

Comparing FPO and MPO Tournament Scores

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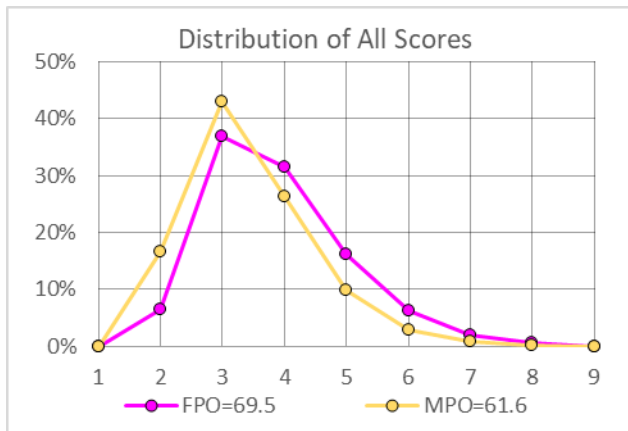
I set out to find the differences between the scores of FPO and MPO players at disc golf tournaments. Perhaps insights can be gained which would help in designing better courses for FPO and MPO.

Raw Totals

I selected 164 events held during 2022 where both MPO and FPO players competed. These were A-tier and above, or had a significant number of MPO players rated 1000 and up. This yielded 546,308 scores from MPO players and 122,070 scores from FPO players.

At these events, the scoring distribution was as follows. FPO averaged 69.5 per 18 holes, and MPO averaged 61.6 per 18 holes.

Score	FPO	MPO	F/M
1	0.01%	0.03%	35%
2	6.52%	16.70%	39%
3	36.90%	43.06%	86%
4	31.56%	26.41%	120%
5	16.05%	9.78%	164%
6	6.29%	2.94%	214%
7	1.92%	0.81%	237%
8	0.54%	0.20%	278%
9+	0.04%	0.02%	196%



The average FPO player would be expected to score 7.9 throws higher than the average MPO player. However, this ignores the differences in the strength of field. It also includes courses where FPO didn't play, or MPO didn't play. For a better comparison, we need to standardize what we look at.

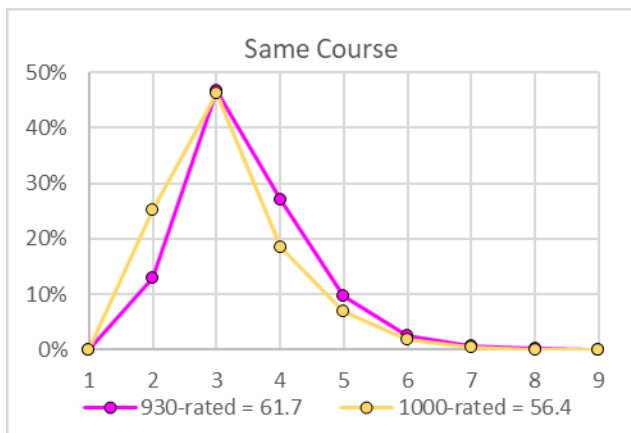
Standardized

Using scores from all the FPO and MPO players may give a distorted picture. Not every player who plays in FPO or MPO is a legitimate contender. Premier Pros are obviously contenders. Since the cutoff for Premier Pro is 930 for FPO and 1000 for MPO, I compared the scoring distributions for 930- and 1000-rated players.

To minimize the effect of playing different sets of courses, I limited the scope to the 230 pairs of courses where FPO and MPO played the same event (some events used more than one course). Both FPO and MPO played the same course on 157 of these. For the other 73, FPO and MPO played different layouts - almost always the FPO course was a shorter version of the course MPO played.

Here are the distributions for 930- and 1000-rated players when FPO and MPO played the same course.

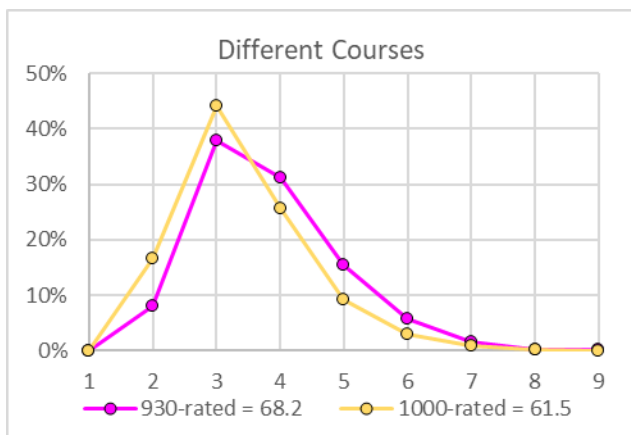
Score	930	1000	930/1000
1	0.02%	0.03%	91%
2	12.93%	25.18%	51%
3	46.75%	46.27%	101%
4	26.96%	18.46%	146%
5	9.58%	6.84%	140%
6	2.47%	1.90%	130%
7	0.60%	0.53%	112%
8	0.18%	0.06%	299%
9	0.07%	0.03%	214%



When FPO and MPO played the same course, 930-rated players scored 5.3 throws higher per 18 holes.

Here are the distributions when FPO and MPO played different courses.

Score	930	1000	930/1000
1	0.01%	0.02%	44%
2	8.01%	16.68%	48%
3	37.83%	44.10%	86%
4	31.22%	25.75%	121%
5	15.35%	9.14%	168%
6	5.67%	3.07%	185%
7	1.55%	0.90%	172%
8	0.26%	0.30%	86%
9	0.10%	0.03%	304%



When FPO and MPO played different courses 930-rated players scored 6.7 throws higher than 1000-rated players.

The excess of 930-rated scores over 1000-rated scores was greater when FPO played their own (usually shortened) course than when FPO played the same course as the MPO.

Wait, whaaat?

This is explained by two things:

First, generally FPO only got their own course when the MPO course was "too long" for them.

Commonly, when the MPO course was short, FPO also played it. Shorter courses make smaller scores, thus smaller differences.

Second, when a course was modified for FPO, the modification did not go far enough to get the 930-rated scores down to equal the 1000-rated scores. Often, for example, FPO would play the same course except for a shorter tee on the longest hole or two.

For courses that both FPO and MPO played, the average length was 7,171 feet. Remarkably, the average length of FPO courses when they got their own course was also 7,171 feet. But, when separate courses were played, the average length of the courses was 8,192 feet for FPO and 9,281 feet for MPO.

Adjusting a Course for FPO

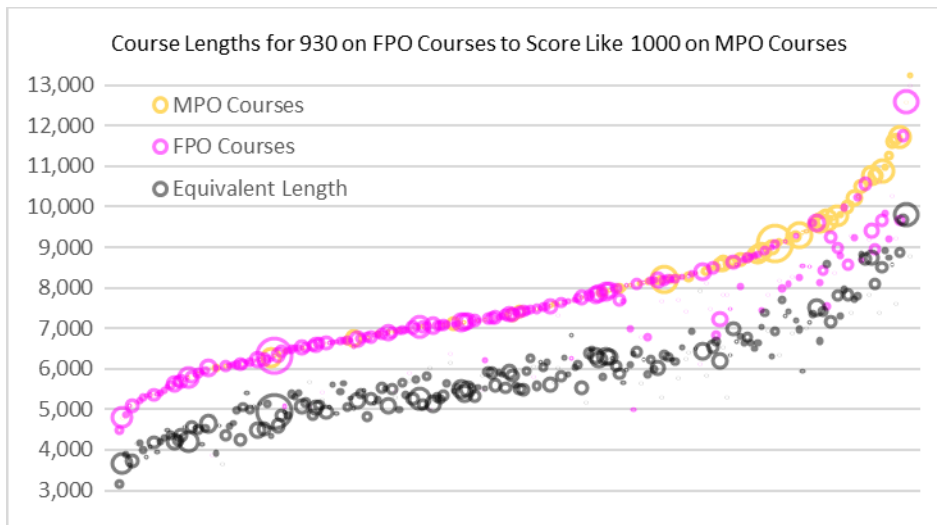
It is possible to calculate how much shorter an FPO course needs to be for 930-rated players to score the same as 1000-rated players on an MPO course. From the data, we know that the typical 930-rated score for an 18-hole course is 33 throws, plus one throw per 244 feet of length. MPO also makes about 33 throws per 18, but add only one throw per 313 feet of length.

This tells us that, in general, a course for FPO should be 78% as long as a course for MPO. This is consistent with results from Sarah Hokom's player polls regarding throw lengths.

For the courses in the data, when FPO and MPO played separate courses, the FPO course averaged 88% as long as the MPO course. About two-thirds of the time FPO played the same course and layout as MPO.

The following shows the lengths of the MPO courses in feet (Gold, in increasing order) together with the lengths of the corresponding course FPO actually played (Pink) and the lengths where 930-rated players on the FPO course would get the same score as 1000-rated players got on the MPO course (Gray).

[The size of the bubble indicates the number of rounds in the data.]

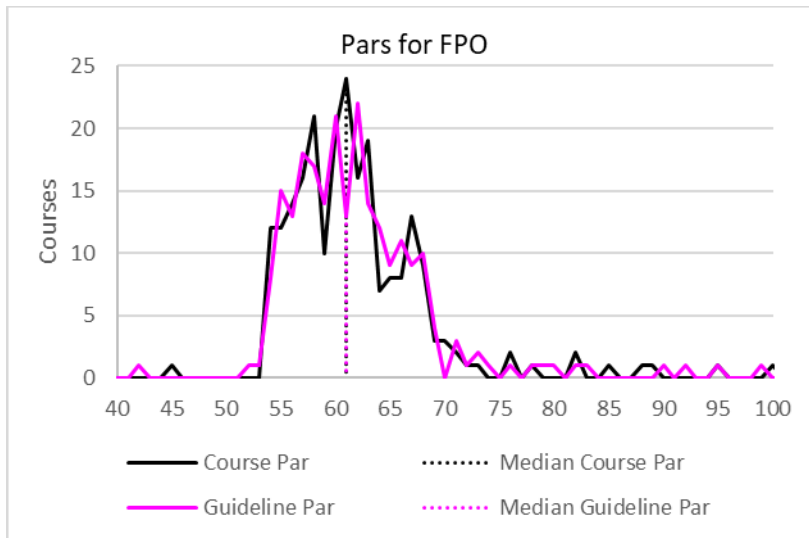


This does not necessarily mean that all FPO courses should automatically be made shorter. Many events host MPO players on courses that are too short for such high-level competition. One avenue to improving these events would be to keep FPO on the existing course and find a course that is about 25% longer for MPO.

Suitability of Pars

By comparing the course pars to the pars suggested by the PDGA Par Guidelines - specifically the Par by Scoring Distribution method - we can see whether FPO players are getting pars suitable for 930-rated players.

For FPO, course par was higher than the Guidelines for 70 courses, equal for 82 courses, and lower for 78 courses. So, pars for courses where FPO played were about right for 930-rated players.



For MPO, course par was higher than the Guidelines for 203 courses, equal for 13 courses, and lower for 14 courses. So, pars for courses where MPO played were typically 3 throws too high for 1000-rated players.

