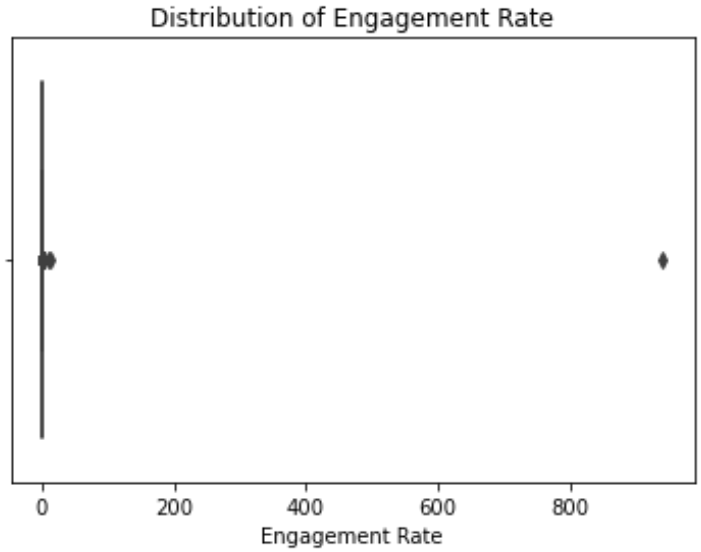
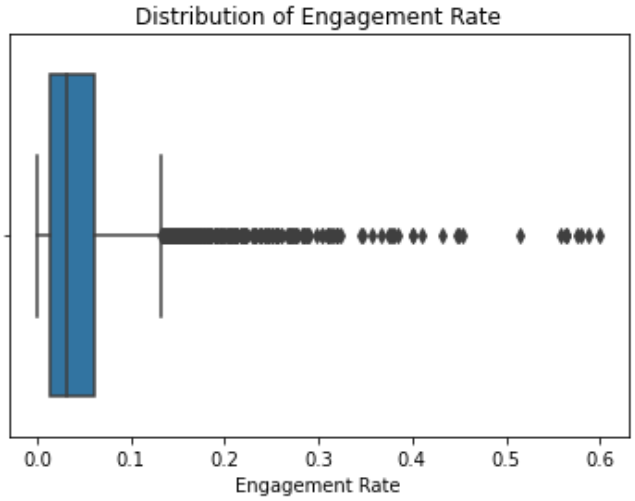
Q1) What is the typical engagement rate we can expect? What's the likelihood that we can achieve a 15% engagement rate?

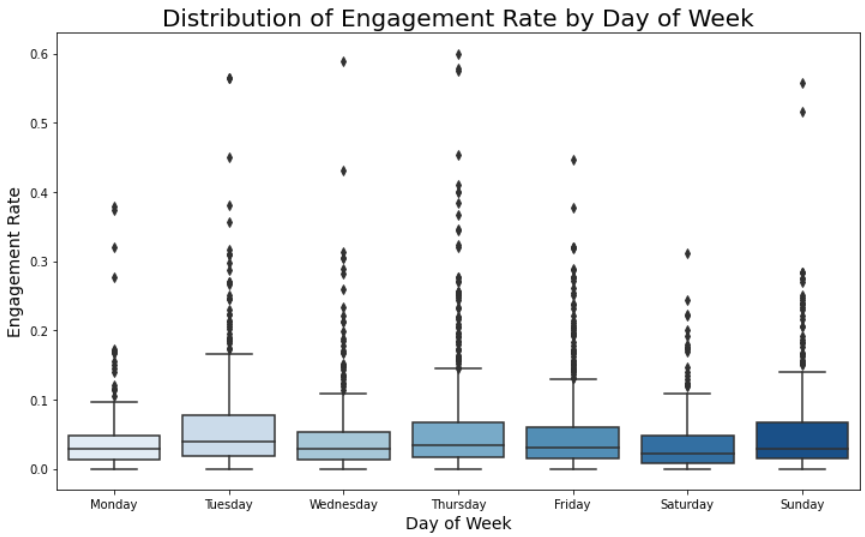


From the chart, we can see that there are some records that have an engagement rate over 1. Since this is not possible, we know that there are some errors in the data. We can see that the data for the 4 records above do not contain accurate data, so these rows will be dropped. After removing the records with incorrect data, we calculated the average engagement rate at 5.31%.



However, looking at the new graph once the incorrect rows are removed, we can see that the distribution is heavily skewed to the right. Therefore, we should use the median as the average engagement rate we can expect, which is 3.08%. The likelihood that we can achieve a 15% engagement rate is 8.13%.

Q2) Does day of the week and time of posting affect engagement rates?



Looking at the distributions of engagement rate by day of week, we can see that there is not much of a difference between each day of the week. Tuesday has the highest average engagement rate at 6.54% but it is not significantly higher than Sunday and Thursday. To check if there is a statistical difference, we will run a one-way ANOVA test. We will check the differences between days.

One-way ANOVA results:
F-statistic: 7.113086361104697
p-value: 1.5478419879663565e-07

Tukey HSD - Multiple Comparison of Means

Multiple Comparison of Means - Tukey HSD, FWER=0.05

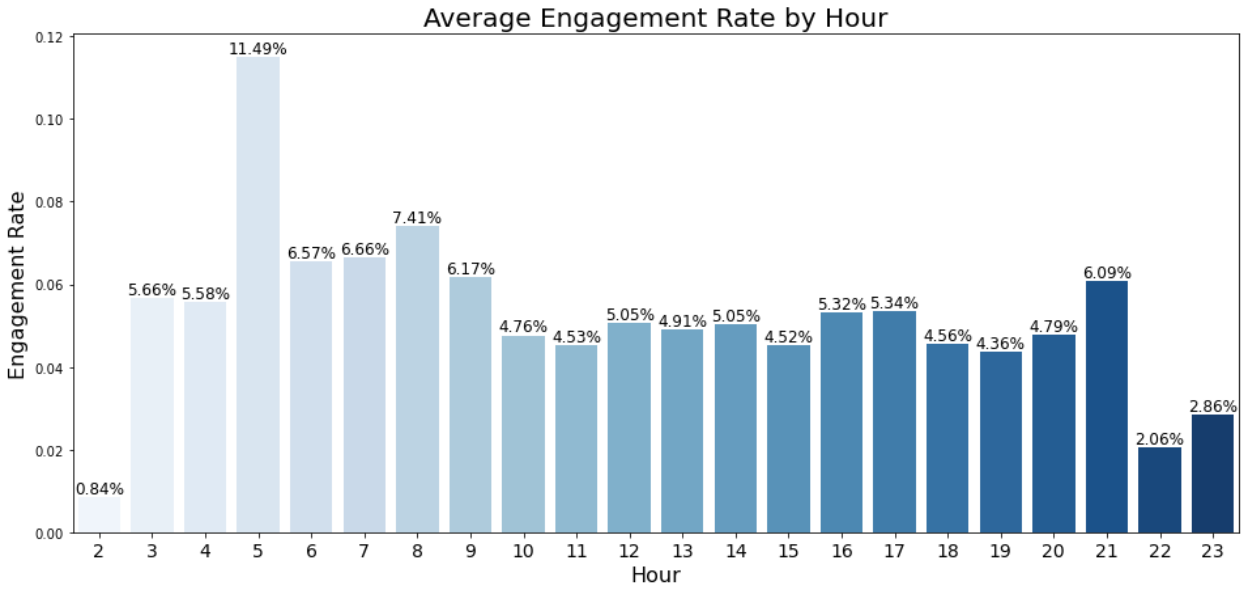
group1	group2	meandiff	p-adj	lower	upper	reject
0	1	0.0202	0.0152	0.0023	0.038	True
0	2	-0.0006	0.9	-0.0185	0.0173	False
0	3	0.0142	0.1851	-0.003	0.0314	False
0	4	0.0057	0.9	-0.0115	0.0229	False
0	5	-0.0074	0.9	-0.027	0.0122	False
0	6	0.0138	0.3513	-0.0056	0.0332	False
1	2	-0.0208	0.001	-0.0347	-0.0069	True
1	3	-0.006	0.8017	-0.019	0.007	False
1	4	-0.0145	0.0166	-0.0274	-0.0016	True
1	5	-0.0276	0.001	-0.0436	-0.0116	True
1	6	-0.0064	0.8957	-0.0221	0.0093	False
2	3	0.0148	0.0141	0.0018	0.0279	True
2	4	0.0063	0.7515	-0.0066	0.0193	False
2	5	-0.0067	0.8701	-0.0228	0.0093	False
2	6	0.0144	0.0977	-0.0013	0.0302	False
3	4	-0.0085	0.3621	-0.0205	0.0035	False
3	5	-0.0216	0.001	-0.0369	-0.0063	True
3	6	-0.0004	0.9	-0.0154	0.0146	False
4	5	-0.0131	0.147	-0.0283	0.0021	False
4	6	0.0081	0.6577	-0.0068	0.023	False
5	6	0.0212	0.0075	0.0035	0.0388	True

The p-value of the ANOVA test means that we reject the null hypothesis and confirm that there is a difference in average engagement rate by day of week. However, looking at the actual differences from the Tukey Test, we can see that the differences are incredibly minimal and not

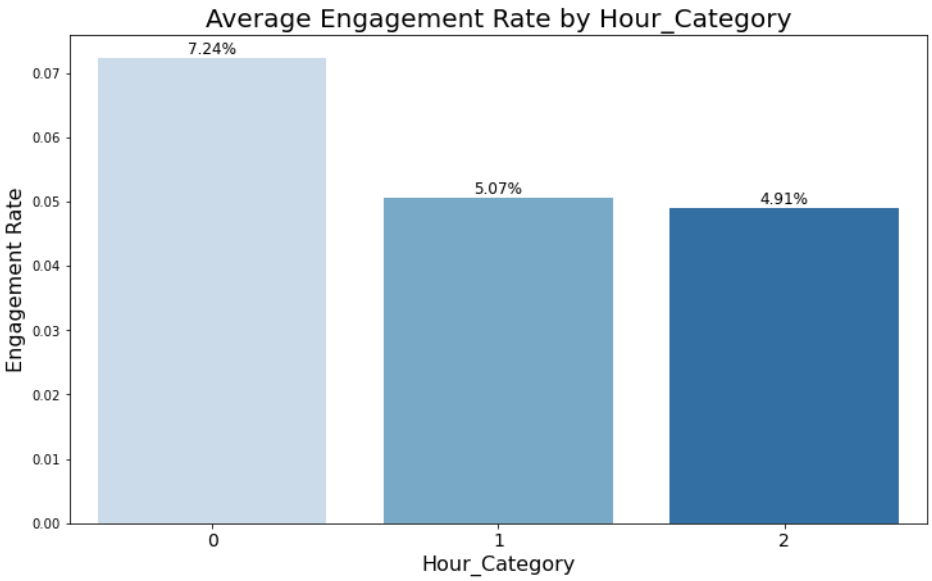
worth pursuing further. Additionally, we will look at the difference between weekday and weekend.

One-Way ANOVA results:
F-statistic: 2.7038602414156796
p-value: 0.10022078044557522

Given the p-value of .1, we fail to reject the null hypothesis that there is a difference in average engagement rate between the weekend and weekdays. Now, we will assess if there is a difference in engagement rate based on the time of day.



From looking at the distribution of average engagement rate per hour, it is apparent that posts between the hours of 3AM and 9 AM have a higher engagement rate, peaking at 5 AM. This makes sense as 5 AM PST is 8 AM EST, which is when a large percentage of people get their day started. It's clear that posting at 5AM would have a substantially different engagement rate, but does this carry over to the morning as a whole? We will break up the hour column into 3 categories from midnight to 8 am, 8 am to 4 pm and 4pm to midnight. We will then use a one-way ANOVA to see if there is a statistically significant difference in the average engagement rate between the hour groupings.



Looking at this bar chart, it appears that posting in the morning does return a higher engagement rate on average. We will run another one-way ANOVA test to confirm if there is a statistically significant difference.

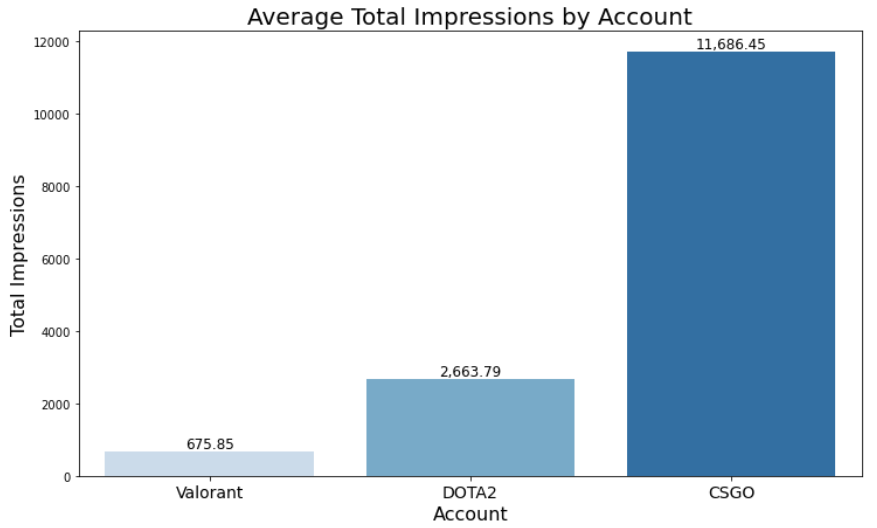
One-Way ANOVA results:
F-statistic: 14.871801381663557
p-value: 3.7689029419481746e-07

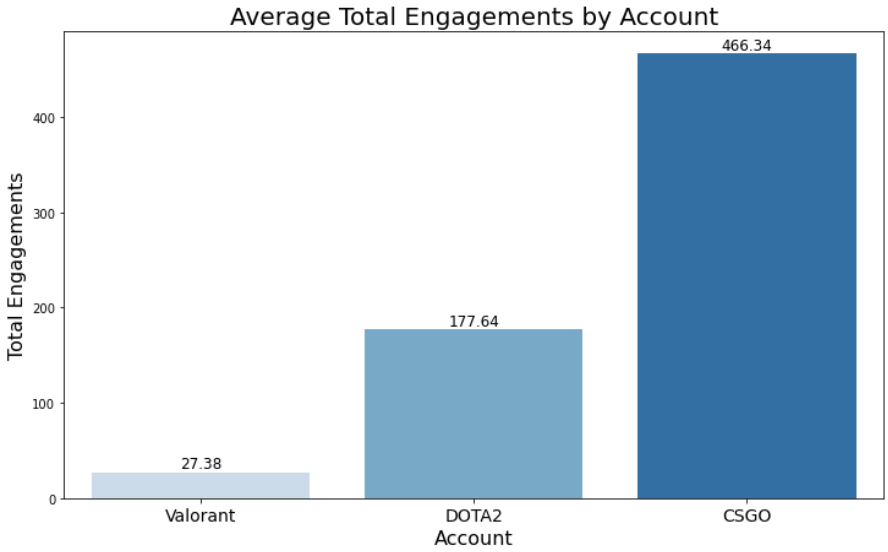
```
Multiple Comparison of Means - Tukey HSD, FWER=0.05
=================================================
group1 group2 meandiff p-adj  lower   upper  reject
-------------------------------------------------
     0      1  -0.0217 0.001 -0.0313 -0.0122   True
     0      2  -0.0233 0.001 -0.0359 -0.0108   True
     1      2  -0.0016   0.9 -0.0112   0.008  False
-------------------------------------------------
```

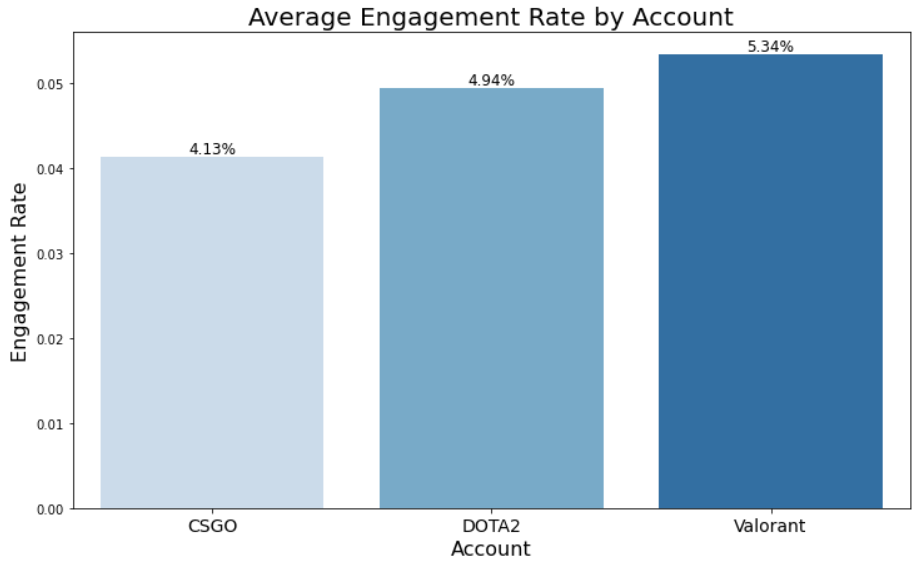
Based on the p-value, we reject the null hypothesis and can say that there is at least one difference in average engagement rate between the hour categories. Looking at the Tukey Test results, we can see that group 0 is statistically different from both groups 1 and 2, and that groups 1 and 2 are not statistically different. Based on this, we can assume that the time of day does affect engagement rate. Looking at the number of posts in each hour category, we can see that the overwhelming majority are posted from 8 am to 4 pm (75%). It makes sense to post during normal working hours. However, posts from midnight to 8 am only make up about 12% of all posts, but have a nearly 50% higher average engagement rate. There is a difference based on time of day, and it should be explored more.

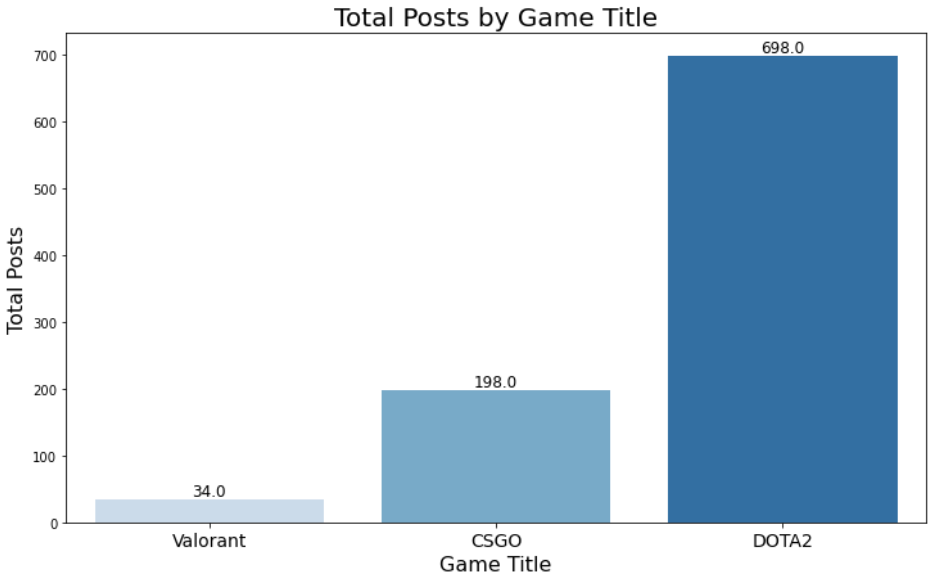
Q3) How are our game titles doing in terms of social performance? Is there a specific game

we should focus more on or less?





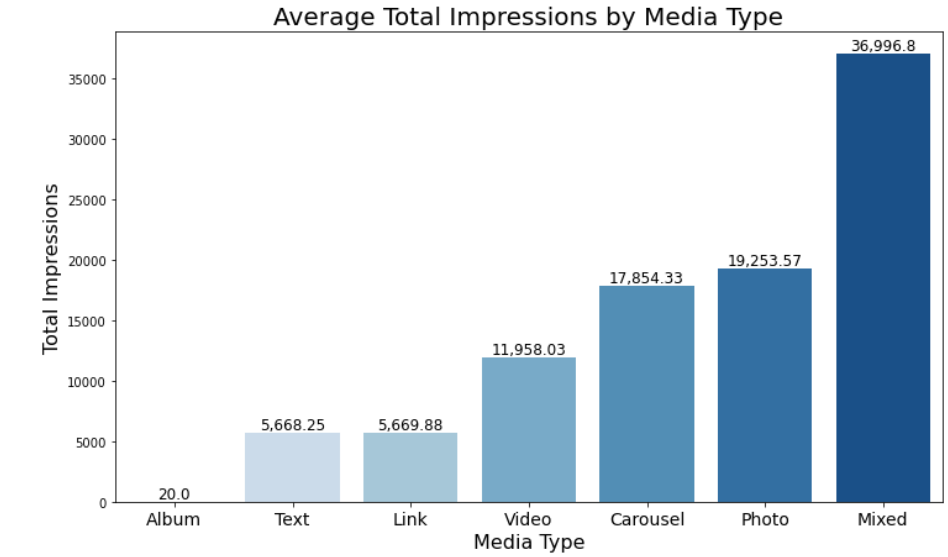


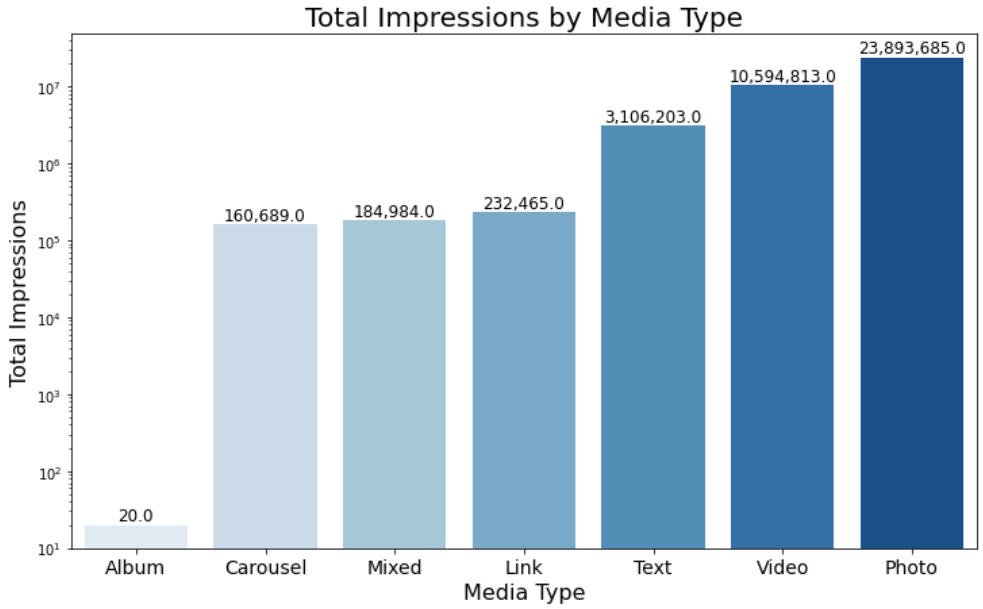


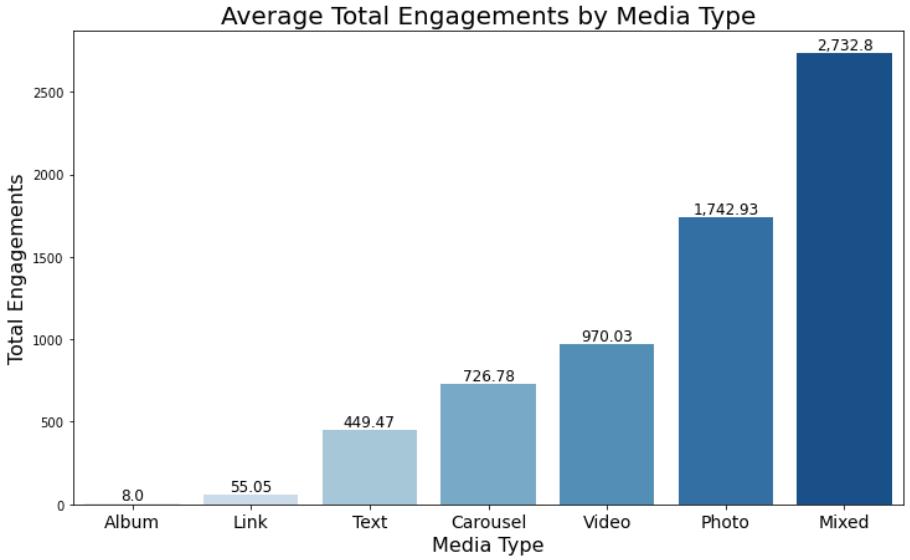
The Counter Strike Global Offensive account gets exponentially higher impressions and engagements, considering both the average and total count of impressions/engagements. However, what is especially interesting is that when we look at the average engagement rate, we can see that Valorant has the highest at 5.34%. CSGO actually has the lowest of the 3 game titles at 4.13%. While the Valorant account may not get as much exposure, the results indicate that it has a more engaged and loyal fan base and therefore should have more posts. When looking at the total posts from each account, it was possible that the results would be biased from an account having existed longer. However, since all of the posts are from the same year, we can see that the majority social media efforts have gone towards posts for the DOTA 2 account. Relative to the other game titles, DOTA 2 has an acceptable engagement rate. However, we must still consider that total exposure is important for the EG brand as a whole. The number of impressions and engagements are not at a satisfactory level given how many resources go into the DOTA 2 account. Therefore, more focus should be put into expanding the Valorant account as it has the highest engagement rate. The CSGO account brings great exposure to the team, so

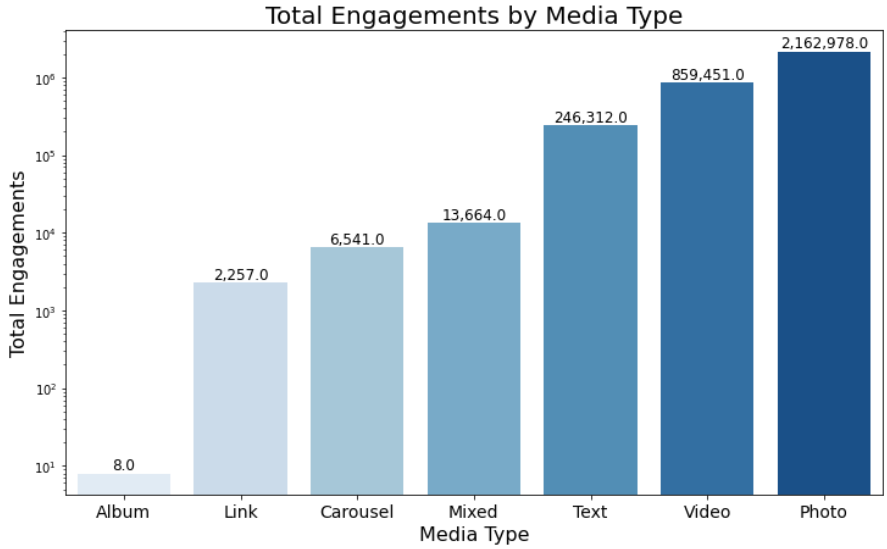
more focus should be put into raising the engagement rate for the posts about CSGO. Finally, there should be a lower focus on the DOTA 2 account because the resources going into posting that much are not returning enough exposure and engagement compared to the other two game titles.

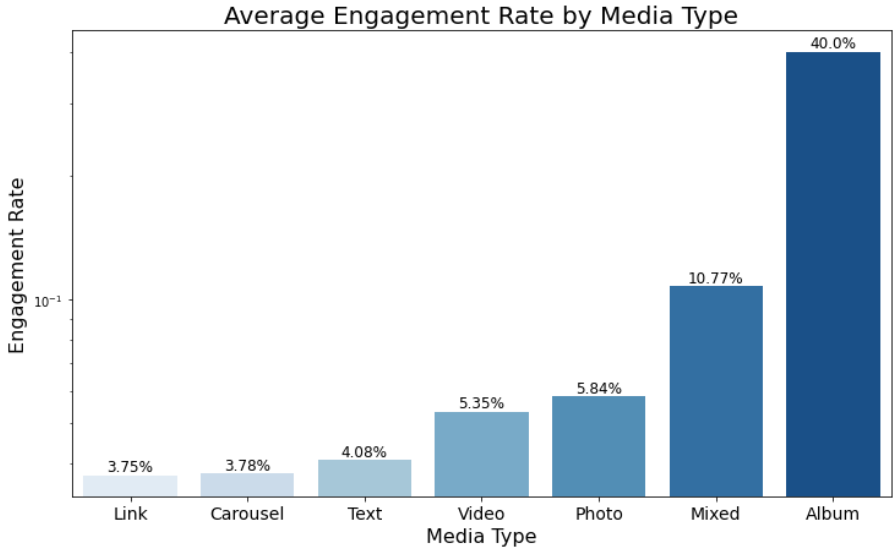
Q4) What media type performs the best?





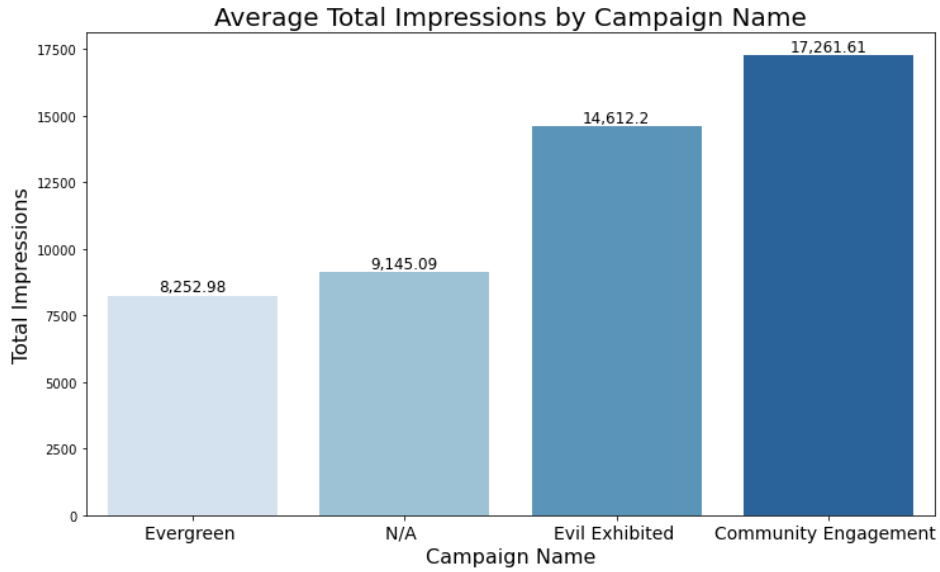

Average Total Engagements by Media Type
Total Engagements
Media Type
Album
Link
Text
Carousel
Video
Photo
Mixed
8.0
55.05
449.47
726.78
970.03
1,742.93
2,732.8

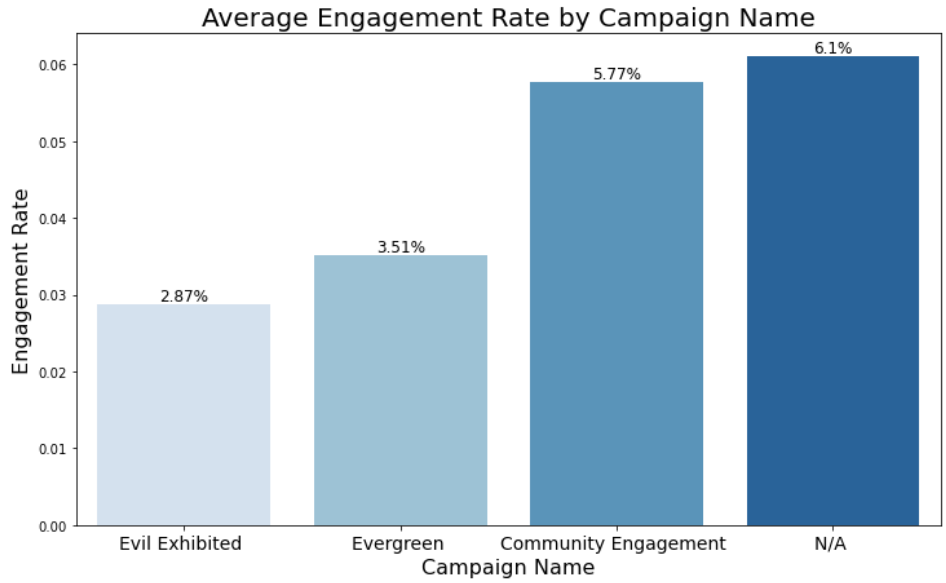

Total Engagements by Media Type
Total Engagements
Media Type
Album
Link
Carousel
Mixed
Text
Video
Photo
8.0
2,257.0
6,541.0
13,664.0
246,312.0
859,451.0
2,162,978.0


Average Engagement Rate by Media Type
Engagement Rate
Media Type
Link
Carousel
Text
Video
Photo
Mixed
Album
3.75%
3.78%
4.08%
5.35%
5.84%
10.77%
40.0%

The album media type has the highest average engagement rate, but as stated before, there is only one data point with the album media type and it likely has incorrect data. The mixed media type has the highest average engagement rate at 10.77%. All of the signs point to mixed being the most engaging type of post. However, if we look at the posts that have the mixed media type, we can see that there are only 5 in the dataset so this likely presents a skewed picture. While we also said that the carousel media type would be a category of interest, the low engagement rate indicates that it may be more useful for exposure, rather than engagement.

Q5) What is our best performing campaign?





Looking at the graphs, community engagement gets the most average impressions and the highest average engagement rate. It is interesting to see that posts without a campaign have the

highest average engagement rate. However, it is clear that the community engagement campaign brings more exposure and therefore is the most successful campaign.

Q6) Define out a posting strategy for our social channels based on your discoveries

Based on my findings, I believe that the posting strategy should be focused on posting during peak social media activity hours. From Question 2, we learned that posting in the morning is the most optimal time to drive engagement, specifically around 5 AM. Looking at the distribution of engagement rate by account type, we can see that Facebook has the highest engagement rate by far at 15%. As such, any content or campaign related content should almost always also be posted on Facebook. Driving engagement also leads to more impressions and exposure, which is why the focus should be on Facebook. In addition to this, posts should focus on the "mixed" media type. The mixed media type has the highest average engagement rate at 10.77%, which is nearly double the 2nd highest of photo. However, there are only 5 mixed media type records in the dataset, which means it could be premature. Therefore, posts with the mixed media type should be explored more.

Q7) What suggestions would you give to the social media team if they want to expand their presence (e.g. if our CSGO youtube channel is doing well should we expand to TikTok)?

Based on my investigation, I believe the biggest focus of expansion should be on the Valorant team. Although the team is still relatively new, the Valorant account receives the highest average engagement rate among all the gaming accounts. Although they don't receive as much exposure in the form of impressions, investing resources in an emerging game like Valorant could pay off dividends in the future. In addition to his, because engagement is the highest with Facebook, the Valorant social media team should also make sure to post all their content to Facebook.