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Illegal loot box advertising on social media? An empirical study using the Meta and TikTok ad transparency repositories

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ABSTRACT

Loot boxes are gambling-like products inside video games that can be bought with real-world money to obtain random rewards. They are widely available to children, and stakeholders are concerned about potential harms, e.g., overspending. UK advertising must disclose, if relevant, that a game contains (i) any in-game purchases and (ii) loot boxes specifically. An empirical examination of relevant adverts on Meta-owned platforms (*i.e.*, Facebook, Instagram, and Messenger) and TikTok revealed that only about 7 % disclosed loot box presence. The vast majority of social media advertising (93 %) was therefore non-compliant with UK advertising regulations and also EU consumer protection law. In the UK alone, the 93 most viewed TikTok adverts failing to disclose loot box presence were watched 292,641,000 times total or approximately 11 impressions per active user. Many people have therefore been repeatedly exposed to prohibited and socially irresponsible advertising that failed to provide important and mandated information. Implementation deficiencies with ad repositories, which must comply with transparency obligations imposed by the EU Digital Services Act, are also highlighted, *e.g.*, not disclosing the beneficiary. How data access empowered by law can and should be used by researchers is practically demonstrated. Policymakers should consider enabling more such opportunities for the public benefit.

1. Introduction

1.1. Loot boxes: prevalence, popularity, and associated concerns

Loot boxes are products inside video games that may be bought by players to obtain random rewards.¹ The loot boxes in some video games can also (or can only) be obtained for free through gameplay,² but the present paper focuses on loot boxes that are available to players to buy with real-world money either directly or indirectly through using in-game currencies that are themselves bought with real-world money (so-called ‘paid loot boxes’), which are simply referred to as ‘loot boxes’ below. Video games now offer many forms of in-game purchases with

randomised elements:³ the players do not know what they will receive until after they have spent real-world money. Not all such monetisation mechanics are visually portrayed as a box that can be opened to receive random rewards. In the present paper, ‘loot boxes’ is used as a shorthand to refer to *all* such in-game purchases with randomised elements, including ‘gacha’ summoning mechanics (which allow players to spend money for a random chance at obtaining playable characters and weapons through a ‘summoning banner,’ rather than through opening virtual treasure chests, and are often implemented in East Asian games⁴) and simulated gambling or social casino games (which allow players to spend real-world money to simulate participating in traditional gambling activities like playing on slot machines but do not allow

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¹ Aaron Drummond and James D Sauer, ‘Video Game Loot Boxes Are Psychologically Akin to Gambling’ (2018) 2 *Nature Human Behaviour* 530.

² Nick Ballou, Charles Takashi Toyin Gbadamosi and David Zendle, ‘The Hidden Intricacy of Loot Box Design: A Granular Description of Random Monetized Reward Features’ (DiGRA Conference, Kraków, July 2022) <http://www.digra.org/digital-library/publications/the-hidden-intricacy-of-loot-box-design-a-granular-description-of-random-monetized-reward-features/> accessed 25 January 2021.

³ Entertainment Software Rating Board (ESRB), ‘Introducing a New Interactive Element: In-Game Purchases (Includes Random Items)’ (ESRB Official Website, 13 April 2020) <https://www.esrb.org/blog/in-game-purchases-includes-random-items/> accessed 19 July 2023.

⁴ Joleen Blom, ‘The Genshin Impact Media Mix: Free-to-Play Monetization from East Asia’ (2023) 16 *Mechademia* 144; Orlando Woods, ‘The Economy of Time, the Rationalisation of Resources: Discipline, Desire and Deferred Value in the Playing of Gacha Games’ (2022) 17 *Games and Culture* 1075.

<https://doi.org/10.1016/j.clsr.2024.106069>

players to then convert any winnings back into legal tender, thus differentiating these products from actual gambling⁵),⁶ although there is academic debate as to whether doing so is appropriate.⁷

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.⁸ In the UK, the Gambling Commission reported in 2022 following a study conducted by Ipsos that 24 % of 11- to 16-year-olds 'paid' to open loot boxes with 'money or virtual currency,'⁹ and this rate has stayed relatively consistent at 21 % in 2023.¹⁰ Unfortunately, the wording of this question left open the unintended interpretation that it also encompasses loot boxes paid for using virtual currency that was obtained *without* spending money (which would not be 'paid loot boxes' involving real-world money as defined above that various stakeholders are most concerned about). The older 2020 Gambling Commission survey by Ipsos, whose wording did not suffer from this problem, reported a 23 % loot box purchase rate amongst the same age group.¹¹ The relative stability of this rate suggests that few participants incorrectly broadly interpreted the 2022 and 2023 survey questions as including non-paid loot boxes. Regardless, note that an industry-funded study (also conducted by Ipsos) reported that only 3.8 % of players, both minors and adults (between 11 and 64), bought loot boxes.¹² The same industry body that funded the aforementioned report previously stated that 53 % of 6- to 64-year-olds in Europe, or 126.5 million people, played video games in 2022.¹³ Consequently, because of the great number of people playing video games overall, even

the alleged 'low' 3.8 % loot box purchase rate means that at least over 4.8 million people in Europe alone are spending money on loot boxes because of how popular video games are. A purchase rate of 21 % based on the newest 2023 UK Gambling Commission data would instead mean that more than 30 million people in Europe are buying loot boxes with real-world money. This is likely an underestimate because the loot box purchase rate amongst the whole population is likely higher than that amongst 11- to 16-year-olds, given that adults are more likely than children to be able to purchase loot boxes and also to spend more money on them. (However, older adults, e.g., those aged between 50 and 64 may be less likely to purchase than younger adults. More research on older video game players, which is not presently available, would be helpful.) Senior management at Electronic Arts, one of the most popular and profitable game companies selling loot boxes, has stated that: (i) young people should not be spending money on loot boxes; (ii) there are many spending control features to limit or prevent spending by children; and, (iii) importantly, most user accounts belong to adults.¹⁴ Indeed, previous academic studies reported higher adult purchase rates of 40–60 % amongst video game players.¹⁵ In addition, when a child purchases a loot box, their parent likely paid for it, and so the adult was also involved in the transaction and arguably engaged with loot boxes and was affected by them as well, which might not have been duly accounted for.

Concerns have been raised about the potential harms of loot boxes, given their gambling-like nature. Unlike traditional gambling, which is generally legally restricted to be available only to adults, loot boxes are widely implemented in video games that have been given a low age rating and thus deemed suitable for young children (e.g., aged 4 and above by the Apple App Store).¹⁶ A positive correlation between loot box spending and problem gambling has been consistently replicated,¹⁷ and recent longitudinal studies have found that young people who purchased loot boxes were more likely to engage in traditional gambling and also spend more money on it six months later.¹⁸ However, inconsistent findings as to whether loot box spending is linked to worse mental health (irrespective of whether loot boxes are causing mental distress or whether experiencing poor mental health leads subsequently

⁵ Jeffrey L Derevensky and Sally M Gainsbury, 'Social Casino Gaming and Adolescents: Should We Be Concerned and Is Regulation in Sight?' (2016) 44 International Journal of Law and Psychiatry 1; Sally M Gainsbury and others, 'A Taxonomy of Gambling and Casino Games via Social Media and Online Technologies' (2014) 14 International Gambling Studies 196.

⁶ Leon Y Xiao, Laura L Henderson and Philip WS Newall, 'Loot Boxes Are More Prevalent in United Kingdom Video Games than Previously Considered: Updating Zendle et al. (2020)' (2022) 117 Addiction 2553; Leon Y Xiao, 'Loot Boxes' in Pawel Grabarczyk and others (eds), *Encyclopedia of Ludic Terms* (IT University of Copenhagen 2022) <https://eolt.org/articles/loot-boxes> accessed 19 July 2023.

⁷ cf David Zendle and others, 'If Everything Is a Loot Box, Nothing Is: Response to Xiao et Al.' (2022) 117 Addiction 2555.

⁸ David Zendle and others, 'The Prevalence of Loot Boxes in Mobile and Desktop Games' (2020) 115 Addiction 1768; Leon Y Xiao and others, 'Gaming the System: Suboptimal Compliance with Loot Box Probability Disclosure Regulations in China' (2024) 8 Behavioural Public Policy 590; Leon Y Xiao, 'Breaking Ban: Belgium's Ineffective Gambling Law Regulation of Video Game Loot Boxes' (2023) 9 Collabra: Psychology Article 57641; Leon Y Xiao, Laura L Henderson and Philip Newall, 'What Are the Odds? Lower Compliance with Western Loot Box Probability Disclosure Industry Self-Regulation than Chinese Legal Regulation' (2023) 18 PLOS ONE Article e0286681.

⁹ UK Gambling Commission, 'Young People and Gambling 2022' (Gambling Commission, 10 November 2022) <https://www.gamblingcommission.gov.uk/report/young-people-and-gambling-2022> accessed 12 July 2023.

¹⁰ UK Gambling Commission, 'Young People and Gambling 2023' (Gambling Commission, 16 November 2023) <https://www.gamblingcommission.gov.uk/statistics-and-research/publication/young-people-and-gambling-2023> accessed 30 November 2023.

¹¹ UK Gambling Commission and Ipsos MORI, 'A Research Study among 11-16 Year Olds in England and Scotland' (2020) https://ckan.publishing.service.gov.uk/dataset/young-people-and-gambling-survey-2019/resource/49b79169-a3be-417c-8241-35f33a5d63fd?inner_span=True accessed 30 November 2023.

¹² Video Games Europe, 'In-Game Spending: A Report by Ipsos for Video Games Europe (Formerly ISFE) on Parents' Supervision of Ingame Spending' (2023) 13 https://www.videogameurope.eu/wp-content/uploads/2023/09/Video-Games-Europe_In-Game-Spending-2023_Final-Sept.pdf accessed 12 October 2023.

¹³ Video Games Europe, 'All About Video Games: European Key Facts 2022' (August 2023) 8 <https://www.videogameurope.eu/publication/2022-all-about-video-games-european-key-facts/> accessed 22 October 2023.

¹⁴ Wesley Yin-Poole, 'The Big Interview: EA, FIFA and Loot Boxes' (Eurogamer, 8 October 2021) <https://www.eurogamer.net/articles/2021-10-05-the-big-interview-ea-fifa-and-loot-boxes> accessed 30 November 2023.

¹⁵ Gabriel A Brooks and Luke Clark, 'Associations between Loot Box Use, Problematic Gaming and Gambling, and Gambling-Related Cognitions' (2019) 96 Addictive Behaviors 26, 28; Wen Li, Devin Mills and Lia Nower, 'The Relationship of Loot Box Purchases to Problem Video Gaming and Problem Gambling' (2019) 97 Addictive Behaviors 27, 30; Leon Y Xiao and others, 'Loot Boxes, Gambling-Related Risk Factors, and Mental Health in Mainland China: A Large-Scale Survey' (2024) 148 Addictive Behaviors Article 107860, 5.

¹⁶ Zendle and others (n 8); Xiao and others, 'Gaming the System' (n 8); Xiao, 'Breaking Ban' (n 8); Xiao, Henderson and Newall (n 8).

¹⁷ David Zendle and Paul Cairns, 'Video Game Loot Boxes Are Linked to Problem Gambling: Results of a Large-Scale Survey' (2018) 13 PLOS ONE e0206767; Stuart Gordon Spicer and others, 'Loot Boxes, Problem Gambling and Problem Video Gaming: A Systematic Review and Meta-Synthesis' (2022) 24 New Media & Society 1001; Shaun Stephen Garea and others, 'Meta-Analysis of the Relationship between Problem Gambling, Excessive Gaming and Loot Box Spending' (2021) 21 International Gambling Studies 460.

¹⁸ Gabriel A Brooks and Luke Clark, 'The Gamblers of the Future? Migration from Loot Boxes to Gambling in a Longitudinal Study of Young Adults' (2022) 141 Computers in Human Behavior Article 107605; J González-Cabrera and others, 'Loot Box Purchases and Their Relationship with Internet Gaming Disorder and Online Gambling Disorder in Adolescents: A Prospective Study' (2023) 143 Computers in Human Behavior Article 107685.

to increased loot box purchasing) have been presented.¹⁹

1.2. Regulating loot boxes: a consumer protection law approach?

Policymakers in many countries have considered whether to regulate loot boxes. In nearly all countries (with the exception of Belgium²⁰), gambling law generally cannot be used to address the problem.²¹ This is because most loot boxes in most video games do not offer rewards that are transferable between players, and so they do not possess real-world monetary value and thus cannot satisfy the legal definition of ‘gambling’.²² Even in relation to a small minority of loot boxes that do offer transferable rewards and thus would constitute illegal gambling in many countries, the relevant regulators have not actively enforced the law, resulting in these products being largely unregulated and remaining on the market.²³ Contract law is also unlikely to be helpful as a legal recourse in many countries because the underlying loot box purchasing contract is presumably legal and unchallengeable.²⁴

Consumer protection law has been suggested as being able to provide some safeguarding for players.²⁵ For background, the relevant consumer protection law is set out in the EU Unfair Commercial Practices Directive 2005 (UCPD). The UCPD was implemented in EU countries, and those national versions apply as law. This included implementation into national UK law (because, at that time, the UK was and would still be a part of the EU for more than another decade, until its eventual withdrawal from the EU on 31 January 2020, i.e., ‘Brexit’²⁶) as the Consumer Protection from Unfair Trading Regulations 2008 (CPUTR). Despite Brexit, some previously implemented EU laws were ‘retained’ or incorporated into UK law.²⁷ The CPUTR therefore remained effective after Brexit as retained EU law. The UCPD has been updated since Brexit (e.g., amendments and insertions made by the Omnibus Directive²⁸), and those updates were *not* incorporated into UK law. However, those did not change the basic principles and rules relied upon for present purposes. This meant that the relevant aspects of consumer protection law in the EU and the UK were effectively identical even after Brexit. It

should also be noted that the UK has since adopted the Digital Markets, Competition and Consumers Act 2024 (DMCCA), which will revoke and replace the CPUTR at a yet unknown future date. Again, no substantive changes were or rather will be made to the relevant legal provisions relied upon herein. In any case, the CPUTR applied as the law when the present study was conceptualised and when data collection was conducted.

Consumer protection law is unlikely to resolve all concerns surrounding loot boxes, but it can address certain questionable commercial practices. For example, suggesting that certain loot box rewards can only be obtained during a limited time period but then later offering those same rewards for sale after the relevant period would be a prohibited commercial practice under EU and UK consumer protection law²⁹ and would also likely be illegal elsewhere. However, even though consumer protection law may in theory forbid certain business practices, without active enforcement by the regulator, it must not be presumed that all companies are compliant and not using prohibited practices. Consumer protection law may provide consumers with a personal right of redress through which they may ask to be compensated by a company *after* being harmed by illegal commercial practices (although even that is not provided for so-called ‘misleading omissions,’ which is the prohibited practice that is relevant to the present study, in the UK³⁰ and started being provided in the EU only very recently since 2022³¹). However, it is far less clear what mechanisms are provided by consumer protection law to allow an interested party (irrespective of whether they are a consumer that has already been harmed, a competitor, or a general member of the public) to complain to a regulator alleging that a certain prohibited practice is being used by a certain company, request more active enforcement, and be guaranteed that a reply will be provided and, if appropriate, that enforcement actions will be taken to stop that company from using prohibited practices.³² To benefit the public, it is not compensation for past harms that is being sought here, but rather stricter enforcement of consumer law to prevent harm in the future.

1.3. Applying UK advertising regulations to loot boxes: the ASA and the CAP Code

In the UK, advertising regulation (which *partially* enforces consumer protection law both (i) because consumer protection law is also enforced through other means and (ii) also because advertising regulation imposes certain rules that are stricter than legal requirements in some respects, e.g., restricting adverts that a section of the public might find offensive but are not otherwise necessarily illegal³³) is an exception to the rule of not providing a direct complaint mechanism that guarantees a reply: interested parties may directly complain about specific pieces of advertising for alleged breaches of advertising rules to the regulator and ask for enforcement actions to be taken, and the regulator will investigate, which may result in rulings upholding the complaint and

¹⁹ cf Xiao and others, ‘Loot Boxes, Gambling-Related Risk Factors, and Mental Health in Mainland China: A Large-Scale Survey’ (n 15); Peter J Etchells, Alexandra L Morgan and Daniel S Quintana, ‘Loot Box Spending Is Associated with Problem Gambling but Not Mental Wellbeing’ (2022) 9 Royal Society Open Science Article 220111; Aaron Drummond, Lauren C Hall and James D Sauer, ‘Surprisingly High Prevalence Rates of Severe Psychological Distress among Consumers Who Purchase Loot Boxes in Video Games’ (2022) 12 Scientific Reports 16128.

²⁰ Xiao, ‘Breaking Ban’ (n 8).

²¹ Leon Y Xiao and Pieterjan Declerck, ‘PAID VIDEO GAME LOOT BOXES ARE NOT GAMBLING UNDER DUTCH GAMBLING REGULATION? SHIFTING THE GOALPOST IN ELECTRONIC ARTS V. KANSSPELAUTORITEIT’ (2023) 27 Gaming Law Review 445.

²² Leon Y Xiao and others, ‘Regulating Gambling-like Video Game Loot Boxes: A Public Health Framework Comparing Industry Self-Regulation, Existing National Legal Approaches, and Other Potential Approaches’ (2022) 9 Current Addiction Reports 163.

²³ Leon Y Xiao and Laura L Henderson, ‘Illegal Video Game Loot Boxes with Transferable Content on Steam: A Longitudinal Study on Their Presence and Non-Compliance with and Non-Enforcement of Gambling Law’ (2024) International Gambling Studies <https://doi.org/10.1080/14459795.2024.2390827> accessed 19 September 2024.

²⁴ Joke Baeck and Ignace Claeys, ‘Restitution of Money Spent on Loot Boxes in Video Games?’ (2021) 41 Computer Law & Security Review 105566.

²⁵ Peter Cartwright and Richard Hyde, ‘Virtual Coercion and the Vulnerable Consumer: “Loot Boxes” as Aggressive Commercial Practices’ [2022] Legal Studies 1; D Leahy, ‘Rocking the Boat: Loot Boxes in Online Digital Games, the Regulatory Challenge, and the EU’s Unfair Commercial Practices Directive’ (2022) 45 Journal of Consumer Policy 561.

²⁶ European Union (Withdrawal) Act 2018, s 20(1).

²⁷ ibid, s 3(1).

²⁸ Omnibus Directive [2019] OJ L328/7, art 3(5).

²⁹ Leon Y Xiao, ‘Drafting Video Game Loot Box Regulation for Dummies: A Chinese Lesson’ (2022) 31 Information & Communications Technology Law 343, 348–349; Unfair Commercial Practices Directive (UCPD) [2005] OJ L149/22, annex 1, para 7; The Consumer Protection from Unfair Trading Regulations 2008 (CPUTR), SI 2008/1277, sch 1, para 7; Digital Markets, Competition and Consumers Act 2024 (DMCCA), sch 20, para 7.

³⁰ CPUTR, reg 27A–27L; DMCCA, ss 232–235. Both reg 27B(1) and s 232(7) omit a ‘misleading omission’ from the list of ‘prohibited practices’ against which the consumer has rights of redress.

³¹ UCPD, arts 11 and 11A, as inserted by the Omnibus Directive [2019] OJ L328/7, art 3(5).

³² UCPD, art 11(1); cf CPUTR, reg 19 27L, which was the UK implementation of art 11(1) of the UCPD; DMCCA, s 231.

³³ Committee of Advertising Practice (CAP), ‘UK Code of Non-Broadcast Advertising and Direct & Promotional Marketing (CAP Code) (12th Edition)’ (2010) s 4 <https://www.asa.org.uk/codes-and-rulings/advertising-codes/non-broadcast-code.html> accessed 30 September 2024.

requesting the relevant advert to be withdrawn or amended.³⁴

For context, there is no singular piece of advertising law in the UK. Relevant provisions are found across a multitude of legislation both primary and secondary (more than 200, according to the relevant regulator³⁵). There is also no dedicated government regulator for advertising in the UK (which is also true for many other countries in Europe and beyond). Instead, an ‘independent’ industry self-regulator funded by the advertising industry through a voluntary ‘arm’s length’ levy, the Advertising Standards Authority (ASA), is responsible for monitoring and enforcing advertising rules on a day-to-day basis. Those rules are intended to ensure that all advertising is ‘legal, decent, honest and truthful.’³⁶ Industry self-regulation therefore supplements the law by not only incorporating existing legal requirements but also, in some respects, raising the standard to be higher than the minimum legal requirement. Industry self-regulation also allows disputes to be resolved more efficiently than would be possible through traditional legal means: indeed, a direct complaint procedure that guarantees a reply from the ASA is provided, which is not realistic to expect of all government regulators.³⁷

The UK advertising rules are set out in the industry-specific UK Code of Broadcast Advertising (BCAP Code),³⁸ which regulates TV and radio advertising specifically, and in the more general UK Code of Non-broadcast Advertising and Direct & Promotional Marketing (CAP Code),³⁹ which regulates all other advertising. The two do not differ substantially (e.g., the same rule that applies to both might be found in differently numbered corresponding sections) and are effectively identical for present purposes. References below are made only to the general CAP Code (as that applies to social media advertising, which is the focus of the present study), although similar provisions of the BCAP Code would apply if the advertising was communicated through TV or radio instead.

The advertising rules enforced by the ASA are drafted by the Committee of Advertising Practice (CAP). Section 3 of the CAP Code regulates misleading advertising. Section 3.1 generally requires that advertising ‘must not materially mislead or be likely to do so.’ Section 3.3 specifies that advertising must not mislead by ‘omitting material information’ or by ‘hiding material information or presenting it in an unclear, unintelligible, ambiguous or untimely manner.’ Section 3.3 further defines ‘material information’ as ‘information that the consumer needs to make informed decisions in relation to a product.’ These aspects of the CAP Code directly incorporate the requirements set out in Article 7 of the UCPD and Regulation 6 of the CPUTR. The prohibition on ‘misleading omissions,’ the definition of ‘material information,’ and the ‘unclear, unintelligible, ambiguous or untimely’ phrasing, *inter alia*, in the CAP Code are copied from the UCPD and CPUTR. The CAP Code therefore enforces, in the advertising context, broader consumer protection law in the UK (whose relevant provisions stem directly from EU law). Accordingly, depending on the specific provision, breaches of the CAP Code, which itself is not a piece of ‘law’ *per se*, may also be contraventions of actual laws (e.g., consumer protection law as expressed through the CPUTR). The ASA can refer matters (e.g., repeated and egregious breaches of the CAP Code) to the relevant regulators (*i.e.*, Trading Standards and the Competition and Markets Authority (CMA)) for them to take enforcement actions,⁴⁰ e.g., criminal prosecutions for

offences committed under the CPUTR, such as engaging in a commercial practice that constitutes a misleading omission.⁴¹

The CAP has recognised potential concerns from consumers and parents about in-game purchases and loot boxes in particular. After a consultation, the CAP published its ‘Guidance on advertising in-game purchases’ in 2021.⁴² In that Guidance, it was clarified 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.⁴³ This is because the presence of in-game purchases and that of loot boxes specifically are ‘material information’ (within the meaning of Section 3.3 of the CAP Code) 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 for ‘free’). Therefore, omitting such information on their presence will cause the advertising to be misleading and in breach of Sections 3.1 and 3.3 of the CAP Code. The European Commission has also published a guidance noting that the EU UCPD (or rather national implementations thereof) should be interpreted as specifically requiring ‘the presence of paid random content (e.g. loot boxes, card packs, prize wheels) … be clearly disclosed to the consumer,’⁴⁴ thus confirming that this rule also applies to the EU beyond the UK and also evidencing that the UK rule has its basis in EU law.

Following a study identifying that many companies operating popular video games failed to duly label their games as containing loot boxes and thus did not disclose their presence on app store product listing pages,⁴⁵ two complaints were made to the ASA for alleged breaches of UK advertising rules. The ASA has since upheld these two complaints in October 2023 and declared the relevant advertising illegal by finding that:

‘Because the ad did not make clear that the game contained loot boxes, which we considered was material to consumers’ decisions to download the game, we concluded that the ad misleadingly omitted material information.’⁴⁶

Those two previous complaints concerned the product listings for video games on app stores, which is recognised as a form of advertising for regulatory purposes. However, such product listings are actually quite idiosyncratic as a form of marketing. This is because, generally, those webpages have to be actively searched for by a potential consumer for the information contained therein to be viewed. Video games are also advertised through other means, ranging from billboards to trailers shown on TV channels.⁴⁷ In contrast to app store listings, these other

³⁴ *ibid* 113–114.

³⁵ *ibid* 118.

³⁶ *ibid* 13, s 1.1.

³⁷ *ibid* 3.

³⁸ Broadcast Committee of Advertising Practice (BCAP), ‘UK Code of Broadcast Advertising (BCAP Code) (1st Edition)’ (2010) <https://www.asa.org.uk/codes-and-rulings/advertising-codes/broadcast-code.html> accessed 30 September 2024.

³⁹ CAP (n 33).

⁴⁰ *ibid* 121–122.

⁴¹ CPUTR, reg 10.

⁴² CAP and BCAP, ‘Guidance on Advertising In-Game Purchases’ (20 September 2021) <https://www.asa.org.uk/resource/guidance-on-advertising-in-game-purchases.html> accessed 11 July 2023.

⁴³ *ibid* 10–11.

⁴⁴ European Commission, ‘Commission Notice – Guidance on the Interpretation and Application of Directive 2005/29/EC of the European Parliament and of the Council Concerning Unfair Business-to-Consumer Commercial Practices in the Internal Market (C/2021/9320) [2021] OJ C526/1’ (29 December 2021) 105 [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021XC1229\(05\)](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021XC1229(05)) accessed 19 October 2023.

⁴⁵ Leon Y Xiao, ‘Beneath the Label: Unsatisfactory Compliance with ESRB, PEGI, and IARC Industry Self-Regulation Requiring Loot Box Presence Warning Labels by Video Game Companies’ (2023) 10 Royal Society Open Science Article 230270.

⁴⁶ Advertising Standards Authority (ASA), ‘Ruling on Hutch Games Ltd [Concerning F1 Clash on the Apple App Store] A23-1196857’ (4 October 2023) <https://www.asa.org.uk/rulings/hutch-games-ltd-a23-1196857-hutch-games-ltd.html> accessed 4 October 2023; ASA, ‘Ruling on Hutch Games Ltd [Concerning Rebel Racing on the Google Play Store] A23-1196862’ (4 October 2023) <https://www.asa.org.uk/rulings/hutch-games-ltd-a23-1196862-hutch-games-ltd.html> accessed 4 October 2023.

⁴⁷ Colin Charles Mathews and Nia Wearne, ‘How Are Modern Video Games Marketed?’ (2016) 5 The Computer Games Journal 23.

forms of advertising would reach consumers who would not be actively looking for video games to download (and may therefore be less aware of possibly problematic issues relating to the advertised product, such as the potential harms of loot boxes). Previous research has not considered whether other forms of advertising for video games containing loot boxes are compliant with advertising rules.

1.4. Social media advertising and ad transparency repositories

One prominent and relatively novel form of advertising for video games is through social media, which is regulated in the UK under the CAP Code. This channel is particularly relevant given widespread adoption of social media across the world across all age groups.⁴⁸ Indeed, this form of advertising is also more easily objectively studied (as compared to more traditional, physical forms) due to affordances recently provided by various major platforms either voluntarily or as a result of mandatory legal requirements. In response to increasing scrutiny, in 2018, social media companies, like Facebook⁴⁹ and Twitter (as X then was),⁵⁰ began providing searchable libraries for the advertising shown on their platforms, although this was initially limited to political advertising only.⁵¹ Since then, some companies have expanded the functionalities of their ad libraries by also providing information on non-political, commercial advertising either voluntarily or as a result of stricter regulation,⁵² such as the world's first obligations imposed by the EU Digital Services Act (DSA).⁵³

The DSA designated a number of online platforms, including Facebook, Instagram, TikTok, and Twitter (which has since become X but is referred to below as whichever entity existed at the relevant time), as 'very large'.⁵⁴ These platforms are required under Article 39 of the DSA to maintain a searchable repository for all ads shown to EU and EEA consumers and provide information about those ads. (For clarity, the UK left the EU before the DSA was adopted. Therefore, the obligations imposed therein are not part of UK law. The UK has also not adopted similar laws requiring ad repositories at its own volition.) These repositories are legally obligated, *at a minimum*, to provide the information listed under Article 39(2), including: a copy of the advert and the identity of what is being advertised (Article 39(2)(a)); the identity of the advertiser (Article 39(2)(b)) and whoever paid for the advert if different (Article 39(2)(c)); when the advert was shown (Article 39(2)(d)); the characteristics of the (groups of) recipients that were targeted by the advert and/or excluded from targeting (Article 39(2)(e)); and the number of recipients the advert eventually reached, including detailed numbers broken down by various characteristics used for targeting purposes (Article 39(2)(g)). If the advert has been removed for being

⁴⁸ Johannes Knoll, 'Advertising in Social Media: A Review of Empirical Evidence' (2016) 35 International Journal of Advertising 266.

⁴⁹ Richard Allan and Rob Leathern, 'Increasing Transparency for Ads Related to Politics in the UK' (Facebook, 16 October 2018) <https://about.fb.com/news/2018/10/increasing-transparency-uk/> accessed 12 October 2023.

⁵⁰ Bruce Falck, 'Providing More Transparency around Advertising on Twitter' (28 June 2018) https://blog.twitter.com/en_us/topics/company/2018/Providing-More-Transparency-Around-Advertising-on-Twitter accessed 12 October 2023.

⁵¹ Paddy Leerssen and others, 'Platform Ad Archives: Promises and Pitfalls' (2019) 8 Internet Policy Review <https://policyreview.info/articles/analysis/platform-ad-archives-promises-and-pitfalls> accessed 11 October 2023.

⁵² Nick Clegg, 'New Features and Additional Transparency Measures as the Digital Services Act Comes Into Effect' (Meta, 22 August 2023) <https://about.fb.com/news/2023/08/new-features-and-additional-transparency-measures-a-s-the-digital-services-act-comes-into-effect/> accessed 12 October 2023.

⁵³ Digital Services Act (DSA) [2022] OJ L277/1.

⁵⁴ European Commission, 'Digital Services Act: Commission Designates First Set of Very Large Online Platforms and Search Engines' (25 April 2023) https://ec.europa.eu/commission/presscorner/detail/en/IP_23_2413 accessed 20 September 2024.

illegal and/or contrary to the service provider's terms and conditions, detailed information as to why the removal took place, including the basis for removal must also be provided (Article 39(3) referring to Article 17(3)). All information should be kept for at least one year after the relevant ad was last shown (Article 39(1)).

Admittedly, there can be no independent assurance that these databases are perfectly accurate, despite relevant legal requirements. Previous research has raised concerns about faulty design and implementation,⁵⁵ which give rise to research limitations. The functionalities (especially when not legally required) can also be changed or removed at any time on a discretionary basis. For example, Twitter removed public access to its ad library in 2021 without providing any reasons just three years after voluntarily implementing it in 2018 because it was entirely discretionary whether this service and the data were provided.⁵⁶ This service has since been relaunched by X (Twitter's successor) (<https://ads.twitter.com/ads-repository>), as required by newly adopted laws (i.e., the DSA, as discussed above), but for EU regions only (and not the EEA regions, even though the DSA is also supposed to apply to them, as detailed below).⁵⁷ However, despite and duly recognising these shortcomings, the information provided by these ad libraries can be taken at face value to address certain research questions, including the present ones.

The ad libraries of different platforms provide varying levels of functionality. The summary below is factually correct as of the data collection period for the present study (i.e., October 2023), but may become inaccurate as various features (particularly those that are not legally required to be provided) are added or removed at the whims of these private commercial entities. For example, the ad library for X is provided only to minimally comply with EU law (specifically, Article 39 of the DSA), so it provides only information about ads that target consumers in EU countries and nothing more (not even the EEA countries to which the DSA is supposed to apply, given the law's 'Text with EEA relevance' designation).⁵⁸ This means that the X ads repository is not useable for any research intending to study ads specifically targeting non-EU territories, including the UK (which, due to Brexit, is an ex-EU country to whose consumers the DSA transparency obligations that were adopted after Brexit do not apply).

In contrast, the Meta (which encompasses advertising on Facebook, Instagram, and Messenger) and the TikTok ad libraries go above and beyond their minimum legal obligations to be transparent about EU-targeting ads, which is required under the DSA because they have been designated as 'Very Large Online Platforms (VLOPs).'⁵⁹ Meta and TikTok additionally allow for ads that target non-EU territories to be scrutinised, even though the two companies are not (or at least have not yet been) required by law to provide some of this information. The Meta library appears to allow ads targeting every country/territory in the world to be searched, whilst the TikTok library allows for those targeting the three EEA countries that are not part of the EU (i.e., Iceland, Liechtenstein, and Norway, which are supposed to be covered by the DSA), Switzerland, and the UK to be scrutinised, but not those targeting elsewhere.

The various ad repositories also differ as to the degree of information that is then provided about the total impressions that a certain ad has

⁵⁵ Paddy Leerssen and others, 'News from the Ad Archive: How Journalists Use the Facebook Ad Library to Hold Online Advertising Accountable' (2023) 26 Information, Communication & Society 1381, 1382.

⁵⁶ Bruce Falck, 'Providing More Transparency around Advertising on Twitter [as Updated on 25 January 2021]' (25 January 2021) https://blog.twitter.com/en_us/topics/company/2018/Providing-More-Transparency-Around-Advertising-on-Twitter accessed 12 October 2023.

⁵⁷ X Corp., 'Ads Transparency' (2023) <https://business.twitter.com/en/help/ads-policies/product-policies/ads-transparency.html> accessed 11 October 2023.

⁵⁸ *ibid.*

⁵⁹ European Commission (n 61).

received. The Meta platform provides this information only in relation to the EU (e.g., how many users of a certain age group from Ireland, an EU country, have seen the ad), which represents the minimum extent of disclosure required by EU law (i.e., Article 39 of the DSA). In contrast, the TikTok platform provides additional information beyond its legal obligations (e.g., how many impressions the ad received in the UK, which is not required to be disclosed by any law and therefore is being disclosed entirely voluntarily). The TikTok ad library additionally allows for search results to be sorted based on their number of impressions (defined as the number of unique users that have seen the ad), which the Meta platform does not permit. This means that the most widely viewed ads on TikTok can be easily identified, but this cannot be done using the Meta ad library. Further, due to wider coverage of different territories provided voluntarily, TikTok can be used to study a few non-EU countries of interest (e.g., the UK) in greater detail. Needless to say, the more functionalities and information an ad library provides, the more research questions can be answered using it.

1.5. Present study and research questions

In summary, UK advertising regulation incorporates and enforces aspects of UK consumer protection law (that companies must not mislead consumers by omitting material information), which implemented EU consumer protection law prior to Brexit. Therefore, aspects of UK advertising regulation (that video game advertising must disclose the presence of generic in-game purchases and of loot boxes specifically) originate from and are identical to EU consumer protection law. The UK's withdrawal from the EU has not affected this thus far. Further, EU law (the DSA) that was adopted after Brexit imposed obligations on social media platforms to provide a repository of all adverts shown and to share data. This law is not part of UK law, and the UK has not adopted similar laws, so these obligations are not imposed in the UK. However, seemingly as part of complying with that EU law, some social media platforms have entirely voluntarily provided certain advertising data related to the UK when not obliged to do so. This creates an ironic situation whereby, despite Brexit, compliance with UK advertising rules (which are, in essence, EU consumer protection law) can be assessed using affordance likely provided by non-applicable EU law adopted post-Brexit.

Acknowledging the limitations of, and the divergent functionalities provided by, ad libraries for social media platforms, the present study sought to pragmatically conduct research on the ad libraries of two different leading platforms by taking advantage of the respective features that they each provide. The Meta library allows for ads to be easily searched for based on the identity of the advertiser account (which for video games is usually, conveniently, the dedicated account for that game title). Therefore, this ad library was used to identify what percentage of advertising on Meta-owned social media platforms (i.e., Facebook, Instagram, and Messenger) for popular games known to contain loot boxes failed to disclose the presence of in-game purchases and of loot boxes specifically. The search function for the TikTok library on the other hand was less useful, as ads were generally attributed to advertisers whose identity is only shown as a company name (which may or may not be a company that is obviously related to the video game, e.g., the publisher of the video game), rather than the game title, which made them less identifiable. However, as detailed above, it is possible to sort all the ads in the TikTok library based on how many unique users have seen each ad and thusly obtain a list of the ads that received the greatest number of impressions on TikTok. This allowed for the most 'popular,' or most viewed, ads relating to video games that implement loot boxes to be identified. These ads were then evaluated to check whether they were compliant with advertising regulations by having disclosed the presence of in-game purchases and of loot boxes specifically. The total number of impressions received by the non-compliant ads could also be calculated based on the data provided by the TikTok ad library.

The following four research questions were addressed:

Research Question 1: What percentage of popular games known to contain loot boxes advertised on Meta-owned social media platforms without disclosing loot box presence?

Research Question 2: What percentage of the ads that received the greatest number of impressions on TikTok pertained to video games known to contain loot boxes?

Research Question 3: What percentage of the TikTok ads identified through Research Question 2 disclosed the presence of loot boxes?

Research Question 4: How many total impressions did the non-compliant TikTok ads identified through Research Question 3 receive?

The present study's research questions and design, despite the methodology being mixed method with a qualitative focus, were pre-registered in the Open Science Framework at: <https://doi.org/10.17605/OSF.IO/ECRA4>.

2. Method

Content analysis was conducted on the ads libraries provided by Meta (<https://www.facebook.com/ads/library>) and TikTok (<https://library.tiktok.com/ads/>). The relevant country settings for the ad libraries were put to the UK because of the present focus on identifying non-compliance with UK advertising regulations (even though the same adverts might also be illegal elsewhere, e.g., under EU consumer law). On Meta, this meant setting the 'Select country' option to the UK only. On TikTok, this meant setting the 'Ad target country' to the UK only.

For Research Question 1, a list of 187 games previously known to contain loot boxes (as collated for the purposes of a previous study and since added to using the results from that same study⁶⁰) was used. This entire list was preregistered. The titles of these 187 games (with some flexibility as to whether or not to include, e.g., subtitles) were entered into the search tool for the Meta ads library. The coder determined whether any of the search results were an ad for the game title searched for. When a dedicated advertiser account for the game was identified, then that account's page was used to identify the most recent adverts relating to said game. The coder then looked for any disclosure of the presence of in-game purchases and of loot boxes specifically in any form (irrespective of visual prominence, e.g., font size of the disclosure text). All loot box presence disclosures were deemed as having also satisfied the requirement to disclose in-game purchases in general, i.e., act also as a generic in-game purchase presence disclosure. It was preregistered that if multiple ads were run for a game, then up to three of the most recent ads for the same game would be examined. It was also preregistered that only search results for ads that were run after 20 September 2021 would be examined because that was the date on which the 'Guidance on advertising in-game purchases' was published.⁶¹ In theory, companies were obliged to comply with the requirements even prior to that date as the Guidance only clarified what obligations were already owed under pre-existing law. However, this was deemed a justifiable date for an artificial cut-off to be set. In fact, all ads examined were run after said date.

For Research Questions 2, 3 and 4, the list of all TikTok ads displayed by the ad library was sorted using the function 'Unique users seen: High to low.' The coder determined whether each ad related to a video game that implements loot boxes. The coder first determined which video game the ad pertained to (and the ad was excluded when such a determination could not be confidently made). Then, the coder

⁶⁰ Leon Y Xiao, 'Shopping Around for Loot Box Presence Warning Labels: Unsatisfactory Compliance on Epic, Nintendo, Sony, and Microsoft Platforms' (2023) 1 ACM Games: Research and Practice Article 25.

⁶¹ CAP and BCAP (n 42).

determined whether that game contains loot boxes either by checking whether it is on the aforementioned list of 187 popular games previously known to contain loot boxes or through actual gameplay or external research (e.g., checking whether the game was attached with the generic 'In-Game Purchases' presence label or the dedicated 'In-Game Purchases (Includes Random Items)' loot box presence warning label on the Google Play Store or in the PEGI database⁶²). Any evidence of loot box presence is publicly available at the data deposit link. The TikTok search tool provides data starting from 1 October 2022, which is a date by which all video game companies should have complied with UK advertising regulations (as it is over a year after the CAP Guidance was published), so it was preregistered that the entire database would be used. As preregistered, sampling stopped after the first 100 adverts pertaining to games offering loot boxes that received the greatest number of impressions globally were identified. Importantly, different ads for the same game title were separately counted as the material could have varied (and, in some cases, did in fact vary) greatly. For Research Question 3, all 100 ads were examined by the coder to find any disclosure of the presence of in-game purchases and of loot boxes specifically in any form (again, irrespective of visual prominence, and loot box disclosures were deemed as also satisfying the requirement to disclose generic in-game purchases). For Research Question 4, the number of unique users from the UK that have seen a certain ad was obtained from the relevant TikTok ad summary webpage, a copy of which has been archived for each advert at the data deposit link.

Following the preregistration, all underlying data are shared for wider public scrutiny of the results via the data deposit link: <https://doi.org/10.17605/OSF.IO/6ZSUA>. Screenshots were taken of texts and non-moving graphical materials, and all videos were archived, such that all adverts can be reviewed at a later date by any interested party.

In accordance with the *Danish Code of Conduct for Research Integrity*, as adopted by the IT University of Copenhagen, the present study did not require research ethics assessment and approval because no human participants or personal data were expected to have been involved and only publicly available information was examined and recorded.

3. Results

3.1. Study 1: Meta

Ads for the 187 preregistered game titles were searched for using the Meta ad library. During this process, it was discovered that one of the games on the list, *Brawl Stars* (2017, Supercell), no longer offered loot boxes for sale in exchange for real-world money at the data collection date.⁶³ (However, subsequently, loot boxes were reintroduced back into the game, which is irrelevant to the present study but noted for the record.⁶⁴) This game was therefore excluded from the sample for being irrelevant: a game not containing loot boxes is obviously not required to disclose loot box presence. No relevant advertising activity could be found for 126 titles, meaning that advertising was found for 60 games on the original list. Three games were added into the sample. Two games, *NBA 2K24* (2023, 2K Games) and *WWE 2K23* (2023, 2K Games), were added because they represented more recent versions of older titles on the original list that were found to have not advertised simply because they were outdated and have since been replaced (e.g., *NBA 2K23* (2022, 2K Games) and *WWE 2K22* (2022, 2K Games)). The two newer titles,

which were advertised, were deemed to be suitable replacements for the older titles. Another game, *The Elder Scrolls Online* (2014, Bethesda), was added because two entries on the original list (*The Elder Scrolls Online Collection: Blackwood* (2021, Bethesda) and *The Elder Scrolls Online Collection: High Isle* (2022, Bethesda)) are expansion packs providing more content for the base game that was added into the sample. The actual game (which was advertised) was deemed to be a suitable replacement for its expansion packs (which were not advertised) for the present research. In summary, 63 games offering loot boxes were found to have advertised on Meta-owned platforms and were included in the sample (or 33.7 % of 187 relevant games checked; *Brawl Stars* and the two *Elder Scrolls* expansion packs were excluded for this calculation, but the three added games detailed above were included).

Amongst these 63 games, for two games, only one relevant advert could be found. For the other 61 games, the three most recent adverts were assessed for each game as preregistered. Therefore, in total, 185 separate adverts were studied. Notably, some of these adverts were identical as some games advertised using the same material multiple times, but these were shown as separate advert entries with a unique numbering in the database and were therefore treated as such.

As to compliance, amongst the 185 adverts detailed in Table 1, only 20 adverts (10.8 %) disclosed the presence of in-game purchases and merely 13 of those 20 adverts (7.0 %) also disclosed the presence of loot boxes. (A loot box presence disclosure was deemed as having also disclosed the presence of generic in-game purchases.) At a game level, amongst 63 games, only 10 games (15.9 %) made in-game purchase disclosures in at least one advert studied, and only six of those 10 games (9.5 %) also made loot box disclosures in at least one advert studied. Only four games (6.3 %) were found to have complied with the requirement to disclose the presence of in-game purchases in all of those games' adverts studied (i.e., the most recent three ads shown), and only three of those four games (4.8 %) were found to have also complied with the requirement to disclose loot box presence in all adverts studied.

3.2. Study 2: TikTok

As preregistered, the list of the ads that received the greatest number of unique impressions were scraped. Data collection stopped after 1074 total entries were reviewed because exactly 100 ads confirmed as relating to games containing loot boxes had been examined. Notably, 154 out of 1074 ads could not be studied because they were removed due to violation of TikTok's terms of service and could no longer be viewed in the repository (14.3 %). For these ads, all information about the identity of the advertiser and other interested parties has also been removed. Given that these ads could not be studied, they were excluded from the sample.

Amongst the remaining 920 entries that were viewable, 151 ads related to video games (16.5 %), including one ad each for the Amazon Prime Gaming subscription service and the Sony PlayStation VR2 virtual reality headset. As with Study 1, notably, some of these adverts were identical or nearly so as some games advertised using the same material multiple times, but these were shown as separate advert entries with a unique numbering in the database and were therefore treated as such. It was not possible to determine what specific video game six ads were linked to because the TikTok ad repository did not provide any information on the URL (Uniform Resource Locator) that a specific advert would have redirected the viewer to. This crucial (and arguably the most important) information about the ad has been omitted by TikTok, which appears to be an obvious breach of the platform's obligations under Article 39(2)(a) of the DSA to disclose the identity of the 'product, service or brand' advertised. This was in contrast to the Meta database, which always provided this information (i.e., the relevant URL). Additionally, 13 ads were for two games that did not contain offer any in-game purchases according to PEGI (Pan-European Game Information), which is the European video game age rating organisation: 10 ads for *Star Wars Jedi: Survivor* (Electronic Arts, 2023) and 3 ads for *Dead Space*

⁶² Xiao, 'Beneath the Label' (n 51).

⁶³ Marie Dealessandri, 'Supercell Removes Loot Boxes from Brawl Stars' (*GamesIndustry.biz*, 12 December 2022) <https://www.gamesindustry.biz/supercell-removes-loot-boxes-from-brawl-stars> accessed 15 January 2023.

⁶⁴ Leon Y Xiao, '.@BrawlStars Reintroduced #LootBoxes, Seriously. You Directly Purchase Something Else and Are given Loot Boxes for "FREE."'" (X, 20 January 2024) <https://twitter.com/LeonXiaoY/status/1748665362881667574> accessed 29 April 2024.

Table 1Meta adverts studied listed by game title ($N = 185$).

| Game | # of ads | Disclosed in-game purchases | Disclosed loot boxes |
|---|----------|-----------------------------|----------------------|
| <i>Bingo Blitz</i> | 3 | 1 | 0 |
| <i>Dragon City</i> | 3 | 2 | 0 |
| <i>Golf Clash</i> | 3 | 1 | 1 |
| <i>Hunt: Showdown</i> | 3 | 1 | 1 |
| <i>Lost Ark</i> | 3 | 3 | 0 |
| <i>Monster Legends</i> | 3 | 3 | 3 |
| <i>NBA 2K24</i> | 3 | 2 | 2 |
| <i>Star Wars: Galaxy of Heroes</i> | 3 | 3 | 3 |
| <i>The Elder Scrolls Online</i> | 3 | 3 | 3 |
| <i>WWE SuperCard</i> | 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>Archer</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>Huuge 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 |
| <i>PUBG MOBILE</i> | 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 | 185 | 20 (10.8 %) | 13 (7.0 %) |

Note. Game titles with ads that were compliant in some manner are bolded and listed before other entries. The three fully compliant games' titles are underlined.

(Electronic Arts, 2023), respectively. The aforementioned 21 ads were excluded from the sample because they were either irrelevant or could not be reliably studied. Accordingly, 130 out of the 920 most viewed ads (that have not been removed for content violation) marketed video games with in-game purchases (14.1 %), and 100 promoted games with loot boxes (10.9 %).

As to compliance amongst the 130 ads relating to games that contained in-game purchases listed in Table 2, only 9 ads disclosed generic in-game purchase presence (6.9 %). Amongst the 100 ads relating to games that contained loot boxes, only 7 ads disclosed loot box presence specifically (7.0 %). At a game level, amongst 40 individual titles containing in-game purchases whose ads were studied, only 4 games disclosed generic in-game purchase presence (10.0 %), and amongst 19 titles with loot boxes, only 3 games disclosed loot box presence specifically (15.8 %).

Interestingly, every compliant ad related to video games published by Electronic Arts. Amongst the 93 non-compliant ads that failed to disclose loot box presence, the advertiser's registered location according to TikTok was China for 46 ads (49.5 %); Israel for 13 ads (14.0 %); the US for 12 ads (12.9 %); Singapore for eight ads (8.6 %); Finland for

Table 2TikTok adverts studied listed by game title ($N = 130$).

| 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 (7.0 %) | 7 (7.0 %) |
| F1 23 | 2 | 2 | 2 |
| <i>BitLife - Life Simulator</i> | 1 | 0 | 0 |
| <i>Bridge Race</i> | 5 | 0 | 0 |
| <i>Call of Duty: Modern Warfare</i> | 1 | 0 | 0 |
| <i>Candy Crush Saga</i> | 1 | 0 | 0 |
| <i>Diablo IV</i> | 1 | 0 | 0 |
| <i>GTA Online: San Andreas Mercenaries</i> | 1 | 0 | 0 |
| <i>Going Balls</i> | 2 | 0 | 0 |
| <i>Hogwarts Mystery: Harry Potter</i> | 2 | 0 | 0 |
| <i>Impulse - Brain Training Games</i> | 1 | 0 | 0 |
| <i>Just Dance 2023 Edition</i> | 1 | 0 | 0 |
| <i>Merge Miners / Merge and Dig</i> | 2 | 0 | 0 |
| <i>My Mini Mart</i> | 2 | 0 | 0 |
| <i>Overwatch 2</i> | 1 | 0 | 0 |
| <i>Spider-Man 2</i> | 1 | 0 | 0 |
| <i>Stealth Master: Assassin Ninja</i> | 1 | 0 | 0 |
| <i>Tall Man Run</i> | 1 | 0 | 0 |
| <i>Tile Busters</i> | 1 | 0 | 0 |
| <i>Triple Cat Sort - Goods Master / Goods Triple - Sort & Match 3D</i> | 1 | 0 | 0 |
| <i>Woodoku</i> | 1 | 0 | 0 |
| <i>World of Warcraft: Dragonflight</i> | 1 | 0 | 0 |
| Total for games without loot boxes | 30 | 2 (6.7 %) | |
| Total | 130 | 9 (6.9 %) | |

Note. Game titles with ads that were compliant are bolded and listed before other entries.

seven ads (7.5 %); Hong Kong for four ads (4.3 %); Germany for two ads (2.2 %); and the UK for one ad (1.1 %). Notably, all eight ads that supposedly had an advertiser based in Singapore (listed as ‘COGNOSPHERE PTE. LTD.’) and two of four ads whose advertiser was supposedly based in Hong Kong (listed as ‘MIHOYO LIMITED’) were actually for games operated by the Mainland Chinese company miHoYo, who would ultimately benefit and likely produced or at least had control over the advertising content.⁶⁵ The listed ‘advertiser’ was but a fully owned subsidiary based in a different jurisdiction. This indicates that the supposed geographic origin of an ad provided by TikTok requires further scrutiny. There may have been other examples of complex corporate structures that the author is unaware of.

For each ad, TikTok provides the value for ‘Unique users seen,’ which is defined as ‘An estimate of the number of unique users who have seen the ad at least once.’ It is not known for how long a user needs to have watched the ad for them to be counted, and it cannot be known whether the user was paying attention to the ad or whether they consequently purchased or downloaded the advertised game. An individual estimate was provided for each country that the ad targeted. A total estimate for all countries was provided using a broad range. Given that the present study’s focus is on the UK situation, only the estimated ‘Unique users seen’ values relating to the UK were recorded and summed as required. Many of these ads also targeted EU and EEA countries in which the same ads should similarly be found to be non-compliant with consumer protection law (specifically, the requirement for companies not to misleadingly ‘omit material information that the average consumer needs to take an informed transactional decision’ under Article 7 of the UCPD and national implementations thereof) and advertising regulations incorporating and applying the UCPD,⁶⁶ as the European Commission has previously stated.⁶⁷ The total number of ‘actual impressions’ (i.e., counting each unique user seeing the same ad multiple times as multiple separate impressions) may be many times the ‘unique impressions’ that have been reported, but the former has not been disclosed by TikTok. Interestingly, because some ads for the same game were identical or largely identical to other entries in the sample, these would have been counted multiple times when calculating the total ‘unique impressions’ received in the UK. Because of the company’s chosen marketing strategy of pushing the same ad multiple times as different entries to potentially the same users, presumably, many of the same unique users would have seen the same ad (ostensibly appearing as different entries) multiple times. The most extreme example is *Top War* (Rivergame, 2019), which advertised as 40 separate entries using similarly misleading advertising that did not accurately reflect actual gameplay (as detailed below under Section 3.3.1). Some of these 40 ads were identical to each other but not all. This means that for some games, their supposed ‘unique impressions’ value would not be accurate and would instead be closer to their actual impressions because of repeated, duplicate counting. In contrast, the ‘unique impressions’ received by a game that was advertised only once would be an accurate reflection. These are practical limitations to the interpretation of the data provided by the TikTok repository that ought to be acknowledged. This means that the impressions reported by the present study should be understood as the *minimum* number of times these adverts have been viewed,

Table 3

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

| 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 |

including potentially by the same users multiple times in cases where the same advert was published as multiple entries. It does not accurately reflect true ‘unique impressions,’ and the value for ‘actual impressions’ may well be many times higher.

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) are presented in Table 3. In summary, in relation to all 130 ads for games with in-game purchases, only 10.8 % of impressions were of ads that made the requisite disclosures, whilst 89.2 % were of ads that contravened regulations. Similarly, in relation to the 100 ads for games with loot boxes, only 10.2 % of impressions were of compliant ads, whilst 89.8 % were of non-compliant ads.

3.3. Otherwise socially irresponsible advertising

Finally, during data collection, it became obvious that some adverts engaged in otherwise questionable practices that would likely be deemed socially irresponsible and may contravene consumer protection law, advertising regulations, or PEGI’s advertising rules.

3.3.1. Misleading advertising that did not represent actual gameplay

Besides omitting material information, other types of misleading advertising would also contravene Section 3.1 of the CAP Code, which generally prohibits misleading advertising. Specifically, exaggeration (except ones that are so obvious as to be unlikely to be taken literally by consumers, or so-called ‘puffery’⁶⁸) is prohibited. Section 3.11 states that advertising ‘must not mislead consumers by exaggerating the capability or performance of a product.’ Applied to the video game context, this means that the gameplay footage shown in the advert must be broadly representative of actual gameplay. The advert should not show gameplay⁶⁹ or imagery⁷⁰ that cannot be found within the game, as doing so is exaggerating what the video game is capable of as a product.

The present study encountered many misleading adverts that purported to show supposed gameplay that was not representative of the majority of actual gameplay. As shown in Fig. 1, one TikTok advert (ID# 1753834718906369: https://library.tiktok.com/ads/detail/?ad_id=1753834718906369) for *Top War* even ironically self-referentially highlighted how the ad was allegedly ‘exposing fake games’ and purported to demonstrate how the gameplay that could be found within the game was supposedly ‘actually like the ads’ and ‘NOT fake.’ To the author’s understanding, the gameplay shown does actually exist as a ‘mini-game’ in a minor part of the overarching game;⁷¹ however, it is not

⁶⁵ Brian Ashcraft, ‘Genshin Impact’s miHoYo Rebrands For Global Audiences’ (*Kotaku*, 14 February 2022) <https://kotaku.com/genshin-impact-mihoyo-hoyoverse-brand-honkai-impact-3rd-1848532266> accessed 16 January 2023; HoYoverse, ‘Presenting the New Brand HoYoverse: Aiming to Provide Global Players With an Immersive Virtual World Experience’ (13 February 2022) [http://www.hoyoverse.com/en-us/news/101566](https://www.hoyoverse.com/en-us/news/101566) accessed 16 January 2023; Tallis Spalding, ‘Are MiHoYo And HoYoverse The Same?’ (*TheGamer*, 20 July 2024) <https://www.thegamer.com/are-mihoyo-hoyoverse-same-differences-explained/> accessed 28 September 2024.

⁶⁶ e.g., Nederlandse Reclame Code [Dutch Advertising Code], art 8.3(c).
⁶⁷ European Commission (n 49) 105.

⁶⁸ CAP Code, s 3.2.

⁶⁹ ASA, ‘Ruling on Rivergame Ltd t/a Top War G22-1166092’ (16 November 2022) <https://www.asa.org.uk/rulings/rivergame-ltd-g22-1166092-rivergame-ltd.html> accessed 12 October 2023.

⁷⁰ ASA, ‘Ruling on Funplus Interactive A17-398352’ (20 December 2017) <https://www.asa.org.uk/rulings/funplus-interactive-a17-398352.html> accessed 30 September 2024; ASA, ‘Ruling on Funplus Interactive A18-463147’ (6 February 2019) <https://www.asa.org.uk/rulings/funplus-interactive-a18-1.html> accessed 12 October 2023.

⁷¹ Leon Y Xiao, ‘What’s a Mini-Game? The Anatomy of Fishing Mini-Games’ (2023) <https://doi.org/10.31219/osf.io/4g9ku> accessed 21 October 2023.

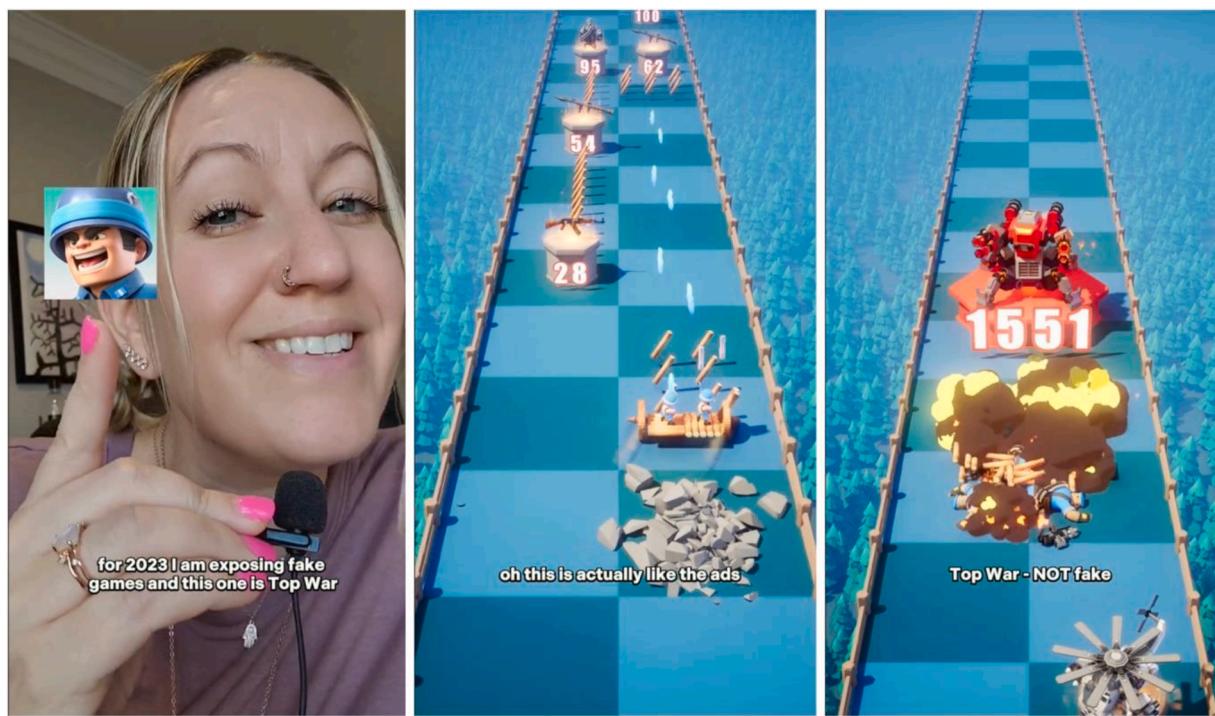


Fig. 1. Screenshots of relevant moments during TikTok advert ID# 1753834718906369 for *Top War* showing how it is not representative of actual gameplay and therefore misleading, but it ironically self-referenced this issue and then purported to claim that the gameplay is not ‘fake.’ © 2023 Rivergame.

representative of the actual gameplay of the vast majority of *Top War*. A previous ASA ruling found that adverts which showed only gameplay that was technically available inside the game but formed only a small part of that game and was not representative of the game overall was still misleading.⁷²

In 2022, the ASA actually specifically ruled on two complaints concerning two TikTok adverts for *Top War*.⁷³ For having included ‘in-game footage in the ads [that] was not representative of the product,’ the ads were determined to have ‘exaggerated the performance of the game and were misleading,’ and thus in breach of advertising rules (*i.e.*, Sections 3.1 and 3.11 of the CAP Code). The advertiser was reminded not to publish misleading adverts. However, the aforementioned TikTok advert shown in Fig. 1 was last shown on 2 February 2023, according to information provided by the ad library. This indicates that the previous enforcement action taken by the ASA has not effectively deterred the relevant video game company based in Beijing, China from continuing to breach UK advertising regulations and act illegally. A referral to the UK consumer protection regulators for criminal prosecution might be apt as industry self-regulation has failed to encourage compliance in this instance.

3.3.2. Offensive advertising that mistreated women and sexualised children under 18

Besides misleading advertising, the CAP Code also prohibits advertising that ‘contain anything that is likely to cause serious or widespread offence’ (Section 4.1 of the CAP Code). Specifically, Section 4.8 prohibits the sexualisation of children under 18, and Section 4.9 prohibits the depiction of offensive gender stereotypes. The ASA has previously

enforced against video game adverts on Twitter because they were likely to cause offence as they stereotyped, objectified, and demeaned women⁷⁴ or portrayed characters who seemed to be under 18 years of age in a sexual way.⁷⁵

Similarly offensive ads appeared in the present sample. As shown in Fig. 2, one Meta advert (ID# 1040307840454210: <https://www.facebook.com/ads/library/?id=1040307840454210>) for *Azur Lane* (Shanghai Manjuu & Xiamen Yongshi, 2017) purported to show that the gameplay involved the player being able to manually ‘Customize Your Girl’ by increasing or decreasing the character’s ‘Looks,’ ‘Temperament,’ and ‘Intelligence’ on a 5-star rating scale. Such stereotypical depiction of women (or girls who are seemingly under 18) as sexual objects would contravene Sections 4.1, 4.8, and 4.9 of the CAP Code. To the author’s knowledge developed through gameplay for previous research purposes, such a mechanic also either does not exist in the game or is not representative of actual gameplay (and so the ad was likely also misleading due to exaggeration and thus in breach of Sections 3.1 and 3.11 of the CAP Code). Even more egregious examples of sexualisation and objectification, such as the Meta adverts for *Kiss of War* (tap4fun, 2019) that showed female characters in compromising positions, were also observed but are not discussed further as the point has been made, and any further discussion would be gratuitous.

3.3.2. Encouraging minors to participate in simulated gambling and glorifying gambling

Section 16 of the CAP Code is dedicated to regulating gambling advertising with additional industry-specific rules. Those rules do not apply to the advertising of simulated gambling or social casino games that allow players to spend real-world money to participate in

⁷² ASA, ‘Ruling on PLR Worldwide Sales Ltd t/a Playrix G20-1061644’ (30 September 2020) <https://www.asa.org.uk/rulings/plr-worldwide-sales-ltd-g20-1061644-plr-worldwide-sales-ltd.html> accessed 30 September 2024.

⁷³ ASA, ‘Ruling on Rivergame Ltd t/a Top War G22-1166092’ (n 69).

⁷⁴ ASA, ‘Ruling on GOAT Company Ltd A22-1162562’ (28 September 2022) <https://www.asa.org.uk/rulings/goat-company-ltd-a22-1162562-goat-company-ltd.html> accessed 30 September 2024.

⁷⁵ ASA, ‘Ruling on Oasis Games Ltd A22-1161063’ (28 September 2022) <https://www.asa.org.uk/rulings/oasis-games-ltd-a22-1161063-oasis-games-ltd.html> accessed 30 September 2024.



Fig. 2. Screenshots of relevant moments during Meta advert ID# 1040307840454210 for *Azur Lane* showing how it stereotyped, objectified, and demeaned women and is therefore likely to cause offence. © 2023 Shanghai Manjuu & Xiamen Yongshi.

traditional gambling activities but, importantly, do not allow them to convert any winning back into real-world money.⁷⁶ This is because those video games are not regulated as traditional ‘gambling’ under the Gambling Act 2005 because the legal, definitional criteria are not satisfied by those games.⁷⁷ Specifically, the winnable ‘prize’ of virtual currencies that cannot be converted into real-world money is neither money nor money’s worth.⁷⁸ Importantly, people have lost significant sums of money on social casino games. One Australian woman experienced gambling problems⁷⁹ and defrauded her employer of AU\$940,000 to play on such a game.⁸⁰ Current regulations are not adequate. The public is rightfully concerned, especially about children under 18 engaging with these games.⁸¹

However, in the present sample, many adverts for simulated or social gambling games that have a Google Play Store age rating of PEGI 18 or an Apple App Store age rating of 17+ (meaning that they are not suitable for young people) did not clearly indicate the age restrictions imposed on them. As shown in Fig. 3, one Meta advert (ID# 710027057632847: <https://www.facebook.com/ads/library/?id=710027057632847>) for *Blackjackist* (KamaGames, 2015), in which players can spend real-world money to simulate playing Blackjack but cannot convert any winnings back into real-world money, even glamourised gambling by implying that gambling is linked to financial and sexual success, both of which are prohibited for traditional gambling advertising under Sections 16.3.4 and 16.3.8 of the CAP Code, respectively. Social casino game adverts are held to a lower standard and not bound by social responsibility rules that apply to traditional gambling adverts, despite the known potential harms of social casino games. To be clear, these ads were not in breach of current UK advertising rules but were socially irresponsible. Future

updates to the CAP Code should consider imposing additional rules on social casino games to, *inter alia*, better protect children from gambling-related harms.

3.3.4. Failing to display PEGI age rating information

Finally, games like *Disney Speedstorm* (Gameloft, 2022), *Genshin Impact* (miHoYo, 2020), *Just Dance 2023* (Ubisoft, 2022), *Magic: The Gathering Arena* (Wizards of the Coast, 2019) (whose entry is missing the PEGI loot box presence warning label despite containing loot boxes), and *RuneScape* (Jagex, 2001) were manually rated by PEGI and thus possessed both age ratings and content descriptors, including, importantly, that of ‘In-game Purchases’ or even ‘In-game Purchases (Includes Random Items)’ (for loot boxes) indicating their presence. However, these games were advertised without showing the PEGI age rating information (let alone the content descriptors), contrary to Article 11 of the PEGI Code of Conduct on advertising (which explicitly includes ‘online advertising’)⁸² and Sections 4.6, 4.7, and 4.8 of the 2021 PEGI Labelling & Advertising Guidelines.⁸³ Failing to show the age rating information to better guide and advise parents and players is certainly socially irresponsible, albeit not necessarily illegal under UK advertising rules (it is debatable whether the PEGI age rating information, beyond the presence of in-game purchases and loot boxes, is also ‘material information’ whose omission would be misleading).

4. Discussion

4.1. Non-disclosure of in-game purchasing and loot box presence

Study 1 revealed that nearly all popular games containing loot boxes that advertised on Meta-owned social media platforms failed to comply with disclosure requirements imposed by UK advertising regulations. Amongst 185 adverts studied, 165 adverts (89.2 %) did not disclose the presence of in-game purchases, and 172 adverts (93.0 %) failed to disclose loot box presence. Amongst 63 popular games studied, 53 games (84.1 %) did not ever disclose the presence of in-game purchasing, and 57 games (90.5 %) never disclosed loot box presence. A small minority of games (10 games (15.9 %) or 6 games (9.5 %), depending on the disclosure in question) did comply at times. However, even amongst these few games, about half did not make the legally required

⁷⁶ Derevensky and Gainsbury (n 5); Gainsbury and others (n 5).

⁷⁷ CAP (n 33) 85.

⁷⁸ Gambling Act 2005, s 6(5).

⁷⁹ Loretta Lohberger, ‘Woman Who Stole \$940,000 from Vet to Gamble Online Jailed’ ABC News (9 December 2021) <https://www.abc.net.au/news/2021-12-09/rachel-naomi-perri-jailed-over-vet-theft-to-gamble-online/100686998> accessed 30 September 2024.

⁸⁰ Ben Butler, “Social Casino” Apps: The Games Exempt from Australia’s Gambling Laws – Because No One Can Win’ *The Guardian* (16 November 2022) <https://www.theguardian.com/australia-news/2022/nov/17/social-casino-apps-the-games-exempt-from-australias-gambling-laws-because-no-one-can-win> accessed 1 March 2024.

⁸¹ House of Representatives Standing Committee on Social Policy and Legal Affairs (Australia), ‘You Win Some, You Lose More: Online Gambling and Its Impacts on Those Experiencing Gambling Harm [Inquiry Report]’ (Parliament of Australia 2023) ch 6 https://www.aph.gov.au/Parliamentary_Business/Committees/House/Social_Policy_and_Legal_Affairs/Onlinegamblingimpacts/Report accessed 30 September 2024.

⁸² Pan European Game Information (PEGI), ‘The PEGI Code of Conduct’ (Pegi Public Site, 2023) <https://pegi.info/pegi-code-of-conduct> accessed 18 July 2023.

⁸³ This document is not publicly available, and the author has been asked not to share it to ensure that PEGI remains the sole source. A copy may be sought from PEGI.

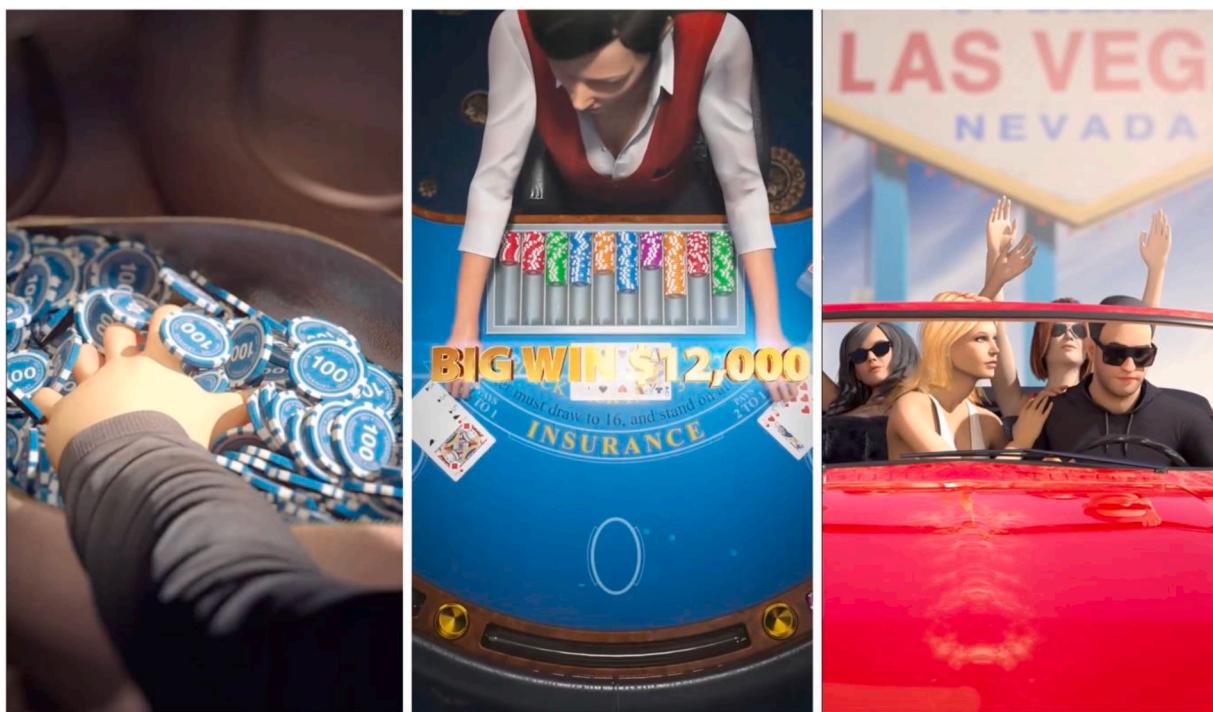


Fig. 3. Screenshots of relevant moments during Meta advert ID# 710027057632847 for *Blackjackist* showing how it glamorised gambling by implying that gambling is linked to financial and sexual success and is therefore socially irresponsible. © 2023 KamaGames.

disclosures consistently (*i.e.*, some adverts for the same game were compliant, whilst others were not). This means that the disclosures were not reliable: depending on which individual advert for the same game the consumer saw, they may or may not have been made aware of the presence of in-game purchasing and of loot boxes specifically. Amongst all adverts studied, just those of four games (6.3 %) consistently disclosed the presence of in-game purchases, and only those of three games (4.8 %) always disclosed loot box presence.

The CAP Guidance clearly explained in 2021, more than two years before the present study was conducted, that any advertising of video games in the UK must disclose the presence of in-game purchasing and of loot boxes in particular if relevant.⁸⁴ This requirement has also been upheld and enforced by the ASA in two complaint rulings on 4 October 2023.⁸⁵ However, 95.2 % of popular video games (60 of 63 total) that advertised on Meta-owned social media platforms (*i.e.*, Facebook, Instagram, and Messenger) failed to always duly inform consumers that they contained loot boxes and thereby acted illegally in breach of advertising regulations.

Following the present study, three complaints were made to the ASA in October 2023 asking it to specifically rule on and affirm the point that the advertising of video games on social media platforms must disclose the presence of in-game purchases and of loot boxes specifically when they are implemented. The ASA upheld these complaints on 20 March 2024 and ruled that Electronic Arts (in relation to *Golf Clash* (Playdemic, 2017)),⁸⁶ Jagex (in relation to *RuneScape*),⁸⁷ and Miniclip (in relation to

8 Ball Pool (Miniclip, 2010)⁸⁸) broke advertising rules (specifically, Sections 3.1 and 3.3 of the CAP Code) by failing to disclose the presence of generic in-game purchases and of loot boxes specifically and thus mislead consumers by omitting material information. These rulings confirmed the illegality of the ads identified herein.

Study 2 was able to verify that, amongst the most viewed 920 TikTok adverts (*i.e.*, those that received the greatest numbers of impressions), 130 of them pertained to games with in-game purchasing (14.1 %), and 100 of them were for games selling loot boxes (10.9 %). This affirms the common knowledge that social media is indeed a platform used by video game companies to advertise and that these adverts were widely viewed by many users across different countries. Disappointingly, like Study 1's results for Meta-owned platforms, only 9 ads (6.9 %) disclosed the presence of in-game purchasing, and just 7 ads (7.0 %) disclosed loot box presence as required. The vast majority (93.0 %) of the most viewed TikTok adverts for games with loot boxes were therefore non-compliant with UK advertising regulations. In total, these adverts received 292,641,000 impressions in the UK alone. Many users have therefore been exposed to illegal adverts that failed to provide important and mandated information disclosures.

More specifically, TikTok's advertising tool stated in early 2023 that the platform could be used to reach about 20 million (presumably active) UK users aged 18 and above (or at least supposedly of this age group, as younger users may have exaggerated their age during account creation).⁸⁹ No data have been provided on users between the ages of 13 and 18 (or those under 13 who technically cannot have an account but may have lied about their age to create an account anyway), even though they can also be targeted with adverts on TikTok.⁹⁰ Ofcom (the

⁸⁴ CAP and BCAP (n 42) 10–11.

⁸⁵ ASA, 'Ruling on Hutch Games Ltd [Concerning F1 Clash on the Apple App Store] A23-1196857' (n 46); ASA, 'Ruling on Hutch Games Ltd [Concerning Rebel Racing on the Google Play Store] A23-1196862' (n 46).

⁸⁶ ASA, 'Ruling on Electronic Arts Ltd A23-1222185' (20 March 2024) <https://www.asa.org.uk/rulings/electronic-arts-ltd-a23-1222185-electronic-arts-ltd.html> accessed 7 April 2024.

⁸⁷ ASA, 'Ruling on Jagex Ltd A23-1216471' (20 March 2024) <https://www.asa.org.uk/rulings/jagex-ltd-a23-1216471-jagex-ltd.html> accessed 7 April 2024.

⁸⁸ ASA, 'Ruling on Miniclip (UK) Ltd A23-1216455' (20 March 2024) <https://www.asa.org.uk/rulings/miniclip-uk-ltd-a23-1216455-miniclip-uk-ltd.html> accessed 7 April 2024.

⁸⁹ Simon Kemp and Kepios, 'Digital 2023: The United Kingdom' (*DataReportal*, 9 February 2023) <https://datareportal.com/reports/digital-2023-united-kingdom> accessed 2 December 2023.

⁹⁰ *ibid.*

UK's media regulator) reported in 2024 that 42 % of 3383 parents surveyed stated that their child aged between 3 and 17 used TikTok.⁹¹ The United Nations reported that there were 14.4 million children under 18 in the UK in 2023.⁹² Accordingly, roughly estimating that there might be another 6 million users in this younger, under-18 age group (*i.e.*, assuming 26 million total TikTok users in the UK), this would mean that each user was exposed to illegal video game adverts that failed to disclose loot box presence more than 11 times on average.

Importantly, this calculation includes only the 93 most watched illegal TikTok adverts included in the very limited present sample: numerous other illegal adverts that failed to disclose loot box presence as required were undoubtedly shown to consumers many more times. As discussed above under *Section 3.2*, the impression numbers provided by TikTok suffer from certain limitations. It ostensibly does not count repeated viewings of the same ad by the same user as multiple impressions. However, some companies chose to serve (nearly) identical ads as separate advert entries, which might have been a strategy to ensure that the same ad was seen by the same users multiple times. This meant that some repeated viewings of effectively the same ad by the same users were counted as multiple impressions for some adverts but not others. Regardless, the impression number provided by TikTok undoubtedly still underestimated how many actual (rather than unique) impressions each advert received. Therefore, even not accounting for countless other illegal adverts beyond the 93 included in the present sample, each user may well have been exposed to far more than 11 illegal adverts for games selling loot boxes on average.

Notably, the present study, as preregistered, acknowledged any form of disclosure as compliant. However, it ought to be highlighted that most of the disclosures found were visually obscure. For example, as shown in the leftmost pane of *Fig. 4*, extremely small and fuzzy text that was highly difficult, if not nearly impossible, to read was used by a Meta advert for *Bingo Blitz* (Playtika, 2012) (ID# 338637368511655: <http://www.facebook.com/ads/library/?id=338637368511655>). Further, a light-coloured font was set against a light-coloured background, making the text unreadable without pausing and zooming in (which may not have been permitted on the social media platforms the adverts were originally shown, *e.g.*, one normally cannot zoom in on a TikTok or Facebook ad video as of December 2023). Finally, the relevant disclosure only appeared very briefly for about three seconds at the end of an extended video advert of 30 seconds. Users are unlikely to carefully watch an ad to the very end and therefore may well miss the disclosure.

Another Meta advert for *NBA 2K24* (ID# 353454070447437: <http://www.facebook.com/ads/library/?id=353454070447437>) similarly used a tiny font that made the text basically illegible, as shown in the centre pane of *Fig. 4*. The relevant disclosure language of '*NBA 2K24* includes optional in-game purchases and paid random items' also only appeared at the end of six lines of terms and conditions that most readers likely would not have read at all.

Finally, as shown in the rightmost pane of *Fig. 4*, a TikTok advert for *Apex Legends* (Electronic Arts, 2019) (ID# 1757757696224289: https://library.tiktok.com/ads/detail/?ad_id=1757757696224289) used the PEGI loot box label (which should be commended because following the industry standard would help consumers to more easily find and understand the relevant information across various games, although that label itself should also be significantly improved). However, the relevant graphic was again incredibly tiny and, importantly, placed at one of the corners of the screen, which might well have been

blocked by other user interface (UI) elements (*e.g.*, captions for the video). For context, the making of *Fig. 4* by the author has not reduced the image quality. The poor quality is original. The original advertising images and videos files are also preserved at the data deposit link and can be reviewed to evidence how poorly rendered the relevant graphics were.

When the mandatory disclosures are made so poorly (such that many consumers would not in fact be able to read them and understand them), it would be open to advertising and consumer protection regulators to opine that such disclosures, despite technically having been made, would nonetheless remain non-compliant with the disclosure requirements because they were made so ineffectively. For example, Article 7(2) of the EU UCPD (and national implementations thereof, including, in the UK, *e.g.*, Regulation 6(1)(c) of the CPUTR and Section 3.3 of the CAP Code, as detailed above) states that material information that has been provided in a manner that is 'unclear, unintelligible, ambiguous or untimely' would still constitute a misleading omission, even though the information was not completely absent or 'omitted' *per se*, but instead poorly provided. Section 3.10 of the CAP Code requires that, to avoid advertising misleadingly, any 'qualifications must be presented clearly.' That a video game contains in-game purchases and loot boxes might be viewed as a 'qualification.' The CAP's guidance on small print and footnotes states: '...whilst there is no specific font or size that marketers should use for small-print, qualifications included in small-print should not be presented in a text size, font, or colour which makes them difficult to read.'⁹³

Given that the presence of loot boxes has been held to be 'material information' that must be provided to consumers within the meaning of both EU consumer protection law⁹⁴ and UK advertising regulations (which enforce aspects of UK consumer law that remains identical retained EU law following Brexit, as explained above),⁹⁵ it follows that poor disclosure of material information would also be a misleading omission, which would attract a penalty⁹⁶ and for which the company may be held criminally liable.⁹⁷ In the UK, engaging in a commercial practice which is a misleading omission under Regulation 6 of the CPUTR is a criminal offence under Regulation 10 of the same and attracts a penalty of either a fine or imprisonment of up to two years or both.⁹⁸

Indeed, the European Commission was clear in relation to video games that compliance with Article 7 of the UCPD requires that 'the main characteristics of the product must be *clearly described*' (emphasis added).⁹⁹ The loot box presence disclosure examples shown in *Fig. 4*, considering the context in which they were shown as described above, were almost certainly 'unclear' and/or 'unintelligible.' It is also relevant to consider that mobile phone screens are relatively small to begin with (which further justifies and requires larger graphics being used). A more prominent form of disclosure would be for the PEGI loot box label and age rating information to be displayed over a black background for at least five seconds (perhaps with an announcer also reading out the relevant information) at the start of any video game advertising, similar to what is done by the major companies with video game trailers. For reference, Section 4.6.1 of the 2021 PEGI Labelling & Advertising Guidelines requires that the age rating label must be shown for at least 2

⁹¹ Ofcom (Office of Communications) (UK), 'Children and Parents: Media Use and Attitudes Report 2024' (19 April 2024) <https://www.ofcom.org.uk/media-use-and-attitudes/media-habits-children/children-and-parents-media-use-and-attitudes-report-2024/> accessed 25 September 2024.

⁹² United Nations, 'How Many Children Are There in the UK?' (UNICEF DATA, 2024) <https://data.unicef.org/how-many/how-many-children-under-18-are-there-in-the-uk/> accessed 25 September 2024.

⁹³ CAP, 'Small Print and Footnotes' (15 August 2023) <https://www.asa.org.uk/advice-online/smallprint-and-footnotes.html> accessed 30 September 2024.

⁹⁴ European Commission (n 49) 105.

⁹⁵ CAP and BCAP (n 42) 10–11; ASA, 'Ruling on Hutch Games Ltd [Concerning F1 Clash on the Apple App Store] A23-1196857' (n 46); ASA, 'Ruling on Hutch Games Ltd [Concerning Rebel Racing on the Google Play Store] A23-1196862' (n 46).

⁹⁶ UCPD, art 13.

⁹⁷ CPUTR, reg 10.

⁹⁸ *ibid*, reg 13.

⁹⁹ European Commission (n 49) 104.



Fig. 4. Screenshots of Meta advert ID# 338637368511655 for Bingo Blitz (left); Meta advert ID# 353454070447437 for NBA 2K24 (centre); and TikTok advert ID# 1757757696224289 for *Apex Legends* (right) demonstrating how the in-game purchasing and loot box presence disclosures were not visually prominent. © 2023 Playtika; 2K Games & Sony; Electronic Arts.

seconds at the start of the video in game trailers to ensure adequate disclosure. (Whether the PEGI loot box label itself is ‘ambiguous’ within the meaning of Article 7(2) of the UCPD, given that it has been empirically demonstrated that most consumers do not understand what the label means and what potential harms it entails,¹⁰⁰ is another question.)

In March 2024, a complaint was made to the ASA regarding an insufficiently prominent loot box presence disclosure, rather than the complete absence of one. This related to a more recently shown advert that was not contained within the present sample. Again, in relation to *Golf Clash*, Electronic Arts used a light grey font to ‘disclose’ loot box presence using tiny texts that were set against a fast moving background and disappeared quickly after only two seconds. On 10 July 2024, unsurprisingly, the ASA upheld this complaint and ruled that failing to present material information clearly, despite technically having provided it, would still breach Sections 3.1 and 3.3 of the CAP Code prohibiting misleading omissions.¹⁰¹ Following this ruling, some ads that were deemed compliant by the present study were confirmed to have not been compliant due to the disclosure lacking visual prominence. Therefore, even more of the ads were breaking UK advertising rules than reported herein. Interestingly, a previous draft of what later became the ruling referenced Section 3.10 on presenting qualifications clearly because the ASA decided to add this additional alleged breach at its own volition (the original complaint did not reference this section). However, the ASA then decided to remove the reference to Section 3.10 of the CAP Code after deciding it was not relevant after all. Nothing turned on this point, so it was not pursued. However, upon reflection, it is not understood why Section 3.10 was later determined by the ASA to be irrelevant when it should have been.

¹⁰⁰ Eamon Garrett and others, ‘Current Loot Box Warnings Are Ineffective for Informing Consumers’ (2022) 139 Computers in Human Behavior 107534.

¹⁰¹ ASA, ‘Ruling on Electronic Arts Ltd A24-1239057’ (10 July 2024) <https://www.asa.org.uk/rulings/electronic-arts-ltd-a24-1239057-electronic-arts-ltd.html> accessed 20 July 2024.

4.2. Non-compliance with the EU Digital Services Act by the ad libraries

The present findings also revealed a number of deficiencies with the Meta and TikTok ad libraries in terms of compliance with the DSA. Most importantly, Article 39(2)(a) mandates that ‘the content of the advertisement, including the name of the product, service or brand and the subject matter of the advertisement’ must be provided by the ad libraries. This has not been properly done by the TikTok repository. Although the full content of the advertising material (*i.e.*, a video) has been preserved, no information is provided as to what URL that specific advert would have redirected the viewer to when interacted with. This is the reason why the present study could not retroactively identify which game a few adverts were even promoting (*e.g.*, ID# 1751364793758754: https://library.tiktok.com/ads/detail/?ad_id=1751364793758754), although actual users who saw the advert obviously would have been redirected with a link to somewhere. The failure by the repository to identify the actual product that is being advertised appears to be an obvious breach of the DSA, and the failure to provide the relevant redirect link means that only incomplete information has been provided, which is a further breach. In contrast, the Meta ad library provided the redirect link which made it possible to identify what specifically was being advertised.

Further, Articles 39(2)(b) and 39(2)(c) of the DSA respectively require that ‘the natural or legal person on whose behalf the advertisement is presented’ and ‘the natural or legal person who paid for the advertisement,’ if different, must be disclosed in the repository. The Meta ad library duly provided a ‘beneficiary’ and a ‘payer’ field to allow this required information to be presented. Some adverts displayed the correct information. For example, as shown in Fig. 5, a Meta advert for *RuneScape* (ID# 331793519217340: <https://www.facebook.com/ads/library/?id=331793519217340>) disclosed both the beneficiary and payer as ‘Jagex Limited,’ the legal entity acting as both the developer and publisher for the game. However, other adverts failed to show accurate information. For example, as shown in Fig. 6, a Meta advert for *Star Trek Fleet Command* (DIGIT Game Studios & Scopely, 2018) (ID#

Fig. 5. Meta advert ID# 331793519217340 for *RuneScape* duly disclosed the ad's 'Beneficiary' and 'Payer' as 'Jagex Limited.' © 2023 Jagex.

299004976183735: <https://www.facebook.com/ads/library/?id=299004976183735>) disclosed both the beneficiary and payer as 'Star Trek Fleet Command,' which is the game title or alternatively the official social media account for the game title, neither of which would be the 'legal person' whose identity must be provided per the DSA. In fact, the game is developed by DIGIT Game Studios and published by Scopely. The Irish DIGIT Game Studios is a subsidiary of the American Scopely,¹⁰² which in turn is a subsidiary of Savvy Games Group,¹⁰³

¹⁰² Rebekah Valentine, 'Scopely Acquires Digit Game Studios' (*GamesIndustry.biz*, 9 May 2019) <https://www.gamesindustry.biz/scopely-acquires-digit-game-studios> accessed 2 December 2023.

¹⁰³ Brendan Sinclair, 'Savvy Games Group Acquires Scopely for \$4.9 Billion' (*GamesIndustry.biz*, 5 April 2023) <https://www.gamesindustry.biz/savvy-game-group-acquires-scopely-for-49-billion> accessed 2 December 2023.

which ultimately is wholly owned by the Public Investment Fund, which is the sovereign wealth fund of Saudi Arabia.¹⁰⁴ The disclosures required by the DSA would not need to be so detailed and reveal all relevant corporate structures. Nonetheless, the disclosure of the beneficiary and payer as only the game title is certainly insufficient and non-compliant. At least the identity of the developer and the publisher should have been published. The legislative intent that companies should be required to provide more transparency about who is funding and benefiting from the advertising has been compromised. As a result, consumers experience more 'sludge'¹⁰⁵ when, for example, trying to obtain redress because they would need to conduct external research to find out who is responsible for the advertising.

Attempts to comply with this DSA requirement as to beneficiary and

¹⁰⁴ James Batchelor, 'What Is Savvy Games Group and How Is It Trying to Change Saudi Arabia's Image?' (*GamesIndustry.biz*, 7 June 2023) <https://www.gamesindustry.biz/what-is-savvy-games-group-and-how-is-it-trying-to-change-saudi-arabias-image> accessed 2 December 2023.

¹⁰⁵ Richard H Thaler, 'Nudge, Not Sludge' (2018) 361 Science 431.

Fig. 6. Meta advert ID# 299004976183735 for *Star Trek Fleet Command* insufficiently disclosed the ad's 'Beneficiary' and 'Payer' as 'Star Trek Fleet Command.' © 2023 DIGIT Game Studios & Scopely.

payer identity on the TikTok ad library also revealed certain shortcomings. For example, for a number of adverts, the 'Ad paid for by' (or payer) field disclosed an obscure entity that could not be easily identified by a member of the public, such as 'Madhouse-3' (ID# 1759802628232210: https://library.tiktok.com/ads/detail/?ad_id=1759802628232210); 'KA EC&Branding-01' (ID# 1754618969234433: https://library.tiktok.com/ads/detail/?ad_id=1754618969234433); and 'KA APP-01' (ID# 1754376902042673: https://library.tiktok.com/ads/detail/?ad_id=1754376902042673).

These may well have been the account names for whichever entity paid for the advert, but TikTok almost certainly has more information internally about these opaque entities (e.g., legal registration details). As it stands, the TikTok ad library has failed to satisfy Article 39(2)(c) because no recognised legal entity has been publicly identified.

Finally, it must be highlighted that 154 out of the 1074 most viewed TikTok ads (14.3 %) were removed for having violated TikTok's terms of service. These adverts were nonetheless viewed many times before they were removed (otherwise they would not rank so highly in terms of viewership). TikTok should put in place stronger content moderation measures before ads are allowed to be published, because any ads that breached platform rules should never have been published in the first place. There should also be better enforcement following publication so that there should not be a significant delay between publication and removal causing millions of users to have viewed each instance of rule-breaking advertising. For example, one such removed advert had at least 12 million unique impressions (ID# 1767328184045618: https://library.tiktok.com/ads/detail/?ad_id=1767328184045618). Article 39(3)

of the DSA imposes further obligations on ad libraries in relation to adverts that have been removed (specifically, disclosing the information referred to in Article 17(3)(a)–(e)). In relation to the aforementioned example of a removed ad, TikTok merely stated: 'You are not able to view this ad as it was removed from TikTok due to a violation of TikTok's terms' and provided a hyperlinked button stating: 'View rejection reasons.' When clicked, a pop-up window further stated:

'This content has been rejected'

Rejection reason provided to advertisers

- The authorization for the TikTok post in this ad has expired.

Affected regions

United Kingdom'

Procedurally, this removal notice failed to provide information on how the investigation process was started, i.e., whether it was prompted by a third-party report or was conducted by the platform at its own volition, as required by Article 17(3)(b). Substantively, 'a reference to the contractual ground relied on and explanations as to why the information is considered to be incompatible' with TikTok's terms and conditions, as required by Article 17(3)(e), have also not been provided. The contractual ground has not been identified, and the reason provided is also vague: it is unclear whose authorisation it is referring to, and why the expiration of the authorisation must necessarily cause the content to be removed, rather than preserved in the repository but no longer shown as an advert as a superior alternative that better supports the public

interest. Many other removed adverts were also merely attached with the same curt notice. The public has not been made duly aware of the underlying reasoning for the content moderation decision as intended by the legislators. Researchers and other stakeholders also would not be able to use this data to systematically study and assess the platform's content moderation practices. Future work should empirically assess compliance with other required aspects of the DSA and other regulations affecting digital platforms, such as the General Data Protection Regulation (GDPR) [2016] OJ L119/1.

4.3. Importance of access to industry data

It is hoped that the present study can serve as a proof of concept of what research might be possible when laws, like the data disclosure obligations contained in the DSA, are imposed on technology companies. The academic literature on loot boxes¹⁰⁶ and other non-industry stakeholders have argued that video game companies should publicly share data relating to loot boxes (particularly on spending) to allow for independent scrutiny that would help the public to better understand whether the concerns surrounding loot boxes are warranted. No member of the industry has yet acted socially responsibly by doing this, and the public is justified to draw an adverse inference from that inaction. However, the present study demonstrates that there are other ways to access some relevant industry resources (*i.e.*, the advertising materials and associated information) even when these are not being directly and voluntarily provided. Although the data relied upon by the present study are not spending data, and have their own limitations as mentioned above, these are data relating to loot boxes that have been disclosed by the industry (and, crucially, not by choice!).

The present research was only made possible because of platform rules and indeed EU law that required certain information to be provided. Researchers should take full advantage of all such available opportunities to hold the industry to account. Regulators should also actively enforce the rules to ensure that what the legislators have intended for companies to provide is indeed being provided in practice. For example, TikTok should be required to improve its ad repository to fully comply with the DSA as detailed above. EU lawmakers should be encouraged upon seeing such academic studies enabled by data disclosure and transparency obligations that they have imposed on companies being conducted for the public benefit. Indeed, it might be advisable to demand companies, particularly those large and international ones with abundant resources, to publicly share even more information in accessible formats. Platforms and the companies behind them actually benefit from sharing such data publicly, because presuming that companies want less illegal content on their platforms, the aims of all stakeholders are, for once, aligned: *i.e.*, better content moderation and the removal of illegal content. Opening up content moderation opportunities to the public could allow for more efficient identification and processing. This is particularly true in relation to advertising regulators and so-called 'trusted flaggers' per Article 19 of the DSA (*e.g.*, an NGO (Non-Governmental Organisation) with a specific charitable goal of addressing a specific issue, such as online child sexual abuse) who too can make use of the tools. Towards this end, platforms should endeavour to equip their ad repositories and other similar resources with more features, such as an easy way to export data so that independent scrutiny would not have to resort to manual review of each webpage or crude data scraping. Policymakers in other regions beyond the EU where similar obligations have not yet been imposed should recognise the already realised benefits of EU law and consider emulating the EU requirements.

Indeed, in relation to spending data on loot boxes held by the industry, it is a misnomer to refer to such data as 'industry' data. In fact,

these are personal data belonging to individual users that are simply being collectively held by a member of the industry. The data protection laws of many jurisdictions now allow individuals to require companies to provide them with a copy of all the personal data that is held about them (*e.g.*, Article 15 of the GDPR; Section 40 of the New Zealand Privacy Act 2020; Section 1798.110 of the California Civil Code; and Article 45 of the Personal Information Protection Law of the People's Republic of China). This would include an individual's loot box spending data. By mobilising a large group of players to make data requests, it is possible to 'liberate' that data from the industry and allow them to be used collectively in the public interest. This is a valuable, future channel of research, similarly enabled by data disclosure-related legal obligations that have already been placed on companies, that should be explored.

4.4. Limitations

The practical limitations with relying on data provided by social media platforms that could not be independently verified have already been noted. The specific limitations relating to the number of 'impressions' that have supposedly been received by each advert as disclosed by TikTok have also been acknowledged. The present study was limited to reviewing the adverts that were within the sample, *i.e.*, the most recent ads published on Meta platforms for Study 1 and ones with the greatest number of impressions on TikTok for Study 2. Most games published many other pieces of the advertising that may or (far more likely) may not have complied. Three of the four games that were deemed as fully compliant with either the requirement to disclose in-game purchases generally or loot boxes specifically in relation to their three most recent adverts for Study 1 (*i.e.*, *Lost Ark* (Smilegate, 2019), *Monster Legends* (Socialpoint, 2013), and *Star Wars: Galaxy of Heroes* (Electronic Arts, 2015)) are known to have published other adverts that were not compliant. Some of these adverts were published before the most recent batch, thus potentially showing that the relevant companies have improved their compliance behaviour more recently. However, *Lost Ark* published at least one other non-compliant advert in the same batch as the compliant ones studied thus revealing inconsistent compliance even during the same publication period. Future research equipped with more resources could conduct a more comprehensive review. Although Section 3.3 highlighted certain other aspects of problematic video game advertising beyond the (non-)disclosure of monetisation features, this part of the research was not conducted in a systematic manner or pre-registered. Future studies could examine other problematic elements of video game marketing and social media promotions that might breach advertising rules. Previous research has rightfully identified that advertising on social media should not be treated as a singular concept.¹⁰⁷ Companies advertise on different platforms in different ways, and users engage with those adverts in varying manners across different platforms. The present study examined only advertising on Meta platforms and on TikTok because their respective ad repositories provided affordances that allowed for this research to be done. Further examination of how video games are advertised on other platforms, such as YouTube and Snapchat, should be conducted. Perspectives from users as to how they felt about this advertising and whether they may have been influenced have not been considered and should be addressed in the future. Similarly, why the vast majority of companies were non-compliant cannot be known. Further research should ask for their perspectives to ensure better policy implementation: were the advertising regulations themselves perhaps insufficiently 'advertised'?

¹⁰⁶ e.g. Etchells, Morgan and Quintana (n 19) 12; David Zendle and Paul Cairns, 'Loot Boxes Are Again Linked to Problem Gambling: Results of a Replication Study' (2019) 14 PLOS ONE e0213194, 11.

¹⁰⁷ Hilde AM Voorveld and others, 'Engagement with Social Media and Social Media Advertising: The Differentiating Role of Platform Type' (2018) 47 Journal of Advertising 38.

5. Conclusion

Social media is a popular avenue for video game companies to advertise. The present two studies assessed whether such advertising was compliant with the UK advertising regulator's requirement that the presence of optional in-game purchasing and of loot boxes specifically must be disclosed if implemented. (This requirement also applies in the EU and the EEA virtue of identical consumer protection law.) On Meta-owned platforms (*i.e.*, Facebook, Instagram, and Messenger), the adverts were nearly all non-compliant with UK advertising rules (172 of 185; 93.0 %). Amongst 63 popular titles known to contain loot boxes, only four games (6.3 %) consistently disclosed the presence of in-game purchases and only three game (4.8 %) always disclosed loot box presence in all adverts studied. This pattern of industry-wide non-compliance was also observed on TikTok. The vast majority (93.0 %) of the 100 most viewed TikTok adverts for games that sell loot boxes breached UK advertising regulations by failing to disclose their presence. In total, these 93 illegal adverts received 292,641,000 impressions in the UK alone. Many users have therefore been repeatedly exposed to illegal adverts that failed to provide important and mandated information disclosures. Assuming that TikTok has 26 million users in the UK, this was estimated to be at least 11 views of illegal and misleading ads per user on average. This number relates only to the 93 adverts included in the present sample and does not account for many other illegal adverts that failed to disclose loot box presence that were undoubtedly shown. Video game companies that sell loot boxes must ensure that their advertising is lawful by prominently declaring the fact that their games contain in-game purchases and loot boxes specifically.

Various social media platforms should more actively enforce the rules to ensure that non-compliant ads are not allowed to be published in the first place and are quickly removed if and when they slip through the net. Prior approval of all ads before publication by the social media platforms would be ideal (especially considering the current situation that the vast majority of ads are non-compliant), as merely responding to complaints by later removing ads that have already been published and seen by many users (potentially millions) is unhelpful. After all, significant profits are being made by the social media companies through advertising, and it would not be unreasonable to expect a share of that to go towards ensuring compliance and consumer protection. Once the compliance rate is higher, *e.g.*, more than 99.0 % of ads are compliant, then the platforms could consider moving back to a content moderation system that responds *post hoc*. Advertisers that repeatedly submit or publish non-compliant advertising should be banned from the platforms (*e.g.*, the company behind *Top War*, discussed above). Social media platforms might not voluntarily impose these restrictions without regulatory intervention because they are conflicted to act against their own commercial interests of maximising advertising revenue and the number of advertisers: the company behind the *Top War* adverts has undoubtedly paid the social media platforms most handsomely. Laws forcing these platforms to do better content moderation may therefore be necessary.

The UK advertising regulator, the Advertising Standards Authority, should more proactively enforce the rules. Credit is due to the ASA for proactively publishing the 'Guidance on advertising in-game purchases' in 2021 to highlight the issue and subsequently investigating and upholding various related complaints. However, those enforcement actions should not have been exclusively triggered by external academic pressure when non-compliance is so widespread. Due to the very high non-compliance rate observed, it does not appear that the ASA has taken any proactive enforcement actions on the issue at its own volition. The ASA might consider actively engaging with the most prolific video game advertisers to ensure that they are aware of the rules (and are not unintentionally not complying due to a lack of knowledge), *e.g.*, by holding

webinars in collaboration with the UK industry trade association, Ukie. Against companies that repeatedly refuse to comply with advertising rules, despite polite reminders and public denouncements (*i.e.*, upheld ruling against them), the ASA must be prepared to actually use its legal backstop and refer those companies for criminal prosecution by Trading Standards and the Competition and Markets Authority. When the weaker deterrence powers of industry self-regulation prove unhelpful, much stronger pressures (such as the threat of a custodial sentence) must be exerted by law. Indeed, Trading Standards and the Competition and Markets Authority, which are the UK government regulators tasked with enforcing consumer protection law, both already have the necessary information to proceed with a criminal prosecution. Setting a judicial precedent might further publicise the issue and more effectively dissuade companies from not complying.

Although focused on UK advertising regulation, this empirical examination of the ad repositories of the Meta-owned platforms and of TikTok also revealed how they did not fully comply with the EU Digital Services Act more generally by failing to sufficiently provide certain mandated information. Such implementation challenges should be promptly fixed but, admittedly, are to be expected with complex legislation requiring technical execution. The mere passage of laws and imposition of obligations do not mean that the problems have been solved by regulation. Whether companies are indeed complying with the regulations must be continually monitored. More broadly, the present study demonstrates that information disclosure obligations placed on technology companies by EU law can be used to conduct academic research for the public benefit as the lawmakers intended. Researchers should take advantage of all data access avenues that have been made available. Regulators should strive to ensure that existing channels are kept open by actively monitoring whether companies are complying and taking enforcement actions as needed to ensure compliance. Policy-makers should consider requiring additional disclosures to be made by companies (particularly beyond the EU) in order to enable further research in the public interest.

6. Postscript on impact: ASA rulings upheld, media features, and parliamentary questions tabled

A total of four ASA rulings based on this study were upheld as detailed above.¹⁰⁸ These both clarified the regulatory position and further publicised the problem, which may reduce non-compliance and better protect the public through raising awareness.

This study and the associated ASA rulings were reported on by *The Guardian*,¹⁰⁹ *Sky News*,¹¹⁰ and video game industry media sources read by both companies¹¹¹ and players.¹¹²

Three written questions were tabled in the House of Lords by Lord Foster of Bath in relation to the findings of, and the recommendations set

¹⁰⁸ ASA, 'Ruling on Electronic Arts Ltd A23-1222185' (n 86); ASA, 'Ruling on Electronic Arts Ltd A24-1239057' (n 101); ASA, 'Ruling on Miniclip (UK) Ltd A23-1216455' (n 88); ASA, 'Ruling on Jagex Ltd A23-1216471' (n 87).

¹⁰⁹ Rob Davies, 'Video Game Firms Found to Have Broken Own UK Industry Rules on Loot Boxes' (*The Guardian*, 29 March 2024) <https://www.theguardian.com/society/2024/mar/29/video-game-companies-developers-loot-boxes-regulator-complaints-rules> accessed 18 April 2024.

¹¹⁰ Narbeh Minassian, 'Mobile Game Ads "breaking Advertising Rules" on Social Media - as Clip Featuring Beckham Slammed' (*Sky News*, 25 July 2024) <https://news.sky.com/story/mobile-game-ads-breaking-advertising-rules-on-social-media-as-clip-featuring-beckham-slammed> accessed 5 September 2024.

¹¹¹ Brendan Sinclair, 'Study Finds Most Social Media Ads Ignore Loot Box Label Requirements' (*GamesIndustry.biz*, 4 January 2024) <https://www.gamesindustry.biz/study-finds-most-social-media-ads-ignore-loot-box-label-requirements> accessed 1 October 2024.

¹¹² Liv Ngan, 'EA, Jagex, and Miniclip Broke Loot Box Advertising Rules' (*Eurogamer*, 20 March 2024) <https://www.eurogamer.net/ea-jagex-and-miniclip-broke-loot-box-advertising-rules> accessed 1 October 2024.

out in, the present study to ask for the UK Government's assessment and response; however, the Government answers were not particularly insightful.¹¹³

Intellectual property notice

The author acknowledges that the copyright of all images, screenshots, and videos of video games, websites, and advertising materials used in this research are retained by their respective copyright holders. The author uses these copyrighted materials for the purposes of research, criticism or review under the fair dealing provisions of copyright law in accordance with Sections 29(1) and 30(1) of the UK Copyright, Designs and Patents Act 1988. The access, extraction, publication, and use of materials from the Meta and TikTok ad libraries for, *inter alia*, academic research and criticism purposes in the public interest are reasonably assumed to be lawful, particularly considering that publication has been limited only to relevant materials. If copyright and/or database rights subsist in the ad libraries, then, having acknowledged the relevant sources, the author uses such data under relevant fair use/fair dealing and 'permitted acts' provisions of copyright law and database rights regulations, as applicable.

Positionality statement

In terms of L.Y.X.'s personal engagement with loot boxes, he has played and continues to play video games containing loot boxes (e.g., *Hearthstone* (Blizzard Entertainment, 2014) until 2018 and *Genshin Impact* (miHoYo, 2020) from 2020), but he has never purchased any loot boxes with real-world money, besides negligible spending for research purposes to confirm the presence of paid loot boxes.

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Declaration of competing interest

In relation to the past three years, L.Y.X. is providing paid consultancy for Public Group International Ltd (t/a PUBLIC) (Companies House number: 10608507), which has been commissioned by the UK Department for Culture, Media and Sport (DCMS) to conduct independent research on understanding player experiences of loot box protections (October 2024 – Present). L.Y.X. undertook a brief period of voluntary work experience at Wiggin LLP (Solicitors Regulation Authority number: 420659) in London, England in August 2022. L.Y.X. has contributed and continues to contribute to research projects that were enabled by data access provided by the video game industry, specifically Unity Technologies (NYSE:U) (October 2022 – Present). L.Y.X. has been invited to provide advice to the UK Department for Digital, Culture, Media and Sport and its successor (the Department for Culture, Media

and Sport; DCMS) on the technical working group for loot boxes and the Video Games Research Framework. L.Y.X. was the (co-)recipient of three Academic Forum for the Study of Gambling (AFSG) Postgraduate Research Support Grants (March 2022, January 2023, & July 2024) and a Minor Exploratory Research Grant (May 2024) that were derived from 'regulatory settlements applied for socially responsible purposes' received by the UK Gambling Commission and administered by Gambling Research Exchange Ontario (GREO) and its successor (Gre Evidence Insights; Greo). L.Y.X. has accepted funding to publish academic papers open access from GREO and the AFSG that was received by the UK Gambling Commission as above (October, November, & December 2022, November 2023, & May 2024). L.Y.X. has accepted conference travel and attendance grants from the Socio-Legal Studies Association (February 2022 & February 2023); the Current Advances in Gambling Research Conference Organising Committee with support from GREO (February 2022); the International Relations Office of The Jagiellonian University (Uniwersytet Jagielloński), the Polish National Agency for Academic Exchange (NAWA; Narodowa Agencja Wymiany Akademickiej), and the Republic of Poland (Rzeczpospolita Polska) with co-financing from the European Social Fund of the European Commission of the European Union under the Knowledge Education Development Operational Programme (May 2022); the Society for the Study of Addiction (November 2022 & March 2023); the organisers of the 13th Nordic SNSUS (Stiftelsen Nordiska Sällskapet för Upplysning om Spelberoende; the Nordic Society Foundation for Information about Problem Gambling) Conference, which received gambling industry sponsorship (January 2023); the MiSK Foundation (Prince Mohammed bin Salman bin Abdulaziz Foundation) (November 2023); and the UK Gambling Commission (March 2024). L.Y.X. has received honoraria from the Center for Ludomani for contributing parent guides about mobile games for Tjekspillet.dk, which is funded by the Danish Ministry of Health's gambling addiction pool (Sundhedsministeriets Ludomanipulje) (March & December 2023); from the Fundació Pública TecnoCampus Mataró-Maresme [TecnoCampus Mataró-Maresme Foundation] for a guest lecture (November 2023); and from the YMCA (Young Men's Christian Association) of Greater Toronto Youth Gambling Awareness Program for a presentation, which is funded by the Government of Ontario, Canada (March 2024). A full gifts and hospitality register-equivalent for L.Y.X. is available via: <https://sites.google.com/view/leon-xiao/about/gifts-and-hospitality-register>. The up-to-date version of L.Y.X.'s full conflict-of-interest statement beyond the last three years is available via: <https://sites.google.com/view/leon-xiao/about/conflict-of-interest>.

Data availability statement

The raw data, a full library of the video adverts studied, and relevant screenshots are publicly available in the Open Science Framework at <https://doi.org/10.17605/OSF.IO/6ZSUA>.

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Data availability

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¹¹³ Lord Foster of Bath and Lord Parkinson of Whitley Bay, 'Question for Department for Culture, Media and Sport, UIN HL3447, Tabled on 20 March 2024, Answered on 12 April 2024' <https://questions-statements.parliament.uk/written-questions/detail/2024-03-20/hl3447> accessed 3 May 2024; Lord Foster of Bath and Lord Parkinson of Whitley Bay, 'Question for Department for Culture, Media and Sport, UIN HL3448, Tabled on 20 March 2024, Answered on 3 April 2024' <https://questions-statements.parliament.uk/written-questions/detail/2024-03-20/hl3448> accessed 3 May 2024; Lord Foster of Bath and Lord Parkinson of Whitley Bay, 'Question for Department for Culture, Media and Sport, UIN HL3734, Tabled on 15 April 2024, Answered on 29 April 2024' <https://questions-statements.parliament.uk/written-questions/detail/2024-04-15/hl3734> accessed 3 May 2024.