

Background

- The full-back role is an ever-evolving position, with more technically proficient players expected to fulfil both defensive and attacking duties.
- Given the fluidity of the position, there are now a wide variety of full-back profiles, each with differing strengths and weaknesses.
- However, assessing player performance based on raw individual statistics does not provide an accurate profile of a player's style of play.
- Principal Components Analysis (PCA)** can statistically reduce a large set of variables (e.g. blocks, interceptions, clearances) to a small set of factors (e.g. defensive play), whilst still retaining most of the information.

Method

- Event data from 419 full-backs across English Premier League, La Liga, Bundesliga and Serie A entered into separate PCA analyses for 2015/16 & 2016/17 season.

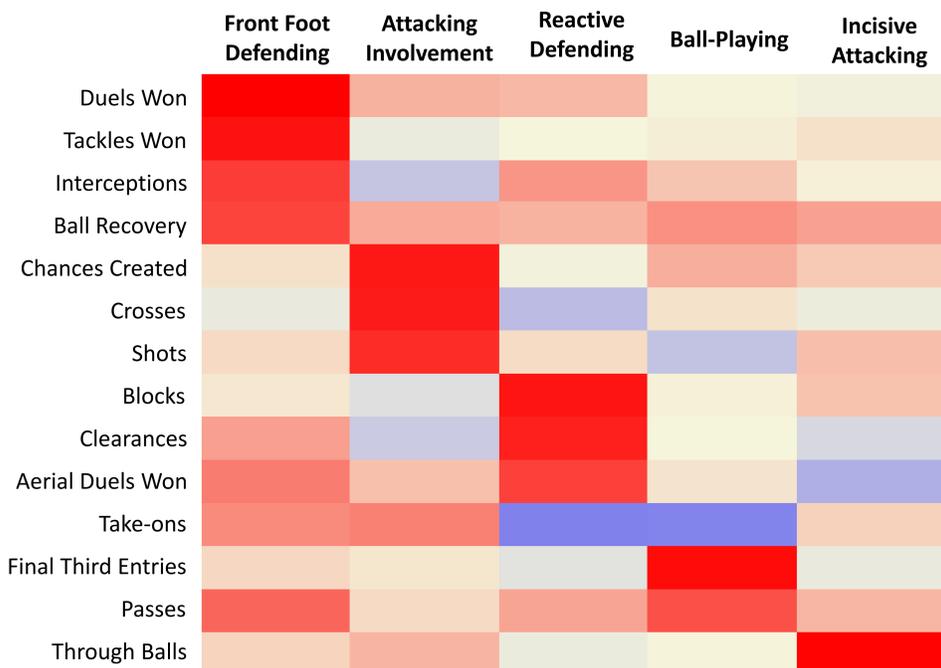
Defensive*	Offensive	General Play
Tackles Won	Crosses	Passes
Interceptions	Shots	Duels Won
Ball Recovery	Through Balls	Aerial Duels Won
Blocks	Take-ons	Final Third Entries
Clearances	Chances Created	

**Possession-adjusted defensive statistics.
All statistics adjusted per 90 minutes*

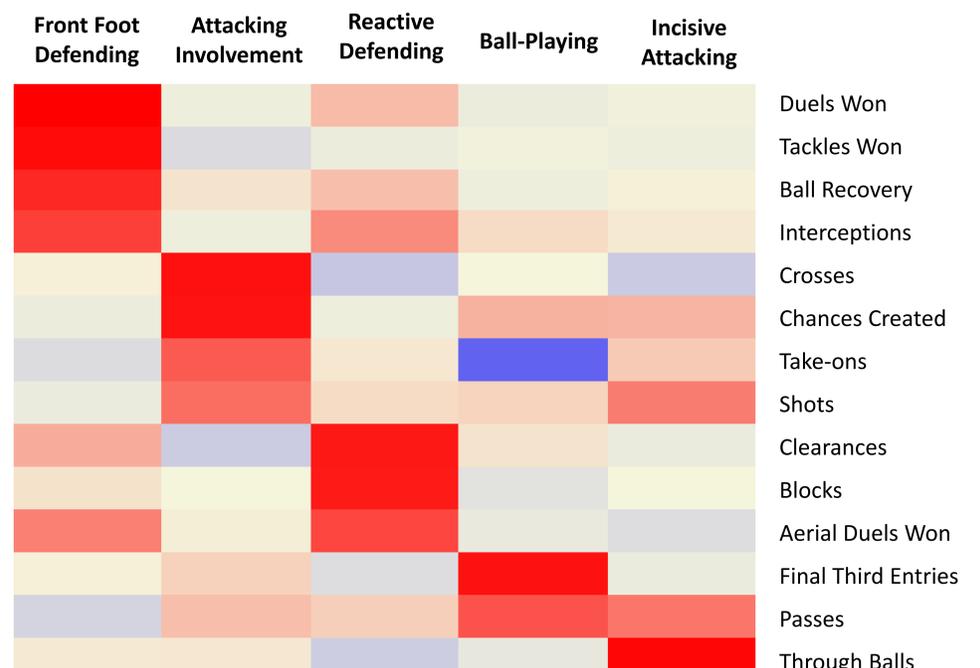
- This allows us to run a **Cluster Analysis**, which groups players on how similar their styles are to each other.
- Further, we can quantify how much a player 'loads' onto each playing style.

Results – Principal Components Analysis

2015/16 Season

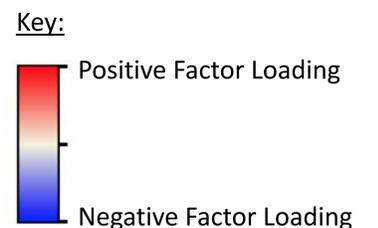


2016/17 Season



Player Dimensions

- Front-Foot Defending** - Wins duels, makes interceptions, and recovers loose balls.
- Attack Involvement** - Gets forward regularly, with high volume of crosses, shots, and chances created.
- Reactive Defending** - Plays on the back-foot, with main focus to defend well.
- Ball-playing** - Plays a lot of passes and plays the ball into the final third regularly.
- Incisive Attacking** - Plays high volume of passes and through balls.



Applications

- PCA compresses many related variables into fewer main categories, allowing a broader comparison between players.
- Clubs can screen transfer targets objectively, without bias, to accurately recruit a profile of player that fits with the club's style of play.
- PCA can also provide useful tactical analysis of opposition players, to determine the playing style of certain positions in order to target opposition weaknesses.
- This analysis is sensitive enough to identify changes or developments in playing style, within and between seasons.