

Illegal loot box advertising on social media: An analysis of Meta and TikTok ad libraries

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EXTENDED ABSTRACT

A preprint of the full paper can be read via: <https://doi.org/10.31219/osf.io/s92j3>.

Loot boxes are products inside video games that may be bought by players with real-world money to obtain random rewards (Drummond and Sauer 2018). Loot boxes are widely implemented in contemporary video games across the world: the most recent findings suggest that about 80% of the highest-grossing mobile games sell loot boxes, including many games deemed to be suitable for young children (Zendle et al. 2020). In the UK, the Gambling Commission reported in 2022 that 24% of 11- to 16-year-olds purchased loot boxes with real-world money (UK Gambling Commission 2022).

Concerns have been raised about the potential harms of loot boxes, given their gambling-like nature. A positive correlation between loot box spending and problem gambling has been consistently replicated (Zendle and Cairns 2018; Spicer et al. 2022; Garea et al. 2021), and recent longitudinal studies have suggested that young people who purchased loot boxes were more likely to engage in traditional gambling and spend more money on it six months later (Brooks and Clark 2022; González-Cabrera et al. 2023).

In the UK, advertising regulation (which enforces EU consumer protection law) requires that any advertising for a video game must disclose whether it contains generic in-game purchases (*i.e.*, of any type, including loot boxes) and whether it contains loot boxes specifically (Committee of Advertising Practice and Broadcast Committee of Advertising Practice 2021, 10–11). This is because the presence of in-game purchases and that of loot boxes are material information that a consumer needs to decide whether or not to engage with a video game (by purchasing a copy of the software or downloading it). Following a study identifying that many popular video games failed to label their games as containing loot boxes on their store listing pages and thus disclose their presence (Xiao 2023), two complaints were made to the ASA for alleged breaches of UK advertising rules. The ASA (2023a; 2023b) has since upheld these two complaints and declared the relevant advertising illegal.

The present study sought to examine the situation on social media by considering what percentage of adverts were illegal and how many impressions these ads

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received. This was done through qualitative analysis of the ads libraries provided by Meta (<https://www.facebook.com/ads/library>) and TikTok (<https://library.tiktok.com/ads/>). Specifically, on the Meta platform, the most recent adverts for popular games known to contain loot boxes were checked. On the TikTok platform, because it was possible to sort the library and identify the ads that were watched the greatest number of times, the most popular ads relating to video games were examined.

The research methodology (including data collection and analysis methods) was preregistered at: <https://doi.org/10.17605/OSF.IO/ECRA4>.

As to the results, amongst 188 adverts for popular games shown on Meta platforms detailed in Table 1, only 21 adverts (11.2%) disclosed the presence of in-game purchases and merely 13 adverts (6.9%) disclosed the presence of loot boxes. At a game level, amongst 63 games, only 10 games (15.9%) made in-game purchase disclosures in at least one advert and only six games (9.5%) made loot box disclosures in at least one advert.

Game	# of ads	Disclosed in-game purchases	Disclosed loot boxes
Bingo Blitz	3	1	0
Dragon City	3	2	0
Golf Clash	3	1	1
Hunt: Showdown	3	1	1
Lost Ark	4	3	0
Monster Legends	4	4	3
NBA 2K24	3	2	2
Star Wars: Galaxy of Heroes	4	3	3
The Elder Scrolls Online	3	3	3
WWE SuperCard	3	1	0
<i>8 Ball Pool</i>	3	0	0
<i>Age of Origins</i>	3	0	0
<i>Angry Birds 2</i>	3	0	0
<i>Archer0</i>	3	0	0
<i>Arknights</i>	3	0	0
<i>Azur Lane</i>	3	0	0
<i>Backgammon - Lord of the Board</i>	3	0	0
<i>Bingo Frenzy</i>	3	0	0
<i>Black Desert</i>	3	0	0
<i>Black Desert Mobile</i>	3	0	0
<i>Blackjackist</i>	3	0	0
<i>CSR Racing 2</i>	3	0	0
<i>Castle Clash: Guild Royale</i>	3	0	0
<i>Disney Magic Kingdoms</i>	1	0	0
<i>Disney Speedstorm</i>	3	0	0
<i>Evony - The King's Return</i>	3	0	0
<i>F1 Clash</i>	3	0	0
<i>Final Fantasy Brave Exvius</i>	3	0	0
<i>Frost & Flame: King of Avalon</i>	3	0	0
<i>Genshin Impact</i>	3	0	0
<i>Guns of Glory</i>	3	0	0
<i>Hustle Castle</i>	3	0	0
<i>Huuuge Casino</i>	3	0	0
<i>Idle Heroes</i>	3	0	0
<i>Jackpot World Casino</i>	3	0	0
<i>June's Journey</i>	3	0	0
<i>Kiss Of War</i>	3	0	0
<i>Last Day on Earth</i>	3	0	0
<i>Last Fortress</i>	3	0	0
<i>Lords Mobile</i>	3	0	0
<i>Magic: The Gathering Arena</i>	3	0	0
<i>Marvel Strike Force</i>	3	0	0
<i>Match Masters</i>	3	0	0
<i>Merge Mansion</i>	3	0	0
<i>Mighty Party</i>	3	0	0
PUBG MOBILE	3	0	0

<i>Pirates of the Caribbean: Tides of War</i>	3	0	0
<i>Rise of Empires: SLG Game</i>	3	0	0
<i>Rise of Kingdoms</i>	3	0	0
<i>RuneScape</i>	3	0	0
<i>Rush Royale</i>	3	0	0
<i>Score Hero</i>	3	0	0
<i>Slotomania - Slot Machines</i>	3	0	0
<i>Star Trek Fleet Command</i>	3	0	0
<i>Tennis Clash</i>	3	0	0
<i>Texas HoldEm Poker</i>	3	0	0
<i>The Seven Deadly Sins: Grand Cross</i>	3	0	0
<i>WWE 2K23</i>	3	0	0
<i>War Machines</i>	1	0	0
<i>War Robots</i>	3	0	0
<i>World Series of Poker Game - WSOP</i>	3	0	0
<i>World of Tanks Blitz</i>	3	0	0
<i>World of Warships Legends</i>	3	0	0
Total	188	21	13

Table 1: Meta adverts studied listed by game title ($N = 188$). *Note.* Game titles with ads that were compliant in some manner are bolded and listed before other entries.

Amongst the 130 of the most watched TikTok ads relating to games that contained in-game purchases listed in Table 2, only 9 ads disclosed their presence (7.0%). Amongst the 100 ads relating to games that contained loot boxes, only 7 ads disclosed their presence (7.0%). At a game level, amongst 40 individual titles containing in-game purchases whose ads were studied, only 4 games disclosed their presence (10.0%), and amongst 19 titles with loot boxes, only 3 games disclosed their presence (15.8%).

Game	# of ads	Disclosed in-game purchases	Disclosed loot boxes
Apex Legends	3	3	3
EA Sports FC 24	3	3	3
FIFA 23	1	1	1
<i>Coin Master</i>	8	0	0
<i>Eatventure</i>	2	0	0
<i>Family Island</i>	1	0	0
<i>Genshin Impact</i>	5	0	0
<i>Honkai: Star Rail</i>	5	0	0
<i>Last Empire War Z</i>	2	0	0
<i>Merge Mansion</i>	7	0	0
<i>Monopoly GO</i>	8	0	0
<i>Roblox</i>	1	0	0
<i>Stormshot: Isle of Adventure</i>	3	0	0
<i>Stumble Guys</i>	3	0	0
<i>Survivor.io</i>	2	0	0
<i>The Sims FreePlay</i>	1	0	0
<i>Top War</i>	40	0	0
<i>Travel Town</i>	4	0	0
<i>War and Order</i>	1	0	0
Total for games with loot boxes	100	7	7
F1 23	2	2	
<i>BitLife - Life Simulator</i>	1	0	
<i>Bridge Race</i>	5	0	
<i>Call of Duty: Modern Warfare</i>	1	0	
<i>Candy Crush Saga</i>	1	0	
<i>Diablo IV</i>	1	0	
<i>GTA Online: San Andreas Mercenaries</i>	1	0	
<i>Going Balls</i>	2	0	
<i>Hogwarts Mystery: Harry Potter</i>	2	0	
<i>Impulse - Brain Training Games</i>	1	0	
<i>Just Dance 2023 Edition</i>	1	0	
<i>Merge Miners / Merge and Dig</i>	2	0	
<i>My Mini Mart</i>	2	0	
<i>Overwatch 2</i>	1	0	
<i>Spider-Man 2</i>	1	0	
<i>Stealth Master: Assassin Ninja</i>	1	0	

<i>Tall Man Run</i>	1	0	
<i>Tile Busters</i>	1	0	
<i>Triple Cat Sort - Goods Master / Goods Triple - Sort & Match 3D</i>	1	0	
<i>Woodoku</i>	1	0	
<i>World of Warcraft: Dragonflight</i>	1	0	
Total for games without loot boxes	30	2	
Total	130	9	

Table 2: TikTok adverts studied listed by game title ($N = 130$). *Note.* Game titles with ads that were compliant are bolded and listed before other entries.

Based on ‘An estimate of the number of unique users who have seen the ad at least once’ provided by TikTok, it was possible to calculate the number of impressions received by ads relating to games with in-game purchases and loot boxes (depending on whether they were compliant or non-compliant with disclosure requirements). These are presented in Table 3. (How this calculation was justified and done is detailed in the preprint of the full paper: <https://doi.org/10.31219/osf.io/s92j3>.) In summary, only 10.2% of impressions of ads for games with loot boxes were of compliant ads, whilst 89.8% of impressions were of illegal ads.

Category	# of ads	UK impressions
Ads disclosing loot box presence	7	33,100,000
Ads failing to disclose loot box presence	93	292,641,000
Total: ads for games with loot boxes	100	325,741,000
Ads disclosing in-game purchase presence	9	45,400,000
Ads failing to disclose in-game purchase presence	121	374,414,000
Total: ads for games with in-game purchases	130	419,814,000

Table 3: Impressions received by TikTok adverts in the UK ($N = 130$).

As to conclusions, the present study found that the vast majority of video game ads on social media platforms failed to disclose that the game being advertised offered in-game purchases and loot boxes in particular. Companies need to better understand their legal obligations when advertising video games offering loot boxes. Players and parents need additional protection. As this remains a work-in-progress, during the presentation at DiGRA, further reflections on the results will be shared, including how the adverts also broke other advertising rules, such as failing to accurately depict gameplay or by objectifying women.

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