

research snapshot

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How common are loot boxes in mobile and desktop video games?

What this research is about

Loot boxes are a popular feature of many mobile and desktop games. They can be purchased with real money and provide an in-game reward to the player. This reward is always hidden, can take many forms, and is specific to the game being played. The usefulness of the reward is not disclosed prior to purchasing. It is random and has an uncertain value. As such, players have no way of knowing what they will receive before purchasing.

Many gaming companies implement this feature, which may encourage children to spend real-world money to improve their gaming experience. Similarities between loot boxes and gambling have led to concerns that loot boxes may be a gateway into real-world gambling. Although most countries have laws to prohibit children from gambling, there have been no official rulings on whether games may or may not include loot boxes. This is important when monitoring children's games as the prevalence of loot boxes may lead to early exposure to gambling.

This study examined what proportion of popular video games contained loot boxes, and how many of those games were accessible to children.

What the researchers did

The researchers ranked the top 100 highest-grossing Android games from the Google Play store, and the top 100 highest-grossing iPhone games from the Apple App store in the United Kingdom. Seventy-six iPhone games were the same games on Android. Due to a lack of information on number of installations per game and best-selling games in the Steam store, a list of the 50 most popular games on Steam was taken from the data aggregator SteamSpy.

What you need to know

Loot boxes are a popular feature of mobile and desktop games. There is a growing concern that loot boxes act as a gateway into gambling due to the nature of luck and random chance upon purchase. Using the top 100 mobile games from the Google Play and Apple App stores and the top 50 desktop games from the data aggregator SteamSpy, the researchers explored how many of the highest-grossing games featured loot boxes. They also explored what proportion of these games were easily accessible to children.

Fifty-eight of 100 Android games, 59 of 100 iPhone games, and 18 of 50 desktop games contained loot boxes. Of these games, 93% of Android and 94% of iPhone games were deemed suitable for children aged 12+. Many of these games were also available to children aged 7+. About 39% of desktop games included loot boxes and had higher age-rating. This study highlights the concern about loot boxes as a gateway for children into gambling.

The researchers focused on four measures: (1) the presence or absence of loot boxes, (2) whether loot boxes could be cashed out, (3) the total number of installations per game, and (4) the age rating for each game. They designated a game as including loot boxes if it had in-game rewards that could be bought with real-world money and consist of an uncertain value.

To determine the presence of loot boxes, the researchers watched videos of gamers playing and buying loot boxes. If videos were unavailable for a specific game, the game was installed and played to determine whether it included loot boxes.

The researchers coded games for Android and iPhone as 'cash out' if secondary websites offered to buy or sell items from the loot boxes. They coded desktop games as 'cash out' if the loot box items could be sold to other players on the Steam store. They coded social casino games as having no loot boxes. Social casino games are virtual games found in real life casinos.

For Android games, the researchers determined the number of installations by using the estimates provided by Google. No estimates were available for the iPhone games through the Apple App store. The aggregator SteamSpy provided an estimate of the number of owners for each desktop game to determine the installation number.

The age rating was taken directly from each game's description posted on either the Google Play store, Apple App store, or Steam store.

What the researchers found

Most the highest-grossing mobile and desktop games included loot boxes as a key feature. Specifically, 58 of the 100 Android games (58%), 59 of the 100 iPhone games (59%), and 18 of the 50 desktop games (36%) included loot boxes. In total, the researchers found over 1.8 billion installations of games with loot boxes. Almost 1 billion of those were for games deemed suitable for children aged 7+.

Loot boxes were less common in desktop games. But, there was still a substantial number of desktop games that featured loot boxes (36%). Desktop games with loot boxes had higher age-ratings, with only a small proportion rated as suitable for children aged 7+. About 39% of desktop games with loot boxes were rated as suitable for children aged 12+.

Ninety-three percent of Android games that featured loot boxes were categorized as appropriate for children aged 12+. Similar results were found for iPhone games, with 94% deemed suitable for children aged 12+. This shows the high prevalence of loot boxes in mobile games that are easily accessible to children. It is a potential cause for concern since children can make these purchases and unknowingly familiarize themselves with gambling-like features.

How you can use this research

Many video games must follow regulations to provide age ratings and content descriptors, but video game companies are not required to disclose whether games include loot boxes. Regulators and rating boards could mandate companies to incorporate this information in the future. This would help inform parents and guardians of what is in the game. By doing so, children may be safeguarded from playing games with loot boxes. This could potentially reduce exposure to gambling at an early age.

About the researchers

David Zendle, Rachel Meyer, Paul Cairns, and Stuart Waters are affiliated with the Department of Computer Science at the University of York in York, United Kingdom. **Nick Ballou** is a PhD student affiliated with Queen Mary University of London in London, United Kingdom. For more information about this study, please contact David Zendle at david.zendle@york.ac.uk.

Citation

Zendle, D., Meyer, R., Cairns, P., Waters, S., & Ballou, N. (2020). The prevalence of loot boxes in mobile and desktop games. *Addiction*. Advance online publication. <https://doi.org/10.1111/add.14973>

Study funding

No funding source was declared.

About Gambling Research Exchange (GREO)

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