

# The Differential Effect of the Evolving Game Status in the Passing Sequences of Top-Level European Football Teams

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## 1 OBJECTIVES

In recent years there have been several studies seeking to understand how contextual variables such as game location, the level of the opponent and the evolving game status typically influence football teams' performances. Usually, investigations examine the effects of these situational variables on physical/conditioning, technical, tactical and mental performance in football (Taylor et al., 2008). The evolving game status (winning, losing or drawing) is one of the most relevant situational variables influencing performance in Association Football (Lago, 2009). Hughes and Reed (2005) reported that game status affected the frequency of shots, with less incidence of shots associated to losing status. On the other hand, other studies demonstrated that ball possession depends on the evolution of the score-line, with teams having greater possession when they are losing compared to when they are winning or drawing (Lago et al. 2007, 2009).

However, some studies have highlighted the importance to consider and examine each team individually since their different identities may moderate the impact of the situational variables (Hughes and Reed, 2005; Collet, 2013). The purpose of this study was to examine the differential effect of the evolving game status in the passing sequences leading to a shot at goal, of four top-level European association football teams.

## 2 METHODS

A total of 20 matches of the final stage of UEFA Champions League (2008-2009) were analysed and 222 passing sequences from 4 different teams (FC Barcelona, Manchester United FC, Chelsea FC, Arsenal FC) were selected for further analysis. As inclusion criteria, all the passing sequences that ended with a shot at goal were selected in order to

capture the way how each team created goal-scoring opportunities. These teams were selected as the most successful ones since they reached the semi-finals of the competition. The dependent variable studied in each sequence was the number of passes per shot ratio (Hughes and Franks, 2005; Collet, 2013). For each team, the passing sequences were distributed by winning, losing and drawing game episodes.

We performed an automatic cluster classification analysis (Two Step cluster) with the overall data, which allowed identifying three groups of passing sequences divided by their substantial differences. Secondly we applied another automatic cluster classification (Two Step Cluster) to identify differences within each game status and to compare for differences between groups of long and short sequences. Finally we applied the Chi-square test with contingency tables (between -1.5 and 1.5) comparing the four teams with the evolving game status.

## 3 RESULTS

The results revealed that Barcelona was the team with large number of passing sequences, while Chelsea showed the lowest total number of passing sequences. When teams were losing there was a tendency for an absence of short passing sequences, while winning teams increased the relative number of these short sequences. Data also revealed important differences between teams, with Barcelona and Manchester United showing superior capacity to increase retention of possession when drawing than when winning.

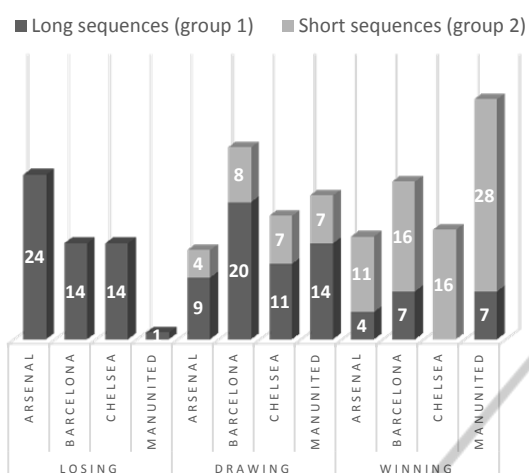


Figure 1: Number of long passing sequences (group 1) and short passing sequences (group 2) by team and according game status ( $p > 0.05$ ).

#### 4 DISCUSSION

Generally, in the overall data the number of passing sequences identified in each game status increased with a higher favourable scoreline. This data somewhat contradicts Lago et al. (2012), who found a decreasing likelihood of reaching the scoring zone as the status of the game was more favourable. The four teams investigated in this study used preferentially long passing sequences when they were losing or drawing, and short passing sequences when they were winning, which agrees with Lago and Martin (2007) and Lago (2009) who found greater possession when teams were losing.

The results obtained emphasise the idea of Lago (2009), for whom the strategies in football are influenced by the scoreline and teams change their style of play during the match accordingly.

The results revealed also substantial differences of passing sequences length between teams and game status. These findings mean that different teams distinctively adapt themselves to changes in relevant performance constraints such as the evolving game status, which reveal what Hughes and Reed (2005) called team's signatures of play.

#### 5 CONCLUSIONS

Findings suggested that top-level European teams tended to differently adapt the length of their passing sequences as a function of the evolving game status.

These different behaviours of teams in similar game contexts support the idea of Castellano, Casamichana and Lago (2012) that teams can be differentiated between them based on the relation between their possession characteristics and performance effectiveness.

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