, "Chapter 9: The Mobile Gaming Market," In *Mastering the Game: Business and Legal Issues for Video Game Developers – A Training Tool*, ed. David Greenspan and Gaetano Dimita (Geneva: WIPO, 2022), 284–285.
[25] Kyungjin Nam and Hye-jin Kim, "The determinants of mobile game success in South Korea," *Telecommunications Policy* 44(2) (2020): 10.
[26] Greenspan and Dimita, "Chapter 9: The Mobile," 289.
[27] Ibid, 285.

gaming is equal to around 50% of the global market of the videogaming industry. Again, this is achieved thanks to the extensive number of different genres of mobile videogames, people of all walks of life can play their desired mobile videogames, being it the cozy and casual genre of games like Gardenscapes to the large online MMORPGs of games like Diablo Immortal.[28]

For instance, when it comes to profit, the instant-messaging apps mentioned in the previous section revealed that their biggest source of revenue is from in-app free-to-play games which have microtransactions implemented in them. South Korean KakaoTalk has disclosed that in the last quarter of 2014, they have grossed over 49 million Euro through a Swedish game called Candy Crush, which was playable in the app. This has led to other companies following suit and trying to have a greater share in the global mobile videogaming market.[29]

If we look at the exact revenue, China is currently on top of the global mobile videogaming market with revenue of around 28.2 billion Euro in 2023. The USA is close second (23.5 billion Euro) with Japan and South Korea far behind with revenue of mobile gaming in 2023 being around 13.1 billion Euro and 5.6 billion Euro respectively. The whole region of Europe grossed around 14.1 billion Euro in 2023 (especially the UK, Germany and France).[30] To compare it to overall numbers, Newzoo states that the worldwide mobile gaming market grossed over 85 billion Euro in 2023, making it the biggest part of the videogaming market (around 49%).[31] Newzoo also predicts that the Asia-Pacific region will continue to increase their mobile gaming market through the years. This should be achieved also due to the extensive popularity of East Asian mobile *gacha* and free-to-play games.

[28] Greenspan and Dimita, "Chapter 9: The Mobile," 289.
[29] Yin, "Chapter 1: The Emergence," 11–13.
[30] "Mobile Gaming Market Worldwide Size – Facts & Statistics by Country & Region," Capermint, last accessed April 27, 2024, https://www.capermint.com/blog/mobile-gaming-market-size/.
[31] "Newzoo's games market revenue estimates and forecasts by region and segment for 2023," Newzoo, last modified February 8, 2024, https://newzoo.com/resources/blog/games-market-estimates-and-forecasts-2023.



Graph 1: Top 6 most grossing countries/regions in the mobile videogaming market in 2023[32]

One of the most widely used microtransaction practices of Korean, Japanese and Chinese mobile videogames, called *gacha* is going to be discussed more in detail in chapter 3.

3 Microtransactions and *Gacha* system in Korean, Japanese and Chinese Mobile Videogames

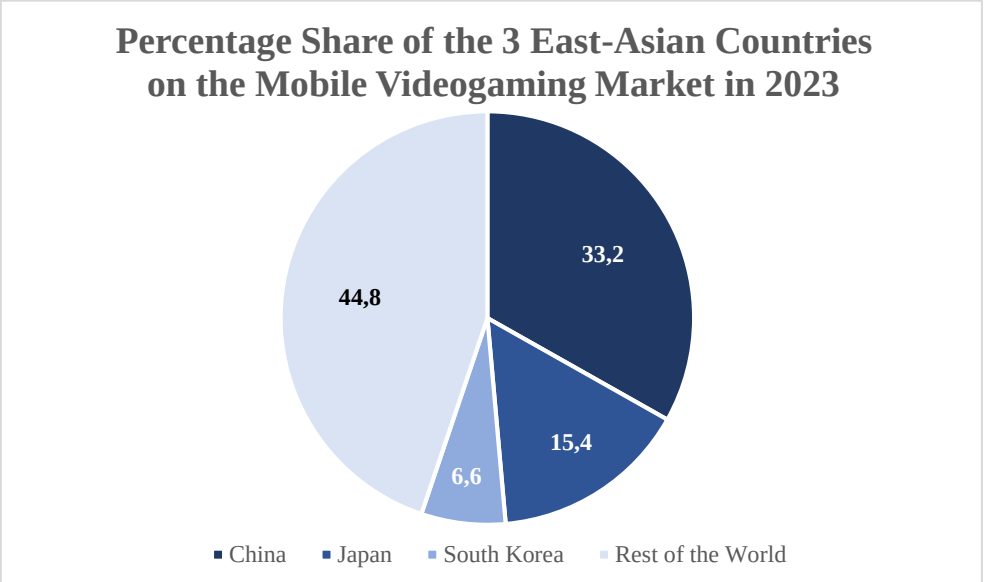
3.1 Economic Framework

Microtransactions as well as the *gacha* system in Korean, Japanese and Chinese mobile videogames are tightly connected because if a videogame has the *gacha* system implemented, most of the virtual currency bought through the means of microtransactions are then spent on *gacha*. This subsection is going to thoroughly analyse and compare mobile gacha games of the three countries discussed on a level of overall mobile-gaming market revenue and popularity in the form of the number of downloads worldwide.

For better navigation, let us recall the market revenue situation of the videogaming industry in 2023. Per Newzoo, the overall videogaming industry grossed approximately 172.5 billion Euro, with the mobile videogaming market corresponding to over 85 billion Euro (49%) of the whole industry.[33] China makes up 28.2 billion Euro, Japan 13.1 billion Euro

[32] "Mobile Gaming Market Worldwide Size – Facts & Statistics by Country & Region."
[33] "Newzoo's games market revenue estimates and forecasts by region and segment for 2023."

and South Korean 5.6 billion Euro of the whole mobile videogaming industry (including non-*gacha* games).[34] Graph 2 portrays the share of each of these East-Asian countries on the whole mobile gaming industry in 2023.



Graph 2: Percentage share of China, Japan, and South Korea on the mobile videogaming market in 2023[35]

The data analysed in the upcoming subsections are from Sensor Tower, an analytics company, which does not report nor has any access to Chinese Android revenue and revenue from Chinese 3rd party app stores. The overall revenue of Korean, Japanese and Chinese *gacha* games could be even higher if we regard the dominance of Chinese mobile-videogaming market. If a videogame is on multiple platforms, Sensor Tower calculates only the revenue from mobile app stores (Android and iOS). Also, gacharevenue.com, a website which uses Sensor Tower's data, only reports the revenue of around 84 of the most critically acclaimed and famous mobile *gacha* videogames (as of April 2024). Thus, the analysis below is a rough estimate of the *gacha* market revenue in 2023.

3.1.1 South Korea

South Korea has many globally famous developers of mobile videogames, such as Netmarble or Smilegate. According to gacharevenue.com, the overall market revenue of Korean *gacha* games has reached approximately 700 million Euro in 2023, that's roughly 10% of the whole Korean mobile videogaming industry. Table 1 shows the market revenue and approximate number of downloads of the top 5 South Korean *gacha* games.[36]

[34] "Mobile Gaming Market Worldwide Size – Facts & Statistics by Country & Region."
[35] Ibid.
[36] Data analysed by author from: Gacharevenue.com, last accessed April 27, 2024, https://www.gacharevenue.com/.

Gacha game	Publisher, Year of Release	Market Revenue (2023)	Number of Downloads (2023)
Goddess of Victory: NIKKE	SHIFT UP Corporation, 2022	293 bil. €	2,1M
Blue Archive *(Japanese Release)*	Yostar, 2021	122 bil. €	520K
Summoners War	Com2uS, 2014	117 bil. €	600K
Epic Seven	Smilegate Entertainment, 2018	42 bil. €	850K
Blue Archive *(Global Release)*	Nexon, 2021	35 bil. €	970K

Table 1: The market revenue and number of downloads of the top 5 Korean mobile *gacha* videogames[37]

3.1.2 Japan

Japan, as the cradle of the *gacha* monetization practice, is a country with the highest number of mobile *gacha* videogames released (as of 2024). The overall market revenue in 2023 was around 1.5 billion Euro, also being around 10% of the whole Japanese mobile gaming market. Table 2 contains the top 5 Japanese mobile *gacha* videogames of 2023, regarding market revenue.[38]

Gacha game	Publisher, Year of Release	Market Revenue (2023)	Number of Downloads (2023)
Uma Musume: Pretty Derby *(Japanese Release)*	Cygames, 2021	329 bil. €	270K
Fate/Grand Order *(Japanese Release)*	Aniplex Inc., 2015	313 bil. €	768K

[37] Data analysed by author from: Gacharevenue.com, last accessed April 27, 2024, https://www.gacharevenue.com/.
[38] Ibid.

Heaven Burns Red *(Japanese Release)*	Wright Flyer Studios, 2022	116 bil. €	239K
Hatsune Miku: Colorful Stage! *(Japanese Release)*	Sega, 2020	115 bil. €	980K
Memento Mori	Bank of Innovation, Inc., 2022	82 bil. €	540K

Table 2: The market revenue and number of downloads of the top 5 Japanese mobile *gacha* videogames[39]

3.1.3 China

Chinese mobile *gacha* videogames grossed around 1.1 billion Euro globally in 2023. However, the real overall number is, naturally, much higher as the Chinese Android revenue and revenue from Chinese 3rd party app stores contribute significantly to the overall market of Chinese mobile videogames (as well as Korean and Japanese). The data provided by Sensor Tower suggests that Chinese mobile *gacha* videogames make less than 5% of the overall Chinese mobile videogame market. Much like the 2 tables before, Table 3 has data about the top 5 Chinese mobile *gacha* videogames.[40]

Gacha game	Publisher, Year of Release	Market Revenue (2023)	Number of Downloads (2023)
Genshin Impact	Hoyoverse, 2020	486 bil. €	18M
Honkai: Star Rail	Hoyoverse, 2023	358 bil. €	10.6M
Arknights *(Japanese Release)*	Yostar, 2020	63 bil. €	159K
Arknights *(Global Release)*	Yostar, 2020	27.7 bil. €	510K
Azur Lane *(Japanese Release)*	Yostar, 2017	27.5 bil. €	88K

Table 3: The market revenue and number of downloads of the top 5 Chinese mobile *gacha* videogames[41]

[39] Data analysed by author from: Gacharevenue.com, last accessed April 27, 2024, https://www.gacharevenue.com/.
[40] Ibid.
[41] Ibid.

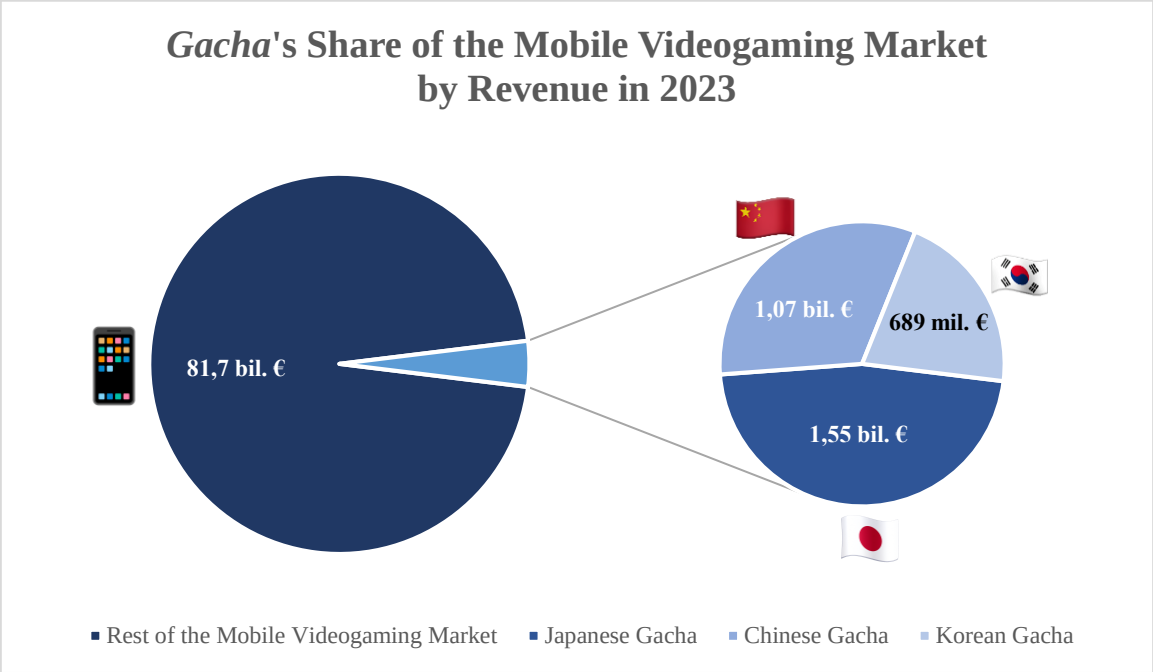
3.1.4 Overall Comparison

To compare the market situation of mobile *gacha* games of all three countries, we may look at Graph 3. The overall market revenue of *gacha* games originating from the discussed countries suggests that *gacha* games contributed 4% to the whole global mobile gaming market revenue in 2023. Japanese *gacha* videogames are the most profitable, followed by the Chinese ones and South Korean *gacha* videogames are on the last place in terms of revenue. Table 4 shows data of the top 10 mobile *gacha* videogames. Hoyoverse's surge to popularity starting from 2020 with their release of *Genshin Impact* (Hoyoverse, 2020) has tremendously contributed to the mobile gaming industry of China. However, in the year 2023, Japanese mobile *gacha* games have still hold their own and Japanese developers and publishers have continued being the most popular and profitable in terms of the *gacha* videogaming market. Interestingly, there are 15 games of Japanese origin in the list of top 25 most grossing mobile *gacha* videogames with Bandai Namco, Cygames and Aniplex Inc. being the most prominent publishers in said list.

Gacha game	Country of Origin	Publisher, Year of Release	Market Revenue (2023)
Genshin Impact		Hoyoverse, 2020	486 bil. €
Honkai: Star Rail		Hoyoverse, 2023	358 bil. €
Uma Musume: Pretty Derby *(Japanese Release)*		Cygames, 2021	329 bil. €
Fate/Grand Order *(Japanese Release)*		Aniplex Inc., 2015	313 bil. €
Goddess of Victory: NIKKE		SHIFT UP Corporation, 2022	293 bil. €
Blue Archive *(Japanese Release)*		Yostar, 2021	122 bil. €
Summoners War		Com2uS, 2014	117 bil. €
Heaven Burns Red *(Japanese Release)*		Wright Flyer Studios, 2022	116 bil. €

Hatsune Miku: Colorful Stage! *(Japanese Release)*		Sega, 2020	115 bil. €
Memento Mori		Bank of Innovation, Inc., 2022	82 bil. €

Table 4: Top 10 of the most grossing mobile *gacha* videogames in 2023[42]



Graph 3: The share of Japanese, Chinese and Korean *gacha* videogames on the whole mobile gaming market (in 2023)[43]

3.1.5 Future Development

The whole mobile gaming industry of China is projected to gross over 31.7 Euro in 2024, while Japan's and South Korea's mobile video gaming markets are projected to reach 15.3 Euro and 5.6 Euro respectively.[44] This will also be achieved thanks to the ever-increasing popularity and profit of *gacha* videogames.

Following the example of China and Japan, South Korean game-developing studios are trying to reach the same level of popularity and profitability of mobile *gacha* videogames.

[42] Data analysed by author from: Gacharevenue.com, last accessed April 27, 2024, https://www.gacharevenue.com/.
[43] Ibid.
[44] "Mobile Games – Worldwide," statista, last accessed April 27, 2024, https://www.statista.com/outlook/dmo/digital-media/video-games/mobile-games/worldwide.

There have been several announcements made by South Korean developers about creating new mobile *gacha* videogames such as Netmarble with their *The Seven Deadly Sins: Origin* (Netmarble, TBA) or *Solo Leveling: Arise* (Netmarble, 2024)[45].

Another interesting fact is the announcement of *Persona 5: The Phantom X* (Perfect World Games, 2024). *Persona*, a critically acclaimed and globally fan-beloved game series developed by Atlus and published by SEGA, is getting a mobile *gacha* instalment which is being developed by a Chinese studio. Most likely, due to the strict law barriers of releasing a Chinese version, SEGA has entrusted development and sold licensing rights to a Chinese game-developing studio which is going to make it easier for SEGA to take advantage of the huge scale of the Chinese market. The original developers of *Persona*, Atlus, are still going to oversee the development of *Persona 5: The Phantom X*.[46]

3.2 Psychological Framework

Although there are hundreds of Korean, Japanese and Chinese mobile videogames, they use very similar properties to convey a thorough influence on the human brain, similarly, to slot machines in casinos. For this reason, this section is not going to be divided by country separately, because the *gacha* system and animation sequences also use similar, if not the same, tricks to keep the player invested.

This similarity is also rooted in cultural differences. Eastern cultures pay attention to multiple cues as a single entity, apart from Westerners. To put this to an example, Japanese reality TV shows are sometimes very overwhelming for the eye of a Westerner. There are a lot of visual and sound stimulants on the screen at the same time. To Westerners, this is sometimes viewed upon as overstimulating and maybe even strange, but people in Japan, South Korea and China fully enjoy having very

[45] "Solo Leveling: Arise: Here's everything we know so far about game, release date and more," The Economic Times, last modified April 20, 2024, https://economictimes.indiatimes.com/news/international/us/solo-leveling-arise-heres-everything-we-know-so-far-about-game-release-date-and-more/articleshow/109443574.cms?from=mdr.

[46] "A free-to-play 'Persona 5' mobile game is on its way," engadget, last modified March 17, 2023, https://www.engadget.com/free-to-play-persona-5-mobile-game-114009191.html?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8&guce_referrer_sig=AQAAAMsS46ly95dZPJ-cYYe9XyKy7zk6cF4jMD-Pw8Ico3b4UFKw2n8R1ePGqS4NMLrGvBRrqCS5fyeyBDDvZvLKrddZloBKiOzXACMpVqZfi805DfuLyqbEFyp80PokfPxMkx58XCKwrKLsezqH6lIyoHuid0awB60XZkMM-xyu6w7I.

stimulative, expressive, or even affective multisensory visual cues because they can easily view everything as a single image.[47]

Thus, those same cues, mentioned above, are used even for the animation sequences which accompany a roll in mobile *gacha* games. However, to ensure that the videogames appeal to a wider and, most importantly, global audience, the developers are trying to make the animations cater to the Western audience as well, using similar fiddles to casinos and other institutions of gambling.

3.2.1 Engaging Aspects

To keep the players engaged in the monetization practice of *gacha*, there must be enough appeal kept even before a player decides to spend real-life money and roll for their desired items. It is a common occurrence that at the release time of any *gacha* mobile videogame, the initial player base and revenue are at their highest, which also corresponds to the size of the development company as well as the popularity of the game and the marketing strategy used before the release. After that, because of the competitive environment of mobile videogame market, developers must keep the momentum of their game going regarding all its aspects and their updates, which should be done regularly.[48]

As to the engaging aspects of *gacha* games, the reasons for continuous playing and paying may differ from person to person (and from whales to fish). The most common aspects being[49;50];

- Narrative
- Collective Value
- Time Availability
- Fanservice/Characters
- Rate-Up or Price Reduction
- Gameplay Enjoyment
- Pay-To-Win

[47] Christian R. Bueno, "West and East, Cultural Differences," YouTube video, published December 6, 2012, https://www.youtube.com/watch?v=ZoDtoB9Abck&ab_channel=ChristianR.Bueno, 29:00–33:15.
[48] Nam and Kim, "The determinants of mobile," 2.
[49] George-Gabriel Rentia and Anastasia Karaseva, "What Aspects of Gacha Games keep the Players Engaged?" (Bachelor's Thesis, 2022), 27–32.
[50] Ida Farina binti Ismail, Mimi Fitriana and Chan Li Chuin, "The Relationship Between Loneliness, Personality Differences, Motivation and Video Game Addiction in the Context of Gacha Games in F2P Mobile Games: A Global Setting," *Proceedings of The 1st Borneo Psychology Seminar* (2021): 130.

First, let's discuss narrative. Every videogame has its own story, some games may be more story-driven than others, but for Easterners, they really like telling diverse and meaningful stories. Thus, *gacha* mobile videogames maintain a good reputation when it comes to narrative. Consumers, both Western and Eastern, like to be engaged in it for years to come, given today's nature of free-to-play mobile videogames being online and regularly updated. And through this narrative, players have a chance to learn more about the items, which then may be provided through the *gacha* system, the better if the item is a character featured in the story.[51]

Collective value and time availability are related in a sense that most items acquired through *gacha* are available in so called "banners", which have a designated amount of low and high tier items that can be rewarded through its means. These "banners" almost always include an exclusive item of the highest rarity and are limited in time, thus making the players feel like if they want to pull for this limited-time item, they should do so as soon as possible, because they never know when the item and its banner is going to come back (and if it even is). This further stimulates the mind of a person and pressures them to act in time. "Banners" are updated regularly according to the state of the game regarding gameplay and narrative (characters that appear in the real time story in-game are more likely to appear in a limited-time "banner").[52]

Collective value is important to a consumer because if they are not able to receive the desired item in time, they may never get the chance to get it again as the item and its "banners" is limited in time. And because of that they have a feeling of accomplishment after getting the desired exclusive item, which has a high collective value for them, increasing with time. However, this value only counts in the *gacha* game in which the item is acquired, because as the definition of *gacha* rewards states, they have no real-life currency value and cannot be exchanged or sold for it. Moreover, if a truly limited, high-tier item is available only if a player spends huge amounts of real-life money, the collective value plays a huge part in influencing a person's brain. For people that consider themselves as collectors, this is a huge engaging aspect in playing and paying in mobile *gacha* videogames.[53]

[51] Rentia and Karaseva, "What Aspects of," 31.
[52] Ibid, 4.
[53] Ibid, 7.

Most, if not all mobile *gacha* videogames' visuals are stylised as to those of anime. Big expressive eyes, cutesy characters with chubby cheeks and immersive battles are all part of them. This also corresponds to the appeal of anime in Korean, Japanese and Chinese modern pop-culture. The attracting element of characters is maybe the most important aspect to consumers when it comes to engaging in the chance-based system of *gacha*. If a player really likes a certain character, their personality, and their part in the narration of the story, the chance of pulling for that specific character in the *gacha* system rises. Thus, to appeal to the male fantasy, fanservice may be used in-game or through social media accounts of the videogame. Most of the times, fanservice means making a character's visual portrayal very obscene, especially if the character is a female. Through the unique properties of the anime design, the characters may have very voluptuous bodies with revealing clothing. What's more, in games filled with fanservice (e.g. Azur Lane), a system where a player may imaginatively marry a certain character further deepens their adoration of this fictional persona.[54]

Through social media accounts, developer studios may release or share fan-art of characters from their mobile videogame. Since fan-art is not an official property of the developer and does not belong to the game's gameplay and narrative, the portrayal of a character by a fan may be done even more obscenely to appeal to the audience. This is also supported by a phenomenon called "genderbending". As the word suggests, "genderbending" means changing the gender of a character, together with the proportion of their bodies. Artists may make a fan-art of a highly popular male character and change their sex to female to please the fans of the game. Other elements of fanservice may include offline events and collaborations with international restaurants and fast-food brands, where fans of the videogame are able to order a menu and get exclusive merchandise with the portrayal of their favourite characters. All in all, off-game fanservice is also an important part of *gacha* mobile videogames.[55]

[54] Britt and Britt, "From waifus to whales," 6.
[55] "Take your game's retention to the next level with collaboration events," Medium, last modified July 7, 2020, https://medium.com/ironsource-levelup/take-your-games-retention-to-the-next-level-with-collaboration-events-911d5d190386.

Rate-Up or price reduction events happen frequently as a marketing strategy as players feel an urge to participate in the corresponding "banner" to acquire their desired item for a reduced price or with a higher probability of it dropping.

According to players, gameplay is an essential part in the engaging aspects of *gacha* mobile videogames as consumers feel that if they spend real-life money, they would like to see the value being carried over into the enjoyment and/or improvement of the gameplay. Many times, especially in action gameplay-driven mobile videogames, new characters introduced also introduce new ways to play the game through their skills and other game-related properties. Having to master these new attributes creates exciting new challenges to players and may extend their willingness to keep playing the videogame.[56]

Sometimes gamers want to obtain their desired items due to advantages they may bring during the gameplay. These items are referred to as pay-to-win since they create a gameplay advantage to whales and dolphins over people who do not spend any real-life currency to obtain in-game virtual items. In games with PvP (player vs. player) modes and functions, this type of items results in great discourse among players as they feel like gameplay and skill should not be influenced by spending money.[57]

3.2.2 Sensory, Neural and Hormonal Cues

As stated before, game-developing companies and distributors of mobile *gacha* videogames use different sensory and neural cues to influence the psyche of a person and raise the chance of them taking part in their game-of-chance monetization practice. These hedonic consumption strategies are a common occurrence also happening in gambling institutions, such as casinos, to sprout a mild Gambling Disorder in consumers.[58] This subsection will try to pinpoint the underlying similar cues between *gacha* with its animation sequences and gambling to support or refute the claim that *gacha* may indeed constitute gambling.

Nowadays, digital, or virtual gambling sites try to mimic similar situations as real-life gambling institutions through multisensory stimulation, mostly auditory and visual, as they are

[56] Rentia and Karaseva, "What Aspects of," 27–28.
[57] Sworup, "Microtransactions as a Business," 14.
[58] Linda D. Hollebeek et al., "Hedonic consumption experience in videogaming: A multidimensional perspective," *Journal of Retailing and Consumer Service* 65 (2021): 8.

emotionally and motivationally intriguing.[59] Identically, *gacha* animation sequences try to include visual and acoustic effects as well as successful or unsuccessful features to appeal to players. These features imitate the loud sounds or flashing lights of slot machines, lottery, or wheel of fortune. Sensory cues may be positively associated with the system of *gacha* even if a player does not get the rarest virtual item from the pool of rewards. These cues are pleasing to players, so they keep on paying and using the monetization system even disregarding their previous unsuccessful roll. Sometimes, the visuals have very distinct casino-like features, especially in the case of sugoroku *gacha*, where the system tries to be an animated imitation of slot machines, roulette, or other gambling games.[60] In the case of open or box *gacha*, the visual and auditory cues differ between an unsuccessful and a successful roll, changing the brightness and colour of the visual effects and/or turning up the decibels of the auditory effects. This aligns with casinos as they try to reach the levels of volume indoors at around 77 decibels (dB), much like the sound system in concerts or cinemas to easily stimulate the attention of people.[61]

Regarding the psychological reasons for a person's pull towards gambling may vary but they are always rooted in our neural, hormonal, and other psychological activity. The first aspect that psychoanalysis considers as important is a behaviour referred to as **"**compulsive masturbation". Game-of-chance monetization systems provide a thrilling excitement and lead to the behaviour mentioned above. As players' level of excitement increases prior to making a roll in a *gacha* game, they then reach a point where they experience an "orgasm", which immediately disappears as the roll result is finally displayed. This hormonal activity feels good and may make players continue using the *gacha* systems to experience this feeling again and again. Secondly, avoidance of negative emotions also plays a big role in engaging in monetization systems such as *gacha*. If the desired virtual item does not appear and a person feels as if the amount of real-life money spent is wasted, they may feel angry and anxious due to the negative emotions associated with their money not being transformed into value of the rare and desired virtual item. The person then wants to escape those negative emotions by further rolling and acquiring their desired virtual item.

[59] Damien Brevers et al., "Examining Neural Reactivity to Gambling Cues in the Age of Online Betting," *Current Behavioral Neuroscience Reports* 6 (2019): 64.
[60] Cerulli-Harms et al., *Loot boxes*, 26.
[61] Dan Digre, "Creating an Audio Experience that Meets Guest Expectations," *Indian Gaming* (2016): 54.

This also corresponds to error in self-justification as a person tries to falsely rationalize their actions and believes that getting duplicate items of lower rarity may even become useful someday.[62] Other scientifically mentioned cues are arousal and the near-miss experience. Consumers of videogames love to have their physical and mental parts activated through the means of gameplay or, in this case, the arousing *gacha* mechanic.[63] The near-miss experience aligns with the tension a person feels before seeing the results of their roll in chance-based monetization systems. Many developers use this cue to signalise that a player almost received a rare, desired item, thus deceiving the player into believing that they are close to getting said item. This results in a more risk-taking behaviour and stimulates a player into further spending money and using the system of *gacha*.[64]

The analysis of *gacha* animation sequences of 3 different mobile videogames regarding the sensory and neural cues will be conveyed in section 4 Analysis of *Gacha* Animation Sequences.

4 Analysis of *Gacha* Animation Sequences

The analysis of *gacha* animations sequences/cutscenes from three different mobile videogames is going to be done regarding the information as presented in 3.2 Psychological Framework. The three analysed games, each from one of the discussed countries (South Korea, Japan, China), have been selected based on Table 4. The most profitable *gacha* game from South Korea, Japan, and China have been selected according to said table. Every single video-file was taken personally by the author on PC which has been accomplished through PC versions of the *gacha* videogames or different PC emulators to ensure the best video quality and readability. The auditory cues are analysed through software called Audacity[65].

Gacha game developers excel at differentiating successful (winning) and unsuccessful (losing) rolls thanks to the means of auditory and visual cues or other psychological practices. These differences are going to be showcased in the following subsections. The final aim

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[62] Soul Kim, 김소울, "Geim nae kaerikteo ppopgi sayongjaui gwageum simni bunseong : peojeul aen deuraegoneul jungsimeuro," 게임 내 캐릭터 뽑기 사용자의 과금 심리 분석 : 퍼즐 앤 드래곤을 중심으로 [Psychological Analysis on Consumer Sentiment for Gacha]. *Journal of Korea Game Society* 한국게임학회 논문지 vol. 16(3) (2016): 80–81.

[63] Hollebeek et al., „Hedonic consumption," 4.

[64] Cerulli-Harms et al., *Loot boxes*, 26.

[65] The Audacity Team, *Audacity* (open-source software), The Audacity Team. multiplatform. ver. 3.5.1, 2024.

of the analysis is to determine if different *gacha* game developers from different East Asian countries use the same or similar practices and fiddles to influence the psyche of their consumers.

The selected games are South Korean *Goddess of Victory: Nikke* [66] (SHIFT UP Corporation, 2022), Japanese *Uma Musume: Pretty Derby*[67] (Cygames, 2021) and Chinese *Genshin Impact*[68] (Hoyoverse, 2020).

4.1 South Korea *(Goddess of Victory: Nikke)*

Goddess of Victory: Nikke was released in 2022, it was developed by a South Korean videogaming studio SHIFT UP Corporation. It features very obscenely portrayed female characters with voluptuous bodies and humanly impossible body proportions and physics. This is one of the first engaging aspects of this mobile videogame as players usually pull for these fictional characters and their equipment/weapons.

4.1.1 Unsuccessful Roll

The video-file analysed in this subsection is referenced in Appendix A. In this game, a player can make a bulk roll consisting of 10 individual rolls and rewarded virtual items. As portrayed in Figure 9 (00:12), the first identification of an unsuccessful roll is shown through the flashing purple light after the upper and lower parts of the machine doors collide. This collision is made quite beautifully as a player needs to swipe the lower part with their mouse cursor or their finger in the case of a smartphone screen. The interactive sensation is one of the first cues which fill a person with anticipation and excitement.

The animation of the machine door opening is not very eye-popping in this case with minimal loud tones and bright lights. The loudest sound of this section being the machine door clicking at the 00:12 timestamp. As the door opens, the display shows the rarity of every single item through the black and purple icons of humans (00:18). A player may then click through the animation as each reward is properly displayed. The SR (blue) and SSR (purple) characters first show a square with their icon before appearing as a silhouette and finally showing themselves. The time of these sections takes around 2 seconds for both SR

[66] Cygames, *Uma Musume: Pretty Derby*, Cygames. Android, iOS, Windows. 2021.
[67] SHIFT UP Corporation, *Goddess of Victory: Nikke*, Tencent Games: Level Infinite. Android, iOS, Windows. 2022.
[68] Hoyoverse, *Genshin Impact*, miHoYo Co., Ltd. Android, iOS, PlayStation 4 and 5, Windows, Nintendo Switch. 2020.

and SSR rarities with no significant auditory differences, only the interference changes colour according to the rarity (blue or purple). At the end, a summary screen shows all the rewards obtained during the bulk pull and the “compulsive masturbation” finally comes to an end.

Figure 9: The identification cue of an unsuccessful roll in *Goddess of Victory: Nikke*

4.1.2 Successful Roll

The video-file analysed in this subsection is referenced in Appendix B. The distinguishing part of a successful roll in *Goddess of Victory: Nikke* is the much brighter flashing gold light which shows after the machine collides (00:10), as stated by Figure 10. Moreover, the sound accompanied with the collision is more intense with a higher tone. The machine doors opening section (00:10–00:16) is also much brighter with more notable auditory cues. Figure 11 displays the differences of the auditory cues heard during this section in unsuccessful and successful rolling attempts. Both sound analyses show two notable bumps. The first bump signalises the collision of the machine parts and the second sequence of bumps is the portrayal of the doors opening section. As we can see, the lower audio (belonging to a successful roll) has a steady and more balanced sound during the opening section as it stays on the same high volume and tone levels to retain the excitement of a player. The collision is also notably louder and more prominent.

Figure 10: The identification cue of a successful roll in *Goddess of Victory: Nikke*

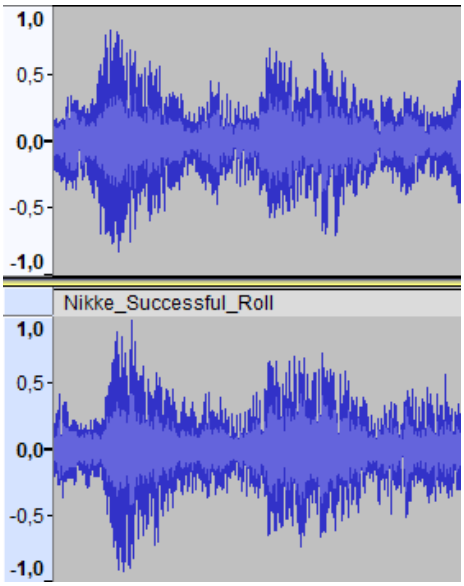

Figure 11: Audio analyses of the *gacha* sequences in *Goddess of Victory: Nikke*
(Upper: Unsuccessful, Lower: Successful)

After a player sees a shiny gold human icon in the initial display of the rarities of all the virtual items, they may click through the cutscene as in the unsuccessful roll. This time, as a player approaches the character of the highest rarity (SSR), the whole background flashes multiple times and changes to black to signalize a difference and to increase the anticipation of a player. As before, the screen first displays a rectangle icon of a character, then showing the silhouette of them and finally displaying them in their full glory.

However, in this case, this section (00:32–00:39) is much more delayed to stimulate the arousal of a player. The whole section takes around 7 seconds, so it is about 5 second longer than if the character had been of lower rarity. In the end of the cutscene, the screen showcasing all rewarded virtual items makes an exciting sound and the SSR character is showcased under a much shinier gold light.

4.2 Japan *(Uma Musume: Pretty Derby)*

Uma Musume: Pretty Derby was released in 2021 and developed and published by a Japanese company Cygames. Players may use the gacha system implemented in this mobile videogame to collect support card and female athletes who, instead of a common running track, run on a derby track just like horses would. Again, the engaging aspect is created as the female characters are visualised rather obscenely and the game is stylised as an anime.

4.2.1 Unsuccessful Roll

The video-file analysed in this subsection is referenced in Appendix C. A player of *Uma Musume: Pretty Derby* can also make bulk 10-rolls to get multiple virtual items at once. When a player clicks on the corresponding button, the animation starts. After that, there is a cutesy character running through a hallway, dressed in green, who seemed to be one of the first characters who welcomes us to some sort of “boarding school for derby athletes”. At the end of the hallway, she opens the huge doors revealing the derby stadium (00:09). As we may analyse in the cutscene sequence of a successful roll during the upcoming subsection, there seems to be no real distinction between the unsuccessful and the successful *gacha* animation sequences. Both have the same audio and visual characteristics and the text above the derby post-positions seems to not be of any help in distinguishing both. After the reveal of the stadium, there is a section showcasing each post-position while the gates change colours according to the rarity of the virtual athlete hiding behind them. The 1-star characters have silver gates while the 2-star characters hide behind gold gates. As this section ends, a red starting light is shown (00:20) and then each one of the girls quickly runs out of their post-position. Player may then click through the animation and no real exciting cue is being played or showcased after that as the 1-star and 2-star characters run away. Lastly, a screen, showing all the virtual items obtained, is displayed to the player.

4.2.2 Successful Roll

The video-file analysed in this subsection is referenced in Appendix D. Just like during the unsuccessful roll, the initial section of the animation is very similar, if not the same. However, this time, one of the gates changes into a rainbow palette of colours, as shown in Figure 12. As the athlete of the highest rarity (3-star) runs out (00:40), they are firstly displayed as a silhouette behind a bright light. After that, their signature voice line is being played, signalizing their approach (if a player is familiar with all of the characters in the pool of rewards). Finally, an exciting cutscene (00:47–00:59) is played as the character and their name is being displayed at the end of said cutscene. At the end of the whole gacha animation sequence, the obtained virtual items are displayed altogether. Figure 13 shows the audio differences of the gate colour-changing sounds of an unsuccessful and a successful roll (the peak points of each audio analyse).

Figure 12: The rainbow post-position gate in *Uma Musume: Pretty Derby*

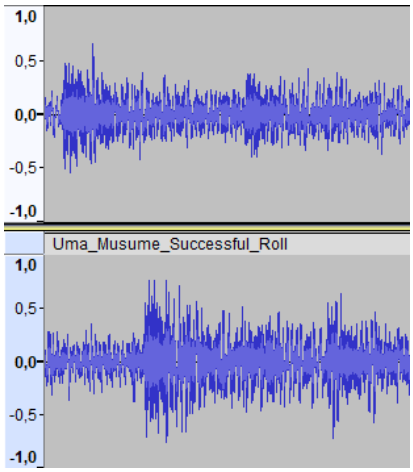

Figure 13: Audio analyses of the *gacha* sequences in *Uma Musume: Pretty Derby*

(Upper: Unsuccessful, Lower: Successful)

4.3 China *(Genshin Impact)*

Genshin Impact was released and developed by Hoyoverse in 2020. It quickly surged to the top with its popularity and market revenue and has been keeping its first spot for the past three years. Players roll for different playable characters and their weapons. However, unlike the previous two games, *Genshin Impact* is an open-world action-adventure game where the characters play a big part in the gameplay as players personally control them in the extensive environment. Also, *Genshin Impact* was released on multiple platforms and is popular on all of them.

4.3.1 Unsuccessful Roll

The video-file analysed in this subsection is referenced in Appendix E. When a player engages in the *gacha* system of this mobile videogame, they are also able to do so in a bulk of 10. As a player clicks on the initiation button, they are welcomed by a section showing something falling from the sky (00:05–00:11). This section is the first differentiating clue of an unsuccessful roll. Figure 14 portrays the moment when the comet/star cluster changes into a bright light with hints of the purple colour. As the screen finally zooms into the purple comet, it flashes for a second before starting to display each virtual item rewarded. Players then may, once again, click through the cutscene while the animation first shows a silhouette of the item before the anticipated reveal. This time, the visual and auditory cues of 3-star (blue) and 4-star (purple) virtual items are slightly different. Timestamp of 00:11–00:13 records the reveal of an item of the lowest rarity (3-star/blue). The delay between the silhouette first showing itself and then the item finally revealing is around 1.75 seconds. In comparison, the reveal of the 4-star (purple) character, Lynette (00:35–00:38), plays a slightly different audio cue which is not necessarily louder but could be described as more arousing. The delay between showing the silhouette and then the full character art is around 2.1 seconds this time. At the end of the cutscene, a screen showcasing all received items is displayed as they were in the previous two games.

Figure 14: The identification cue of an unsuccessful roll in *Genshin Impact*

4.3.2 Successful Roll

The video-file analysed in this subsection is referenced in Appendix F. During *Genshin Impact*'s successful roll animation, the identification cue (00:07) is displayed as the comet changes its colour to gold with much brighter light and hints of rainbow (see Figure 15). The audio is also different than in the unsuccessful roll sequence, however, the audio analyses do not show that the volume levels are any different between the winning and losing rolls.

As the rewards are displayed, a player is bound to reach the character of the highest rarity (5-star). The revealing section (00:29–00:32) is much grander in scale, the audio cue is more intense and has higher volume levels than before and the visuals display a flashing "boom" effect with gold extensions beaming out from the silhouette as the character and their art is finally shown. The delay this time is around 2.5 seconds which is the longest out of all the rarities, stimulating a player's anticipation and excitement. Figure 16 describes the different sound levels of a 4-star (purple) and a 5-star (gold) character being revealed. After the 5-star (gold) character is finally shown, their long voice line is played, this is not an indicator of an item's rarity as much as it is an indicator of getting a new character. If a player gets a 4-star (purple) character for the first time, their voice line is also played. At the end of the *gacha* animation sequence, all items obtained are displayed with the character of the highest rarity illuminating with gold shining background and the "New" tag.

Figure 15: The identification cue of a successful roll in *Genshin Impact*

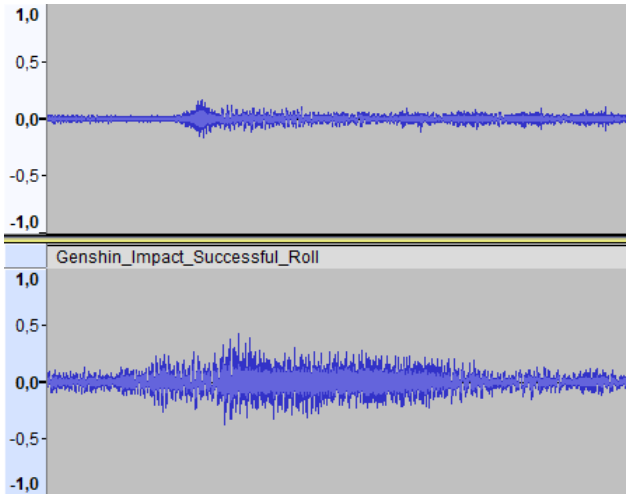

Figure 16: Audio analyses of the *gacha* sequences in *Genshin Impact*

(Upper: Unsuccessful, Lower: Successful)

4.4 Summary

In comparison, *gacha* game developers and publishers of all three discussed East Asian countries use very similar or even same fiddles and practices to exploit a person's psyche. Just like gambling institutions and games, *gacha* videogames use multisensory stimulation to convey an immersive gambling experience during the rolling animations and cutscenes. The louder auditory cues and bright visual cues make a big part of distinguishing successful and unsuccessful rolls. Usage of practices which embrace hormonal or neural activity are also apparent. As it currently stands, *gacha* videogames are and should be of great discourse among law enforcers and regulators from countries globally.

Conclusion

Currently, as the mobile videogame market continues to expand, many game developers will seek an opportunity to penetrate said market. As many mobile games are free-to-play, developers and publishers need to find another source of profit. They started implementing microtransactions into their mobile videogames which provide players with the option to buy and use many services of a game by spending real-life currency. South Korean, Japanese, and Chinese mobile videogame developers brought this to a brand-new level by creating the *gacha* system, a game-of-chance monetization practice.

In conclusion, from an economic standpoint, *gacha* has proven quite profitable with shared revenue of around 3.3 billion Euro in 2023. When a player wants to use *gacha*, they would need to spend the virtual currency which is bought through microtransactions, thus the source of revenue is born. To compare the *gacha* market situation of all three discussed countries, Japan leads with global revenue of 1.55 billion Euro in 2023. This also refutes author's initial hypothesis because China is not the leader of *gacha* gaming on a global scale. China is in second place with revenue of 1.07 billion Euro in 2023. South Korea is last with 689 million Euro in 2023 but with bright future as many developers announce their future *gacha* projects.

Gacha mobile videogames are widely popular and played for many different reasons. The main engaging aspects for gamers may include the characters and their visuals, narrative, gameplay enjoyment and/or collective value. A player chooses to engage in the monetization practice of *gacha* for those reasons and because of the animation sequences/cutscenes they convey. Developers use tactics and fiddles commonly found among gambling institutions, such as “compulsive masturbation”, near-miss experience and multisensory stimulation. These practices are evidence of *gacha* really being a constitute of gambling, thus pointing to the fact that law makers of countries globally should be taking this practice seriously as they do with regular gambling, because *gacha* (as of 2024) is still usable to children and teenagers as well. Many countries, such as Belgium and the Netherlands, have already started to properly take care of the legality of this system. Lastly, in comparison of South Korea, Japan, and China, developers from all three countries convey the same fiddles and practices to influence the psyche of a player so they keep using their *gacha* system.

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List of Appendices

Appendices

Appendix A: Unsuccessful Roll of *Goddess of Victory: Nikke*

File Name: Nikke_Unsuccessful_Roll.mp4

Creator: Matouš Olah (©All Rights Reserved 2024)

Type of File: .mp4 video file

File Description: The video file showcases the *gacha* animation sequence of an unsuccessful (R or SR) roll in the South Korean mobile videogame *Goddess of Victory: Nikke* (SHIFT UP Corporation, 2022).

File Storage: Student Agenda of Palacký University Olomouc (Olah_Matouš_Nikke .zip folder)

Appendix B: Successful Roll of *Goddess of Victory: Nikke*

File Name: Nikke_Successful_Roll.mp4

Creator: Matouš Olah (©All Rights Reserved 2024)

Type of File: .mp4 video file

File Description: The video file showcases the *gacha* animation sequence of a successful (SSR) roll in the South Korean mobile videogame *Goddess of Victory: Nikke* (SHIFT UP Corporation, 2022).

File Storage: Student Agenda of Palacký University Olomouc (Olah_Matouš_Nikke .zip folder)

Appendix C: Unsuccessful Roll of *Uma Musume: Pretty Derby*

File Name: Uma_Musume_Unsuccessful_Roll.mp4

Creator: Matouš Olah (©All Rights Reserved 2024)

Type of File: .mp4 video file

File Description: The video file showcases the *gacha* animation sequence of an unsuccessful (1- or 2-star) roll in the Japanese mobile videogame *Uma Musume: Pretty Derby* (Cygames, 2021).

File Storage: Student Agenda of Palacký University Olomouc (Olah_Matouš_Uma_Musume .zip folder)

Appendix D: Successful Roll of *Uma Musume: Pretty Derby*

File Name: Uma_Musume_Successful_Roll.mp4

Creator: Matouš Olah (©All Rights Reserved 2024)

Type of File: .mp4 video file

File Description: The video file showcases the *gacha* animation sequence of a successful (3-star) roll in the Japanese mobile videogame *Uma Musume: Pretty Derby* (Cygames, 2021).

File Storage: Student Agenda of Palacký University Olomouc (Olah_Matouš_Uma_Musume .zip folder)

Appendix E: Unsuccessful Roll of *Genshin Impact*

File Name: Genshin_Impact_Unsuccessful_Roll.mp4

Creator: Matouš Olah (©All Rights Reserved 2024)

Type of File: .mp4 video file

File Description: The video file showcases the *gacha* animation sequence of an unsuccessful (3- or 4-star) roll in the Chinese mobile videogame *Genshin Impact* (Hoyoverse, 2020).

File Storage: Student Agenda of Palacký University Olomouc (Olah_Matouš_Genshin_Impact .zip folder)

Appendix F: Successful Roll of *Genshin Impact*

File Name: Genshin_Impact_Successful_Roll.mp4

Creator: Matouš Olah (©All Rights Reserved 2024)

Type of File: .mp4 video file

File Description: The video file showcases the *gacha* animation sequence of a successful (5-star) roll in the Chinese mobile videogame *Genshin Impact* (Hoyoverse, 2020).

File Storage: Student Agenda of Palacký University Olomouc (Olah_Matouš_Genshin_Impact .zip folder)