

Warning! Poor Compliance with Loot Box Probability Disclosure and Warning Regulations in Taiwan

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INTRODUCTION

Paid loot boxes are products in video games that allow players to spend real-world money purchasing random rewards (Drummond and Sauer 2018). Loot boxes are prevalent internationally (Xiao and Park 2025). The prevalence of loot boxes and the association between purchasing loot boxes and problem gambling (Zendle et al. 2020) raise regulators' concerns. However, most loot boxes cannot be regulated under gambling law because of rewards lacking monetary value in the real world, despite structural and psychological similarities. Therefore, improving the transparency of loot boxes becomes a more broadly adopted alternative regulatory approach (Leahy 2022).

Probability disclosure is a widely used method to inform players of the probability of obtaining rewards from loot boxes. Mainland Chinese law requires probability disclosures, while the UK relies more on industry self-disclosure. South Korea has shifted from self-regulation to a legal requirement from March 2024 onwards. Still, companies' compliance is not satisfactory in these regions (Xiao and Park 2025). The prevalence of loot boxes and companies' compliance elsewhere remain unknown.

Taiwan also legally requires loot box probability disclosure, after Mainland China and before South Korea implemented the same, with specific stipulations. Disclosed probabilities must be presented as percentages (%), rather than using vague expressions such as 'very low' (Consumer Protection Office, Consumer Protection Committee, Executive Yuan [CPO] (Taiwan) 2022). Also, it required the disclosure of probabilities of each potential individual reward in every loot box, rather than the probabilities of obtaining different categories of rewards (*e.g.*, 10% to obtain rewards in category A from a loot box, while hiding the possibly different probabilities to get each individual reward from category A would be non-compliant) (CPO 2022). Additionally, companies must

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display a specific warning message of ‘此為機會中獎商品，消費者購買或參與活動不代表即可獲得特定商品 [This is a chance-based product; the consumer is not guaranteed to obtain any specific product by virtue of purchasing or participating]’ or a similar message to that effect (CPO 2022). This warning may be shown on the loot box purchase page, game login page, or the official website. No similar requirement has been imposed anywhere else in the world.

By examining the prevalence of paid loot boxes and companies’ compliance with probability disclosure and warning regulations in Taiwan, this study provides insights on the (in)effectiveness of unique loot box regulations. It will inspire global policymakers considering similar regulations in their regions to improve their implementation and enforcement.

Research question: To what extent do game companies comply with loot box probability disclosure and warning regulations in Taiwan?

METHOD

A list of the 100 highest-grossing iPhone games in Taiwan on 7 September 2025 was collated from data.ai, a leading data analytics company. The information of all games on the Taiwan Apple App Store and Google Play Store was screenshotted. An 1-hour gameplay recording from new account creation of all games was taken. All loot boxes found during gameplay were screenshotted. The presence and locations of probability disclosure and warning messages were recorded. All data are publicly shared via <https://doi.org/10.17605/OSF.IO/HV2RY>.

RESULTS

In Taiwan, 93 of the 100 (93.0%) highest-grossing iPhone games contained paid loot boxes, and 69.0% of them disclosed the presence of loot boxes in the game on the Apple App Store, whilst 45.0% disclosed on the Google Play Store.

The probability disclosure availability status of games is shown in Table 1.

Disclosure formatting category	Disclosed for	
	at least one loot box (%)	all loot boxes (%)
Any probabilities	83 (89.2%)	34 (36.6%)
Individual item-based probabilities	70 (75.3%)	25 (26.9%)
Percentage-based probabilities	82 (88.2%)	31 (33.3%)
Individual item- and percentage-based probabilities	69 (74.2%)	23 (24.7%)

Table 1: Formatting of probability disclosures for games with loot boxes (N = 93).

Warning messages were found in only 22 of 93 games (23.7%) containing paid loot boxes. The locations where the warning messages were observed are displayed in Table 2.

Location(s)	Number of games (%)
Compliant	
On loot box purchase page only	6 (6.5%)
On official website only	3 (3.2%)
On loot box purchase page and official website	2 (2.2%)
On login page, app store page, and official website	2 (2.2%)
On probability disclosure page, and official website	2 (2.2%)
On loot box purchase page, and currency purchase window	1 (1.1%)
On loot box purchase page, and probability disclosure page	1 (1.1%)
On probability disclosure page, in-game news page, and official website	1 (1.1%)
Non-compliant	
On probability disclosure page only	3 (3.2%)
On app store page only	1 (1.1%)
No warning messages found	71 (76.3%)

Table 2: Locations of found loot box warning messages (if any) (N = 93).

DISCUSSION AND CONCLUSION:

The prevalence of loot boxes in the highest-grossing iPhone games in Taiwan is high (93%). However, about one-third of games failed to notify users that they contained loot boxes on the Apple App Store page. The situation is worse on the Google Play Store, where over half of the games failed to do so. Such a failure indicates companies' unsatisfactory compliance with Apple's and Google's developer policies. Players are not warned about potential risks due to a lack of transparency.

Compliance with the formatting of probability disclosure is poor. The majority of games disclosed probabilities in the required formatting only for the most obvious loot boxes; however, only a small minority of games provided the disclosure in the required formatting for all loot boxes.

Compliance with warning regulation is extremely poor. Most games failed to provide warning message. Concerningly, 21 of those games (29.6%) explicitly incorporated this rule into their Terms & Conditions (T&Cs), which represent one of the legal contracts between the game company and the player, but still failed to implement this legal requirement (Figure 1). It suggests that the company was aware of its obligations but decided to purport to 'comply' suboptimally. For those who complied with the requirement, only half provided warning messages in game. Although other locations are acceptable under existing regulations (*e.g.*, external to the game and on the official website), it is highly questionable whether they can adequately warn players.



Figure 1: A screenshot of the T&Cs of Game 030: Genshin Impact (原神) shows: ‘企業經營者應於遊戲網站、遊戲套件包裝上載明以下事項：……並應記載「此為機會中獎商品，消費者購買或參與活動不代表即可獲得特定商品」等提示 [the company should display the following information on the official website and the game’s physical package: …… and should display warning messages, 「This is a chance-based product; the consumer is not guaranteed to obtain any specific product by virtue of purchasing or participating」]’. The company has promised to provide warning message in the T&Cs but failed to do so in any location.

Present results indicate that Stricter monitoring and enforcement are required to ensure that the rules that have been adopted to address loot box-related concerns are complied with in practice and thereby actually providing information to consumers and better protecting them. Having regulations on the books that are not followed is misleading and harmful to consumer interests, as this gives the false impression that policy actions have already been taken when they have not actually been realised.

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A full library of the research data supporting this study is available via <https://doi.org/10.17605/OSF.IO/GEY3X>.

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