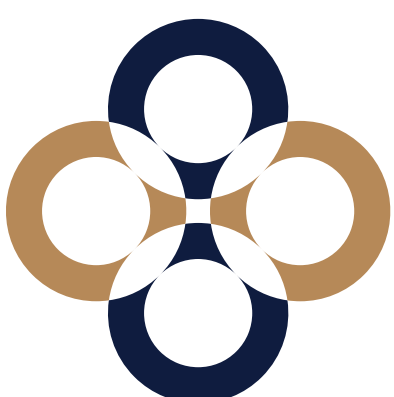
**Author(s):****László, CSATÓ****Organisational unit:** Institute of Operations and Decision Sciences**Title:** How to avoid uncompetitive games? The importance of tie-breaking rules**Publication data:** EUROPEAN JOURNAL OF OPERATIONAL RESEARCH, 2023**Journal ranking:** SJR 2022: D1, Alp 2021: 89**Abstract:**

If the final position of a team is already secured independently of the outcomes of the remaining games in a round-robin tournament, it might play with little enthusiasm. This is detrimental to attendance and can inspire collusion and match-fixing. We demonstrate that tie-breaking rules might affect the occurrence of such a situation. Its probability is quantified via simulations for the four groups of the 2022/23 UEFA Nations League A under two well-established tie-breaking rules, goal difference and head-to-head records. In these home-away round-robin contests with four teams and 12 matches, the competitiveness of the final four games can be promoted by giving priority to goal difference, which reduces the chance of a fixed position in the group ranking by at least two and usually five percentage points in the last round. Our findings, supported by sensitivity analysis in a theoretical model, provide important lessons on how to design ranking systems.

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