Title: Statistics in Sports

Speaker: Prof. Ruud Koning, University of Groningen

Area: DS

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Brief Description and Abstract

Elite sports has progressed from a pastime for people with some free time to a professional entertainment industry. Also, the organization of elite sport events has made big steps, from being stadium events only, to events that are distributed along many different channels. Financial stakes in sports are high, as a consequence, athletes try to improve wherever possible, so so do organizing bodies. In the first part of the workshop, I give a selective overview of advances in data analysis in sport, by discussing examples and recent problems of interest.

In the second part, I will present some of my current research. Sport fans value the uncertainty of the outcome of a sporting contest, in fact, one may argue that this uncertainty is one of the defining characteristics of sports Fort (2006), Szymanski (2003). Uncertainty of outcome can be regulated by choosing a certain competition format. Different tournament types have different incentives for the participants. It is well known that average effort provided by equally skilled athletes decreases with the number of participants in a winner take all contest.

Some tournament types base ranking on some absolute measure of performance, so essentially all athletes compete against each other, even though they may not compete simultaneously. In such a case, incentives are similar to the ones in a single rank order tournament, and so is effort provided.

In this paper we focus on speed skating. A speed skating event (say, 1500m men) usually has approximately 20 participants, who skate against each other in pairs. Finishing time is recorded and after all participants have skated, the one with the fastest time wins. Even though each skater has only one direct opponent, he effectively competes against all participants. However, skaters in later pairs have an advantage over earlier skaters: they know the time to beat in order to lead the ranking at that moment.

To assess the informational advantage of later skaters, we estimate a flexible model where their performance depends-among other things-on the best time skated so far. In most tournaments the order of skaters is determined by performance in earlier events, so in our model we allow for this by incorporating individual effects. We find a small and significant effect of the best time skated so far: if the best time skated so far decreases by 1~second, performance of the skater improves by approximately 0.17%-0.42% (depending on the specification). Even though this effect appears to be very small, it may be significant as the time difference between top places of important tournaments may be tiny.

Speaker Profile:

Ruud Koning is a sport economist who uses his training as an econometrician to study the field. He is past president of the European Sports Economics Association and member of the steering committee of MathSport. His main interests are measuring competition, assessing behavior of elite athletes, and modeling extremes. He is editor of Sports Economics Review, and referees for different journals.

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