



Fan Perception vs. External Results: A Multi-Method Approach to Correlating Fan Perception of Big 6 Premier League Rivalries to Attendance and Social Media Engagement

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Abstract

Rivalries are important in sports for numerous reasons, the main reason is that fans of sports teams are more passionate when they play a bitter rival than when they do not. Lengthy, heated rivalries can evolve over time and lead to fan and player engagement. However, there has not been much research about sports rivalries, especially correlating fan perception of their major rivalries to performance the main research gaps are attendance and social media insight. This paper therefore asks: to what extent do survey data, social media engagement metrics, and match attendance statistics consistently reveal a hierarchy of rivalries for each Big 6 Premier League team? This research combination can accurately portray Big 6 rivalries in the Premier League. I surveyed many Big 6 fans to understand the strength of their allegiance to their chosen EPL team as well as the hierarchy of rivalries, as perceived based upon either local derby clashes or championship contests. Following this, I used Python code to analyze Instagram data that I manually acquired from Big 6 Instagram pages. This data comprises accurate tallies for the number of likes and comments against every Big 6 opponent. I assumed that more likes and comments would project a bigger rival, whereas fewer likes and comments project a smaller rival. By using these measurements, Premier League fans, observers of the game, journalists, and statisticians will be able to understand the intensity of these rivalries and analyze the dynamics of interactions between rival clubs, players and fans. In addition, I have acquired data on Big 6 teams' attendance data from the past several years using Python to investigate another aspect of the vitality of stronger and weaker rivalries.

Introduction

Rivalries hold special importance in the world of sport, ascribing more meaning to competitions than just the outcome. Intense rivalries evoke strong emotions from fans, players, and communities alike and lead to players putting in their utmost efforts when they play against a big rival. They also help sports fans learn about how people think and act and what makes us who we are. The friendships and shared identity that come from these rivalries teach us how people connect and become close. They also remind us of the past, showing how things have changed over time. Because rivalries are covered in many media narratives, they also affect the business of sport and how we enjoy entertainment. Looking at the different parts of rivalries and the different ways fans act can help us understand why some people get so passionate for their club. Overall, sports rivalries evoke a fascinating range of emotions, uncovering who we are and how the culture of sport has developed. This makes them important to study as a means for understanding society, human behavior, and the sport industry at large.

Historic Premier League rivalries have captured the imagination of football fans for decades, with passionate supporters adding an extra layer of intensity to these matchups. One

of the most iconic rivalries in English football is the clash between Manchester United and Liverpool. Dating back to the industrial rivalries between the cities of Manchester and Liverpool, this fixture has transcended football to become a symbol of regional pride. The fans, often referred to as the "Red Devils" and the "Scousers," respectively, create an electrifying atmosphere during these matches. They fill the stadiums with a sea of red as songs echo through the stands, showcasing their unwavering loyalty and fervent support. The intense emotions that flow from the stands to the pitch contribute to the unique spectacle that is a Manchester United vs. Liverpool encounter.

Sometimes, these emotions go too far. This was tragically exemplified by Manchester United fans making fun of the Hillsborough disaster, which occurred during an FA Cup semi-final match between Liverpool and Nottingham Forest on April 15, 1989. The tragedy was primarily caused by overcrowding in the stadium's central pens, which led to a fatal crush. It was worsened by poor crowd management, inadequate police response, and the design of the stadium. The disaster resulted in the loss of 97 lives (Liverpool fans) and had a profound impact on football in the United Kingdom. Many Manchester United fans found the matter hilarious, and chanted obscenities about it whenever they played Liverpool in fixtures after the disaster.

Another historic rivalry that ignites the Premier League is the North London derby between Arsenal and Tottenham Hotspur. Located just a few miles apart, these two clubs have had a fierce rivalry for over a century. The fans, known as the "Gooners" and the "Spurs," bring an unparalleled level of passion and intensity to this fixture. The atmosphere on matchdays is nothing short of electric, as both sets of supporters sing their hearts out, creating an intense and unforgettable experience. The North London derby is a battle for local pride, with fans desperate to claim bragging rights in the city. The passion and energy generated by these rival supporters add an extra spark to an already enthralling contest.

While the North London derby is a fierce battle for local pride, across the country in Manchester, the Manchester derby between Manchester United and Manchester City has gained significance in recent years. Traditionally dominated by United, City's resurgence as a major force in English football has intensified the rivalry. The fans of both clubs, commonly known as the "Red Devils" and the "Cityzens," are vocal and passionate in their support. The Manchester derby is an occasion that splits the city into two passionate factions. Fans fill the stands (United fans wearing their team's red jerseys, and City fans wearing their team's sky blue jerseys), chanting and creating an electric atmosphere that transcends the 90 minutes on the field. The fierce competition between these two clubs and the passionate fan base that supports them make the Manchester derby one of the most highly anticipated fixtures in the Premier League calendar. While these rivalries showcase the passion and intensity of the Premier League, they are just a few examples of the many historic feuds that have captivated fans over the years.

As someone deeply passionate about football and particularly intrigued by the rivalries among the Premier League's big six teams, I am eager to dive into research that explores the profound depths of these competitions. My fascination lies in understanding the severity of the emotions, the historical underpinnings, and the unique cultural aspects that make these rivalries so captivating. By undertaking this research, I hope to satisfy my own curiosity while gaining personal insights into the psychology of fandom, the sociology of sports culture, and the broader societal implications of these rivalries. This journey promises to be not only intellectually rewarding but also a deeply personal exploration of what makes these rivalries such a crucial and enduring part of football culture. By delving into these Premier League rivalries, we can

understand how history, regional differences, and loyalties shape both football and society. Exploring the cultural and psychological aspects reveals how fandom impacts social interactions, behaviors, and a sense of belonging. Ultimately, this study highlights how shared passions and traditions bring people together and influence the way we connect and define ourselves.

Methodology

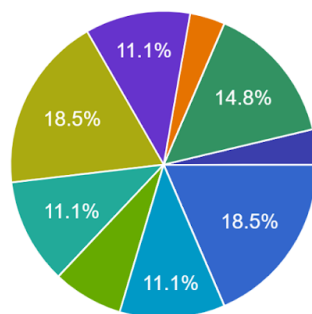
Survey Data

The survey sent out to EPL fans included the following questions:

1. Age
2. What is your favorite team in the Premier League?
3. How passionate of a fan would you say you are for the team that you chose?(1- not passionate, 10-very passionate)
4. Why do you support your favorite team?
5. How successful do you believe the team that you chose is?(1- not successful, 10-very successful)
6. What is your team's biggest rival in your opinion?
7. How much do your favorite team's fans hate your biggest rival? (1- not hated at all, 10-most hated by far)
8. What is your team's second biggest rival in your opinion?
9. What is your team's third biggest rival in your opinion?
10. Why does your team have such a strong rivalry with your biggest rival?
11. Where do you think a fan of your team's biggest rival would place your team on their most hated list?
12. How successful is your team against your biggest rival head-to-head?
13. To what extent do your team's fans demonstrate their anger at their rivals during games? (verbal abuse- mild; physical outrage- extreme)
14. My team's fans' passion level against their biggest rivals is:

What is your favorite team in the Premier League?

27 responses



- Arsenal
- Chelsea
- Liverpool
- Manchester City
- Manchester United
- Tottenham Hotspur

The survey was distributed through social media platforms such as Instagram and Reddit in order to garner responses from a sample population of Premier League fans. 27 unique respondents filled out the survey. 23 of the 27 survey responses were submitted by Big 6 fans. The teams yielding the largest fan representation were Arsenal and Manchester City, with 5 respondents each.

Match Attendance Data

Match attendance data for Big 6 English Premier League teams was acquired from a source called [sportsreference.com](https://www.sportsreference.com). More specifically, the attendance data was logged under a subpage called fbref.com. For each match that occurred in the 2014 through 2023 English Premier League seasons, the home team, away team, venue, and attendance were scraped via a Python package called BeautifulSoup. Their attendance counts were averaged if multiple matches occurred between the same two opponents. Occasionally, if a team changed venues, thereby observing a change to their venue capacity, their attendance data was only analyzed from the season that the change went into effect through the present day.

Social Media Engagement Data

To acquire the engagement metrics from Instagram, I manually scrolled through each Big 6 team's Instagram account and extracted the comment and like data from every one of their matchday posts against a Big 6 opponent, resulting in 10 different games for each team. The time period that I examined began August 14, 2022 (Chelsea vs Tottenham) to May 25, 2023 (Manchester United vs Chelsea). Some nuances that I considered for this dataset were that Arsenal and Manchester City did not post their 'Matchday' posts until midway through the season (these matchday posts included the date and time of a specific Big 6 match). However, the remaining 4 of the Big 6 teams posted Matchday posts throughout the season. Due to this difference, in a successful attempt to not skew any data, I extracted the comment and like data from 'Next Up' posts from Arsenal and Manchester City's Instagram accounts. These 'Next Up' posts ran from the beginning to the end of the season, so all 10 Big 6 games for Arsenal and Manchester City, respectively, were included. In addition to this nuance, I also had to note one important aspect of my research: as the season progresses, each of the Big 6's Instagram accounts grow in followers, meaning that more likes and comments could come in the later season's Big 6 Matchday and Next up posts. However, as my data shows, this is not necessarily the case, as many posts with the most likes and comments came in the beginning/middle of the season for each of the Big 6 teams.

Analytical Methods

To properly identify the 1st, 2nd, and 3rd strongest rivals of each Big 6 team, the following procedure was used:

1. Inputted the survey data into an Excel spreadsheet with each response in a separate row and the questions (columns) labeled as follows:
 - A: Favorite Team in the Premier League
 - B: Team's Biggest Rival
 - C: Team's Second Biggest Rival
 - D: Team's Third Biggest Rival
2. Created a pivot table from the raw data, where the data was sorted by "Favorite Team in the Premier League" as rows and teams' biggest, second biggest, and third biggest rivals as columns. Due to some overlapping viewpoints from respondents, the values represented the number of votes in agreement about the given rivalry strength.
3. To quickly harness insights from the data, the values were arranged in descending order by clicking the drop-down arrow next to each count field in the Values area and selecting "Sort Largest to Smallest."
4. Lastly, a summary table was compiled, showcasing the top 3 rivals, accompanied by their respective mention counts.

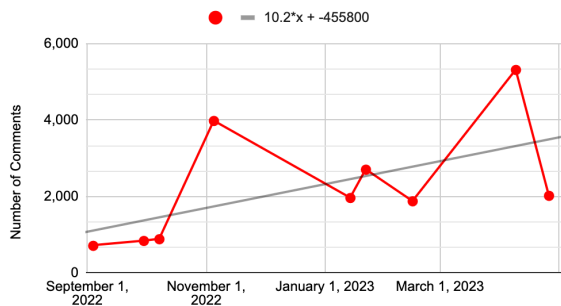
Results & Figures

What is your favorite team in the Premier League?	What is your team's biggest rival in your opinion?	AVERAGE of How much do your favorite team's fans hate your biggest rival? (1- not hated at all, 10- most hated by far)
Arsenal	Tottenham Hotspur	10.00
	Chelsea	10.00
Tottenham Hotspur	Arsenal	9.75
Manchester United	Manchester City	10.00
	Liverpool	9.50
Chelsea	Arsenal	9.33
Liverpool	Manchester United	9.00
Manchester City	Manchester United	9.75
	Liverpool	4.00

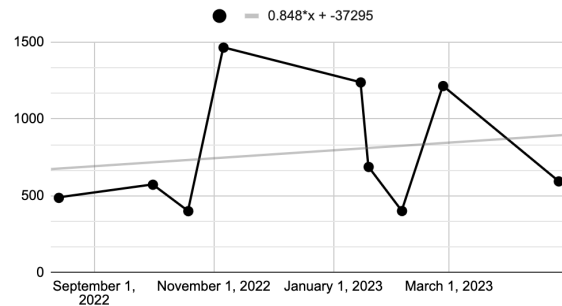
Figure 1. Graphical Representation of Survey Results

In this survey of Premier League fans, the rivalry intensity between football clubs takes center stage. Arsenal and Tottenham Hotspur fans share an intense mutual dislike, both rating each other at a perfect 10 on the hatred scale. Similarly, Chelsea and Tottenham's rivalry is fervent, with both sets of supporters rating their animosity at 10 as well. Meanwhile, Manchester United and Manchester City fans display a fierce rivalry, rating each other at 9.75. The feud between Arsenal and Chelsea fans is also strong, scoring 9.33, while Liverpool supporters reserve their most potent enmity for Manchester United (9.00) and Chelsea (4.00). These rankings illustrate the passionate rivalries that define the Premier League fan experience.

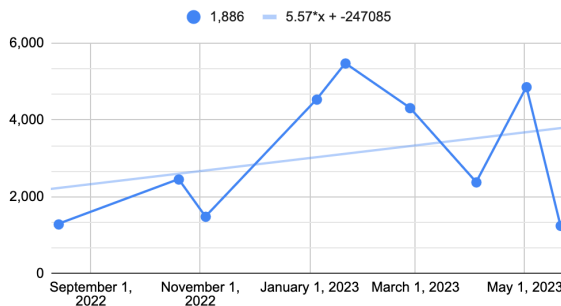
Arsenal # of Comments



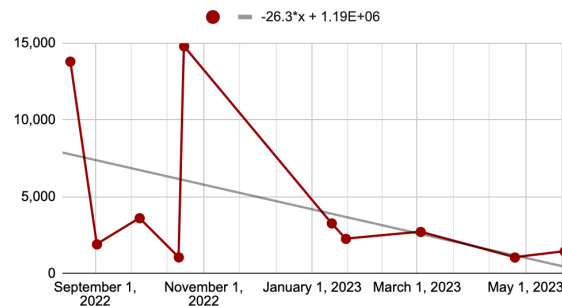
Tottenham # of Comments



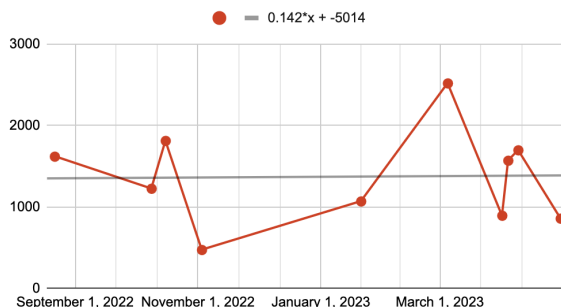
Chelsea # of Comments



Man Utd # of Comments



Liverpool # of Comments



Man City # of Comments

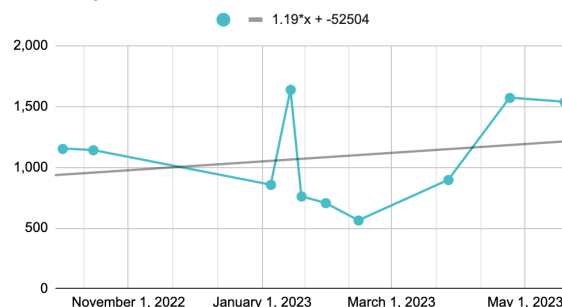


Figure 2. Match day Instagram post comment count over time for each of the EPL Big 6 teams; Slope of trend lines are included on the graphs to indicate the correlation between the two variables, time and number of comments.

Arsenal, Tottenham, Manchester City, Liverpool, and Chelsea each had an increasing slope of comments on their matchday posts throughout the 2022-2023 Premier League season, meaning that their social media engagement trended up with respect to time. Manchester United was the only team in the Big 6 to have a negative slope of matchday post comments. However, this may have been impacted by the controversy surrounding club legend Cristiano Ronaldo before their match versus Manchester City on October 2nd, 2022, on which their matchday post had a very high number of comments. The controversy was Ronaldo refused to enter Manchester United’s previous Premier League game as a substitute, according to Manchester United’s manager, Erik ten Hag. In summary, the majority of Big 6 teams showed a positive trend of Big 6 matchday posts as the season progressed. This matters because the data reflects the influence of events and player actions on social media engagement, offering insights into fan interactions and the broader impact of player-related incidents on club image and online presence.

Big 6 Team	Pearson Correlation Coefficient (rounded to thousandths place)	p-value	Statistically Significant (p < 0.05)
Arsenal	0.669	0.034	yes
Tottenham	0.257	0.474	no
Chelsea	0.182	0.615	no
Manchester United	-0.502	0.139	no
Liverpool	0.022	0.951	no
Manchester City	0.226	0.531	no

Table 1. Pearson correlation coefficient values and p-values for matchday Instagram post comments over time (all Big 6 teams).

Similar to findings from Figure 2, Table 1 demonstrates that there is a positive increasing trend over comments over time. But, through this analysis, it is evident that the two variables are often not correlated in a statistically significant manner. Therefore, more research should be done to verify the findings over a larger period of time.

Big 6 Team	Pearson Correlation Coefficient (rounded to thousandths place)	p-value	Statistically Significant (p < 0.05)
Arsenal	0.773	0.01	no
Tottenham	-0.168	0.40	yes
Chelsea	-0.020	0.96	yes
Manchester United	-0.483	0.16	yes
Liverpool	0.052	0.89	yes
Manchester City	-0.301	0.40	yes

Table 2. Pearson correlation coefficient values and p-values for matchday Instagram post likes over time (all Big 6 teams).

Discussion

This research examined the relationship between fan perception, social media engagement metrics, and match attendance statistics in the context of Big 6 Premier League rivalries. While some aspects of the hypothesis were partially supported, a comprehensive conclusion should acknowledge the mixed findings.

1. **Survey Data:** The survey data revealed a strong agreement among fans about the intensity of certain rivalries, supporting the idea that fan perception can provide valuable insights into rivalry strength. For instance, the intense rivalry between Arsenal and Tottenham Hotspur received strong support from fan perceptions.
2. **Social Media Engagement:** The analysis of social media engagement metrics (likes and comments on Instagram posts) did not consistently support the hypothesis. Although there was a positive trend in engagement, the correlation was often not statistically significant, indicating that social media data alone may not be a reliable indicator of rivalry intensity.
3. **Match Attendance:** The conclusion regarding match attendance and its relationship to rivalry intensity is not supported (weak correlation) in the given information, and further analysis is needed to draw definitive conclusions in this regard.

In light of these findings, it is evident that the dynamics of rivalries are multifaceted, and no single source of data can provide a complete picture. While survey data aligns with the hypothesis, the correlation between social media engagement and match attendance data is more complex and requires further investigation.

The limitations of the research, including the challenges in analyzing social media data and the need for a higher respondent count in the survey, are acknowledged; The research has limitations, primarily in relying on modern social media data, which may not fully capture the historical depth of rivalries. Additionally, the survey's limited respondent count may not represent the full spectrum of fan perspectives. These limitations highlight the need for a more holistic approach that considers historical, cultural, and sociological aspects of football rivalries beyond the digital realm. Anomalies in attendance data, attributed to venue changes and other seasonal events, highlight the importance of accounting for external factors when studying rivalry dynamics.

In conclusion, while the survey data support the idea that fan perceptions can offer valuable insights into rivalry intensity, the relationship between social media engagement and rivalry strength is nuanced and warrants further exploration. Additional research is needed to fully understand the multifaceted nature of sports rivalries and their impact on various aspects of fan engagement and society.

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