Carmel Camilleri

How Visualizations and Data are Used in Soccer

Agenda

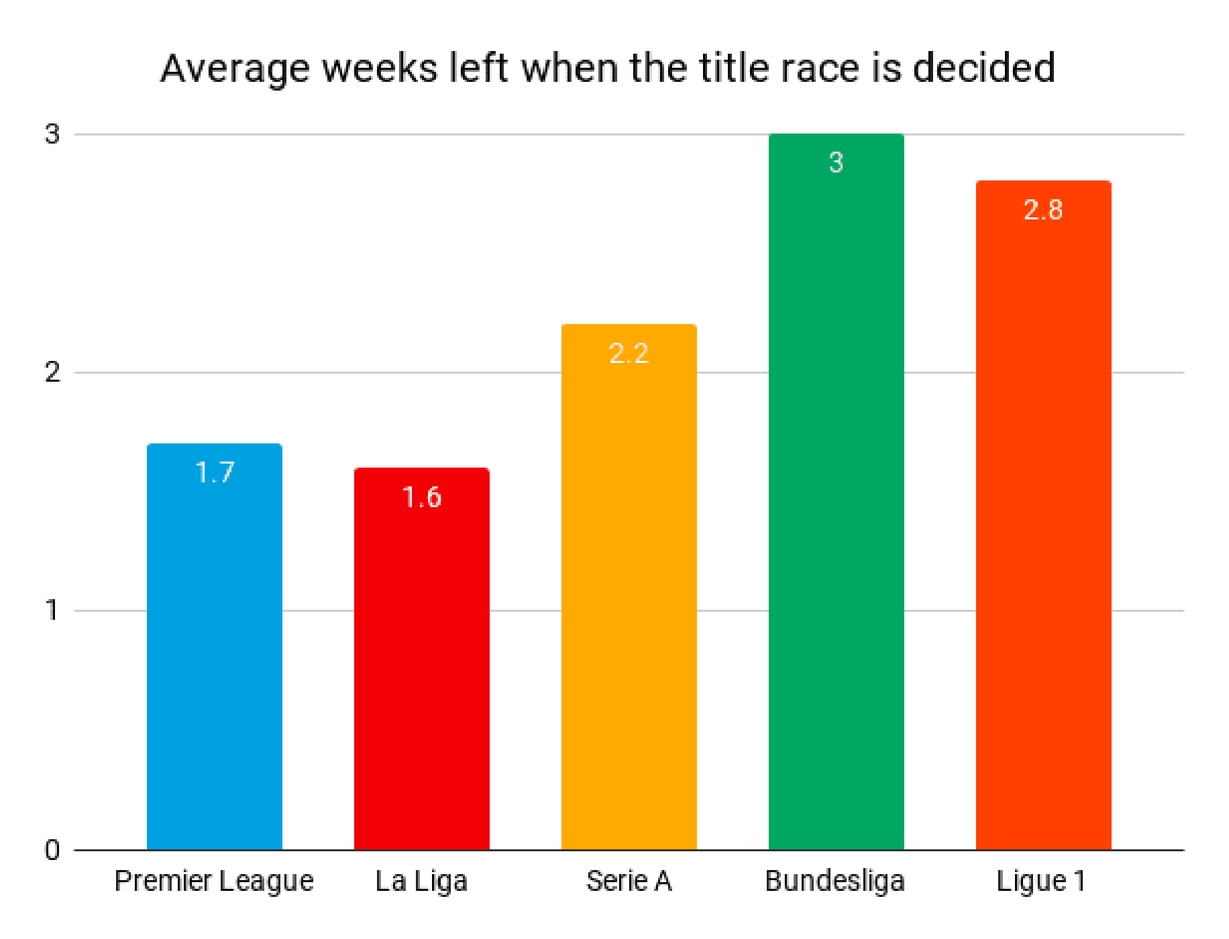
- Why European Soccer Is Amazing
- Simple Figures- Big Value
- Why should you care about data in sports

Understanding European Soccer

Domestic Football Title Distribution - Top 5 European Leagues (1963-Present)

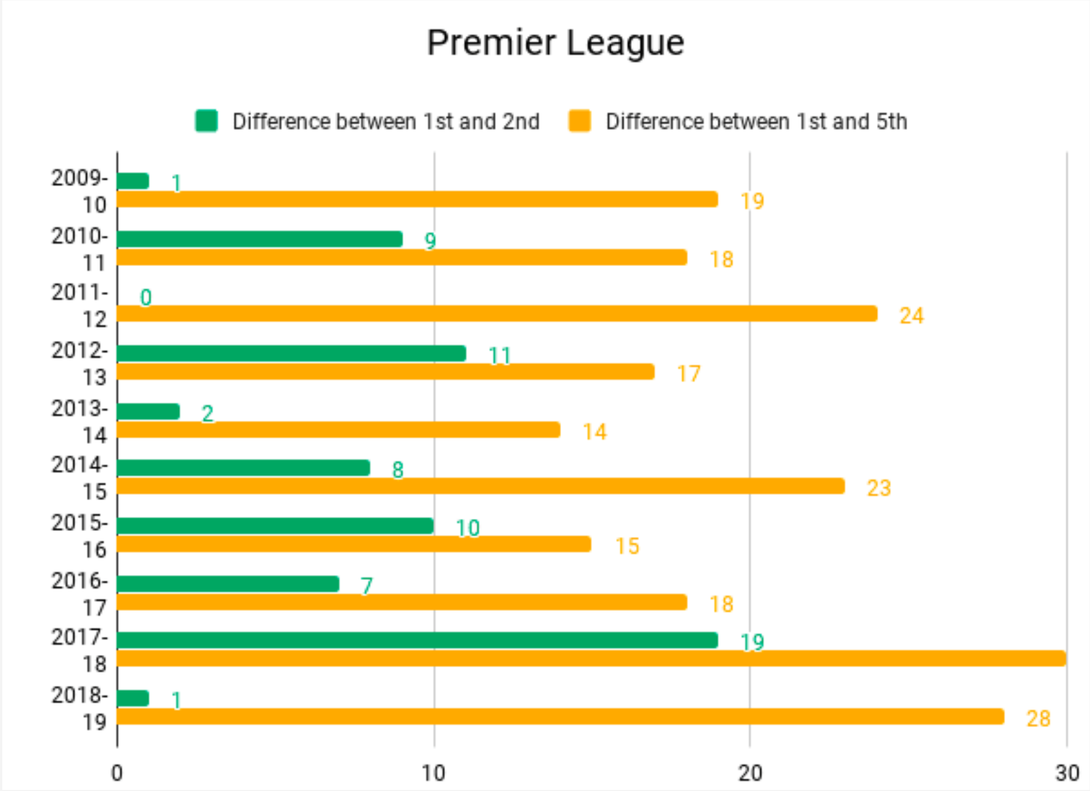
(austin_rettig, 2022)

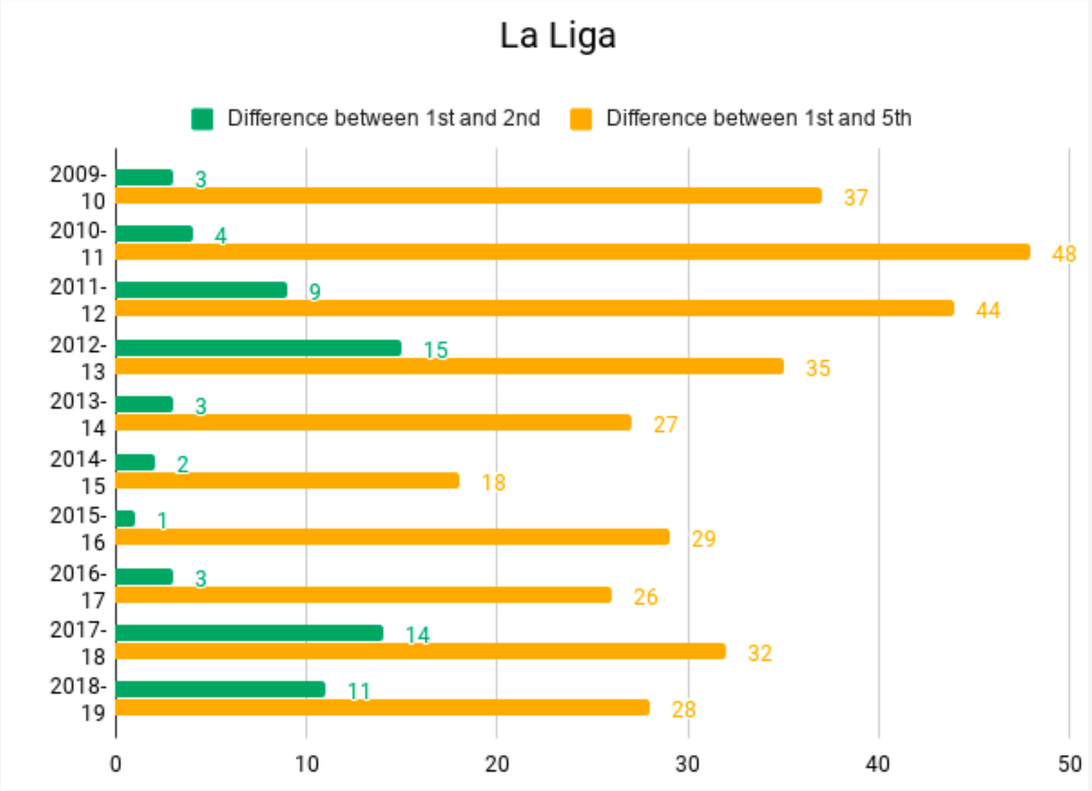
How Competitive are these leauges?



(Chaudhary, 2023)

How Competitive are These Leauges?

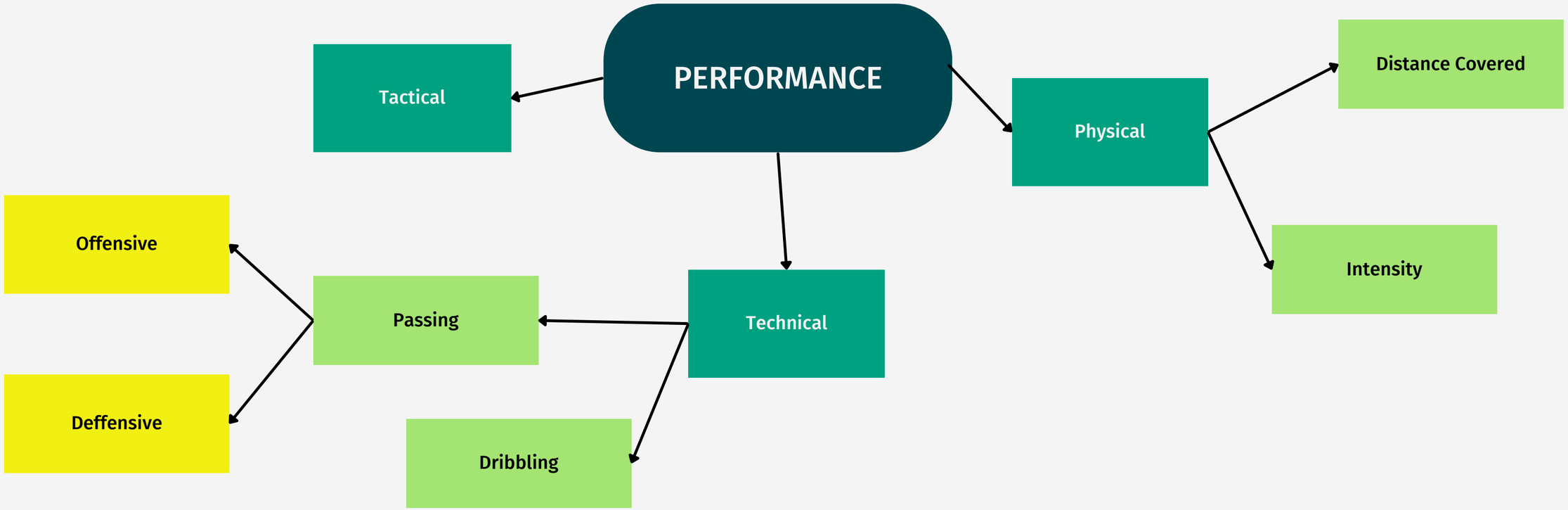




(Chaudhary, 2023)

Key Performance Indicators for Performance

Tip: Understanding teams or players KPI's can help teams develop a plan when facing an opposing team



Back to Agenda Page

Distance Covered and intensity

Winning Matches

- Attacking players tend to run in high intensity
  - Greater tendency for counterattacks when in possession
- Defenders run in high intensity relatively less
  - Greater tendency for deep defending when opponents have possession

Draw or Loosing Matches

- Attacking players exhibit lower intensity in running
- Defenders run in higher intensity
  - Suggesting a more proactive defensive strategy

The relationship between Age and Intensity

- The relation strength increases with consideration of distance covered in high intensity.
- Age correlates with distance covered, primarily affecting attacking positions.
- Younger players have an advantage in both tendency and ability to furnish high-intensity efforts.

Figure 4: gap in sprint distance between teams and goal difference during a match

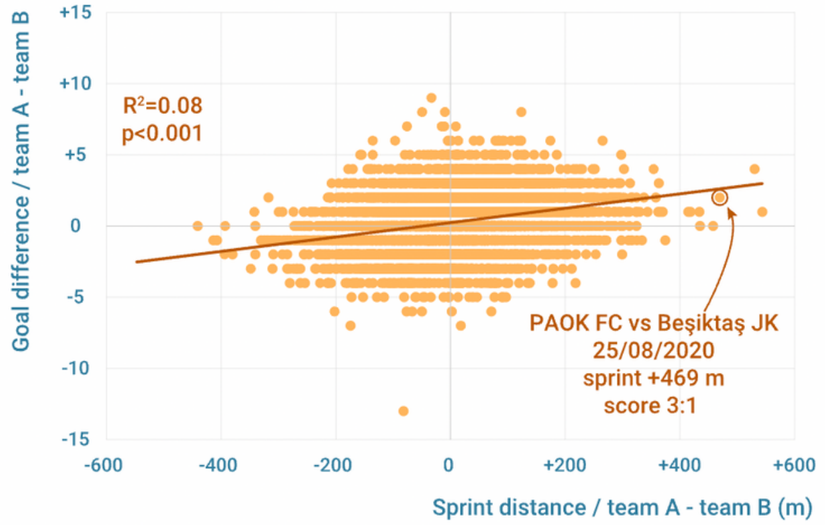
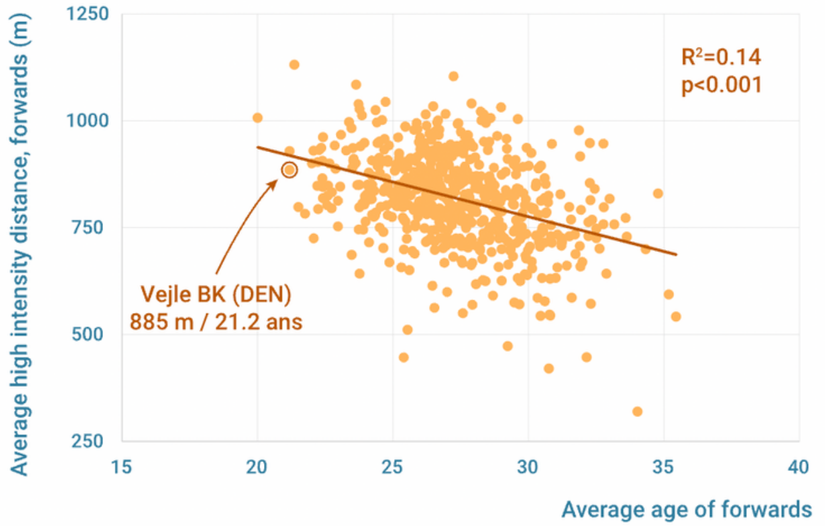
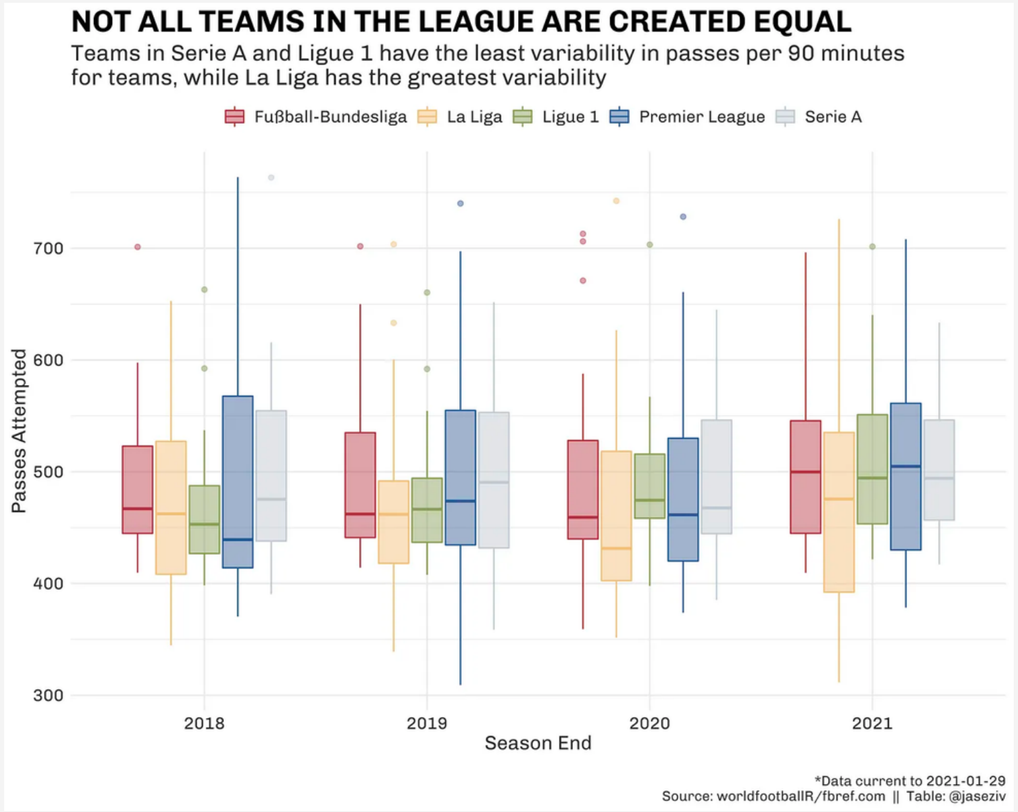


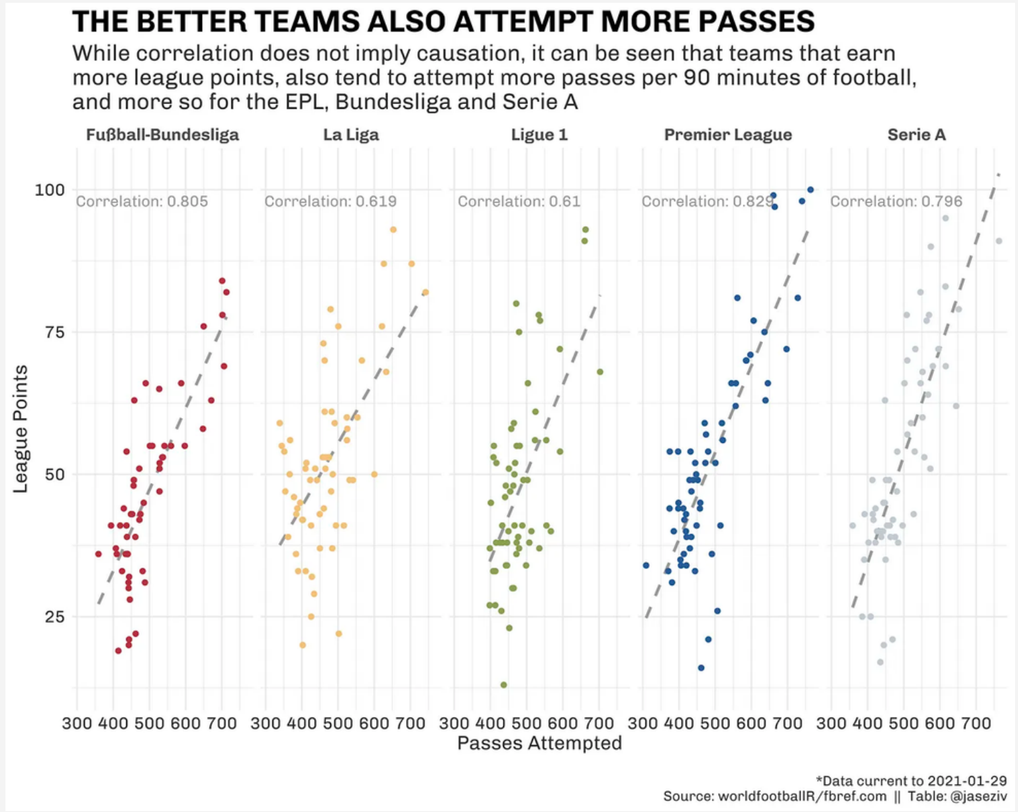
Figure 6: average distance in high intensity and forwards' average age on the pitch, per team



(Raffaele Poli et al., 2021)

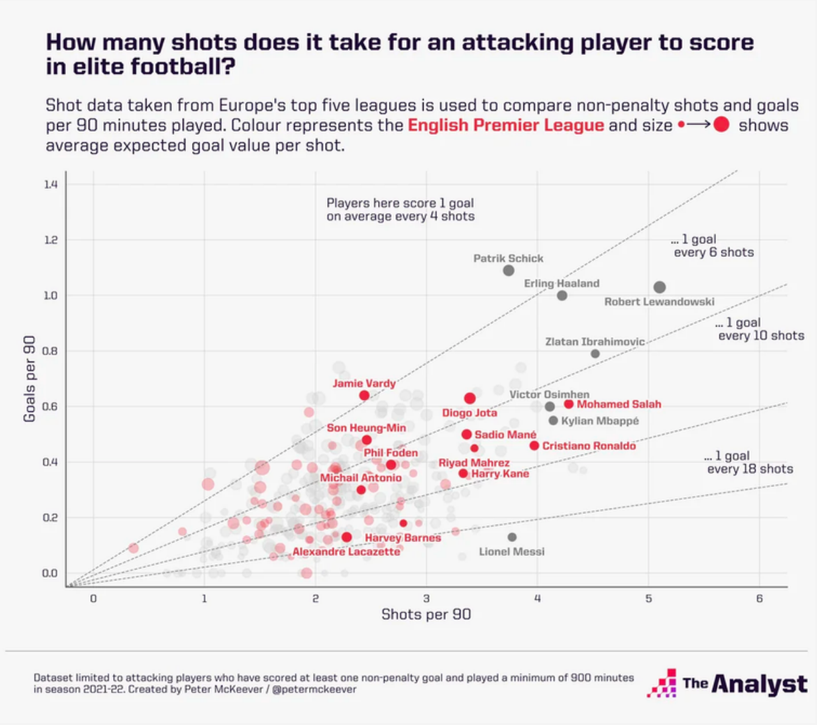
Technical





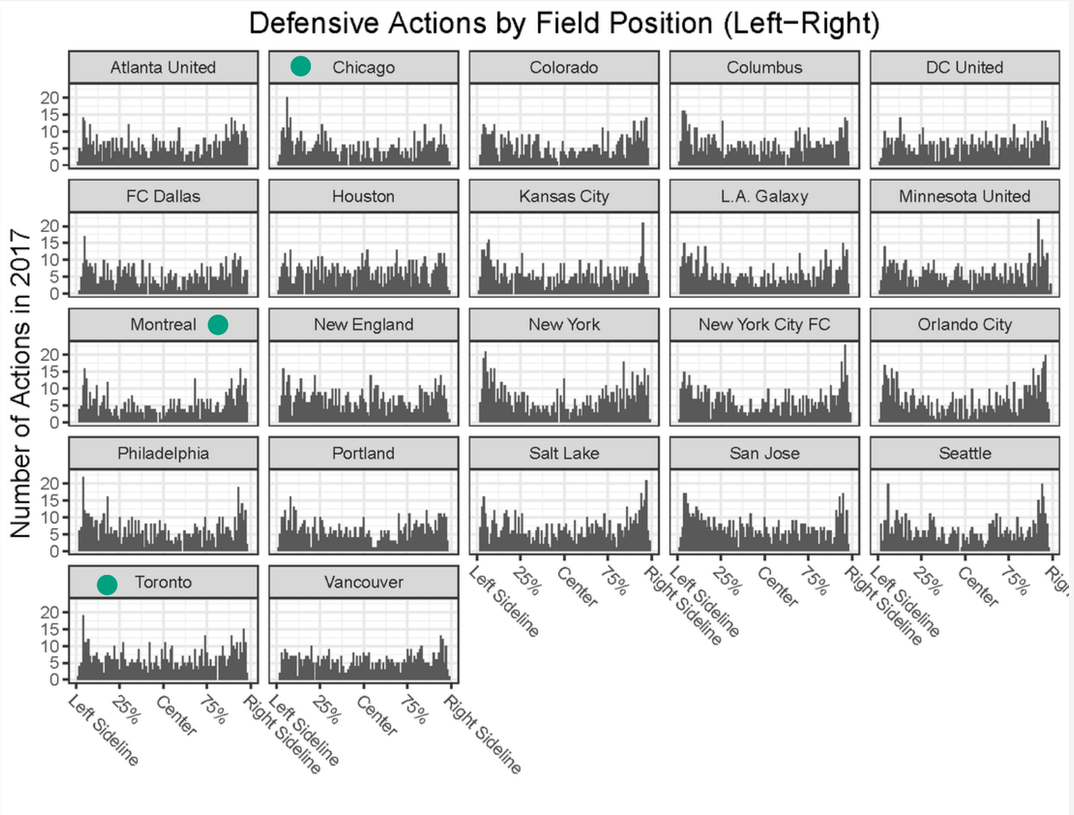
(Zivkovic, 2021)

Tactical

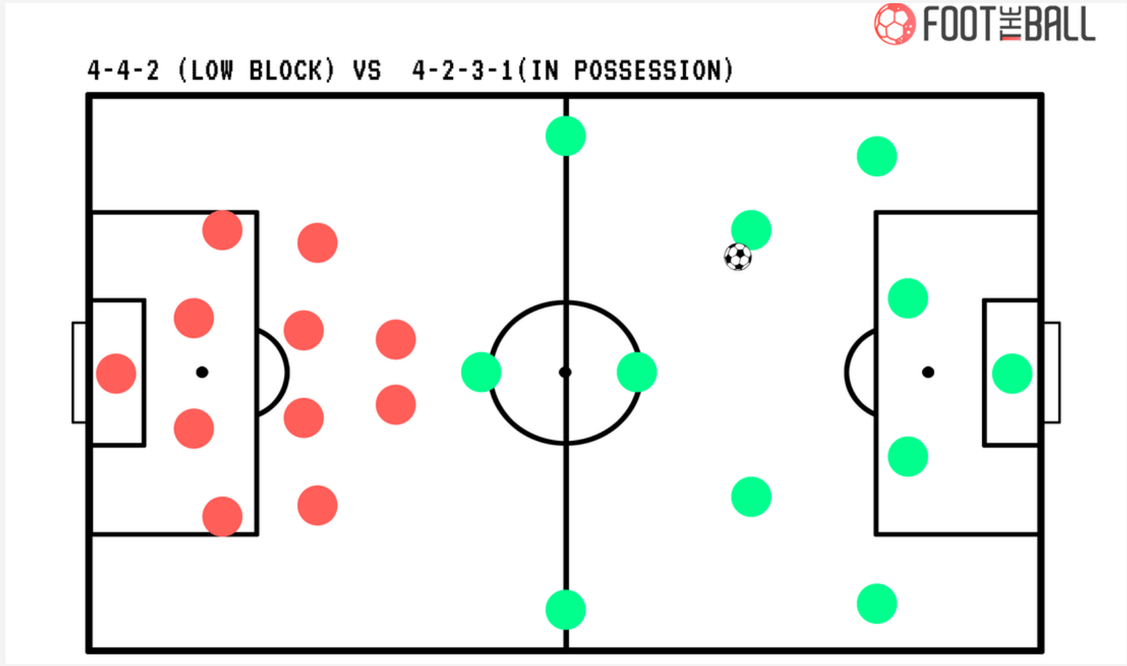


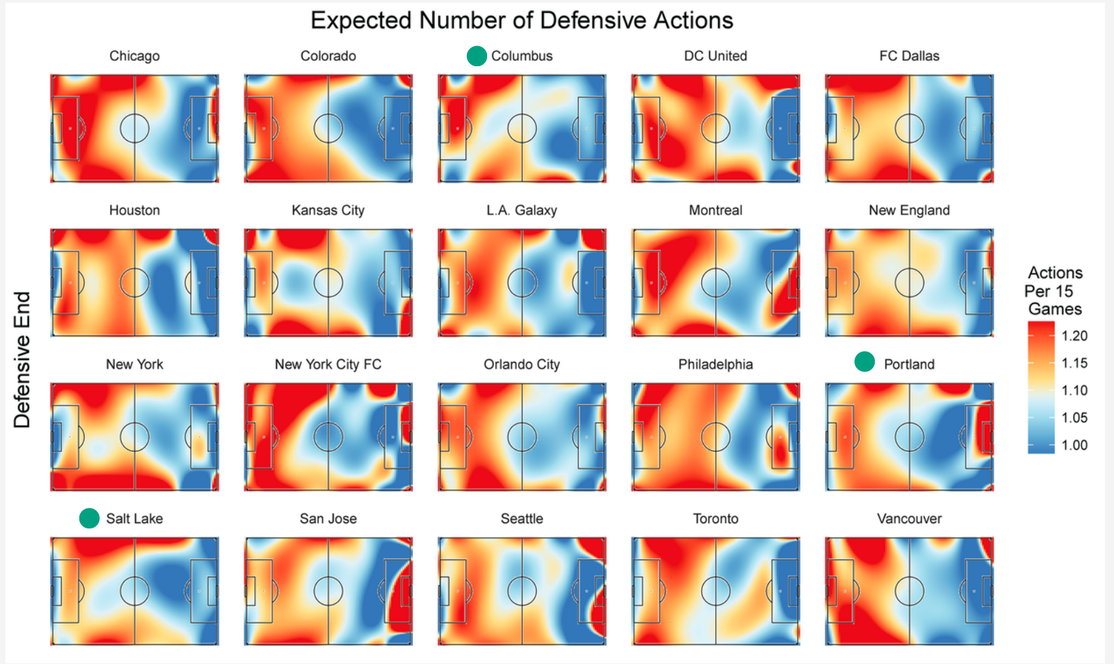
(Chelsea Draw yet Another Blank as Vinicius Junior Shows His Brilliance - Champions League Hits and Misses, n.d.)

Defensive



(Arora, 2022)





(DMP, 2017)

Why do we Care?

Physical Metrics:

- Identify fitness levels and workload distribution.
- Personalize training programs and prevent injuries.
- Benchmark players and track improvements.

Technical Metrics:

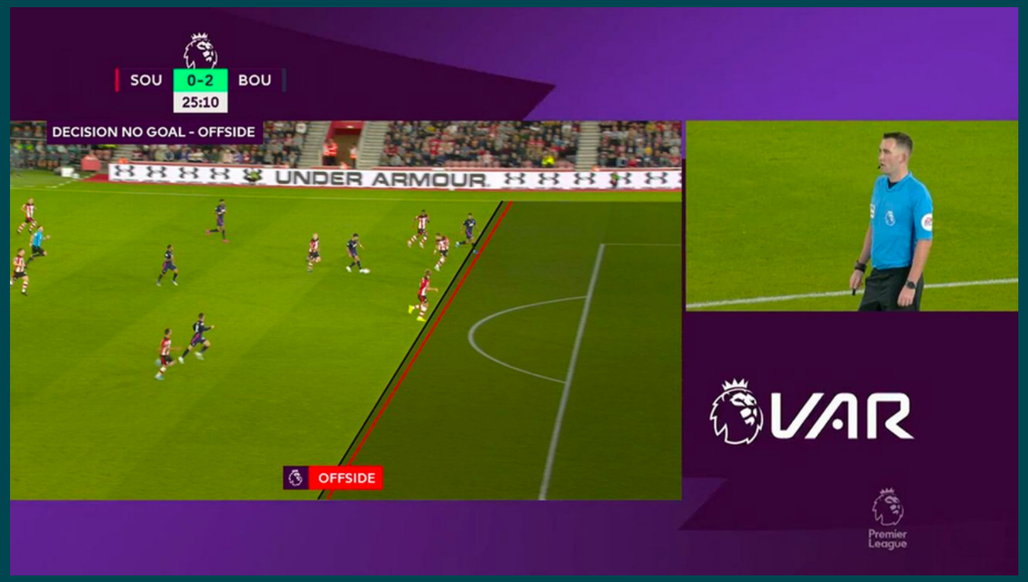
- Analyze spatial patterns and movement tendencies.
- Inform strategic planning and positioning adjustments.
- Adapt game strategies based on opponent trends.

Tactical

- Analyze spatial patterns and movement tendencies.
- Inform strategic planning and positioning adjustments.
- Adapt game strategies based on opponent trends.
- Assess overall team control and ball distribution.
- Guide offensive and defensive strategies and player positioning.

Broadcasting

Back to Agenda Page



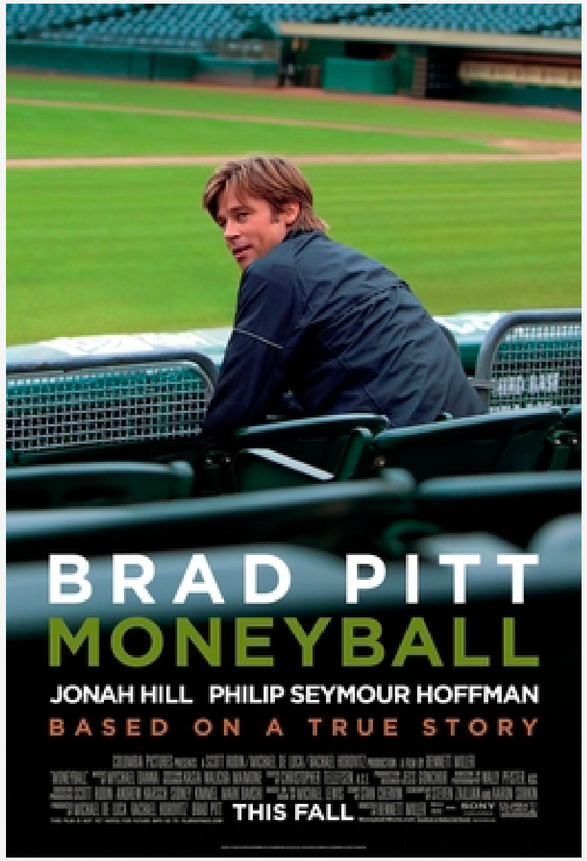
- VAR
- Helps decide decisions on the game in real time

(FRSA, 2019)

- Player highlights
- Enhances ability to critique and improve performance.

(admin, 2020)

Future of Sport



- "It's about using statistical analysis to find undervalued players."
- "Adapt or die."

(Lewis, 2003)

Is a Data-Driven Approach Right for Soccer?

Objective Analysis

- Objective insights into player performance
- Improve team tactics and game outcomes
- Reducing reliance on subjective opinions or biases.

Performance Optimization

- Allows coaches and players to identify strengths, weaknesses
- Targeted training programs and strategic adjustments.

Strategic Decision-Making

- Help coaches make informed decisions regarding team formations, player selections, and in-game tactics.
- Enhances the team's competitive advantage.

Player Development

- Tracking individual player metrics over time facilitates personalized development plans
- Focuses on improving specific skills and maximizing player potential.

Back to Agenda Page

Do you have any questions?

Feel free to ask away!!

Carmel Camilleri

carmel01@yorku.ca