MAS10

EVALUATING QUARTERBACKS' CONTRIBUTIONS TO THEIR TEAMS' WINS USING DATA ENVELOPMENT ANALYSIS

Thai Tran, Patrick Fullerton, Saleh Alghamdi, Seong-Jong Joo
Air Force Institute of Technology, Wright-Patterson AFB, Ohio, USA

Abstract

This study examines quarterbacks' contributions to teams' wins in the National Football League (NFL) using network data envelopment analysis models. We include the performance records of the top 15 quarterbacks in each year for 14 years from 2011 to 2024 in the United States of America. The study investigates the impact of evolving play styles, pocket passers versus dual-threat quarterbacks, and rule changes and offensive schemes on quarterback performance. Findings aim to provide a comprehensive understanding of NFL passing evolution, offering strategic insights for coaches, analysts, and fans in modern football, which contribute to significant practical implications.

Conference Track

Modeling and Simulation