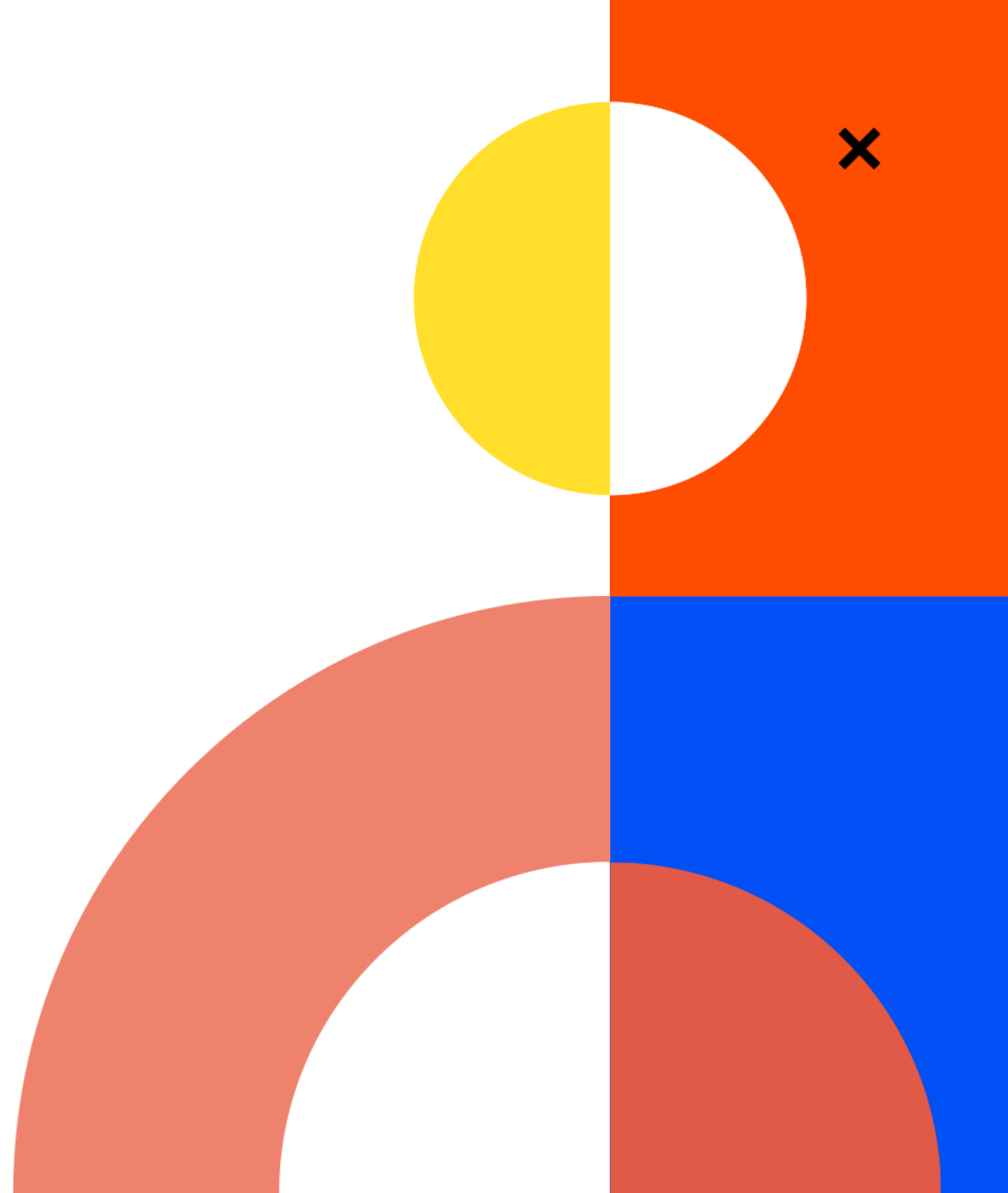




YouTube Trending Video Analysis

Team 6A

Maraline Torres, Ying Zhang, Yujia Cao,
Yuting Gong, (Bruce)Chang-Hung Hou



INTRODUCTION

As YouTube viewers become more and more diverse, video watching preference varies more significantly between different groups of categories than ever.

OUR GOAL:

- Exploratory analysis of characteristics, including categories, view, likes count and trending time in trending videos identify changes in preference.
- We are interested to know if the country culture has an influence on the YouTube trending videos characteristics.



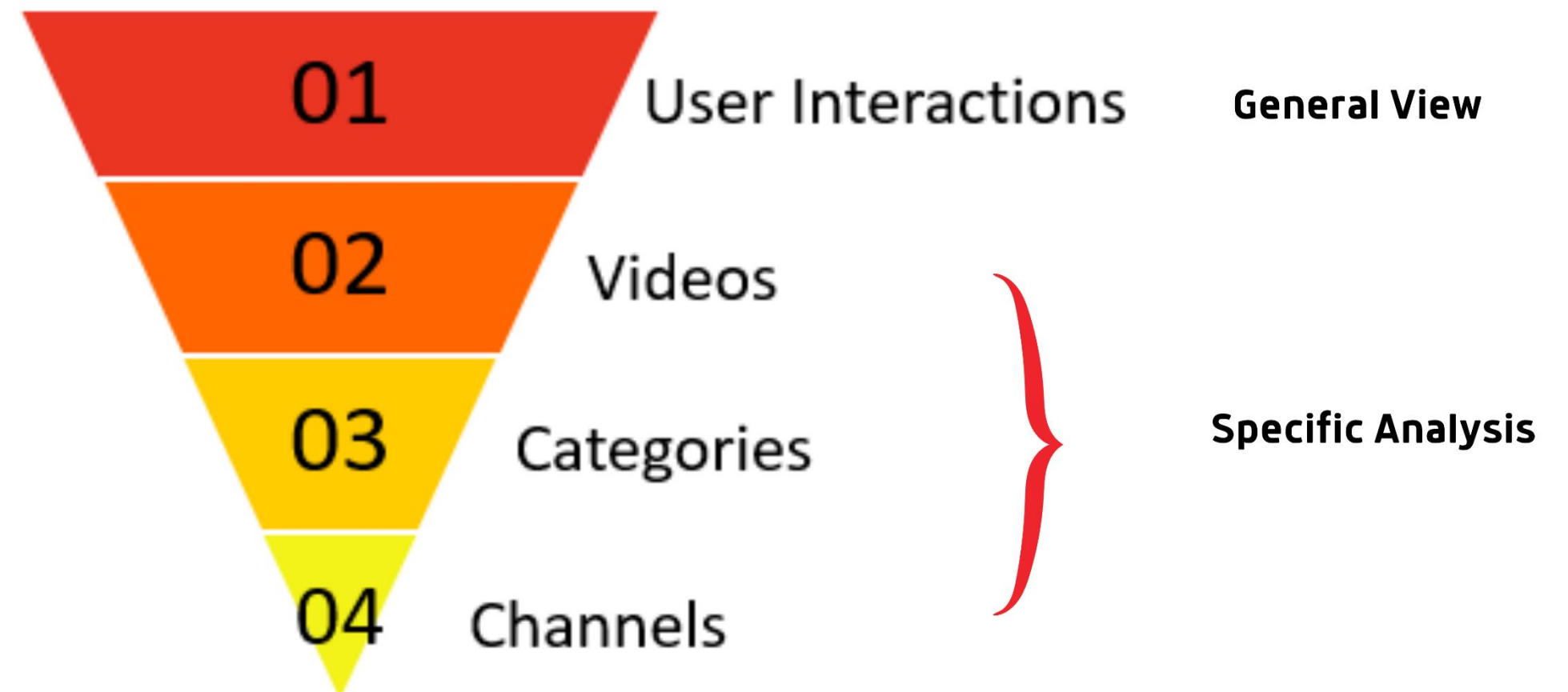
Data source:

This data source were collected using the YouTube API and it presents a list of the top trending videos on the platform. To determine the year's top-trending videos, YouTube uses a combination of factors such as number of views, shares, comments and likes. We accessed the data source via Kaggle data notebooks "Trending YoTube Video Statistics" and "YouTube Trending Video Dataset".

Getting to know our dataset

- Dataset: **71,868** entries, **16** columns. Data were collected in the year of 2018 and 2020.
- On average, we have data on about **318** trending videos per day for a total of **226** days
- According to our dataset, for U.S videos, there were **195.58** videos trending on YouTube each day on average. For Japan videos, the number is **150.0**

Our Storyline



YouTube User Interactions



views



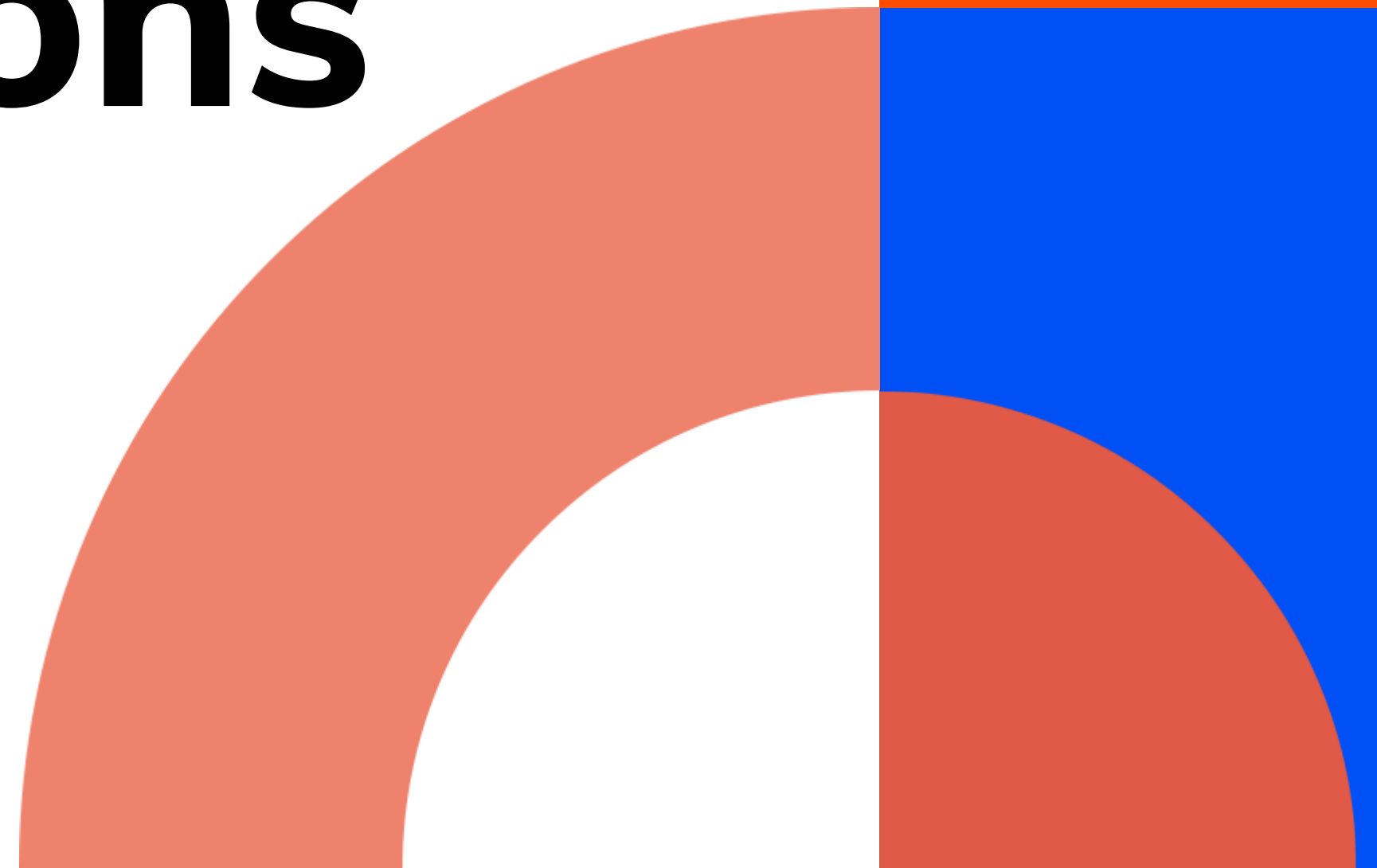
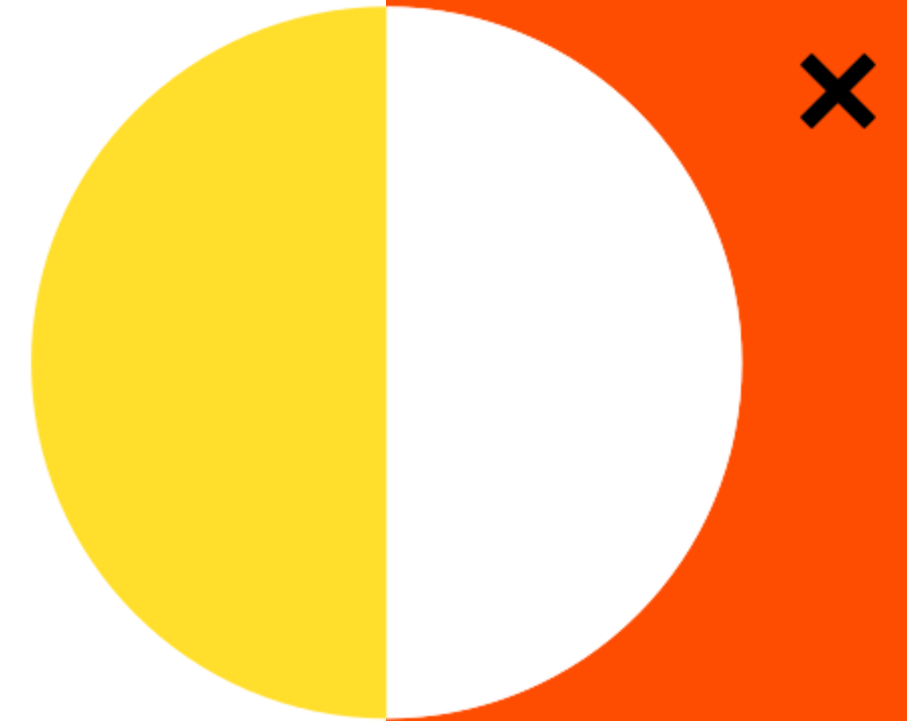
Likes



Comments



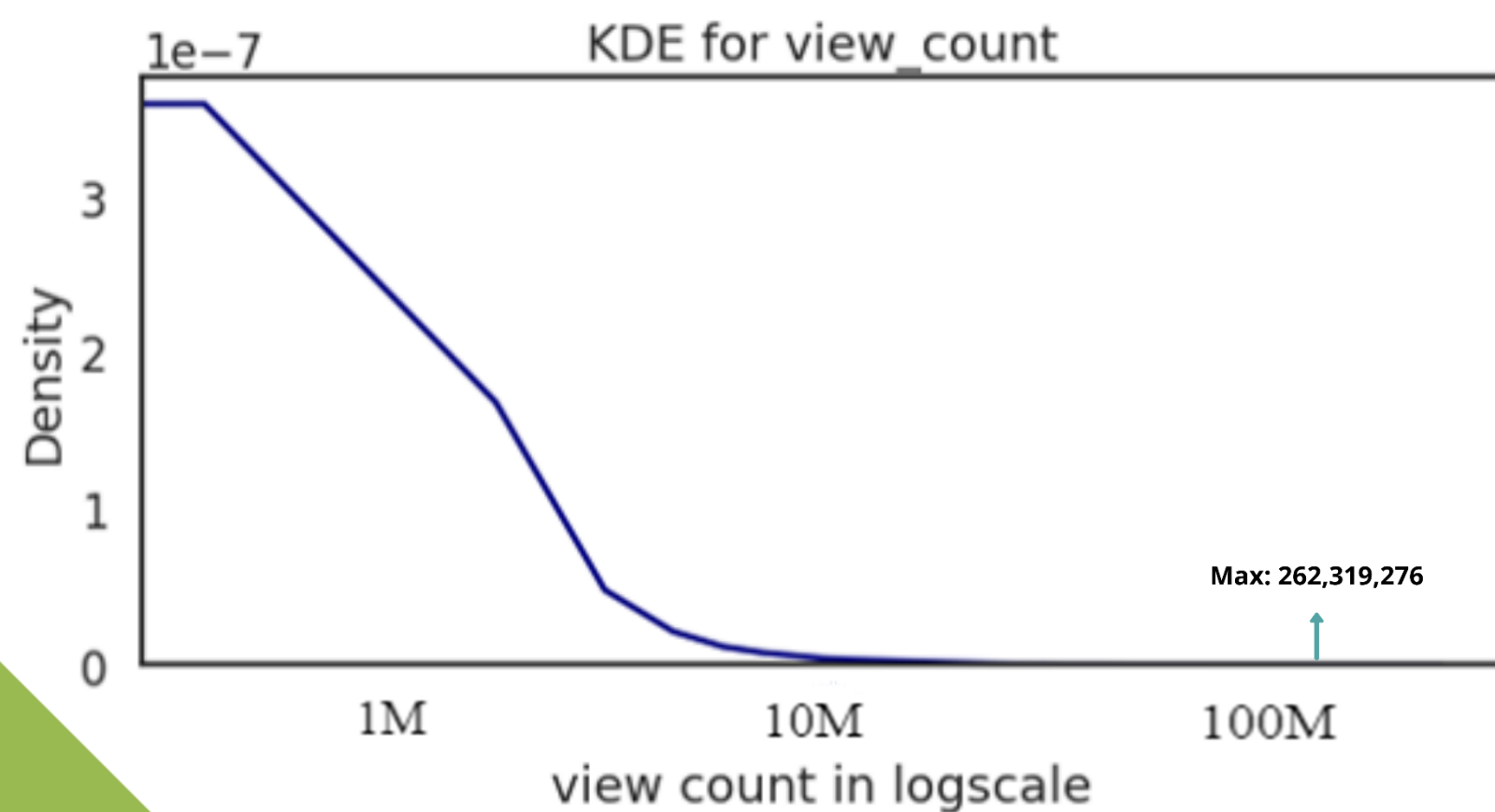
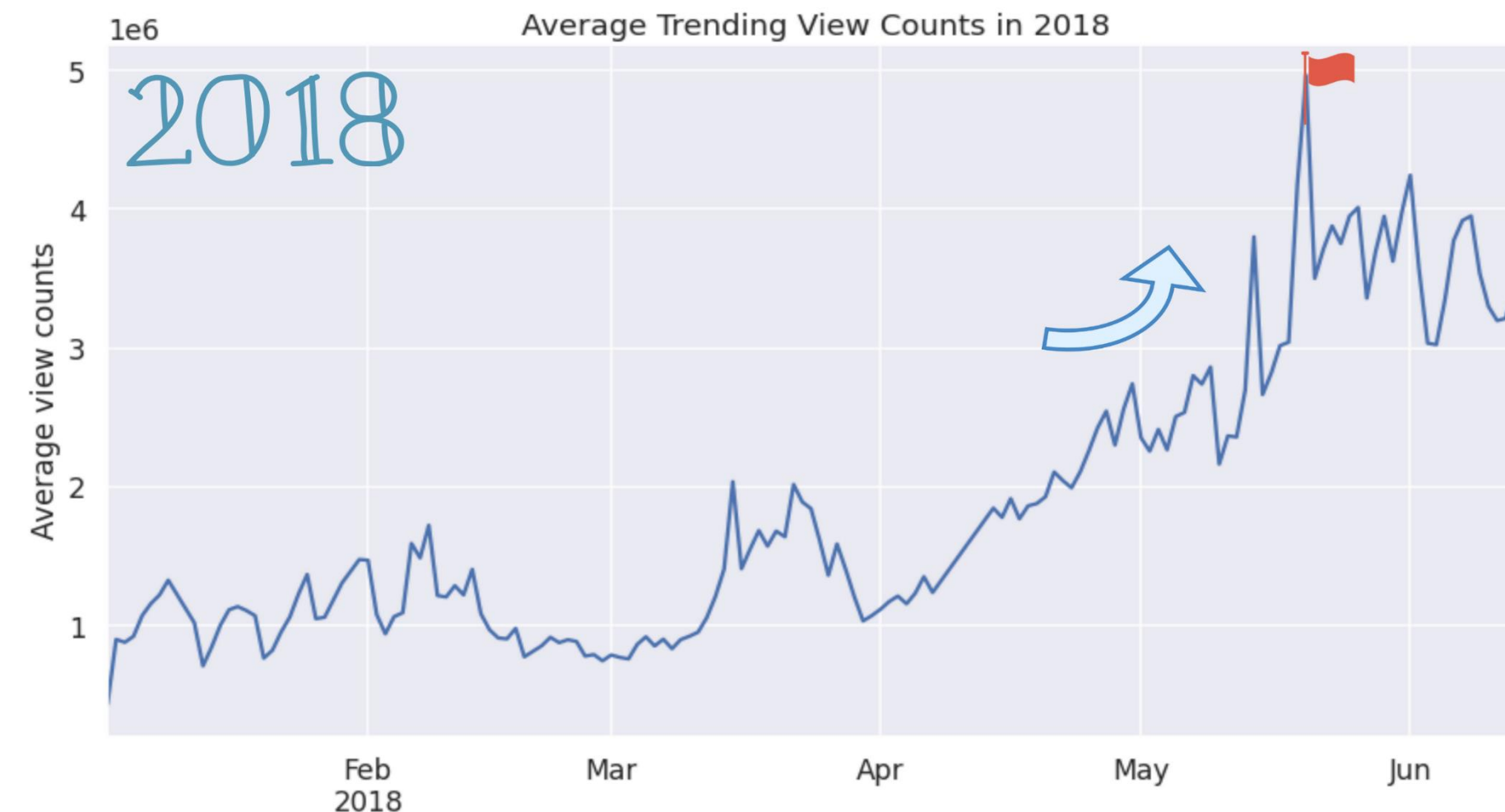
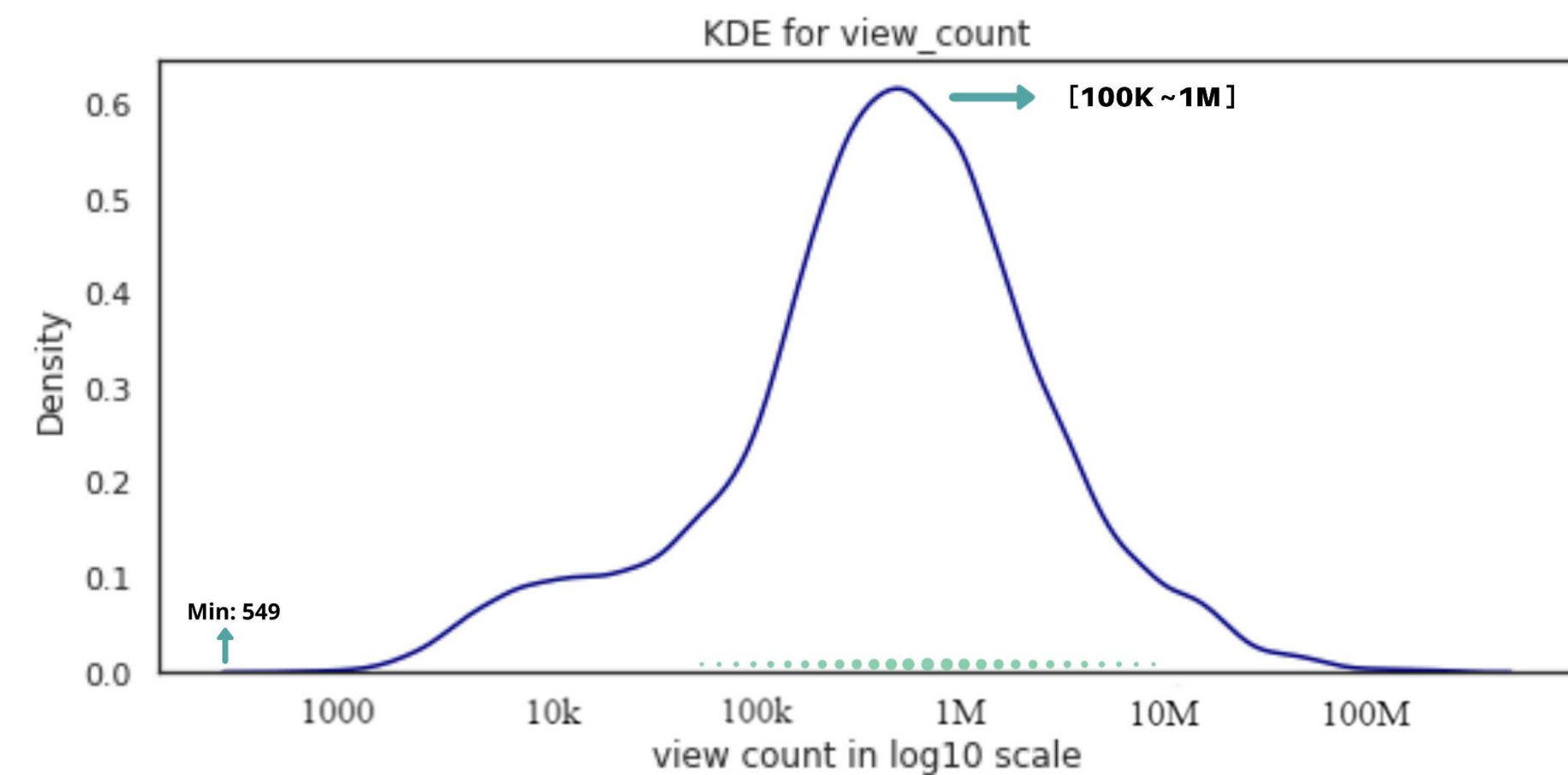
Dislikes





YouTube Trending videos

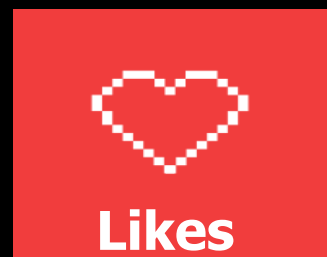
View counts analysis



Relationships among User Interaction Features



views



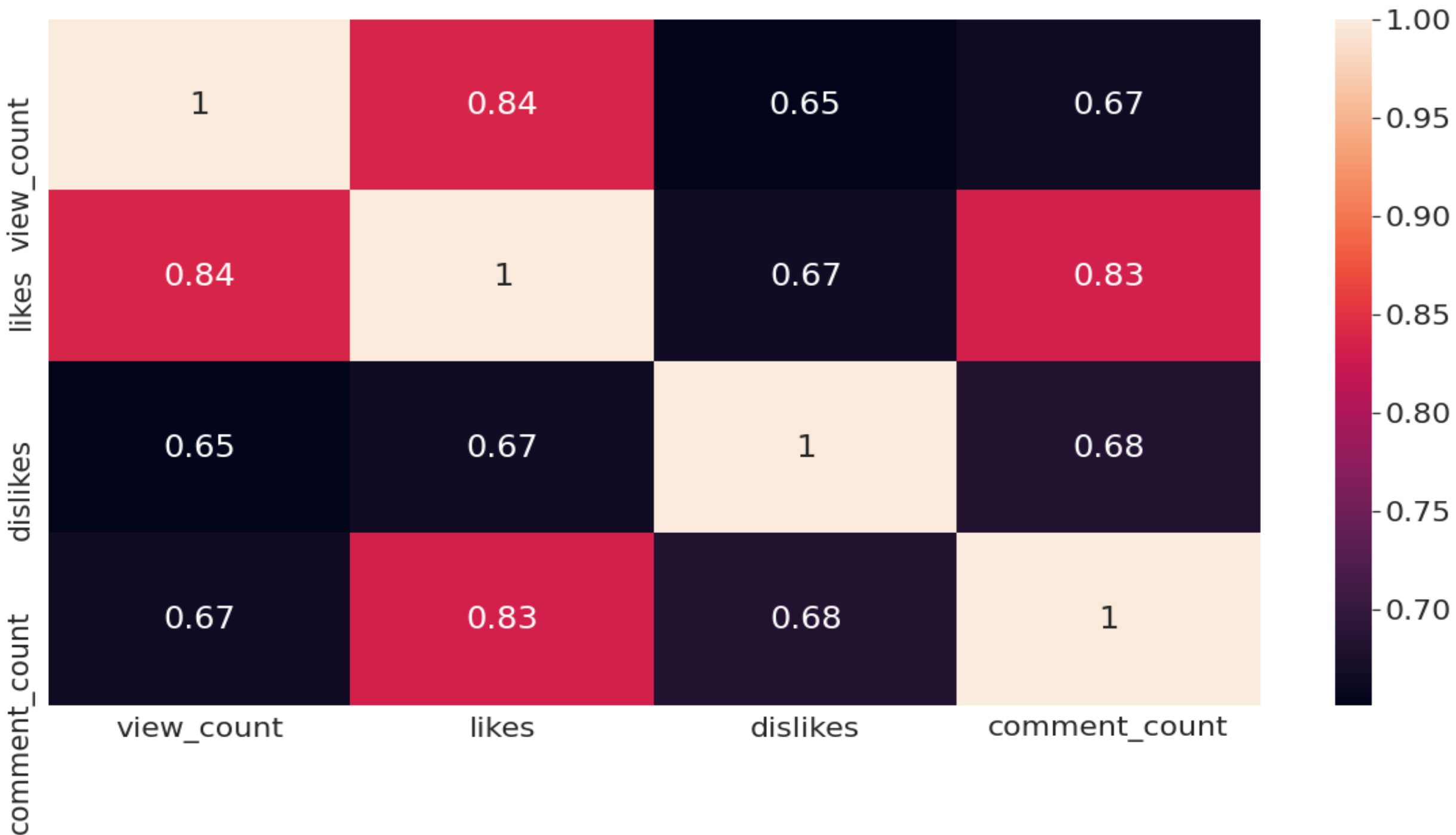
Likes



Comments



Dislikes



- Heatmap
- Likes and View Counts show very strong positive correlation.
 - Comment counts and Likes show very strong positive correlation.

Relationships among User Interaction Features



views



Likes

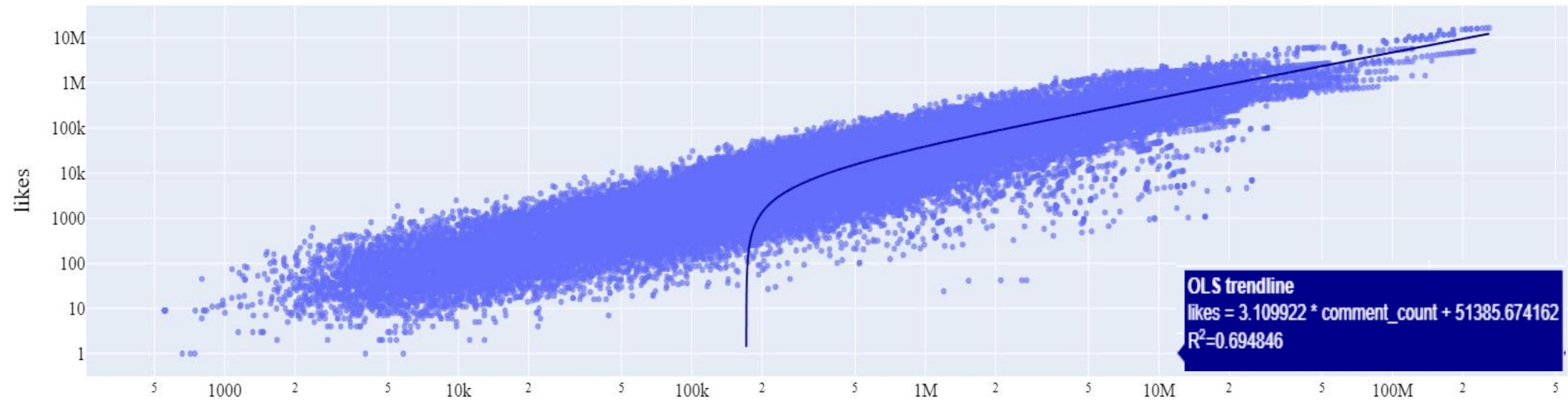


Comments

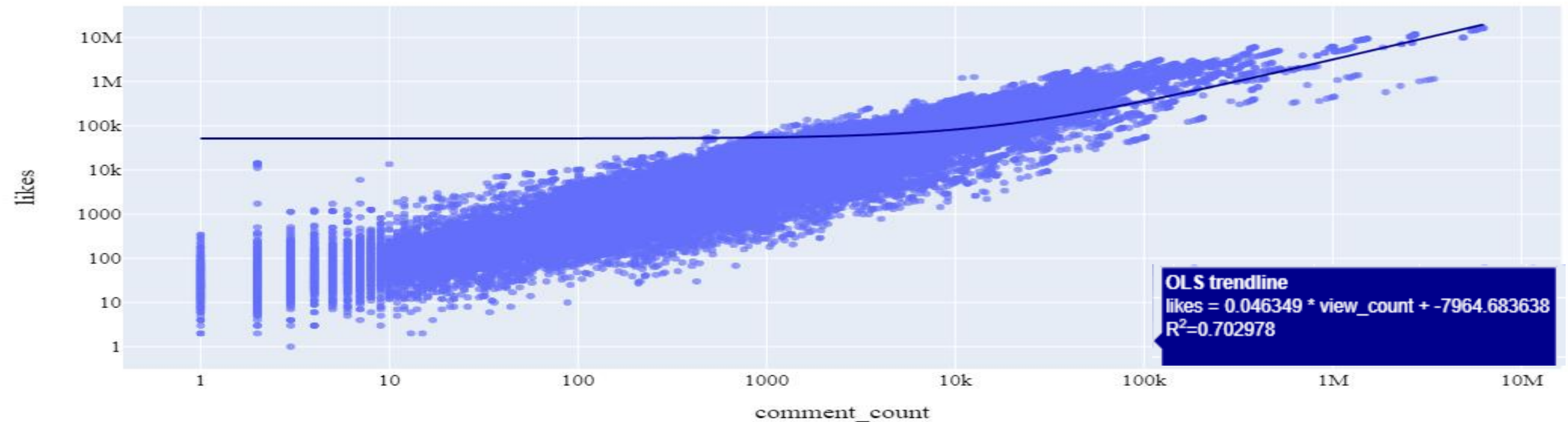


Dislikes

The relationship between views and likes

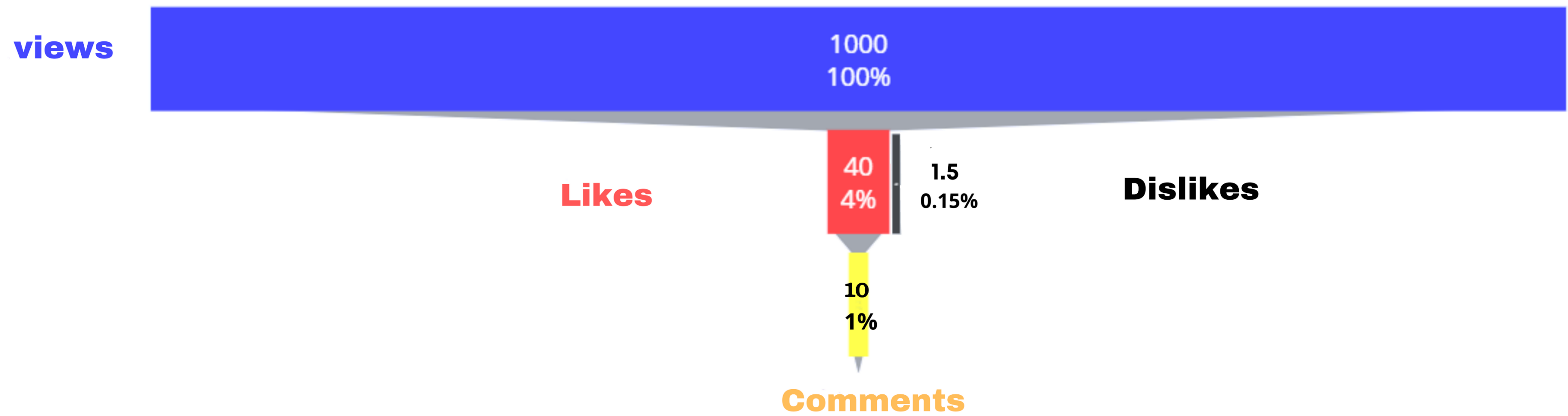


The relationship between comments count and likes



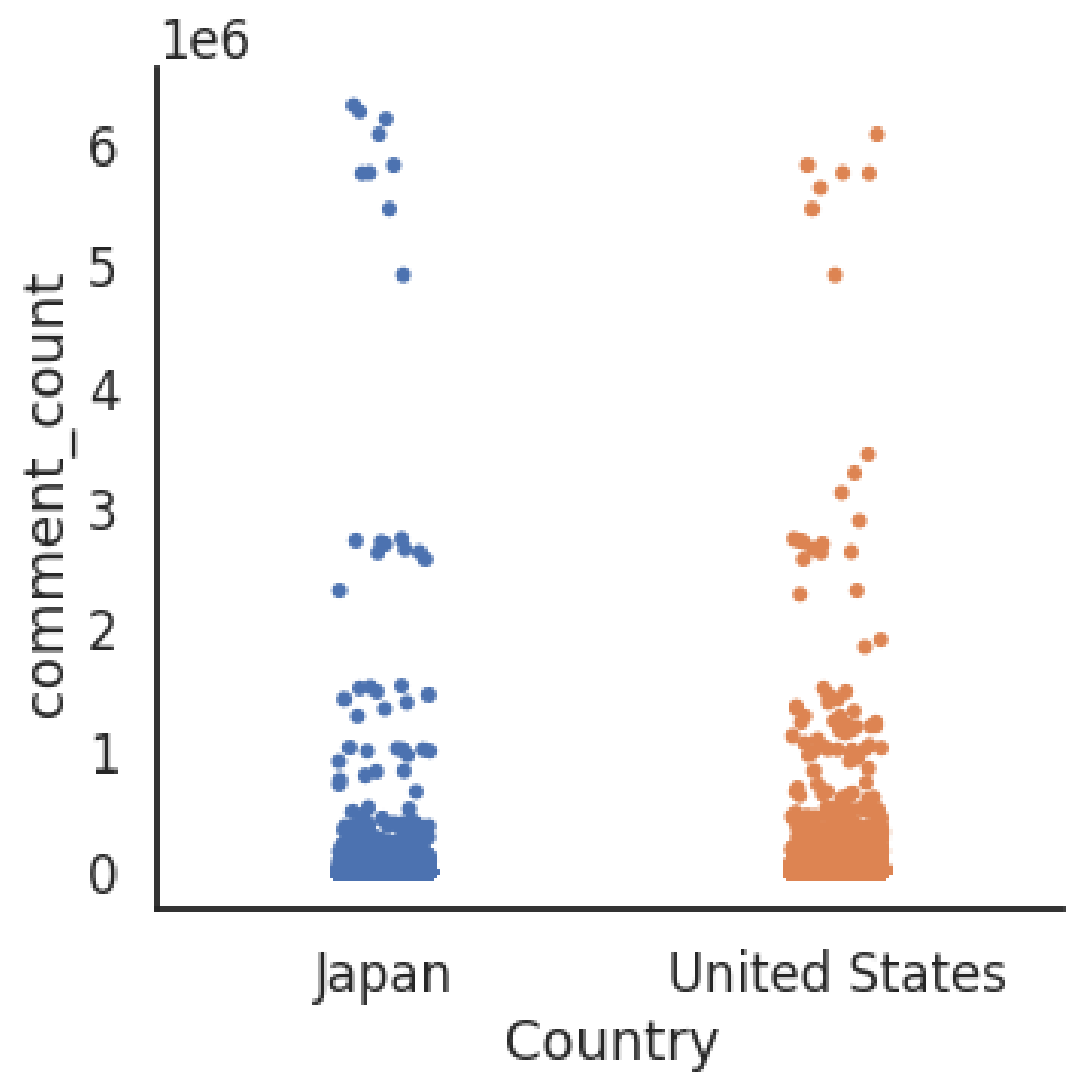
User Interaction features- conversion ratios

Conversion Funnel



On average, YouTubers should expect a 4% like to view ratio, and 1% comment to view ratio.

User Interactions in Japan and U.S



Behavior Similarities

- The distributions for comment counts are quite similar for Japan and U.S

VS

Behavior Differences

- U.S users tend to have higher view counts and likes counts than Japanese users
- U.S videos tend to receive more dislikes compared to Japan videos

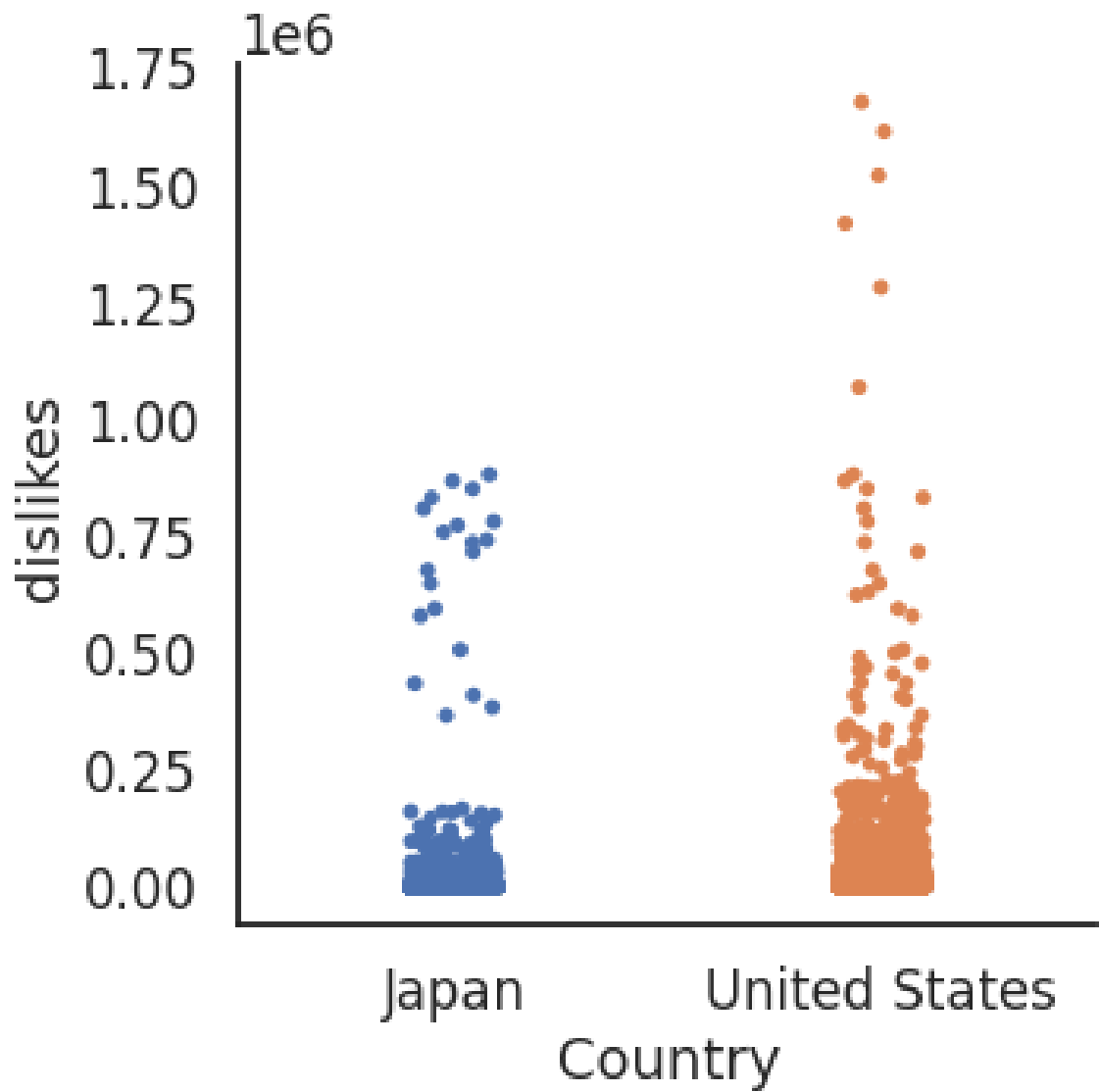


Comments

Mean of comments count:
6 k

Mean of comments count:
10 k
(increase by 60%)

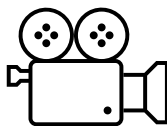
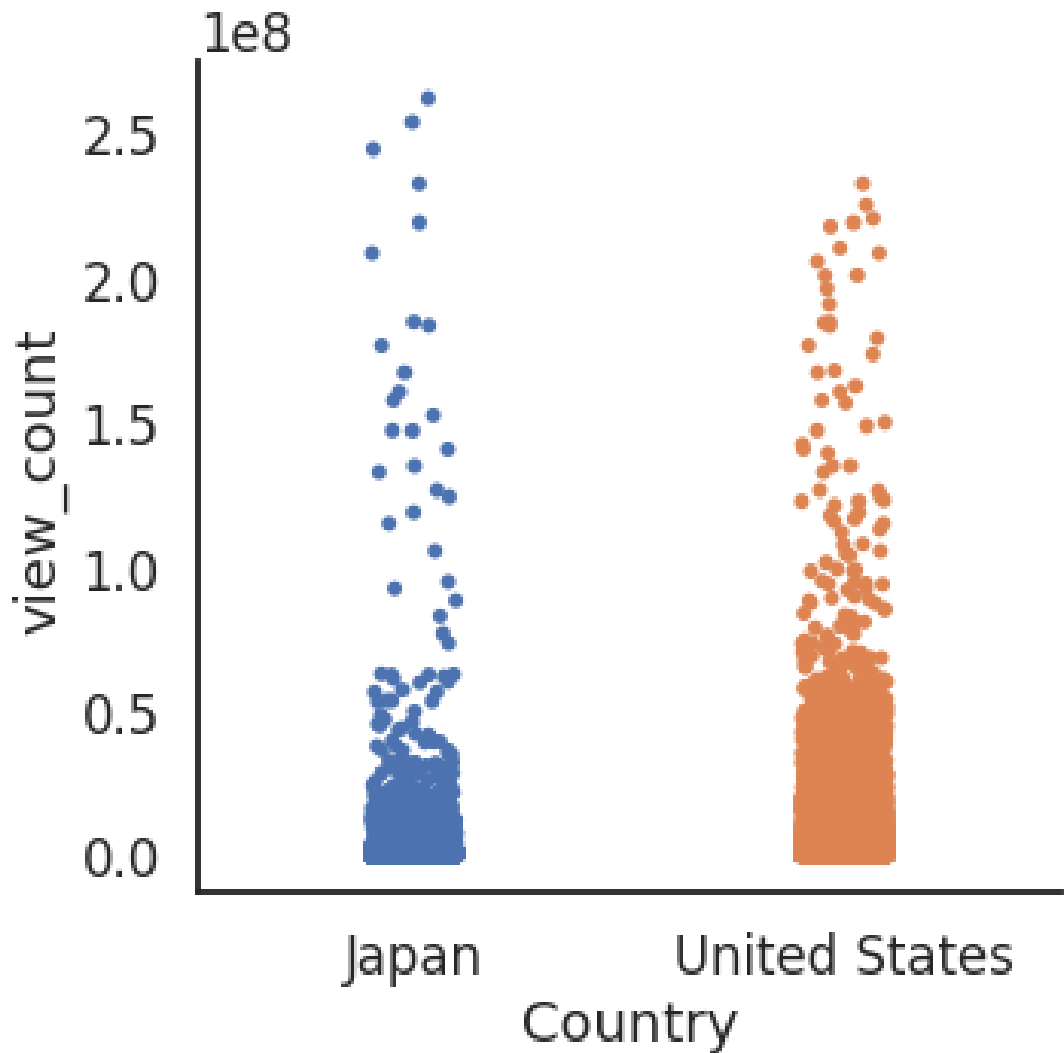
User Interactions in Japan and U.S



Dislikes

Mean of dislikes count:
1 K

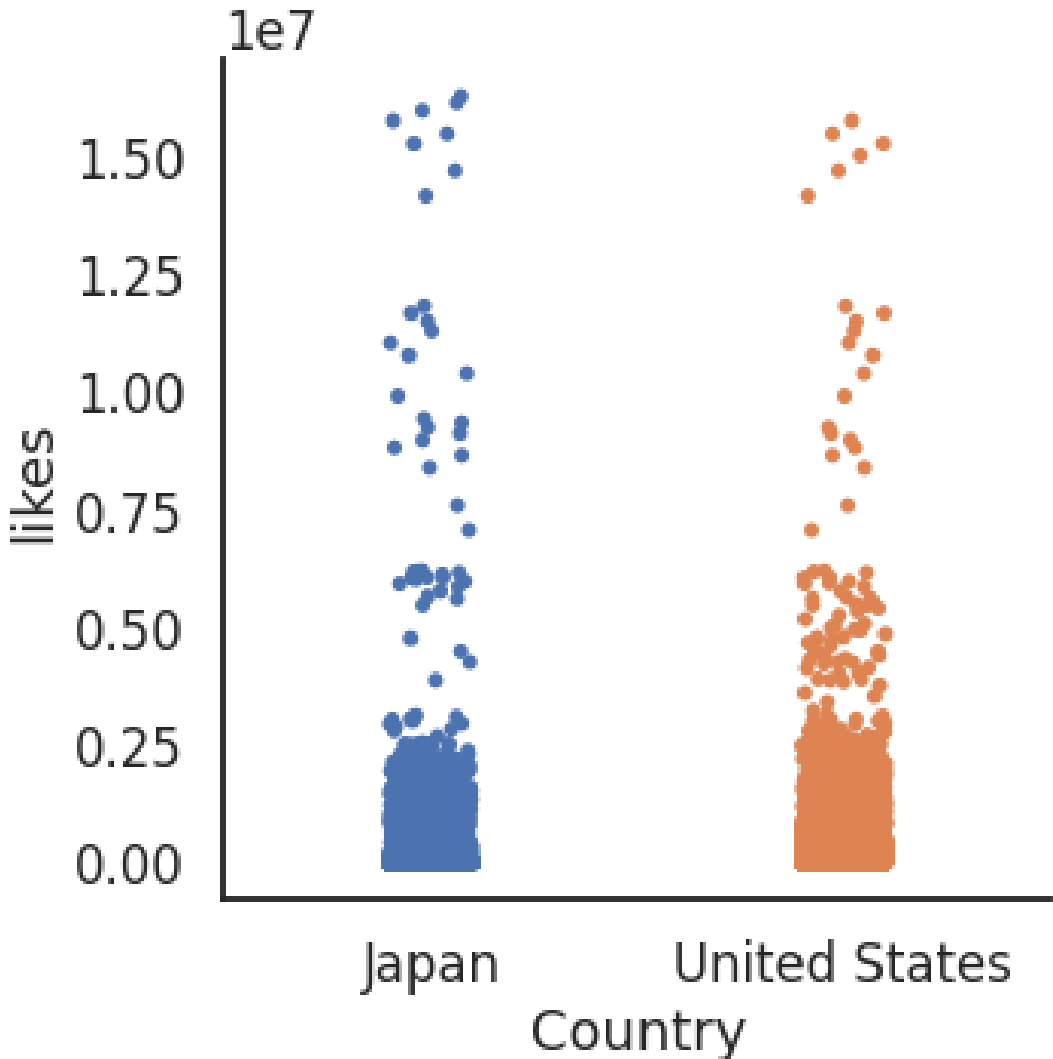
Mean of dislikes count:
4 K (4 times)



View Count

Mean of views count:
800K

Mean of views count:
2 M (1.5 times)



Likes

Mean of likes count:
4 k

Mean of likes count:
10k (1.5 times)

Most common words in Titles

U.S Videos Titles

Most common words : Official, music videos, trailer, Game Highlight
Cultural Hot words: Black Panther, Infinity War, Super Bowl,
American Idol, Selena Gomez, Among Us



Japan Videos Titles

Most common English words : Official, Game highlights
Cultural Hot words:
One Piece(manga series), King&Prince (Japanese idol),
Shohei Ohtani (baseball pitcher), BTS, ITZY, (KPOP)



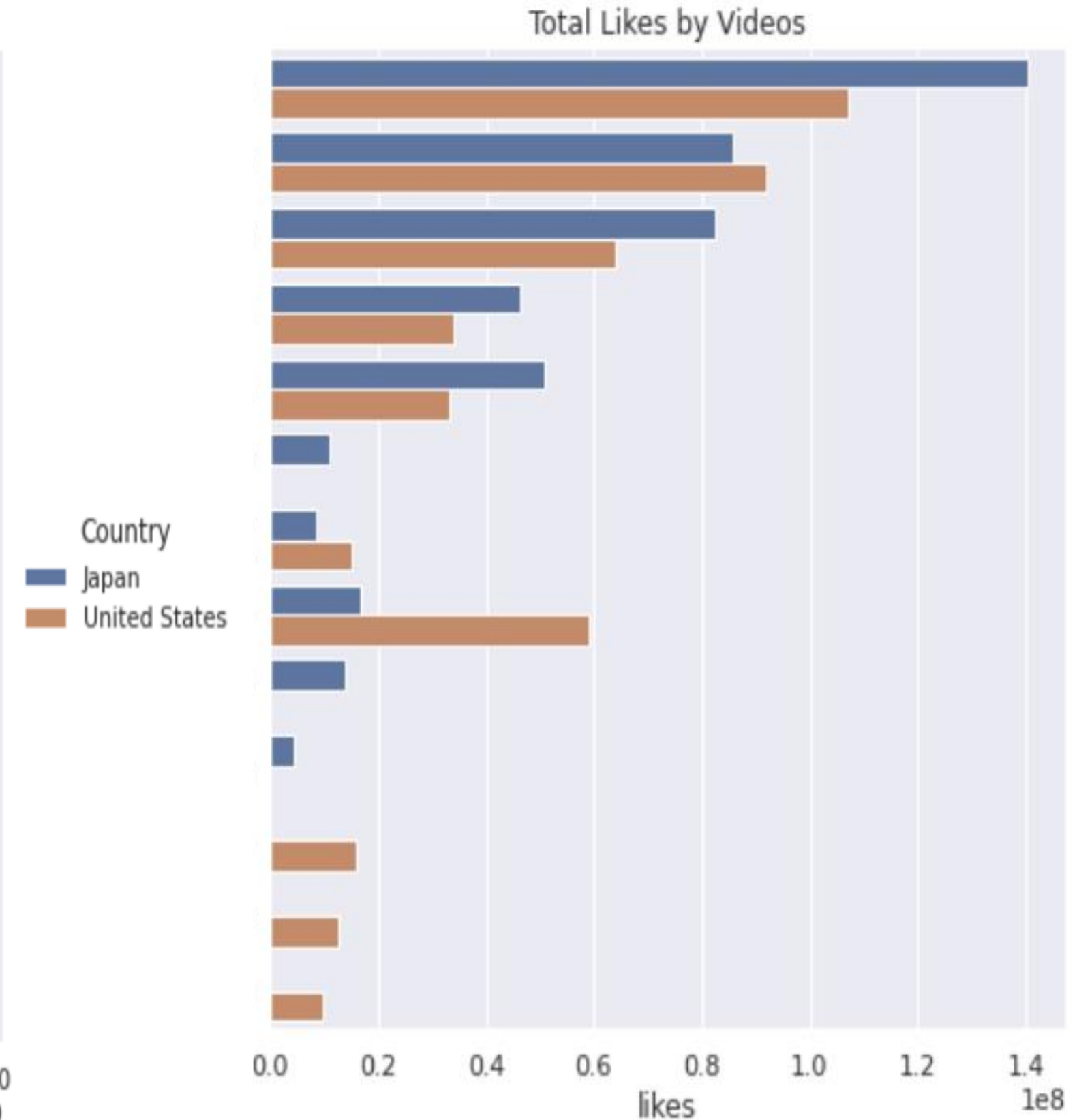
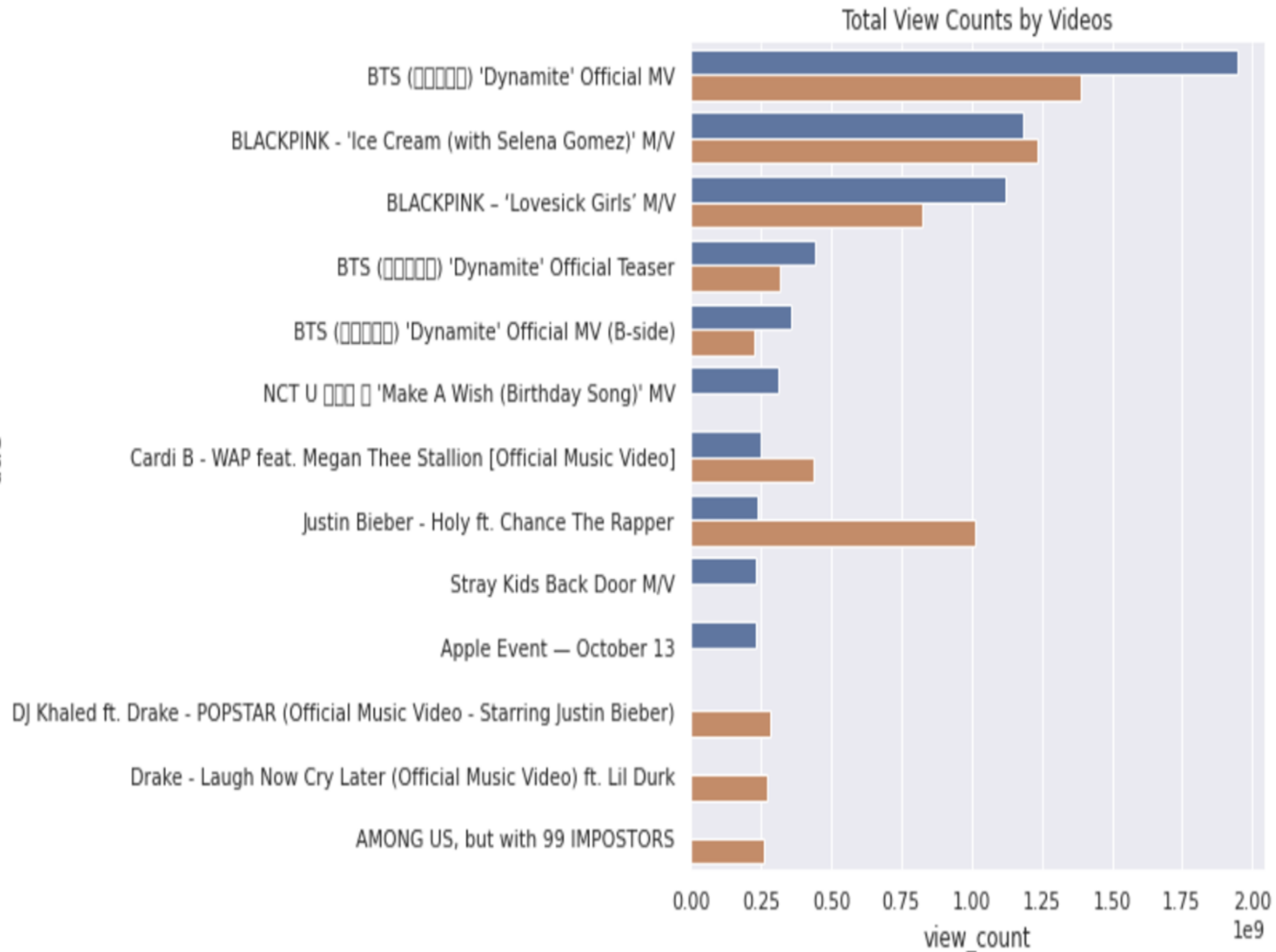
YouTube Videos Analysis



- Top 10 videos for the US/Japan
(Analysis for view count/like/dislike)
- Days to go trending for videos in
2018/2020 for the US and Japan

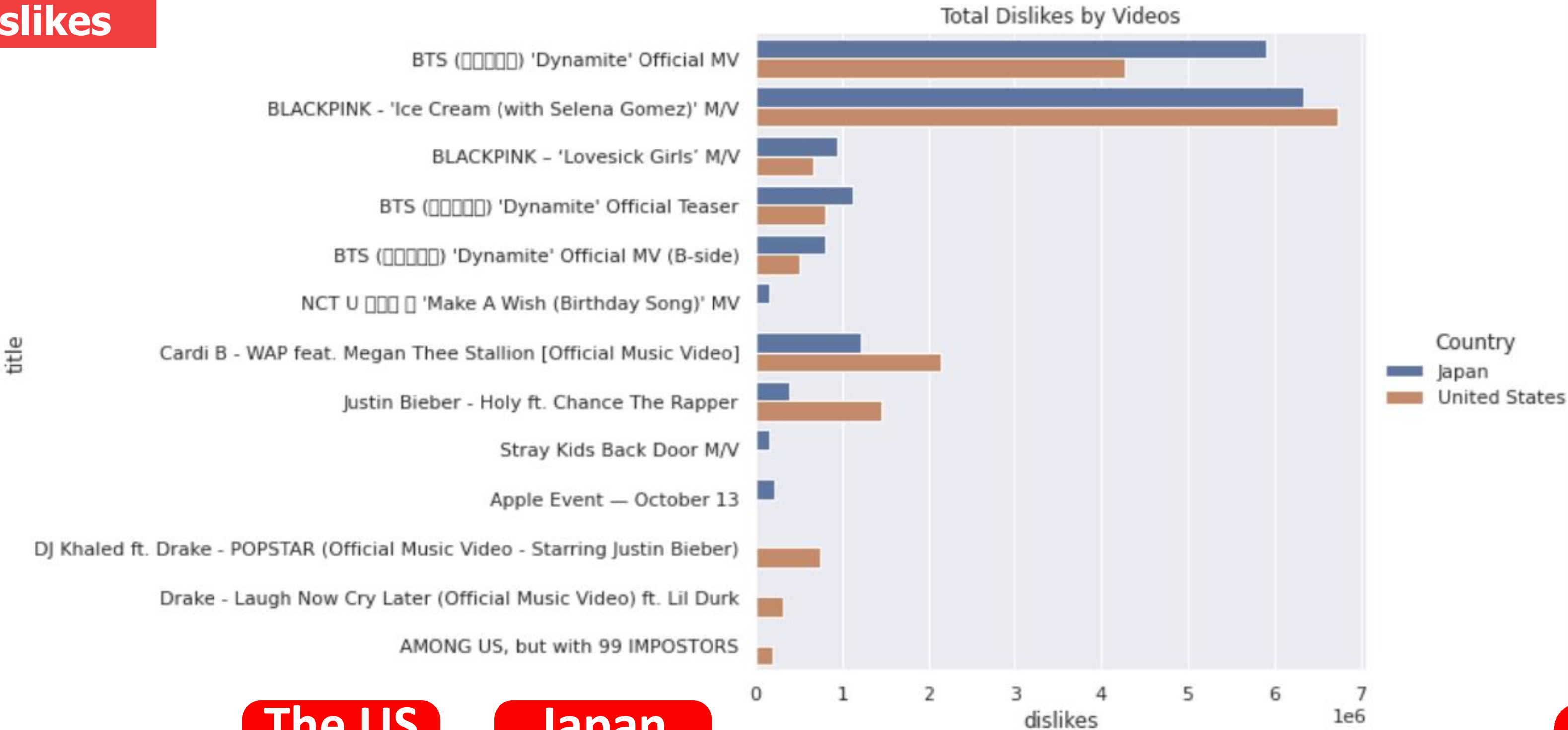


Top 10 videos for the US/Japan



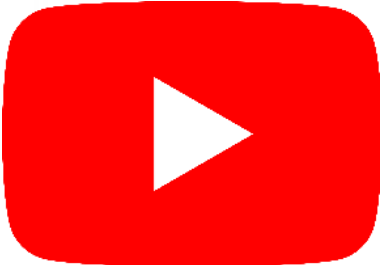


Top 10 videos for the US /Japan



The US
1.78M

Japan
1.73M

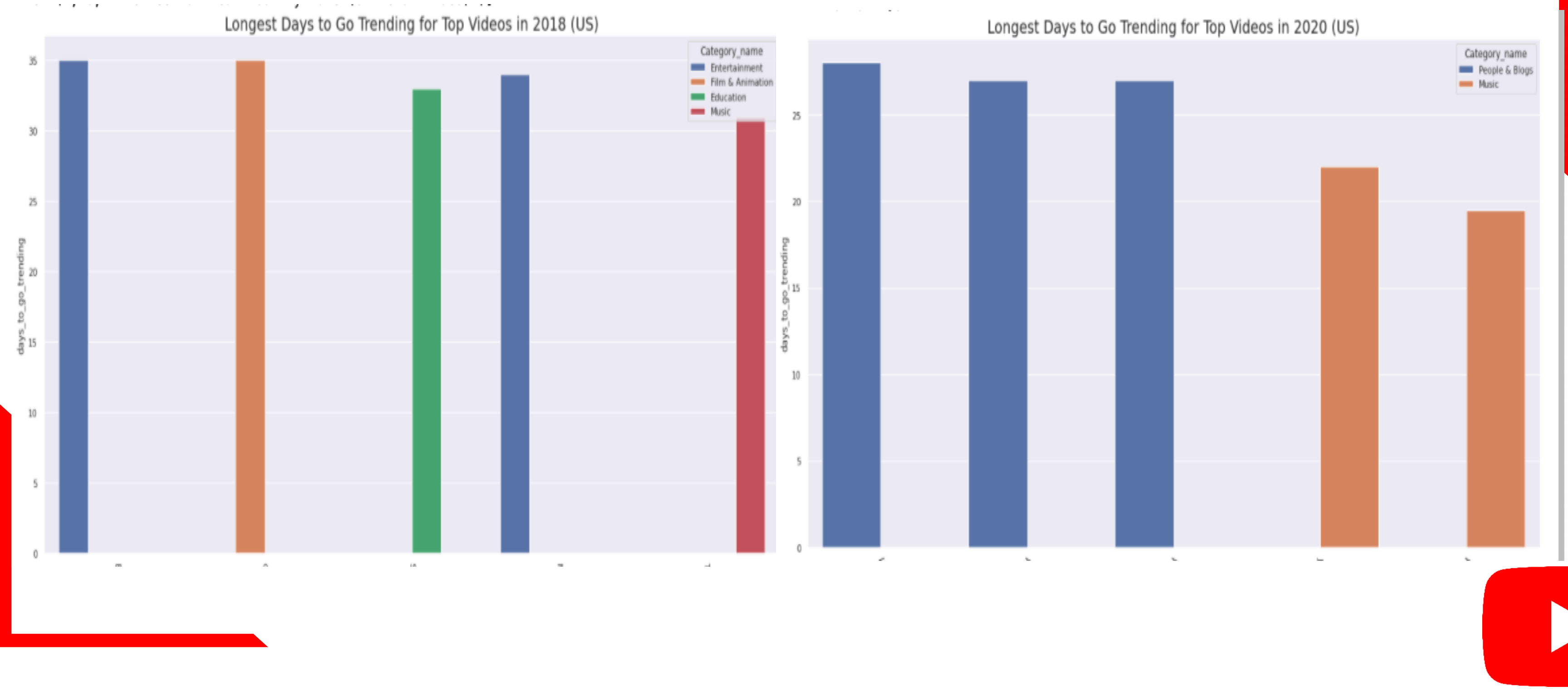


Findings

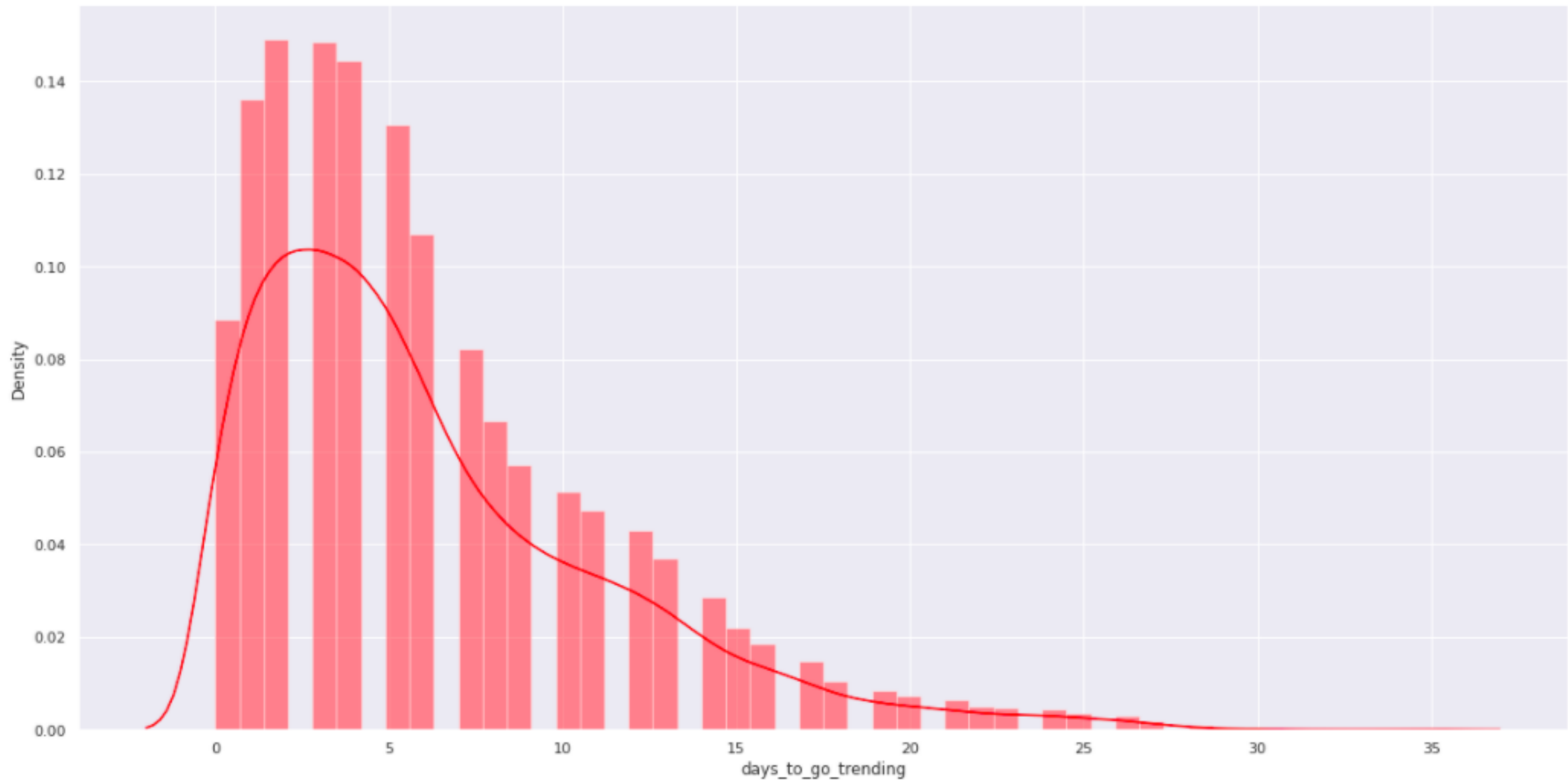
- Likes and view counts show a similar distribution for the top videos in the US and Japan
- Average dislikes for top US videos is more than for top Japanese videos

Top Trending videos in United States

--The longest time for videos to go trending in the U.S

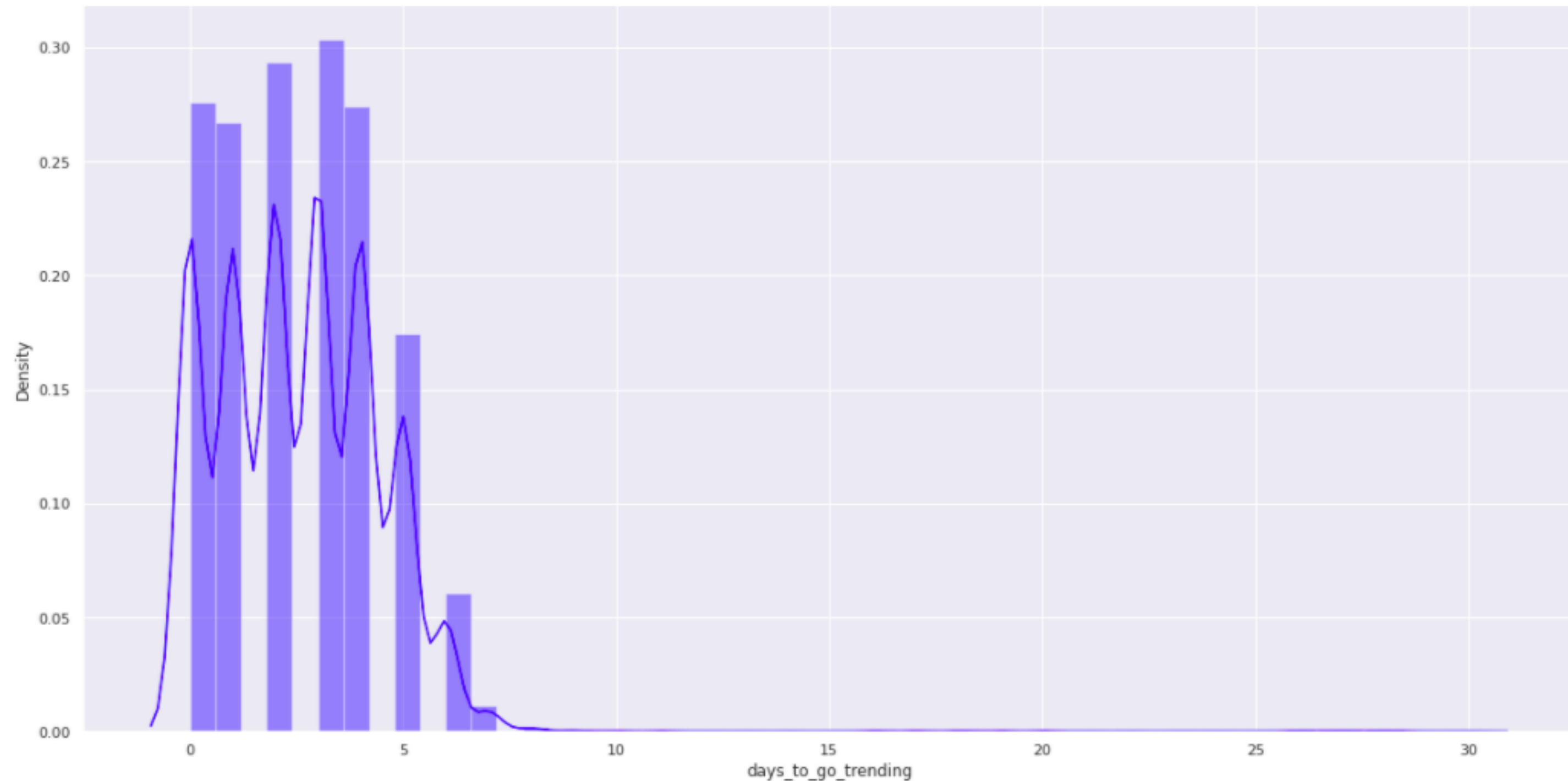


Distribution of days for videos to go trending in 2018 – the US



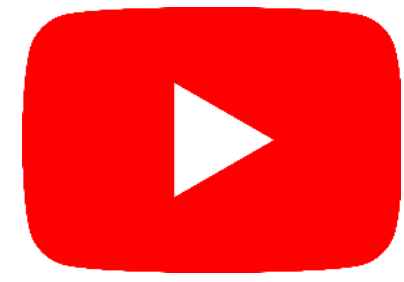
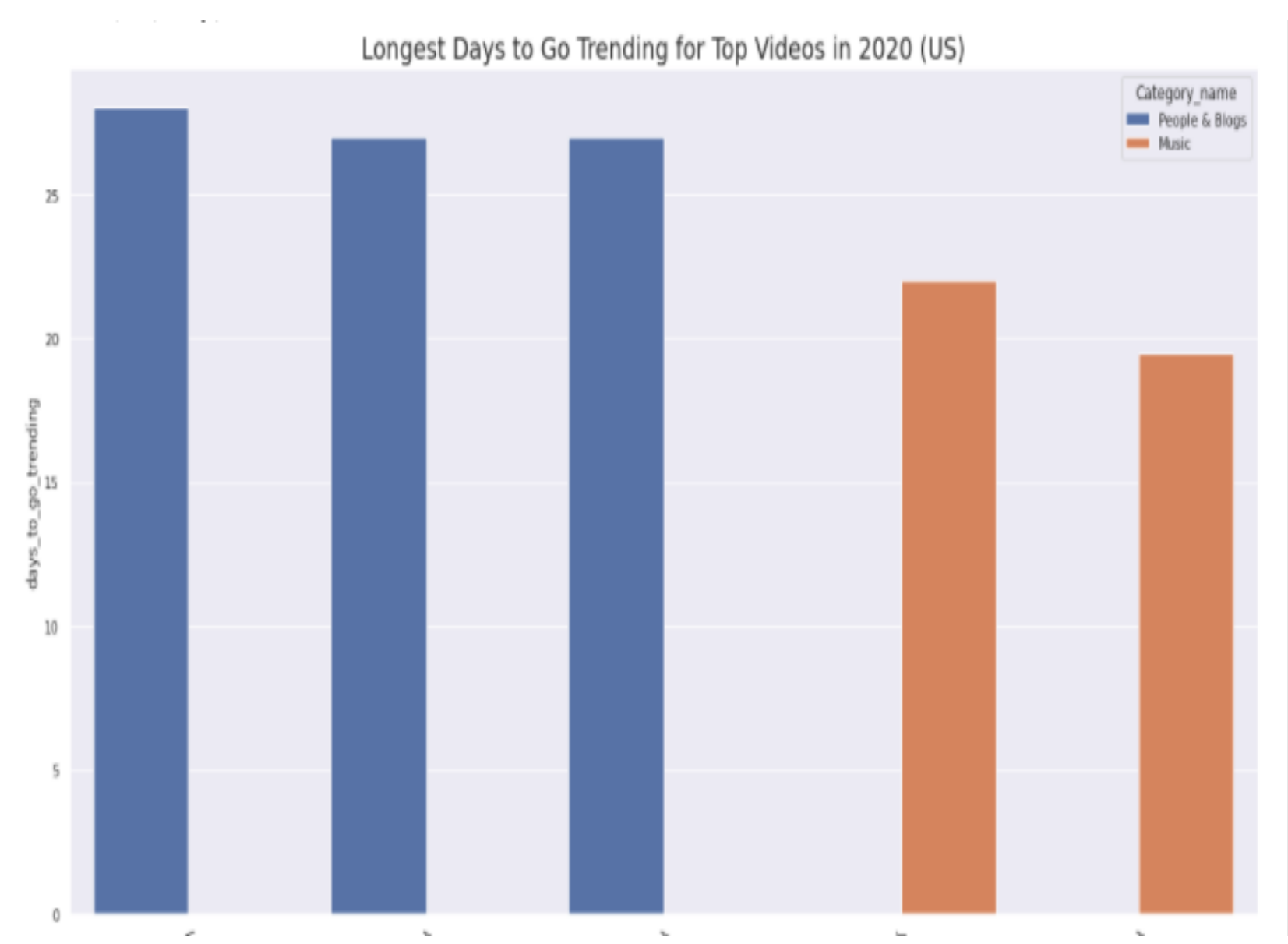
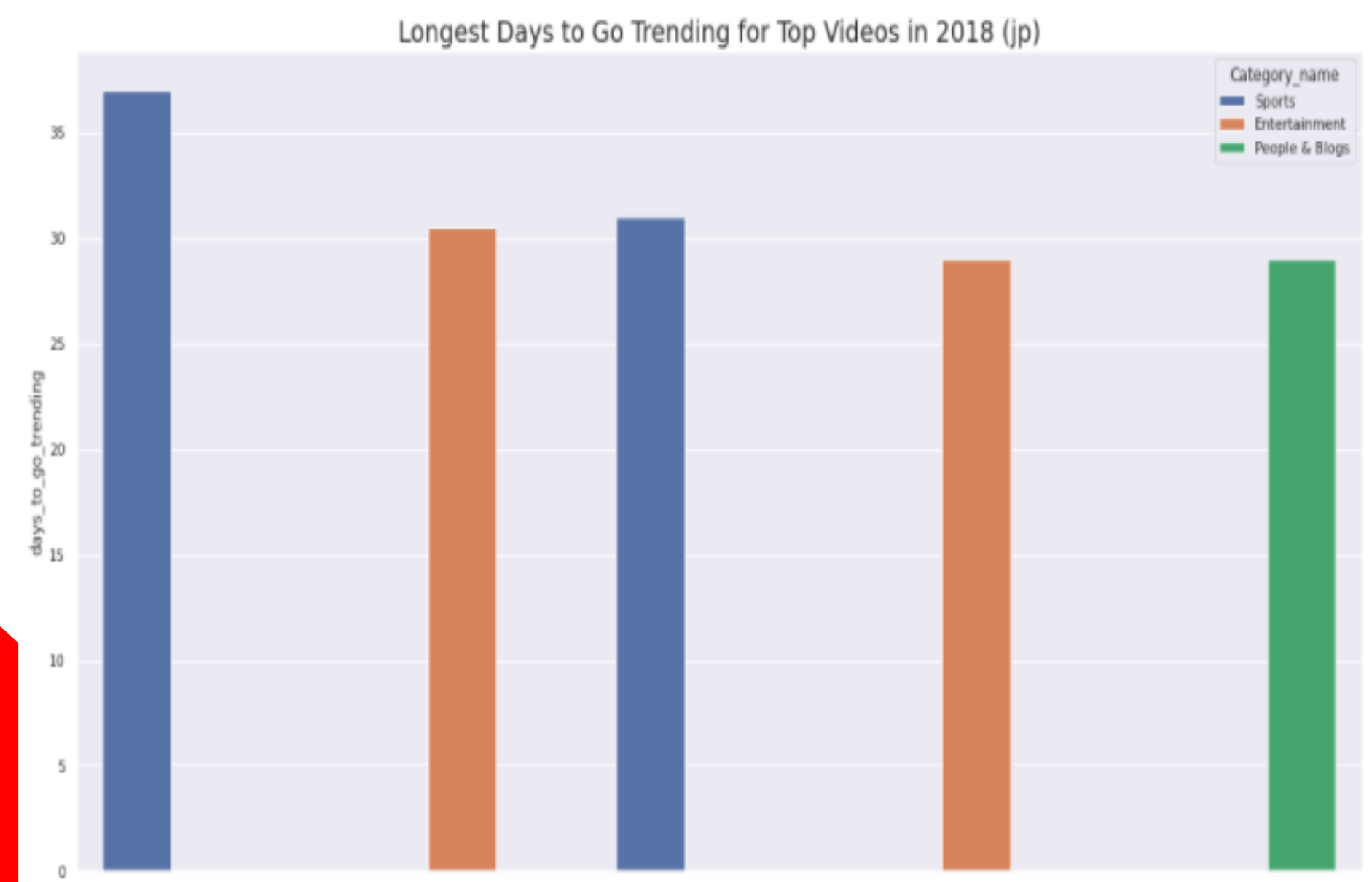
Distribution of days for videos to go trending in 2020 – the US

Days for **large** amount of videos spent 1-5 days to go trending



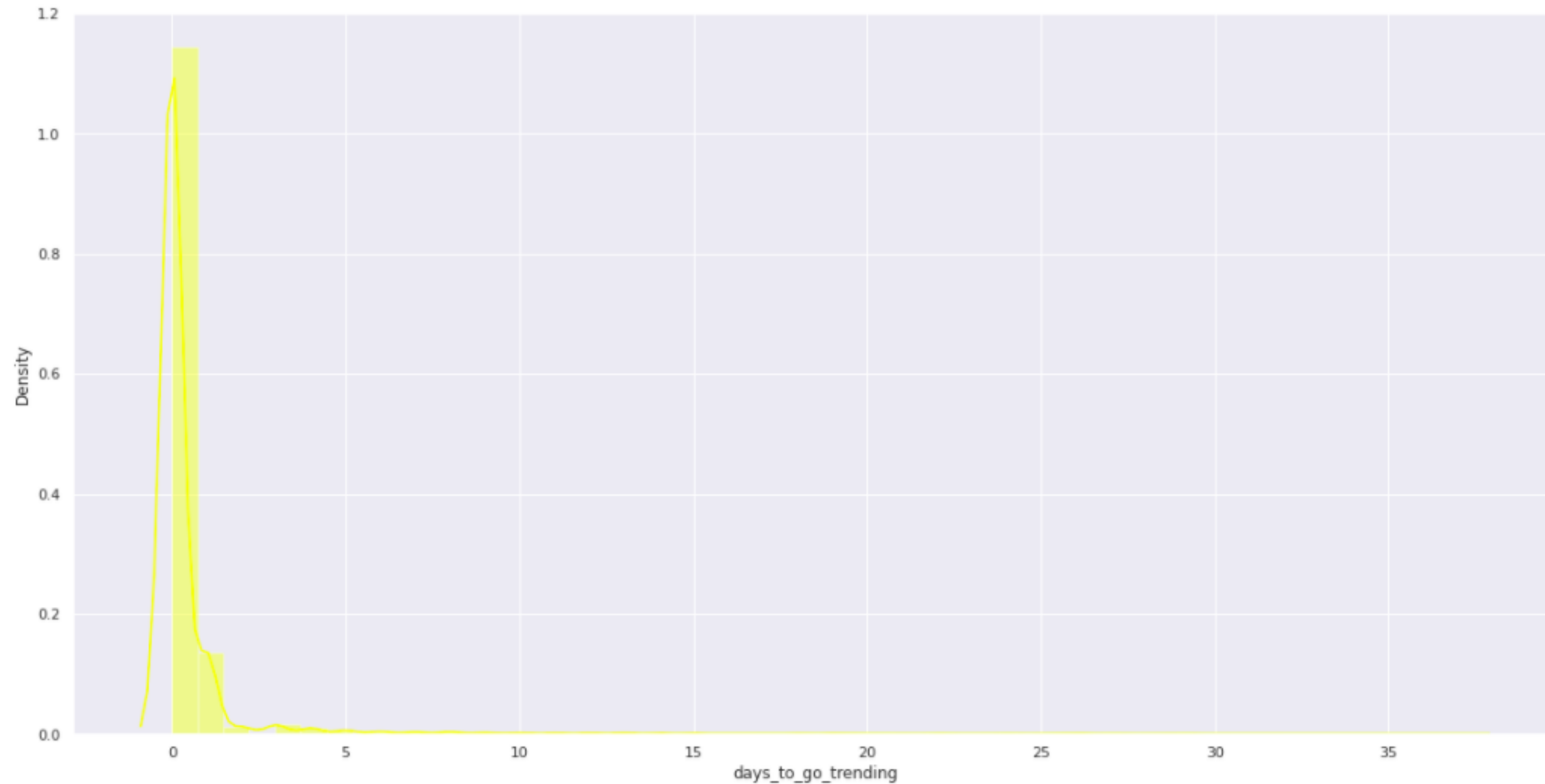
Top Trending videos in Japan

--The longest time for videos to go trending in Japan

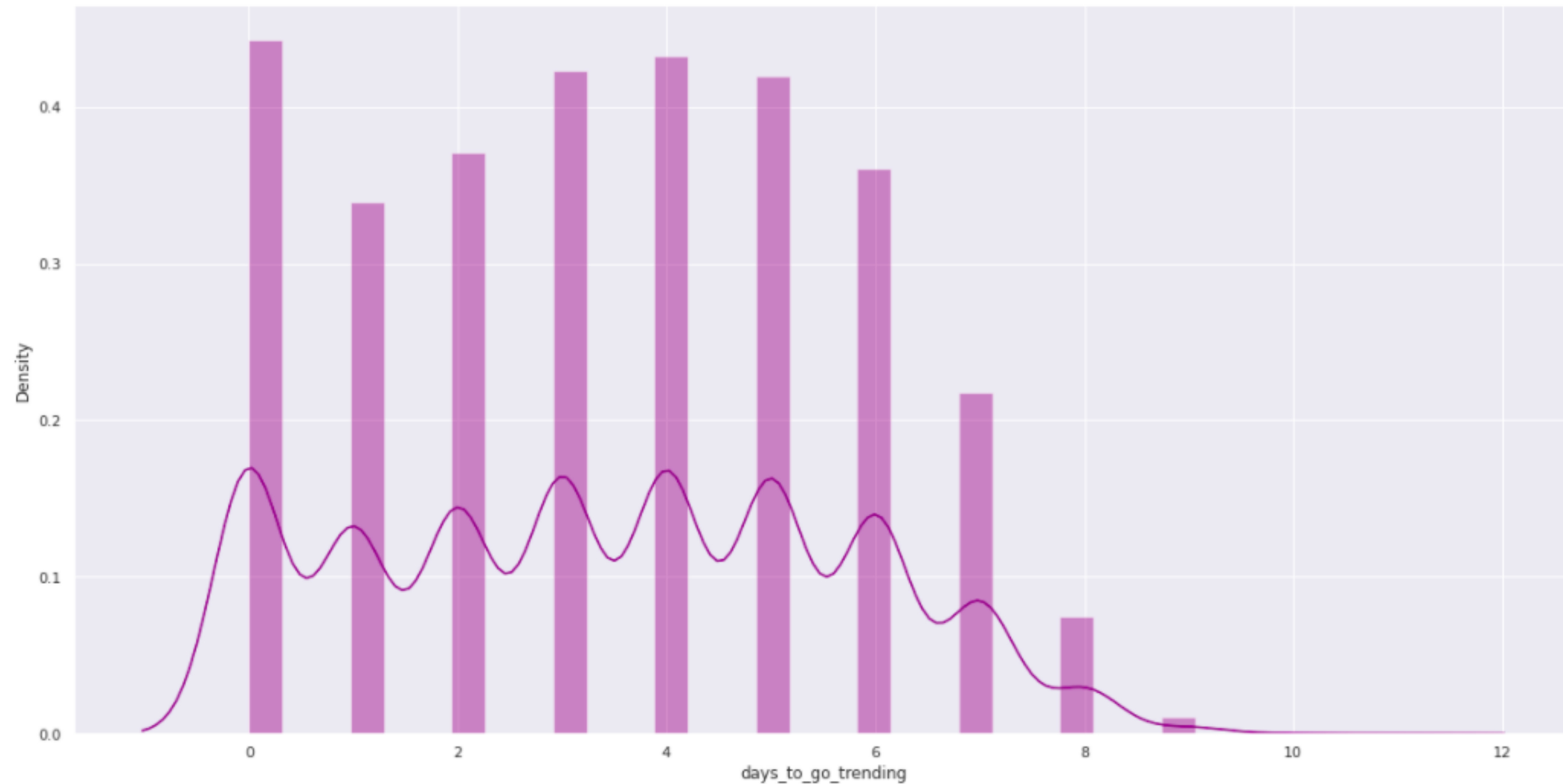


Distribution of days for videos to go trending in 2018 – Japan

Overall view of distribution



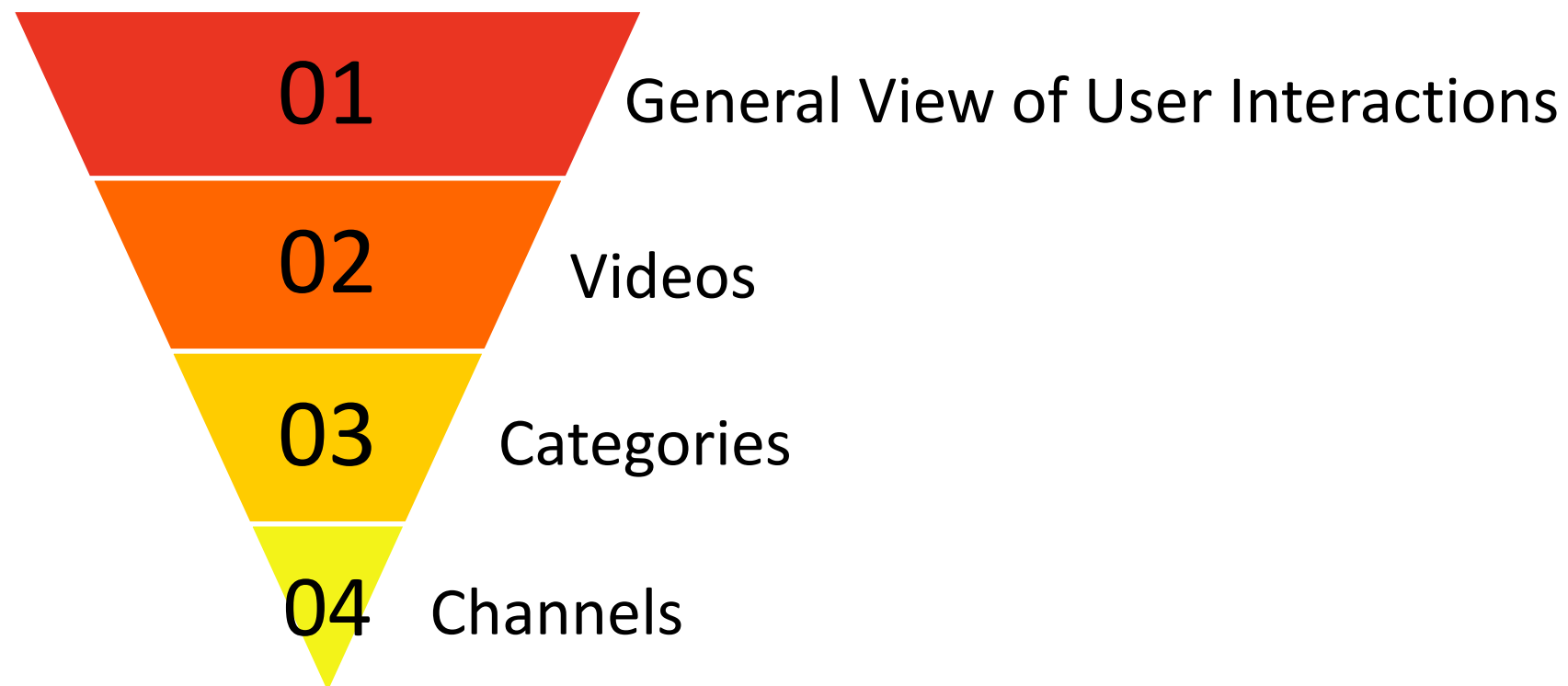
Distribution of days for videos to go trending in 2018 – Japan





Category Analysis

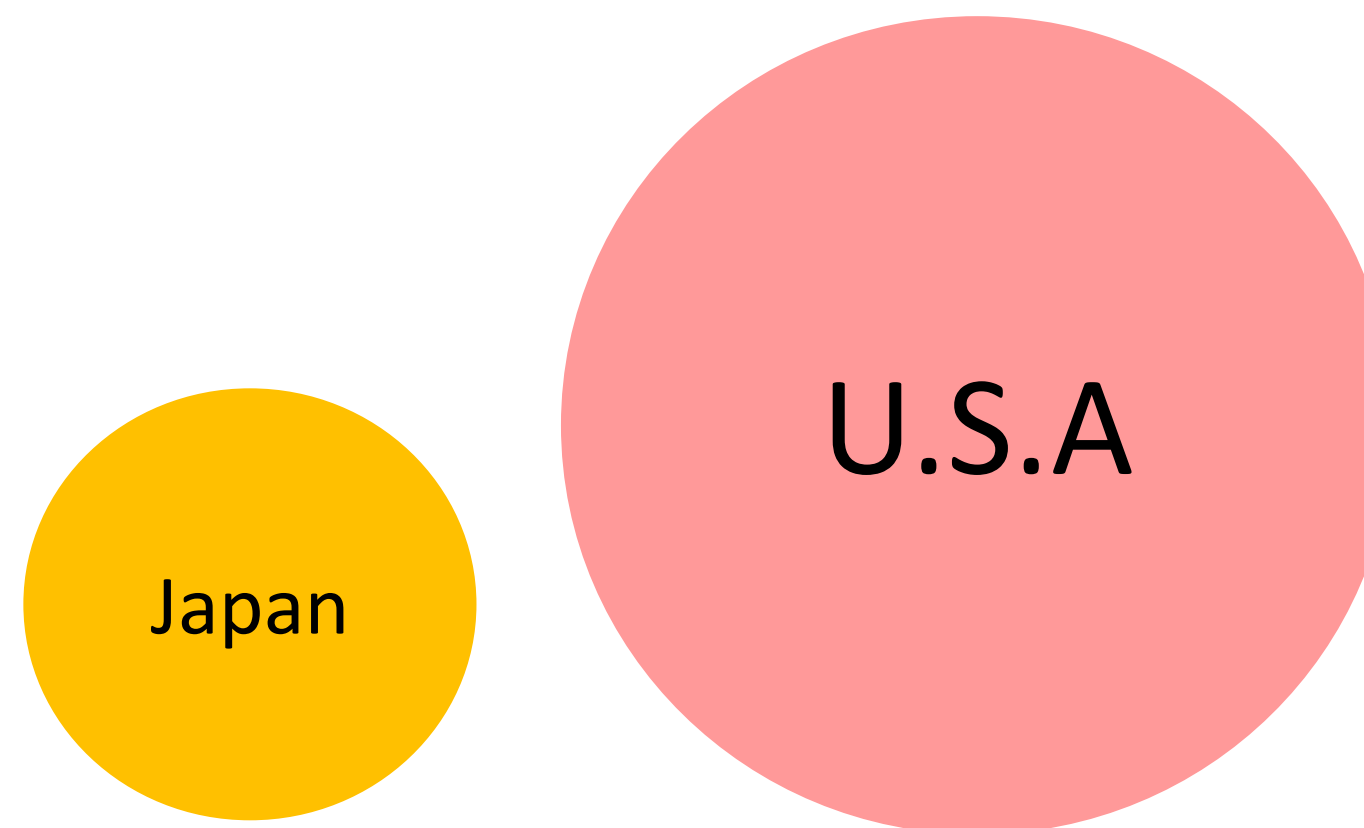
Our Storyline



What we do for categories

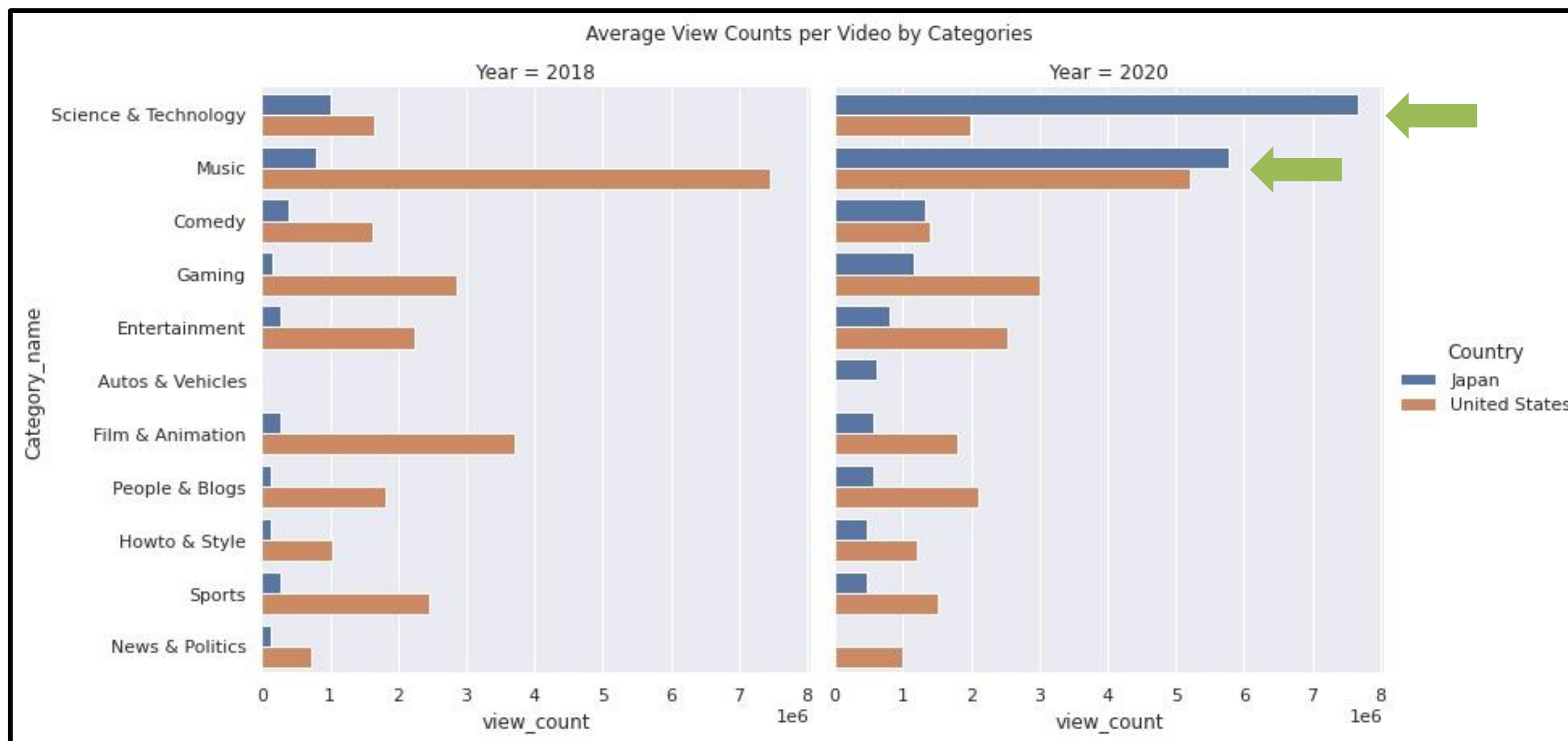
- Select top 10 categories from 2 years and from 2 countries
- Visualize average views, likes, dislikes, and comments per video
- Discover characteristics among categories

Prerequisite for
Category Analysis:





Category Analysis



- Music as well as Science & Technology owns the most average view counts
- In 2020, view counts shows reversed results in top 2 categories compare to 2018.



Category Analysis

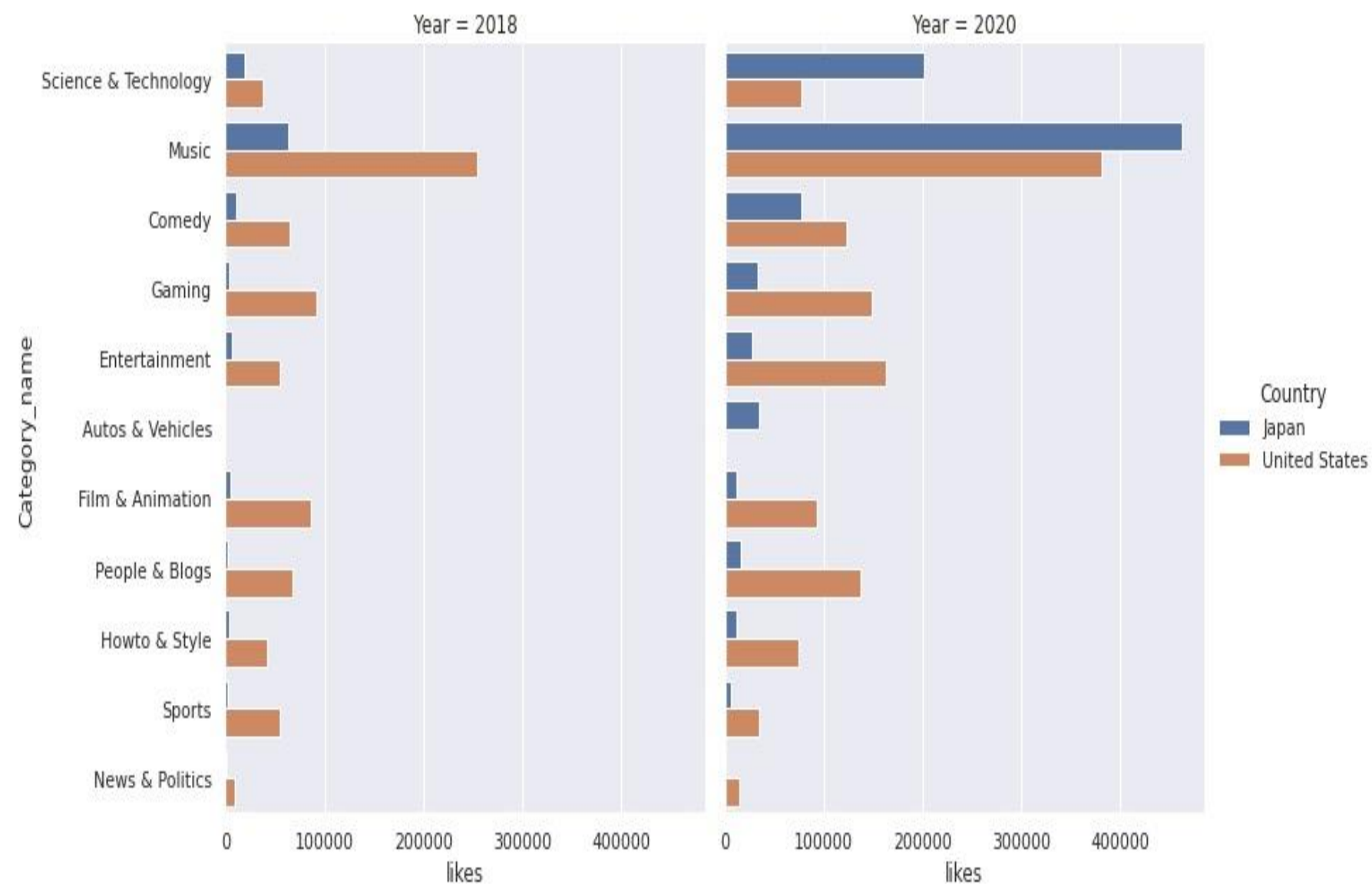


Likes

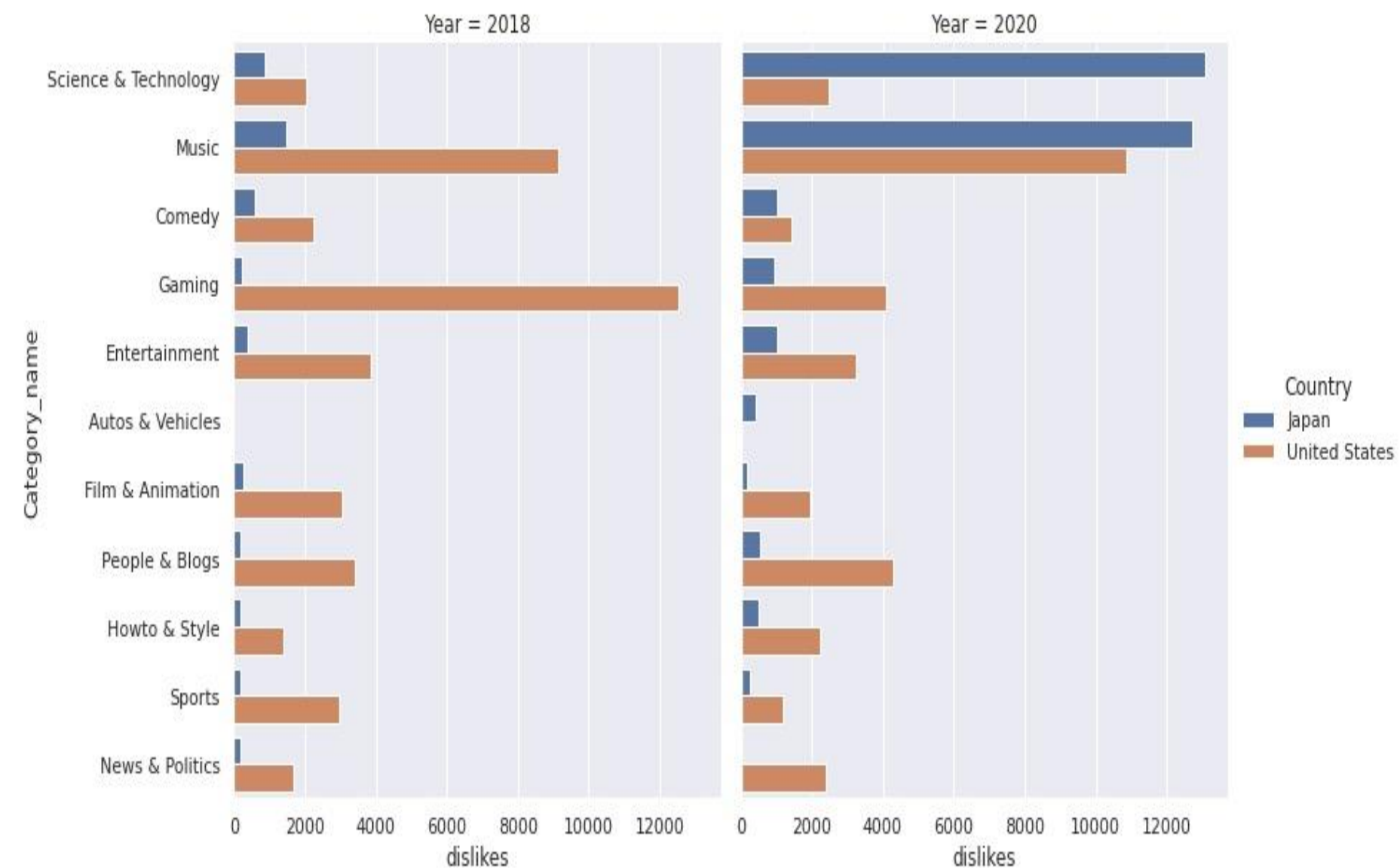


Dislikes

Average Likes per Video by Categories



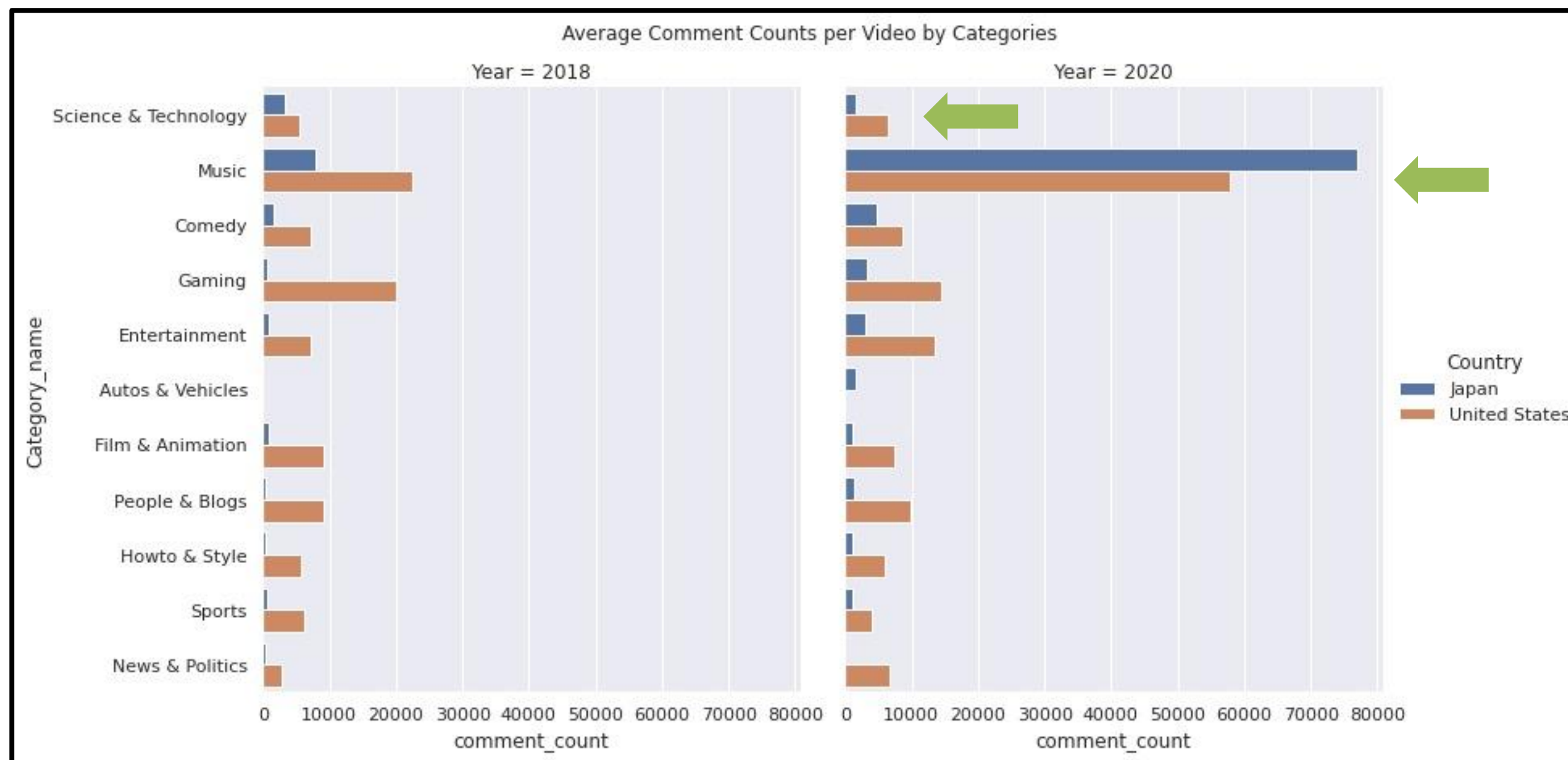
Average Dislikes per Video by Categories



Same in likes and dislikes!



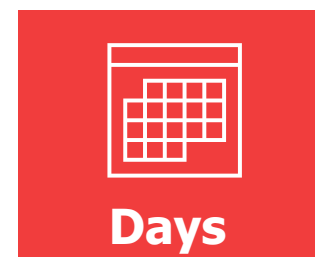
Category Analysis



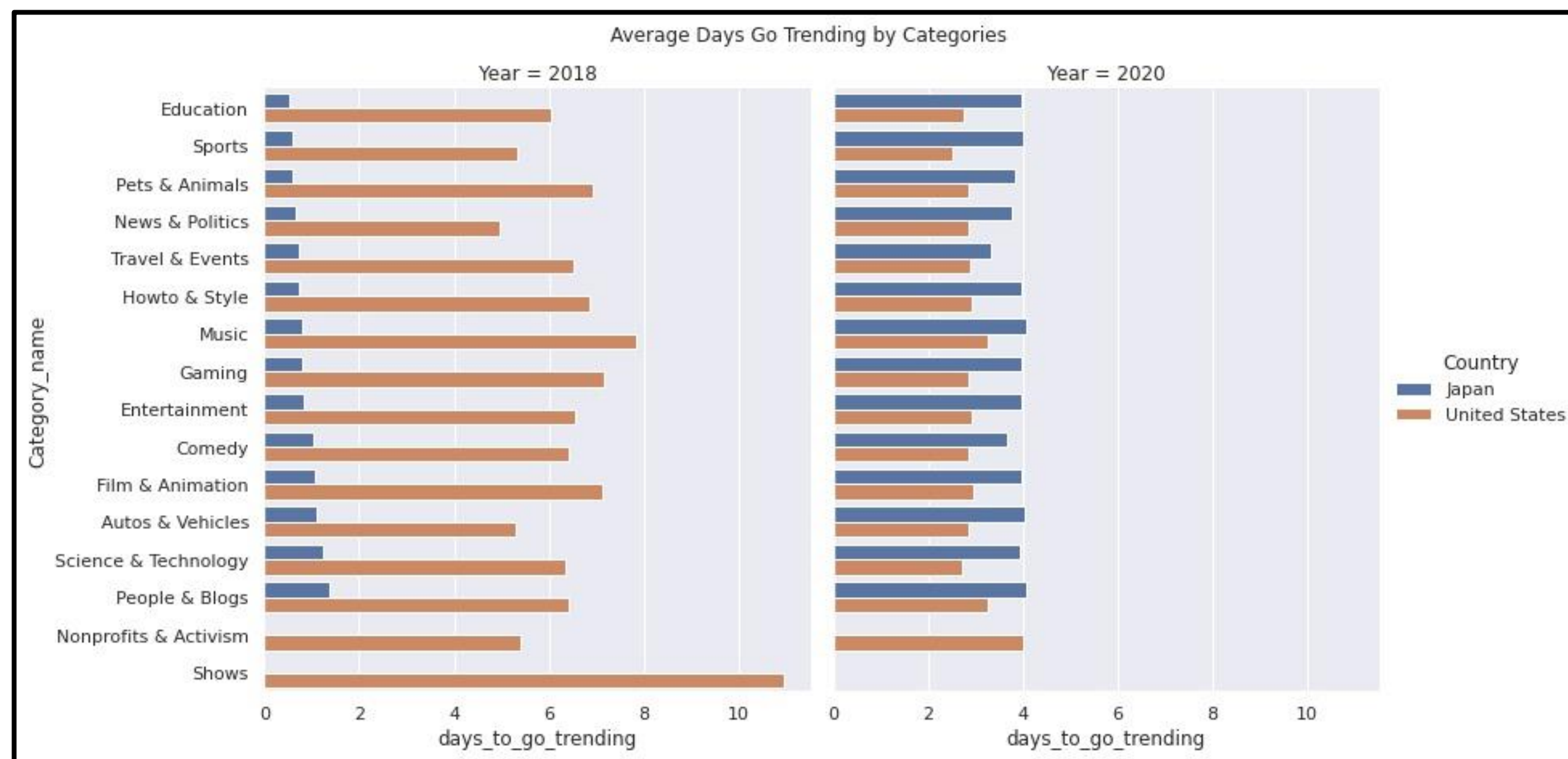
- Science & Technology, which all owns the most average view counts in Japan in 2020, perform differently in comments
- Music performance on comments are similar to view counts



Category Analysis



Days to Go Trending



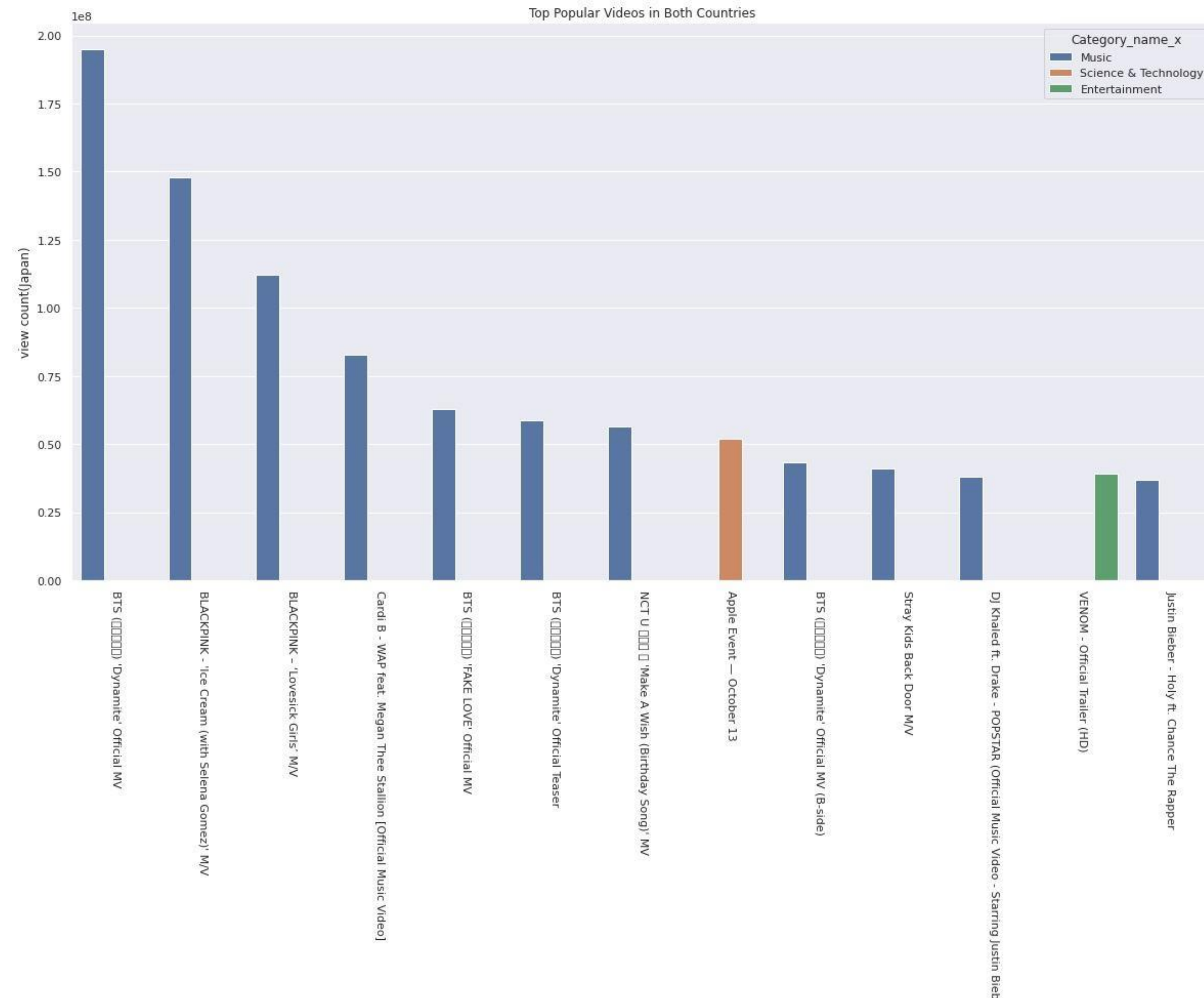
U.S.A.



Japan



Top Popular Videos in Both Countries



Relationship between Top Videos and Categories

11 of 13 top videos are from music category

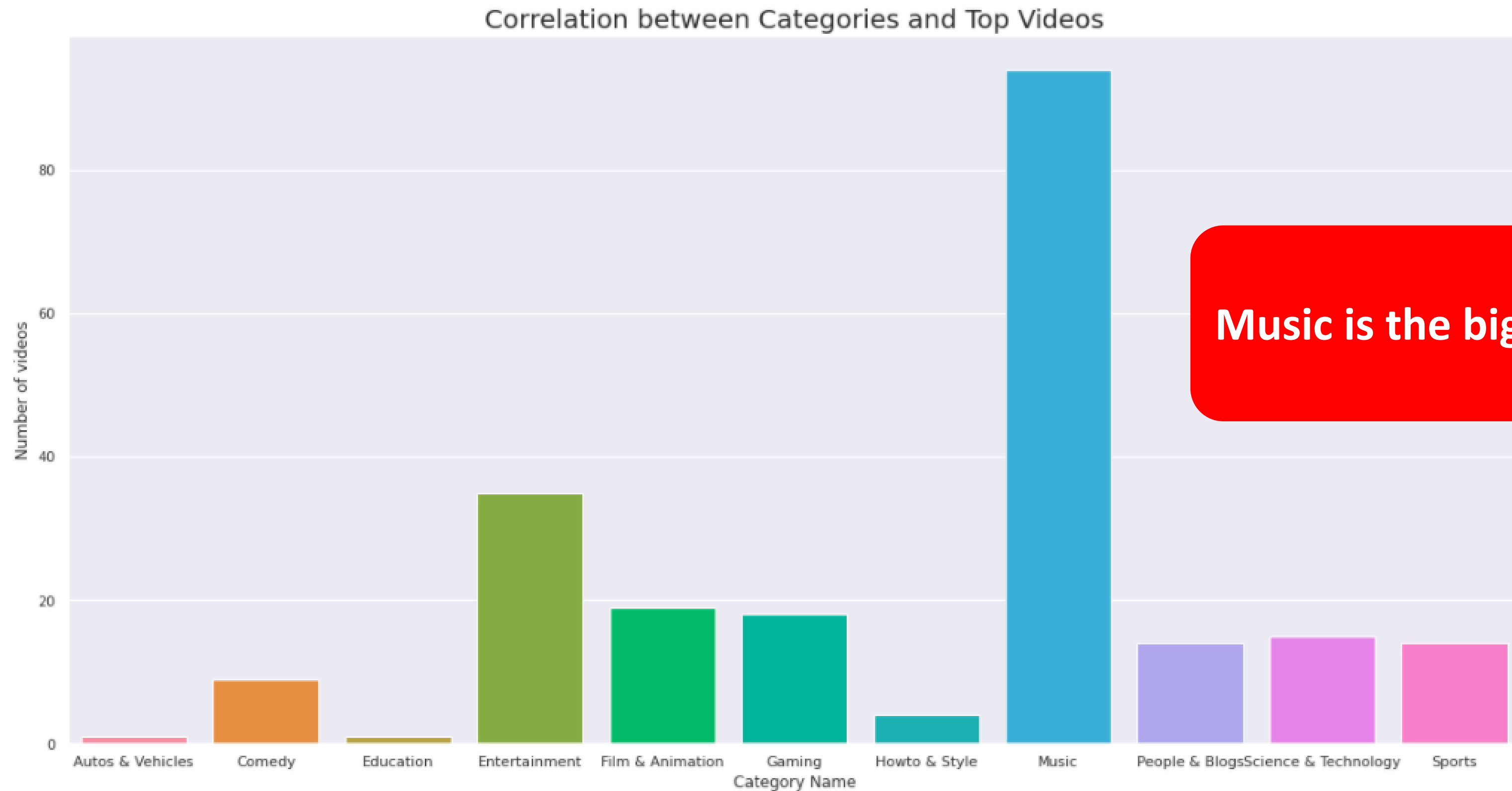
8 of 11 music videos belong to Korean music

BTS and BLACKPINK are popular in both countries

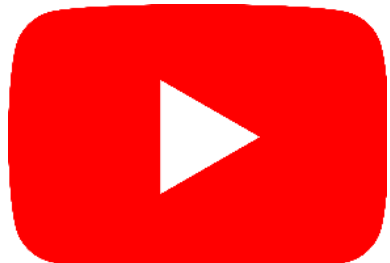


Relationship between Top Videos and Categories

—Top 500 videos in the US & Japan

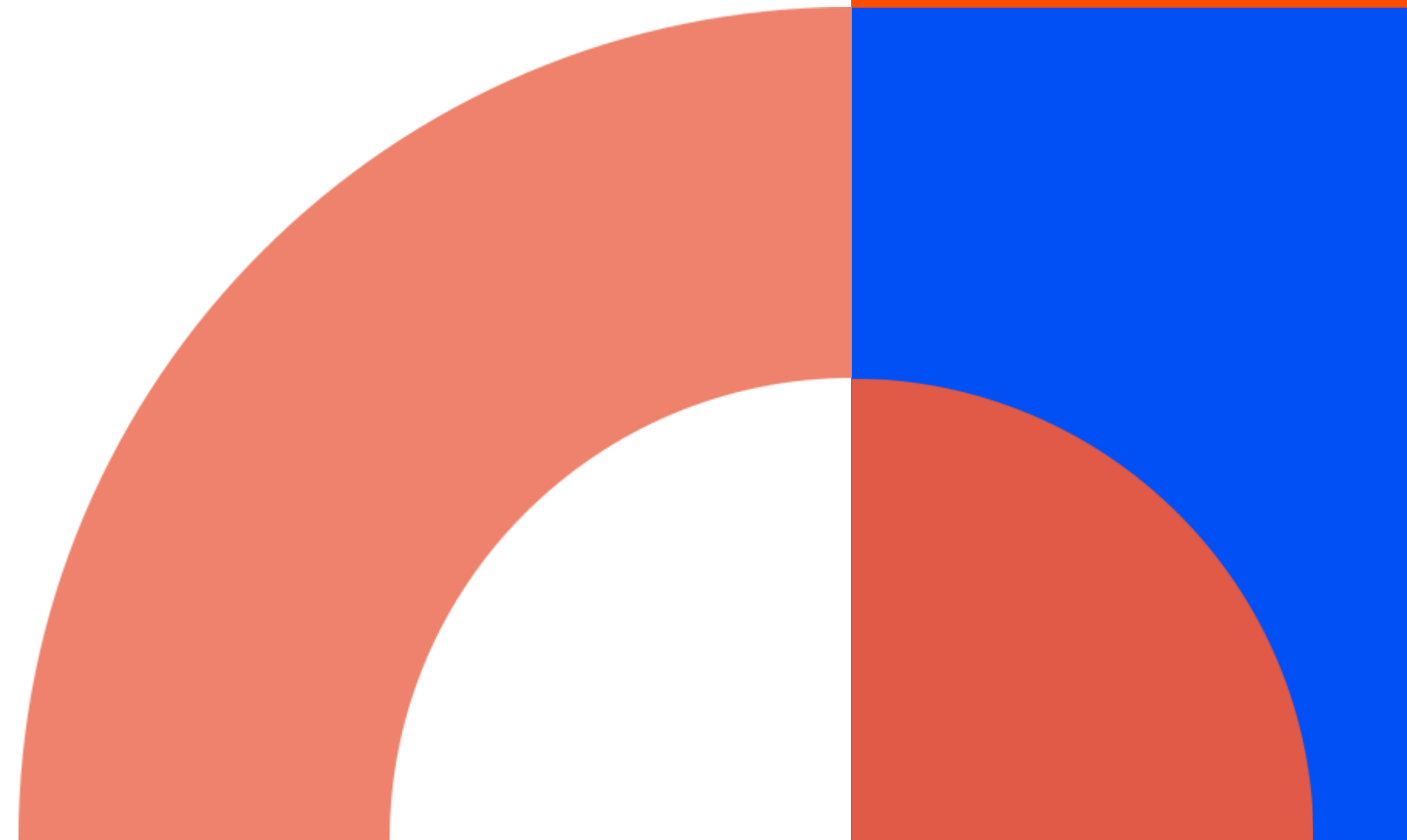
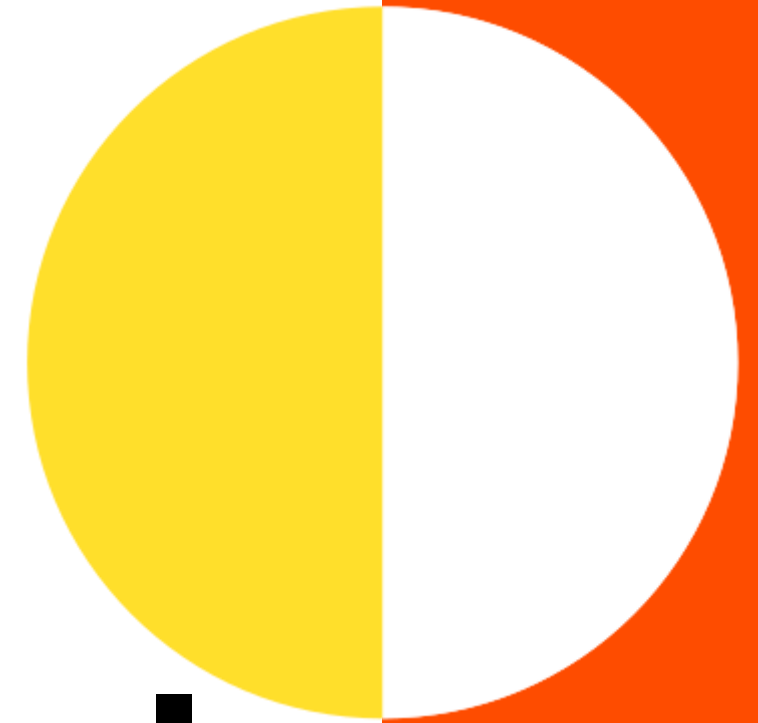


Music is the biggest part



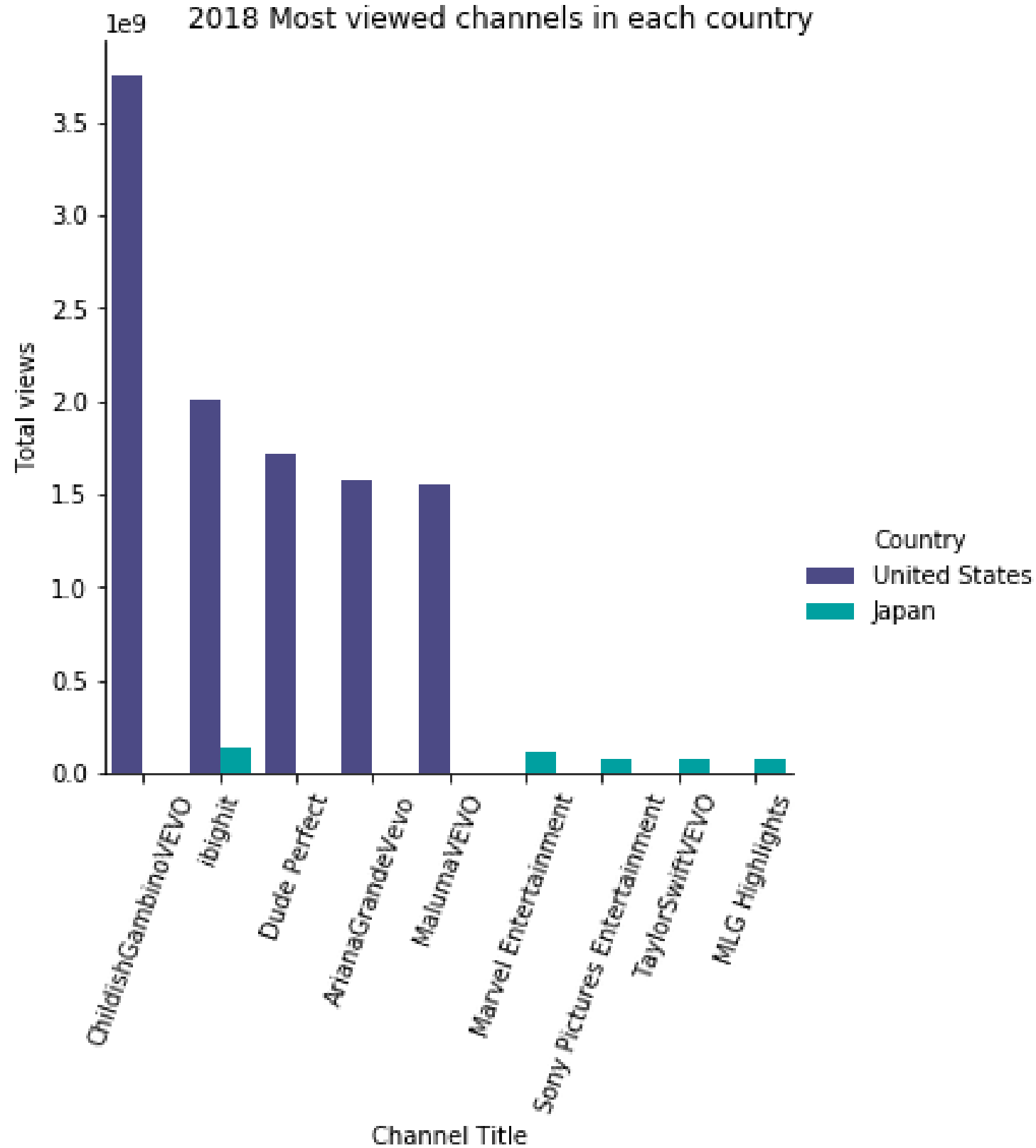


YouTube Channel Analysis





Top 5 Most Viewed Channels in 2018 for US and Japan



ChildishGambinoVEVO

TOP #1
US Channels

3.7B
Views

ibighit

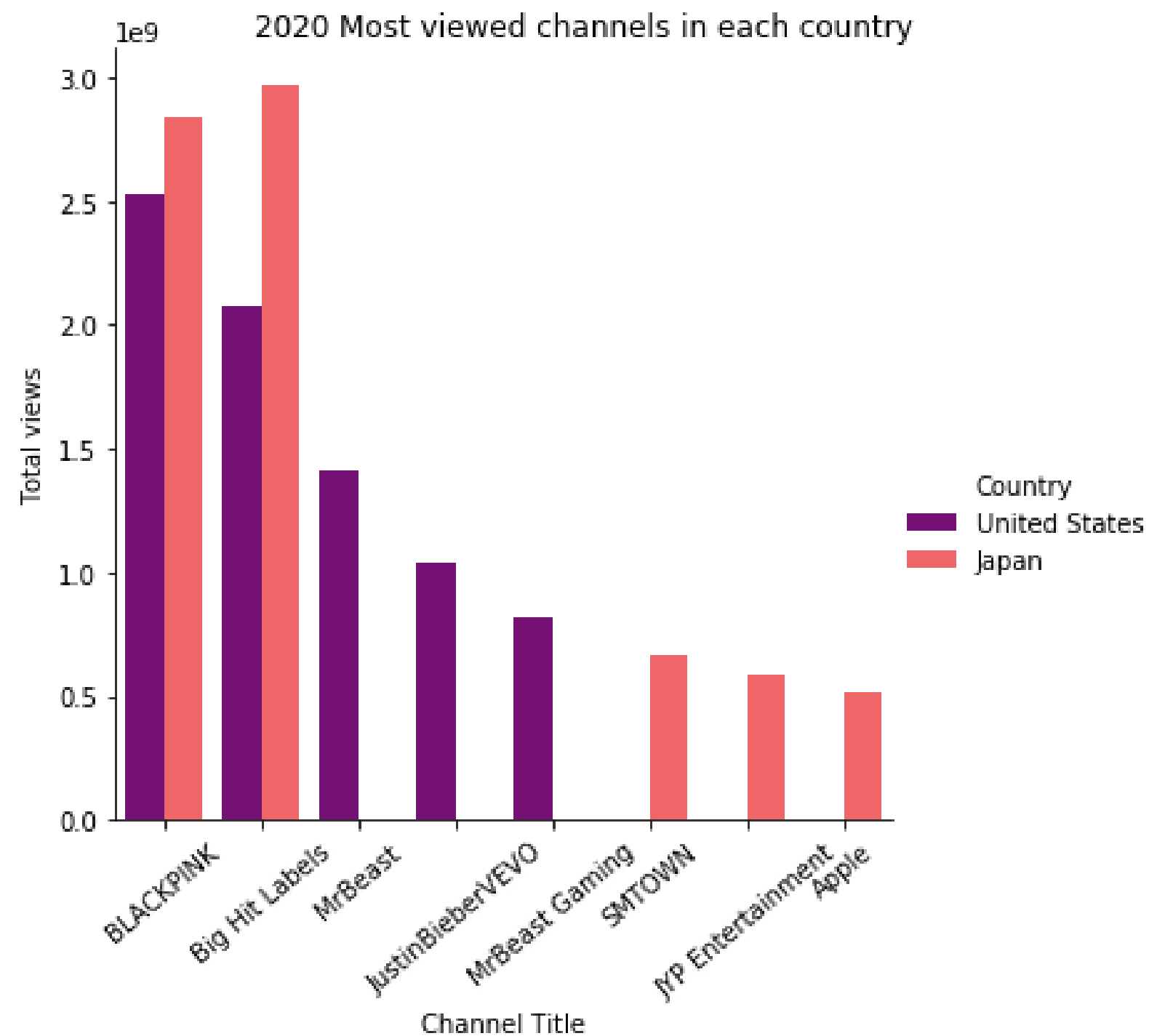
TOP #1
Japan Channels

1.38M
Views

Match
Channel



Top 5 Most Viewed Channels in 2020 for US and Japan



BLACKPINK

TOP #1
US Channel

2.5B
Views

TOP #2
Japan Channel

Big Hit Labels

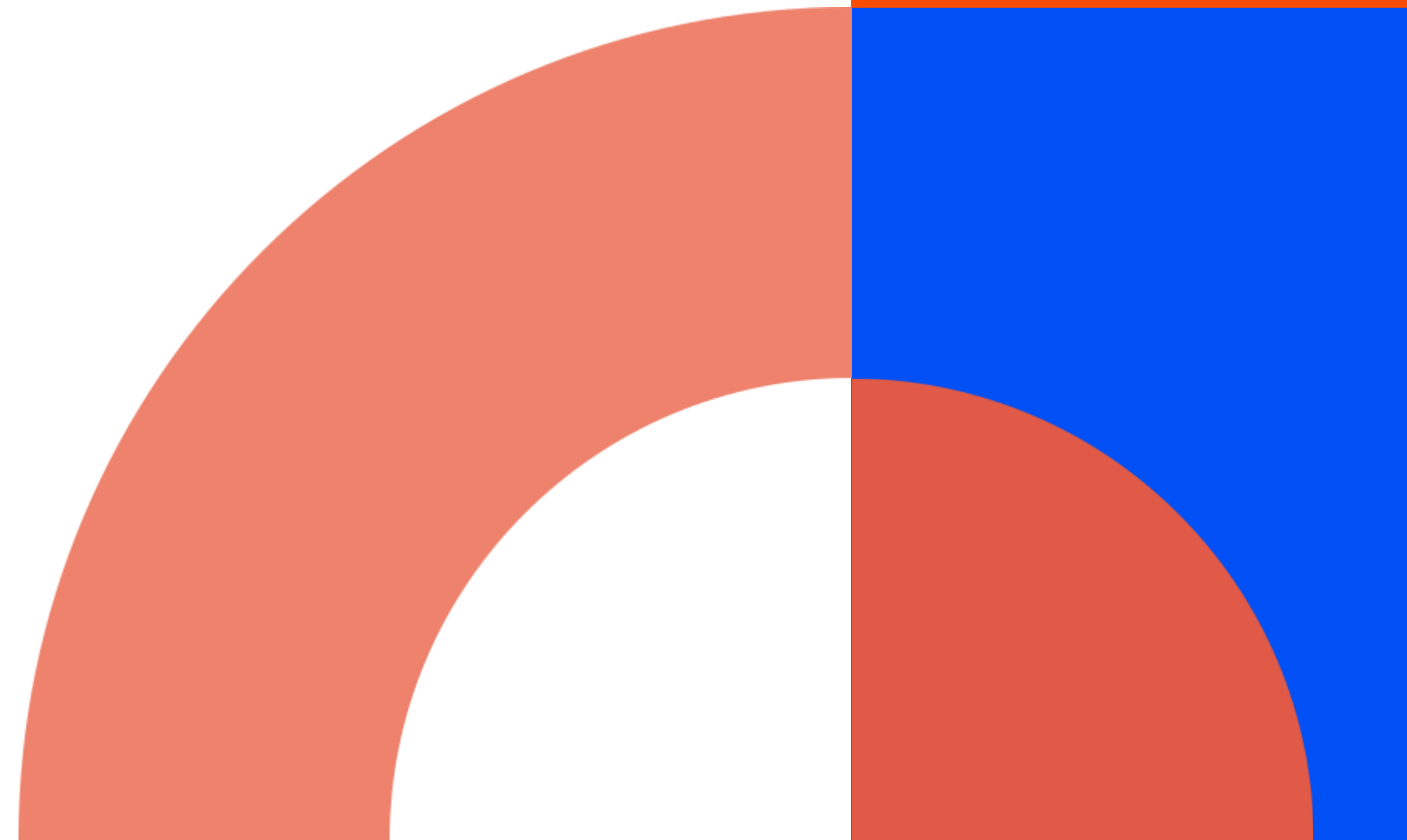
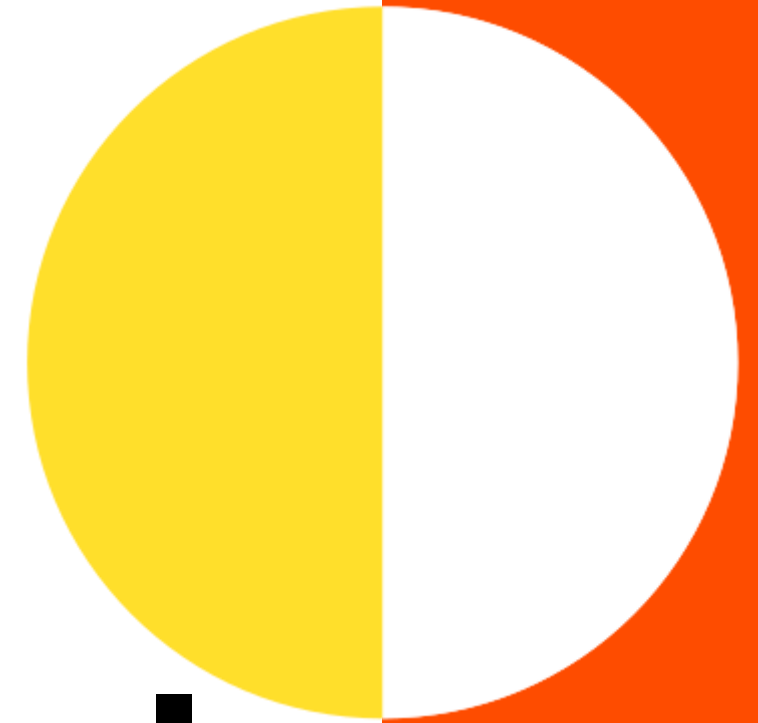
TOP #1
Japan Channel

2.9B
Views

TOP #2
US Channel

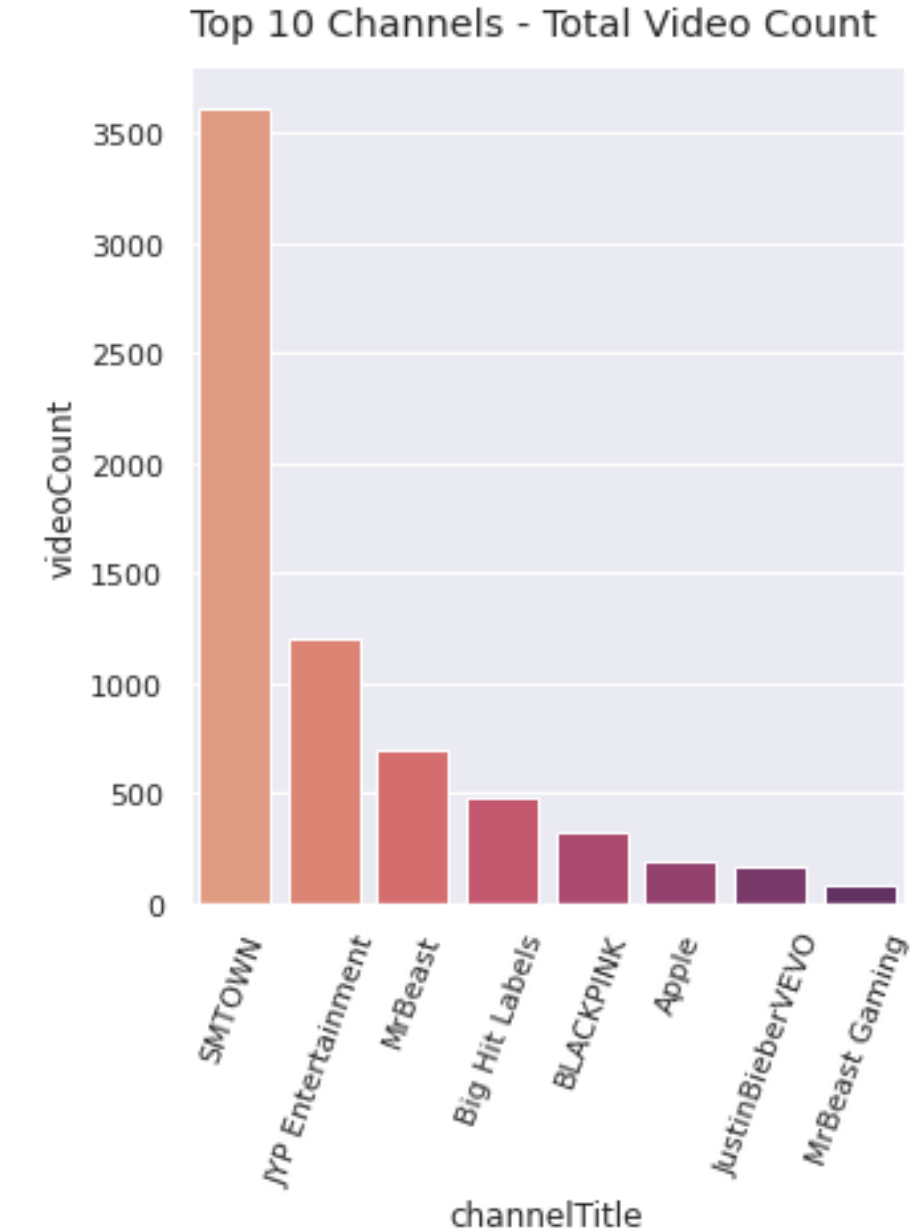
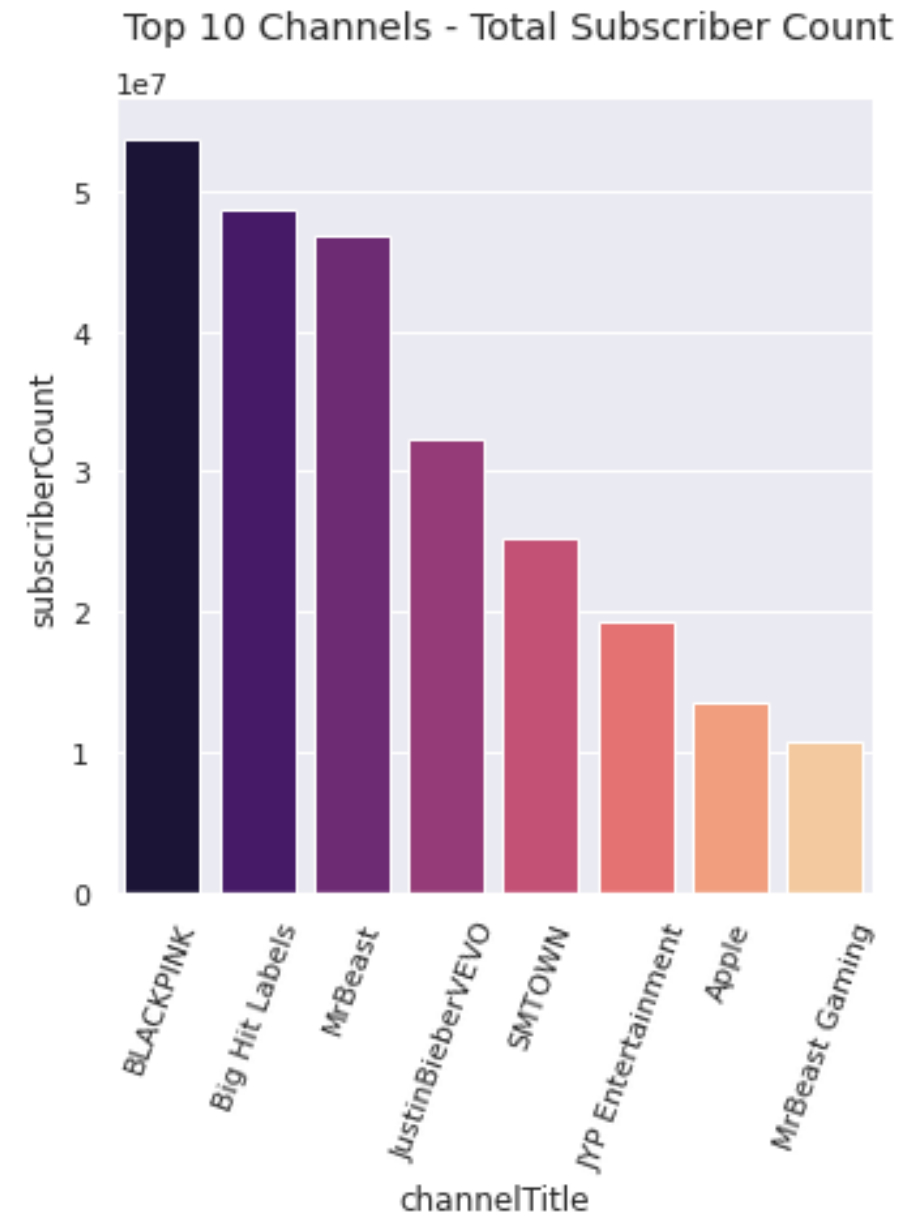
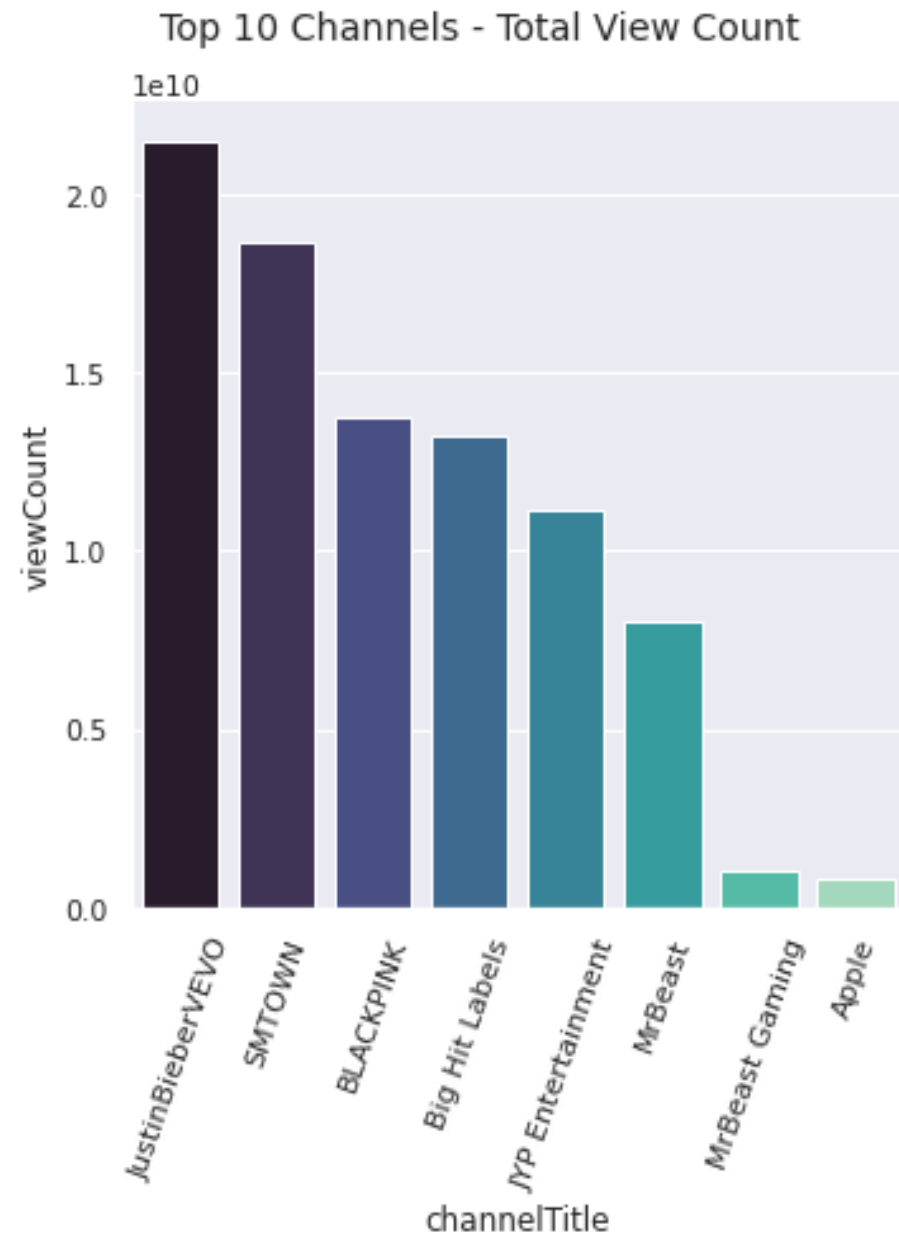


YouTube Channel Statistics





Statistics - Top 5 Most Viewed Channels in 2020 for US and Japan



JustinBieberVevo
21.6B views
32M Subscribers
163 videos

SMTOWN
18.6M views
25M Subscribers
3,608 videos

BLACKPINK
13.7M views
25M Subscribers
3,608 videos

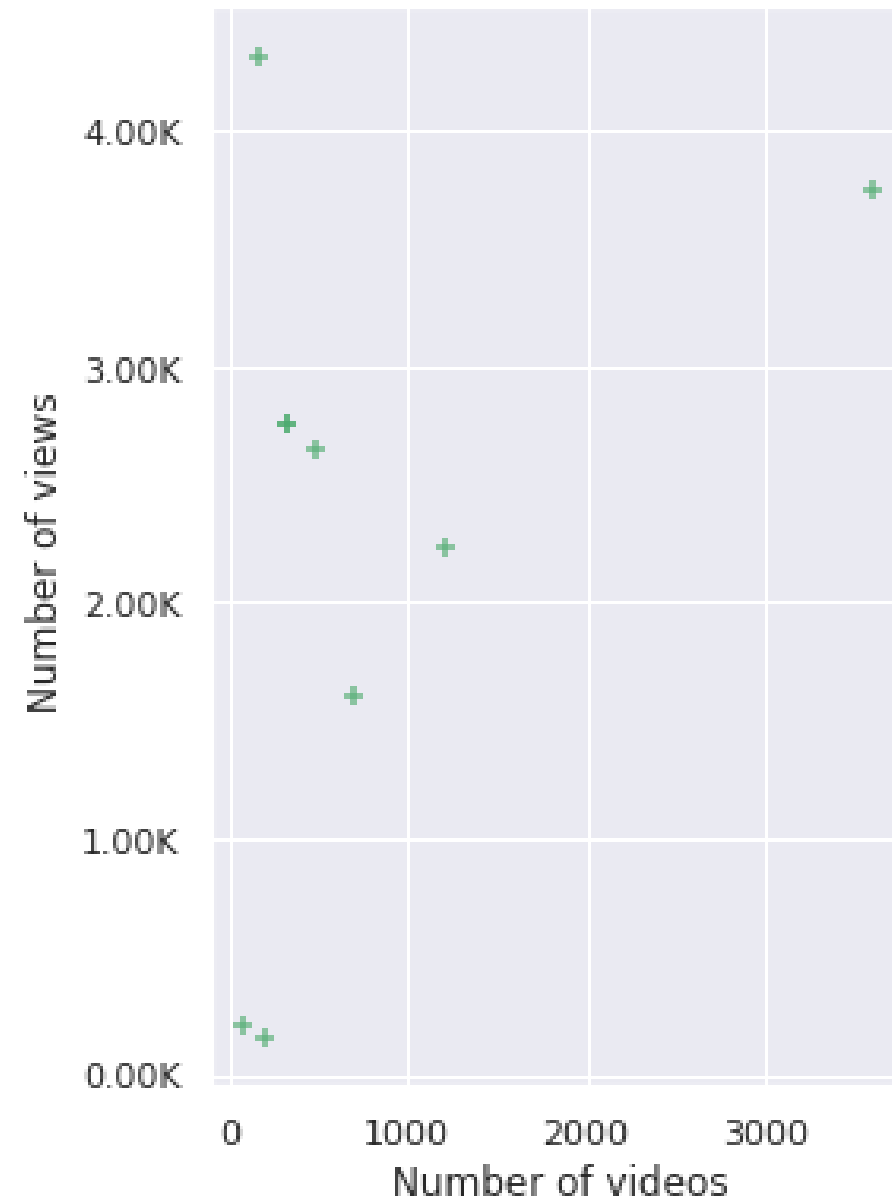
Big Hit Labels
13.1M views
48.5M Subscribers
475 videos

JYP Entertainment
11.1M views
19.3M Subscribers
1,204 videos

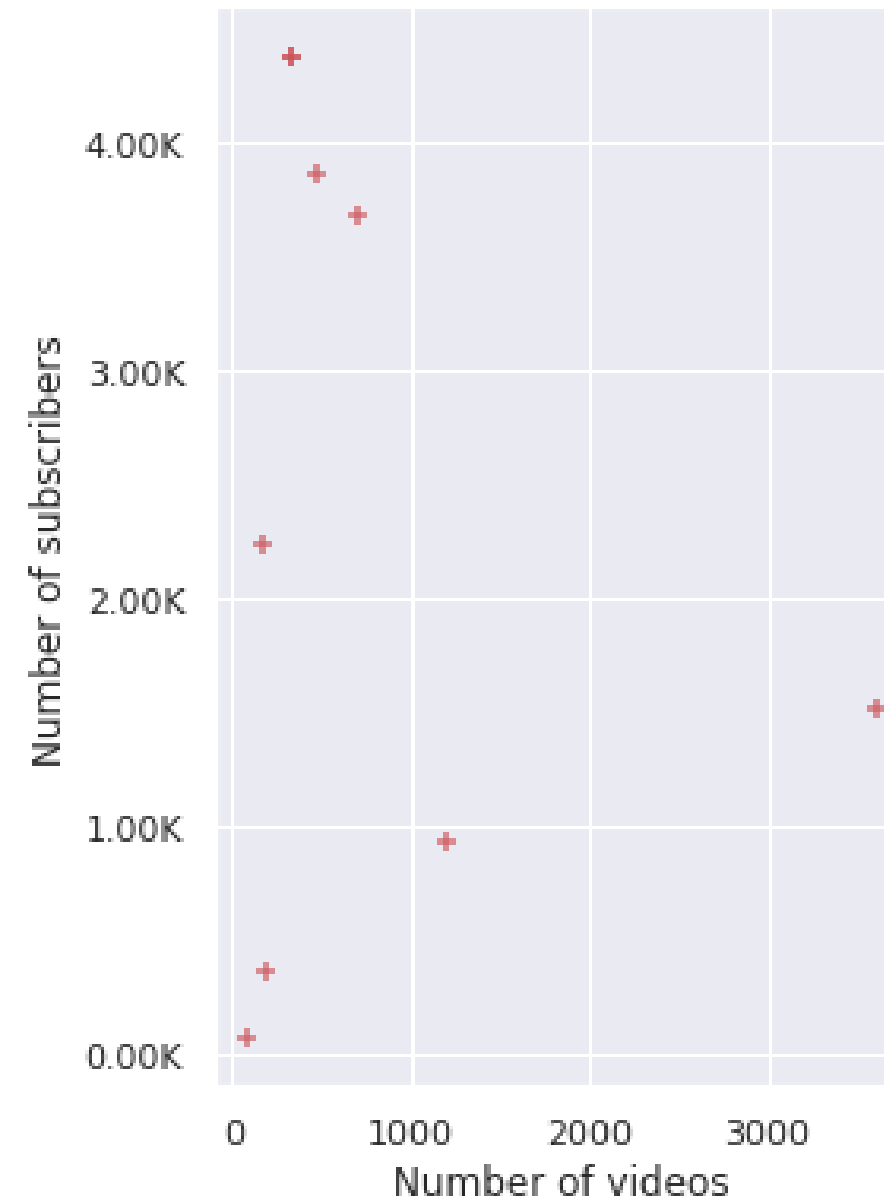


Top 5 Most Viewed Channels in 2020 for US and Japan

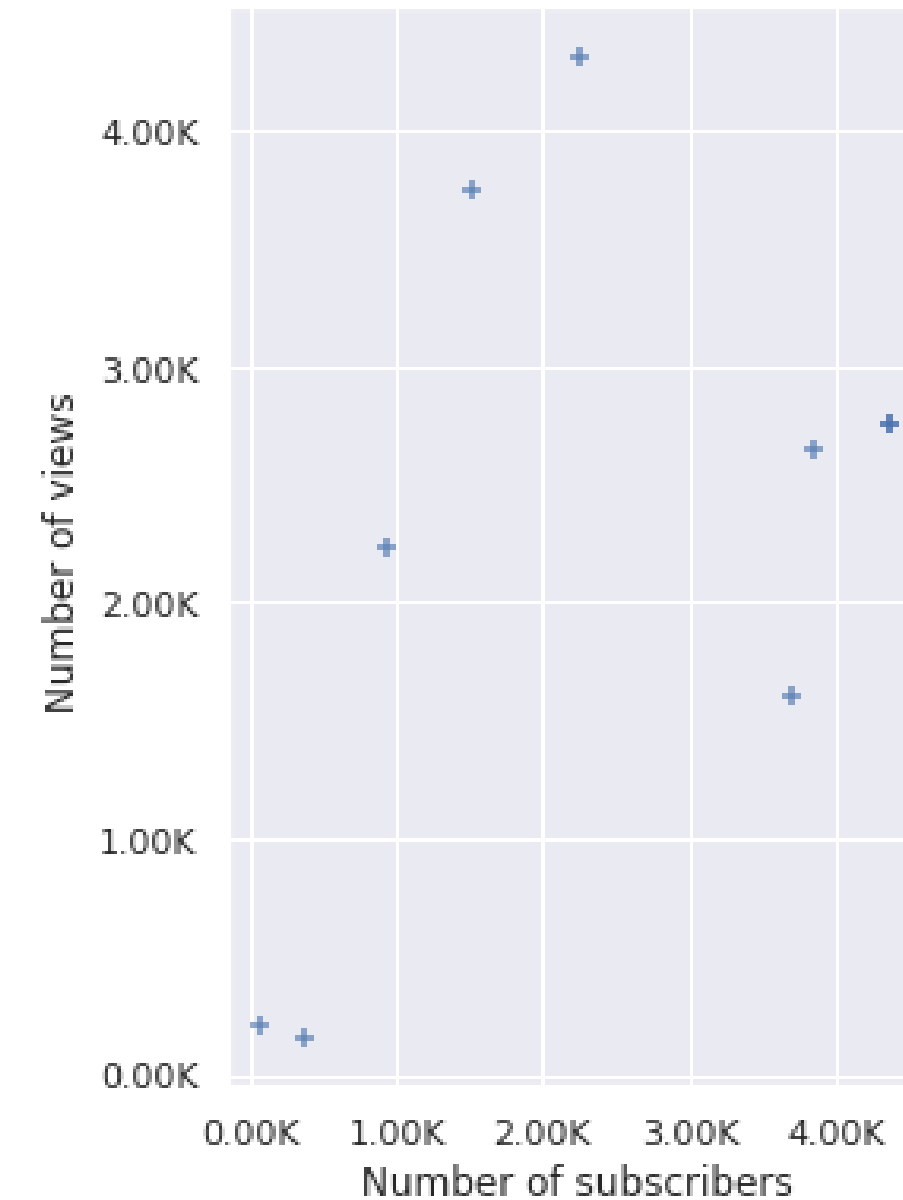
Relationship between the channels statistics



Unable to see any relationships



Could be: Between Subscribers and Views



More channels to identify relationships





YouT Tube Channel Publish Time





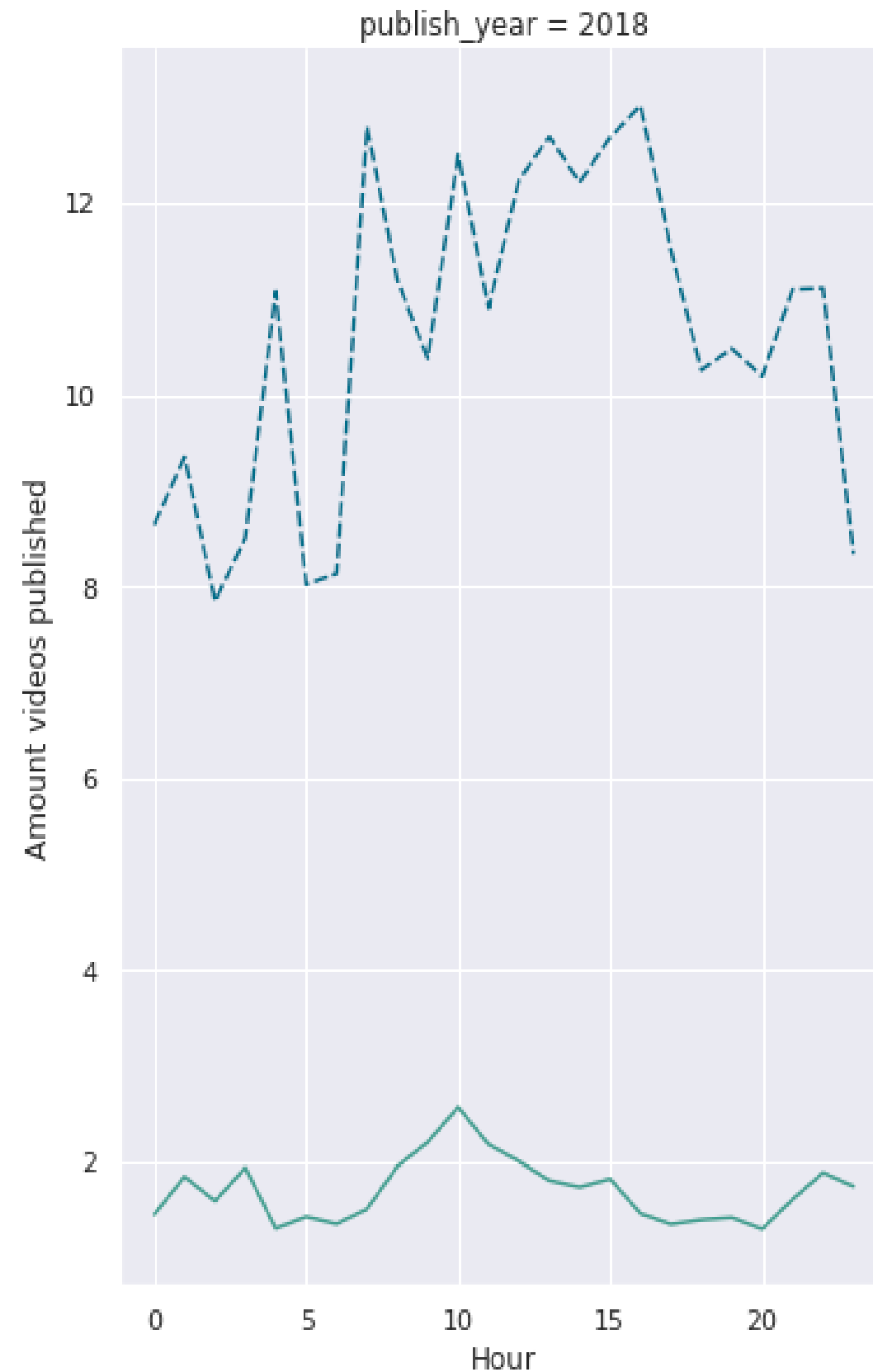
Channel Publish Hour Time Series for US and Japan

2018



Japan ~10 am

US ~ 3 pm

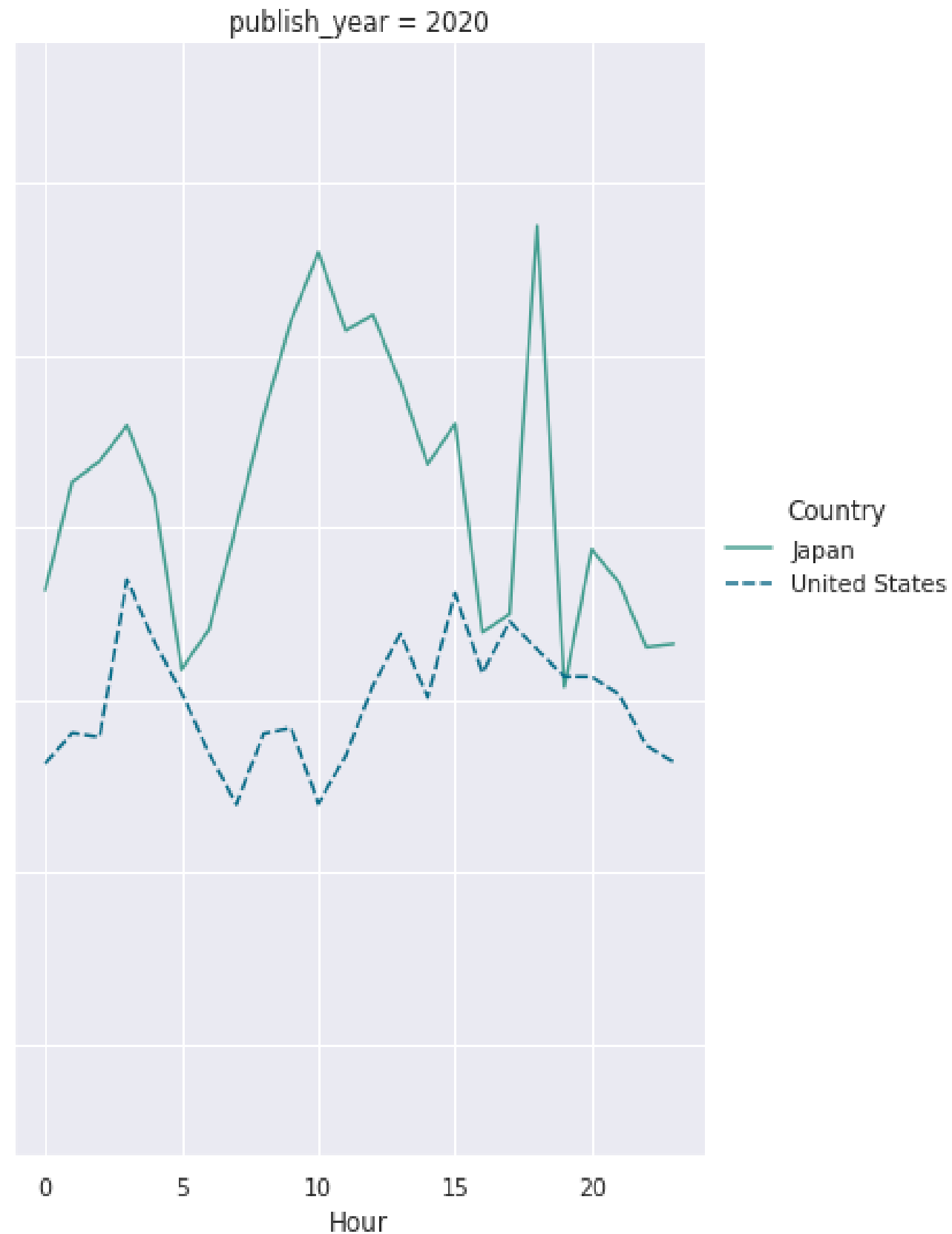


2020

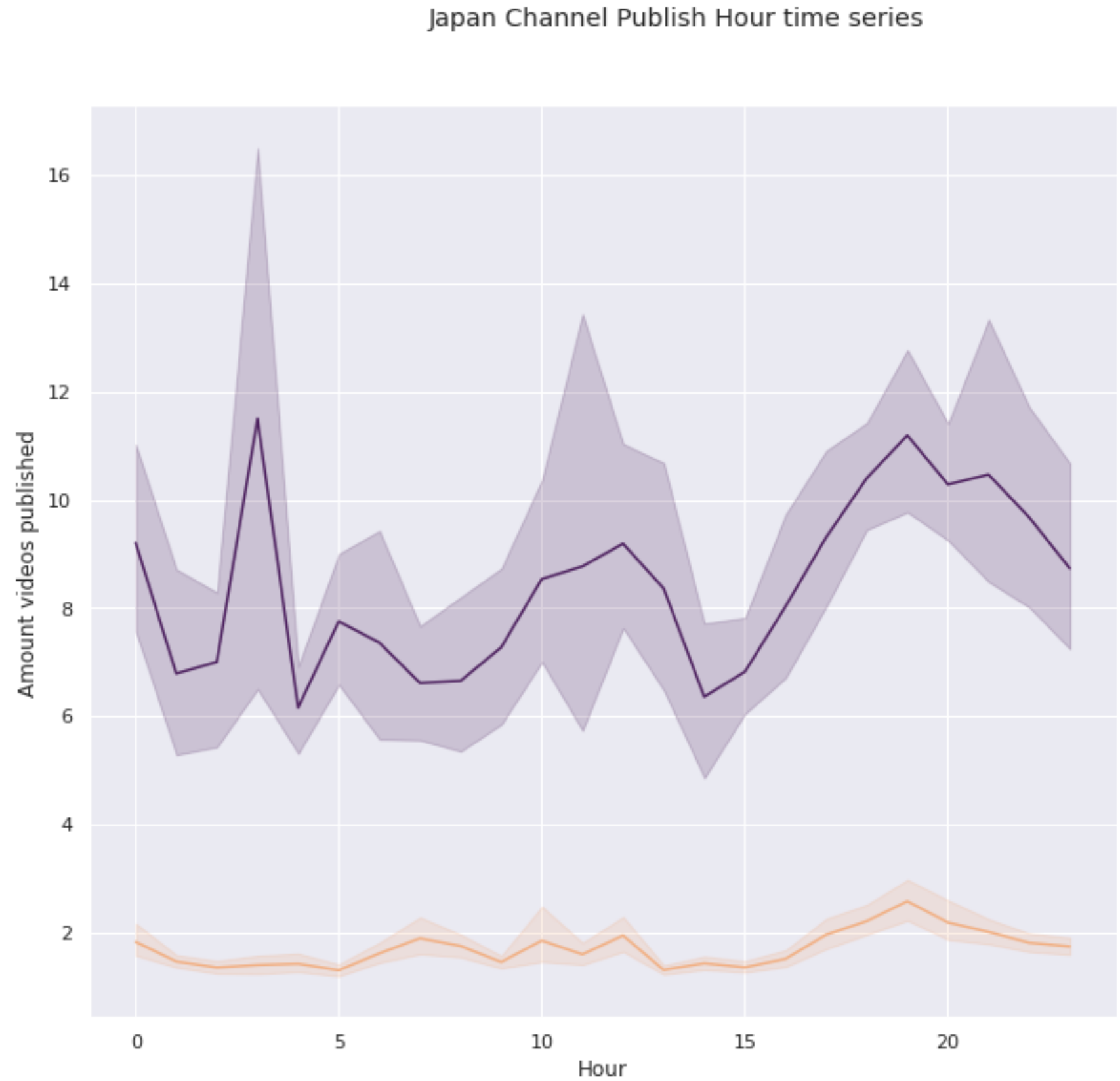


~3-5 am

~6-7 pm



Channel Publish Hour Time Series for Japan



**Asia time zone –
9 hours after UTC**



14 hours ahead EST



More videos in 2020



**Early morning and
afternoon**

Channel Publish Hour Time Series for United States



**LA time zone –
8 hours ahead than UTC**



3 hours behind EST

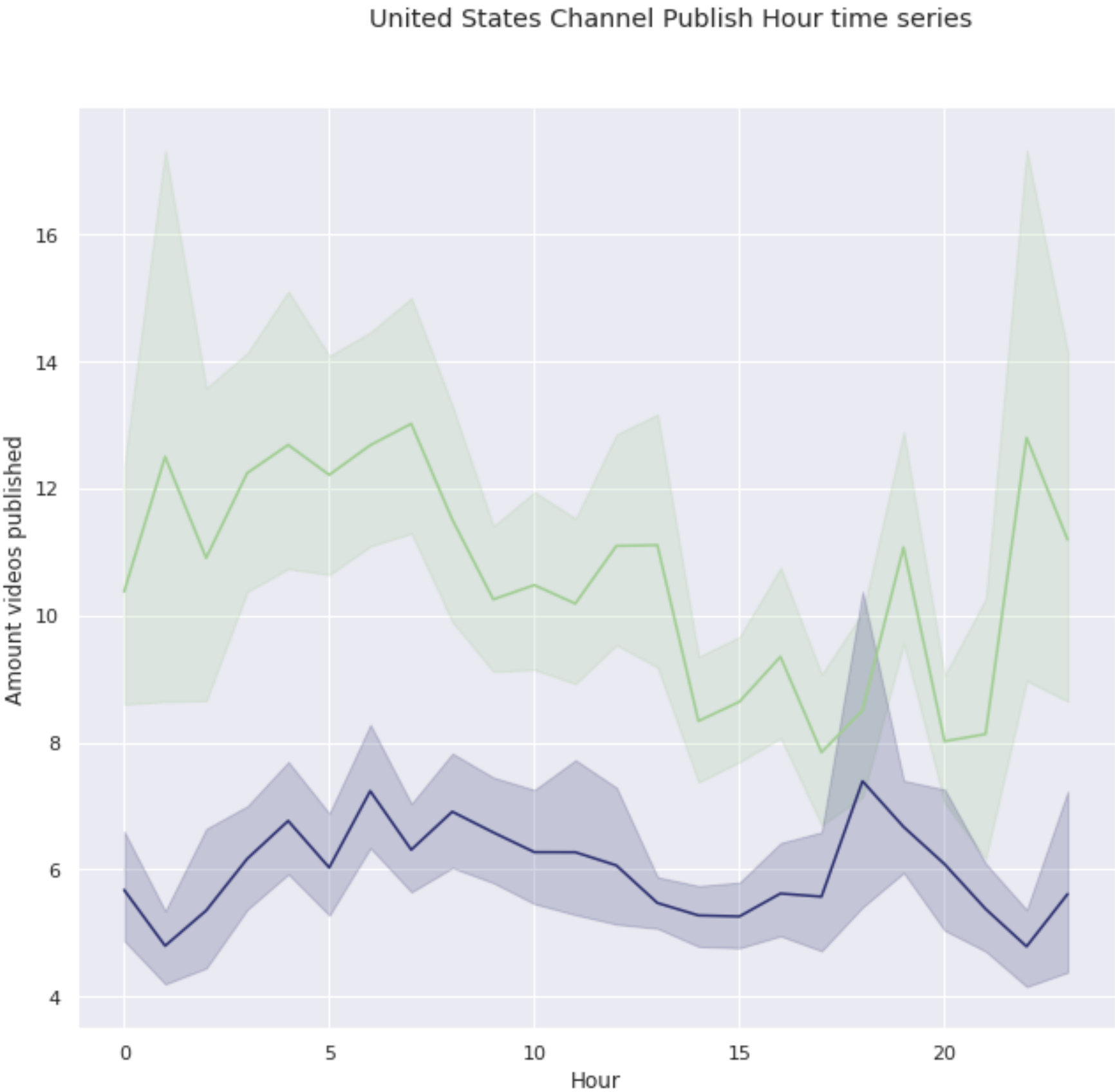


More videos in 2018



**2018- Early morning
and afternoon**

**2020-Early morning and
afternoon**





Channel Publish Day Series for US and Japan

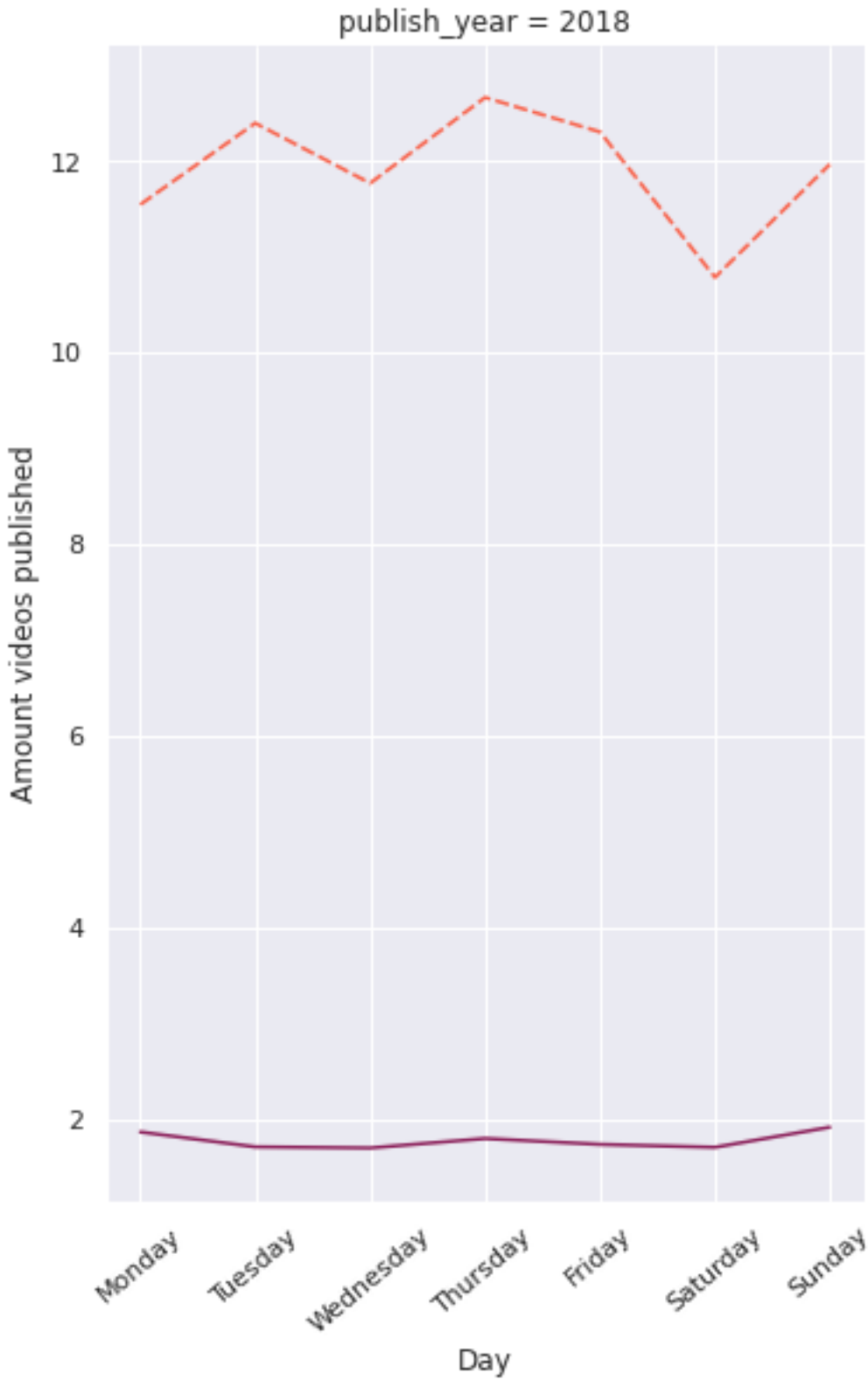
Channel Publish Weekday series

2018

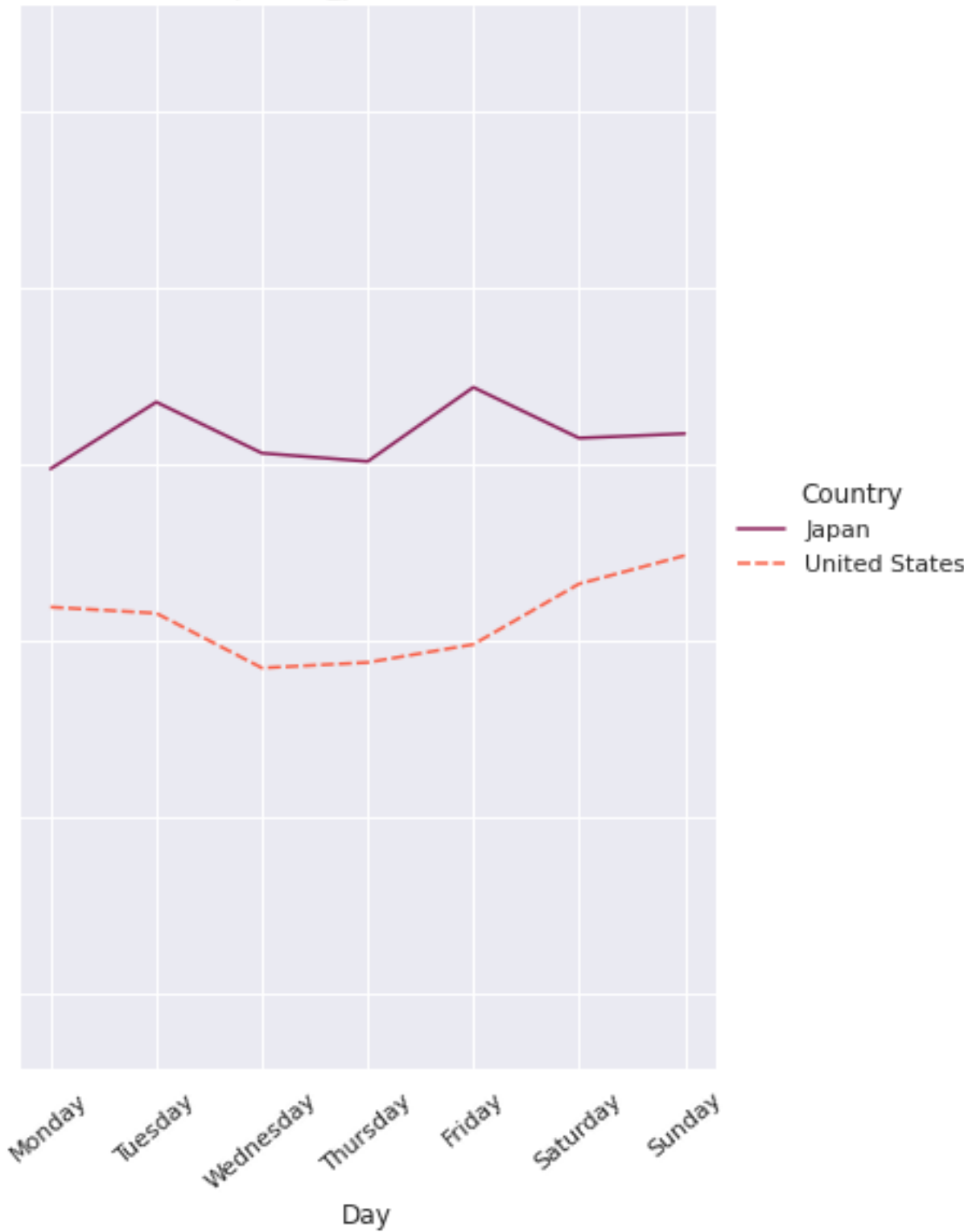


US - Preferred to publish in weekdays

Japan - No much difference when compared to US



publish_year = 2020



2020



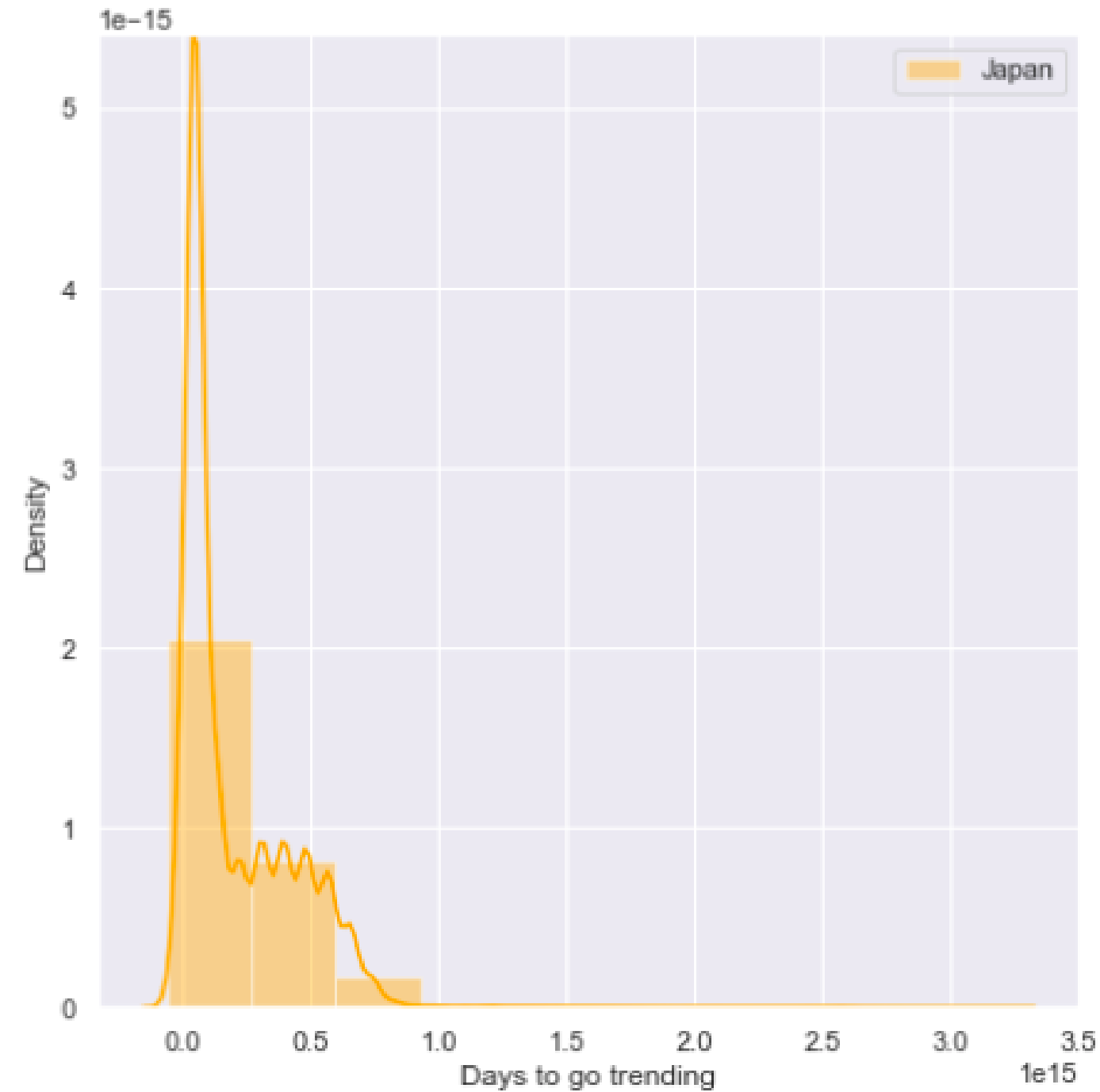
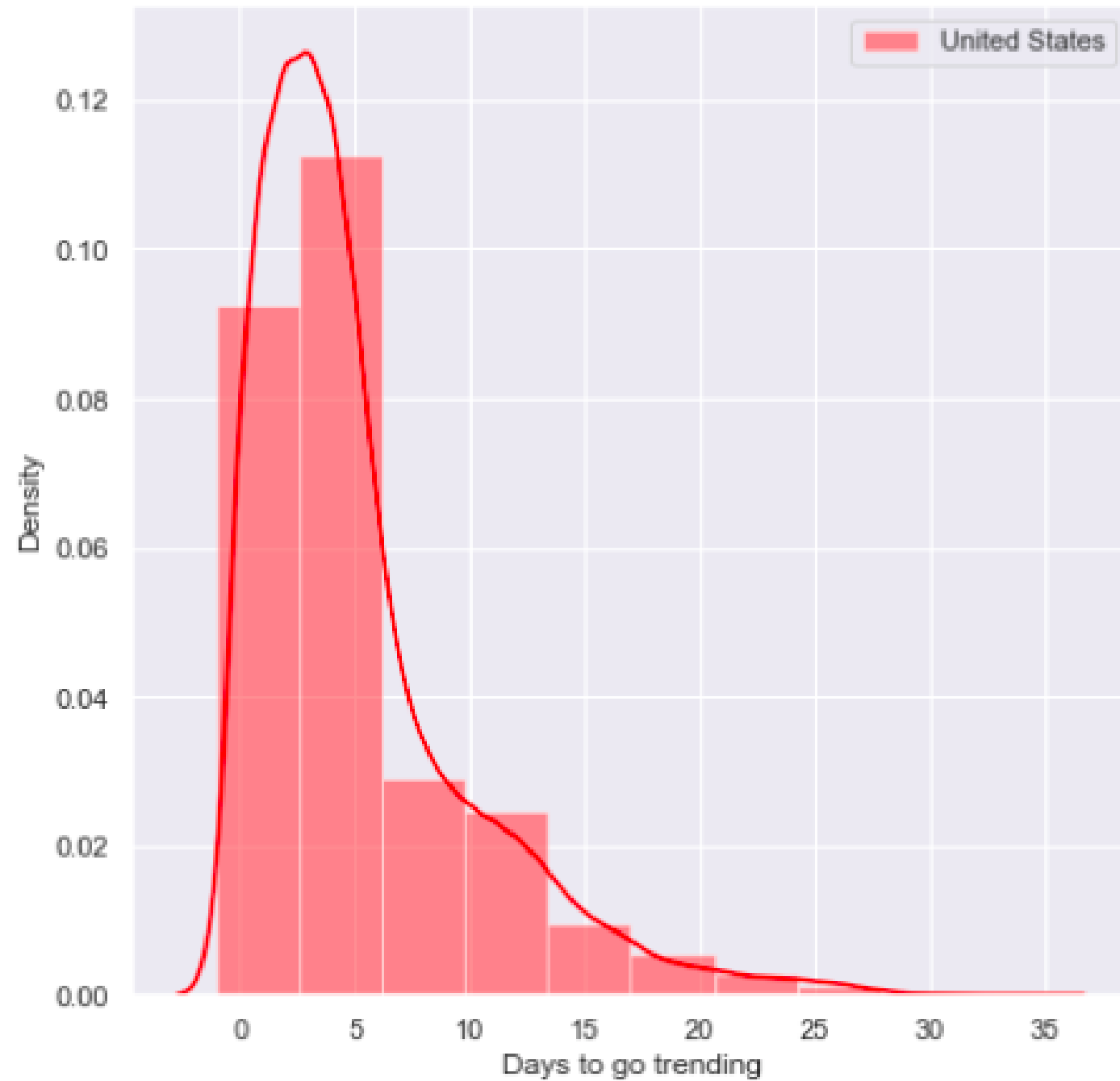
US – Continue to publish in weekdays but changed their preference for weekends

Japan - Preference publishing in weekends (Since Thursday)



Channels Trending time for US and Japan

Channels Days to go trending vs Country



**Japan channels
trend faster than US**

Features for Videos

100K~1M

Views for trending
videos on average

1

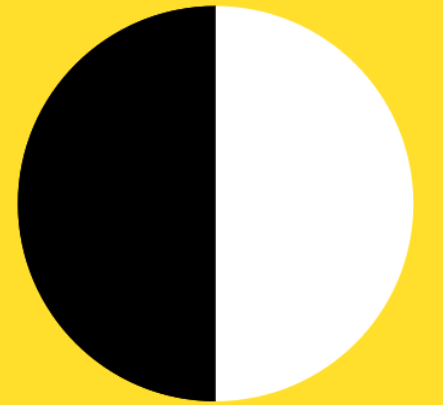
Comments per
100 viewing

2~3

Days for a published
video go trending

4

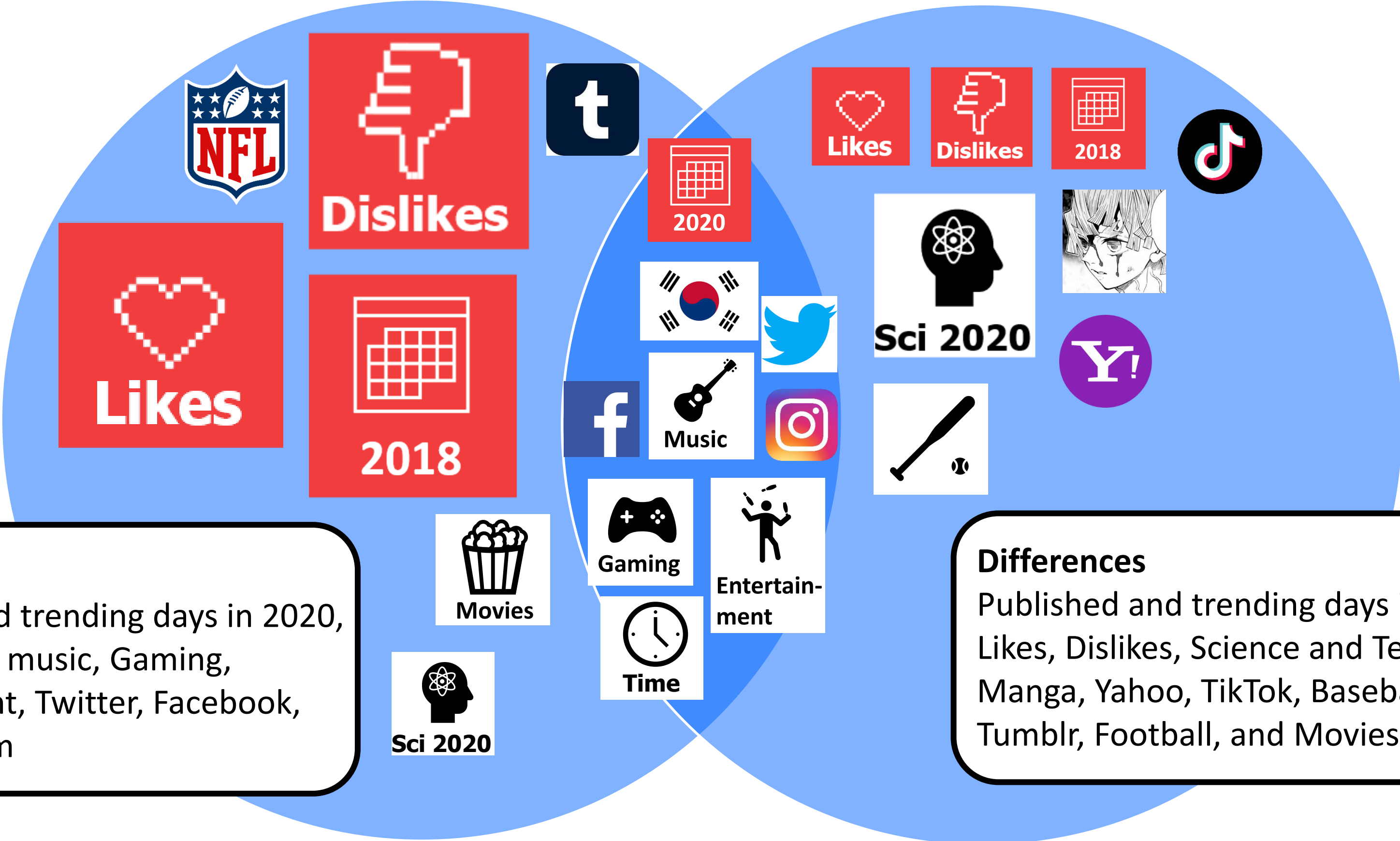
Likes per 100
viewing



Similarities and Difference

U.S.A

Japan



Similarities

Published and trending days in 2020, Time, Korean music, Gaming, Entertainment, Twitter, Facebook, and Instagram

Differences

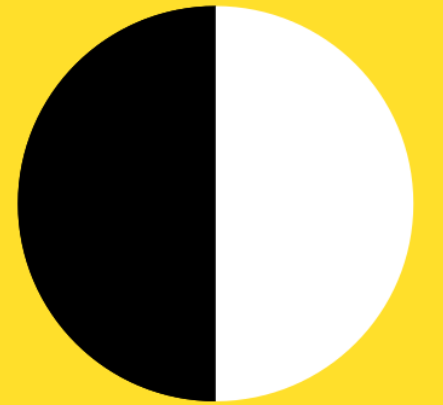
Published and trending days in 2018, Likes, Dislikes, Science and Tech, Manga, Yahoo, TikTok, Baseball, Tumblr, Football, and Movies



Thank you!

Team 6A

Maraline Torres, Ying Zhang, Yujia Cao,
Yuting Gong, (Bruce)Chang-Hung Hou





YouT ube Trend ing Pred ictive Model

