

A group of Leicester City football players in blue kits are celebrating their Premier League victory. They are gathered around the Premier League trophy, which is held in the center. The players are wearing blue jerseys with the Leicester City crest and the Barclays logo. They are all smiling and shouting with joy. The background shows the King Power Stadium with blue banners featuring the Barclays logo and the hashtag #Spirit. The text "Against All Odds: Leicester City's Triumphant Journey to Premier League Glory" is overlaid in white on the image.

Against All Odds: Leicester City's Triumphant Journey to Premier League Glory

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Background

2015/2016 Premier League Season:

- Leicester City Football Club achieved the unimaginable by defying all odds and capturing their first-ever Premier League title.

The Why Factor:

- All of the news articles that were published about this event only stated the odds and did not provide any statistics to explain their numbers
- This phenomenon was never explained with reasons that could convince us.



Our Question:

How did Leicester City Football Club win the English Premier League contrary to all expectations?



Goals and Understandings



1. Create Models to Establish Leicester's Actual Title Odds and Break Down the Odds Into Categories of "Luck" and "Skill"

1. Identify How A Unique Tactical Strategy and Key Players Made Leicester's Title Victory Possible

1. Identify Confounding and Chance Factors Contributing to Leicester's Title

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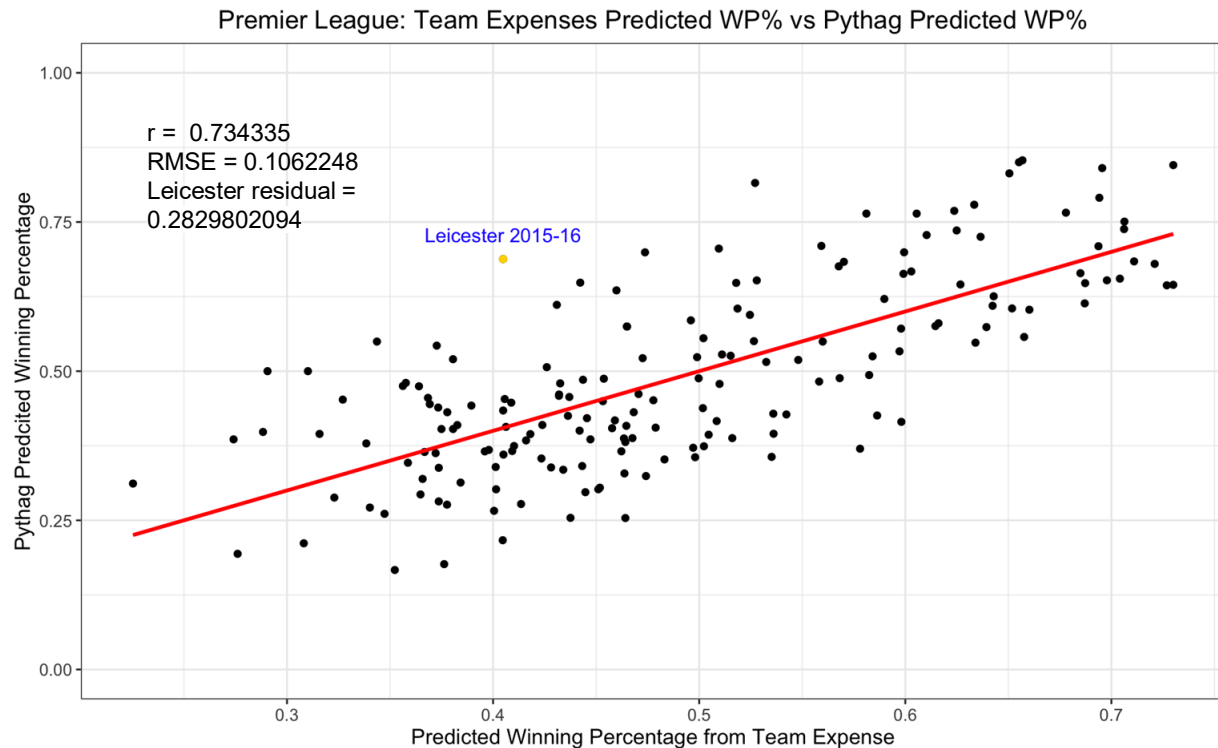
Null Statement

Leicester City Football Club's
2015/16 English Premier
League title win was due
entirely to chance and luck.

A celebratory scene featuring Leicester City football players and their manager, Claudio Ranieri, in blue kits and suits. They are holding the Premier League trophy and celebrating with confetti. The background is a stadium filled with fans.

Calculating Leicester's Actual Title Odds

Team Expense Model - The Skill Factor



Expense Produces
Performance

Team Expense = (Weighted)
Payroll & Transfer
Expenditure

$$WP = (W/G) + (1/3)(D/G)$$

$$\beta = 1.24208$$

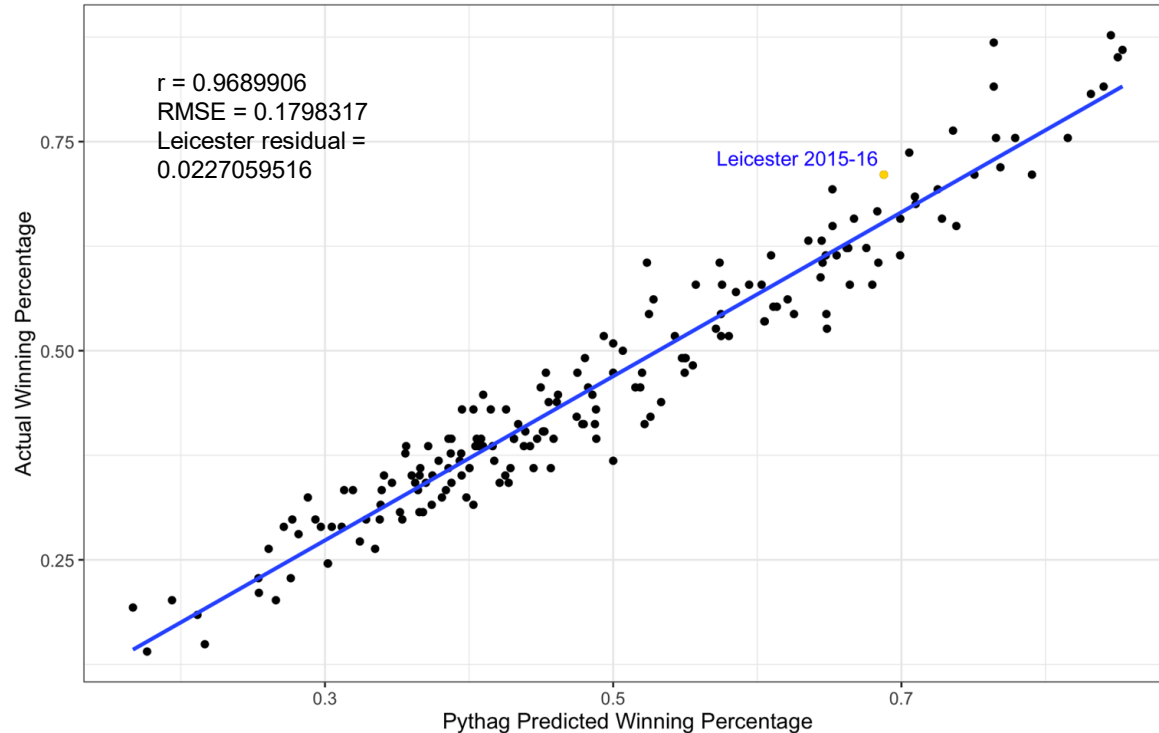
$$GS^{.24208} (GS^{.24208} + GA^{.24208})$$

Leicester 2016 Z Score =
2.663975986

“Skill Factor”

Pythag Model - The Luck Factor

Premier League: Pythag Predicted WP% vs Actual WP%



Performance Produces Actual WP%

Above Line = Lucky Team

$$WP = (W/G) + (1/3)(D/G)$$

$$\beta = 1.24208$$

$$GS^{1.24208} / (GS^{1.24208} + GA^{1.24208})$$

Leicester 2016 Z Score = **1.355616**

“Luck Factor”

Luckiest Champion?

Combined Z Score and Actual Odds

2.663975986 (Skill-based residual Z score) + 1.355616 (Luck-based residual Z score) =
4.019591986

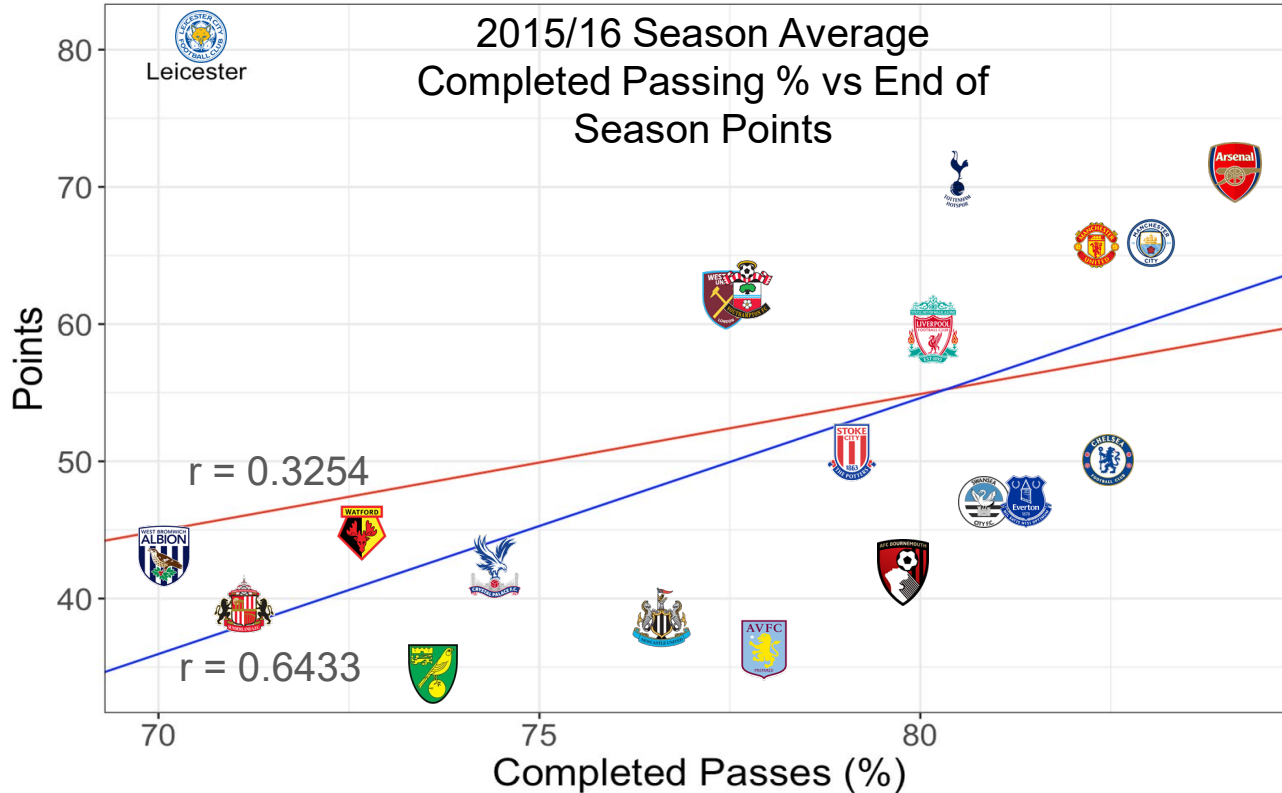
- Produces **15,000 to 1 odds** of a title victory
- Attribute most make-up to **skill**
- How could they have overperformed that greatly?



A large group of Manchester City players and staff celebrating on a football pitch. They are wearing blue kits and holding the Premier League trophy. The background is a large crowd of fans. The scene is overlaid with a semi-transparent blue banner at the top and bottom containing the Barclays Premier League logo and the text 'CHAMPIONS 2015/16'. The central text 'Defensive & Offensive Strategy' is written in white over the players.

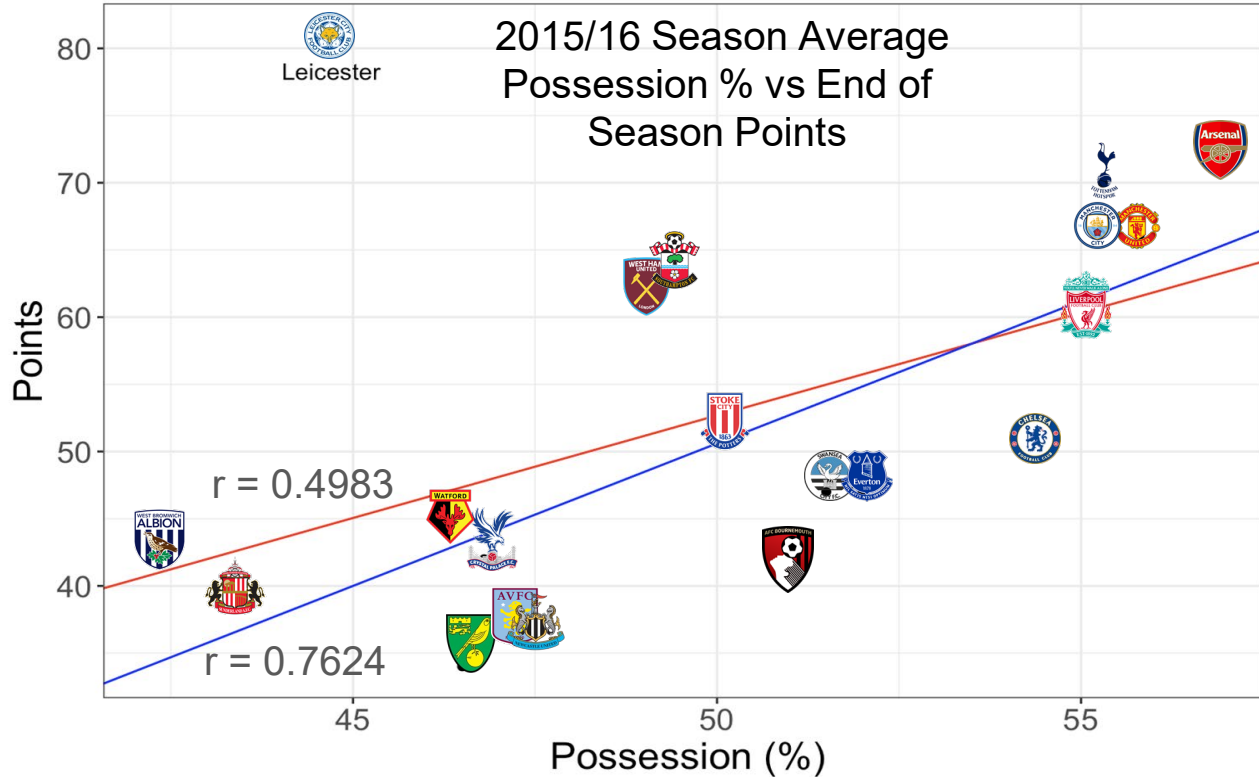
Defensive & Offensive Strategy

Completed Pass % vs Pts



Team	Pass Completion %
Arsenal	84.2
Manchester City	83.1
Chelsea	82.5
Manchester United	82.3
Everton	81.4
Swansea	80.9
Tottenham	80.5
Liverpool	80.2
Bournemouth	79.8
Stoke	79.1
Aston Villa	77.8
Southampton	77.7
West Ham	77.6
Newcastle	76.6
Crystal Palace	74.4
Norwich City	73.6
Watford	72.6
Sunderland	71
Leicester	70.5
West Bromwich Albion	70

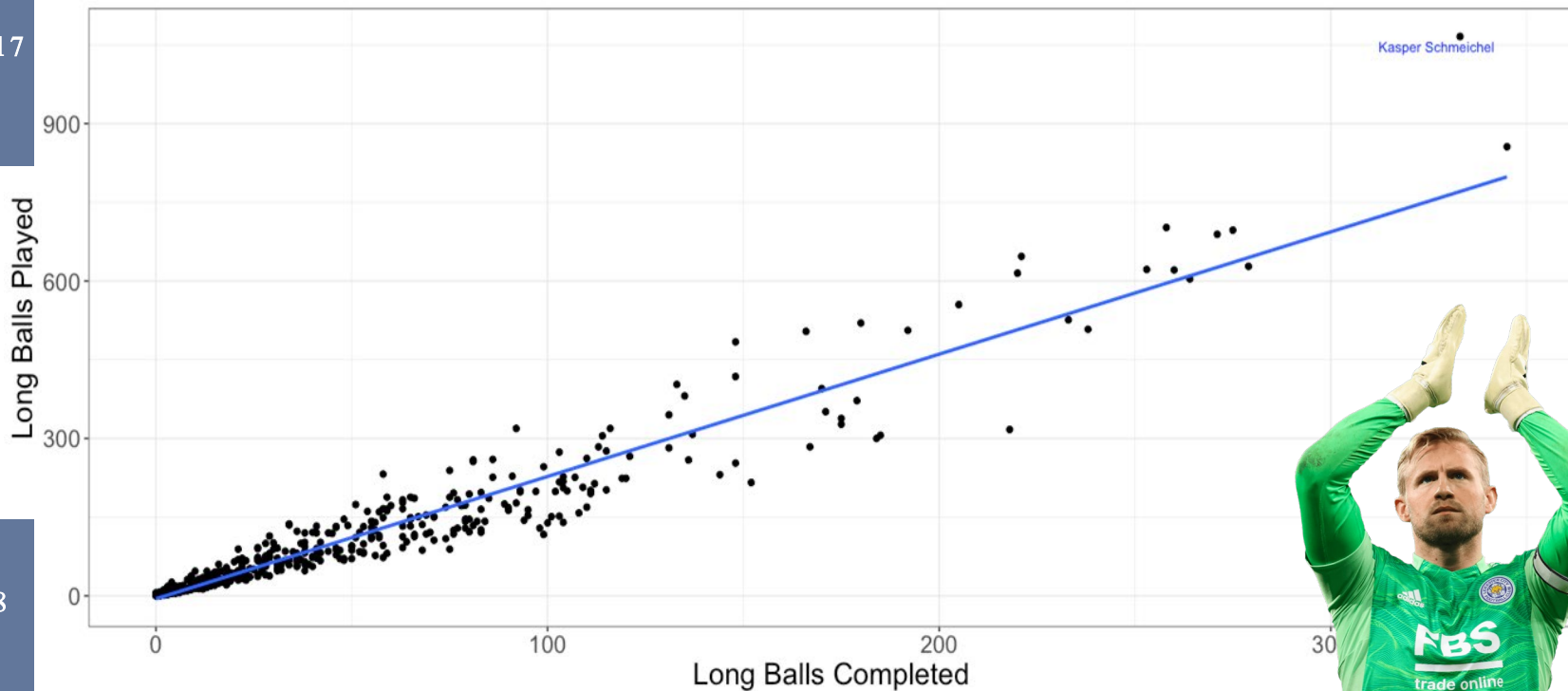
Possession % vs Pts



Team	Possession %
Arsenal	56.9
Manchester United	55.8
Tottenham	55.3
Manchester City	55.2
Liverpool	55
Chelsea	54.4
Swansea	52
Everton	51.5
Bournemouth	51
Stoke	50
Southampton	49.3
West Ham	49.1
Newcastle	47.4
Aston Villa	47.3
Crystal Palace	46.8
Norwich City	46.5
Watford	46.3
Leicester	44.7
Sunderland	43.3
West Bromwich Albion	42.3

Successful Long Passes 2015/16

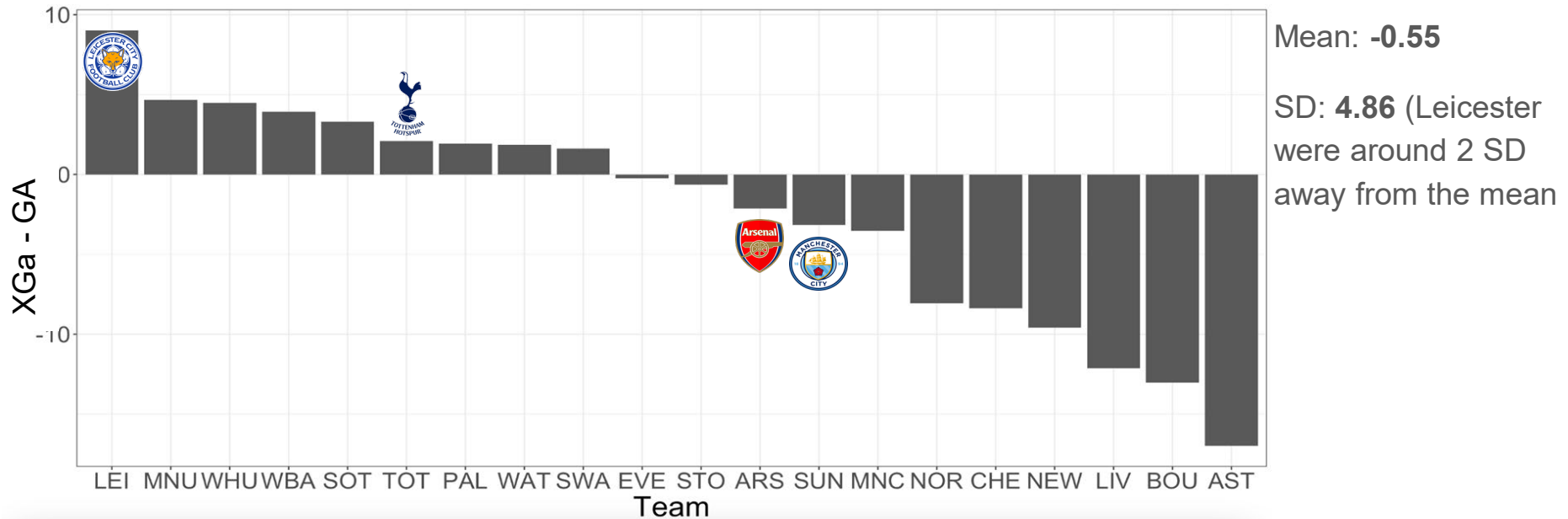
Attempted
Mean: 206.6117
SD: 155.3160
Z: 5.5332



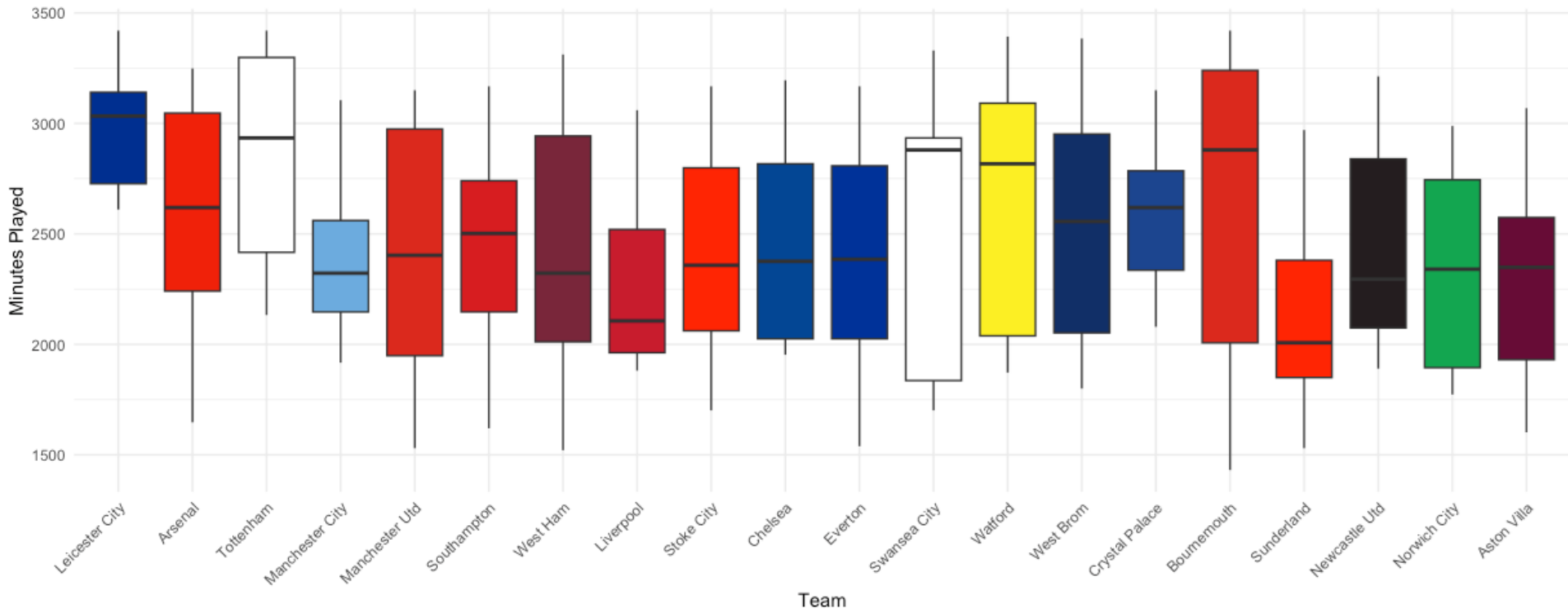
Completed
Mean: 44.8998
SD: 55.2422
Z: 3.8127



xGA-GA in 2015/16 Season



Distribution of Minutes For Top 11 Players 2015/16



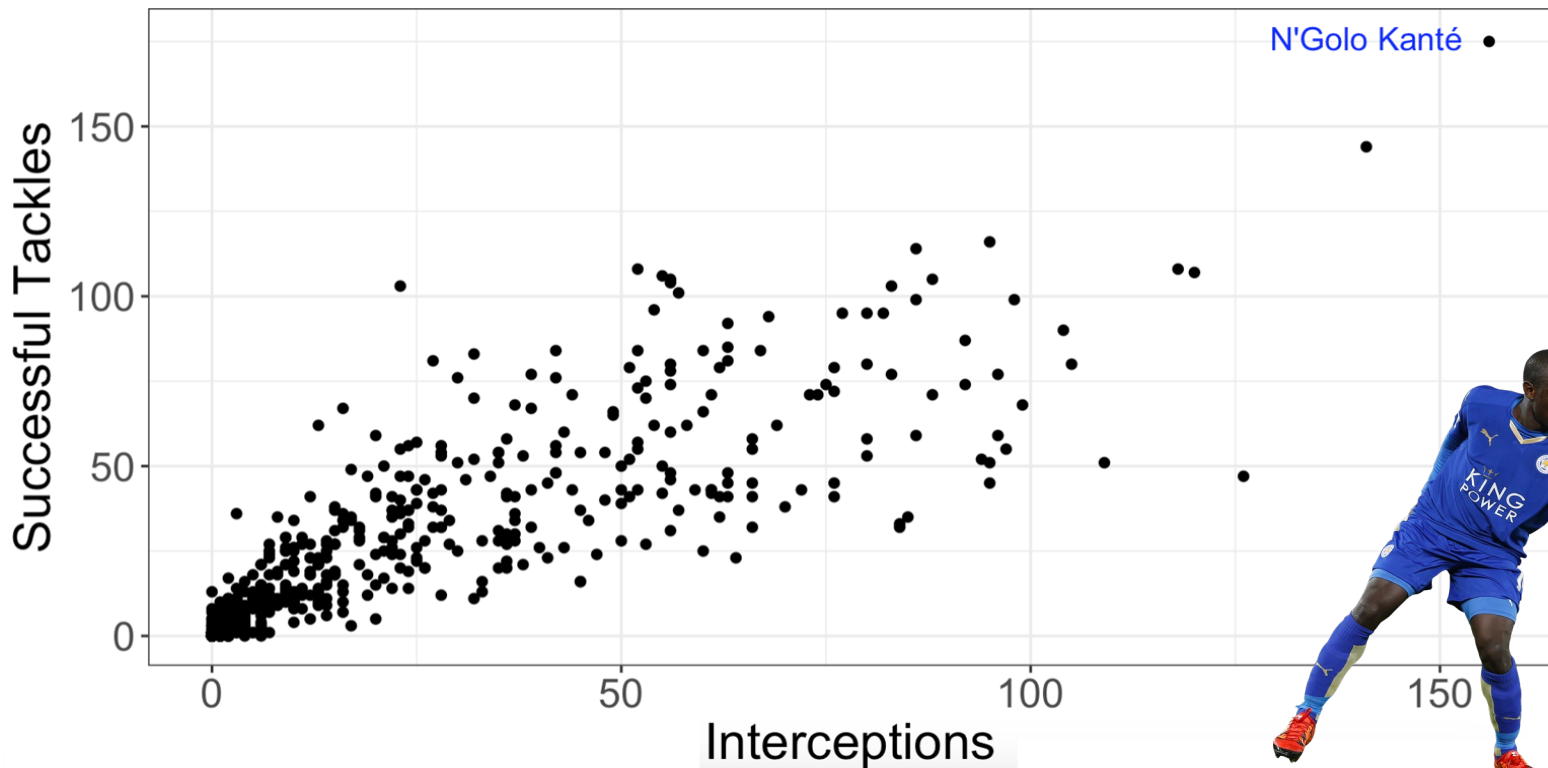
A celebratory scene from the 2015-16 Premier League season. Leicester City players and staff are gathered around a large trophy, the FA Cup, which is prominently displayed in the center. The players are wearing their blue home kit, and many are wearing medals. A man in a suit is clapping, and another man in a suit is kneeling in the foreground, smiling. A large blue banner in the foreground reads "BARCLAYS PREMIER LEAGUE CHAMPIONS 2015-16". The background is filled with more players and staff, all celebrating the team's victory.

Individual Players

Outstanding Performer: N'Golo Kanté

Tackles
Mean: 74.6442
SD: 21.5071
Z: 4.6662

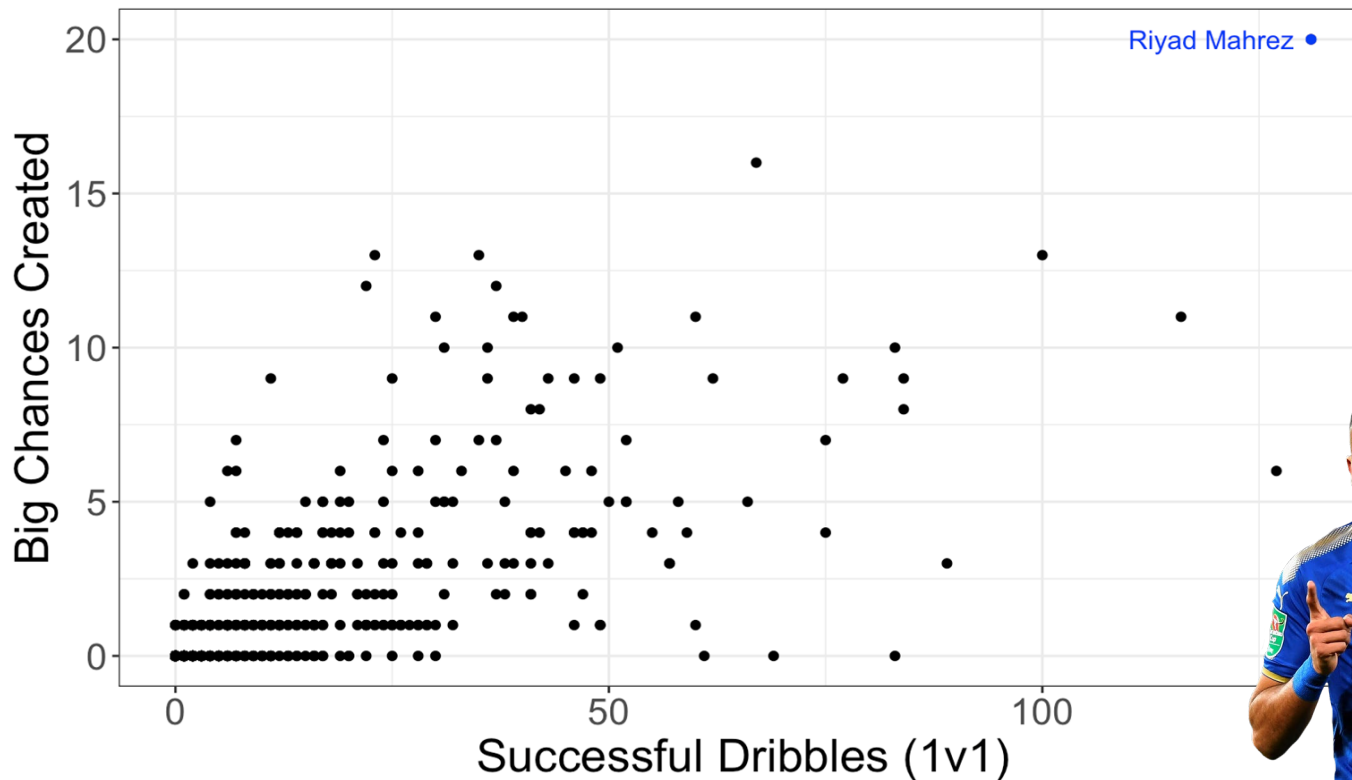
Interceptions
Mean: 59.8650
SD: 23.3815
Z: 4.1116



Outstanding Performer: Riyad Mahrez

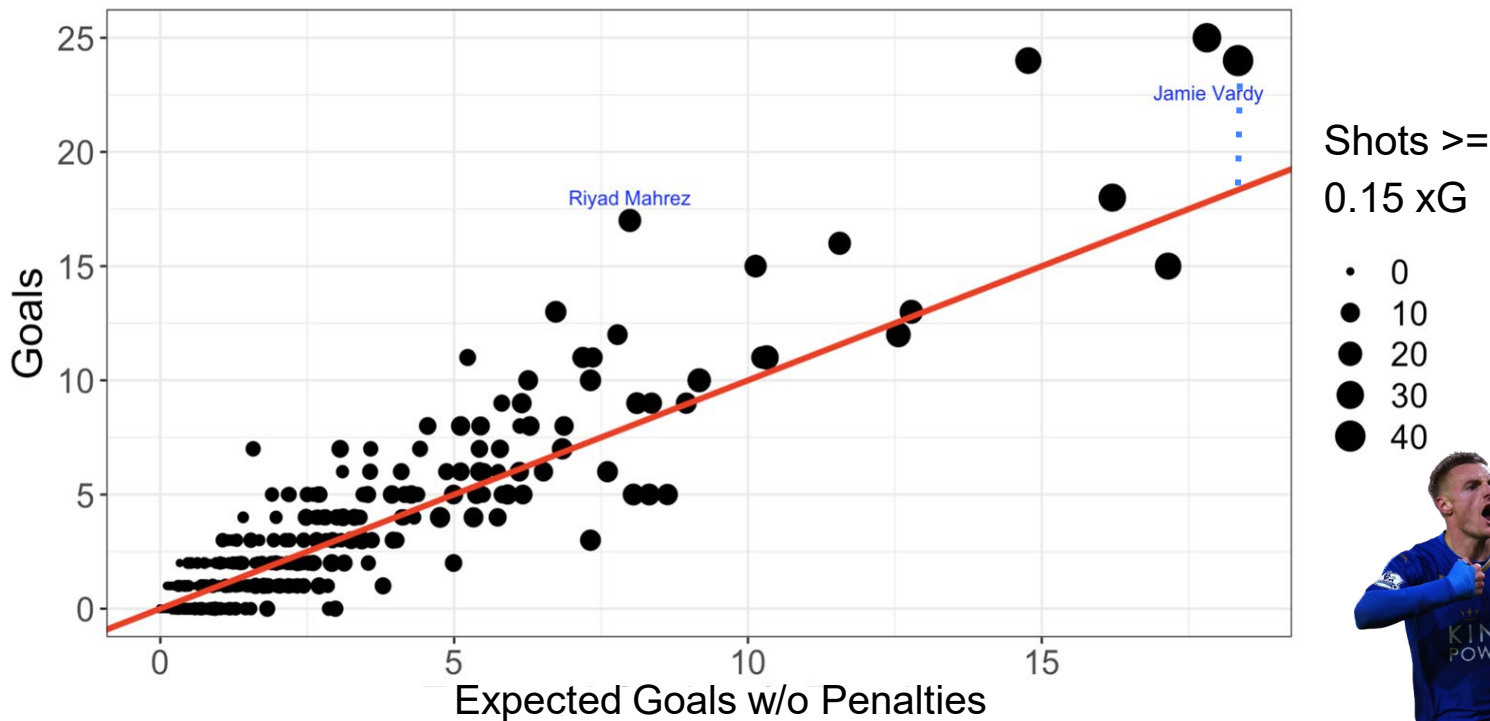
Big Chances
Mean: 6.9239
SD: 3.8199
Z: 3.4231

1v1 Dribbles
Mean: 51.2346
SD: 21.3334
Z: 33.7390



Outstanding Performer: Jamie Vardy

xG vs Goals



RMSE: 1.44

Jamie Vardy was **3.93 SD** above his predicted goals

Riyad Mahrez was **6.25 SD** above his predicted goals



A group of Manchester United players in blue kits are celebrating, holding a large silver trophy. A man in a suit is presenting the trophy to one of the players. The scene is filled with joy and excitement.

Chance & Confounding Factors

Underestimation
by Opponents

Consistency

Lack of European
Soccer/Football



Confounding Factors

Underestimation
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Confounding Factors

Underestimation
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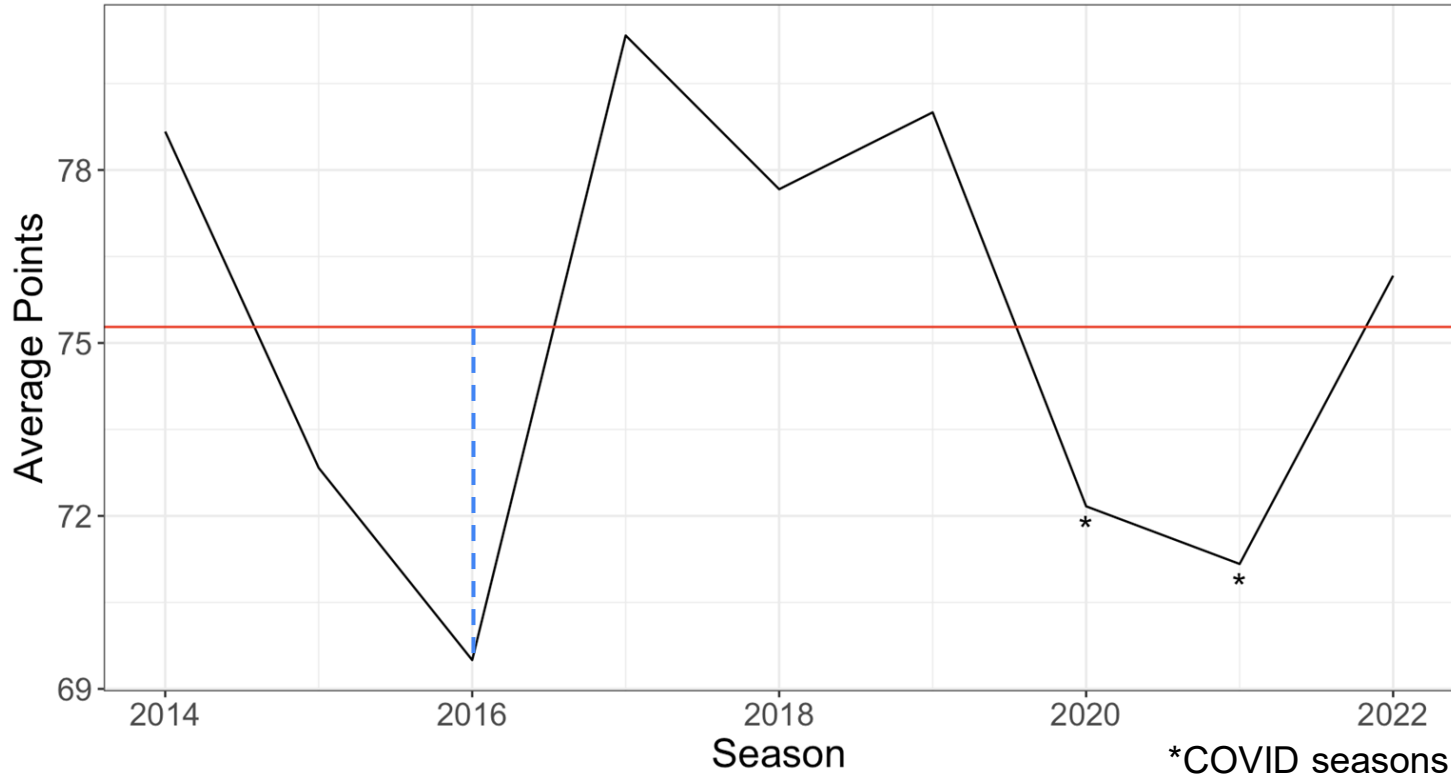
Consistency

Lack of European
Soccer/Football



Confounding Factors

Average Points per Season (Top 6 Teams)



2016 Season Mean:
69.5 pts

2016 Season SD:
6.35 pts

Overall Mean:
75.28

Overall SD:
3.70

2016 Z score:
-1.56 (5.78 pts)

*COVID seasons

Thank You
For Listening



Sources

<https://www.kaggle.com/datasets>

<https://www.skysports.com/football>

<https://understat.com/team/Leicester>

<https://www.capology.com/uk/premier-league/payrolls/2015-2016/>

<https://statsbomb.com/wp-content/uploads/2022/08/Working-with-R.pdf>