

Loot boxes as gateway drug: Findings from a two-wave longitudinal survey

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INTRODUCTION

Loot boxes are purchasable in-game items that provide randomized rewards, with players not knowing the specific value or content of the reward prior to purchase (Nielsen & Grabarczyk, 2019; Xiao et al., 2021). They have become an increasingly widespread monetization mechanism in free-to-play games, where they serve to incentivize repeated micro-transactions across mobile and PC gaming markets (Xiao & Henderson, 2024; Zendle et al., 2020). A growing body of research has raised concerns about loot boxes as a form of pseudo-gambling, particularly because they combine monetary expenditure and chance-based outcomes (Brock & Johnson, 2021; Jayemanne et al., 2021; King & Delfabbro, 2019; Macey & Hamari, 2019a; Macey & Hamari, 2019b; Xiao, 2022; Xiao & Henderson, 2024; Xiao et al., 2021; Zendle & Cairns, 2018). However, relatively few studies have been designed to examine whether loot box consumption predicts later gambling behaviour over time.

This paper addresses this gap through a two-wave longitudinal survey study of gaming, in-game spending, and gambling behaviour among Danish citizens aged 10-25 years. The study measures gameplay frequency, social configurations of play, in-game spending including loot box consumption, and participation in different forms of gambling across two timepoints: late spring 2024 and late spring 2025. Respondents were recruited through a stratified random sample from the Danish Civil Registration System, enabling statistical generalisability to the wider population. At the first timepoint, 4,771 respondents completed the full questionnaire. These respondents were contacted again one year later and asked to complete the same questionnaire, resulting in a final panel of 2,105 respondents who participated at both timepoints (Mean age = 17.2, standard deviation = 4.4, 1171/56 % females and 1034/44 % males). Survey data were further enriched with register data, allowing for

a more nuanced assessment of key background variables, including socioeconomic background.

Because the majority of outcome variables were categorical, the data were analysed using ordinal logistic regression (Agresti, 2010). The analysis examined the extent to which loot box consumption at Time 1 predicted various forms of gambling at Time 2, while controlling for relevant background variables and gambling behaviour at Time 1. The findings indicate a clear and statistically significant relationship between loot box consumption and later gambling behaviour. However, the results also reveal important differences across gambling forms. Loot box consumption is most strongly associated with later online casino gambling ($p = 0.001$) and skin gambling ($p = 0.029$), whereas social media appear to be a stronger predictor of esports betting ($p = 0.0002$) and traditional sports betting ($p = 0.0002$). Moreover, the predictive power of loot box consumption overlaps substantially with key background variables, most notably age (18-21), gender (male), and prior gambling behaviour (autoregression).

The paper discusses these findings in relation to existing frameworks for understanding the relationship between digital gaming, gambling, and youth culture (Kirkeby, 2025; Thorhauge & Gregersen, 2019). In particular, the study indicates that the limited explanatory power of socioeconomic background, combined with the strong overlap between age, gender, and gaming and gambling patterns, suggests that loot box consumption and its association with later gambling should be understood less as a problem confined to socially vulnerable youth and more as a broader youth-cultural phenomenon. Whereas issues such as alcohol and drug use are often framed in terms of small groups of “youth at risk” these findings indicate that loot box-related gambling risks may constitute a more mainstream problem. Finally, the paper argues that the different patterns associated with different gambling forms can help identify the specific youth-cultural contexts in which problematic gambling practices emerge, thereby informing more targeted prevention strategies.

BIO

Anne Mette Thorhauge, PhD, is Associate Professor in Media and Communication Studies at the Department of Communication, University of Copenhagen, and a member of the Center for Tracking and Society. Her research focuses on digital media, platform economies, digital markets, gaming cultures, and children’s and young people’s use of digital technologies. She has published extensively on video games, platformization, and everyday digital media practices, combining qualitative and digital methods approaches.

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CONFLICTS OF INTEREST

No conflicts of interest.

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