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A Population Division Based Multi-Task Optimization Algorithm for Solving Multiple-Team Formation Problem Based on Tiki-Taka Optimization Algorithm

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Abstract
The Team Formation Problem (TFP) has recently gained popularity in Operation Research (OR). The challenge of finding the lowest or maximum values from a massive pool of solutions is called optimization. Often, meta-heuristic algorithms are chosen to solve optimization issues because they are fast and use few resources. Recent literature research has focused on a new optimization issue termed multi-task optimization (MTO). This article updates our ongoing efforts to address the MTO issue. Specifically, our research examines the use of Tiki-Taka, a football-inspired meta-heuristic algorithm, to solve the MTO issue by adopting a partitioned population method. We use UMP Experts dataset as a case study to optimize team connection costs. Our study proved that TTA could solve MTO Team Formation Problem effectively.

Keywords: Optimization; Meta-heuristic algorithm; Team formation problem (TFP); Multi-task optimization (MTO).