

Social media platforms offer sports teams a medium through which to connect with their fans and establish a sense of community. One of the most popular social media platforms for sports fans is Instagram as it offers a focus on visual media which can captivate fans. NBA teams have experienced substantial growth and engagement on Instagram and we are curious about the extent to which these trends apply to WNBA teams. We will be investigating the difference in responses and engagement between the Instagram accounts of two NBA teams and their WNBA counterparts: the Washington Wizards, the Los Angeles Lakers, the Washington Mystics, and the Los Angeles Sparks. We have evaluated engagement levels across these accounts to identify trends and gain insights about the characteristics of each league's respective communities.

Literature Review

The differences between men's and women's sports deals with a wide range of topics, including sports social media relationship marketing, coverage disparities, rising popularity of women's sports, and gendered aspects of athlete representation on social media.

The previous findings of others have allowed us to further our own research and make observations about our topic. Sports social media relationship marketing and cultivating relationships among brands is an important part of the research. There are findings that demonstrate that social media research in sports management aligns with service-dominant logic and illustrates the role of social media in cultivating relationships among and between brands and individuals. (Filo, Lock & Karg, 2015) The interaction

of these accounts plays an important role in cultivation such relationships. It is important to build these relationships to increase the engagement rate rather than having a large follower base but less interaction.

Another related topic is the difference in coverage between male and female sports. There have been findings that indicate a much larger amount of coverage and bias towards male sports, portraying them as more professional and at a higher level of play (Frideres, & Palao, 2019), similar to how we don't see as much of the WNBA in promotions or mass media compared to the NBA. It gives the idea to the readers and viewers that male-dominated sports are more important. This is significant because it shows how the media treats male vs female sports coverage. This provides valuable insight to our topic. For example, it can show how some platforms might be more willing to promote men's sports for higher engagement from their audience and acceptance from the majority of users.

The coverage of the rise in popularity of women's sports is also important to note, it has been gaining more viewers and more airtime than ever before. In 2022, networks started to take more notice of women's sports and how there was not as much recognition or broadcasts as there were with mens sports, deciding to make a change. Both CBS and ESPN reported increasing their screen time for women's sports by 50%, and the WNBA's coverage on ABC and ESPN rose by about 19% year-to-year. In 2022, it was the WNBA's most watched year since 2008 (Umstead, 2022). This is important to take note of for our topic when looking at the data, to see if this rising popularity on television is surfacing on social media and how WNBA teams compare to their

counterparts. It also denotes superstar influence on the increased interest, which is something we will take note of in our analyses.

Finally it is important to note what has been found in relation to the media and what they put out about their players and teams. Social media and its relationship to sports media is very important, it can indicate the level of intrigue that an athlete's own social media has on consumers, as well as the importance of fan pages in growing a team or player's content farm. (Emmons & Mocarski, 2014). By looking at what has been discovered in this area it can give us insight into how gendered norms may appear in team media, and if that impacts the engagement or type of engagement.

There have been various approaches in the past, but this topic is still important to learn more about why there are such different reactions between gendered posts in sports, what causes it, and how it can change between teams or organizations. It is a developing research area that deserves to be studied further.

Research Questions:

RQ1 :What types of Instagram posts garner higher engagement levels?

RQ2: How does winning a game affect Instagram engagement?

Method

For our sampling method, we focused our results on the 2022-2023 NBA season and the 2023 WNBA season. We used a stratified random sample, pulling from all of 2022-2023, splitting our posts into 7 different types, and randomly sampling from each of those types, and that is where our data comes from. Post type is our first independent variable that we measured. We then randomly selected using a random number

generator from a range of 1-60 to determine how far back from either A) the end of the NBA Finals on June 12th, 2023 for NBA teams or B) October 31st, 2023 for WNBA teams, and using a selection of four posts from each category.

We use win rate as another independent variable, although the record itself was not what was measured, as it would skew the data. We decided it was best to label a positive record (identified as 0.5 or above) as a 1, and a negative record (below 0.5) as a 2, and any posts that did not fall within either the respective team's regular season or postseason. Finally, we gathered both the like and comment total of each instagram post, and averaged them in comparison to the team's total follower count to get an average engagement rate in the form of a decimal to find our dependent variable statistics.

Coding

Types 1-5 refer to specifically an image or multimedia that does not involve a full length video but may include a moving graphic image. Type 1 refers to a Pre-Game Image post referring to a post that either references a game day or one that shows off the outfits of the players walking into the arena; Type 2 refers to a Post-Game Image post, usually a score or win post.

Type 3 refers to Player Highlight Multimedia posts, which we define as including birthdays, acquisitions, and performance recognition; Type 4 refers to Multimedia posts involving awards, award races, records, and hall of fame related posts; Type 5 refers to external promotion multimedia posts, which we identify as a collaborative effort between the team and an external organization including charities and businesses.

Types 6 and 7 referred specifically to video posts, not moving graphic images.

Type 6 refers to generalized engagement Video posts, such as team-crafted promotional videos and the like; and Type 7 refers to video clips from in-game highlights and media availability interviews or documentaries.

Analysis

We chose to use these methods in order to be able to test the different post types so we would not be stuck trying to find a certain number of posts within a certain type that was too tightly defined, while also not being so broad as to acknowledge simply images and videos, so we would have a significant number of samples from each type. We chose the sample range 1-60 because it gave us the best chance of encapsulating an entire season as well as some offseason posts to get a larger variety, without widening our margins so far as to be taken into the prior season.. We chose to use 4 from each category to get a comparable representative sample size from each category.

We used a T-test to determine if there were any significant differences between the record of wins and losses affecting a team's post success, using the result categories of "win" and "loss". We also used bar graphs to discover rudimentary correlations between engagement rates and winning percentage, engagement rates and post type, and engagement rates by team. We also used means to discover each team's engagement rate by post type and determine how successful each type was. Saturation was likely not achieved due to our sample size.

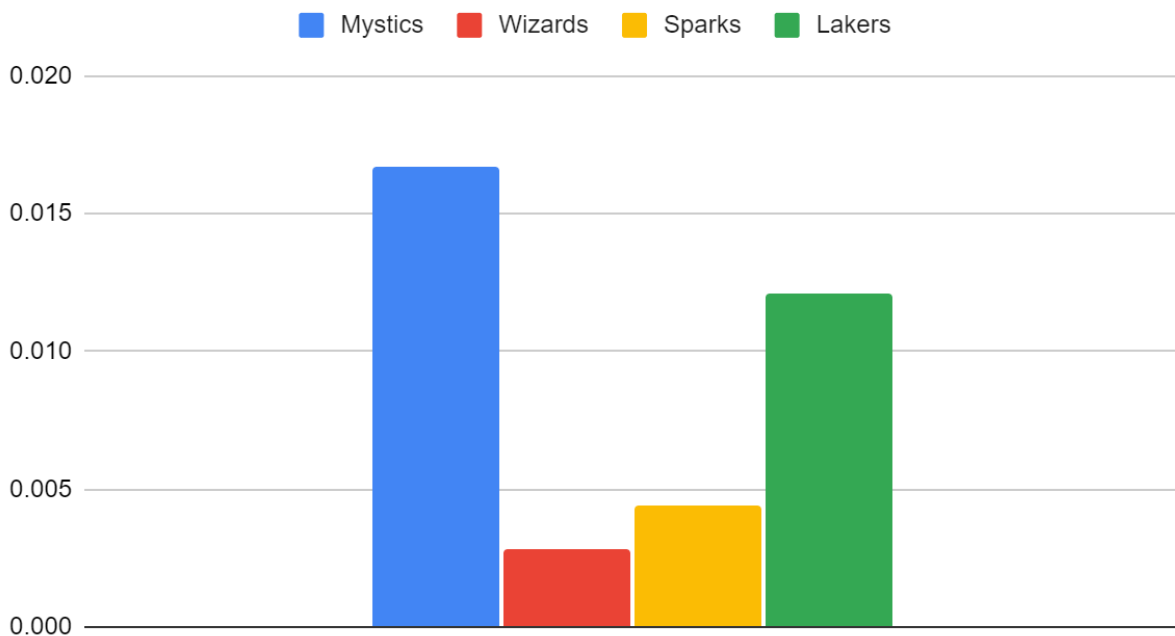
Results

These results are found from the 2022-2023 NBA season and the 2023 WNBA season.

Descriptives

Descriptives of the study are listed below. Different graphs and tables are used to visualize the data. Each graph has a text description below the chart.

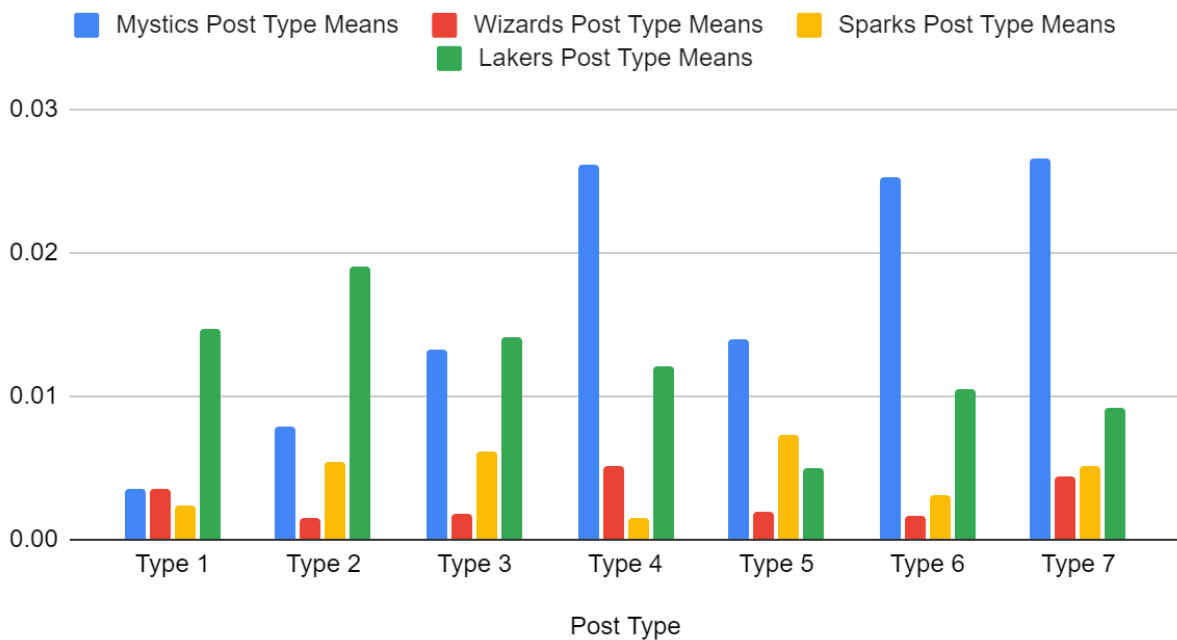
Mean Engagement Rate for Each Team



This graph shows the total mean engagement rate for each team. The Mystics had the highest rate of 0.01667701863 or 1.67% of their follower base per post. The Lakers had the second highest at 0.01206449392 or 1.21% of their follower base per post. The Sparks had a mean of 0.004445131762 or 0.44% of their follower base per post, and the Wizards had a mean of 0.0028565, or 0.29% of their follower base per post.

	Mystics	Wizards	Sparks	Lakers
Total:	0.01667701863	0.0028565	0.004445131762	0.01206449392

Mean Engagement Rate for Each Team by Post Type

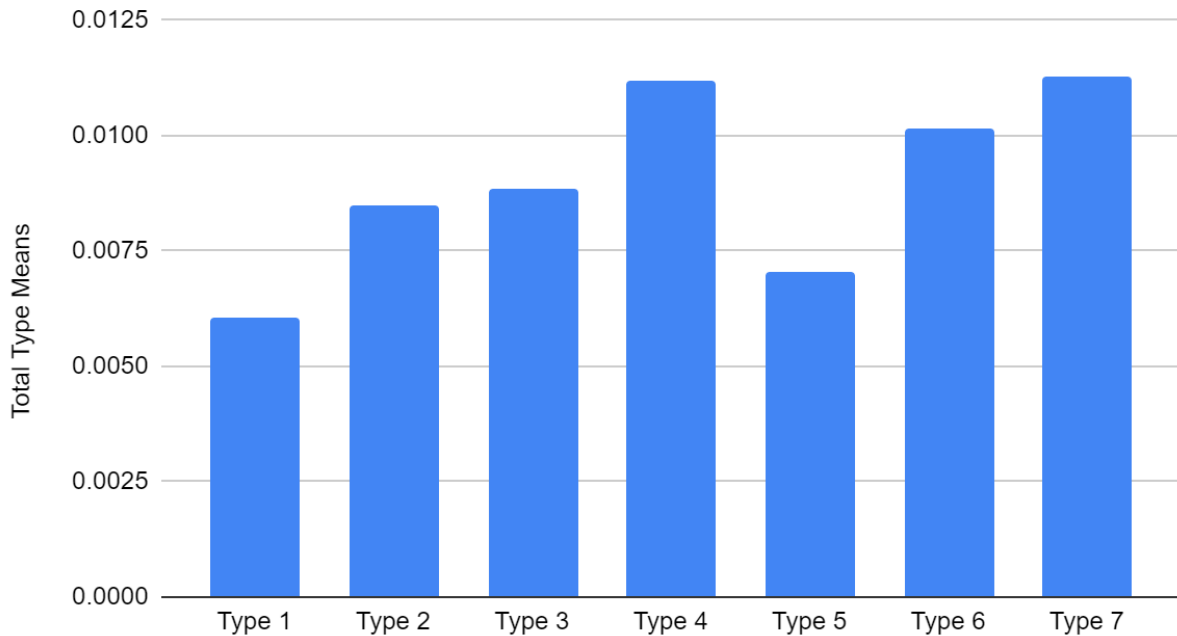


By comparing the means of engagement rates for each post type we were able to find that the Mystics and The Lakers have higher engagement rates. The Wizards and Sparks have lower engagement rates.

	Mystics Post Type Means	Wizards Post Type Means	Sparks Post Type Means	Lakers Post Type Means
Type 1	0.003584782609	0.0035185	0.002363204	0.01468692553
Type 2	0.007910869565	0.001573666667	0.00547626	0.01901962765
Type 3	0.01324130435	0.001788166667	0.0061726	0.01410165957
Type 4	0.02616304348	0.0051315	0.00144214	0.01205798936

Type 5	0.01400434783	0.001878166667	0.007361026667	0.004966085103
Type 6	0.02531304348	0.001704166667	0.00317804	0.01046655319
Type 7	0.02652173913	0.004401333333	0.005122651667	0.009152617015

Total Type Means vs. Post Type



This graph shows total type means vs post type. Post types 7, 4, and 6 had the highest mean engagement rate. This reveals that videos and award-type posts have a higher engagement rate on Instagram than types 3, 2, 5, and 1.

	Total Type Means
Type 1	0.006038353034
Type 2	0.008495105971
Type 3	0.008825932647
Type 4	0.01119866821
Type 5	0.007052406567
Type 6	0.01016545083
Type 7	0.01129958529

Post Type	Num.
IMAGES	-
Pre-Game	1
Post-Game (Score)	2
Player Highlight (Birthdays, Acquisition.)	3
Award / Award Race / Record	4
External Promo (Charity or Other)	5
VIDEOS	-
Engagement	6
Clips	7

Research Questions:

RQ1: What types of Instagram posts garner higher engagement levels?

RQ1: The types of Instagram posts that garner higher engagement levels include engagement, clips, and awards. A comparison of the total type mean vs the post type finds the engagement average for each type of post. Standard deviation was not found to be significant but it can determine which post type did the best. The highest value (post type 7) at 0.01129958529 - the standard deviation 0.002013677648 = 0.00928590764. Any mean value higher than 0.00928590764 suggests that that type of post is notably more successful in attracting user engagement levels. The post types 4, 6, and 7 are higher than 0.009 which suggests that they are the most successful types. The post types that we recognize as having notably lower than average levels of engagement included pre-game and external promotion. Post types 2 and 3 were not significantly outside the mean to recognize them as notably more or less successful than average.

RQ2: How does winning a game affect Instagram engagement?

RQ2: Through our tests, we found that winning percentage does not meaningfully affect a team's Instagram engagement. Using a two-factor t-test to see if win rate affects user engagement; a positive correlation is found at $t = 0.69$. A p-value of 0.49 proves that this data is not statistically significant, failing to reject the null hypothesis, and there is no significant correlation between winning a game and Instagram engagement.

Discussion

Our first research question focused on what types of posts garner the most engagement. We found that type 4 posts that feature players receiving awards or breaking records garnered an exceptional amount of engagement as well as type 7 posts, which include in-game clips of players. The popularity of type 4 posts makes sense as fans are likely to celebrate the achievements of the players. The same goes for clips of players, as fans enjoy seeing highlights from games they may have missed or want to relive the best moments from a certain game. The least successful posts were type 1 posts which relate to pre-game activities. There isn't much to celebrate in these posts and fans are likely watching the game as they were posted.

As for our test to see if win rate affects user engagement, we found a positive correlation of $t = .69$ after performing a two-factor t-test, but with a P value of .49 this data isn't statistically significant. The high t-value is likely due to the data we collected on the Lakers, who had a positive win rate for most of the season as well as high engagement because of their popularity. It seems as though the likelihood that a fan of

a certain team will engage with that team's Instagram page is independent from how well they have performed in the season.

There are a few potential external variables for this that should be taken into account when pursuing future research. Popularity may play a larger role in a team's success than their performance. Popular teams may experience high engagement even if they are underperforming, and less popular teams may continuously see low engagement even if they are performing well in the season. Another external variable may be that Instagram isn't the preferred platform for people who closely follow the performance of these teams. All of the teams that we studied feature "behind-the-scenes" content on their Instagram pages. This may pull a user's attention away from a team's performance and play off of their interest in the lives of the players and the team's inner workings. Although we are unsure that these alternate explanations fully explain the results, the people managing NBA and WNBA Instagram pages should take these possibilities into account. For Instagram content, perhaps posts should focus on giving insights about the team instead of relying on the team's performance in the current season.

There are a few potential limitations that may have affected our conclusions. We chose to focus on only two NBA and two WNBA teams while there are 30 teams in the NBA and 12 teams in the WNBA. While we chose teams with varying levels of popularity, fans of teams in the sample may have been more loyal to the more popular teams and therefore provide support regardless of type of post or win rate. A source we used as part of our literature review (Filo, Lock & Karg, 2015) corroborates this theory, as social media plays a powerful role in creating relationships between the team and

their fans. Another limitation of our research was time, as we would have been able to cover more types of posts and analyze more teams with a wider time window for research. In future research, we may benefit by increasing our sample size as well as including different seasons to measure changes over time. Our research primarily covered the 2022-2023 NBA season and the 2023 WNBA season, as well as some offseason or preseason before and after these seasons.

Our results may have been skewed by recent trends and to have a clearer understanding of what fans respond to on Instagram, we should perform research over a longer period of time. We focused our quantitative research on measuring overall engagement, but we may have benefitted by including qualitative research such as the quality of the interactions. For example, we took the number of comments into account when calculating engagement rate, but a qualitative measure we could have used was the sentiments expressed in the comments which may have varied more based on type of post or win rate.

Social media offers opportunities for teams to gain and retain fans, as well as make money through sponsorships and partnerships. They are an important part of a team's marketing and the people who run these accounts are constantly looking for ways to improve their strategies. Studies like ours play an important role in shaping these strategies.

References

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