

Project title:

# Analyzing Chelsea Football Club Performance in the EPL 2020-2021

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## **I. Introduction**

Chelsea Football Club is one of the most storied and successful teams in English football history. The club has consistently been present in the top tiers of English football and has won numerous domestic and international trophies over the years. Based in West London, Chelsea has a passionate fan base and a reputation for playing exciting and attacking football. The 2020-2021 season marks a massive transformation for Chelsea Football Club with the signings of significant new players, the arrival of a new head coach, and a resurgence in form that led them to multiple finals in different tournaments as well as a top-four finish in the Premier League (domestic league tournament with each team playing a total of 38 games). Chelsea's fortunes altered considerably after acquiring German mastermind Thomas Tuchel midway through the season, as they went on a run of strong defensive performances and eye-catching offensive strategies. In this paper, we will analyze Chelsea's different performances under Tuchel and Lampard focusing on key performance indicators that have driven the team's success in the Premier League. Using data analysis and data visualization such as graphs or charts, we will explore the strengths and weaknesses of the team and examine how these factors have influenced the results on the pitch.

By investigating the team's performance, we hope to provide valuable insights into the world of football coaching and management and demonstrate the importance of data analysis and performance monitoring in modern sports.

## **II. Data and Methods**

The datasets for this project were obtained from the public package “engsoccerdata” as well as the private package “understatr” which we got from the GitHub repository called “ewenme/understatr” because it was not submitted to CRAN. These packages provide access to football data from various sources including the official EPL website, football-data.co.uk, and fbref.com. The data covers a wide range of information from basic statistics like match results, players' outputs, and team performance metrics such as goals scored, goals conceded, possession, and many more indicating factors in football.

To address the project objectives, we have conducted exploratory data analysis and used visualization techniques. We have filtered the dataset to focus on Chelsea's matches during the 2020-2021 EPL season, and have calculated various metrics to assess their performance, such as variables like "h\_a" representing home or away games, "xG" (Expected Goals) and "xGA" (Expected Goals Against) which measure the number of goals a team is expected to score and concede respectively, "npG" (Non-penalty Expected Goals) and "npGA" (Non-penalty Expected Goals Against) which are the same as xG and xGA but exclude penalty goals, "deep" (Deep Passes) and "deep\_allowed" (Deep Passes Allowed) which measure the number of successful passes completed within a certain distance of the opponent's goal, "scored" and "missed" which represent the actual number of goals scored and conceded, and "xpts" (Expected Points) which estimates the number of points a team is expected to earn based on their

performance. The "result" variable indicates the outcome of the match as a win (w), draw (d), or loss (l). The dataset also includes match dates, cumulative wins, draws, losses, points earned, non-penalty expected goal difference (npGD), PPDA (Passes Per Defensive Action) metrics, team information, league name, year, week, and manager. The datasets also include the above information for each individual player in the team. We looked at how the team's performance varied under different managers, and whether there were any notable differences in their approach or tactics. Overall, our methods involved a combination of exploratory data analysis and visualization techniques to gain insights into Chelsea's performance during the 2020-2021 EPL season.

### **III. Results**

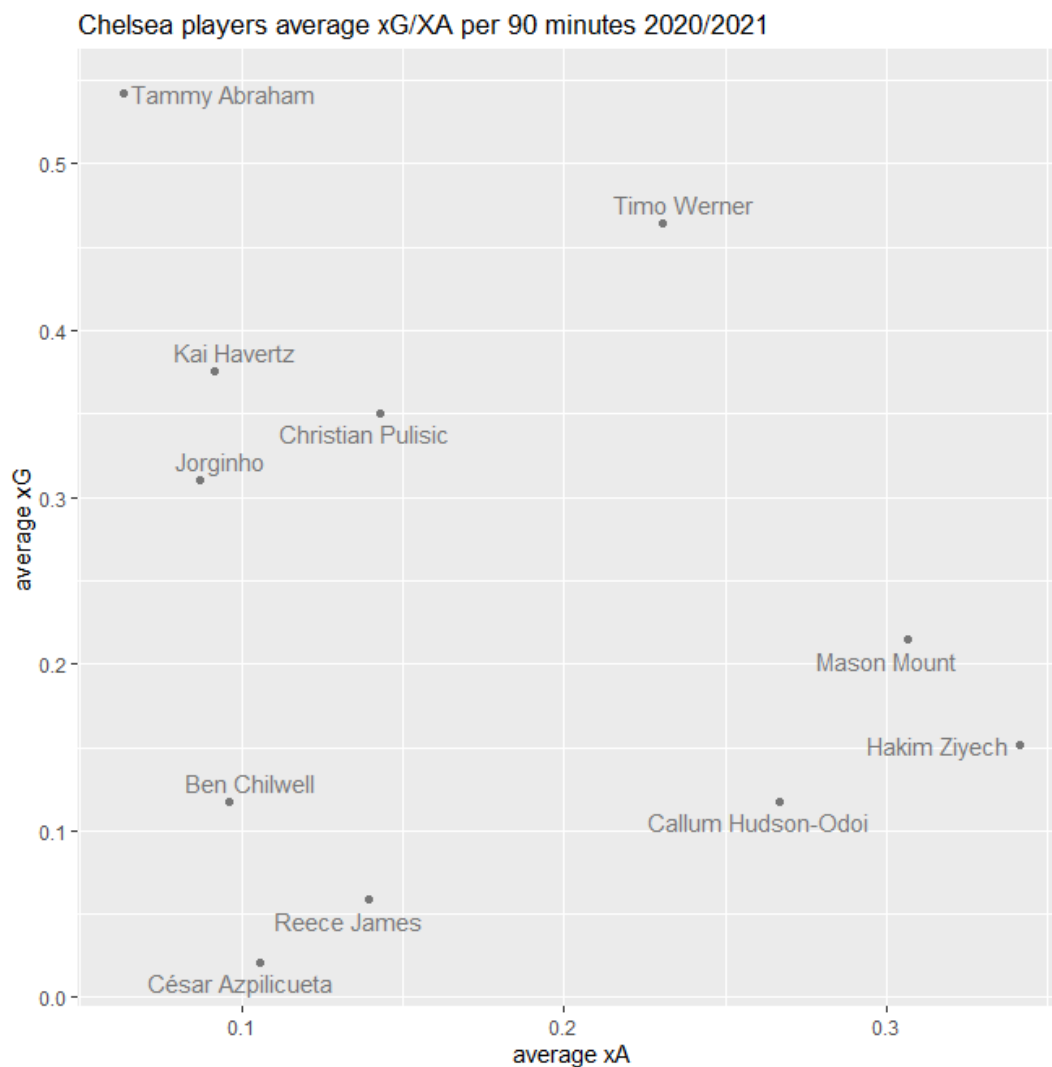
Our original hypothesis for expecting some differences was that Tuchel's tactical approach and emphasis on a well-structured defense, combined with efficient attacking strategies, would lead to better overall performance compared to the other manager. We believed that Tuchel's ability to optimize player positioning and adapt to various in-game situations would result in higher expected goals (xG) and non-penalty expected goals (npG) values, signifying more goal-scoring opportunities created. Additionally, we anticipated that Tuchel's focus on maintaining a solid defensive line would contribute to lower expected goals against (xGA) and non-penalty expected goals against (npGA) values, reflecting fewer scoring opportunities for opponents. Ultimately, we hypothesized that Tuchel's managerial skills and tactical approach

would lead to a higher win rate and lower loss rate, showcasing his superiority over Lampard.



Furthermore, we also analyze each player's data using their expected goals (xG) and their expected assists (xA). As we are looking into team statistics, it will be interesting to see the individual performance of each player particularly their contributions on xG and xA. Here we only want to see players who have any goals/assists with a considerable amount of playing time (>500 minutes) and since we are looking at xG and xA, it wouldn't be fair to include goalkeepers

and defenders, thus we created a filter for players that satisfy the requirements. We can see Tammy Abraham has the highest average number of xG while Hakim Ziyech has the highest average number of xA which means they have very good positioning and is always there when the chance arises. Timo Werner comes in second but far surpasses Tammy Abraham regarding the average number of xA. These statistics also suggest quite clearly the attacking playstyle of Chelsea players.



## **IV. Conclusion**

Throughout the season, Chelsea displayed a fluctuating performance which can be partly attributed to the differences in management styles between the two managers. Under Lampard, Chelsea's style focused on possession and a slower build-up play. The team maintained a solid defensive structure but often needed help to create clear-cut scoring opportunities. This approach resulted in a lower npG in games, which might have contributed to their inconsistent results.

In contrast, Tuchel implemented a more dynamic and aggressive playing style. Chelsea adopted a high-pressing tactic, which led to more counter-attacking opportunities and higher npG in games. The team's defensive approach also changed, becoming more proactive in winning back possession and limiting opponents' deep completions. This shift in strategy allowed Chelsea to control games better and capitalize on the quality chances they created, leading to improved overall performance.

Several key players excelled under Tuchel's management during that season. Mason Mount showcased their versatility and contributed with crucial goals and assists. N'Golo Kante stood out with exceptional defensive skills, while Hakim Ziyech provided attacking threats. Tammy Abraham's pace and goal-scoring form was vital, and Timo Werner displayed creativity in linking up with the attackers. Thiago Silva's leadership and experience bolstered the team's defense. These players played a significant role in the team's success under Tuchel.

In summary, the season showcased a tale of two distinct managerial styles, each with its own set of strengths and weaknesses. The first manager's focus on possession and a solid defensive structure provided a stable foundation but often limited the team's attacking potential. On the other hand, the second manager's dynamic and aggressive approach enabled Chelsea to

create more quality chances and exert greater control over matches, ultimately resulting in an enhanced performance throughout the latter part of the season.

## References:

Author(s): Last Word on Sports

Year: 2021

Title: Chelsea 2020-21 Season Review

Website: Last Word on Sports

URL: <https://lastwordonsports.com/football/2021/05/31/chelsea-2020-21-season-review/>

Author(s): Planet Football

Year: 2020

Title: Comparing Thomas Tuchel's first 50 Chelsea games with Frank Lampard's last 50 games

Website: Planet Football

URL: <https://www.planetfootball.com/quick-reads/comparing-thomas-tuchels-first-50-chelsea-games-with-frank-lampards-last-50-games/>

Author(s): Austin Wehrwein

Year: 2021

Title: Reintroducing myself to football analytics via understatr

URL: <https://austinwehrwein.com/tutorials/xgforeveryone/>



