

# Project Soccer

The winning team

# Our Goal



...(pun intended)

**“Can we determine the key variables in building successful soccer team?”**

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## Success:

Finishing in the  
Top 4 teams in the  
league.

## Variables:

- Financial
- Diversity
- Playing Group

## Our sample:



(2015 - 2019)

# Limitations of Analysis:

There's a lot that goes into a winning team. We could have included:

- Playing style
- Coaching staff
- Experience of team
- Any many others!

This is also a small sample, both based on leagues and also number of years.

**This would only be Phase 1 of a deeper analysis.**

# Financials

*How much does the team spend?*

- Transfer Spend
- Player Wages
- Player Value



# Initial Findings

**Teams with a bigger budget, tend to have a better chance at success.**

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On average, when comparing Top 4 Teams against the League:

- **Player Wages:** spend 1.5 - 2x the amount weekly.
- **Player Value:** have players worth almost 2x the value
- **Transfer budget:** invest 1.5 - 3x the amount on new players

## So which variable is most important?

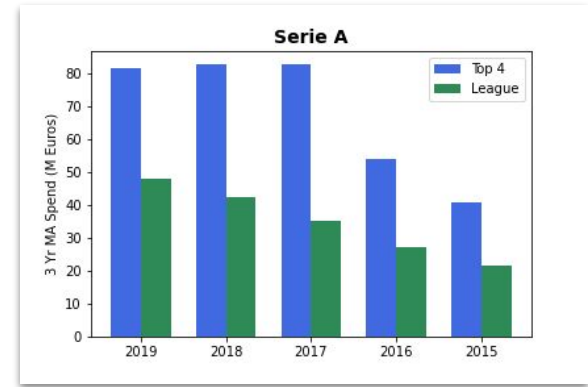
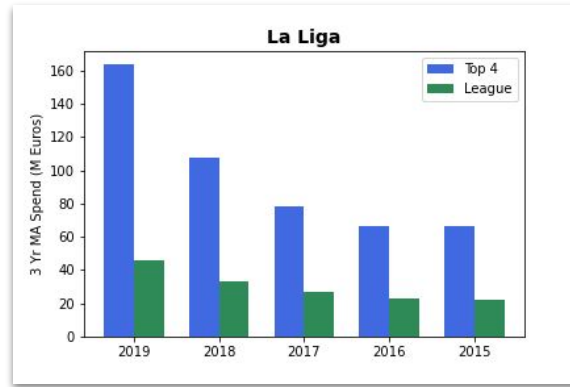
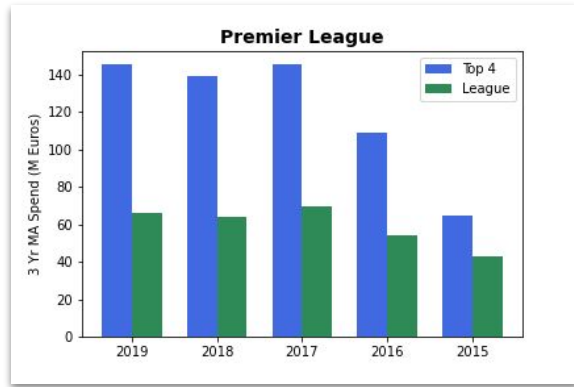
After considering four sets of variables, we can see that Transfer Spend (3 yr MA) has the greatest influence.

When comparing the leagues, money had the greatest influence in the UK.

| Results: R-Squared Analysis |                |         |         |
|-----------------------------|----------------|---------|---------|
| Variables                   | Premier League | La Liga | Serie A |
| Transfer Spend (3 yr MA)    | 0.44           | 0.35    | 0.33    |
| Average Player Wage         | 0.27           | 0.19    | 0.23    |
| Transfer Spend (Single yr)  | 0.21           | 0.26    | 0.30    |
| Average Player Value        | 0.34           | 0.21    | 0.22    |
| Overall Financial Influence | 0.32           | 0.25    | 0.27    |

# Zooming in on Transfer Spend (3 Yr MA)

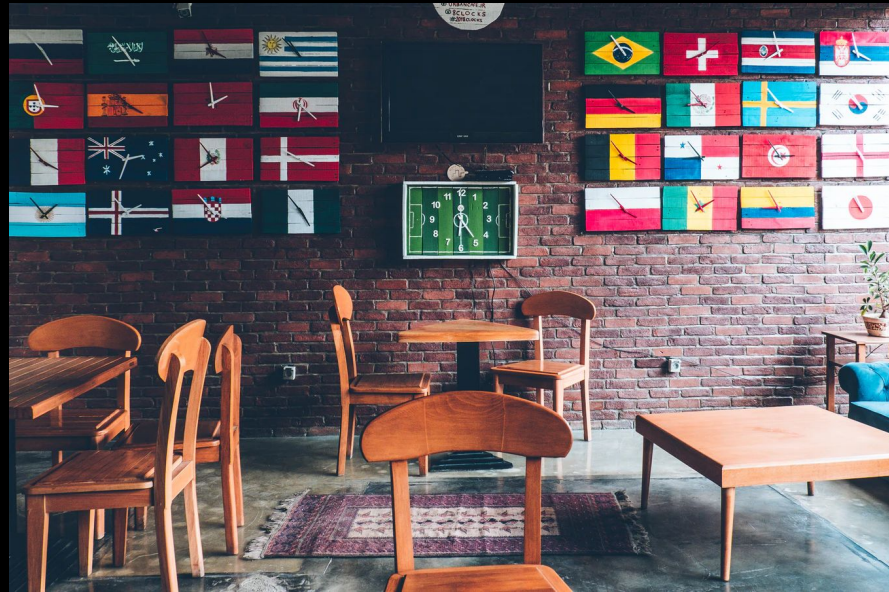
Whilst there is an influence in each league, it is most prevalent in England and Spain where the difference in recent years is as significant as 100m Euros.



# Diversity

*Where do the players come from?*

- Nationality analysis
- Local player %





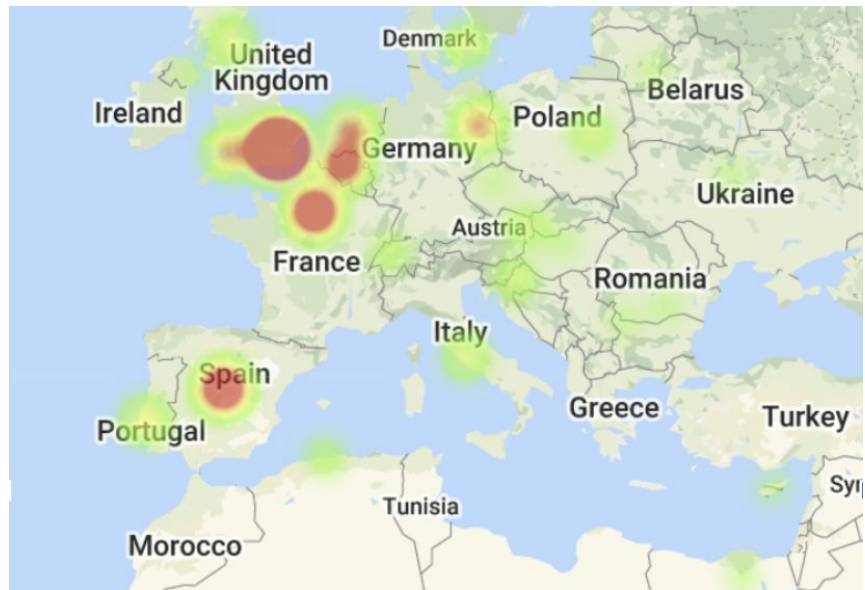
# Diversity analysis: across 2015 - 2019

|                                     | Mean % National Players |             |
|-------------------------------------|-------------------------|-------------|
|                                     | Top 4 Teams             | Last 4 Team |
| <b>Premier League<br/>(England)</b> | 36%                     | 42.1%       |
| <b>Serie A<br/>(Italy)</b>          | 34.98%                  | 64.3%       |
| <b>La Liga<br/>(Spain)</b>          | 47.62%                  | 70.16%      |

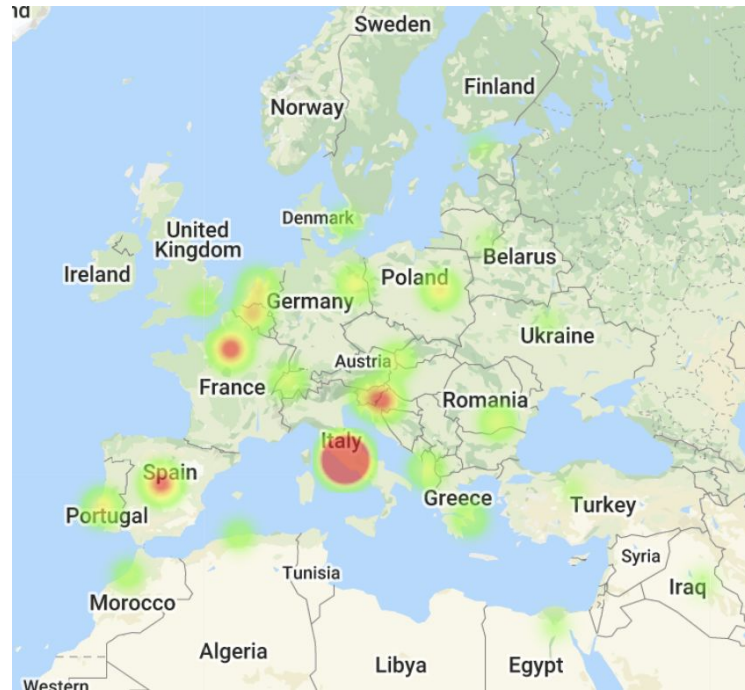
# Key Observations

- **ENG** has the smallest diversity gap between top and last teams.
  - Diversity does not seem to tilt the scale between winnings teams however the percentage of foreign players is quite high (min 56% foreign).
- **IT** has the widest diversity gap with winning teams having a 65% of foreign players and losers 35%.
  - Diversity seems to have a notorious effect to build a winning team in this league.
- **SP** has a wide diversity gap between top and last teams however the winning spanish teams, compared to ENG and IT, has the highest % of national players.
  - Diversity seems to be a relevant variable in the spanish league.

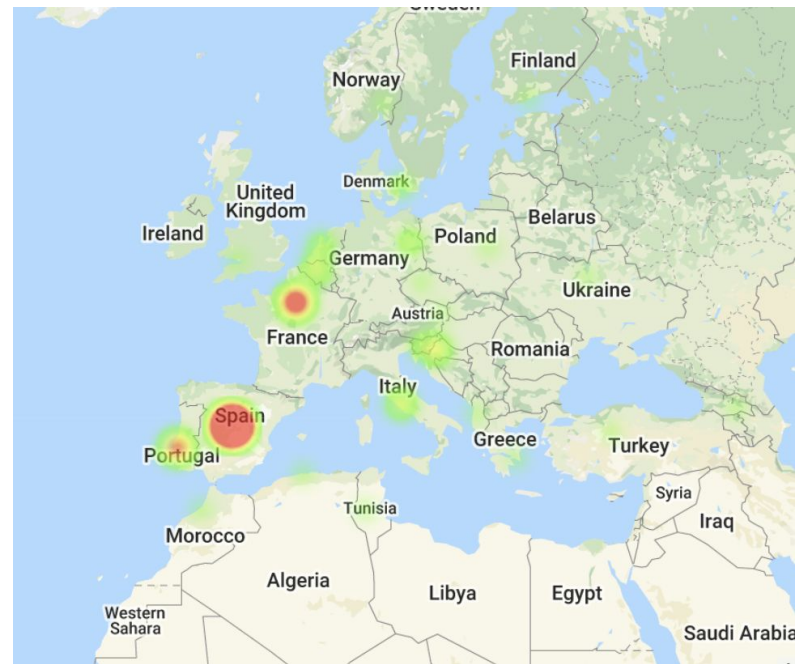
# English League: Top 4 Teams 2015 - 2019



# Italian League: Top 4 Teams 2015 - 2019



# Spanish League: Top 4 Teams 2015 - 2019



# Player Analysis

*What type of players do we have?*

- Age, Weight & Height
- Rating
- Positional



# Playing variables

## General League info :

|                | Goals +<br>League top 4 |    | Goals -<br>League top 4 |    | Avg age<br>League top 4 |    | Avg height<br>League top 4 |     | Avg weight<br>League top 4 |    | Avg rating<br>League top 4 |    |
|----------------|-------------------------|----|-------------------------|----|-------------------------|----|----------------------------|-----|----------------------------|----|----------------------------|----|
| Premier League | 34                      | 50 | 29                      | 19 | 25                      | 24 | 182                        | 182 | 76                         | 75 | 72                         | 75 |
| La Liga        | 33                      | 48 | 27                      | 17 | 25                      | 25 | 181                        | 180 | 74                         | 74 | 72                         | 77 |
| Serie A        | 35                      | 47 | 30                      | 21 | 26                      | 26 | 183                        | 183 | 76                         | 77 | 72                         | 76 |

## The most correlated variables :

|                | Goals + |                    | Goals - |                    | Avg player rating |                    |
|----------------|---------|--------------------|---------|--------------------|-------------------|--------------------|
| Ranking vs.    | Corr    | Fit LM (r-squared) | Corr    | Fit LM (r-squared) | Corr              | Fit LM (r-squared) |
| Premier League | -0.74   | 0.55               | 0.78    | 0.61               | -0.62             | 0.38               |
| La Liga        | -0.66   | 0.44               | 0.69    | 0.48               | -0.62             | 0.38               |
| Serie A        | -0.75   | 0.57               | 0.76    | 0.58               | -0.73             | 0.53               |



# Playing variables

General **player** info :

| team_position | age  | height_cm | weight_kg | overall | potential | value_eur  | wage_eur |
|---------------|------|-----------|-----------|---------|-----------|------------|----------|
| CAM           | 26.0 | 178.0     | 71.0      | 76.0    | 79.0      | 11822414.0 | 38414.0  |
| CB            | 28.0 | 187.0     | 81.0      | 76.0    | 79.0      | 10399747.0 | 40545.0  |
| CDM           | 28.0 | 182.0     | 75.0      | 77.0    | 80.0      | 14585484.0 | 59258.0  |
| CM            | 26.0 | 179.0     | 73.0      | 76.0    | 79.0      | 12476786.0 | 41304.0  |
| GK            | 25.0 | 182.0     | 76.0      | 70.0    | 76.0      | 4859567.0  | 23800.0  |
| LB            | 27.0 | 183.0     | 77.0      | 76.0    | 78.0      | 10286686.0 | 41566.0  |
| LCM           | 26.0 | 180.0     | 73.0      | 76.0    | 79.0      | 12018548.0 | 43887.0  |
| LW            | 25.0 | 177.0     | 73.0      | 79.0    | 83.0      | 25966667.0 | 109762.0 |
| RB            | 27.0 | 179.0     | 73.0      | 75.0    | 78.0      | 8258065.0  | 34839.0  |
| RW            | 25.0 | 178.0     | 73.0      | 79.0    | 82.0      | 25211905.0 | 93810.0  |
| ST            | 27.0 | 183.0     | 77.0      | 77.0    | 79.0      | 14744835.0 | 50289.0  |



# Playing variables

How to choose the best **players** with a budget :

Most correlated skills per team position

|            | 1                     | 2                         | 3                        | 4                         | 5                        |
|------------|-----------------------|---------------------------|--------------------------|---------------------------|--------------------------|
| <b>CAM</b> | skill_ball_control    | attacking_short_passing   | skill_dribbling          | dribbling                 | passing                  |
| <b>CB</b>  | defending             | defending_standing_tackle | defending_sliding_tackle | defending_marking         | mentality_interceptions  |
| <b>CDM</b> | movement_reactions    | attacking_short_passing   | skill_ball_control       | mentality_interceptions   | international_reputation |
| <b>CM</b>  | skill_ball_control    | movement_reactions        | passing                  | attacking_short_passing   | mentality_composure      |
| <b>GK</b>  | gk_diving             | gk_handling               | gk_positioning           | gk_reflexes               | movement_reactions       |
| <b>LB</b>  | movement_reactions    | mentality_composure       | defending                | defending_standing_tackle | defending_marking        |
| <b>LCM</b> | skill_ball_control    | attacking_short_passing   | passing                  | mentality_composure       | dribbling                |
| <b>LW</b>  | mentality_positioning | skill_ball_control        | movement_reactions       | mentality_composure       | dribbling                |
| <b>RB</b>  | skill_ball_control    | movement_reactions        | passing                  | attacking_short_passing   | dribbling                |
| <b>RW</b>  | mentality_composure   | movement_reactions        | shooting                 | dribbling                 | attacking_short_passing  |
| <b>ST</b>  | shooting              | mentality_positioning     | movement_reactions       | skill_ball_control        | power_shot_power         |

# Conclusion

From our analysis, the the initial considerations in building a winning team are:

- Budget plays a significant role, particularly investment in new players.
- We want a mix of at least 50 / 50 of local to international players.
- Aim to score 50 or more goals in a season and;
- Concede less than 20 in a season.
- Average Player Rating of 75.

Based on our initial analysis we were able to predict the team ranking with an accuracy of 90 % , and predict the player rating with an accuracy of more than 97%.

**Questions?**