

Extra Feature Story

Math Madness: Statistics Might Help Choose NCAA Brackets

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Statisticians have found ways to improve the odds of picking the winners of the NCAA men's basketball tournament, but have not been able to conquer the uncertainties that make it nearly impossible to create the perfect bracket.

Every March, the NCAA tournament allows committed college hoops fans, as well as casual observers, to predict the outcome of 63 tournament games.

This year, thanks to online pools and Facebook applications, more people are entering than ever before.

There are myriad methods for determining which team will beat another: mascot matchups, school rivalries, team colors, or more-complicated superstitions.

But for those looking for a more scientific method to winning their pool, there are plenty of guides and strategies to improve your chances of bracket success.

The odds

Like the outcome of any wager, there are odds for correctly picking tournament game winners, Final Four teams and the champion. The chances of picking every outcome correctly – the perfect bracket – are staggeringly low.

If you assumed that each game was a toss-up, like a coin flip, your chances of picking every game correctly would be .5 to the 63rd power – one in 9 million trillion, explained Wall Street Journal columnist Carl Bialik.

No one has ever filled out a perfect bracket, according to his research.

However, game outcomes aren't completely random, and your odds can greatly improve. By figuring in the seeds of teams, which is a pre-tournament ranking of each team on a scale of one through 16 for four different regions, among other mathematic techniques, Bialik improved his chances of the perfect bracket to one in 150 million.

Using research

Because predicting every upset in the tournament is almost impossible, the key to winning a pool is to pick better than the other players.

Joseph Chatlos, who teaches statistics at Upper Arlington High School in Columbus, Ohio, said that because game outcomes and team selection for the tournament are not random, you can use statistics to your advantage.

"In some ways statisticians always deal with subjective cases where you don't know what will happen," Chatlos said. "We are never very sure of anything in statistics. It's a matter of weighing the odds and figuring out what's going to happen."

Studying the outcome of past tournaments is one way to improve your bracket.

Pete Tiernan, who runs bracketscience.com, uses a database of statistics from the past 23 years of the 64-team tournament to help his customers outperform the average bracket.

Tiernan compiles coaching records, each seed number's past performance and school histories on his old Macintosh computer. He analyzes individual odds for different factors without the use of sophisticated math programs: how does a team do in the tournament if it has won six of its last 10 games? What about seven of the last 10?

"Some of the more clever kids in stats class ask if my sample size is large enough. And sometimes, admittedly its not," Tiernan said. "There's been 23 tournaments in the modern era since [the] field expanded to 64 and sometimes our sample size is limited."

Numbers versus instinct

For Tiernan, data from past tournaments are only a buffer against a really terrible bracket.

By using data from the past tournaments, you can keep your bracket from placing lower than 55 percent of the entrants, Tiernan said. However, the rest is chance.

To win a large pool, you must go out on a limb and pick some upsets, he said.

"I think that's what people like to do, be the clever person who picks that upset. You also risk being the dumbest person in your pool," he explained.

-- Compiled by Quinn Bowman for NewsHour Extra

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