March Madness ended Monday. How did your bracket work out?

Most of the 40 million people who fill out brackets to predict the winners of each game in the NCAA Men’s Basketball Championship make their picks based on their knowledge of the game, wishful thinking or flat-out guessing.


This year, the American Statistical Association decided to counter the madness with a method.

In a contest it called Statsketball, ASA challenged high-school and college students to fill out brackets in a pair of challenges based on a statistical analysis of their own design. Winners received a complimentary ASA membership, a T-shirt and $200.

“We wanted students to think hard about how they might take available information and turn it into some understanding of what future events might look like,” said ASA

executive director Ronald L. Wasserstein. “You could pick your team based on your favorite color, or you could use a model that takes into account player performance, home and road activity, and records against similar opponents.”

In the Pick ‘em Upset Challenge, contestants chose winners for each of the 32 first-round games. Two points were awarded for correct picks plus the seed difference for upsets. Correctly picking No. 8 seeded Wisconsin to upset No. 1 seeded Villanova would have yielded seven bonus points (8-1=7) plus two points for having picked a winner, a total of nine points.

“There is a bit of skill,” said Michael Lopez, a professor of mathematics at Skidmore College, in Saratoga Springs, N.Y. who designed the challenges. “You have to recognize what upsets are more likely.”

Twenty-five undergraduates and 107 high-school students competed. The winners, who were selected based on points and strategy, were Naveen Gooneratne, a senior from Lower Merion High School in Pennsylvania, and Michael McLaughlin, a junior at Temple University.

Mr. McLaughlin tested different metrics, such as strength of schedule, to see how well they correlated with the performance of low-seeded teams in previous NCAA tournaments then used the results to calculate the probability of upsets by this year’s low seeds.

He discarded other metrics that turned out to have little connection to upsets. “I thought senior-heavy teams would be more likely to pull upsets,” he said, “but there wasn’t a strong correlation.”

Mr. McLaughlin correctly predicted the outcomes of 25 games, earning 73 points, including 23 upset points.

Mr. Gooneratne, who estimated the probability of upsets using data from the website RotoGuru, correctly picked 29 winners, earning 79 points, including 21 upset points.

The second challenge, Build Your Own Bracket, was intended to force contestants to think strategically.

Each contestant had 224 draft points to “spend” on a portfolio of teams with the goal of choosing the overall NCAA champion among the group—but the spending cap prevented them from loading up on top seeds, which, at 75 points, were the costliest option.

Once a portfolio was selected, the teams earned 1 point for a win in the first round, 2 for a win in the second, and 3, 5, 8 or 13 points for wins in subsequent rounds.

Eight undergraduates and 18 high-school students participated in the challenge.

The high-school winners were James Andrews, Jordan Levy and Connor Heuerman, seniors at College Park High School in Pleasant Hills, Calif., who worked together to estimate the probability that each team would win every round of games, then calculated the expected value of teams based on the points they would be awarded for the wins.
To calculate their probabilities, they averaged historical data based on team-seedings and current projections using data such as Fivethirtyeight.com's ELO ratings, which rely on the final score, home-court advantage, game location, team conference, and whether a game is played as part of a tournament.

The 11 teams they selected went on to win 14 games for 23 points; their strongest team, Kentucky, made it to the Elite Eight.

The college winners were North Carolina State sophomores Jason Thompson and Graham Pash, who simulated the tournament 10,000 times, used the contests' point system to calculate each team's average expected points, and divided it by the cost in draft points to produce each team's cost efficiency.

For example, Wichita State was expected to earn an average of 2.4 points per round and cost 8 draft points for a cost efficiency rating of .30. In comparison, Gonzaga was expected to earn an average of 8.8 contest points per round, but cost 75 draft points for a cost efficiency rating of .12.

The partners picked 10 cost-efficient teams that then went on to win 16 games, collecting 40 points, only to fail in the final. They had picked Gonzaga to go all the way.

Almost. Gonzaga lost to North Carolina.

In basketball, and statistics, that's the way the ball bounces.

"You can't expect that predictions are always going to come out," Mr. Wasserstein said. "But a prediction based on a good model will be a better prediction in the long run."

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