

# Far from Perfect Compliance: Loot Box Prevalence, Probability Disclosure, and Compu Gacha Policy in Japanese Mobile Games

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## Keywords

Loot Boxes, Video Games; Compu Gacha; Law and Regulation; Consumer Protection; Probability Disclosure; Gambling; Japan

## INTRODUCTION

Loot boxes are virtual items prevalent in video games, wherein players can spend real-world money or in-game currency to obtain randomized items (Yokomitsu et al., 2021). The term typically conveys the same meaning as the Japanese term “gacha,” wherein players are similarly encouraged to make microtransactions to obtain random items, rather than directly purchasing items (Koeder et al., 2018). In Japan, gacha has become one of the most important video game monetization mechanics since its introduction to mobile games (Shibuya et al., 2019). It enables Japan to maintain its extraordinarily high Average Revenue Per User (ARPU), making the country the third largest gaming market in the world (Newzoo, 2025; Sensor Tower, 2025).

However, concerns around the associations between gacha and gambling addiction also increased along with the widespread use of gacha mechanics in the mobile gaming industry (Yamakami, 2012). It conceals the high cost of obtaining rare items due to the low price for each draw (Yamakami, 2013). In the Japanese context, there are over 10 different gacha mechanics, including Redraw Gacha, Consecutive Gacha, and Compu Gacha (Koeder et al., 2018). Among them, Compu Gacha (Complete + Gacha) has particularly drawn the attention of regulators. It is an extension of gacha mechanics that requires consumers to collect a specific set of different items,

Proceedings of DiGRA 2026

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obtainable only through gacha, to receive an extremely rare reward (Schwiddessen, 2018). It is prohibited under consumer law, specifically, the Act against Unjustifiable Premiums and Misleading Representations [不当景品類及び不当表示防止法] (Law No. 134 of 1962) due to the deceptive nature of this mechanic and gambling-related concerns in relation to children (Consumer Affairs Agency (CAA), 2012a, 2012b).

However, regular gacha mechanics remain permissible, continuing to serve as the main monetization tool for mobile games. Currently, the Japanese gaming market relies mainly on multiple, potentially overlapping industry self-regulatory guidelines to improve transparency in gacha by requiring in-game probability disclosure for obtaining random gacha rewards (NHN JAPAN Corp. et al., 2012; Japan Online Game Association (JOGA), 2012; Japan Social Game Association (JASGA), 2013; Computer Entertainment Supplier's Association (CESA), 2016). However, most of the guidelines made by those organizations, such as CESA (2016), are only binding on their member companies (mainly Japanese companies) and do not apply to overseas companies, which also operate popular games in Japan.

There is limited research on gacha in Japan (Yamakami, 2012, 2013; Koeder et al., 2018; Schwiddessen, 2018; Shibuya et al., 2019; Sato et al., 2024), and only one empirical study (Sato et al., 2024) on the implementation of self-regulation that found perfect compliance (100% visibility of drop rates in Japan, compared to 93% in China, 55% in Europe, and 51% in the US), which appears doubtful in the context that previous research has found that other video game regulations in other countries were poorly complied with (Xiao et al., 2024; Xiao & Lund, 2025; Xiao & Park, 2025).

To better understand the prohibition of Compu Gacha and the implementation of industry self-regulation in Japan, we examined the current prevalence of gacha mechanics in 100 top-grossing mobile games in Japan, the birthplace of gacha (Schwiddessen, 2018), and their compliance with regulations with a particular focus on the potential presence of prohibited Compu Gacha.

## **METHOD**

A list of the 100 top-grossing mobile games in Japan was generated on 31 August 2025 using data.ai, an authoritative data analytics company, to serve as our sample. Each game was downloaded from the Japanese Apple App Store, and at least 1 hour of gameplay from new account creation was recorded. Based on previous research using the same method that identified at least 80% loot box prevalence in other jurisdictions (Xiao, 2023; Xiao & Lund, 2025), whilst we acknowledge that one hour of gameplay may not capture all loot boxes within a particular game, we deemed an hour to be sufficient for reliably measuring binary loot box presence particularly in relation to a new player's experience, given research resource constraints.

Screenshots were taken of any gacha mechanics and corresponding probability disclosures found during gameplay, as well as potential Compu Gacha mechanics. This project was preregistered via the Open Science Framework (<https://doi.org/10.17605/OSF.IO/SQ7XG>). All the games were played in Japanese by a researcher with fluent Japanese skills, and all screenshots and coding decisions were checked by a second fluent Japanese speaker to confirm coding reliability and ensure accuracy. The very few disagreements were resolved through discussions.

## RESULTS

Among the 100 highest-grossing mobile games in Japan, 91% included gacha mechanics. Amongst the 91 games with gacha mechanics, 90.1% provided probability disclosures for at least one loot box in-game, but only 41.8% provided probabilities for all loot boxes found within one hour of gameplay as required. Four games were identified as containing suspected prohibited Compu Gacha mechanics.

Figure 1 shows the presence of suspected Compu Gacha in *Gossip Harbor: Merge & Story* (Microfun Limited, 2022). To earn the rewards, players must collect specific cards, which can be obtained randomly from card packs. Players can get those card packs by spending extra stamina, which can be purchased with real-world money.



**Figure 1:** An example of suspected Compu Gacha in *Gossip Harbor: Merge & Story* (Microfun Limited, 2022) alongside the explanation for the mechanic provided by the game company.

## DISCUSSION AND CONCLUSION

Our findings suggest that the current Japanese loot box self-regulation system is not performing as well as previously reported (Sato et al., 2024). Transparency is limited due to the relatively poor disclosure of probabilities, even within the limited context of the gacha mechanics found within 1 hour of gameplay. Whilst 82 of 91 games (90.1%) with gacha mechanics disclosed at least one probability during 1 hour of gameplay, which is higher than the 59% in the UK, where the same measure is required by industry self-regulation (Xiao & Lund, 2025). Importantly, only 41.8% of

games with Gacha mechanics disclosed probabilities for all loot boxes found within one hour of gameplay. This is highly unsatisfactory, but these results are comparatively better than other regions', including the 13.3% found in the UK in January 2024 (Xiao & Lund, 2025). To conclude, significant gaps remain before perfect compliance can be achieved, contrary to previous research claims (Sato et al., 2024).

## DATA AVAILABILITY STATEMENT

A full library of recordings, PDF printouts of app stores, and video game screenshots justifying each coding decision is publicly available in the Open Science Framework via: <http://doi.org/10.17605/OSF.IO/58Y9D>.

Preprinted full paper is available at: [https://doi.org/10.31219/osf.io/efxnb\\_v1](https://doi.org/10.31219/osf.io/efxnb_v1).

## FUNDING INFORMATION

L.Y.X. is supported by a Presidential Assistant Professors Scheme Start-Up Research Grant (9382009) awarded by the City University of Hong Kong [香港城市大學] (March 2025). K.X.X. is supported by a research assistant position funded by the aforementioned project.

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