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Gilmore Girls and Instagram: A Statistical Look at the Popularity of the Television Show Through the Lens of an Instagram Page

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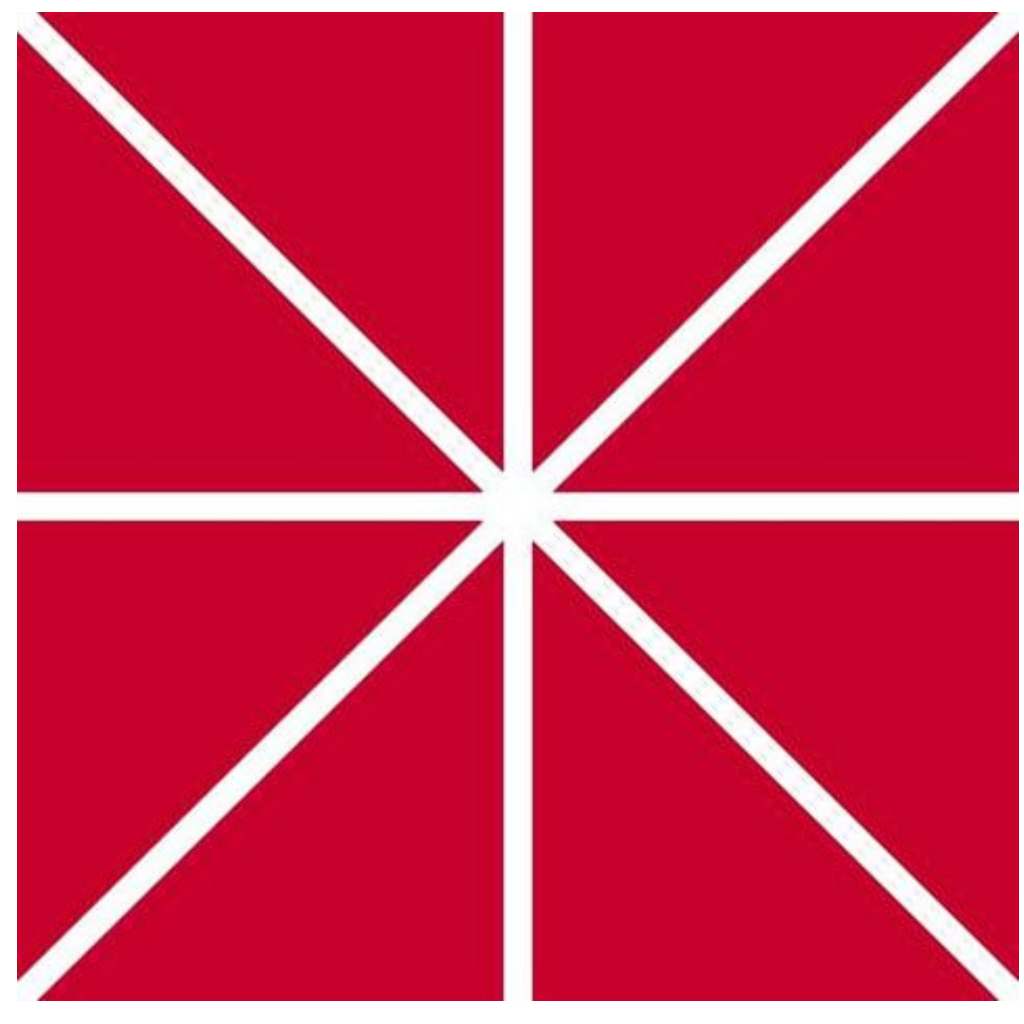
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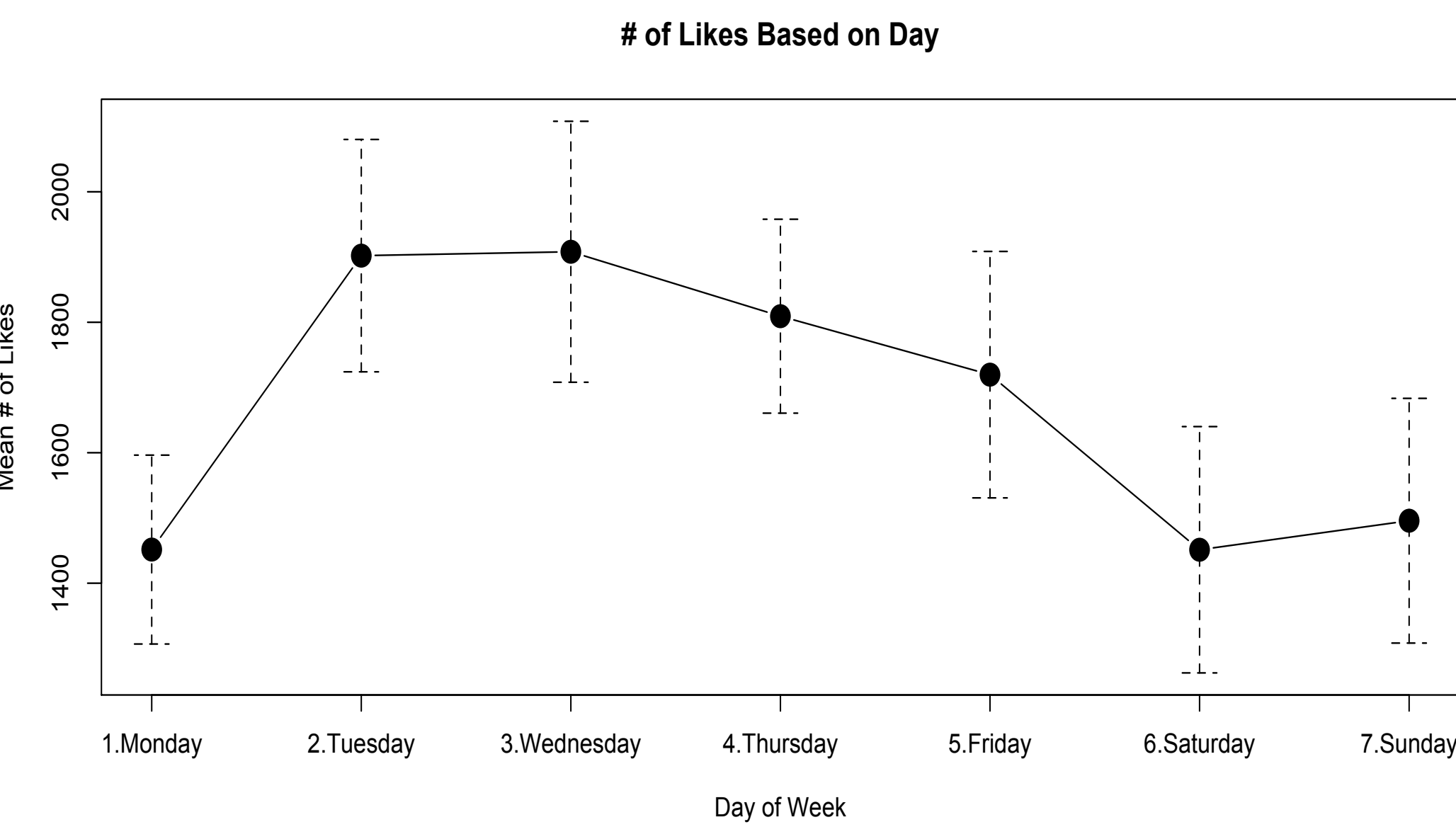


“Gilmore Girls” and Instagram: A Statistical Look at the Popularity of the Television Show Through the Lens of an Instagram Page

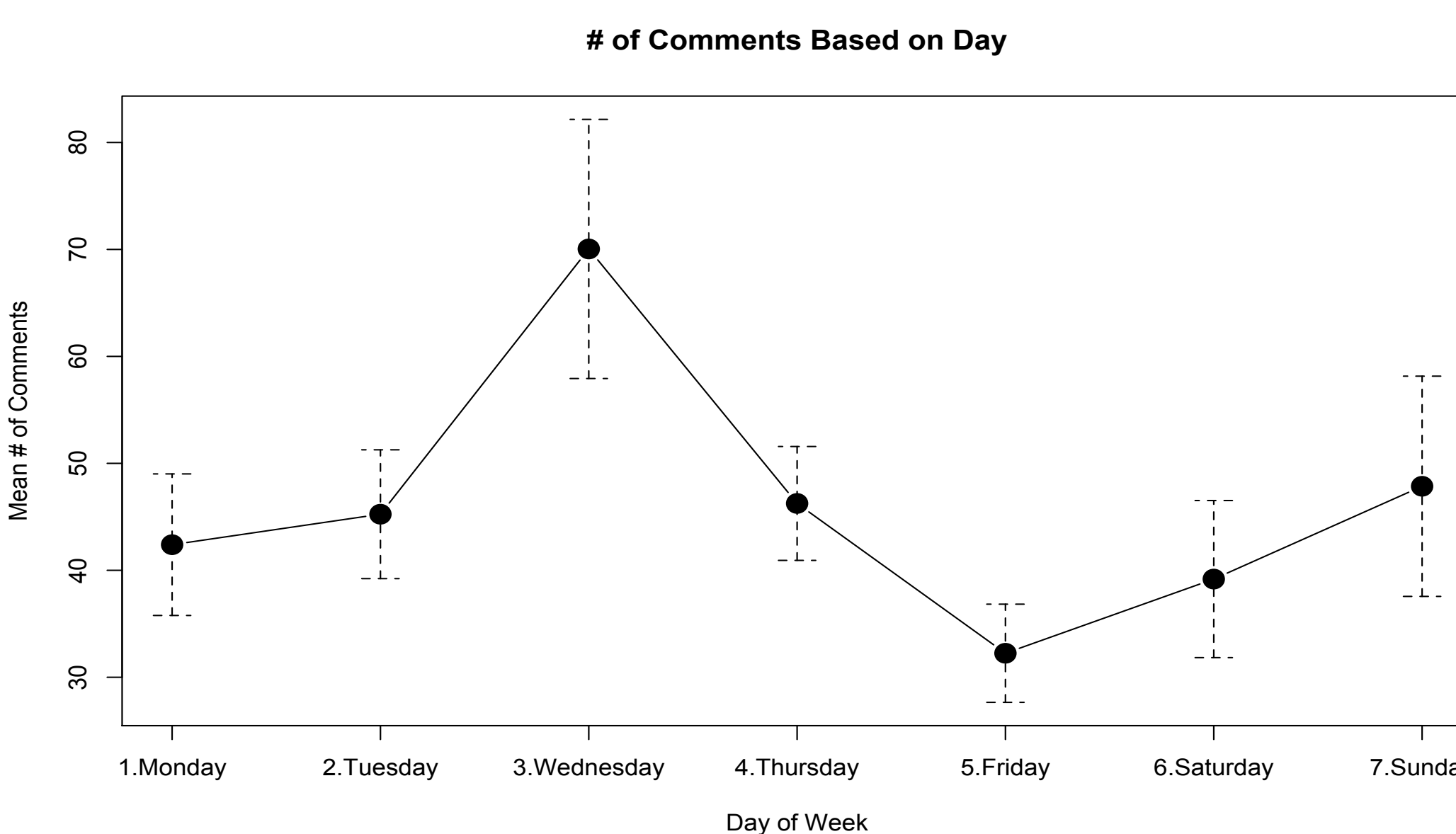
Brittany Simmons, Dr. Oliver Lopez

Introduction

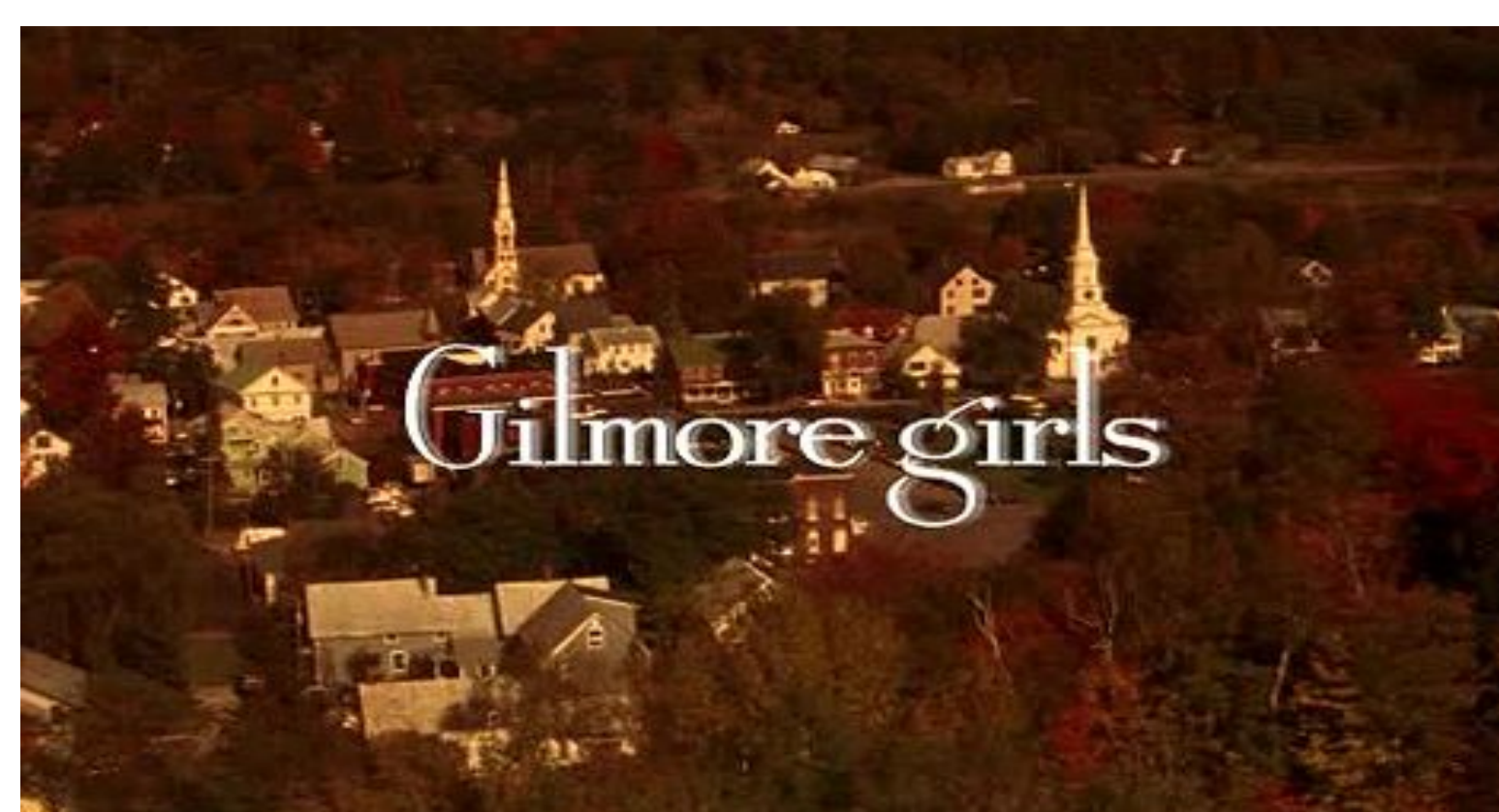
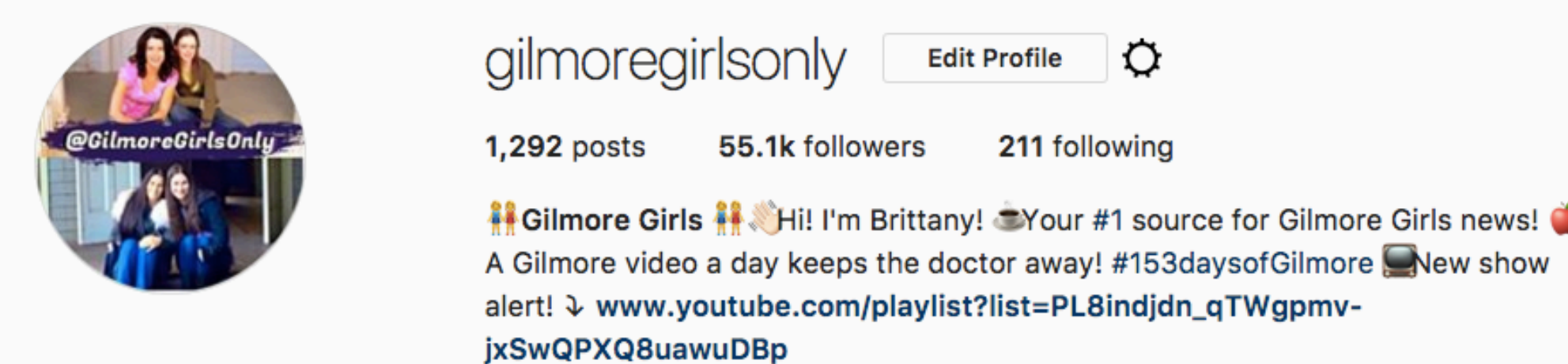
After going on the Warner Brothers Tour in December of 2015, I created a *Gilmore Girls* Instagram account. This account, which started off as a way for me to create edits of the show and post my photos from the tour turned into something bigger than I ever could have imagined. In just over a year I have over 55,000 followers. I post content including revival news, merchandise, and edits of the show that have been featured in Entertainment Weekly, Bustle, E! News, People Magazine, Yahoo News, & GilmoreNews. I created a dataset of qualitative and quantitative outcomes from my posts from December 2015 to April 2016, and September 2016 to November 2016. This includes a total of 671 different posts. I am interested in analyzing data for each post including outcomes such as number of likes, number of comments, number of views, caption type, and type of post (video or picture).



This graph shows the average number of likes by day of the week. Based on the day of the week, Tuesday and Wednesday have the highest means of likes with varying outliers while Saturday has the lowest means of likes.



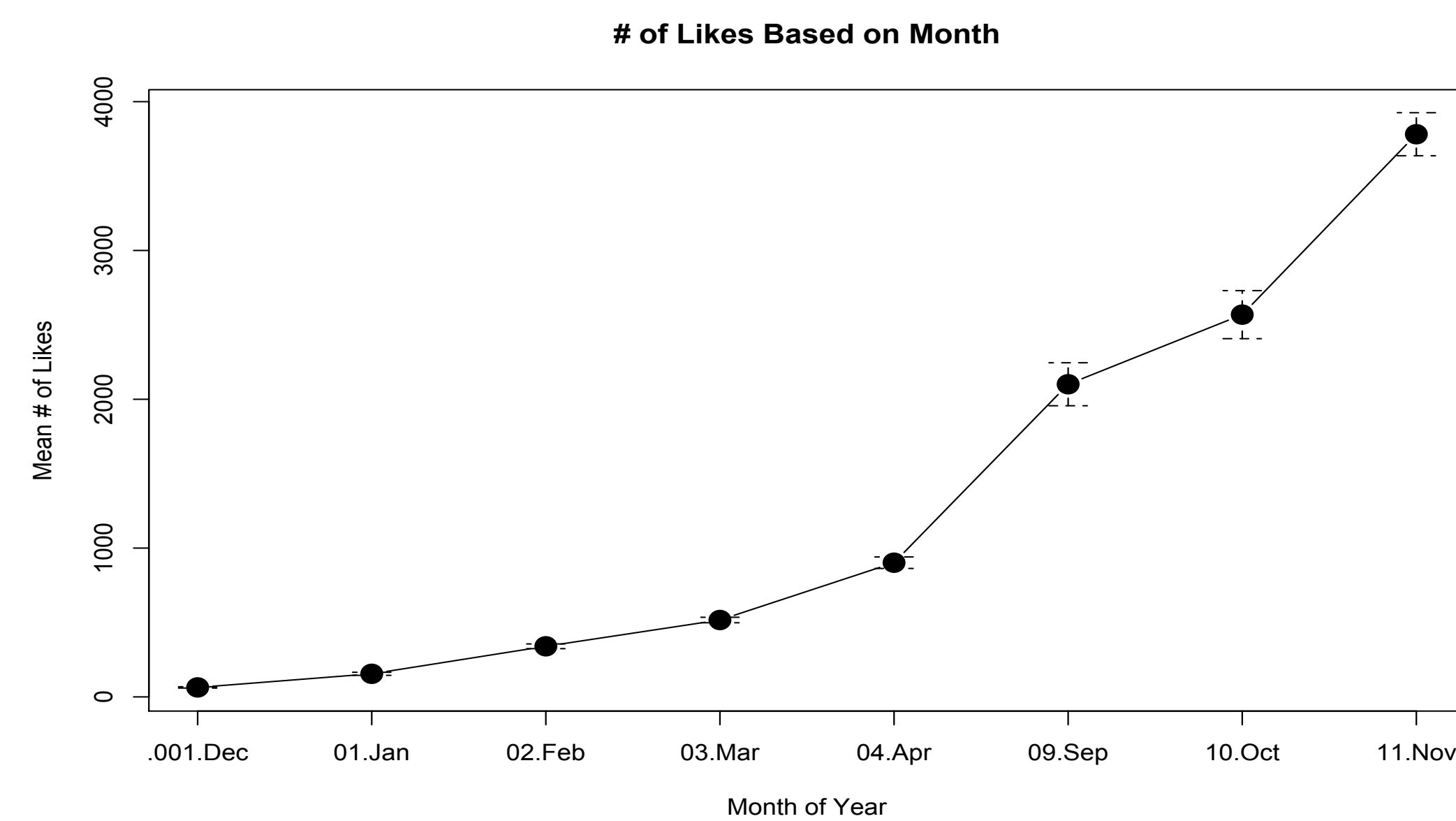
This graph shows the average number of comments by day of the week. Based on the day of the week, Wednesday has the highest mean of comments while Friday has the lowest mean of comments.



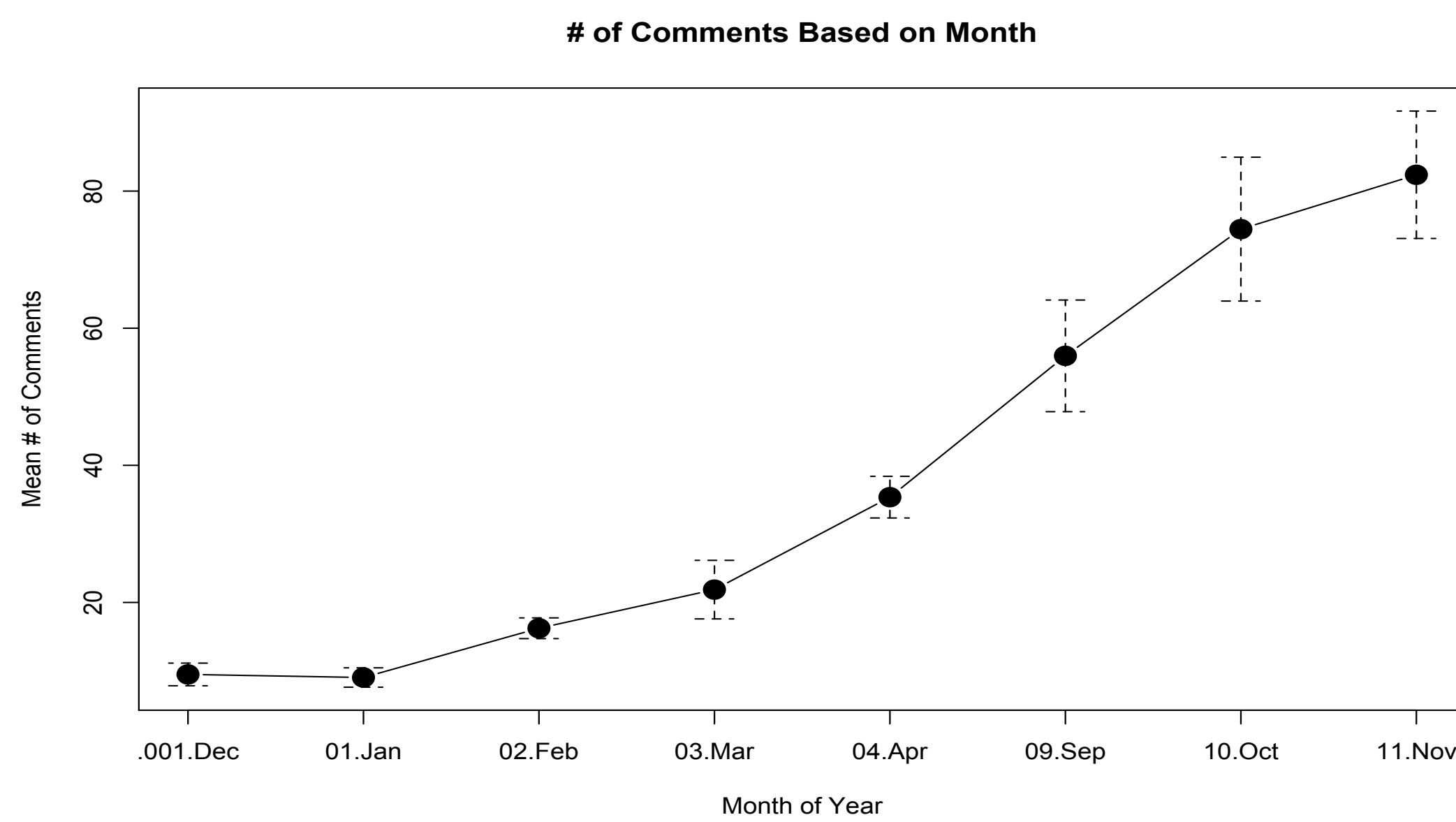
Research Questions

- Does the caption type affect the number of comments received?
- Does the type of post affect the overall interaction (the number of likes, comments, and video views) from my followers?

I used statistical methods that I learned in my Math 203 Introduction to Statistics course to describe the dataset and to conduct tests of hypotheses for each of my research questions.



This graph shows the average number of likes by month of the year. Based on the month of the year, the average number of likes increased due to an overall increase in followers over time.

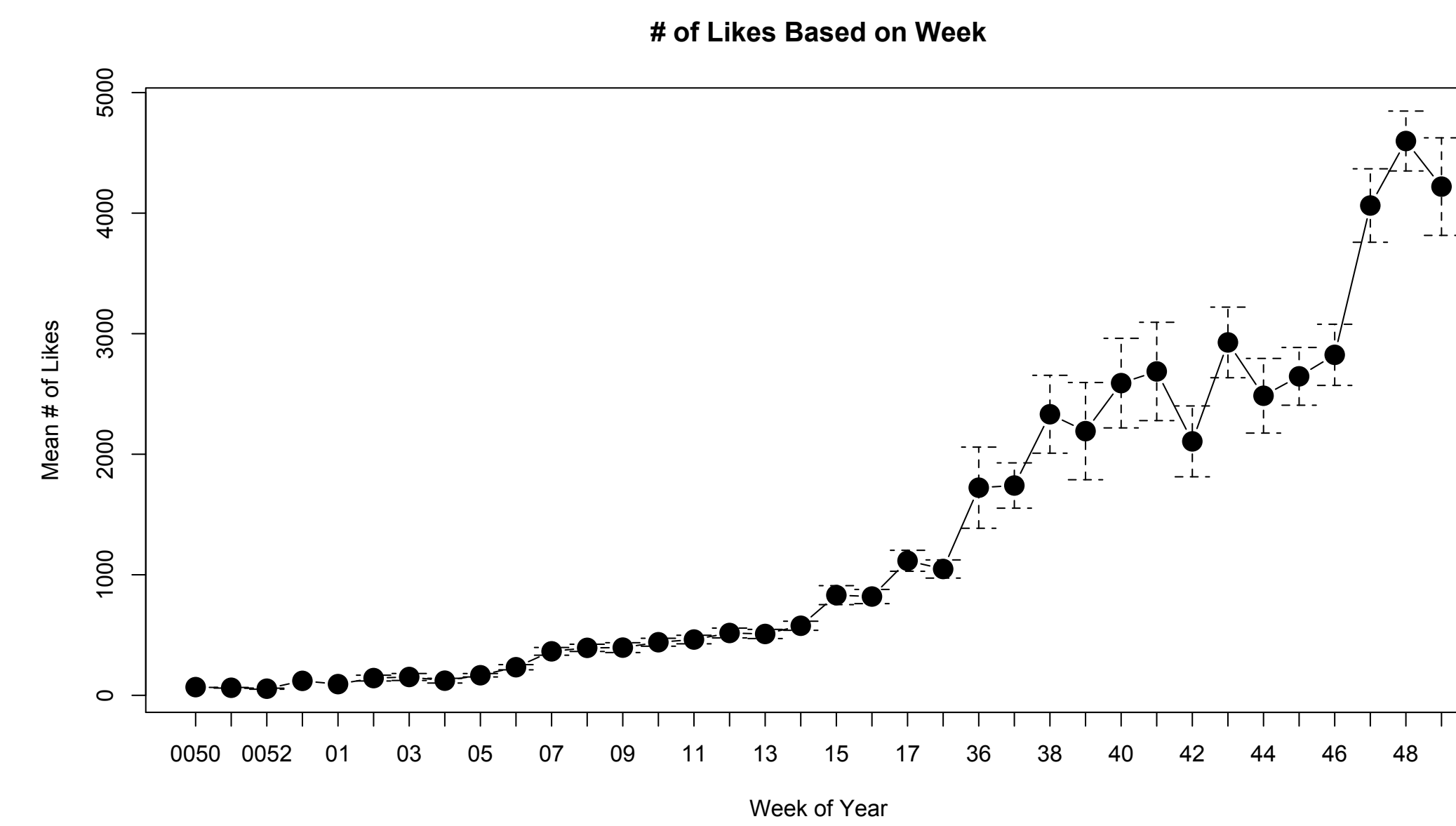


This graph shows the average number of comments by month of the year. Based on the month of the year, the average number of comments increased due to an overall increase in followers over time.

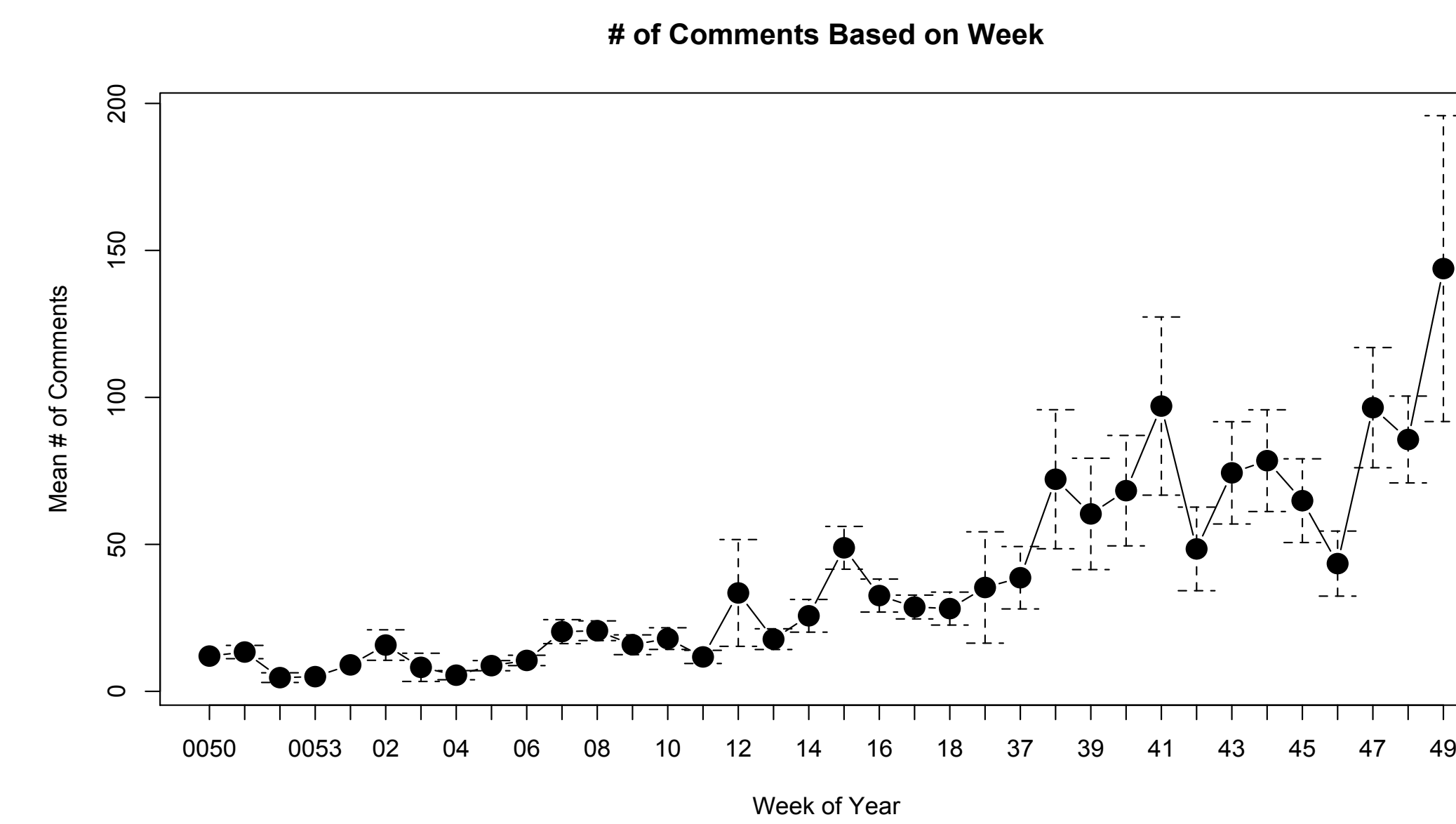
Variable	Count (%)
Table 1: Type of Post	
Picture	614 (91.64%)
Video	56 (8.36%)
Table 2: Picture Type	
Article	26 (4.23)
Behind the Scene (BTS)	7 (1.14)
Cast Confirmation	30 (4.89)
Cast member	132 (21.50)
Contest	12 (1.95)
Countdown	7 (1.14)
Edit	3 (0.49)
Fan art	1 (0.16)
Fan festival	3 (0.49)
Holiday theme	4 (0.65)
Interview	2 (0.33)
Magazine	7 (1.14)
Magazine cover	11 (1.79)
Netflix event	10 (1.63)
Netflix event / personal	3 (0.49)
Netflix premiere / personal	8 (1.30)
Netflix promo	22 (3.58)
New cast confirmation	6 (0.98)
News	54 (8.79)
Original still	15 (2.44)
Personal	8 (1.30)
Product	11 (1.79)
Prop	10 (1.63)
Relatable content	44 (7.17)
Revival still	60 (9.77)
Scene edit	43 (7.00)
Script	5 (0.81)
Set	64 (10.42)
Snapchat promo	2 (0.33)
Trailer	4 (0.65)
Table 3: Video Type	
Cast	1 (1.79)
Fan Festival	1 (1.79)
Gilmore Guide	5 (8.93)
Interview	12 (21.43)
Netflix promo	17 (30.36)
Relatable content	3 (5.36)
Revival scene	2 (3.57)
Scene	3 (5.36)
Set	7 (12.50)
Trailer	5 (8.93)

Exploratory Analysis

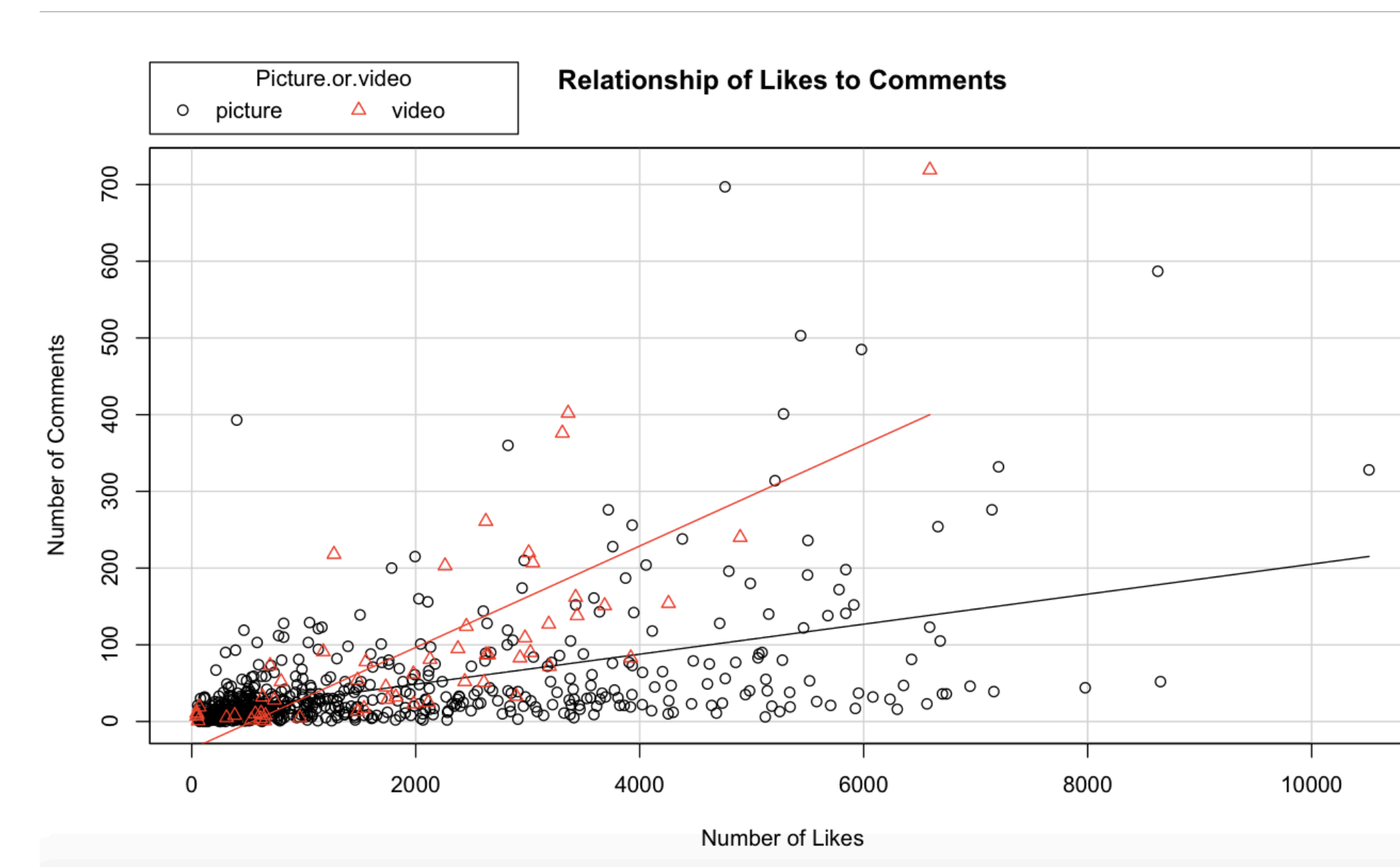
The overall trend based on likes and comments is that over time (as measured in days of week, month of year, and week of year), the account received more followers, and therefore showed an increase in likes and comments.



This graph shows the average number of likes by week of the year. Based on the week of the year, the average number of likes increased due to an overall increase in followers over time.



This graph shows the average number of comments by week of the year. Based on the week of the year, the average number of comments increased due to an overall increase in followers over time.



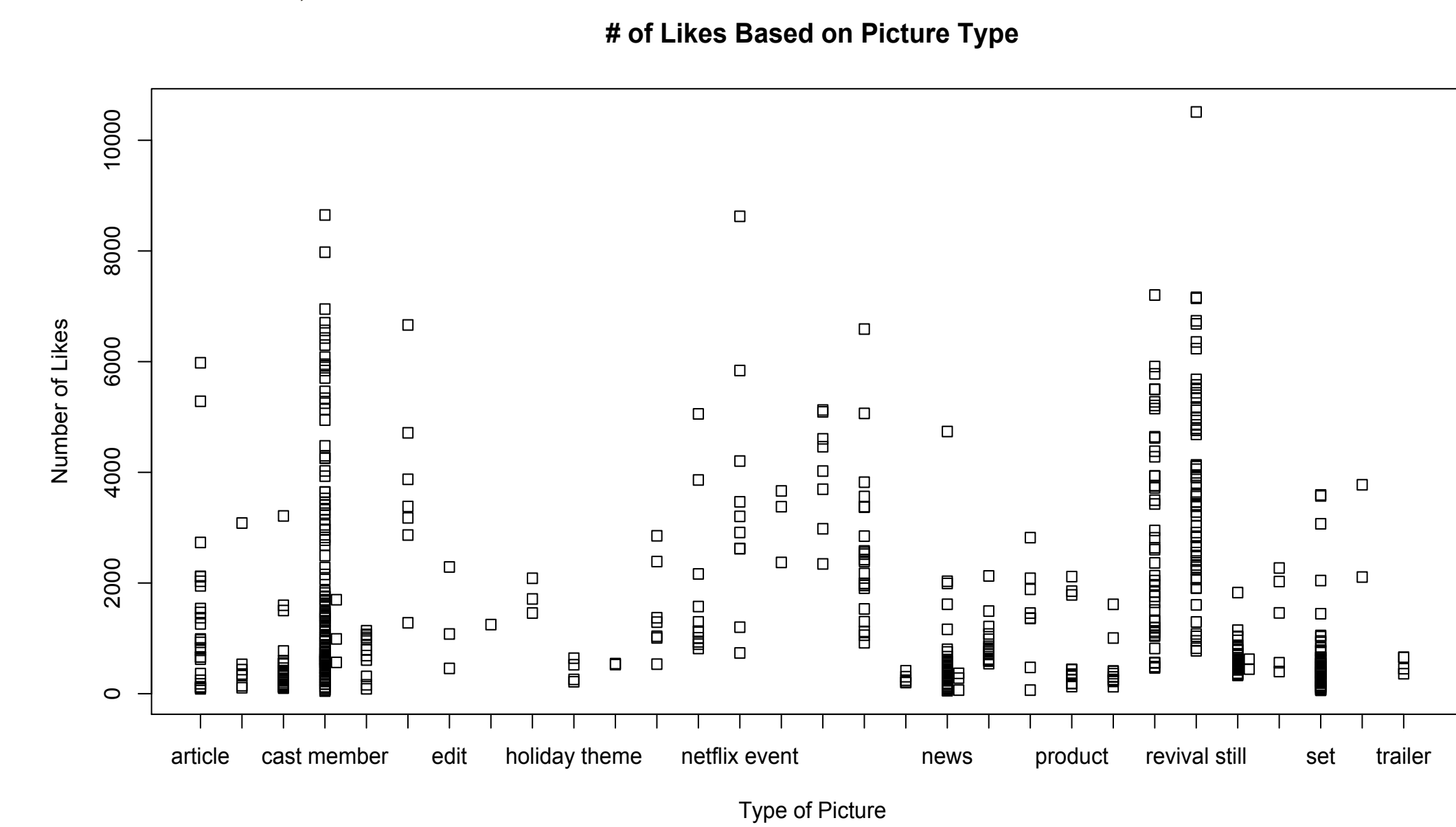
This graph shows that the number of likes and comments are both represented by a linear relationship. The number of likes and comments for a picture are more spread out due to the large range of data presented, while the number of likes and comments for a video show a clearer representation of a positive correlation because of the smaller range of data. Both pictures and videos show an increase over time due to an overall increase in followers.

Conclusion

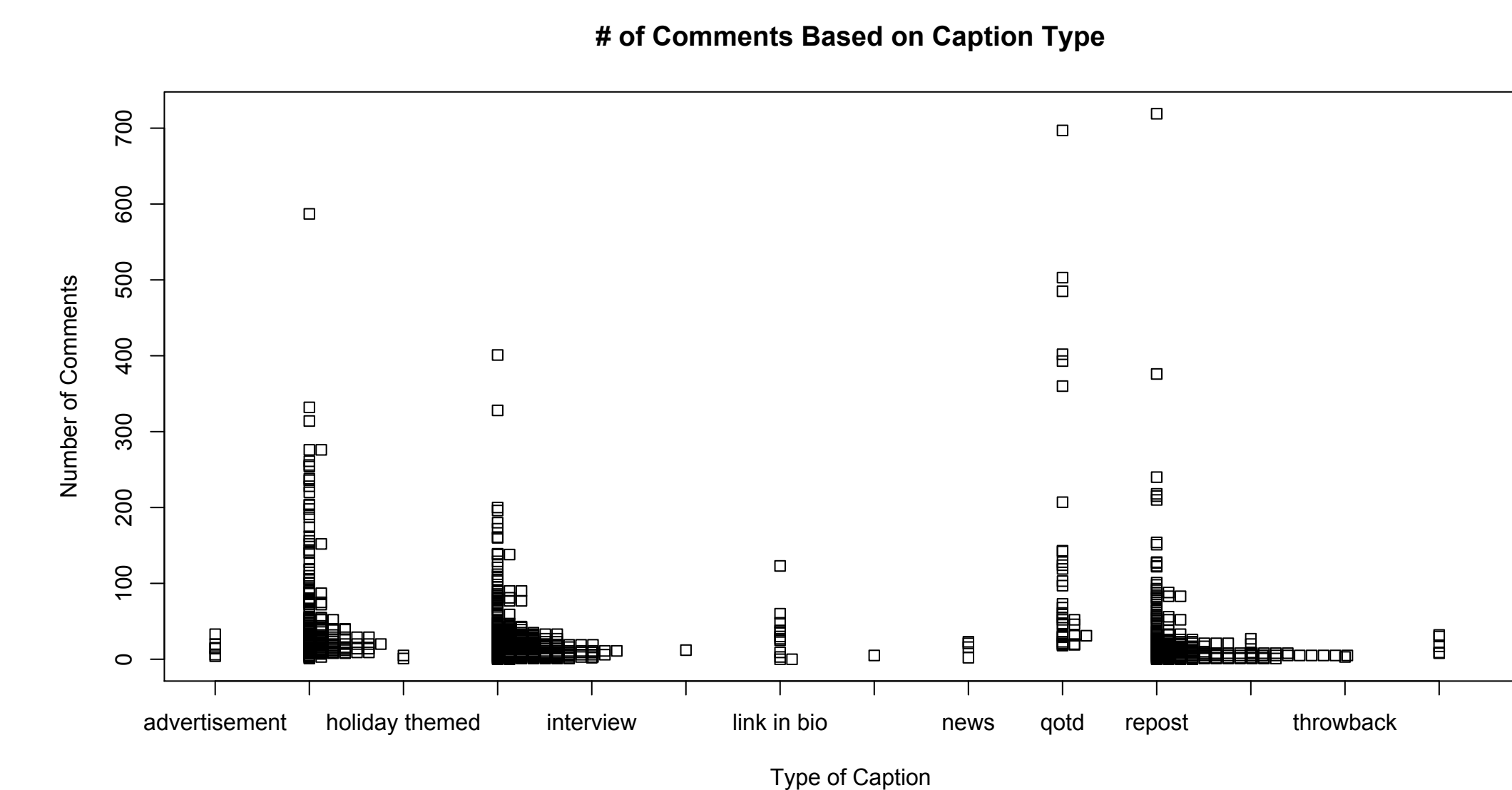
Overall, this project will help me use my Instagram page in a more efficient way. Now, I can use the tested material to help gain the most likes and comments on my posts. The data that I gathered will help me predict the expected values of likes and comments per post based on the day of the week, the week of the year, the month of the year, and the type of photo, video or caption that accompanied the post. By taking a statistical outlook with my data, I was able to answer my two research questions. My first research question was: “Does the caption type affect the number comments received?” Through creating tables and graphs with my 671 data points, I was able to see that certain caption types do affect the number comments received. For example, question of the day captions received the most comments because of the follower interaction. I was also able to answer my second research question which was: “Does the type of post affect the overall interaction (the number of likes, comments, and video views) from my followers?” The question had a positive outcome and led me to find out that posts that included cast members or revival stills received the most likes. This outcome makes sense as photos that featured cast member and revival photos created a sense of anticipation for the revival that aired in November of 2016. Additionally, I was able to find out which days of the week, weeks of the year, and months of the year led to the most likes and comments. Now, I know that if I post on a Wednesday that I can expect the most likes and comments. I hope to use the information gathered in the management of my account and hope that the outcomes will help my account continue to grow.

Variable	Pictures (n = 614)	Videos (n = 56)	All (n = 671)
Comments	42.02 (69.63), (0, 697)	96.07 (124), (1, 719)	46.54 (77.01), (0, 719)
Likes	1676.54 (1787.15), (47, 10512)	1993.61 (1386.16), (45, 6991)	1703.1 (1758.5), (45, 10512)
Views		12345.3 (8968.3), (907, 32952)	

After completing a Wilcoxon rank sum test, I was able to determine the median amount of likes between pictures and videos is significantly different (p value = .0094). The median amount of likes for pictures was 865 while the median amount of likes for videos was 1,980.



This graph shows the average number of likes per pictorial post based on the type of post. There are 30 types of posts. The most popular types of posts are cast member, news, relatable content, revival stills and set. These types of posts received on average the most likes because of their frequency and likeability.



This graph shows the average number of comments per pictorial post based on the type of caption each post contains. There are 14 types of captions. The most popular type of captions are conversational, informational, repost and question of the day. These type of caption that received the most comments is the question of the day because of the follower to post interaction.

