To Test Whether Certain Players Are Better On Certain Courses

by Steve West Disc Golf, LLC

August 7, 2020

The data was the round scores from 6772 rounds for players that played at least 5 courses in 2019 during rounds that had at least 5 of these players on the course.

A pseudo-round-rating for each player-round was calculated based on the linear fit of ratings as a function of score. Each player's actual rating was subtracted from the pseudo-round-rating for a performance score.

Player skills were matched to course features in the following way. Each player was assigned a value of negative one to one on a spectrum. Each course was also assigned a value of -1 to 1 on a spectrum. Players at the -1 end of the spectrum should perform better on the courses at the -1 end of the spectrum. The more preferable the match between player and course, the higher the expected performance score should be. Preference is measured by sqrt((course value - player value)^2).

If certain players do favor certain courses, the correlation of performance scores to preference should be high.

For random assignments of players and courses to values on the spectrum, the difference between performances on the courses which are highly preferred vs. those which are not preferred would be expected to be near zero. Simulations confirm this.

To test whether there is any way to match courses to players in a way that enhances performance, thousands of iterations of assignments of course values and player values were tried until an optimal allocation was found for rounds played in 2019. In other words, courses were assigned a value of X if they helped players who were also assigned a value of X. Players were assigned a value of X if they played better on courses with a value of X. By cherry-picking assignments after the fact, the correlation of performance values to preference can reach 34%.

However, when these same assignments were applied to 2020 events (for player/course combinations that were also played in 2019) the correlation for 2020 drops to near zero - matching what would be expected from random assignments. This shows that the apparent performance improvements from properly matching courses to players is illusory.

Furthermore, the optimal assignments from one simulation to the next bear almost no correlation to each other.

In conclusion, no evidence was found to indicate that players can be predicted to perform better (or worse) on certain types of courses.