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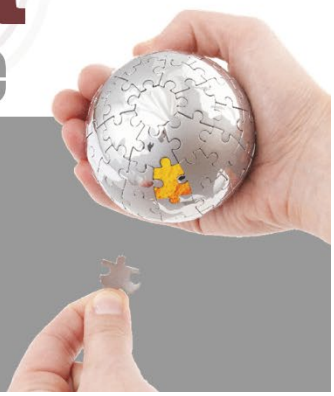

A new analytical method to examine in-play betting behaviours using a large online gambling dataset

What this research is about

In-play betting involves making bets during a live sporting event. An example is betting that a specific sports player will score a goal before the halftime in a match. In-play betting occurs at a faster pace than fixed-odds betting, in which bets are made before the start of a match. There is concern that in-play betting increases the risk of developing gambling problems.

Online gambling providers can gather large datasets of users' real-world gambling behaviours. Examining these large datasets can be challenging. Conventional statistical methods often exclude outliers, which are datapoints from users whose gambling behaviours fall in the extreme range. These users may be the most heavily involved in betting. Conventional methods also assume a linear relationship between variables. That is, these methods assume as one variable increases, so does the other (e.g., people who bet a higher amount of money per bet also make more in-play bets in total). However, variables may have a more nuanced relationship.

In this study, the researchers used quantile regression as a new method to examine patterns of in-play betting across different levels of involvement. Quantile regression does not assume linear relationship nor exclude outliers. The level of involvement was defined using total number of in-play bets made. People who made large number of in-play bets were thus heavily involved in in-play betting.

What the researchers did

The researchers used a publicly available dataset by *bwin,* an internet betting service provider. *Bwin* provided data on users who signed up between February and September 2005. The researchers used data from 24,781 users who made in-play bets during this period. Most users were men (92%). The users were based in 64 countries, with 58% from Germany.

The researchers divided the users into two groups. The first group included 20,891 users who made 0 to 111 in-play bets. These users' number of in-play bets did not go too high above the median, which was the middle value when each user's number of in-play bets was arranged from lowest to highest. This group was called the "normally involved in-play bettor" (NIB) group. The second group included 3,890 users who made more than 111 in-play bets. This group was called the "most involved in-play bettor" (MIB) group.

The researchers separated users within the NIB and MIB groups into different quantiles ranging from 0.1, 0.3, 0.5, 0.7, and 0.9. Users in the quantiles above 0.5

What you need to know

In-play betting involves making bets during a live sporting event. Examining large datasets of in-play betting collected by online gambling providers may aid in detecting problem gambling. The researchers used quantile regression as a new method to examine in-play betting behaviours across different levels of involvement with in-play betting. The dataset included 24,781 users who were divided into "normally involved" and "most involved" groups. Users in each group were separated into different quantiles. Those in higher quantiles made more in-play bets. The results showed that the relationships between various in-play betting behaviours (e.g., frequency) and total number of in-play bets depended on how involved people were with in-play betting.

made more in-play bets than the median of the group. The researchers then examined various in-play betting behaviours across the different quantiles for the NIB and MIB groups. These behaviours included:

- Duration, which was difference in days from the first to the last in-play bet.
- Frequency, which was based on the percentage of betting days.
- Average number of in-play bets per day.
- Average number of in-play bets per betting day.
- Total stake in Euros, which was the total amount of money spent during the study period.
- Average stake, which was the average amount of money spent per bet.
- Standard deviation (SD) for the daily average stake, which was a measure of whether users tended to bet around their average amount or varied their bet amount widely.
- Net change, which was the amount of money lost or won during the study period.
- Percentage change, which was based on the amount won as a percentage of the total stake.

What the researchers found

Several in-play betting behaviours showed a linear relationship with total number of in-play bets. Others showed a different relationship. Moreover, the strength of the relationship was influenced by how involved users were with in-play betting.

An example was frequency which was a positive predictor of total number of in-play bets. For the NIB group, frequency increased consistently with total number of in-play bets (a linear relationship). That is, users in higher quantiles made more frequent in-play betting. The MIB group showed a different relationship. For the MIB group, frequency increased for users in lower quantiles and then declined for users in higher quantiles (above the 0.5 quantiles). The same patterns were also seen for duration.

Another example was average number of in-play bets per day, which was a negative predictor. For the NIB group, users in higher quantiles made fewer bets per day on average. For the MIB group, this pattern was reserved for users who made more than the median number of bets (above the 0.5 quantiles).

How you can use this research

This study shows the potential of quantile regression in gambling research. A fuller understanding of in-play betting may aid in detecting problem gambling.

About the researchers

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Citation

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