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 BreakDown 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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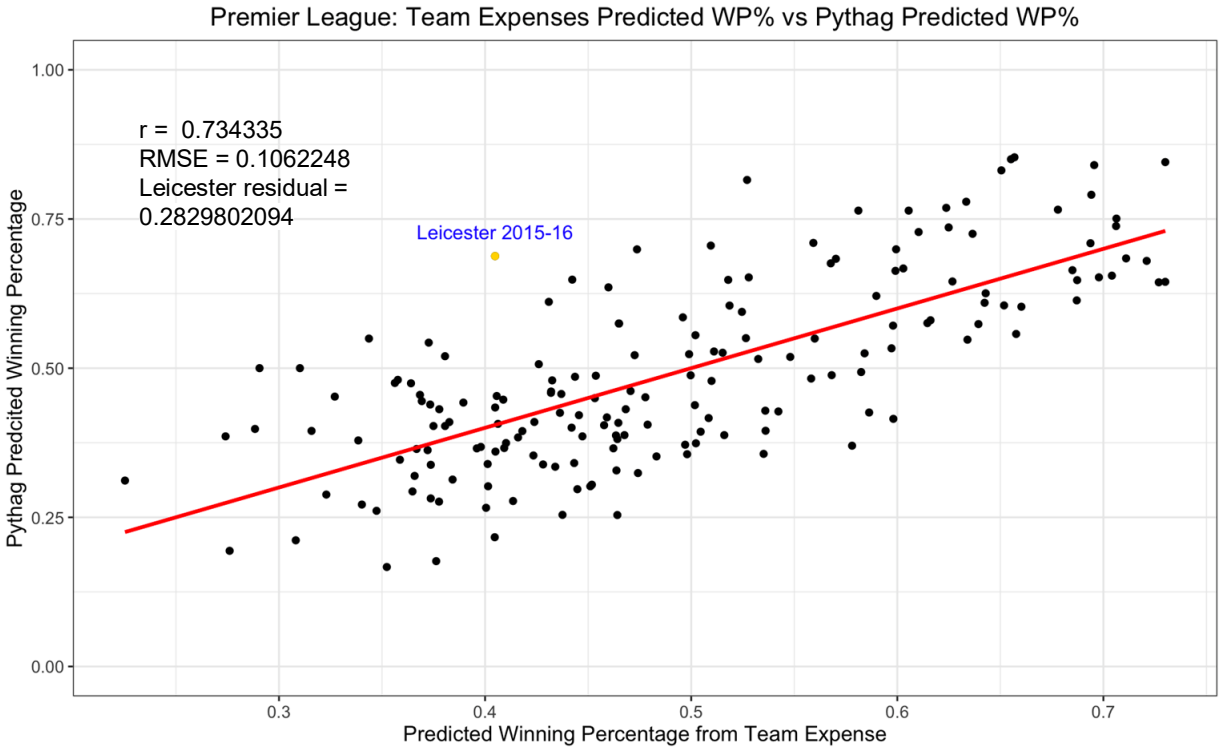
Null Statement

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

Calculating Leicester's Actual Title Odds

Team Expense Model - The Skill Factor



Expense Produces Performance

Team Expense = (Weighted) Payroll & Transfer Expenditure

$WP = (W/G) + (\frac{1}{3})(D/G)$

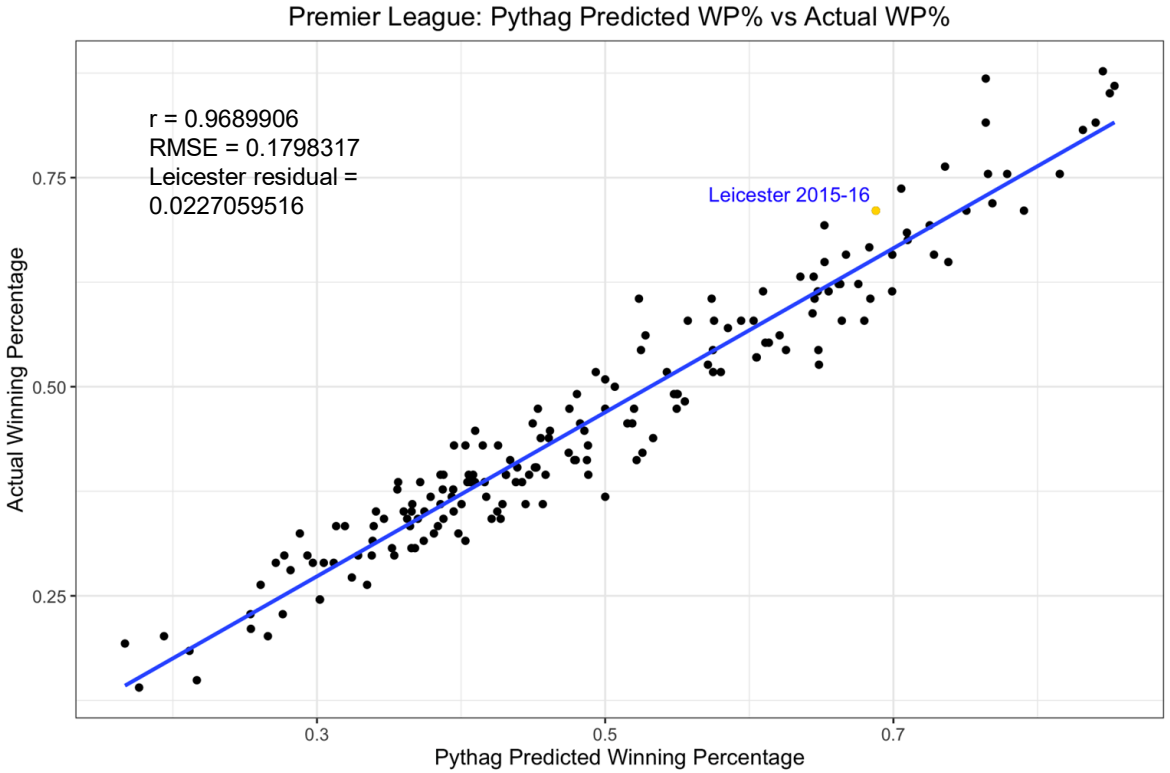
$\beta = 1.24208$

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

Leicester 2016 Z Score = **2.663975986**

"Skill Factor"

Pythag Model - The Luck Factor



Performance Produces Actual WP%

Above Line = Lucky Team

$WP = (W/G) + (\frac{1}{3})(D/G)$

$\beta = 1.24208$

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

Leicester 2016 Z Score = **1.355616**

"Luck Factor"

Luckiest Champion?

Combined Z Score and Actual Odds

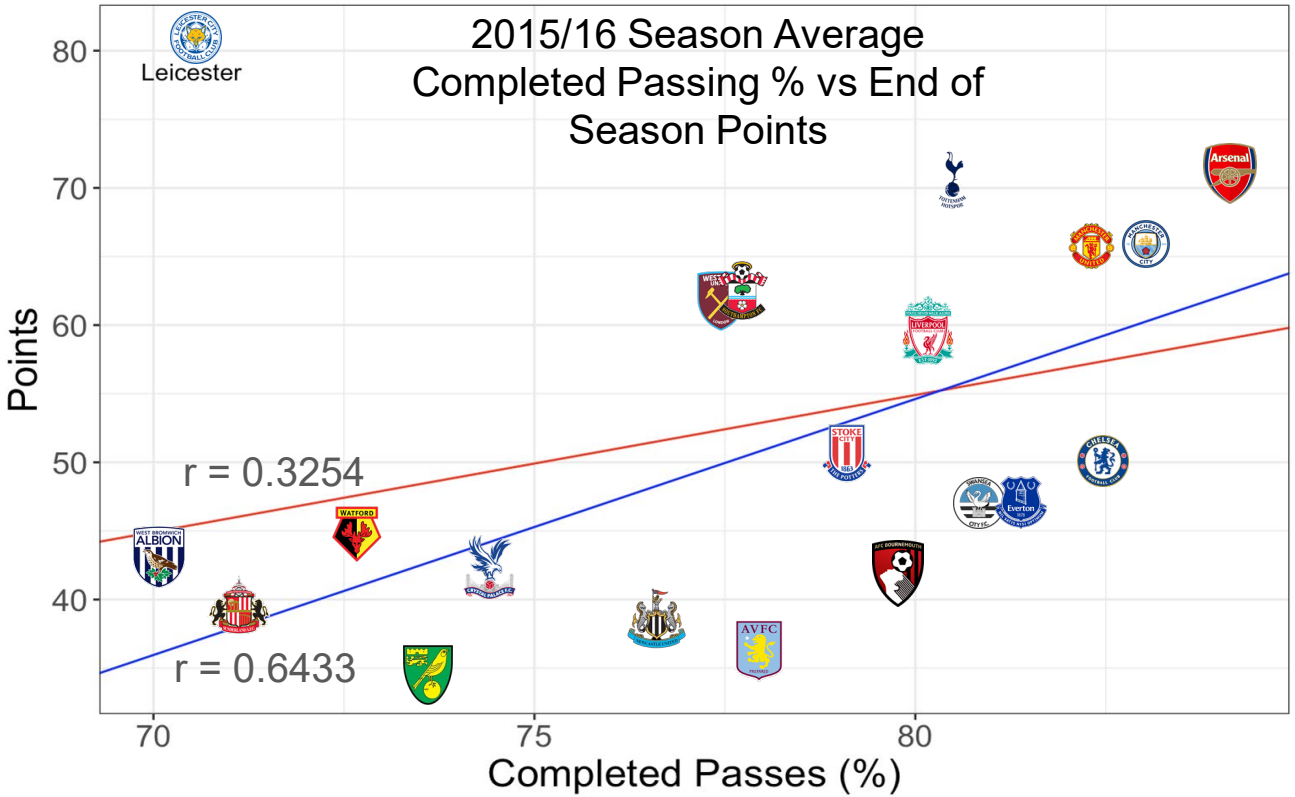
2.663975986 (Skill-based residual Z score) + 1.355616 (Luck-based residual Z score) =

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?

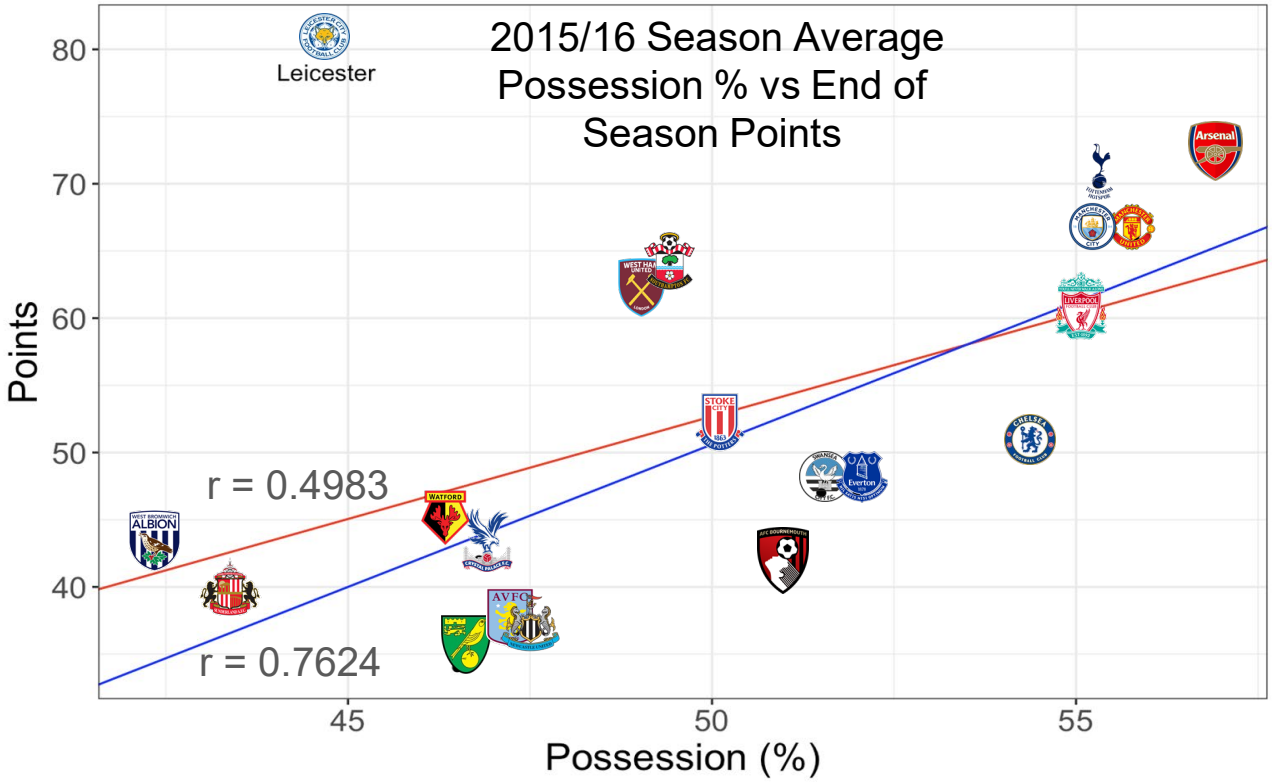
Defensive & Offensive Strategy

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

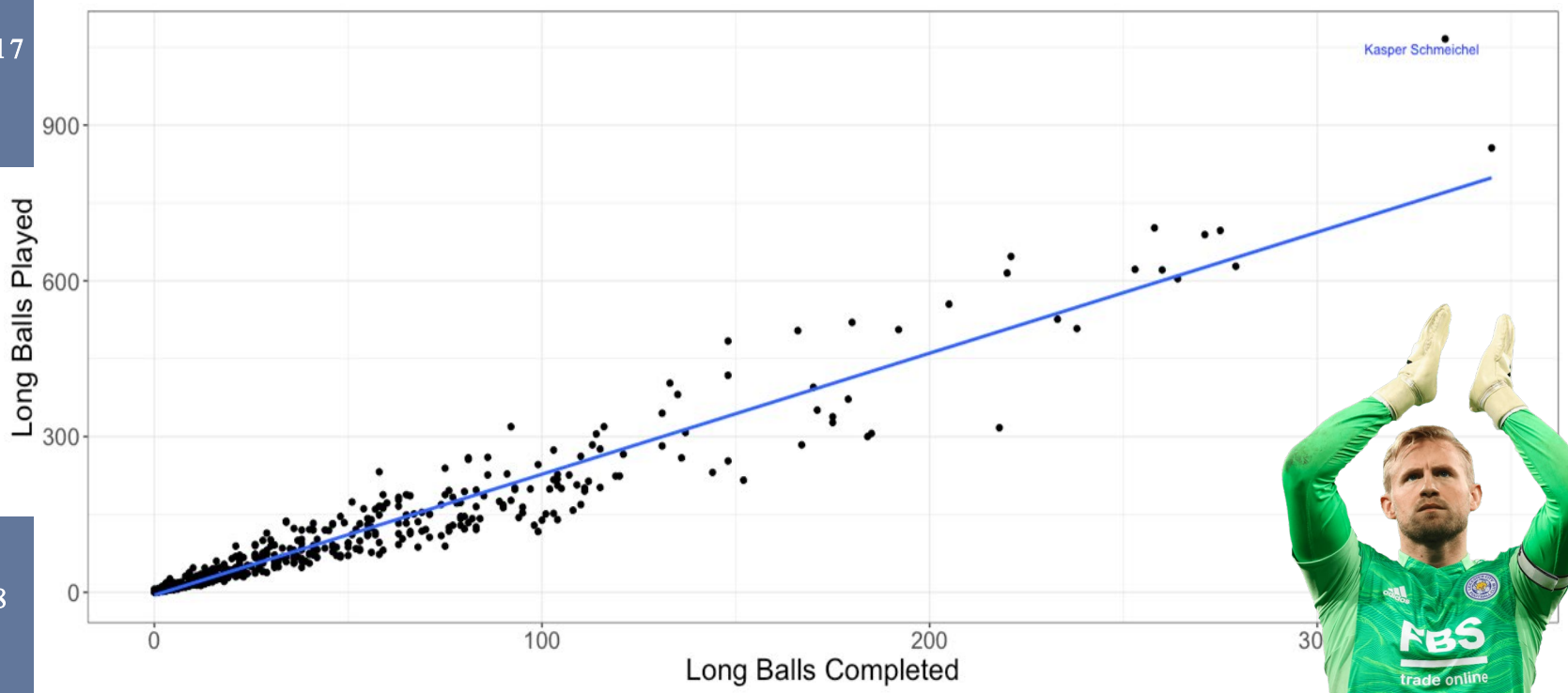
Possession % vs Pts



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

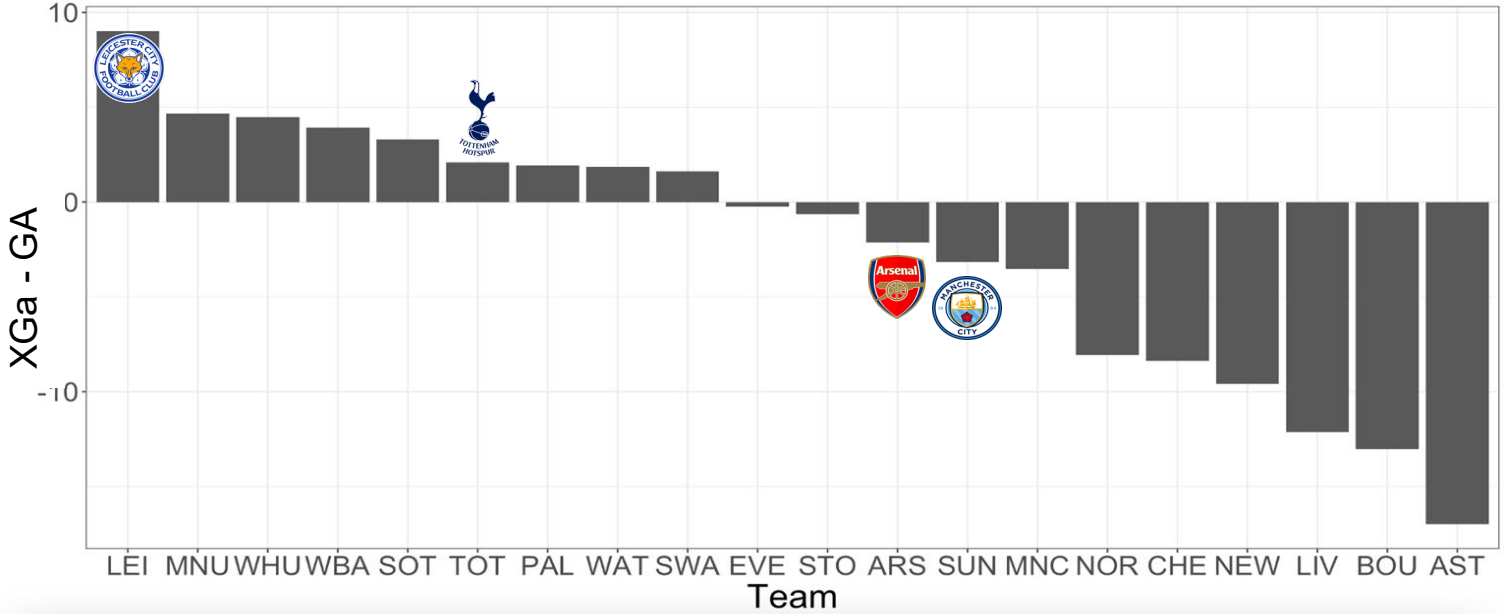
Successful Long Passes 2015/16

Attempted
Mean: 206.6117
SD: 155.3160
Z: 5.5332



Completed
Mean: 44.8998
SD: 55.2422
Z: 3.8127

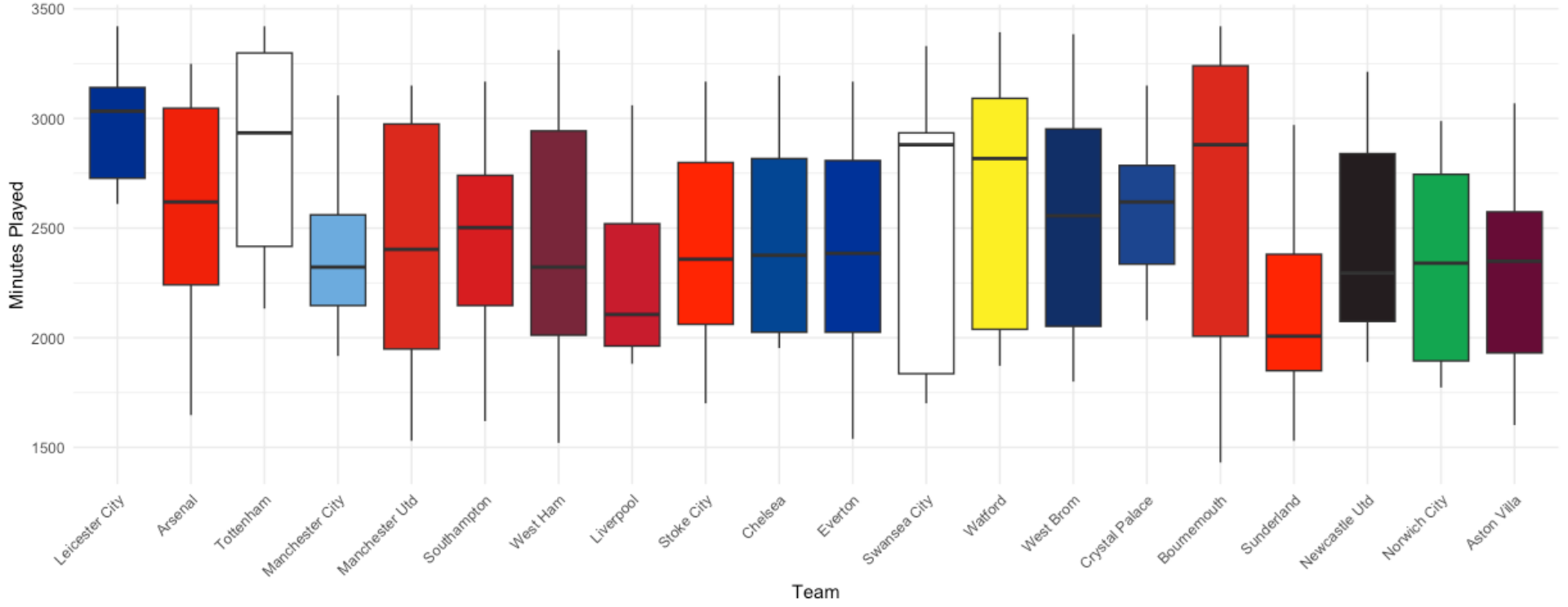
xGA-GA in 2015/16 Season



Mean: **-0.55**

SD: **4.86** (Leicester were around 2 SD away from the mean

Distribution of Minutes For Top 11 Players 2015/16

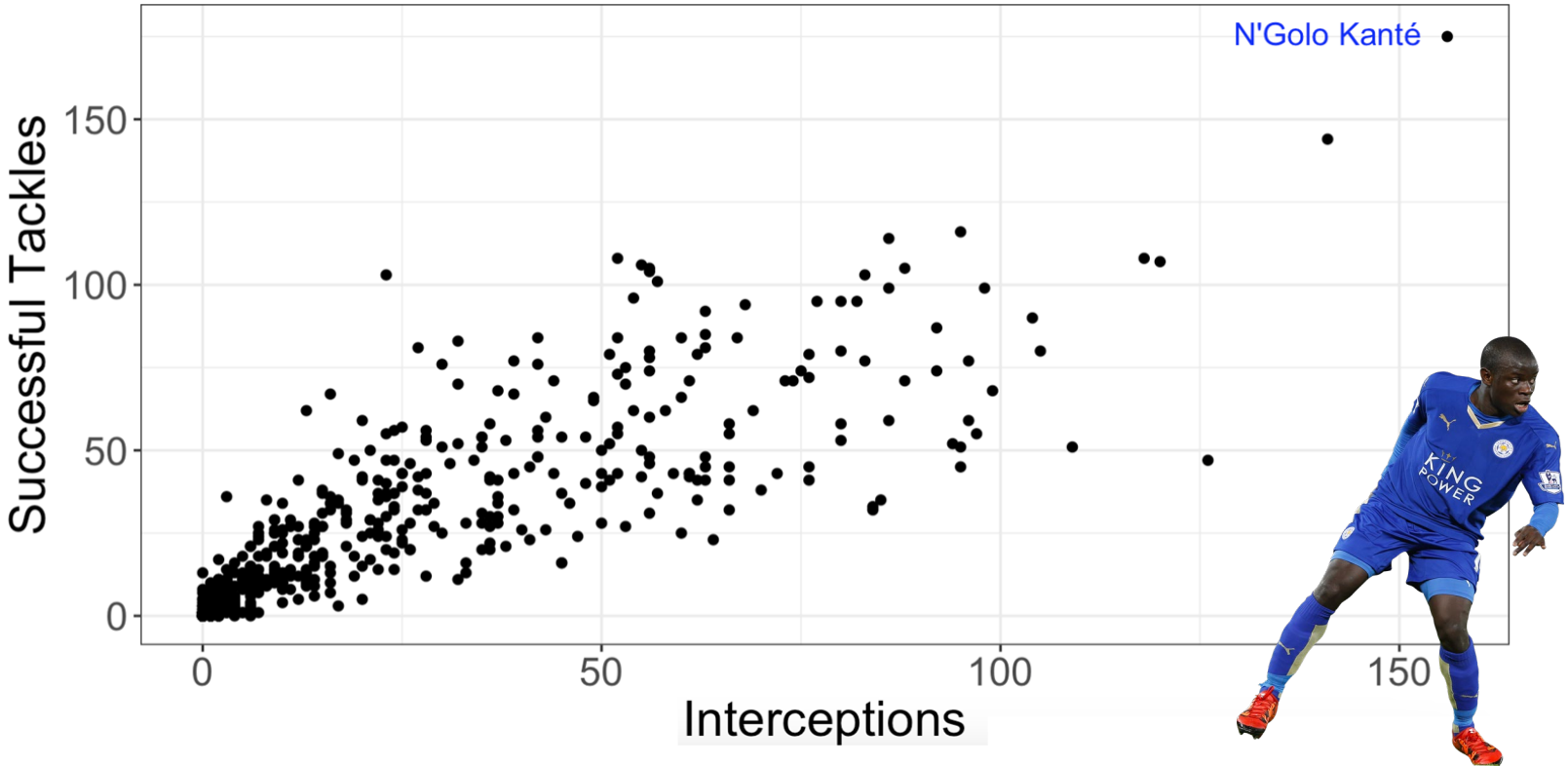


Individual Players

Outstanding Performer: N'Golo Kante

Tackles
Mean: 74.6442
SD: 21.5071
Z: 4.6662

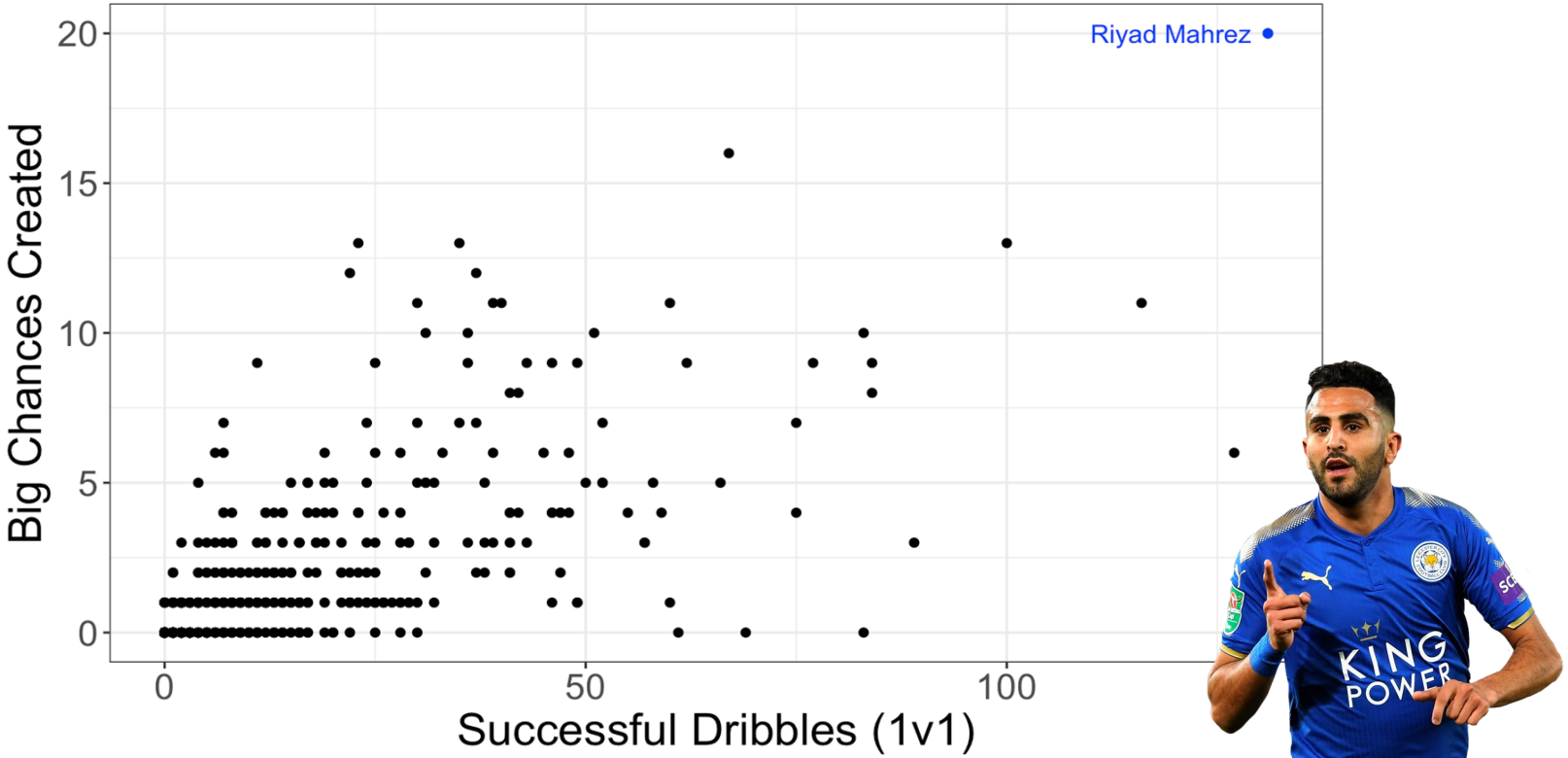
Interceptions
Mean: 59.8650
SD: 23.3815
Z: 4.1116



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

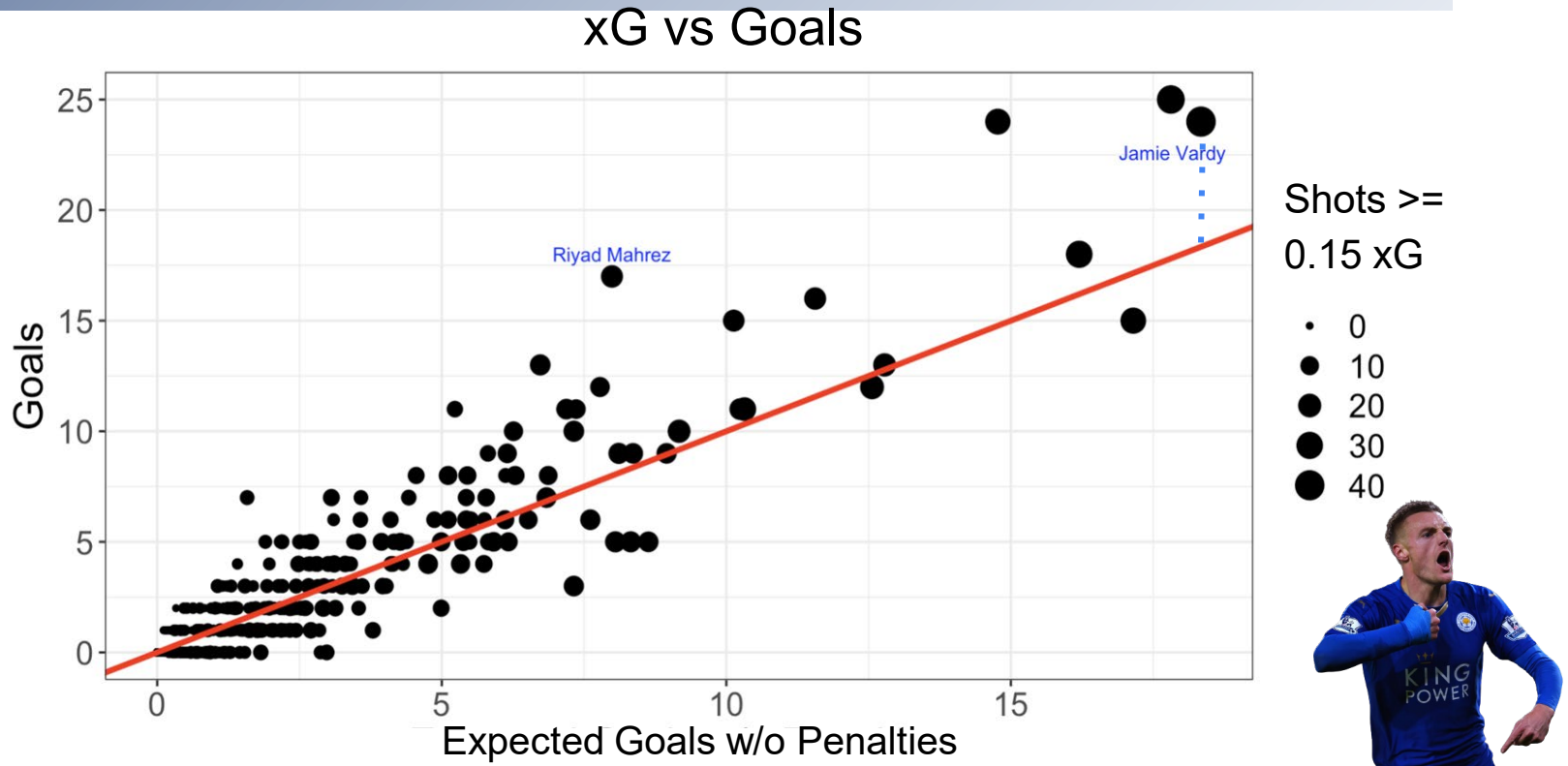


Outstanding Performer: Jamie Vardy

RMSE: 1.44

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

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



Chance & Confounding Factors

Confounding Factors

Underestimation by Opponents

Consistency

Lack of European Soccer/Football

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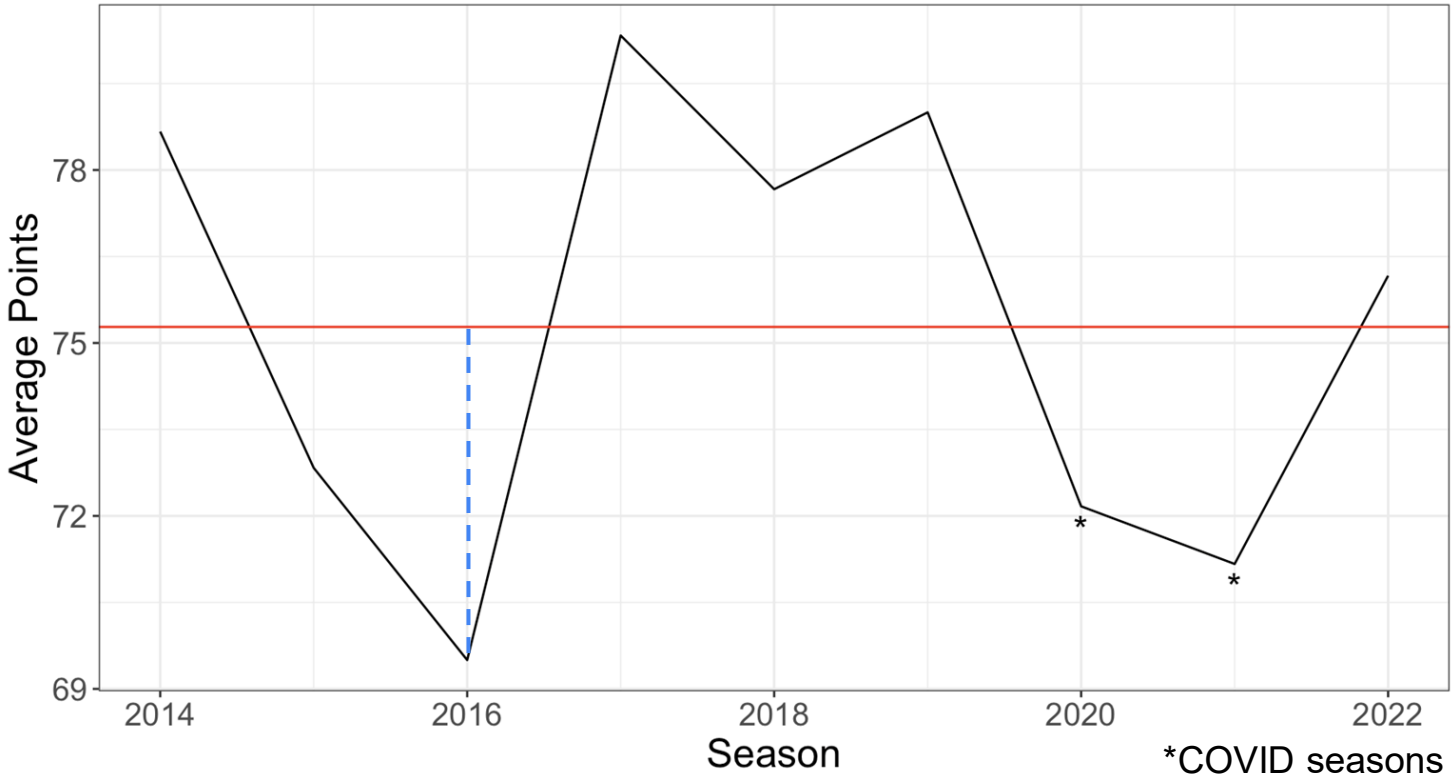
Confounding Factors

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)

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/

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