

Multiple game themes as a potential structural characteristic of online slot machines

What this research is about

Slot machines have structural characteristics that can encourage harmful gambling. These include being fast-paced and continuous, allowing people to gamble without a break. One structural characteristic of slot machines that has not yet been studied is providing multiple visual themes (e.g., deep space, high seas). According to cognitive psychology, risky behaviour like gambling can be explained by the idea that people will persist in an activity that leads to wins and shift to another activity when they experience a loss. Offering multiple themes could encourage persistent gambling because it allows people to shift between several theme, even though each theme offers similar chances of losses over time.

In this study, the researchers looked at whether offering multiple slot product themes would influence people to persist in gambling (i.e., make a greater number of spins). They also looked at whether this effect would be more prominent for people with problem gambling.

What the researchers did

The researchers recruited 990 participants through Prolific, an online crowdsourcing platform, in February 2024. Participants were adults living in the United Kingdom who had previous experience using online slot machines. Before the main study, participants filled out a pre-screen questionnaire, which included the Problem Gambling Severity Index (PGSI) to assess problem gambling experienced in the past year. Only those who scored 7 or less on the PGSI were invited to take part in the main study.

In the main study, participants were randomly assigned to one of two groups for an experimental

What you need to know

Slot machines have features that can encourage harmful gambling. In this study, the researchers looked at how providing multiple themes within a slot product might influence people's gambling persistence. They recruited 990 adults living in the United Kingdom who had experience using slot machines in 2024. All participants scored 7 or less on the Problem Gambling Severity Index. They were randomly assigned to one of two groups for an experimental online slot machine task. In the multiple theme group, participants could switch between four different visual themes. In the single theme group, the slot machine game featured a single visual theme.

The multiple and single theme groups did not differ in the number of spins made. There was no evidence to suggest that participants with higher levels of problem gambling who were in the multiple theme group made more spins. Participants were more likely to leave the slot machine theme after wins and least likely to leave after losses disguised as wins. The findings can inform future research on this topic (e.g., testing the impact of multiple themes on other gambling products and people with problem gambling).

online slot machine task. The multiple theme group contained 508 participants, who were allowed to switch between four different visual themes while gambling on an online slot machine. The single theme group contained 489 participants, who gambled on an online slot machine with a single visual theme (randomly selected from one of the four themes).

Participants first earned £5 by completing an easy task involving retyping captcha codes. During the

experimental task, they gambled on the slot machine using their earned money. Each bet was set at £0.30 per spin. The slot machine game was programmed so that all £5 would be used up after 100 spins. The sequence of outcomes included 44 losses (an outcome of 0), 30 losses disguised as wins (a spin that won less than £0.30), and 26 wins (a spin that won more than £0.30). Participants could end the task by clicking a button to cash out or completing the maximum 100 spins. They were then told how much they had lost and were asked to rate how likely they were to gamble on this product again.

What the researchers found

On average, participants were 39.6 years old. There were 395 female participants.

There was no difference between the multiple and single theme groups in the number of spins made during the experimental slot machine task. There was also no evidence to suggest that participants with higher levels of problem gambling who were in the multiple theme group made more spins. However, participants with higher levels of problem gambling were less likely to cash out without gambling, made more spins in general, and were more likely to persist until they had made 100 spins.

Overall, participants were more likely to leave the slot machine theme after experiencing a win, and least likely to leave after experiencing a loss disguised as a win. This is inconsistent with the idea that people typically persist after a win and quit gambling following a loss.

Participants' likelihood of gambling on the online slot machine theme again was not related to their level of problem gambling. It also did not differ between the multiple and single theme groups.

How you can use this research

This study did not find evidence that providing multiple themes is a structural characteristic of slot machines that influences gambling behaviour. Future research could build on this study by, for example, including people with problem gambling and testing other gambling products (e.g., online casino games).

About the researchers

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Citation

Newall, P., Hayes, T., Weiss-Cohen, L., James, R. J. E., Byrne, C. A., & Muggleton, N. (2025). Could the provision of multiple game themes be a neglected gambling product structural characteristic? Results of an online simulated gambling task. *International Gambling Studies*. Advance online publication. <https://doi.org/10.1080/14459795.2025.2488868>

Study Funding

Funding for this study was provided by Clean Up Gambling.

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