THE FANDOMS OF THE NBA

Philipp Kläger

Abstract

The analysis revealed that the sentiments and emotions towards different NBA teams are not only different, but also ambivalent in its direction. There are no teams that are "purely" perceived in a negative or positive manner. This observation is accurate for every team except for the three franchises that didn't induce any significant Exemplary for this, the LA Lakers are the most "hated" franchise in this sample, yet they are also unlikely to be perceived in combination with angry or sad feelings. Recent success seems to be an important factor how teams are perceived on Twitter. Given this implication, marketers should exploit recent success in the league with their marketing campaigns to exploit this - for example after a big playoff win.

I. Introduction

"Sport has the power to change the world. It has the power to inspire, it has the power to unite people in a way that little else does." - Nelson Mandela, human rights activist (Rigney 2020)

Why do people love sports so much? On a personal level, most people will probably have a different answer to this question. According to sports psychologists, there are a total of eight different motivations. Being exciting and aesthetically pleasing are among the most frequently occurring reasons, but people also seek self-esteem benefits, money interests, joint experience with family members or loved ones, as well as because it offers a venue for emotional expression (Wann et. al., 2001; Simons 2014).

As the NBA playoffs have recently started, I have decided to explore the sentiments and emotions in the fandoms of the NBA. Subsequently, this research seeks to present a descriptive analysis about sentiments towards different NBA teams on Twitter and which factors influence these sentiments.

II. Literature Review: Related Work & Industry Background

"Our collective success has forged some kind of unity in this huge and normally fragmented metropolis, it cuts across cultural and class lines." - Kareem Abdul-Jabbar, NBA Hall of Famer about the LA Lakers (Zhang et. al., 2018)

Considering the immense interest in sports and their fans, there is surprisingly little research on fan behavior and its respective emotions. Subsequently, this research intends to add to the already existing scenery of empirical studies with an exploratory analysis of sentiments and emotions towards different NBA teams. To provide an extensive and detailed foundation for this endeavor, this review will synthesize the current status of research regarding the sentiments and emotions towards sports teams, as well provide an industry background regarding the characteristics and possible differences between current NBA teams and its supporters.

Related Work   While all sorts of fandom can be characterized as overall positive, research indicates that sentiments and levels of engagement towards different teams vary depending on a set of factors such as the respective team's success. A recently conducted sentiment analysis of comments in NBA-related communities suggests that fans of top teams are more active in surprising losses, as fans of lower-seeded teams are more active in surprising wins. They also discovered empirical evidence for a phenomenon commonly referred to as "bandwagon fans," which represents the coherence between strong team performance and a significantly larger share of fans with low loyalty (Zhang et. al., 2018). Further research about the football 2014 World Cup displays that positive (anticipation & joy) and negative (fear & anger) fan reactions were consistent with goal results, while also indicating different levels of sentiments depending on the team allegiances, as non-US game sample showed more positive reactions than the main sample (Yu & Wang 2014).

Industry Background   As can be expected, NBA fandom is often dependent on a supporter's location. Within proximity to the home city of a team, usually, the most supporters can be found. This is especially visible in the most crowded area of NBA teams in the southwest of the US, where six teams are situated close by. However, there are several exceptions. The most successful teams of the past two decades, the Los Angeles Lakers and San Antonio Spurs (won five championships each since 2000) have managed to find supporters all over the country, indicating that success is a big factor for people in choosing their allegiances. The Toronto Raptors managed to persuade the vast majority of Canada, which can be attributed to a potentially higher degree of national loyalty in fandom in Canada (Twitter Blog 2015).

Recent research suggests that regarding sentiments and emotions, (recent) success can be the source of both allegiance and resentment towards NBA teams. This can be perfectly visualized with the example of the Brooklyn Nets: they had been hardly discussed at the time of the Twitter Blog study (2015) due to their lack of success and no championship aspirations. Yet they also have quickly emerged as the most hated team in the entire league arguably due to their recent success this year with championship aspirations – they experienced an increase of their winning percentage from 46.3% to 66.7%. Additionally, with traditional rivalries, the study suggests another reason for resenting specific teams, as the Boston Celtics are mostly hated in Pennsylvania, the home of their arch-rival, the Philadelphia 76ers (BasketballNews 2021; Basketball-Reference 2021).

In recent years, there has been an interesting development regarding teams that haven't enjoyed as much success as storied franchises. On Twitter, smaller teams like the Atlanta Hawks or Portland Trail Blazers have exercised a remarkably larger engagement on social media, as their official accounts initiated the most conversations among NBA-related tweets. This is surprising, because they are among the teams with the lowest number of followers, whereas the Lakers, the leader in followers, initiate the least amount of Twitter conversations. This could be an indication that smaller teams try to outweigh the lack of success with a higher degree of engagement on social media to attract fans.
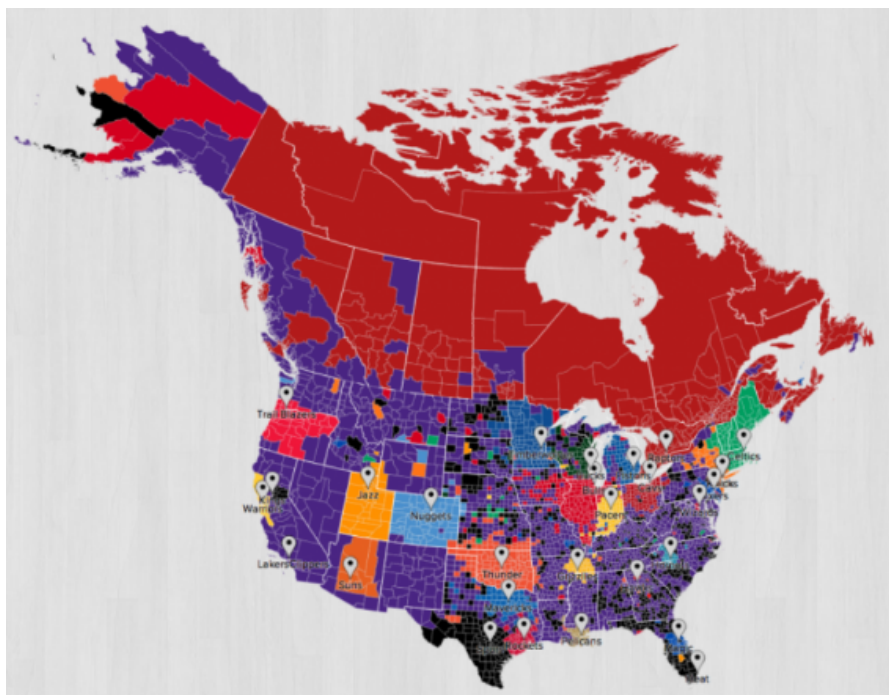
Figure 1: Fandom Allegiances: most liked NBA teams per county ; Source: Twitter Blog (2015)
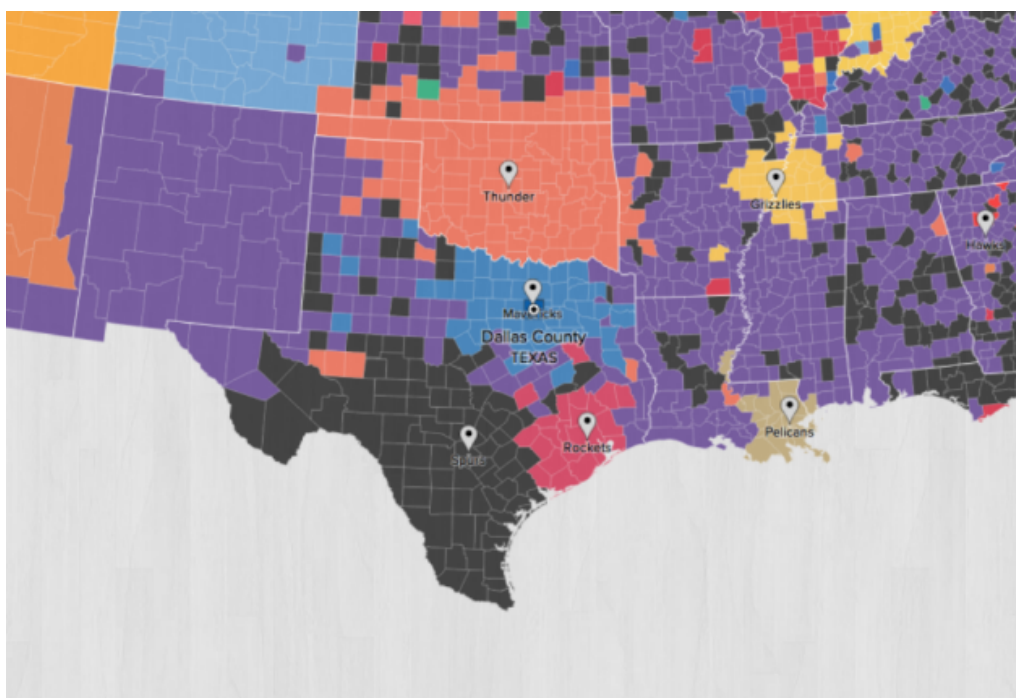

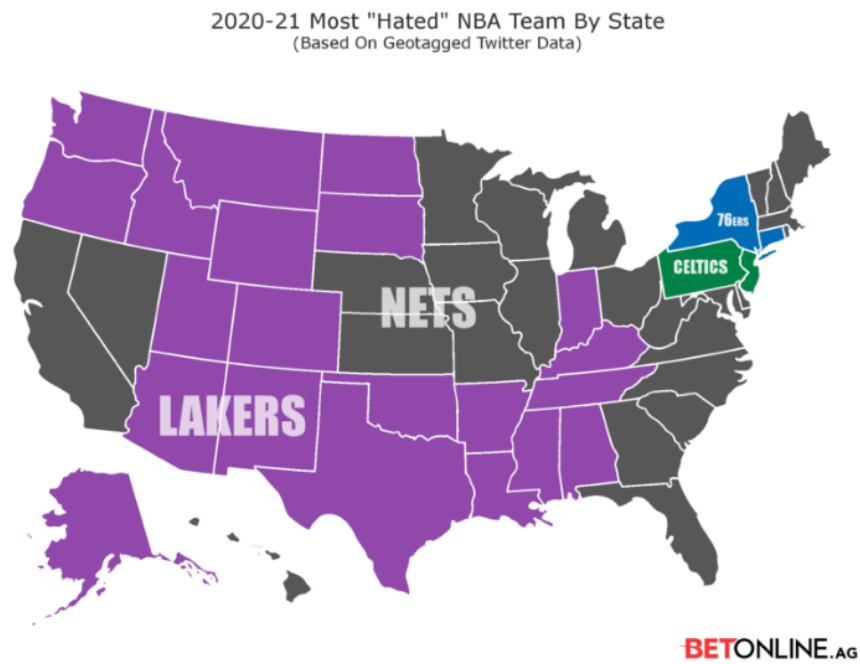Figure 2: Fandom Allegiances: most liked NBA teams per county ; Source: Twitter Blog (2015)

Figure 3: Resentment: most hated NBA teams per state; Source: BasketballNews.com (2021)
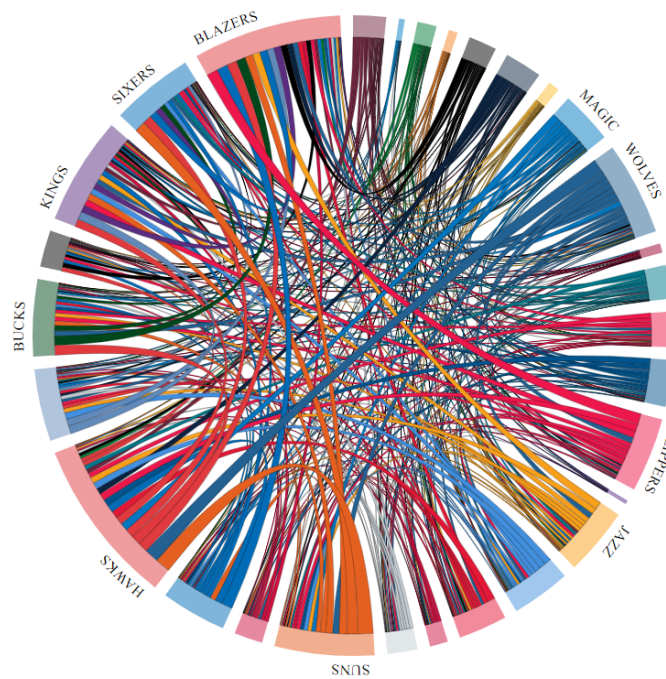

Figure 4: Number of initiated conversations; Sources: Capital News Service (2018) / Statista (2021)

III. Data

Data Collection   The data was collected from Twitter on March 20th 2021 with the Twitter Search API. The initial data set contained 10716 observations and 50 variables. A file with the names of all 30 NBA teams in form of hashtags was utilized to identify and access the adequate data from the platform.

Data Processing   After examining the data, multiple data cleaning and preparation actions were necessary. Firstly, unnecessary columns for the analysis were dropped. Secondly, a set of team id variables were created to assign each tweet to the mentioned team. This was accomplished with first creating an index variable, that detected each team assignment to a specific number (e.g., Brooklyn Nets with 3). Afterwards, a dummy variable was created for each team, indicating the value 1 if the team was indeed mentioned and 0 for every other team. Thirdly, tweets that could not be assigned to a team and missing values were erased, which reduced the number of observations to 9714. Lastly, the text data was cleaned to prepare the analysis appropriately by removing links, mentions, htmls, numbers, excess whitespaces and unneeded special characters.

Variable	Unique (#)	Missing (%)	Mean	SD	Min	Median	Max
Character Length	287	0	107.7	88.3	4.0	77.0	294.0
Favorite Count	169	0	8.2	109.6	0.0	0.0	5826.0
Retweet Count	63	0	0.7	8.7	0.0	0.0	409.0

N: 9714 observations

Figure 5: Sample Overview

IV. Methodology

Sentiment Analysis   The sentiment analysis of this research was conducted with the syuzhet-package and the NRC Word-Emotion Association Lexicon. The NRC Lexincon refers to a list of English words that displays their respective associations to eight basic emotions (anger, fear, anticipation, trust, surprise, sadness, joy and disgust) and two sentiments (negative and positive). The associations were crafted manual with the means of crowdsourcing (Mohammad 2021).

Linear Regressions   After running the sentiment analysis, a series of linear regressions were conducted to determine which sentiments and emotions to each team. For each regression, the NBA team id was the dependent variables for the variables attained in the sentiment analysis.

V. Results

The analysis yields multiple interesting insights:

- The Los Angeles Lakers are significantly linked to multiple sentiments and emotions. They are most likely to be brought up in negative tweets, yet surprisingly least likely to be linked to tweets including anger or sadness sentiments.

- The Phoenix Suns are most likely to be mentioned in a positive sentiment tweet, but also least likely to be tagged in tweets that issue trust.

- The Chicago Bulls are most likely to be mentioned in tweets with joy or surprise, yet least likely to be named in a tweet about anticipation.

- The Sacramento Kings are most likely to be tagged in a tweet embodying trust or sadness, however they are least likely to be included in a tweet about fear or with positive sentiment.

- The franchises of Memphis Grizzlies, Houston Rockets and Philadelphia 76ers did not display any significant connection to any sentiment or emotion, which may indicate that the social media presence of their official team account and their respective fans do not post many emotionally driven tweets.

Significance	Positive (+)	Joy	Anticipation	Surprise	Trust
*** 0.001	Heat Kings Pistons Suns	Bulls Celtics Pistons Suns	Hawks Knicks Wizards		Cavaliers Jazz Kings Suns
** 0.01	Bulls Mavericks	Wizards	Bulls Cavaliers Lakers	Lakers	Bulls Clippers Nuggets
* 0.05	Lakers Nets Raptors	Cavaliers Knicks Magic Raptors	Heat Nuggets	Celtics Mavericks Spurs	Bucks Heat Spurs Thunder
. 0.1	Clippers Knicks	Nets	Hornets Magic	Bulls Clippers Knicks	T-Wolves
> 0.1	all others (19)	all others (20)	all others (20)	all others (23)	all others (18)
Estimates	**Suns (+0.029)** Pistons (+0.022) Lakers (+0.008) Mavericks (-0.001) Raptors (-0.004) Bulls (-0.015) Heat (-0.018) **Kings (-0.020)**	**Bulls (+0.034)** Celtics (+0.030) Cavaliers (+0.007) Raptors (+0.005) Knicks (-0.007) Wizards (-0.008) Suns (-0.018) Pistons (-0.043) **Magic (-0.020)**	**Hawks (+0.023)** Knicks (+ 0.012) Wizards (+0.008) Nuggets (+0.007) Cavaliers (+0.006) Lakers (-0.012) Heat (-0.014) **Bulls (-0.019)**	**Bulls (+0.016)** Lakers (+0.015) Clippers & Knicks (+0.006) Spurs (+0.005) Mavericks (-0.009) **Celtics (-0.014)**	**Kings (+0.023)** Jazz (+0.022) Spurs & T-Wolves (-0.003) Bucks & Thunder (-0.004) Clippers (-0.007) Cavaliers & Nuggets (- 0.009) **Suns (-0.015)**

All model intercepts are highly significant
No significant sentiments or emotions: Grizzlies, Rockets, Sixers

Figure 6: Sentiment Analysis and Regression Results - Positives

Significance	Negative (-)	Anger	Sadness	Disgust	Fear
*** 0.001	Clippers Lakers Raptors	Lakers Nets Raptors	Kings Lakers Pistons Raptors		Lakers Raptors
** 0.01	Hawks Magic			Clippers	Pistons
* 0.05	Bulls Cavaliers Celtics Pelicans Wizards	Bucks Clippers Pacers	Celtics Heat Jazz Magic Mavericks	Celtics Heat Knicks Lakers Raptors	Kings
. 0.1	Jazz Suns	Cavaliers Hawks	Clippers Pacers	Warriors	Hawks Knicks Magic Suns Trail Blazers
> 0.1	all others (18)	all others (22)	all others (19)	all others (23)	all others (21)
Estimates	**Lakers (+0.039)** Raptors (+0.019) Clippers (+0.015) Celtics (+0.012) Pelicans (-0.004) Cavaliers & Wizards (-0.006) Hawks (-0.012) Bulls (-0.016) **Magic (-0.020)**	**Nets (+0.053)** Bucks & Pacers (+0.007) Cavaliers (+0.006) Clippers & Hawks (-0.010) Raptors (-0.018) **Lakers (-0.028)**	**Kings (+0.045)** Pistons (+0.035) Magic (+0.019) Celtics (+0.015) Mavericks (-0.10) Heat (-0.024) Jazz (-0.019) **Lakers (-0.026)**	**Heat (+0.024)** Knicks (+0.008) Warriors & Raptors (-0.008) Clippers (-0.011) Lakers (-0.014) **Celtics (-0.018)**	**Pistons (+0.031)** Raptors (+ 0.028) Lakers (+0.020) Magic (+0.014) Hawks (+0.009) Trail Blazers (-0.004) Knicks & Suns (-0.006) **Kings (-0.021)**

All model intercepts are highly significant
No significant sentiments or emotions: Grizzlies, Rockets, Sixers

Figure 7: Sentiment Analysis and Regression Results - Negatives

VI. Discussion & Conclusion

NBA fandom is often dependent on a supporter's location. Within proximity to the home city of a team, usually, the most supporters can be found. Recent success can be the source of both allegiance and resentment towards NBA teams. The analysis revealed that the sentiments and emotions towards different NBA teams are not only different, but also ambivalent in its direction. There are no teams that are "purely" perceived in a negative or positive manner. This observation is accurate for every team except for the three franchises that didn't induce any significant. Exemplary for this, the LA Lakers are the most "hated" franchise in this sample, yet they are also unlikely to be perceived in combination with angry or sad feelings. It is noticeable, that the largest positive significances are often linked to big market teams (e.g., Los Angeles, New York, Chicago), while the small market teams are frequently linked to negative connections (e.g., Sacramento, Orlando, Phoenix).

Managerial Relevance Recent success seems to be an important factor how teams are perceived on Twitter. Given this implication, marketers should exploit recent success in the league with their marketing campaigns to exploit this - for example after a big playoff win. In order to compete with the image of big franchises, small market teams should follow the example of the Atlanta Hawks and Portland Trail Blazers with a significantly higher level of interactions and conversations on Twitter in order to attain similarly positive associations (Capital News Service 2018). In a increasingly globalizing world, where the Covid-19 pandemic has accelerated the diminishing importance of locations in the real-world in favor of digital experiences, social media strategies like this could enable small market teams to even up the playing field with the traditionally successful teams that reside in the metropolis cities of Northern America.

Future Directions of Research Given the relatively small scope and sample size, future research might attain more detailed implications and results with a larger time frame of observations, as this research only included the tweets about the NBA teams of one week. An even more interesting outline would be to conduct a survey with NBA fans about their sentiments and emotions towards different franchises in order to compare the results with the analysis of this research project.

Word Count Number of Words: 2006

References

Almendrala, A. (2017): How Being A Sports Fan Makes You Happier and Healthier, in: The Huffington Post. Retrieved from: https://www.huffpost.com/entry/sports-fan-mental-health-benefits_n_6565314

BasketballNews (2021, May 22nd): Study: Who's the most hated team in the NBA right now? Retrieved from: https://www.basketballnews.com/stories/study-whos-the-mosthated-team-in-the-nba-right-now

Basketball-Reference (2021): Brooklyn Nets. Retrieved from: https://www.basketball-reference.com/teams/NJN/

Bernhardt, P.C., Dabbs Jr., J.R., Fielden, F.A. & Lutter, C.D. (1998): Testosterone changes during vicarious experiences of winning and losing among fans at sporting events, in: Physiological Behavior, 65(1).

Capital News Service (2018, June 3rd): The hidden Twitter relationships of NBA teams. Retrieved from: https://cnsmaryland.org/2018/06/03/the-relationships-between-nba-teams-twitter-accounts/

Mohammad, S. (2021): NRC Word-Emotion Association Lexicon. Retrieved from: https://saifmohammad.com/WebPages/NRC-Emotion-Lexicon.htm

Rigney, R. (2020, February 12th): Why do we love sports?, in: PSU Vanguard. Retrieved from: https://psuvanguard.com/why-do-we-love-sports/

Simons, E. (2014): What science can tell sportswriters about why we love sports, in: Columbia Journalism Review. Retrieved from: https://archives.cjr.org/full_court_press/science_sportswriting.php

Statista (2021): Twitter followers of NBA teams as of March 2021. Retrieved from: https://www.statista.com/statistics/240386/twitter-followers-of-national-basketball-association-teams/

Twitter Blog (2015): #NBA fans: Where are your team's followers? Retrieved from: https://blog.twitter.com/en_us/a/2015/nba-fans-where-are-your-team-s-followers

Wang, Y. & Zhou S. (2015): How do sports organizations use social media to build relationships? A content analysis of NBA clubs' Twitter use, University of Alabama, 1-65.

Wann, D.L., Melnick, M.J., Russell, G.W. & Pearse, D.G. (2001): Sport Fans: The psychology and social impact of spectators, Routledge.

Yu Y. & Wang X. (2014): World Cup 2014 in the Twitter World: A big data analysis of sentiments in U.S. fans' tweets, in: Computers in Human Behavior, Vol. 48, 392-400.

Zhang, J.S., Tan, C. & Lv, Q. (2018): "This why we play": Characterizing Online Fan Communities of the NBA Teams, in: Proceedings of the ACM on Human-Computer Interaction, CSCW, Art. 197, 1-25.