



NBA POPULARITY & PERFORMANCE MEASURES ON TWITTER

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INTRODUCTION

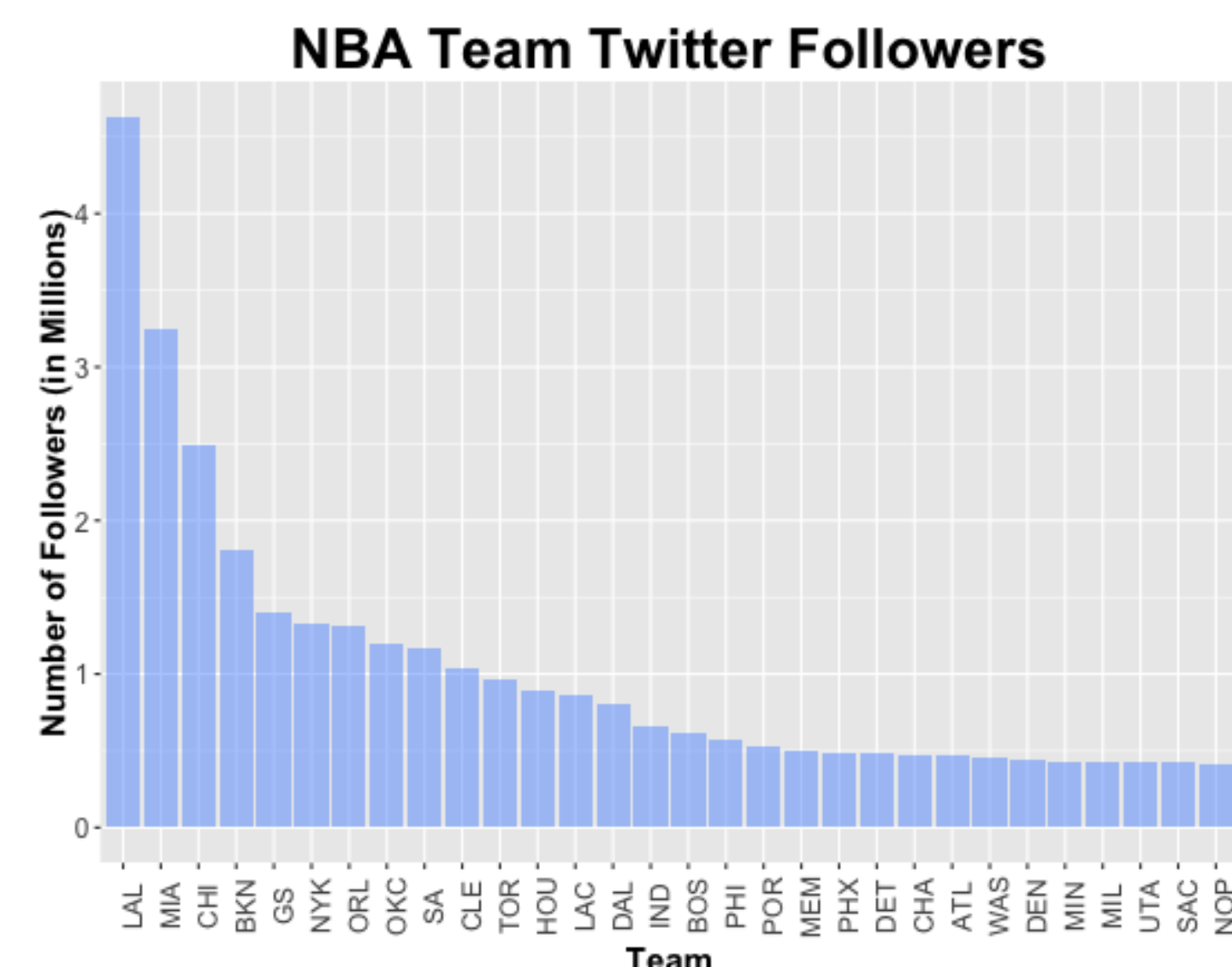
Twitter has become a crucial promotional tool for NBA players and teams. Our analysis addressed two main questions: What makes an NBA Twitter account popular? Does a player's Twitter behavior reflect player performance?

DATA

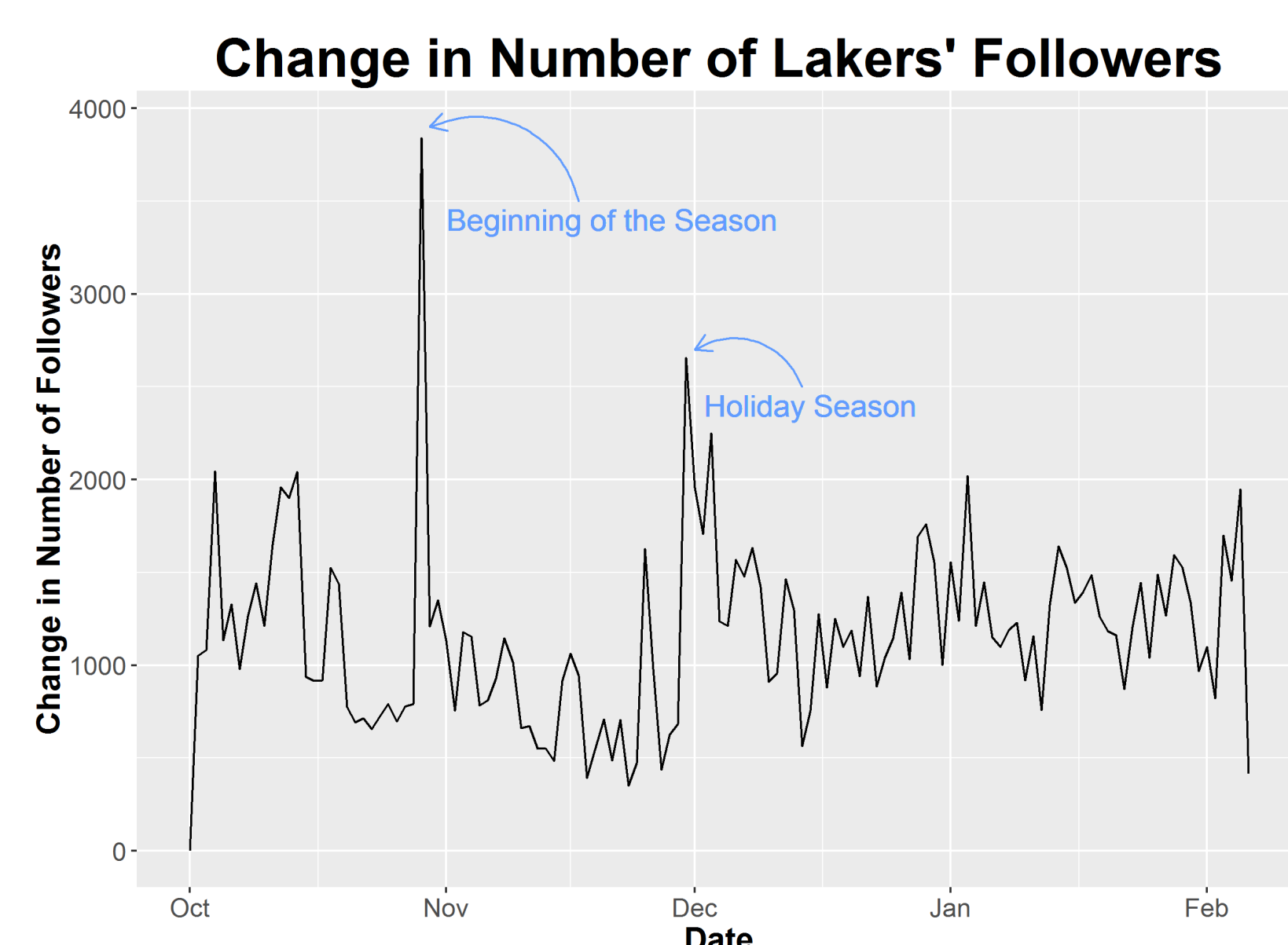
The dataset consisted of Twitter timelines collected from Twitter's REST API from 10/27/15 to 1/28/16 of 30 NBA teams and 349 players with Twitter accounts, excluding players without accounts or with suspended accounts. Outside data sources included *Basketball Reference* and *Twittercounter*. The project repository can be found at <https://github.com/jjasonWang/STAT-222-NBA-Twitter-Project>.

OVERVIEW

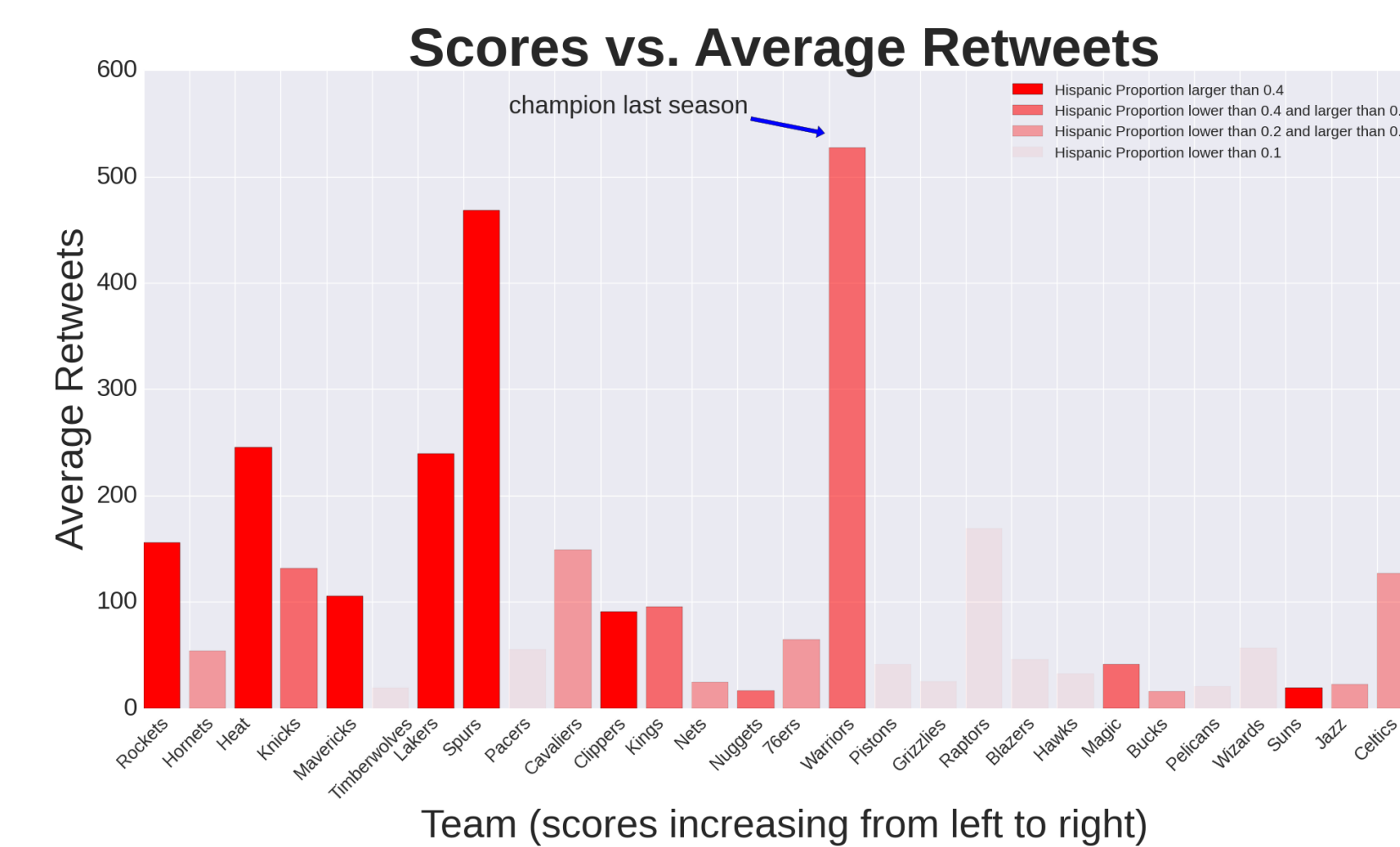
As seen in the bar plot of NBA team Twitter followers, the LA Lakers has the most followers.



Change in the Lakers' followers has two peaks: the beginning of the season and the holidays.



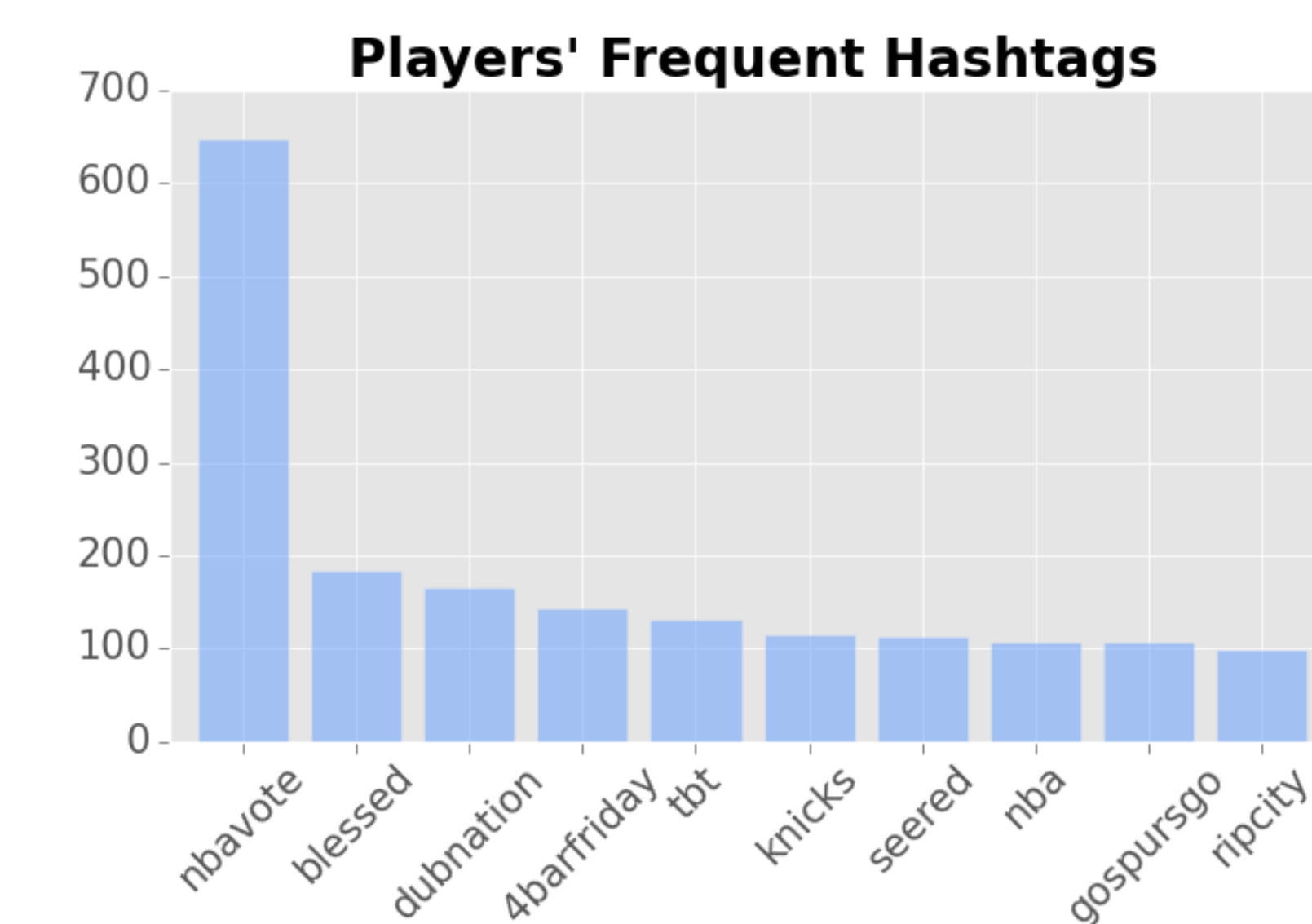
SVD SCORES



We defined a score based on SVD and found out that the left (lower scoring) teams tend to have more retweets. Also the left teams all tend to use more Spanish tweets. The colors of the bars represent the proportion of Hispanic of the team's city, which may explain why the left teams use a lot of Spanish tweets. In conclusion, if a team in a city with high proportion of Hispanic, it would have more retweets by using Spanish tweets.

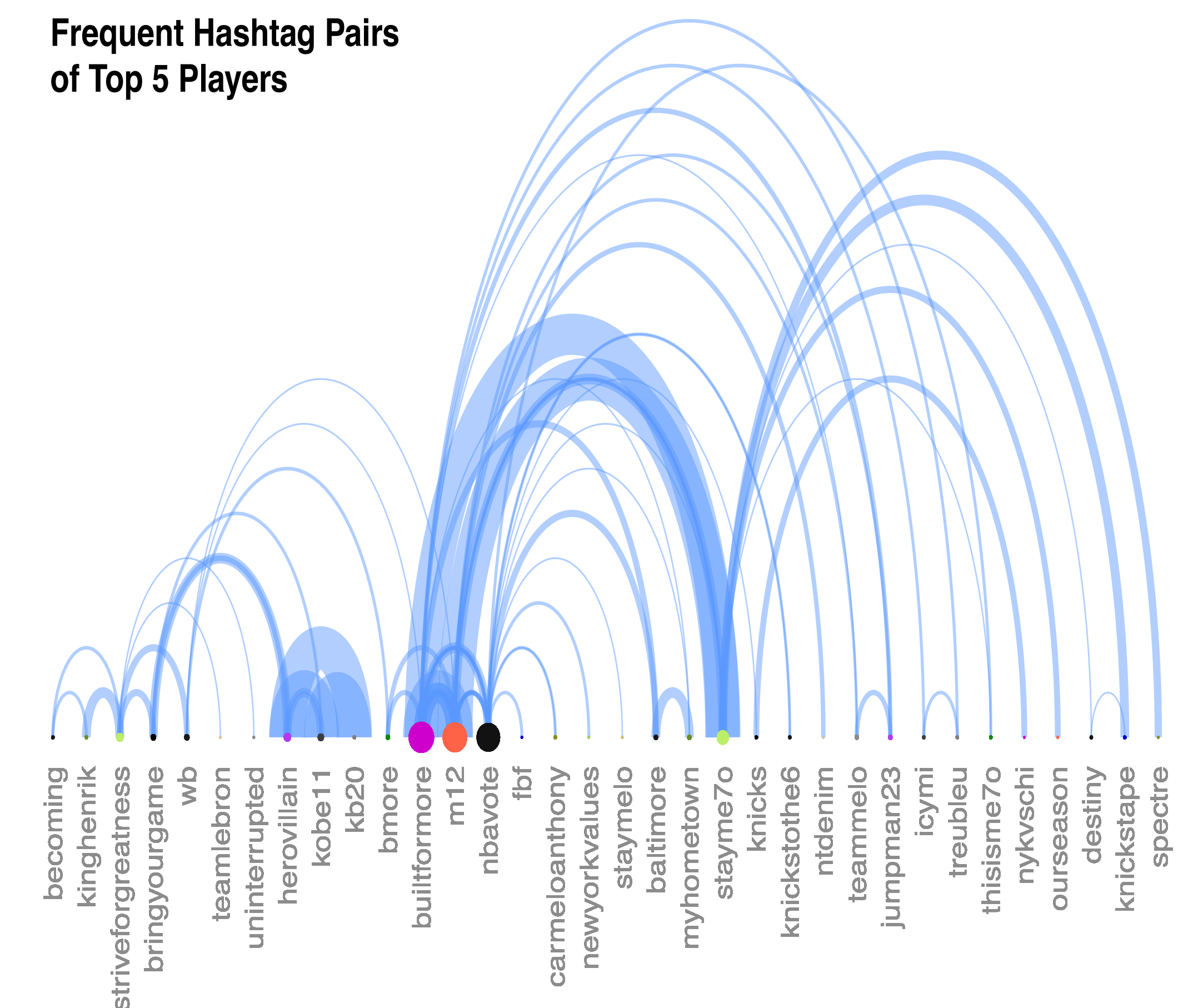
HASHTAG ANALYSIS

As shown below, NBA players frequently use hashtags referencing popular teams in the league.

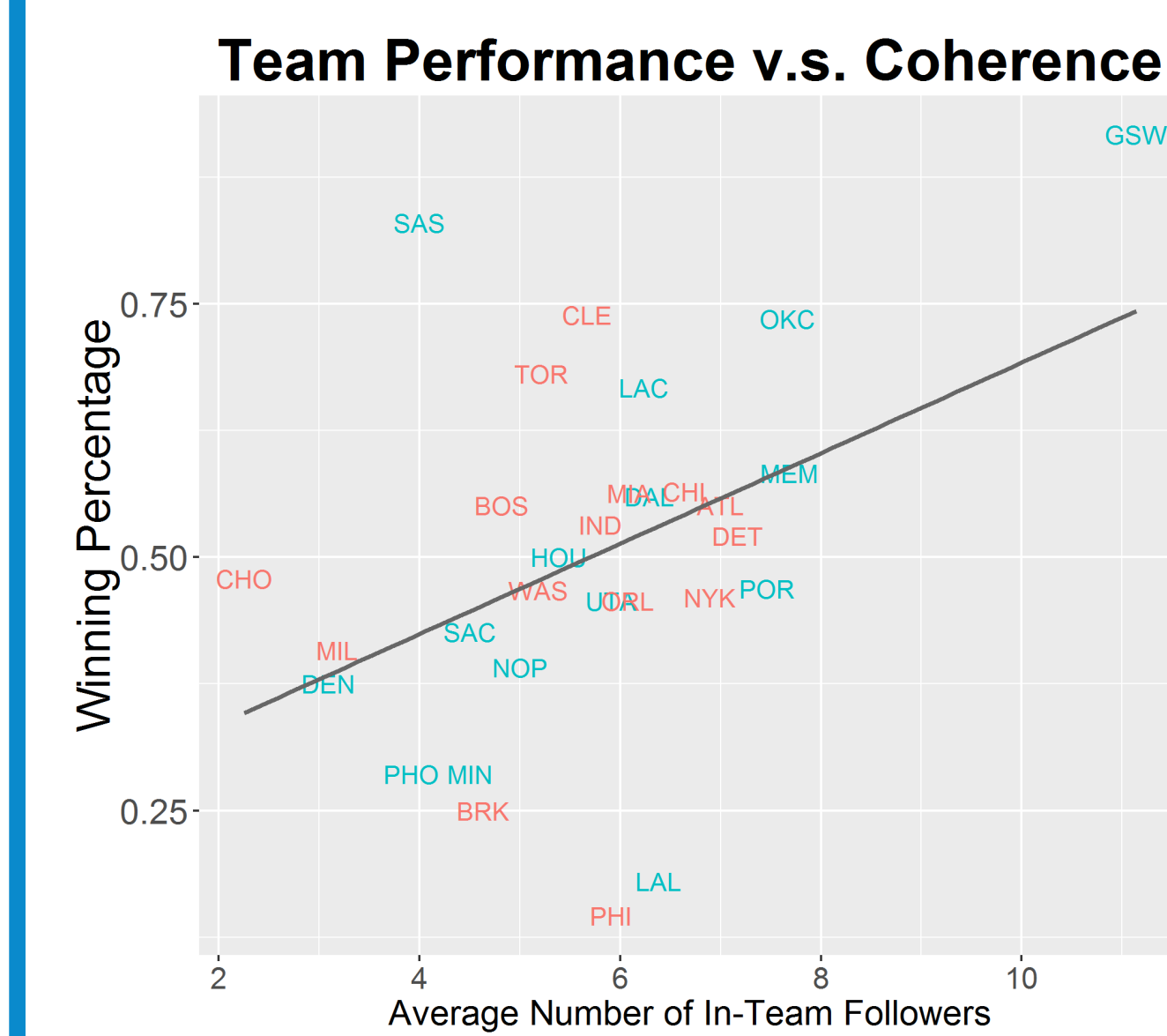


The arc plot displays the most frequent hashtag pairs in player tweets. The size of the dot indicates hashtag frequency while the width of the arc indicates hashtag pair frequency. Players often promote sponsors using hashtags. Notice Carmelo

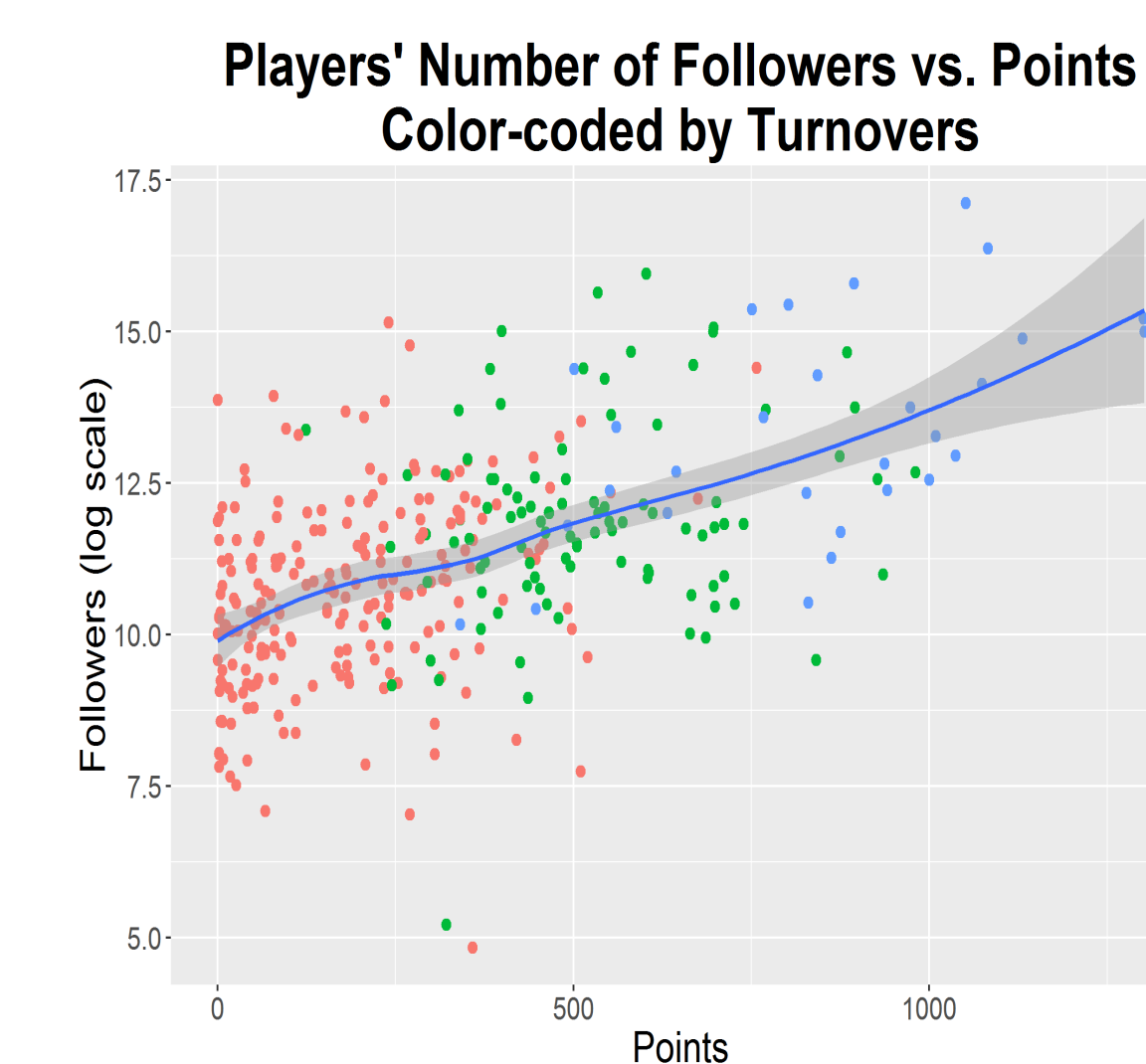
Anthony's #teammelo connects to #m12, #jumpman23, and #builtformore, Nike and Jordan shoes.



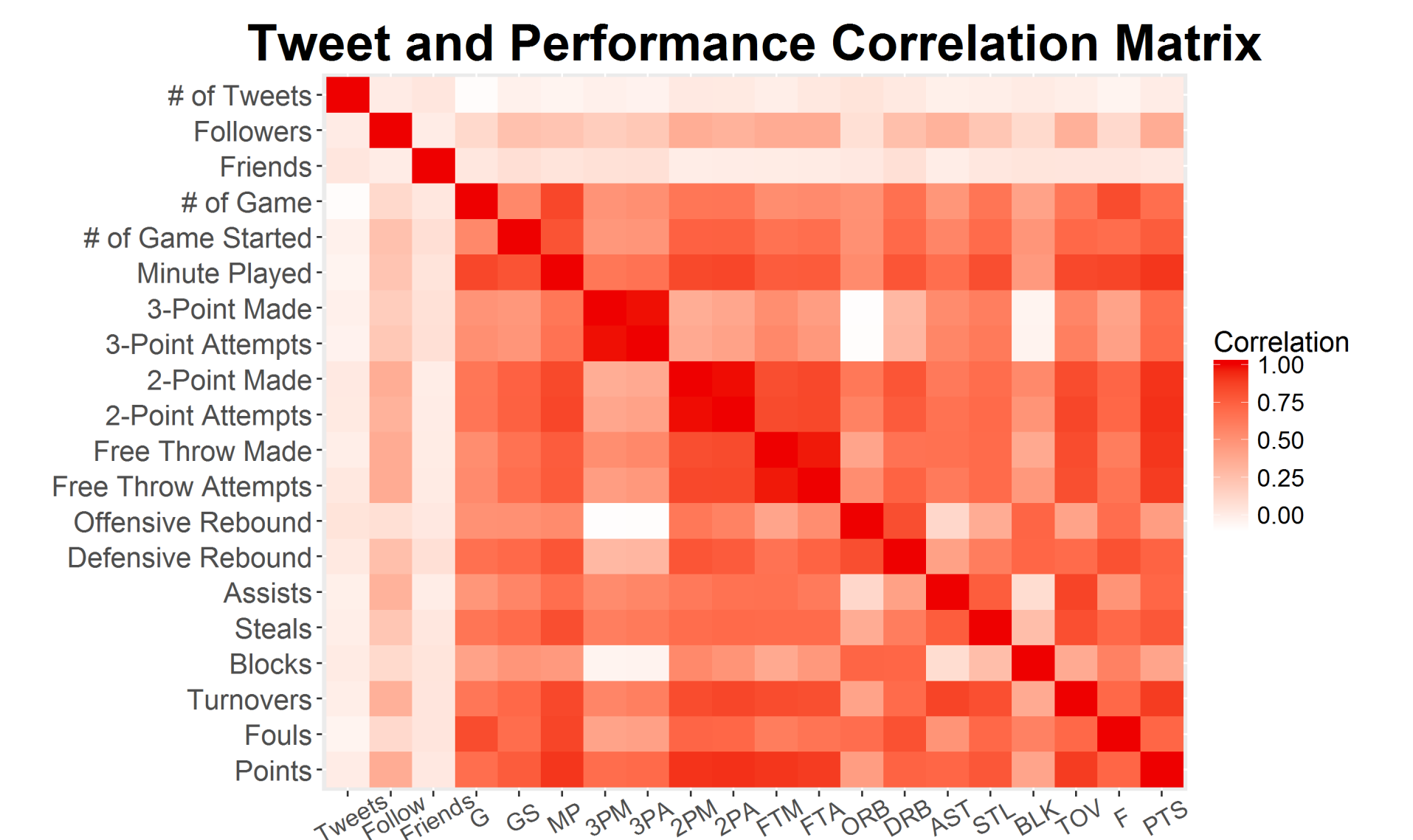
PERFORMANCE



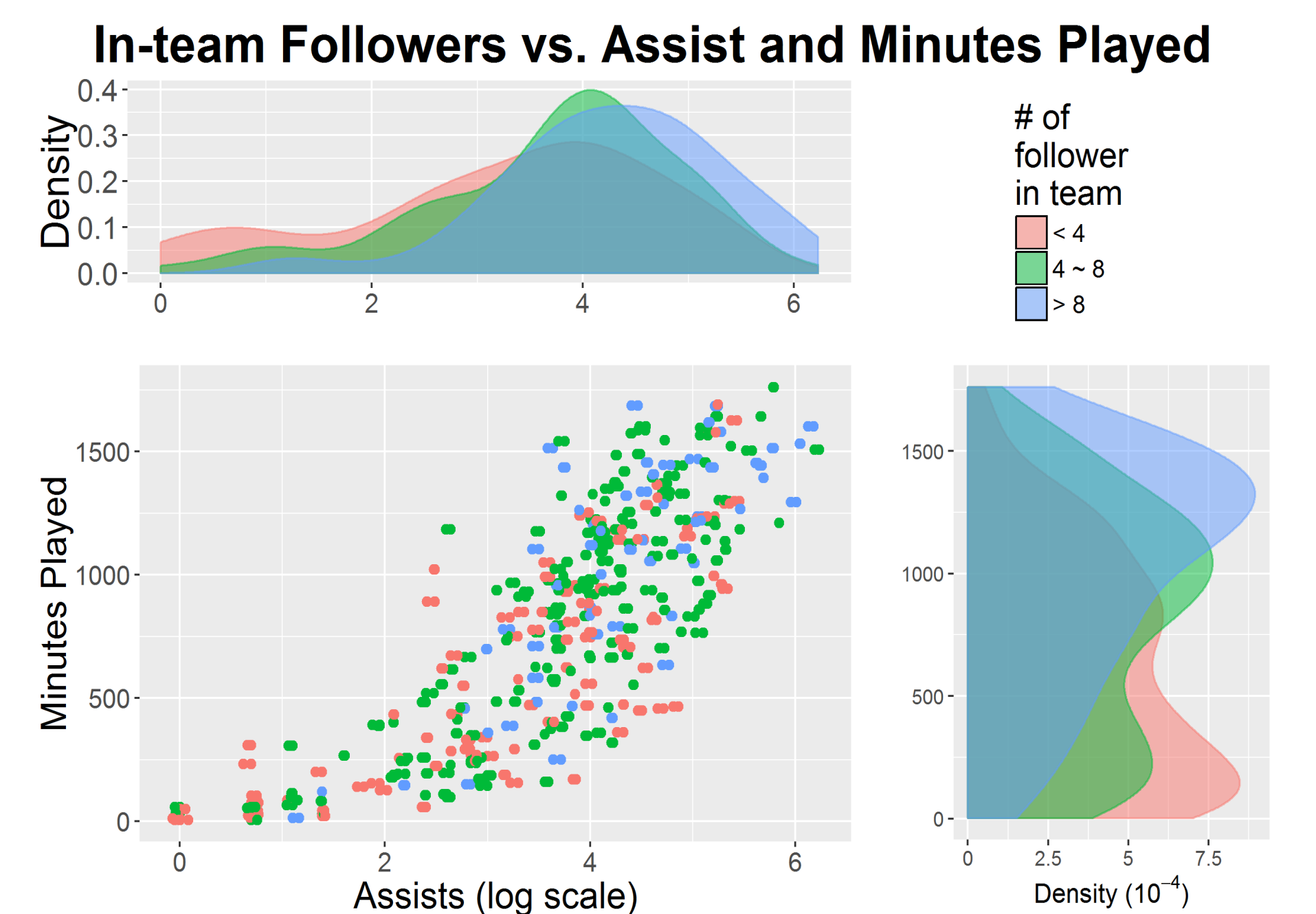
- On average, the more team members follow each other, the better the team performs, in whichever conference.
- Players who score more tend to have more turnovers. This may explain why the relationship between turnovers and number of followers is positive.



PERFORMANCE



The matrix above illustrates correlation between 3 Twitter and 17 player performance variables. Most performance attributes are highly positively correlated. No negative correlation exists. However, all Twitter attributes, excepting number of followers, are uncorrelated with performance.



After examining the relationship between number of followers within a player's team and minutes played and assists, we found that players with more followers from their team tended to have more minutes played and more assists.

CONCLUSION

- If the team is in a city with a high proportion of Hispanic, it should tweet more Spanish tweets.
- Players use Twitter to promote sponsors.
- High performing players have more followers.
- More in-team followers indicates better team and individual performance.