> Thursday, April 21st, 2022
14:00 - 15:30

OPERATIONS MANAGEMENT

IÉSEG SCHOOL OF MANAGEMENT

EMPOWERING CHANGEMAKERS FOR A BETTER SOCIETY

‘HOW TO CONCLUDE A SUSPENDED SPORTS LEAGUE?’

ALI HASSANZADEH KALSHANI - ALLIANCE MANCHESTER BUSINESS SCHOOL

ABSTRACT

Professional sports leagues may be suspended due to various reasons such as the recent COVID-19 pandemic. A critical question the league must address when re-opening is how to appropriately select a subset of the remaining games to conclude the season in a shortened time frame. Despite the rich literature on scheduling an entire season starting from a blank slate, concluding an existing season is quite different. Our approach attempts to achieve team rankings similar to that which would have resulted had the season been played out in full. We propose a data-driven model which exploits predictive and prescriptive analytics to produce a schedule for the remainder of the season comprised of a subset of originally-scheduled games. Our model introduces novel rankings-based objectives within a stochastic optimization model, whose parameters are first estimated using a predictive model. We present simulation-based numerical experiments from previous National Basketball Association (NBA) seasons 2004-2019, and show that our models are computationally efficient, outperform a greedy benchmark that approximates a non-rankings-based scheduling policy, and produce interpretable results. Our data-driven decision-making framework may be used to produce a shortened season with 25-50 % fewer games while still producing an end-of-season ranking similar to that of the full season, had it been played. We also suggest how to conclude the 2019-20 NBA season.

LEM Lille Economics Management

cnrs

Université Catholique de Lille 1875