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## Predictive validity of small-sided game performance and physical tests for overall performance ratings in soccer

Bergkamp, Tom; Niessen, Susan; Hartigh, den, Ruud; Frencken, Wouter; Meijer, Rob R.

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Title: Predictive validity of small-sided game performance and physical tests for overall performance ratings in soccer

### Contributing Authors

**Tom L. G. Bergkamp** - Department of Psychometrics and Statistics, Faculty of Behavioral and Social Sciences, University of Groningen, Grote Kruisstraat 2/1, 9712TS, Groningen, the Netherlands

**A. Susan M. Niessen** - Department of Psychometrics and Statistics, Faculty of Behavioral and Social Sciences, University of Groningen, Grote Kruisstraat 2/1, 9712TS, Groningen, the Netherlands

**Ruud. J. R. den Hartigh** - Department of Developmental Psychology, Faculty of Behavioral and Social Sciences, University of Groningen, Grote Kruisstraat 2/1, 9712TS, Groningen, the Netherlands

**Wouter G. P. Frencken** - Football Club Groningen, Groningen, the Netherlands

**Rob R. Meijer** - Department of Psychometrics and Statistics, Faculty of Behavioral and Social Sciences, University of Groningen, Grote Kruisstraat 2/1, 9712TS, Groningen, the Netherlands

### Abstract

#### Introduction:

Talent identification research in soccer involves the prediction of elite soccer performance. Although conventional research has mainly focused on isolated (e.g., physiological) components as predictors of performance level, representative samples of in-game soccer behavior may improve predictions [1]. As part of a longitudinal study, this pilot analysis compared the predictive validity of representative samples of soccer performance in small sided games (SSGs), against the validity of performance on a endurance, sprint and agility test.

#### Method:

Sixteen players of the U-19 team and 18 players of the U-23 team of a professional soccer academy participated in 11 (SD = 3) different 7-vs-7 games. Player's performance was assessed based on the result of each SSG through two measures: the average number of points obtained in an SSG (3 points for a win system), and an Elo-rating. Standardized tests were used to assess speed, endurance, and agility. Whole-season performance ratings (0 – 10) given by coaches at the end of the season were used as a criterion measure.

#### Results & Discussion:

For the U-19 players, average points per SSG ( $r = 0.44$ ) and Elo-rating ( $r = 0.49$ ) were substantially stronger predictors of the coaches' rating than speed ( $r = -0.08$ ), endurance ( $r = 0.34$ ), and agility ( $r = -0.08$ ). Contrastingly, for the U-23 players, all variables correlated negatively with coaches' rating. Average points per SSG ( $r = -0.40$ ), Elo-rating ( $r = -0.32$ ), and speed ( $r = -0.42$ ), had the strongest negative correlations. Endurance ( $r = -0.12$ ) and agility ( $r = -0.08$ ) had small correlations. Possibly, the contradictory findings may reflect differences in the construction of ratings in each group. Despite inconclusive evidence, part of the results supports similar hypotheses in other domains [2].

#### Conclusion:

Preliminary findings suggest that representative samples from SSGs are potentially stronger indicators of soccer performance ratings than widely-used isolated components. However, given small sample sizes and the inconsistent results for the U-23 players, general inferences regarding the predictive value of this measure cannot be made yet.

#### References:

1. Den Hartigh RJR, Niessen ASM, Frencken WGP, Meijer RR. Selection procedures in sports: improving predictions of athletes' future performance. *Eur J Sport Sci.* 2018;31:1–8.
2. Lyons BD, Hoffman BJ, Michel JW, Williams KJ. On the predictive efficiency of past performance and physical ability: The case of the national football league. *Hum Perform.* 2011;24:158–72

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**Main Contact:**

Tom Bergkamp

Phone: +31 6 12354913

Email: [t.l.g.bergkamp@rug.nl](mailto:t.l.g.bergkamp@rug.nl)