Video game age rating, age assurance, and identity verification in Mainland China and beyond: Policy implementation insights from popular iPhone games

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INTRODUCTION
Playing video games is a popular activity globally across age groups. Concerns have been raised about potentially problematic engagement both in terms of spending too much time ('gaming disorder' as defined by the World Health Organisation) and money, including on gambling-like in-game purchases, such as loot boxes. Giving games different advisory age ratings based on their potentially problematic content and advising consumers and parents as to what age group the game is suitable for is a non-restrictive policy approach that is widely adopted internationally. In contrast, aiming to address 'internet addiction' and 'excessive monetary spending,' East Asian countries have adopted (and in the South Korean case since repealed) stricter legal restrictions on how long and when young people can play video games for and how much money they are permitted to spend. These restrictions are enforced by software means through age assurance and identity verification procedures. A prominent example is how Mainland China restricts under-18s from playing online games except for one hour only between 8–9 PM on Fridays, weekends, and public holidays (Zendle et al. 2023). Different monetary spending limits are also imposed against children based on age groups, with older children being allowed to spend more. While in other regions, such as Japan, Taiwan (China), and the UK, industry self-regulation is the primary approach, with age verification conducted primarily through player self-declaration. Previous research presented conflicting evidence as to whether restrictions on gameplay time were beneficial and achieved the regulatory aims, with certain studies suggesting that some young people circumvent the restrictions (Zhou et al. 2024). Policy implementation evidence can inform both future domestic and international policymaking (including repealing ineffective policies). This research novelly assessed whether and how major technology companies implement age rating, age assurance, and identity verification procedures to enforce video game-related regulatory restrictions in Mainland China and provide a comparative perspective with Japan, Taiwan (China), and the UK. A content analysis

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of the account creation process of the 100 highest-grossing iPhone games in Mainland China, Taiwan (China), Japan, and the UK was conducted. In Mainland China, 95.0% of games did conduct identity verification as required. However, notably, 5.0% of games were accessible without the user having been required to complete identity verification processes, which means the companies acted in breach of regulations. The currently widely adopted identity verification process in Mainland China has many flaws, including being easily circumventable. Actionable improvements, such as transmitting sensitive personal data only to a third-party identity verification provider rather than many individual companies, are recommended. Further, confusingly, two age rating systems often providing conflicting information were presented simultaneously to Mainland Chinese consumers. The implementation of a single, unified, and culturally appropriate age rating system that includes an adult-only (18+) rating would ensure better child protection. In Taiwan (China), the vast majority of games, including social casino games, could be played without any identity or age verification, and only 9% of games implemented self-declaration-based age verification, which means younger players could easily circumvent it by lying. In Japan, no in-game identity verification was found, and 56% of games included self-declaration-based age verification processes, such as affirming that one is above a certain age (2%), choosing a specific age group (11%), and entering players' birth date or current age (43%). In the UK, just over a third of games implemented self-declaration-based age assurance, which, importantly, is not recognised as a sufficiently robust and satisfactory age verification method under Section 230(4) of the Online Safety Act 2023 (Xiao & Lund, 2025). Indeed, these insights are also relevant to global tech regulation, as many other countries are depending on such software solutions to address online harms young people might encounter, ranging from pornography to online gambling.

DATA AVAILABILITY STATEMENT

For the Mainland Chinese aspect, the raw data and a full library of PDF printouts and screenshots showing, inter alia, the relevant Apple App Store webpage sections and in-game age and ID verification pages for each game is publicly available in the Open Science Framework at: https://doi.org/10.17605/OSF.IO/TZ27G. A preprint of the Mainland Chinese aspect of this study is available via: https://doi.org/10.31219/osf.io/uqbf9_v2.

For the Taiwanese aspect, the data is publicly available in the Open Science Framework at: https://doi.org/10.17605/OSF.IO/GEY3X and https://doi.org/10.17605/OSF.IO/YC8GD

For the Japanese aspect, the data is publicly available in the Open Science Framework at: https://doi.org/10.17605/OSF.IO/58Y9D and https://doi.org/10.17605/OSF.IO/H2CTR.

For the UK aspect, the data is publicly available in the Open Science Framework at: https://doi.org/10.17605/OSF.IO/YNJ5X and https://doi.org/10.17605/OSF.IO/J3TGQ.

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