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The influences of structural characteristics of games on online gambling behaviours

What this research is about

Structural characteristics are the design features of gambling games. For example, event frequency is the time between two wagers in seconds and reflects a game's speed of play. Structural characteristics can influence gambling behaviours. However, most studies on structural characteristics have been based on self-reported data or laboratory studies. Only one study has used real-world data from a gambling operator to examine the effects of the structural characteristics of video lottery terminals.

This study is the first to look at how structural characteristics might influence online gambling behaviours in a real-world setting. The data were provided by a large European gambling operator. The researchers determined online gambling behaviours as the number of bets and theoretical loss in a gambling session. Theoretical loss is the amount of money players would expect to lose based on the actual amount of money bet and a game's return-to-player (RTP). RTP is the percentage of the bet amount that is paid back as winnings.

What the researchers did

The researchers had access to data from November 27, 2020 until April 15, 2021. The researchers defined bets that were made more than 15 minutes apart as a new gambling session. Wagers that were made within 15 minutes were counted as within a single session. The researchers analysed only sessions in which one particular game was played. This was done to understand how a game's structural characteristics might affect gambling behaviours.

In total, there were 763,490 gambling sessions from 43,731 players. Players were from Germany, Austria, UK, Poland, and Slovenia. Their average age was 43 years old. Less than one-fifth of players were women (17.4%). The players gambled on 598 different games, each of which had at least 100,000 wagers. The majority of these games were slots games.

The researchers analysed the following structural characteristics for each game:

- Event frequency - a lower event frequency means a game is played at a faster speed.
- Return to player (RTP) - a higher RTP means a game pays back more to players.
- Hit frequency reflects how often a game pays out. A lower value means wins are more frequent.
- Continuity is the average length of a session in minutes.
- Average bet is the average amount of money bet across all wagers in a game.

What you need to know

Structural characteristics are the design features of gambling games. This study looked at how structural characteristics might influence online gambling behaviours using real-world player tracking data. The data included 43,731 players with 763,490 gambling sessions. The researchers found that structural characteristics explained only 7.7% of the differences in the number of bets made in a session. This increased to 8.8% when in-session gambling characteristics and demographic information were also taken into account. Event frequency of a game and maximum amount won on a single bet were the two most important in explaining the number of bets made in a session.

- Standard deviation bet reflects the differences in amount of money bet across all wagers in a game.
- Average win is the average amount of money won across all wagers in a game.
- Standard deviation win reflects the differences in amount of money won across all winnings.

The researchers also analysed a number of metrics for each gambling session. These metrics included session length, number of bets, amount bet, amount lost, number of wins, amount won, average bet, average win, maximum bet, maximum win, RTP, hit frequency, and theoretical loss. Some of the metrics were estimated for each game as well as for session.

What the researchers found

The researchers found that structural characteristics explained only 7.7% of the differences in the number of bets made in a session of a game. This increased to 8.8% when the researchers also took into account in-session metrics and demographic information (age and gender). All structural characteristics and in-session metrics contributed to explaining the number of bets made. The only exception was standard deviation win. Of note, games with larger maximum bets and larger average bets had a lower number of bets in a session. Being female and older age were associated with a higher number of bets in a session.

The researchers then determined the importance of the different structural characteristics and in-session metrics in explaining the number of bets. The results showed that the maximum amount won on a single bet in a session was the most important. Event frequency of a game was the second most important, with lower event frequency being associated with a higher number of bets. The players made on average 505 bets in a session if they played a game that had an event frequency lower than 11.79 seconds and had won a maximum amount of more than €38 on a single bet. Other structural characteristics, in-session metrics, and demographic characteristics provided little explanation.

The researchers also examined the theoretical loss in a session. Hit frequency of a game, hit frequency of a session, age, and female gender were not associated with the theoretical loss in a session. Other game structural characteristics and in-session metrics contributed to explaining the session theoretical loss.

How you can use this research

The results suggested that excessive gambling could be due to structural characteristics of games and random events during a gambling session (e.g., a large win). This study could inform future research and problem gambling prevention efforts.

About the researchers

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Citation

Auer, M., & Griffiths, M. D. (2022). The relationship between structural characteristics and gambling behaviour: An online gambling player tracking study. *Journal of Gambling Studies.* Advance online publication. https://doi.org/10.1007/s10899-022-10115-9

Study funding

No funding was received for this study.

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