

## **IPS143: Advances in Sports Statistics**

## Ranking of professional football players using the twofold I-distance method

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## Abstract:

The field of study which is experiencing a surging interest is the application of statistical methods in sports. Namely, multivariate analysis is more and more used to analyse and predict sports performance. One of the questions which attracts the attention is how to rank football players and which indicators of play are crucial within such a ranking. A sophisticated ranking, which encompasses more indicators and is based on statistical multivariate analysis could be proposed having in mind the wide availability of indicators of performance. To provide a possible ranking, as a case study, we observed the professional football players from the Premier League in the season 2018/19 and three groups of: metrics of defensive game, offensive game, and metrics of pass. The chosen statistical methodology to create a novel ranking is the twofold I-distance method. The twofold approach consists of the application of I-distance on two levels: first, on the level of indicators, and second on the level of previously created pillars. In the observed sample, we ranked 78 players. The results indicate that Eden Hazard, Kyle Walker, and Idrissa Gueye top the ranking, followed by Wilfried Zaha, Granit Xhaka, and Fabinho. When it comes to the importance of parts of play for the ranking position, pass is the most important while offensive and defensive game come after. Future directions of the study could cover a longitudinal study on indicator and pillar importance to inspect how the style of the game changed over the years. Another possible future direction of the study could be the application of Composite I-distance Indicator (CIDI) or enhanced Scatter Search - CIDI (eSS-CIDI) methodology to devise specific weights of indicators and pillars. The here presented approach could act as a foundation for further research on the application of statistical multivariate analysis in the field of sports statistics.

## Keywords:

Premier League, sports statistics, football statistics, composite indicators, rankings, I-distance