Multidimensional success measures in tournaments increase participation through hedonic framing

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Tournament systems in professional tournaments on the one hand try to measure the relative strength of the participants as accurately as possible and on the other hand try to make the event exciting for the audience. In amateur tournaments, particularly in mind games, however, often another goal is much more important: the enjoyment of the participants and their willingness to participate.

While there are surely many ways in which to improve this enjoyment, in this article we focus on one particular factor that is directly determined by the tournament system: success measurements. Most tournament systems provide basically one measurement of success: e.g., in a KO-tournament, success may be measured by your final rank, the number of wins or the round up to which you proceeded, but all of these measures are obviously very highly correlated or even identical. Similarly, in a Swiss system tournament, number of wins and final rank, again, are by definition bascially one and the same success measure.

Why would it be better to have more than one such measure? The psychological reason is that having two or more such measures allows you to do "hedonic framing". By this we mean that you are free to weight these measures *after the fact* in order to increase your subjective happiness about your results. If this indeed happens, the satisfaction of participants with their performance (and thus probably with the whole tournament) would on average be higher as compared to tournaments with only one success measure, since more participants can consider themselves as successful.

In this article we look at one such tournament system with (at least) two independent success measures, the McMahon system. This system is a variant of the Swiss system that assigns starting points to the participants depending on their strength/rating. The system is most frequently used in Go where it is the standard in amateur tournaments in Europe and America.

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In this system, only the best players have a chance to win the tournament, while weaker players cannot even theoretically win the tournament, since their starting points are simply too low. Weak players in this system will only play against other weak players and have therefore, however, the chance to win many (or even all) of their games. This leads to two different success measures that are basically independent: final rank and number of wins.

In a statistical analysis with data from all European Go tournaments from 1996 to 2016 with around 40,000 participants (taken from the European Go Database), we find evidence that participants indeed show hedonic framing: the likelihood to participate again (and sooner) in a tournament is higher if the participants' rank was better and if their number of wins was higher, but both effects do not add up. This implies that multi-dimensional tournament systems (like McMahon) allow participants to see their own performance in a better light and thus be more satisfied. This leads to a higher chance of participating again.

As a side result, we find that the hedonic framing effect is strongest for less experienced and weaker players. It is therefore a particularly important method to make tournaments attractive for newcomers.

The result has obvious implications to other mind sports and strongly suggests to use tournament systems with multi-dimensional success measures as often as possible in amateur tournaments.