



Full Length Article

Adaptive behaviours of attacking futsal teams to opposition defensive formations

B. Travassos^{a,b,*}, J. Bourbousson^c, P.T. Esteves^{b,d}, R. Marcelino^b, M. Pacheco^a, K. Davids^e^a Department of Sport Sciences, University of Beira Interior, Covilhã, Portugal^b Research Centre in Sports Sciences, Health Sciences and Human Development, CIDESD, CreativeLab Research Community, Portugal^c Sport Sciences Faculty, University of Nantes, France^d Polytechnic Institute of Guarda, Guarda, Portugal^e Centre for Sports Engineering Research, Sheffield Hallam University, UK

ARTICLE INFO

Article history:

Received 27 November 2015

Revised 8 February 2016

Accepted 16 February 2016

Keywords:

Team performance

Tactical behaviours

Futsal

Performance analysis

Defensive formation

Constraints

ABSTRACT

This study evaluated tendencies towards flexibility/stability of coordinated behaviours in international futsal teams, considered as complex collective systems, according to changes in opposition defensive formations. Six games of two international futsal teams (Spain and Portugal) were selected for Social Network Analysis to capture the coordination tendencies that emerge in the tactical behaviours of players when performing against different defensive formations. Ball trajectories in each offensive pattern of play were notated in an adjacency matrix where each entry accounted for the linkages between 12 spatial field areas. Each offensive play was coded according to the defensive formation of an opposing team (i.e. conservative or risky formation). Results revealed similar network properties between teams when competing against more risky defensive formations, while notable differences were observed against conservative defences. Effect of defensive formation of opponents on macro network properties was observed in both the Portuguese and Spanish teams. At a meso-level, only the Spanish national team exhibited notable changes, suggesting a greater level of adaptability to unfolding performance events. The observed flexibility in tactical behaviours of the Spanish team appeared to express their greater expertise levels.

© 2016 Elsevier B.V. All rights reserved.

1. Introduction

Over the past few years, research on team sports performance has moved beyond the traditional notation of action frequencies and their relation to success, to consider the effects of situational game constraints on team performance (Lago & Martín, 2007; Lago-Ballesteros, Lago-Peñas, & Rey, 2012). For example, variations in some situational variables (e.g. game result, the on-field locale of ball recovery, or the balance in opposition teams) can constrain the attacking play exhibited by a team, resulting in changes in the probability of reaching the critical scoring space in football (Lago-Ballesteros et al., 2012). Also, in the team sport of Futsal, Gómez, Moral, and Lago-Peñas (2015) revealed that the probability of successfully maintaining ball possession depends on the type of team possession and the defensive formation of the opposition. These findings reinforce the idea that the adaptability of teams to emergent game constraints is crucial to improve performance and achieve competitive successful outcomes.

* Corresponding author at: Sport Sciences Department, University of Beira Interior, Convento de Sto. António, 6201-001 Covilhã, Portugal.

E-mail address: bruno.travassos@ubi.pt (B. Travassos).