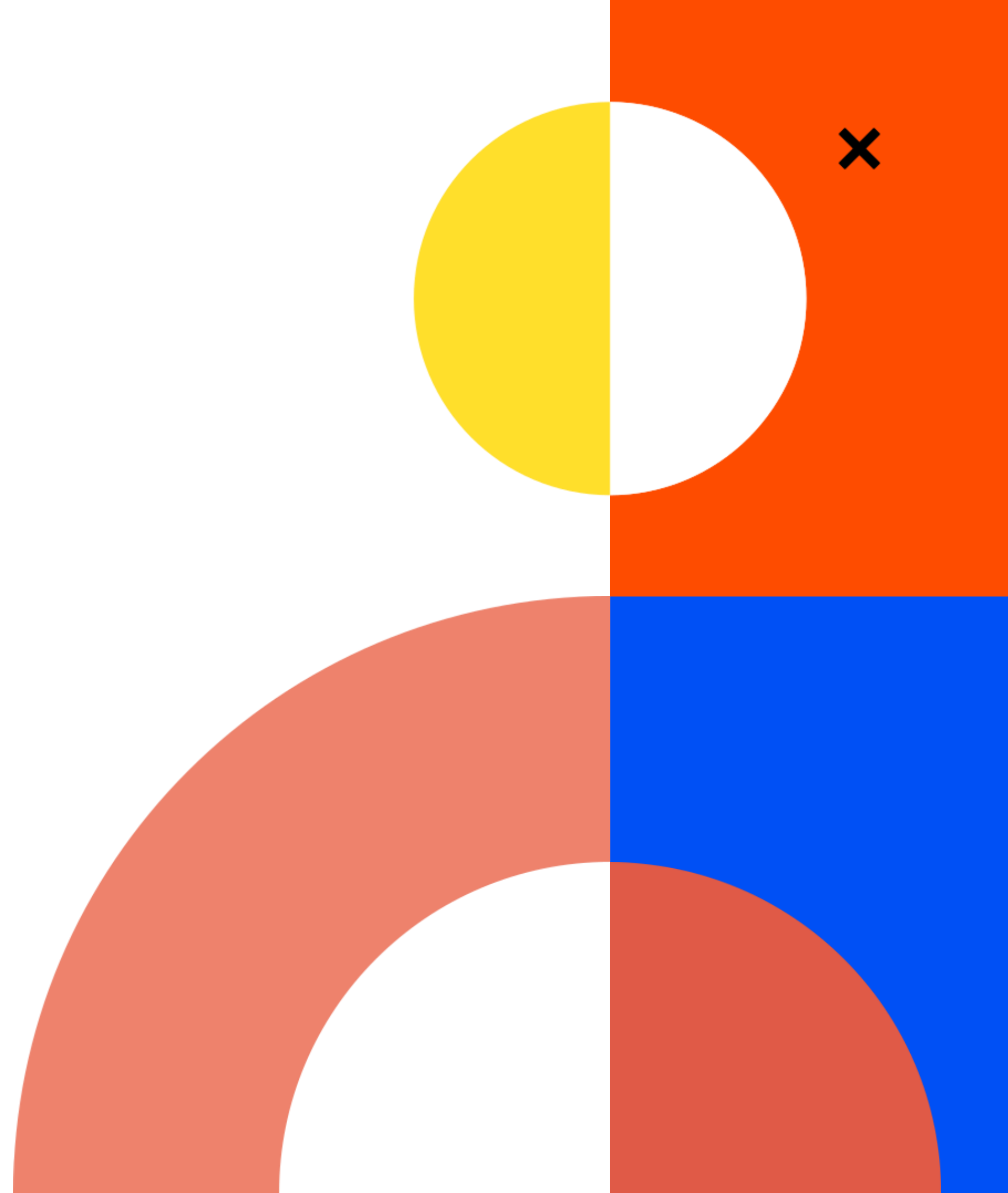




# YouTube Trending Video Analysis

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.



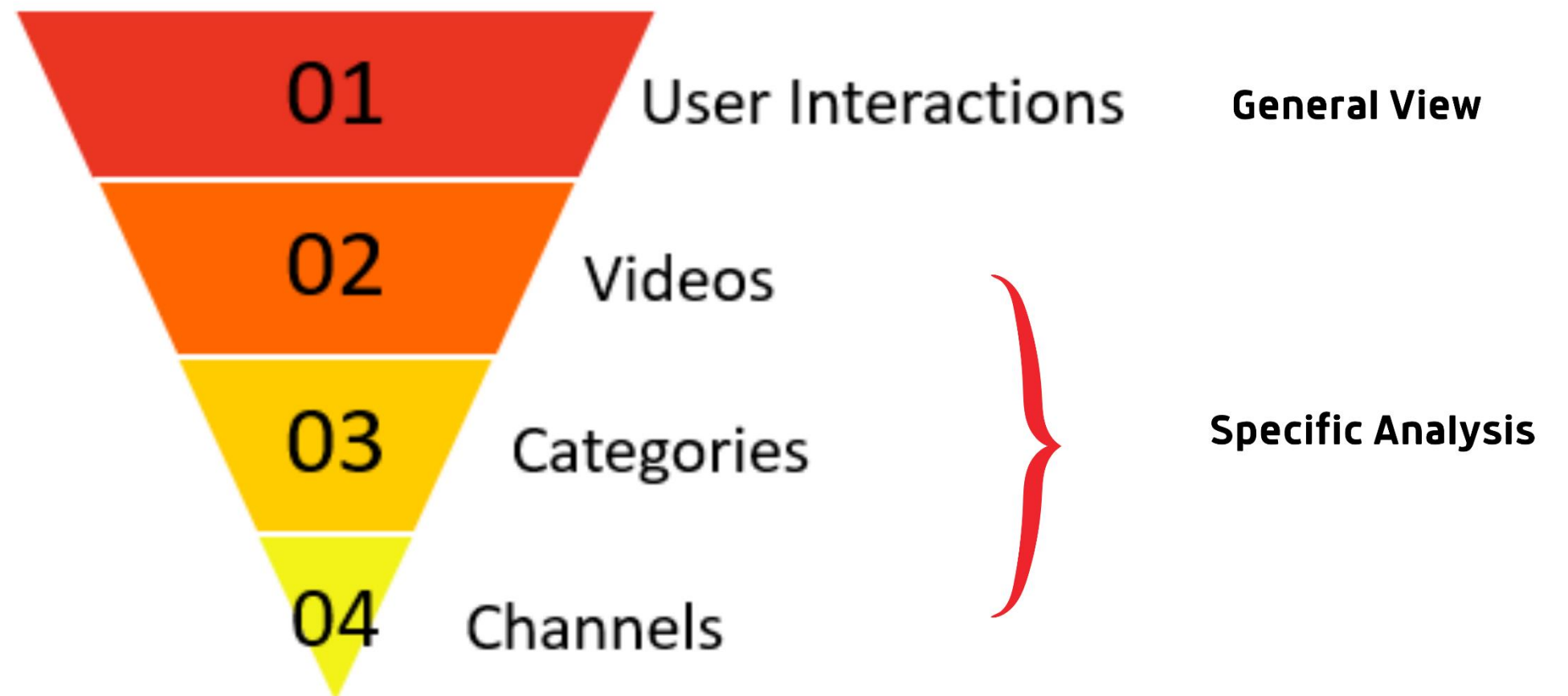
## Data source:

*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



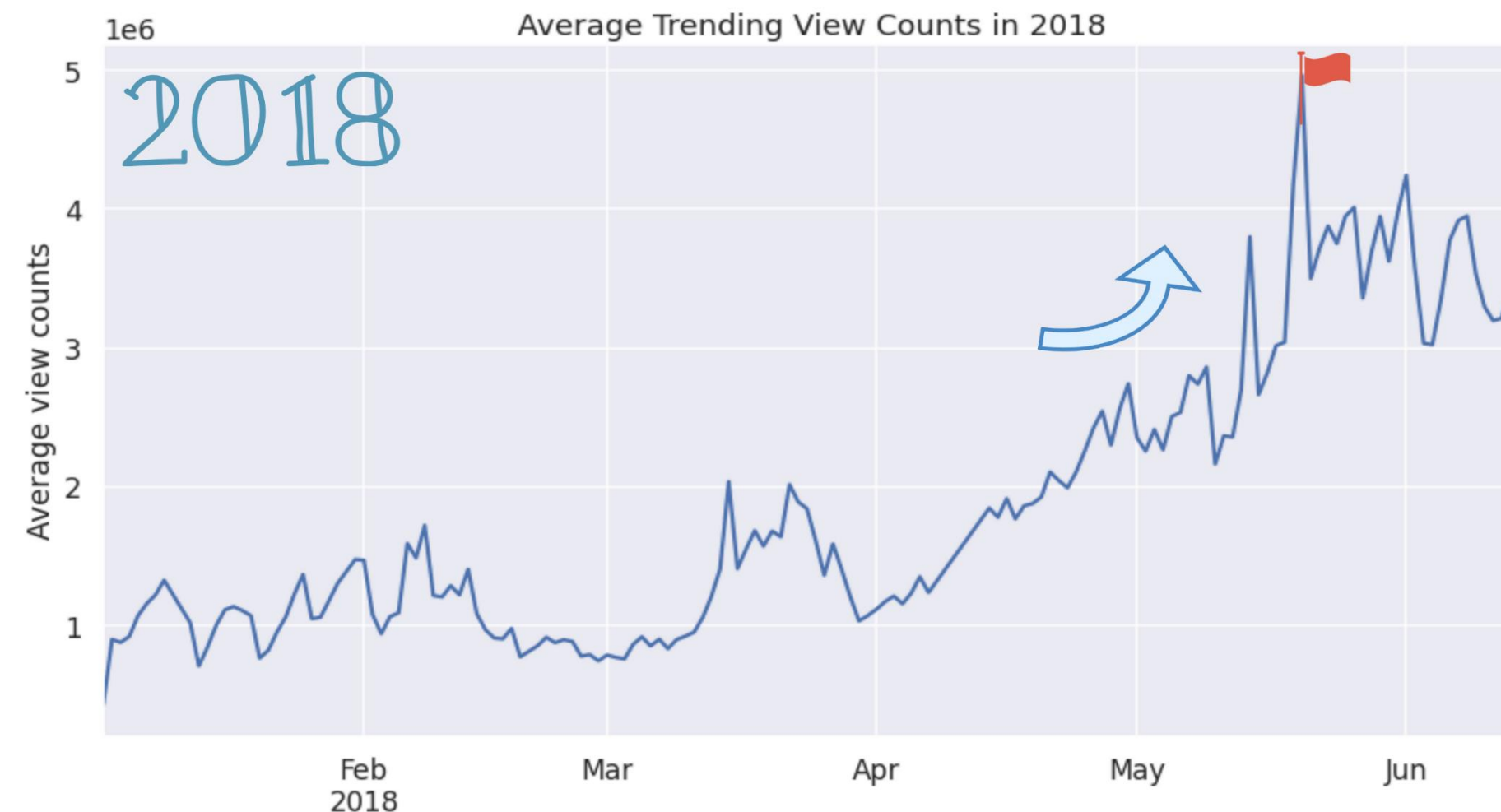
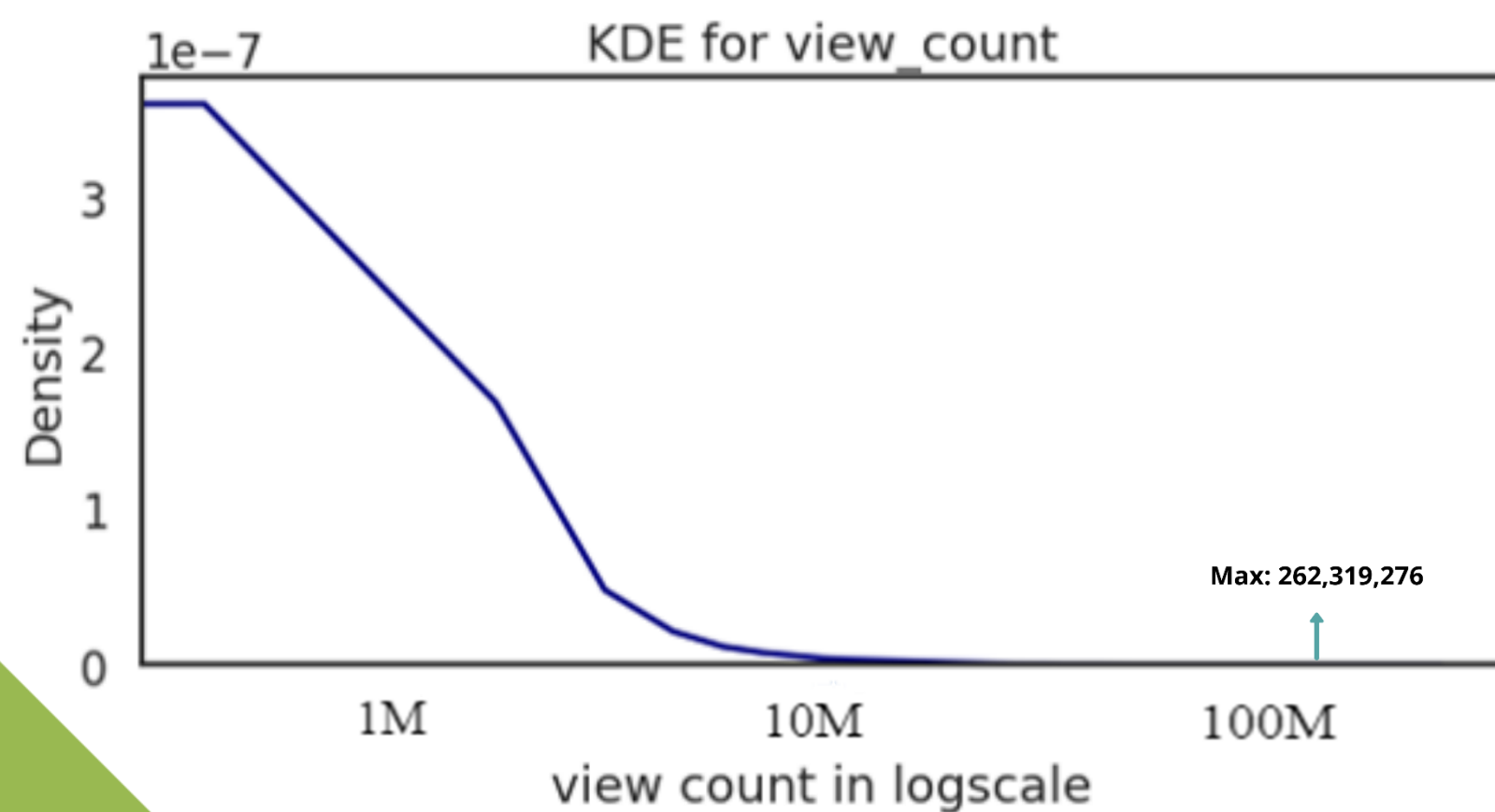
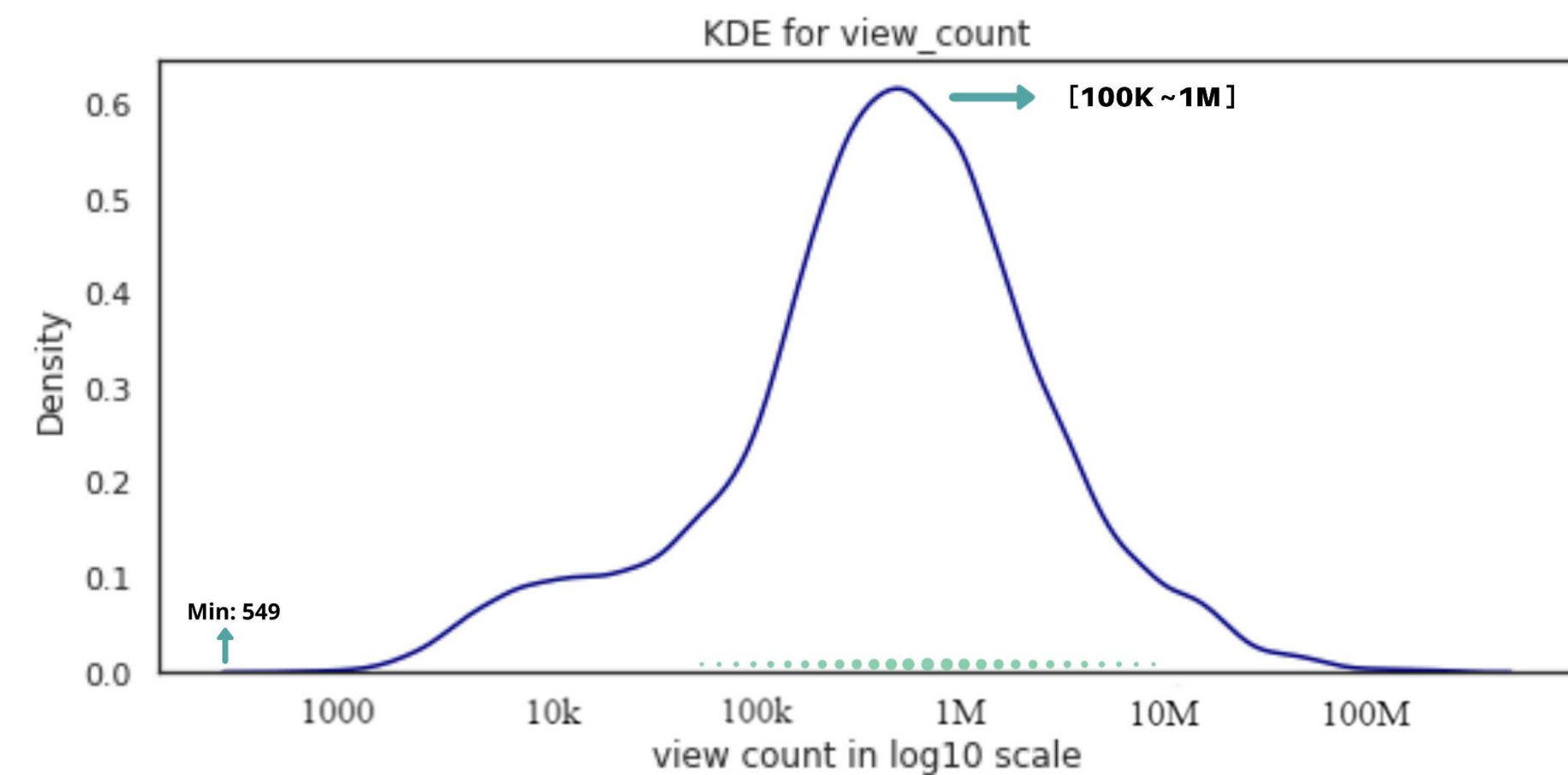
Dislikes





YouTube Trending videos

# View counts analysis



# Relationships among User Interaction Features



views



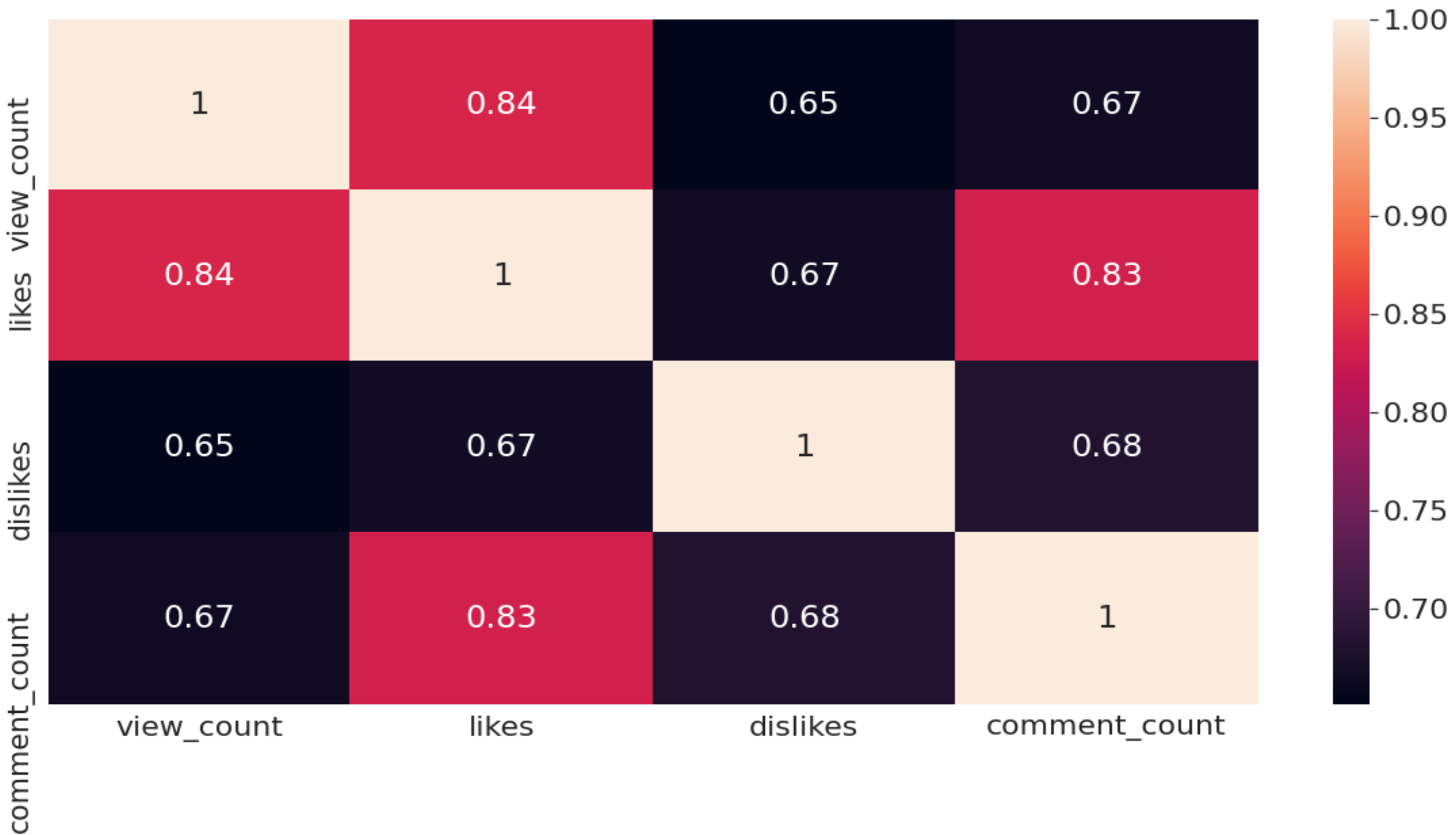
Likes



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

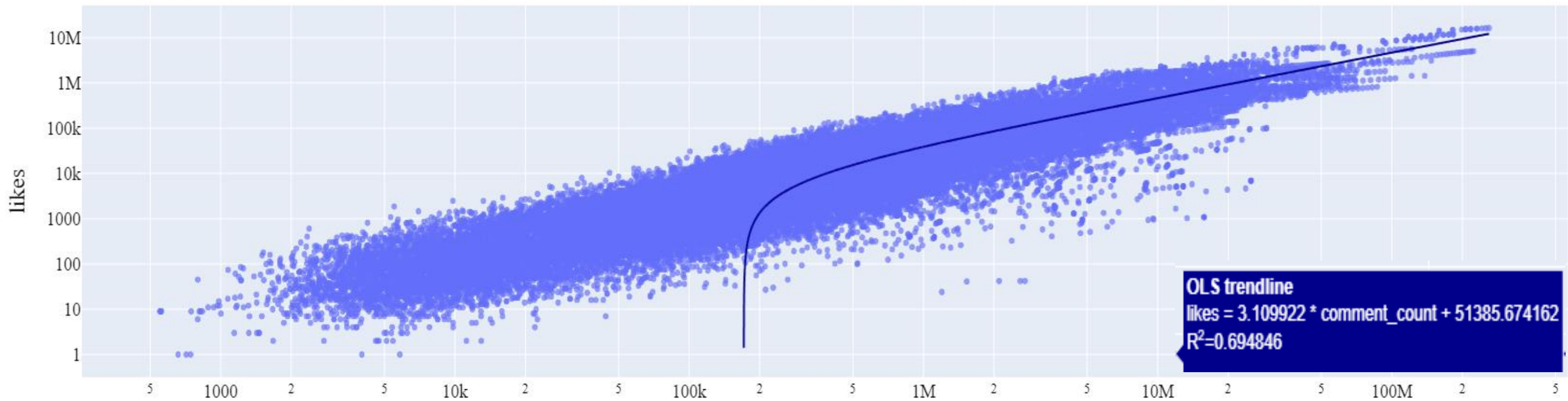


Comments

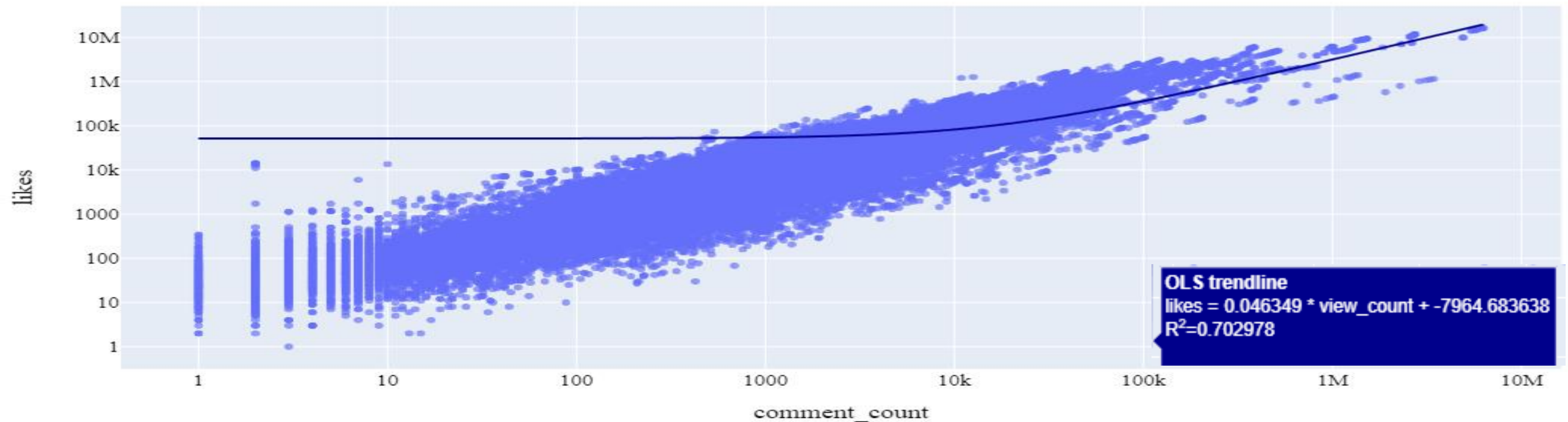


Dislikes

The relationship between views and likes

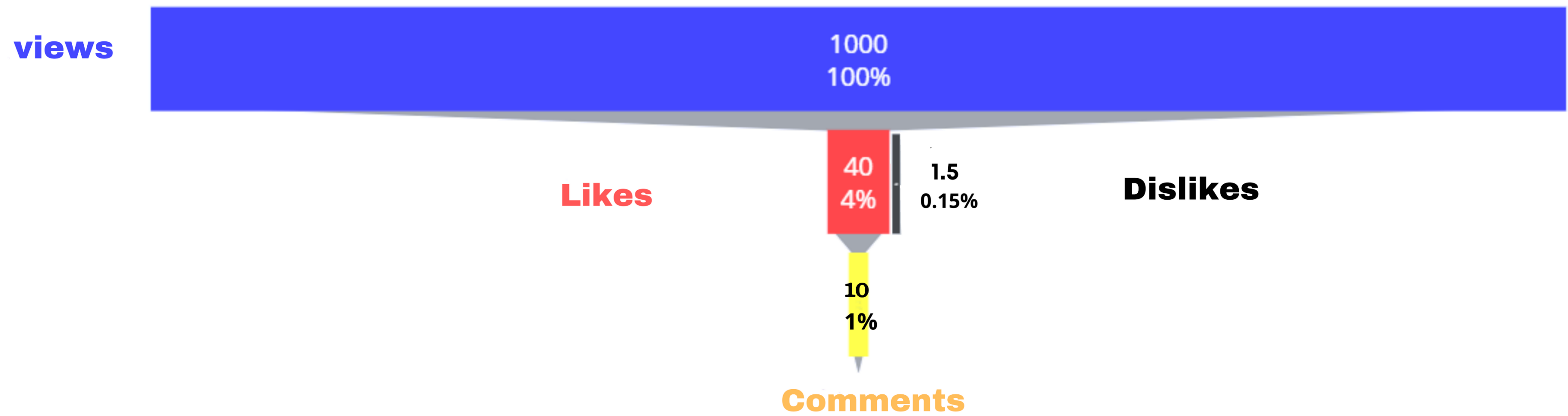


The relationship between comments count and likes



# User Interaction features- conversion ratios

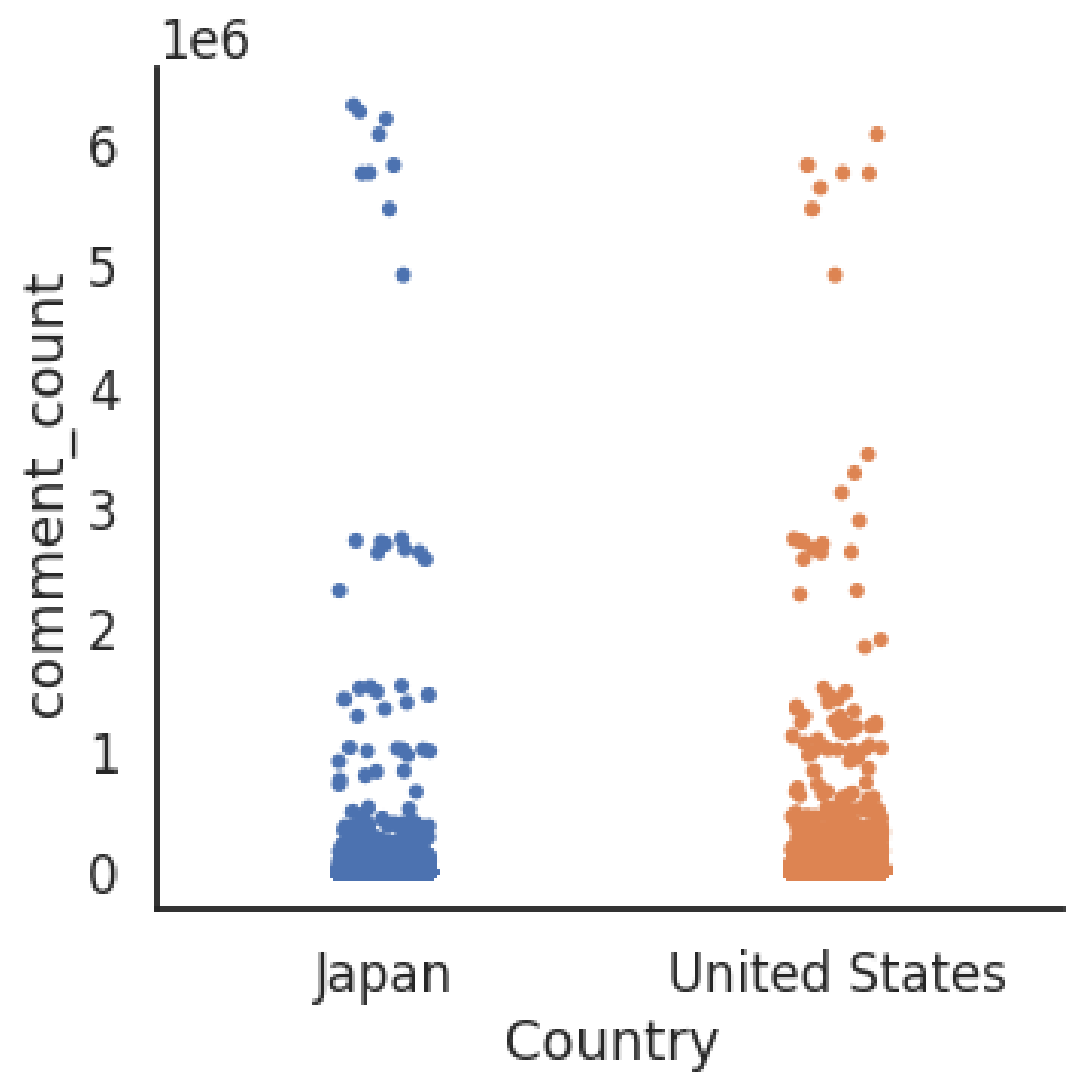
## Conversion Funnel



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

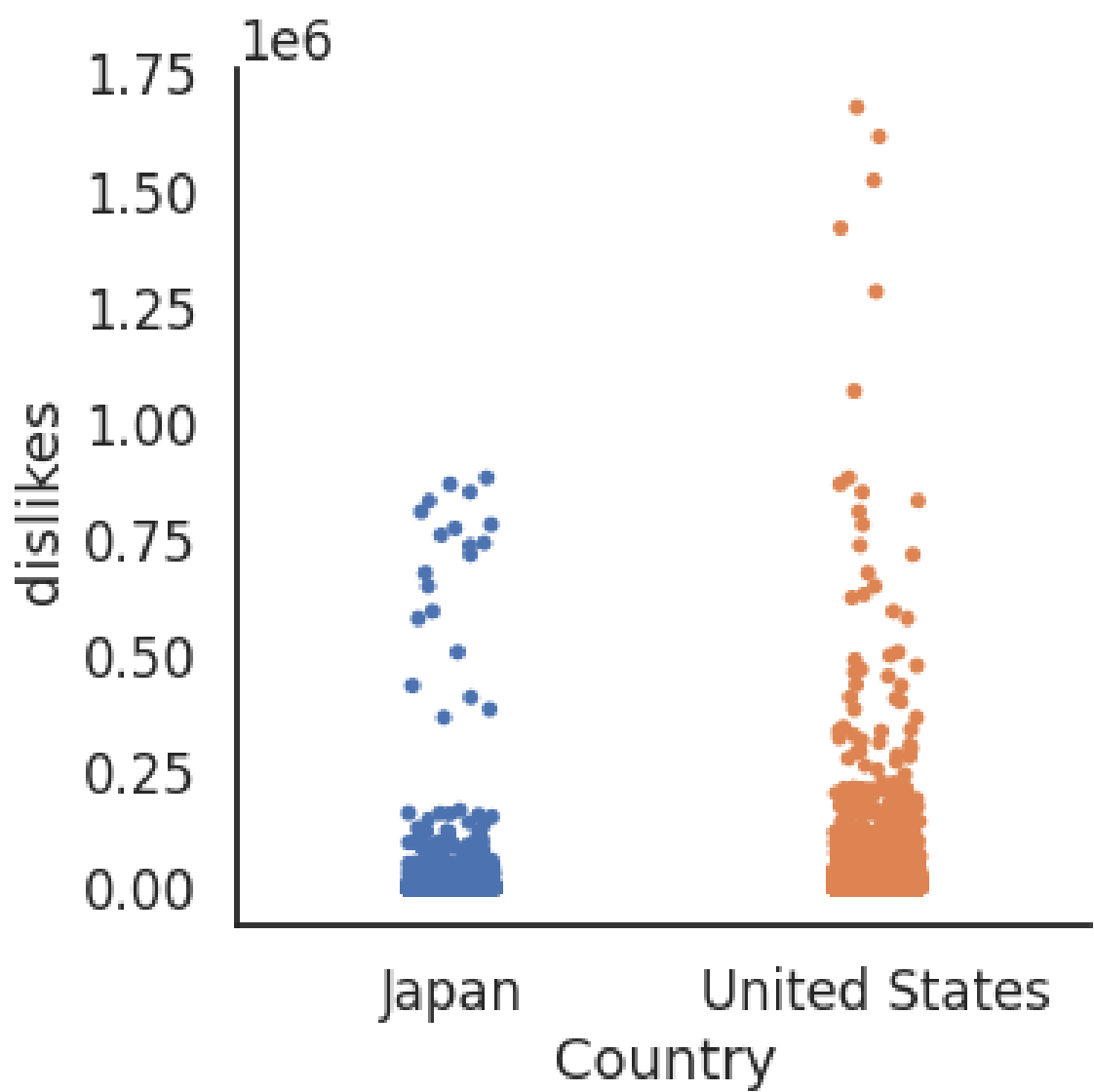


### Comments

Mean of comments count:  
6 k

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

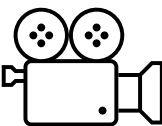
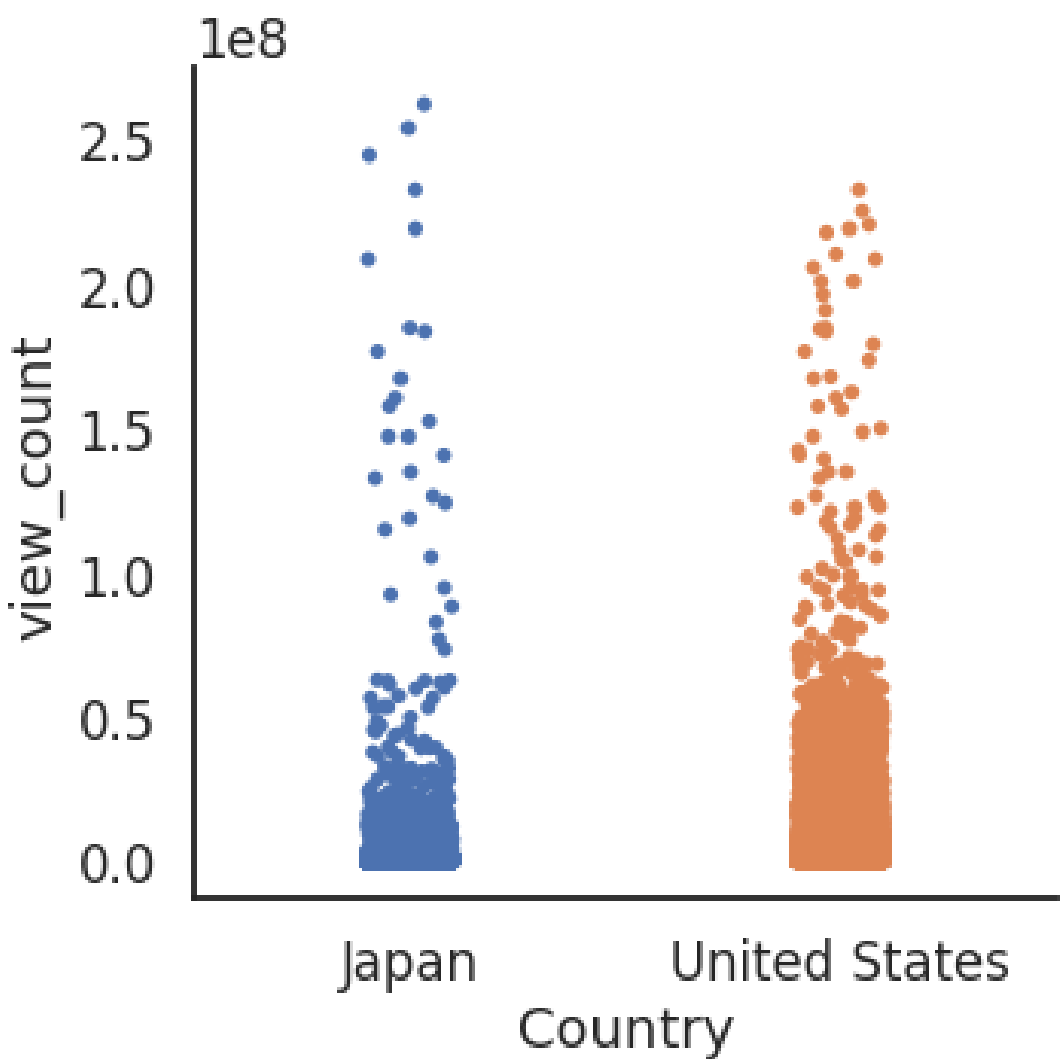
# User Interactions in Japan and U.S



Dislikes

Mean of dislikes count:  
1 K

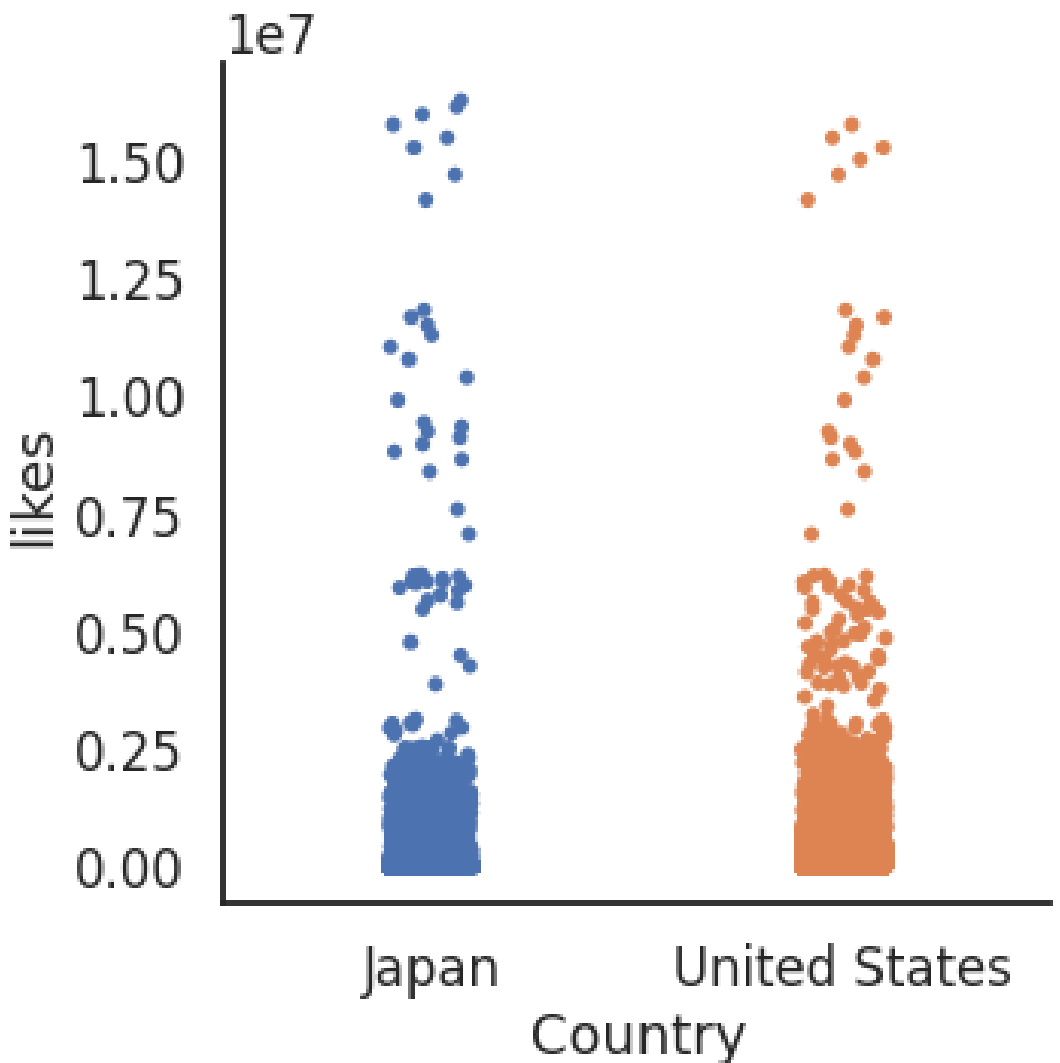
Mean of dislikes count:  
4 K (4 times)



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

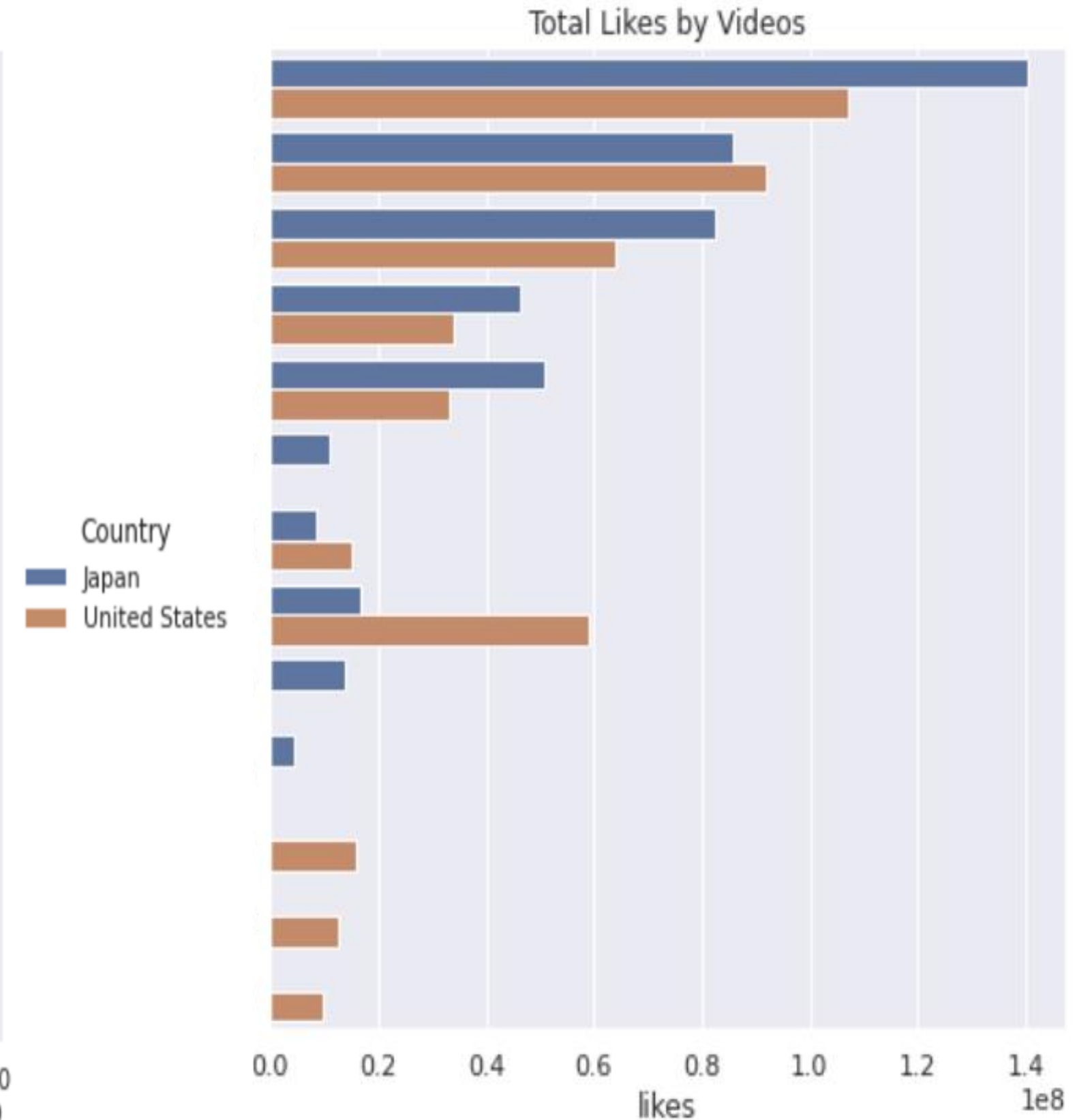
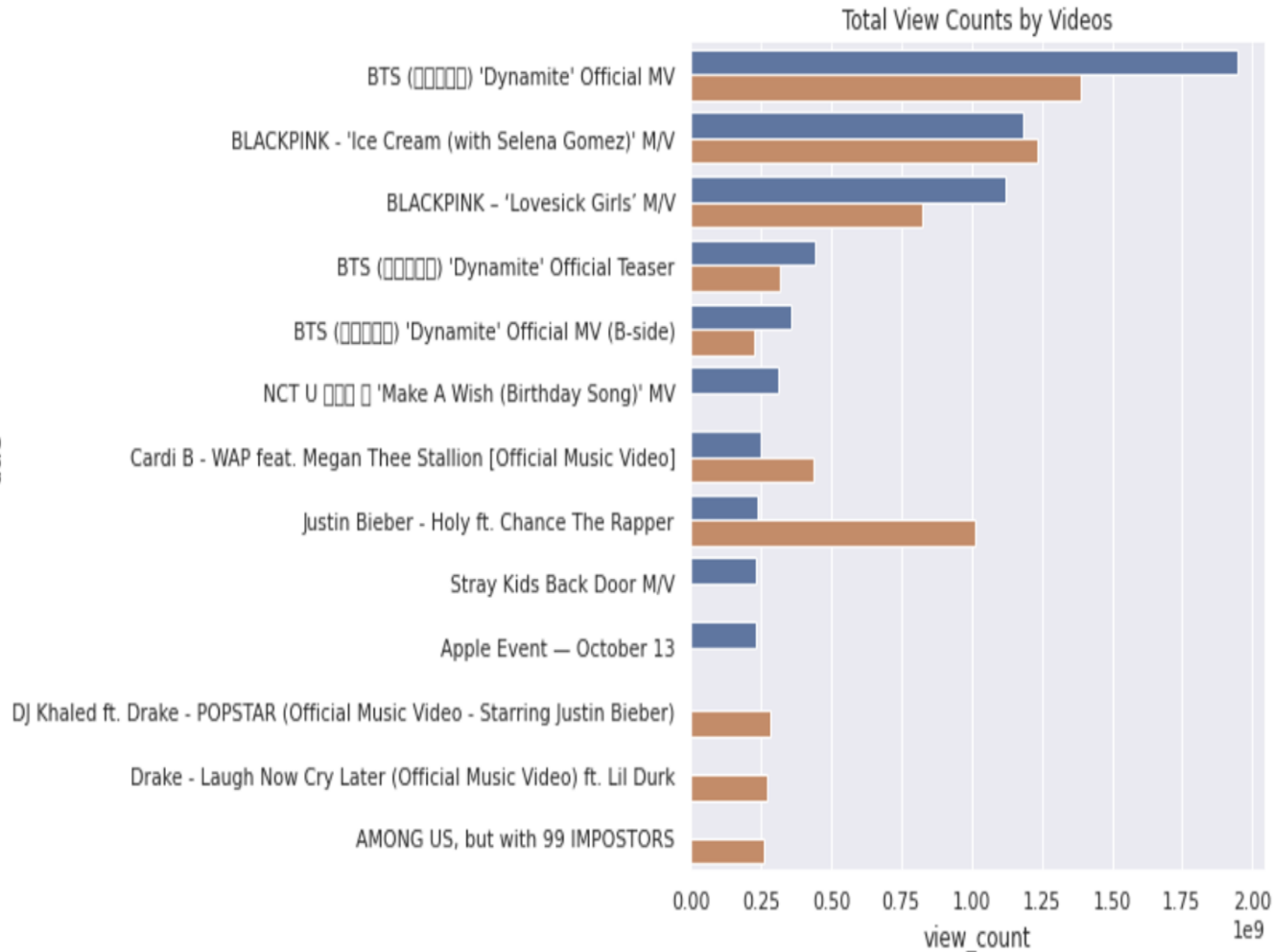


- Top 10 videos for the US/Japan  
(Analysis for view count/like/dislike)
- Days to go trending for videos in  
2018/2020 for the US and Japan



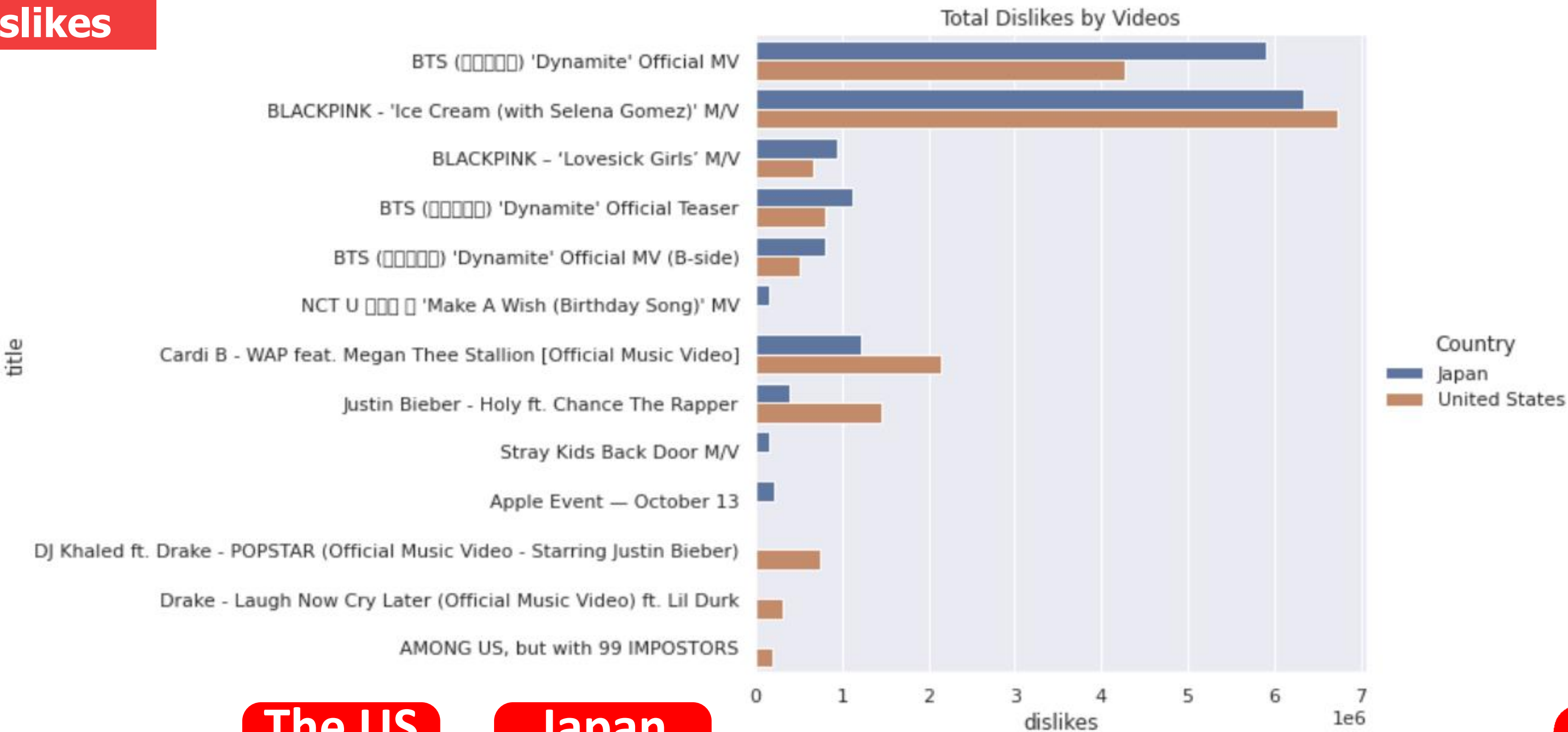


# Top 10 videos for the US/Japan



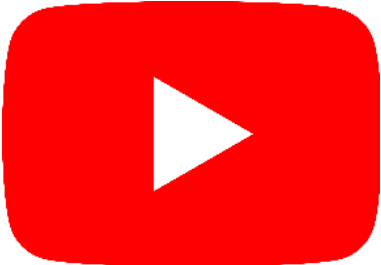


# Top 10 videos for the US /Japan



The US  
1.78M

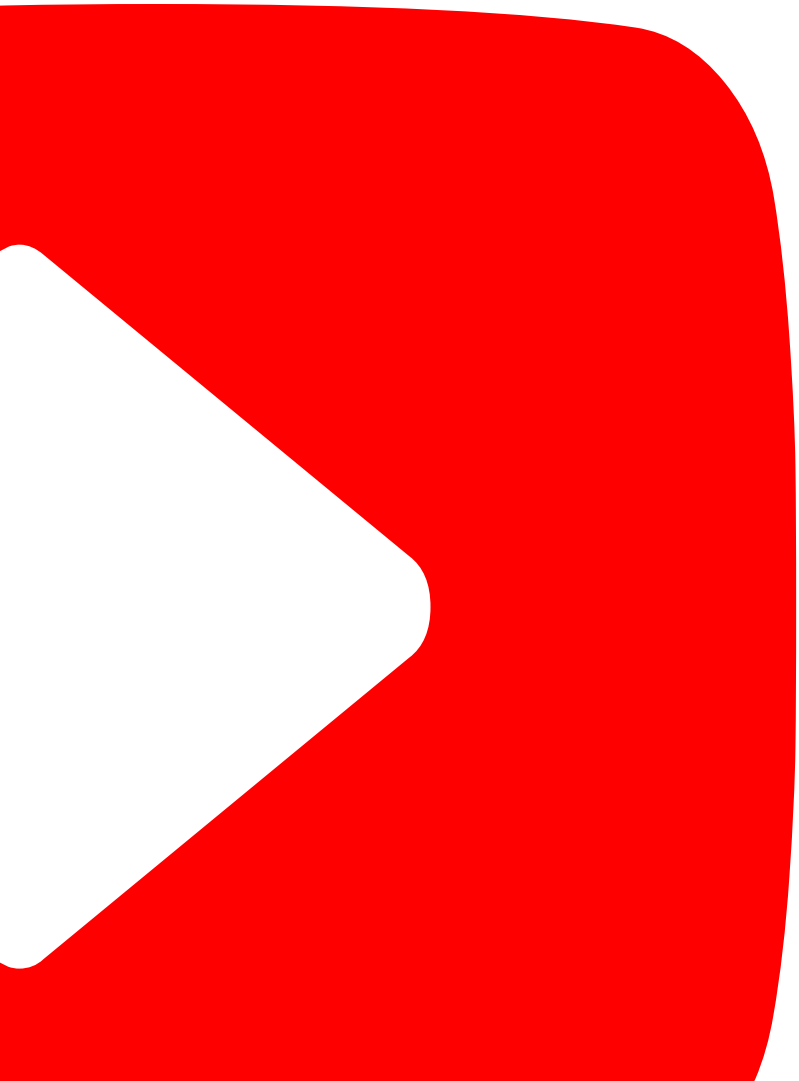
Japan  
1.73M





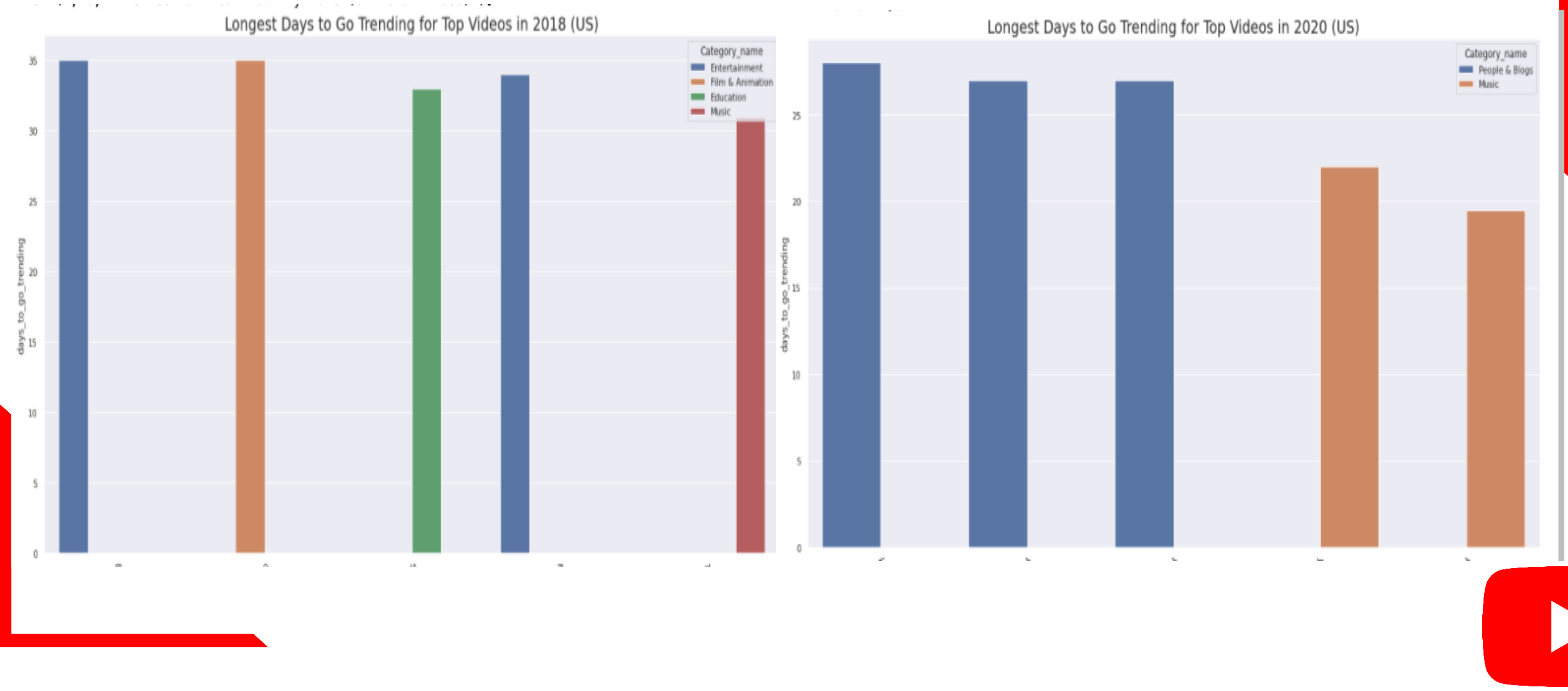
# Findings

- 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

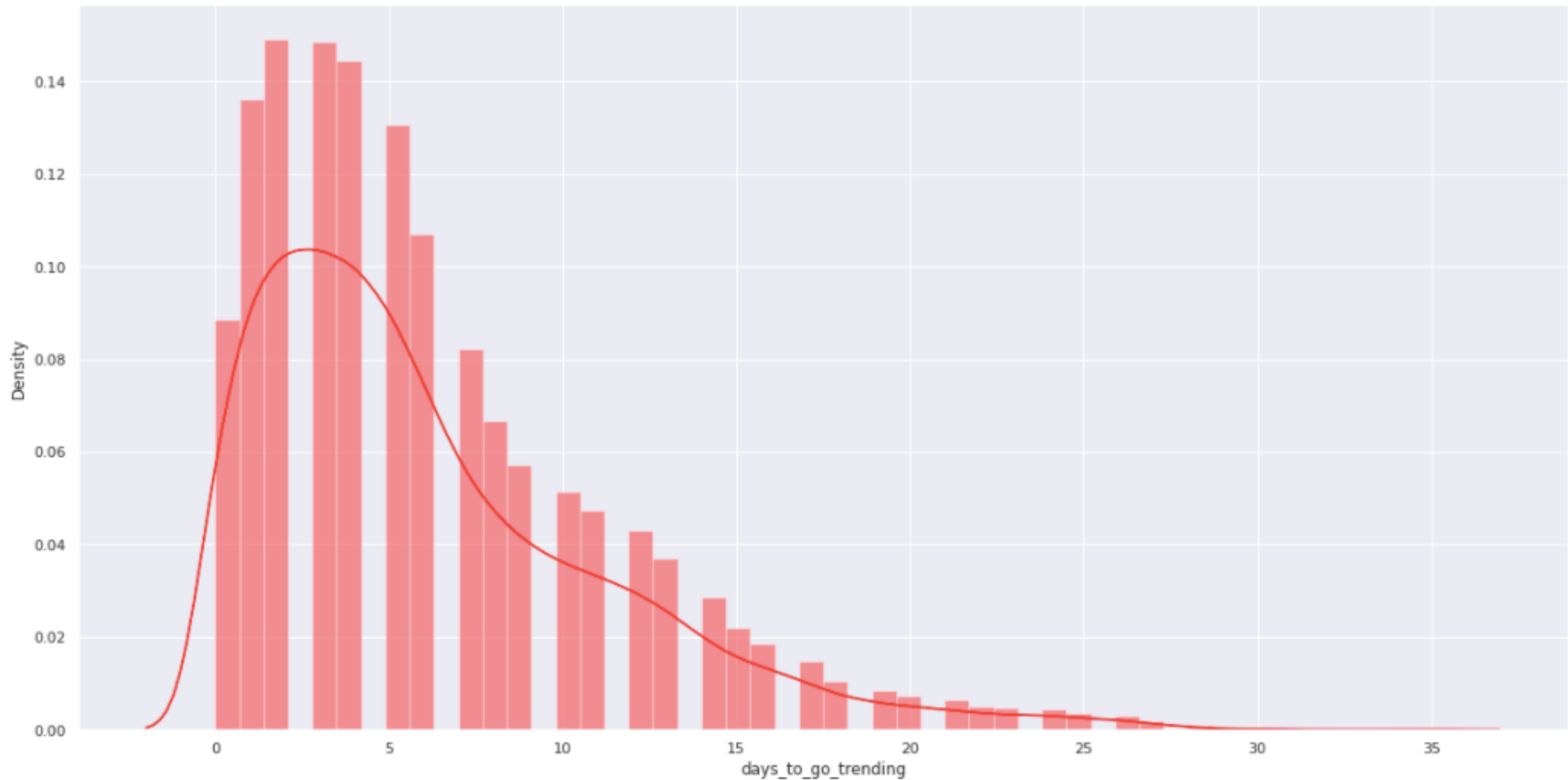


# Top Trending videos in United States

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

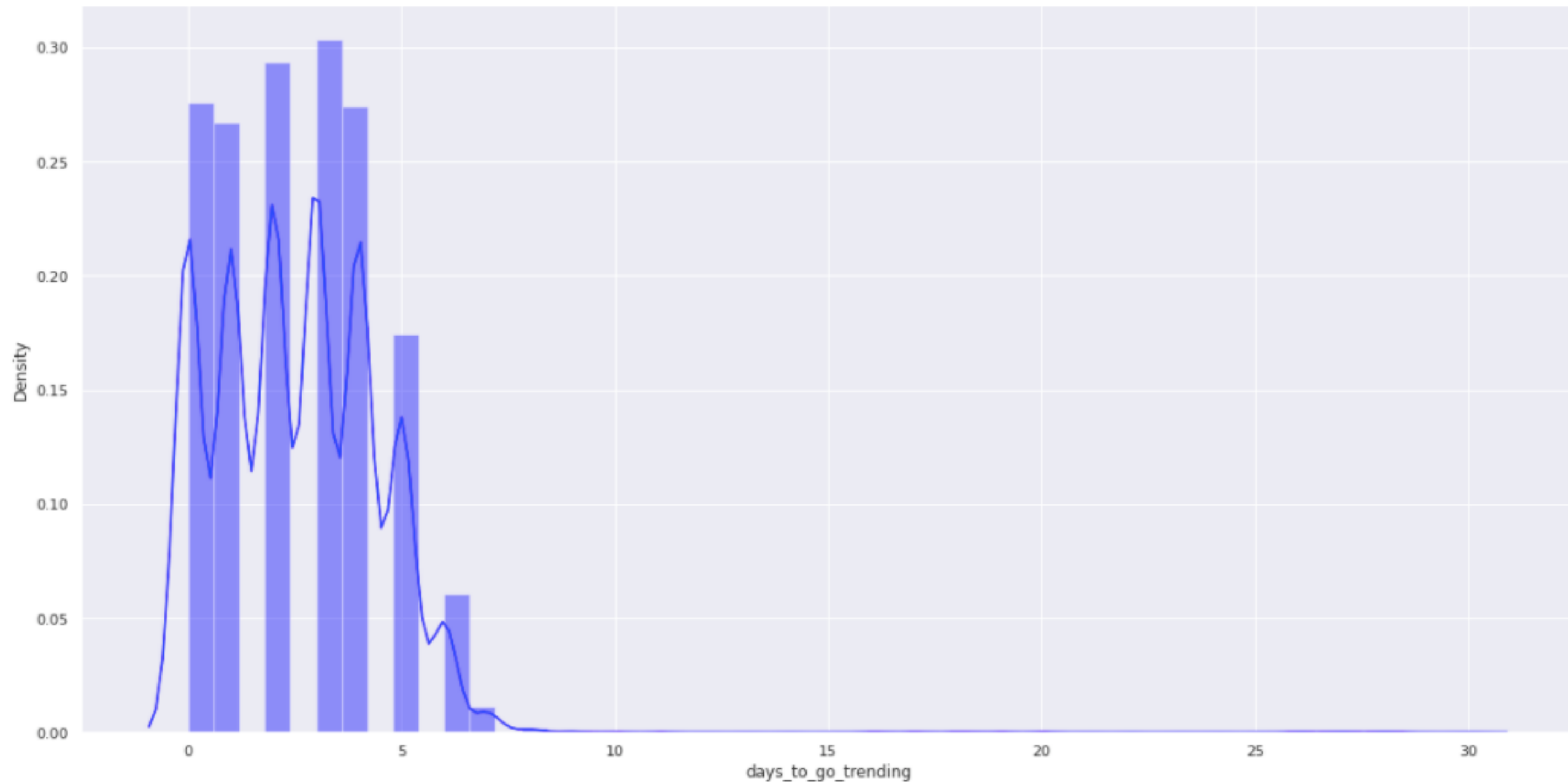


# Distribution of days for videos to go trending in 2018 – the US



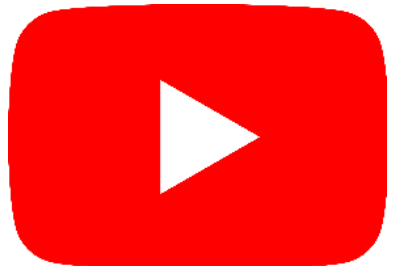
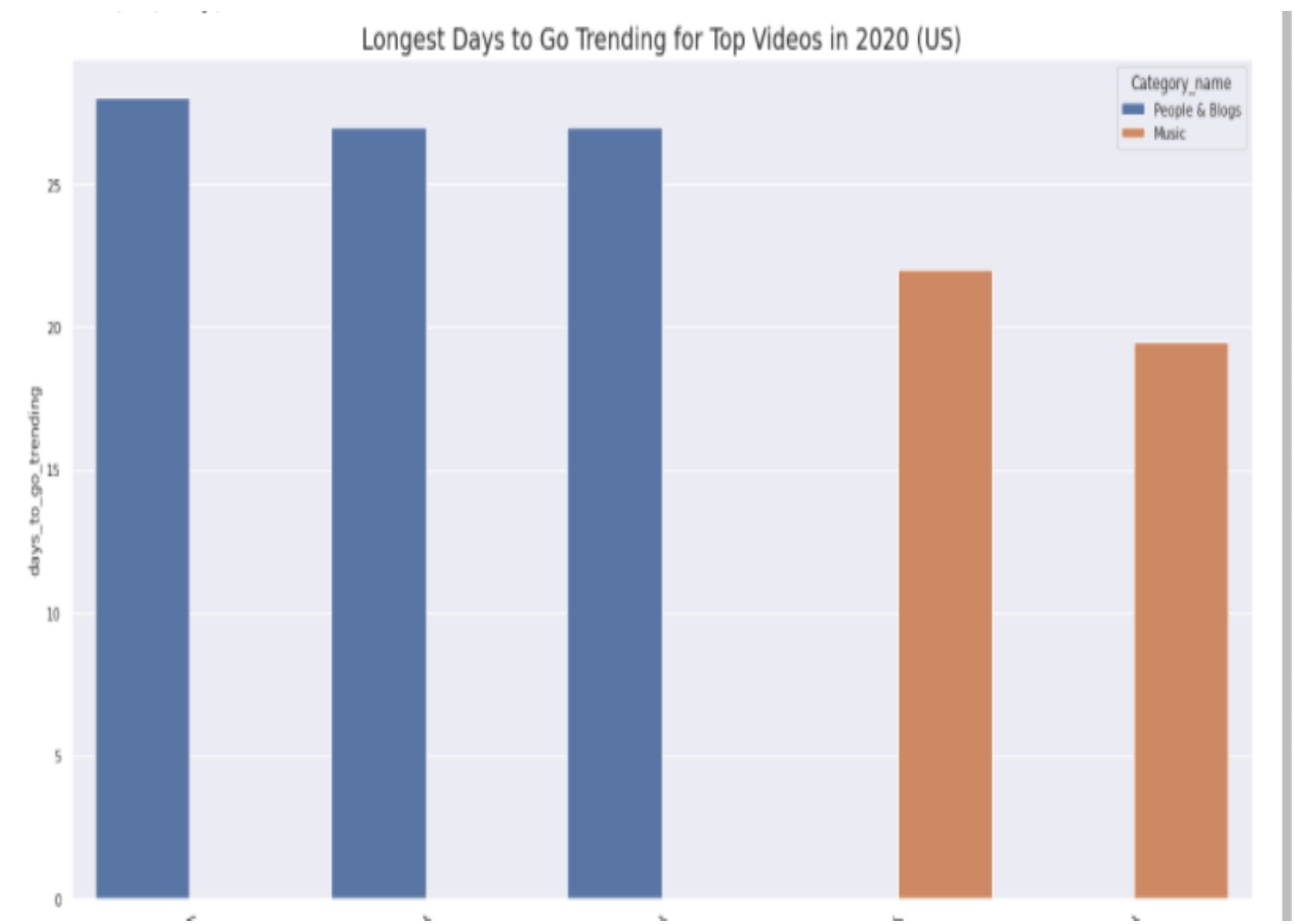
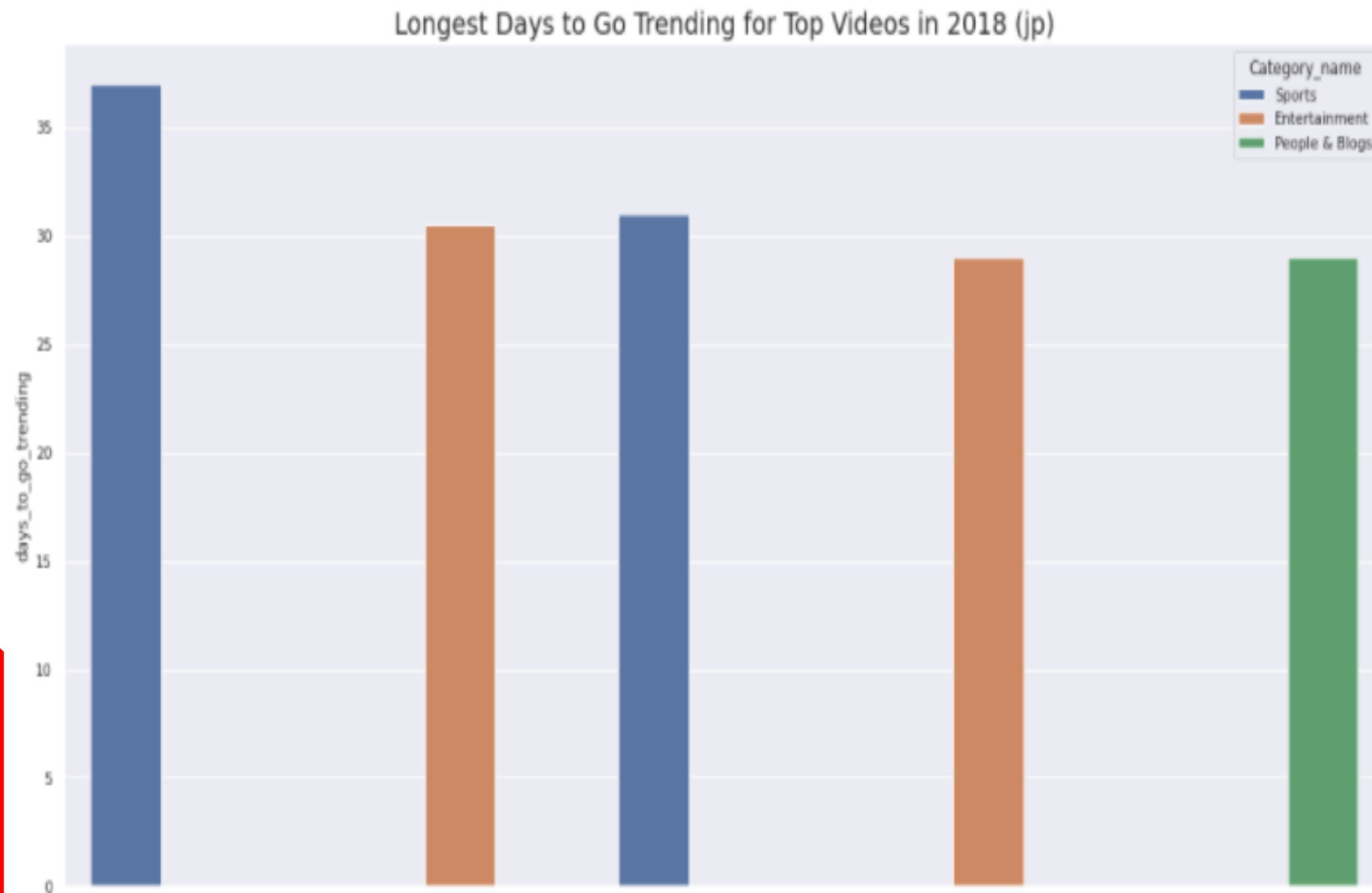
# Distribution of days for videos to go trending in 2020 – the US

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



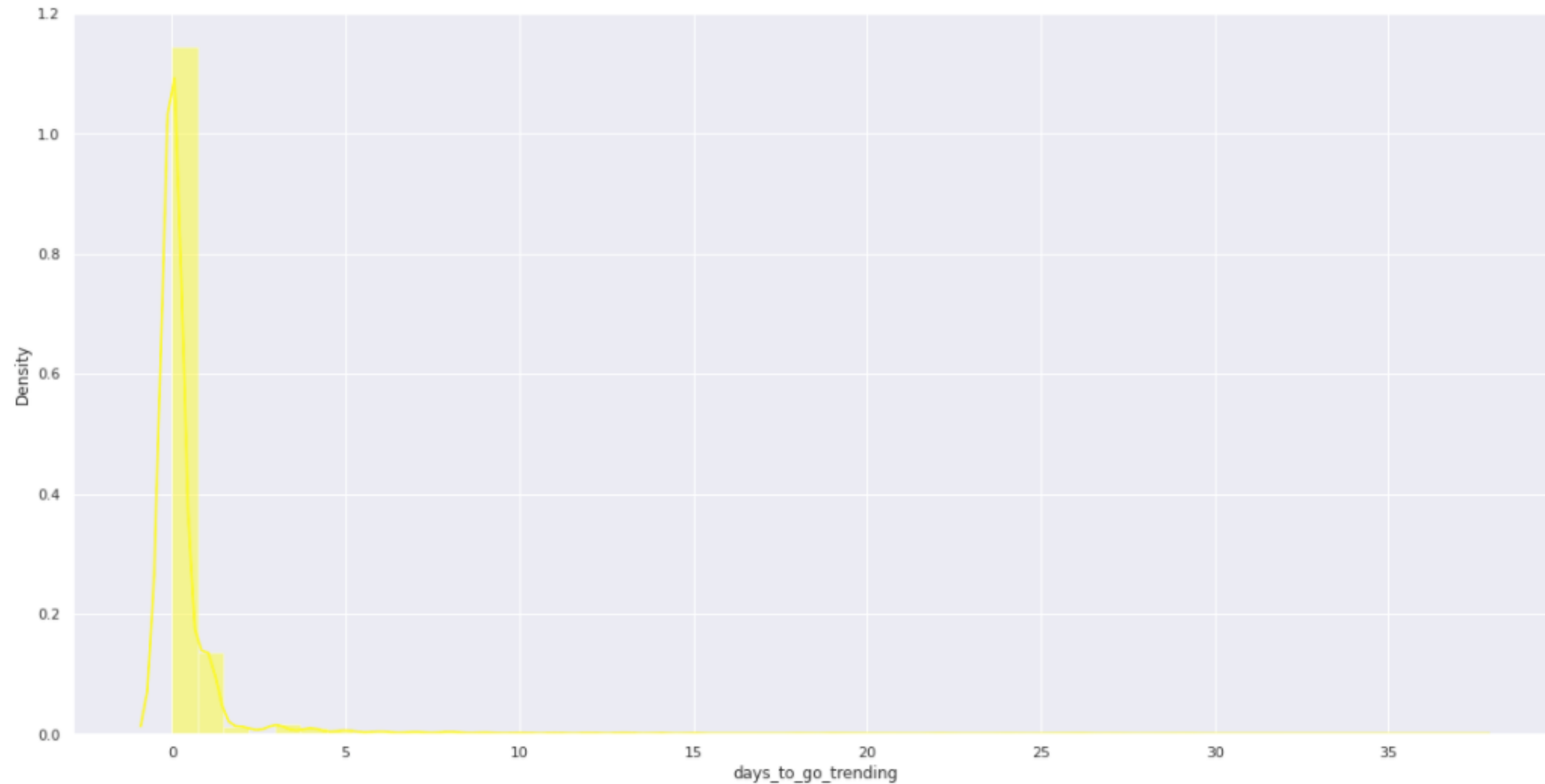
# Top Trending videos in Japan

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



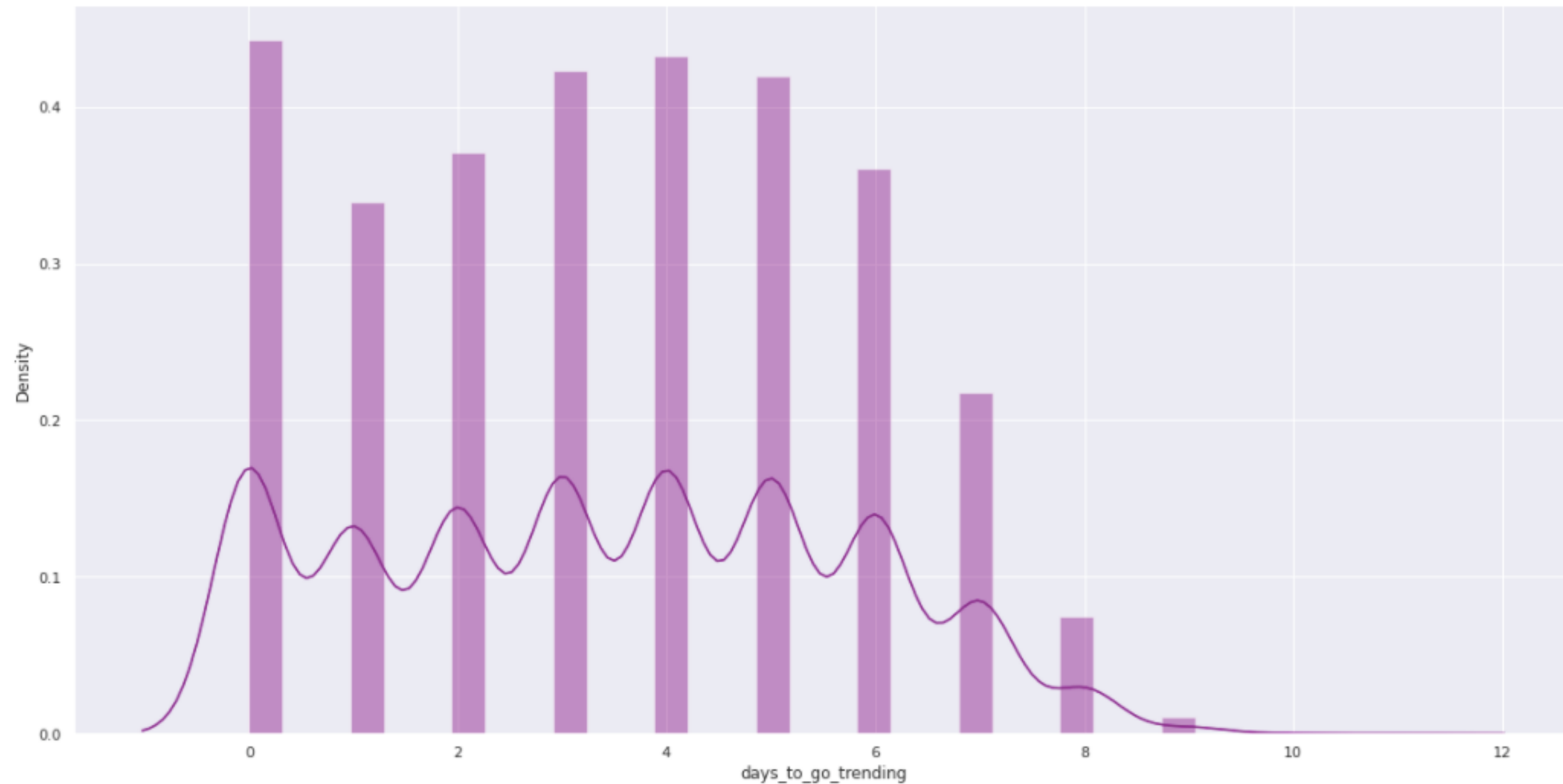
# Distribution of days for videos to go trending in 2018 – Japan

Overall view of distribution





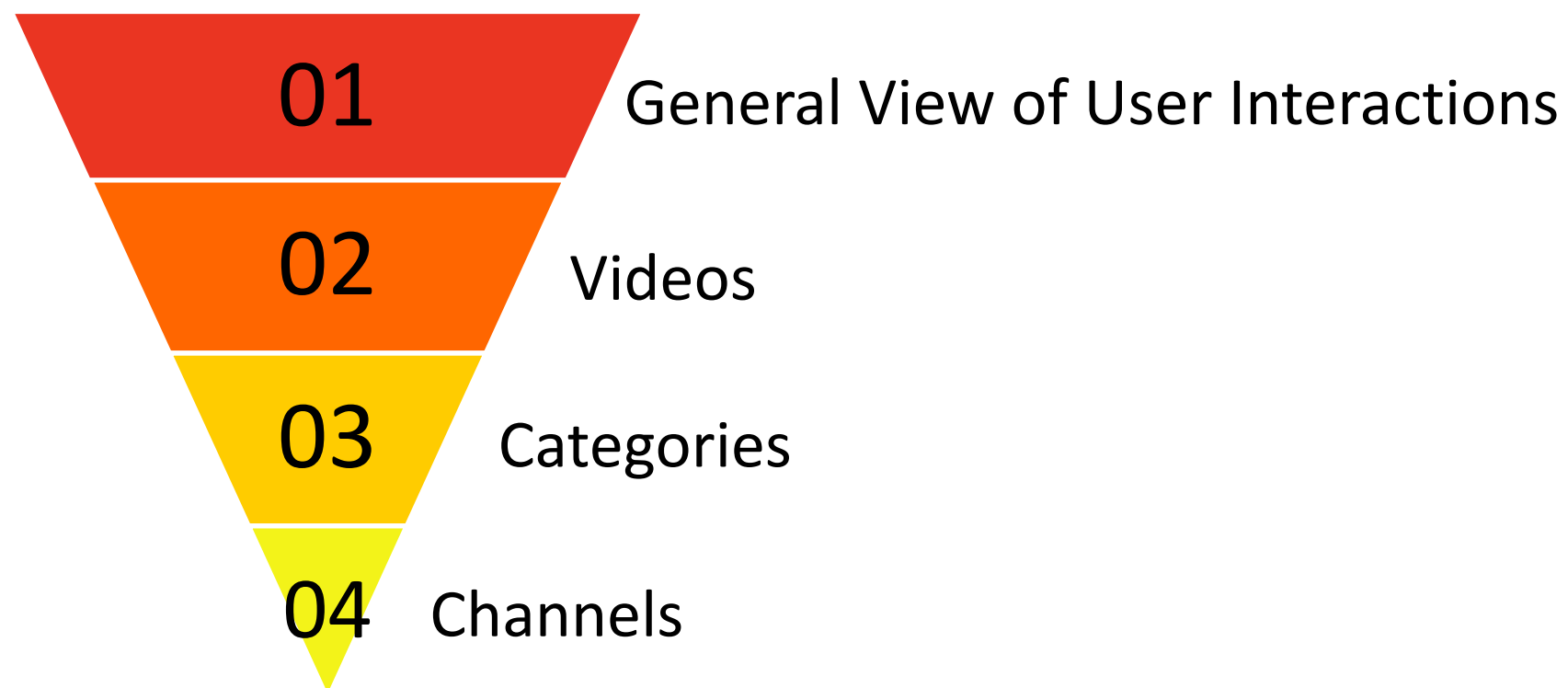
# Distribution of days for videos to go trending in 2018 – Japan





# Category Analysis

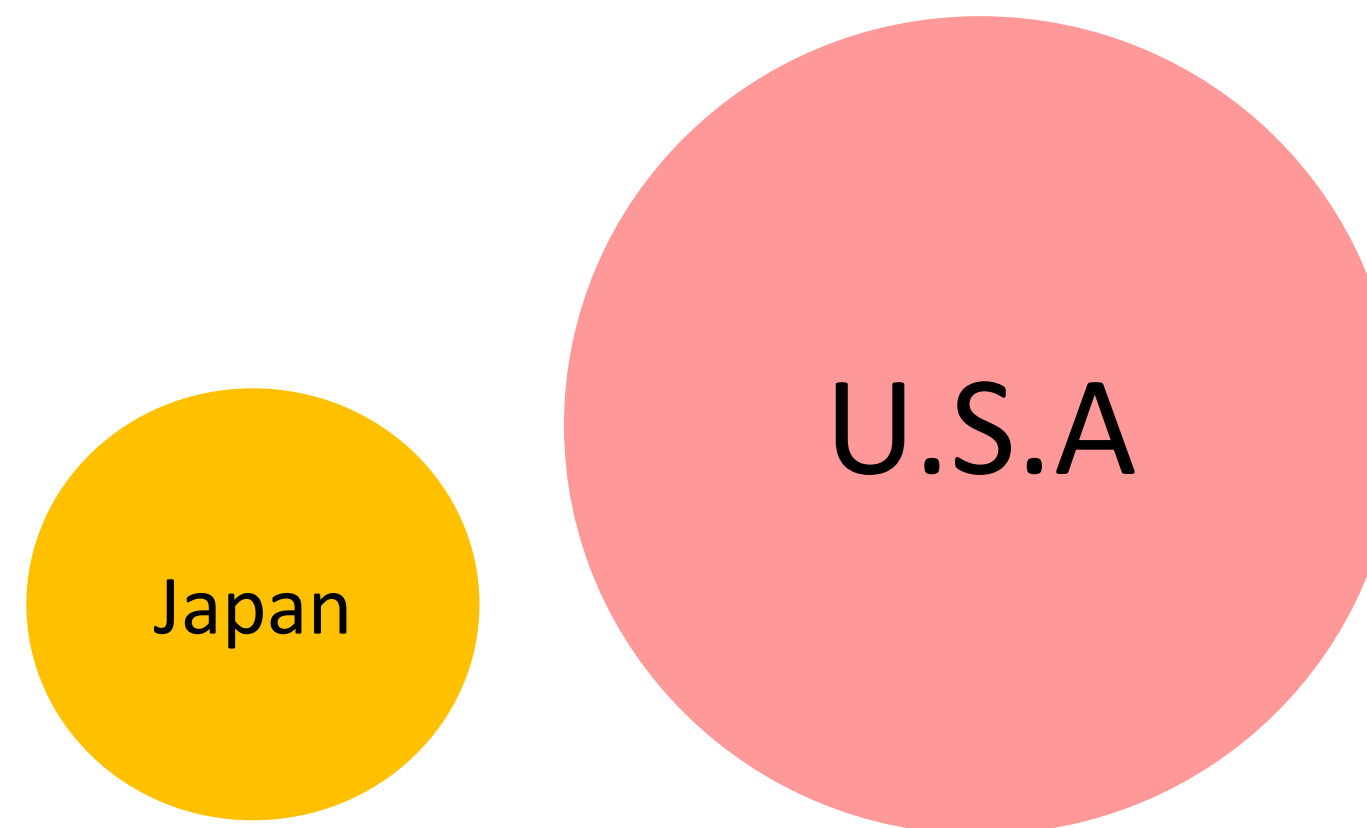
## Our Storyline



## What we do for categories

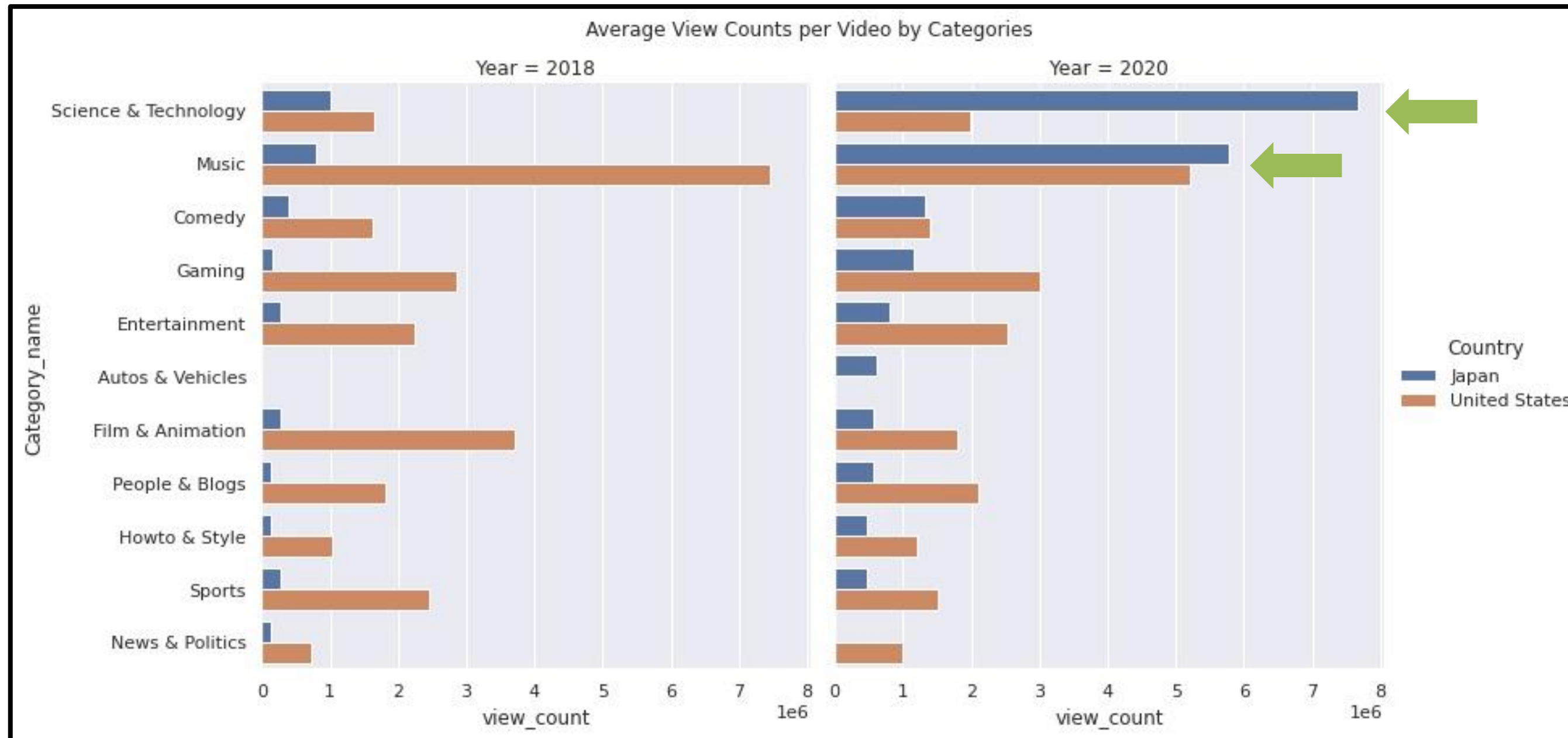
- Select top 10 categories from 2 years and from 2 countries
- Visualize average views, likes, dislikes, and comments per video
- Discover characteristics among categories

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

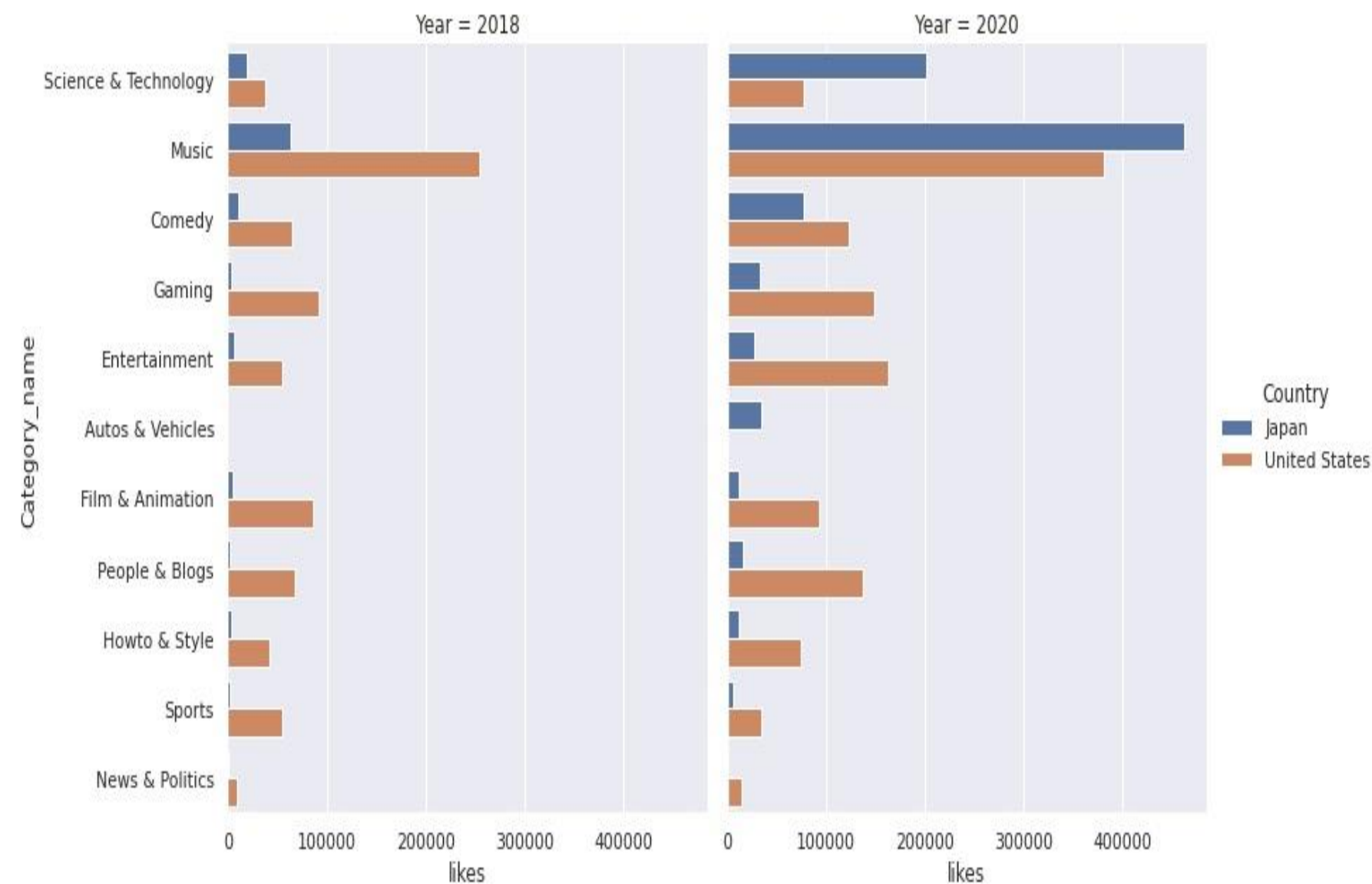


Likes

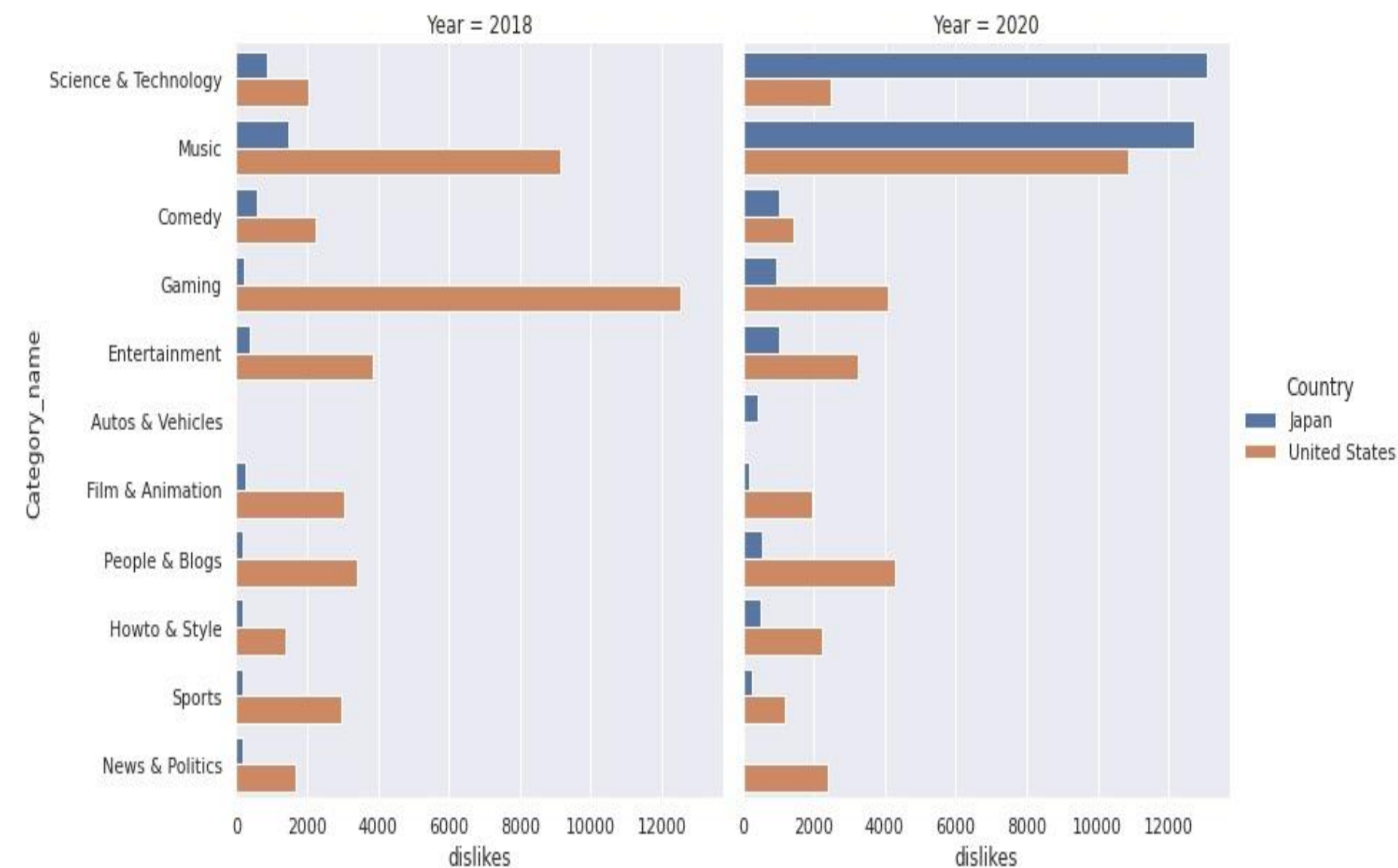


Dislikes

Average Likes per Video by Categories



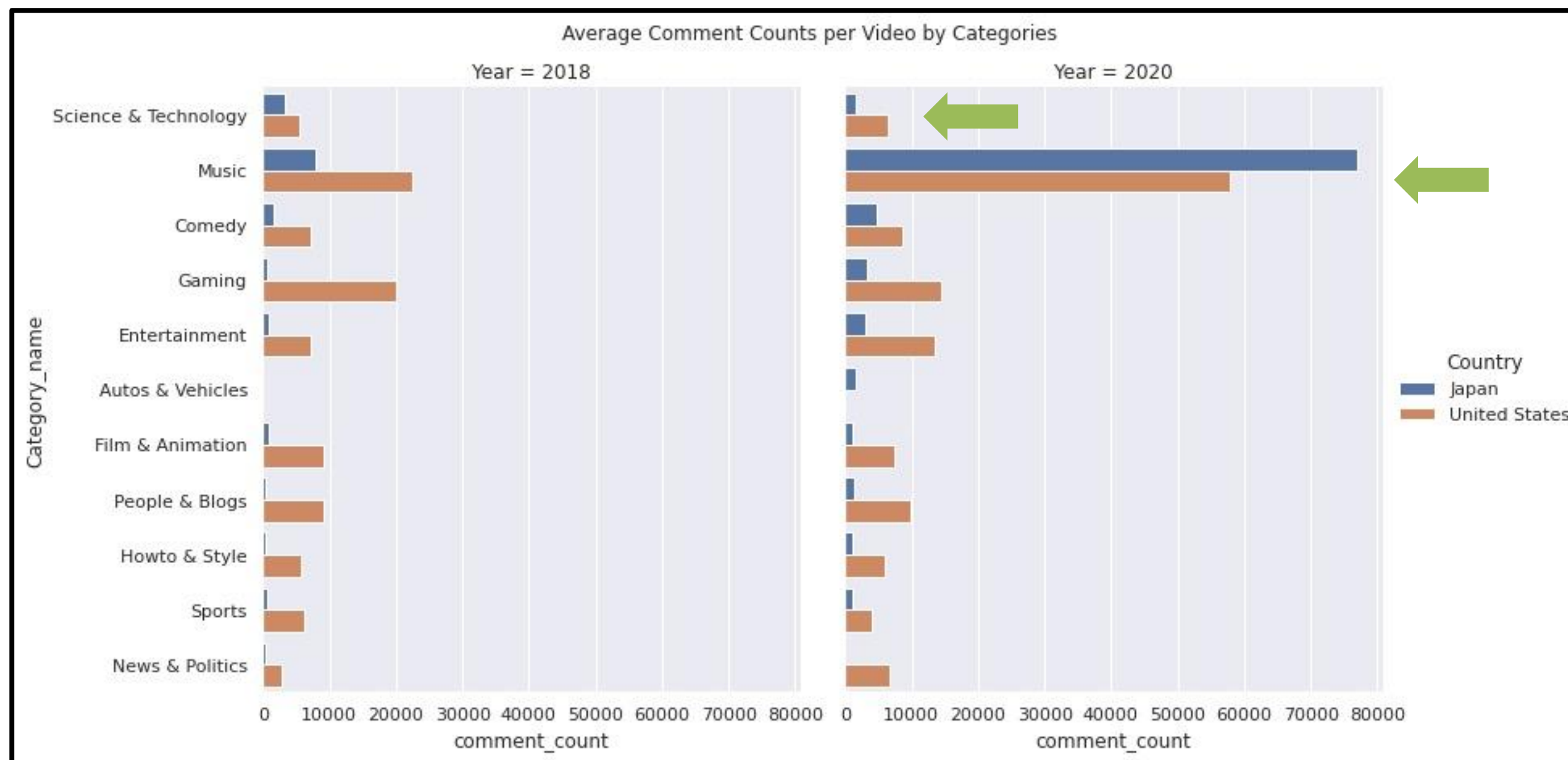
Average Dislikes per Video by Categories



Same in likes and dislikes!



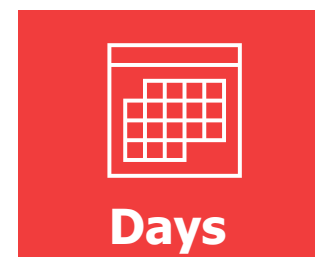
# Category Analysis



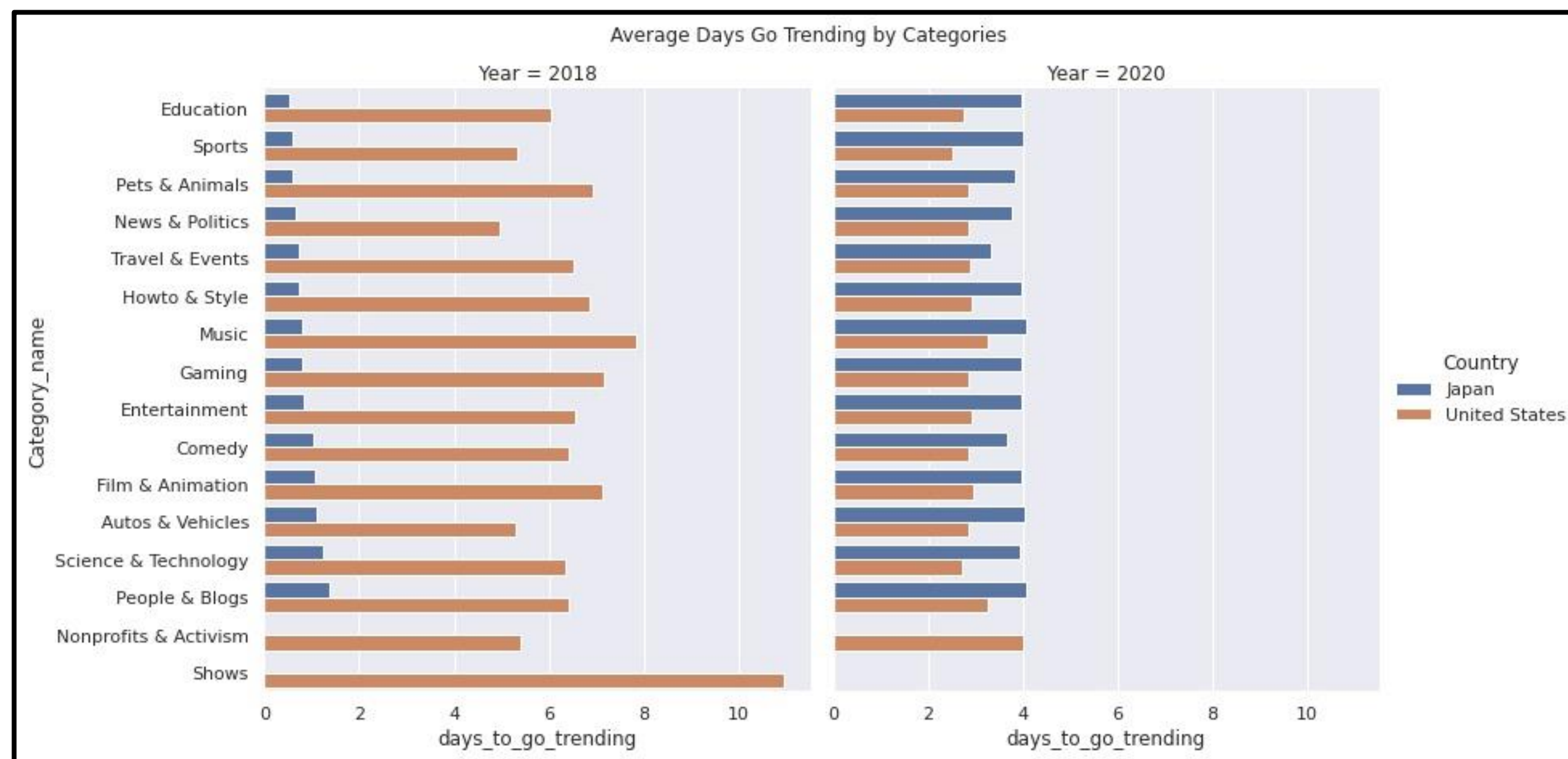
- Science & Technology, which all owns the most average view counts in Japan in 2020, perform differently in comments
- Music performance on comments are similar to view counts



# Category Analysis



Days to Go Trending



U.S.A.

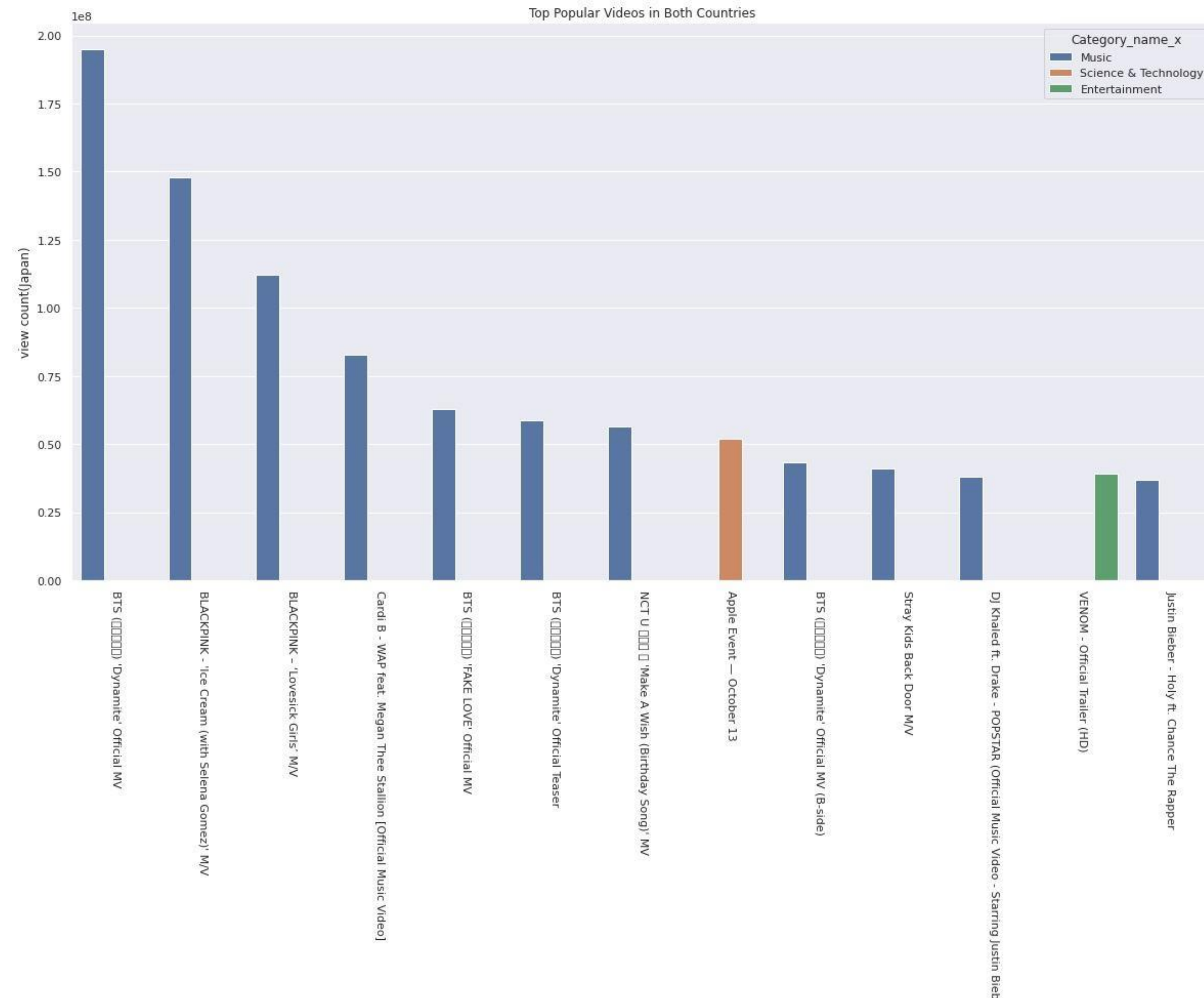


Japan





Top Popular Videos in Both Countries

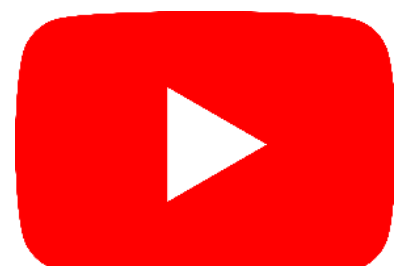


# Relationship between Top Videos and Categories

11 of 13 top videos are from music category

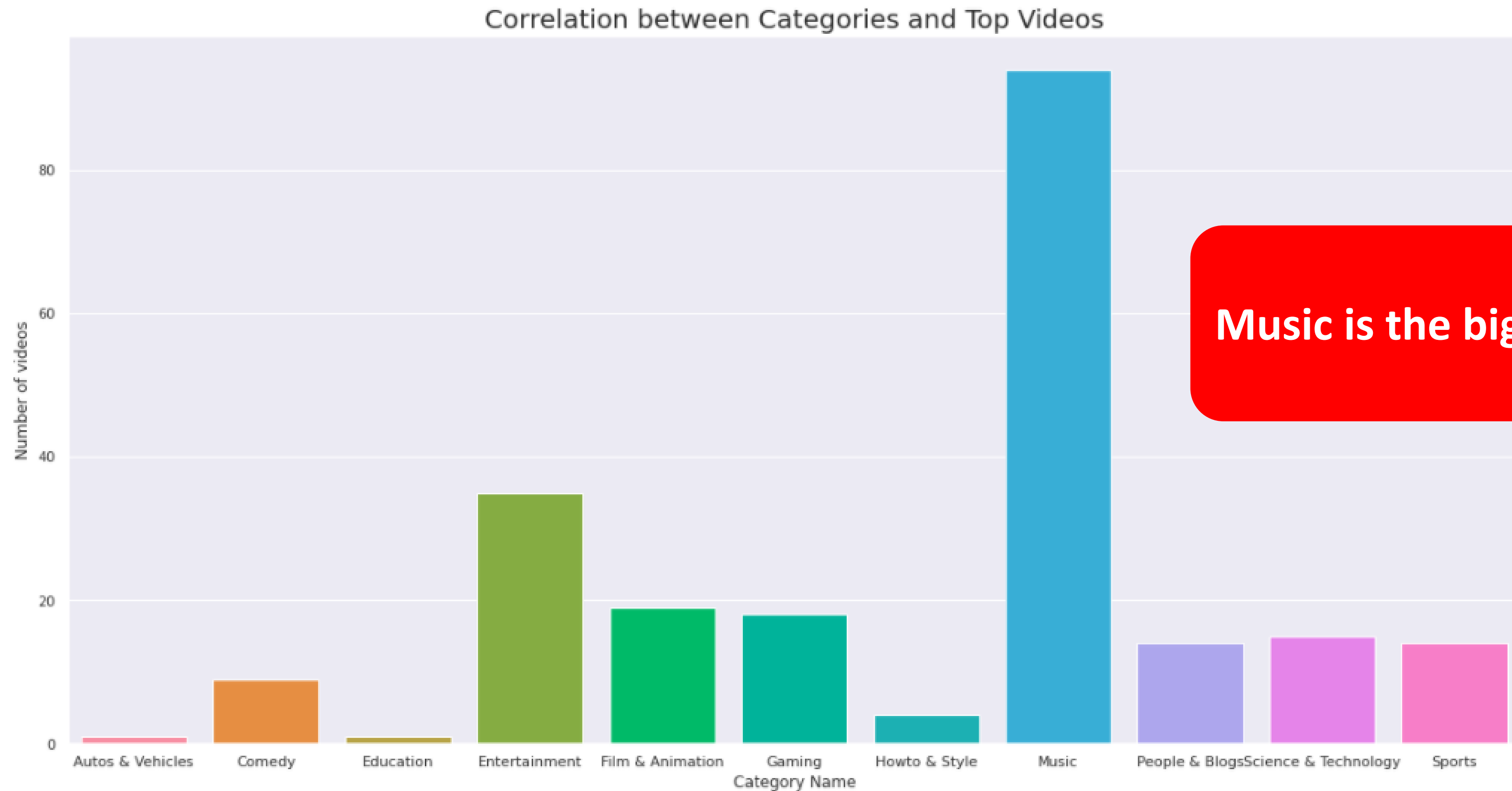
8 of 11 music videos belong to Korean music

BTS and BLACKPINK are popular in both countries

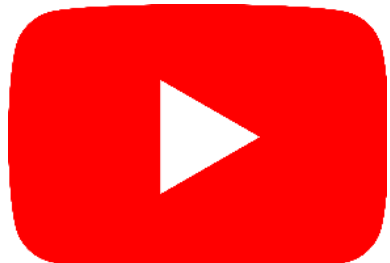


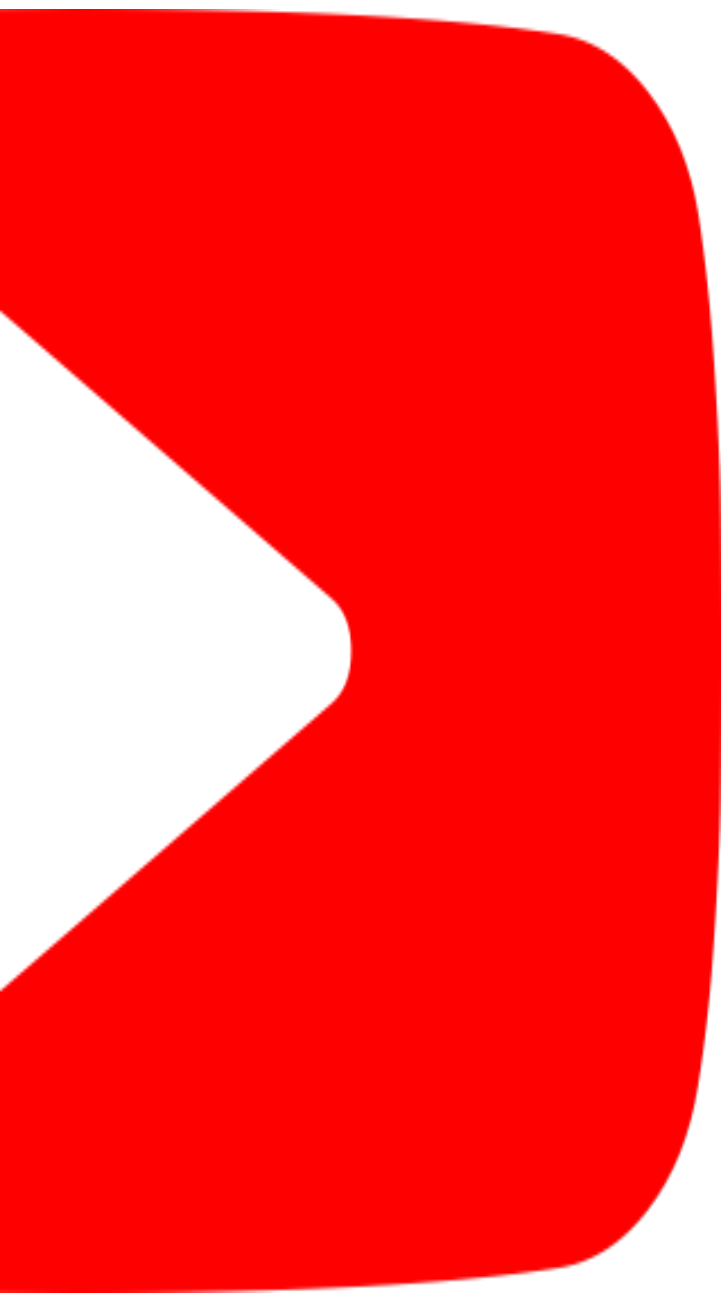
# Relationship between Top Videos and Categories

## —Top 500 videos in the US & Japan

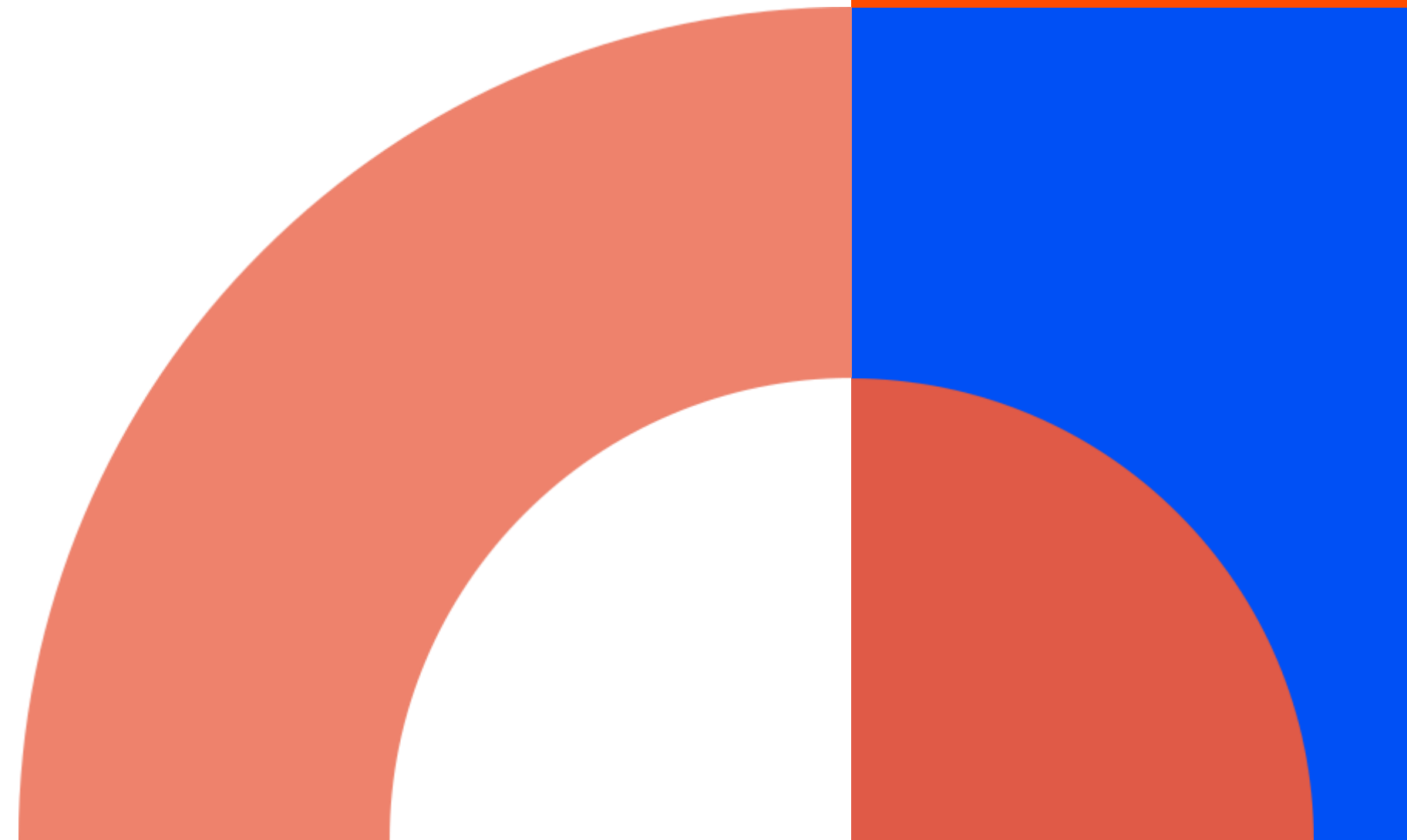
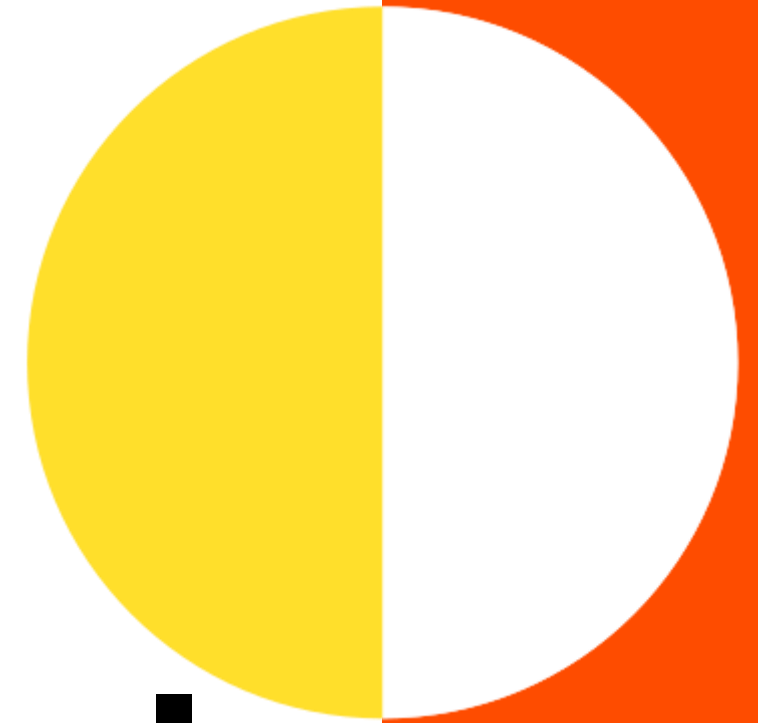


Music is the biggest part



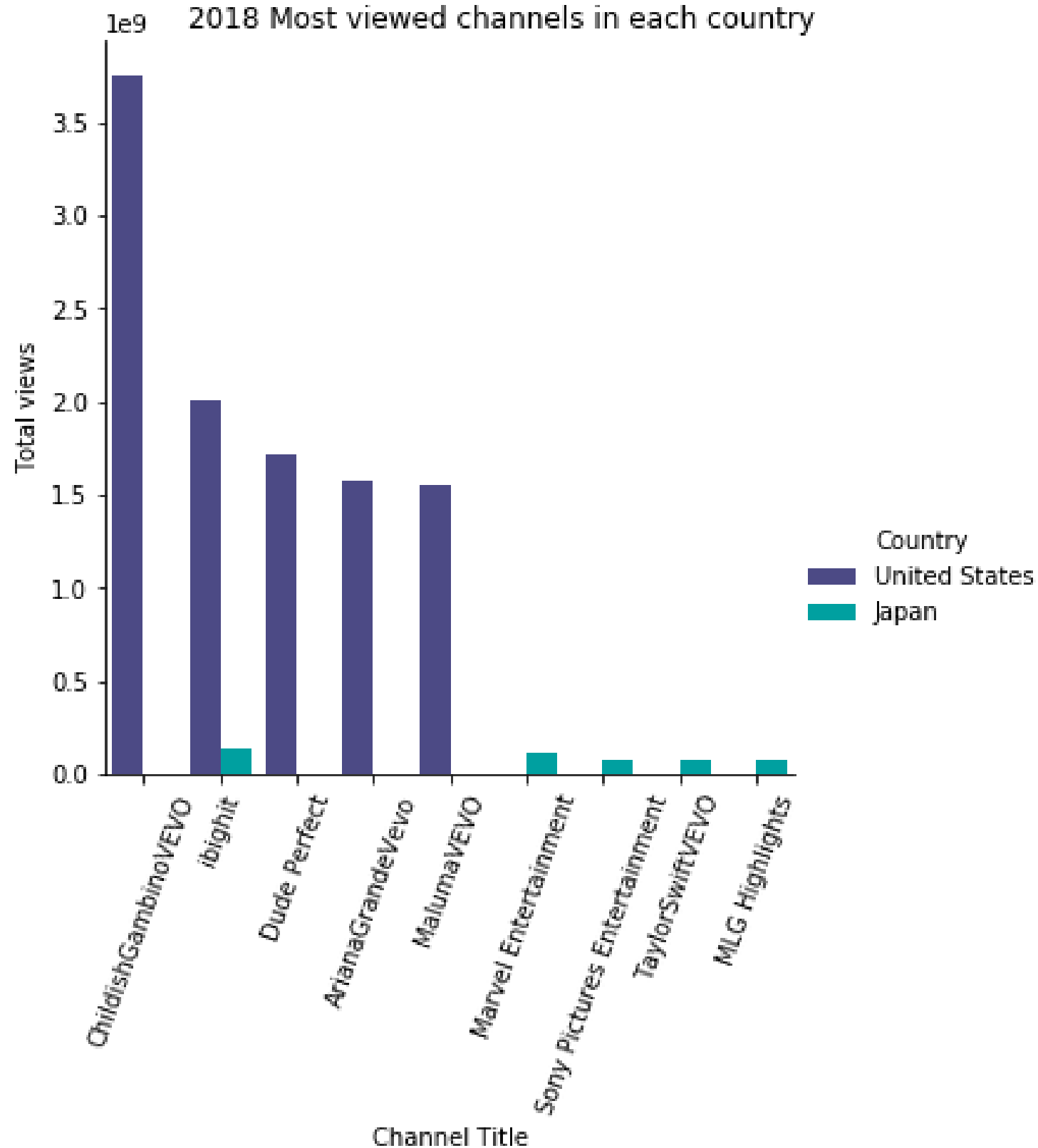


# **YouTube Channel Analysis**





# Top 5 Most Viewed Channels in 2018 for US and Japan



ChildishGambinoVEVO

TOP #1  
US Channels

3.7B  
Views

ibighit

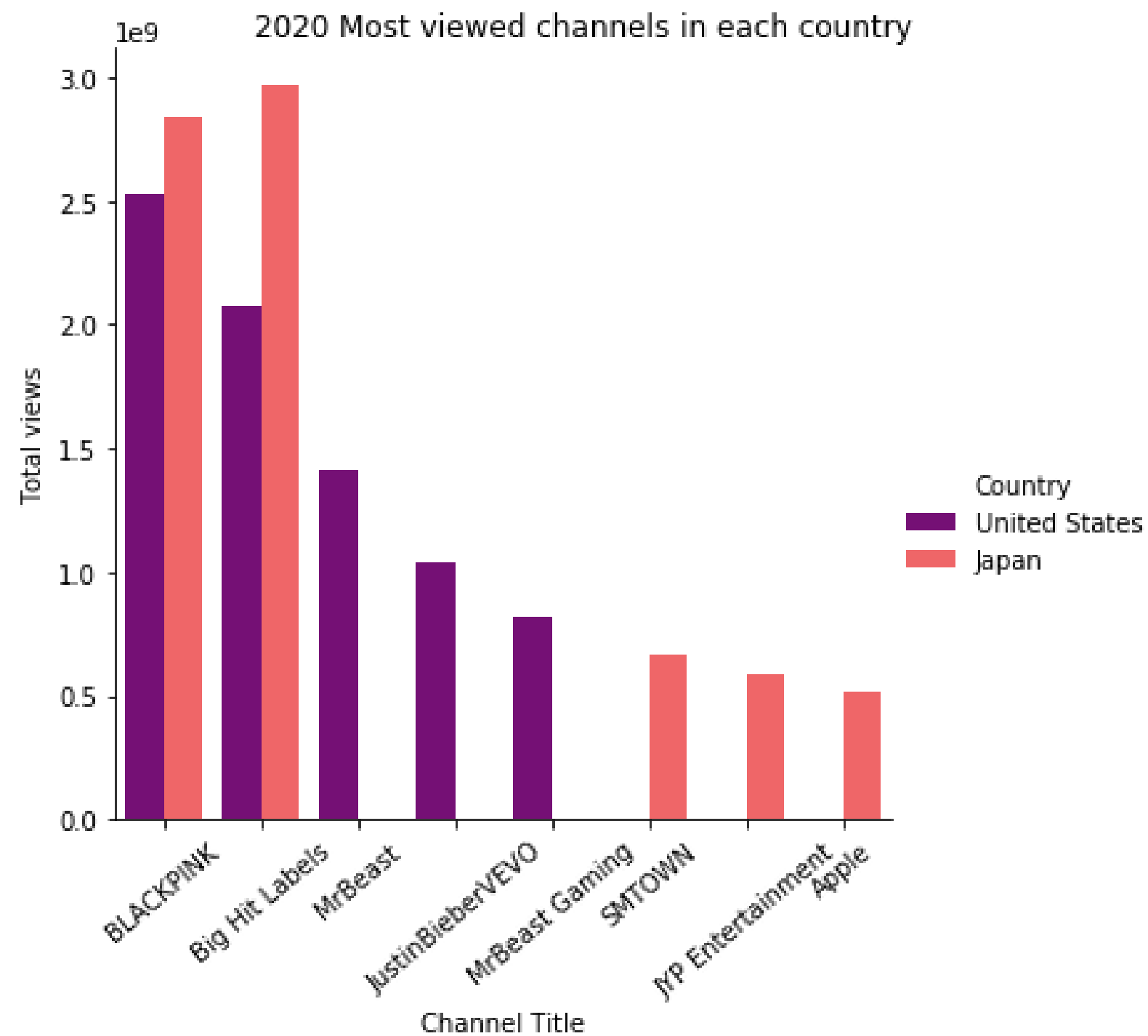
TOP #1  
Japan Channels

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

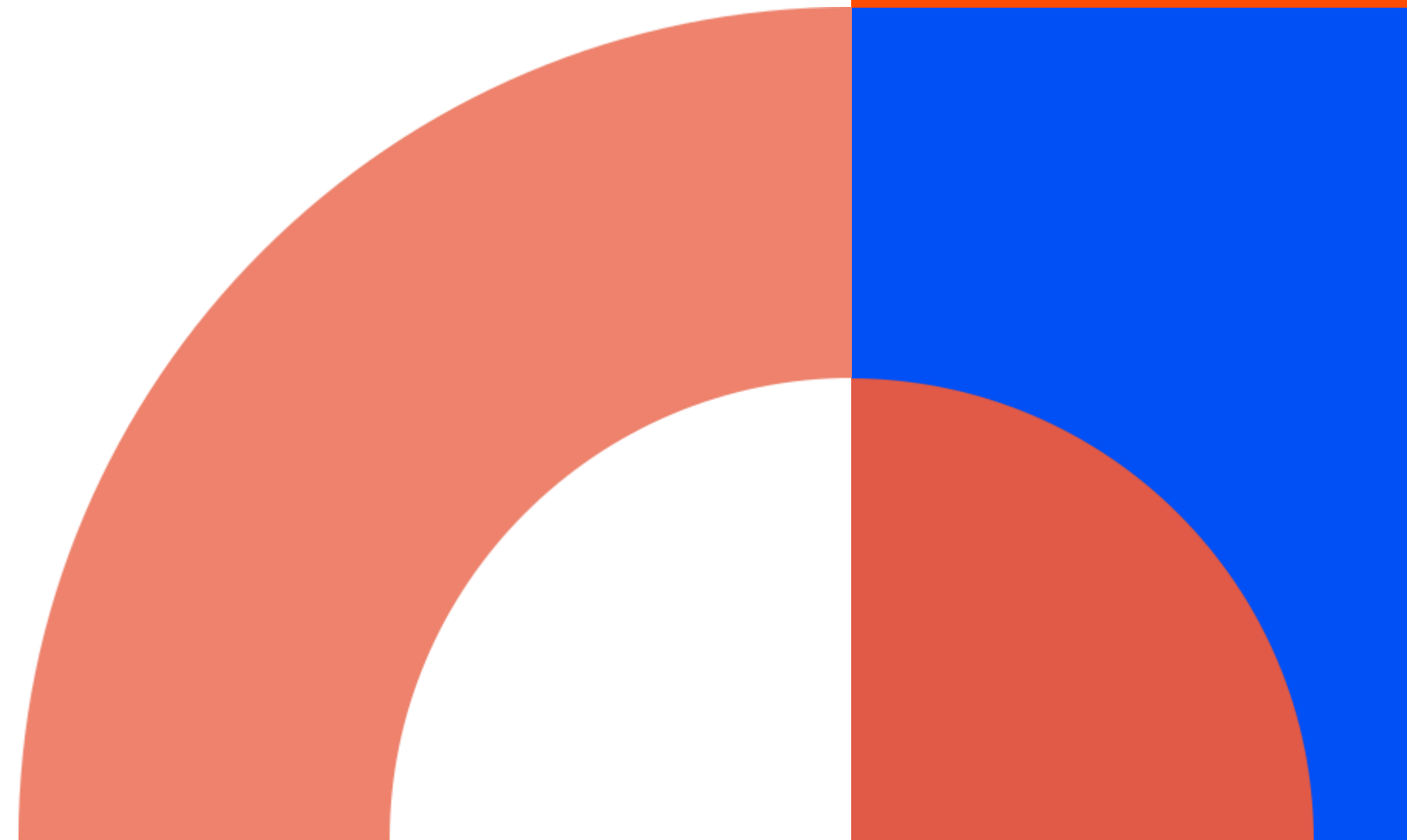
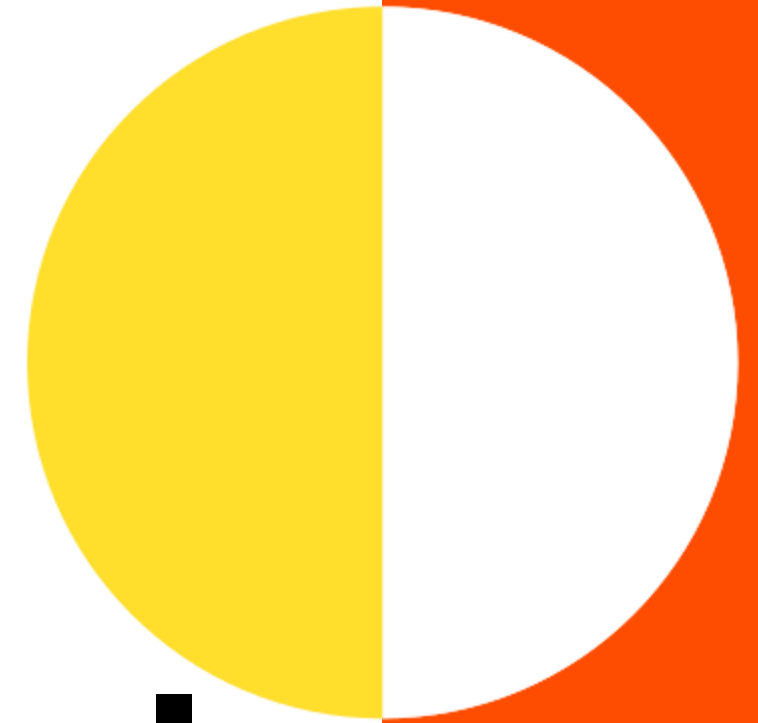
**TOP #1**  
Japan Channel

**2.9B**  
Views

**TOP #2**  
US Channel



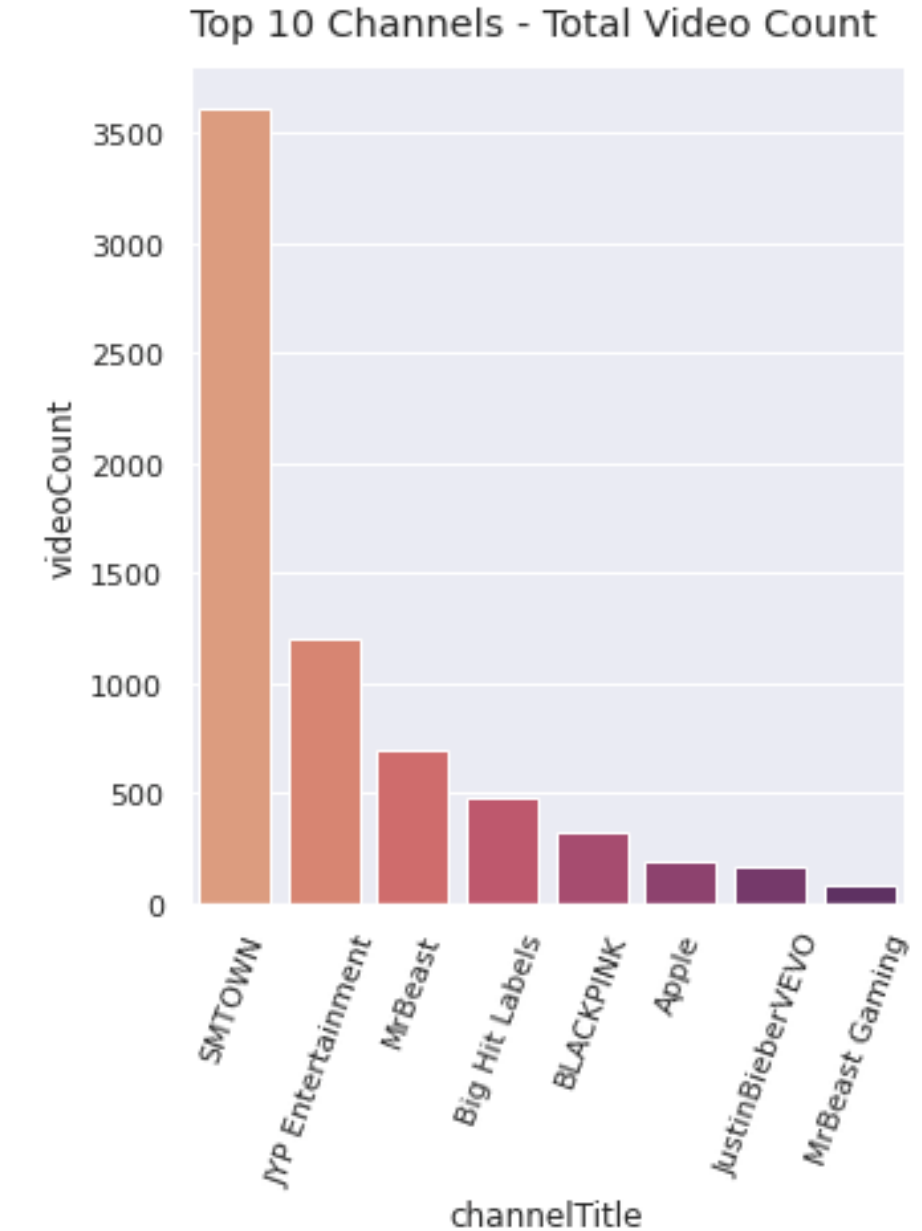
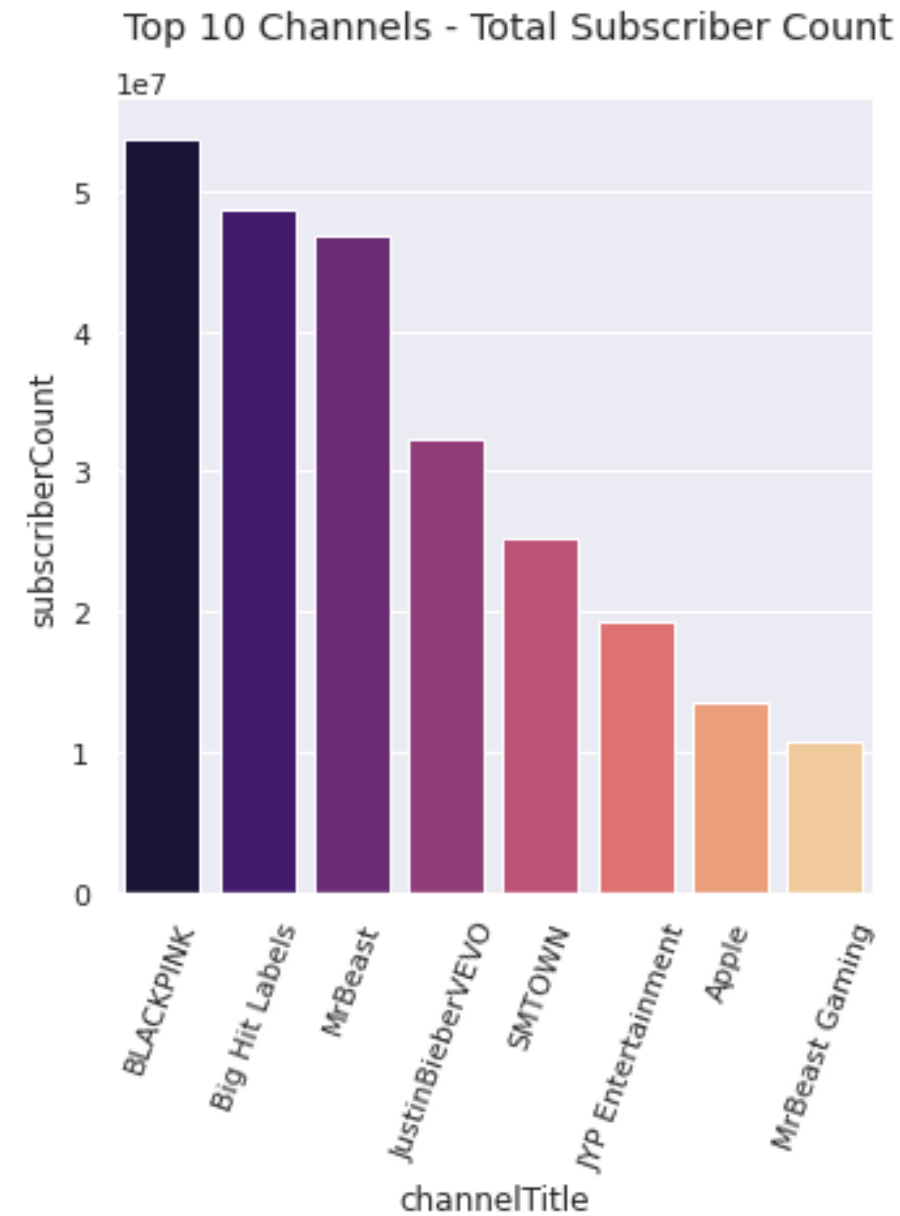
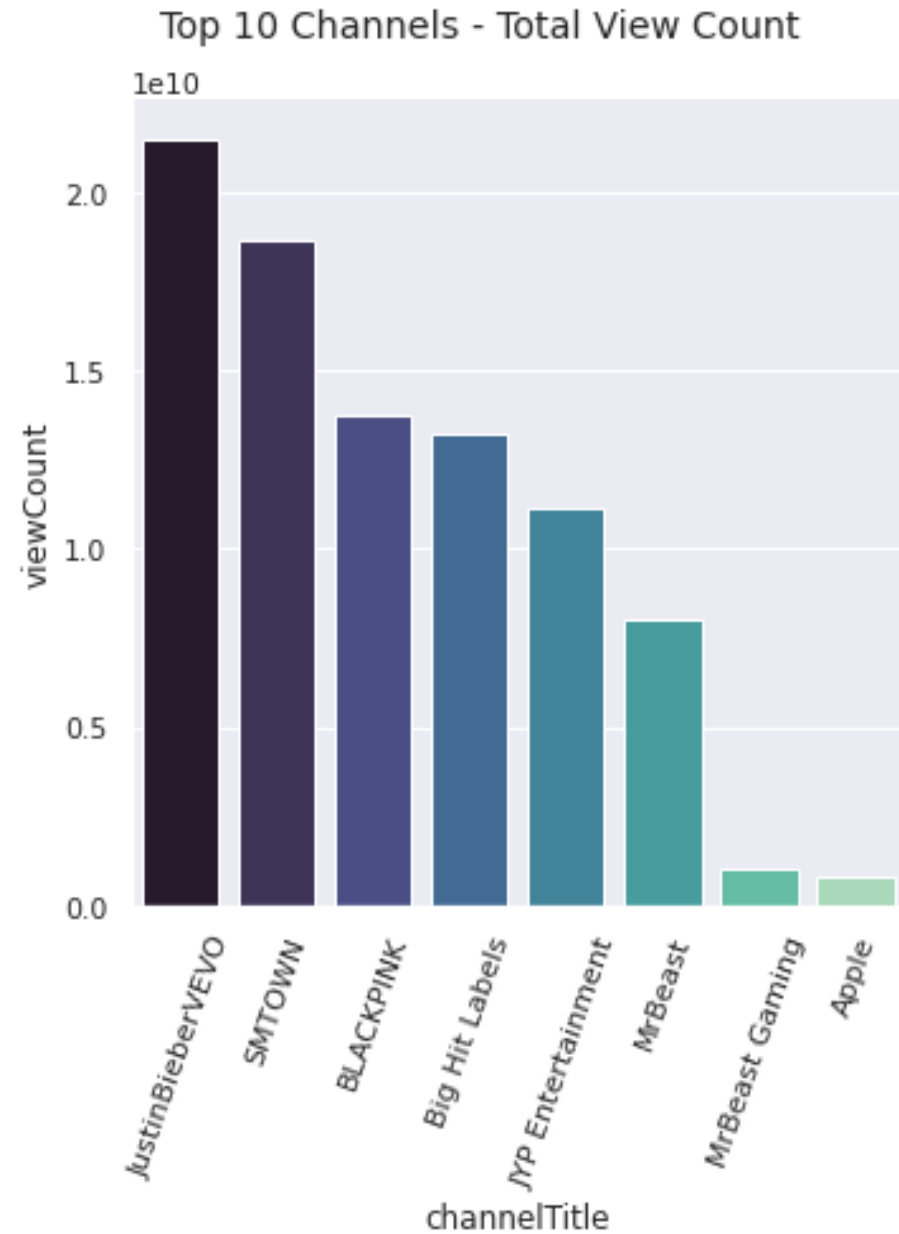
# **YouTube Channel Statistics**







# 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

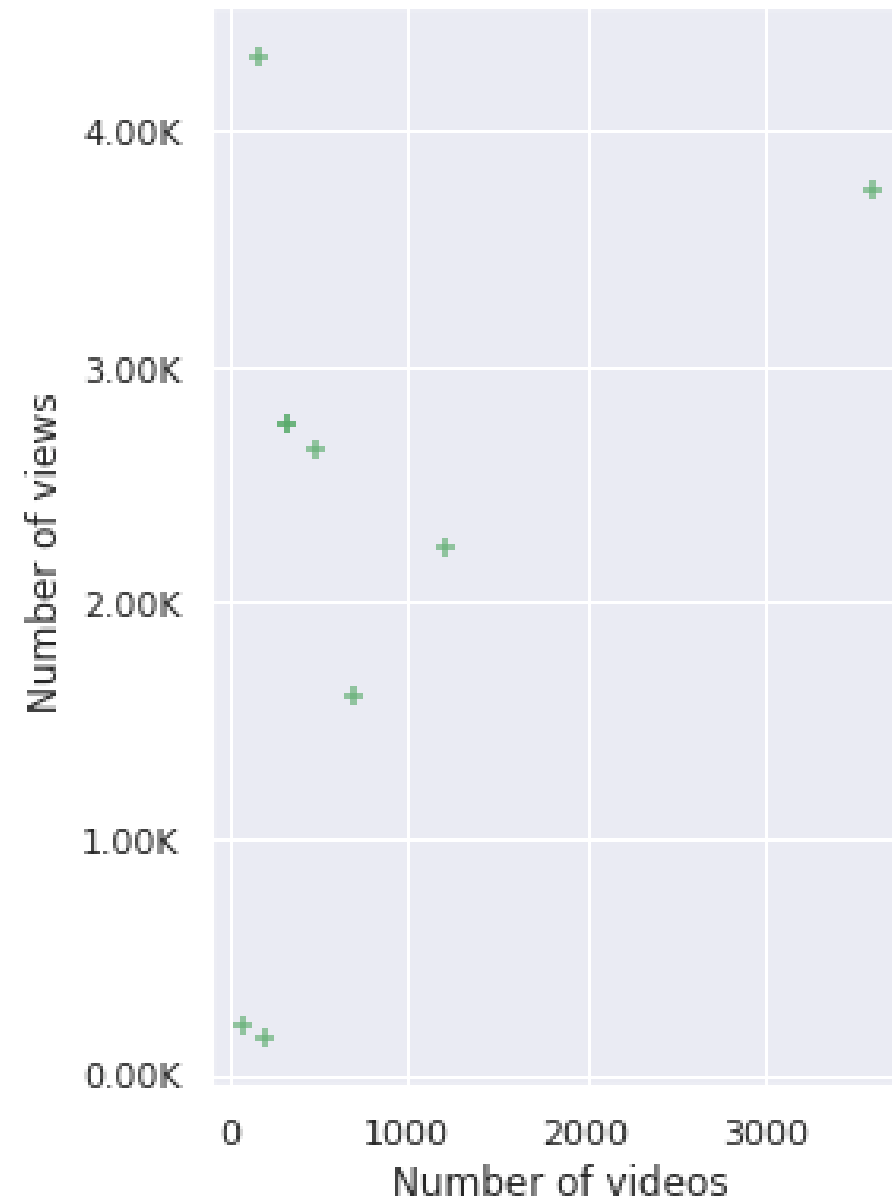
**Big Hit Labels**  
13.1M views  
48.5M Subscribers  
475 videos

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

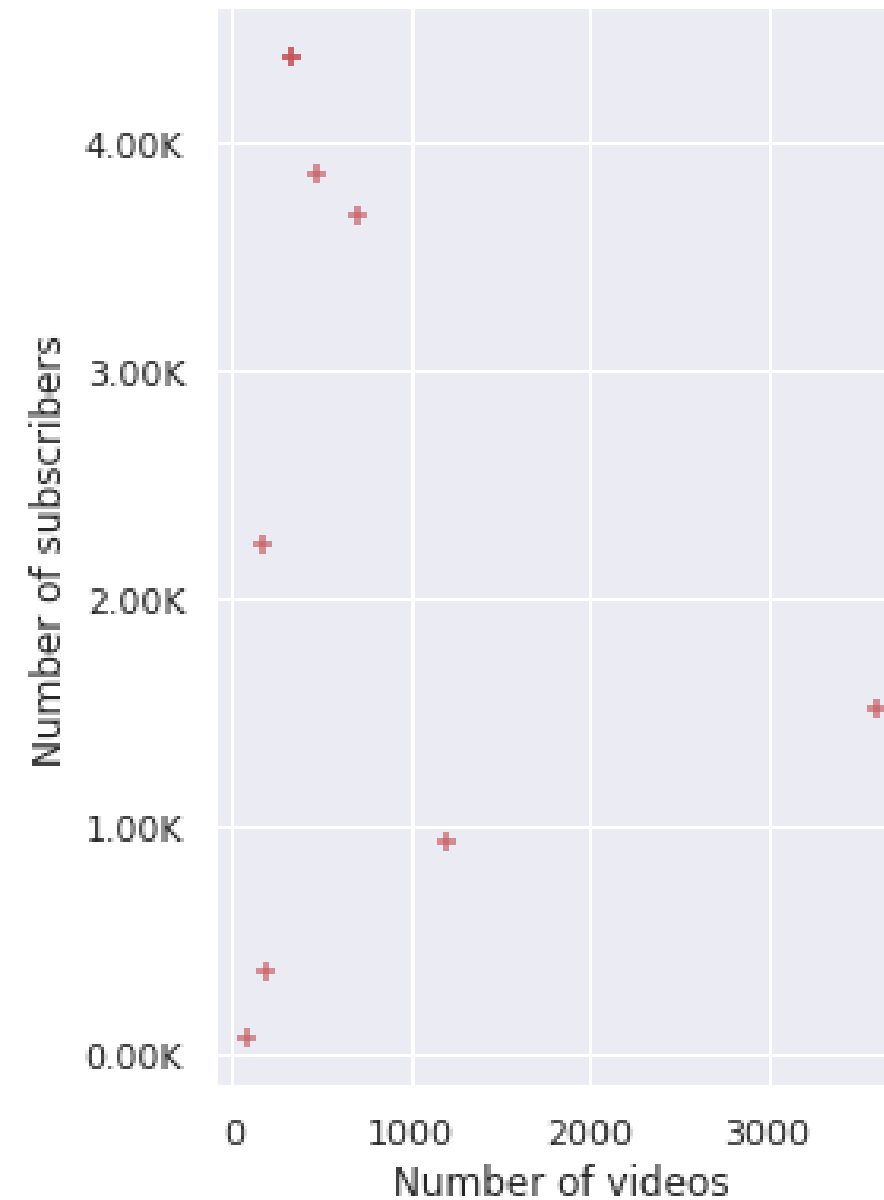


# Top 5 Most Viewed Channels in 2020 for US and Japan

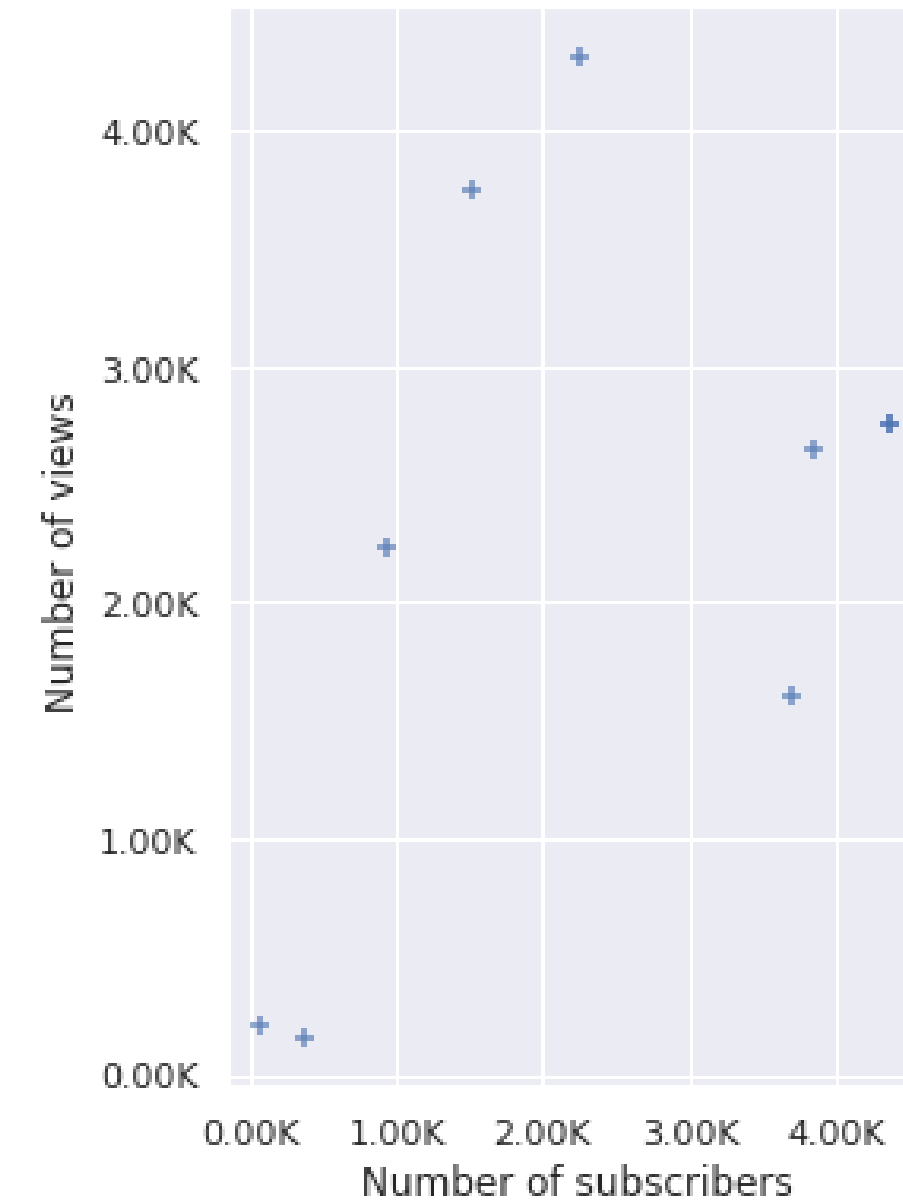
Relationship between the channels statistics



Unable to see any relationships



Could be: Between Subscribers and Views



More channels to identify relationships





# **YouT Tube Channel Publish Time**





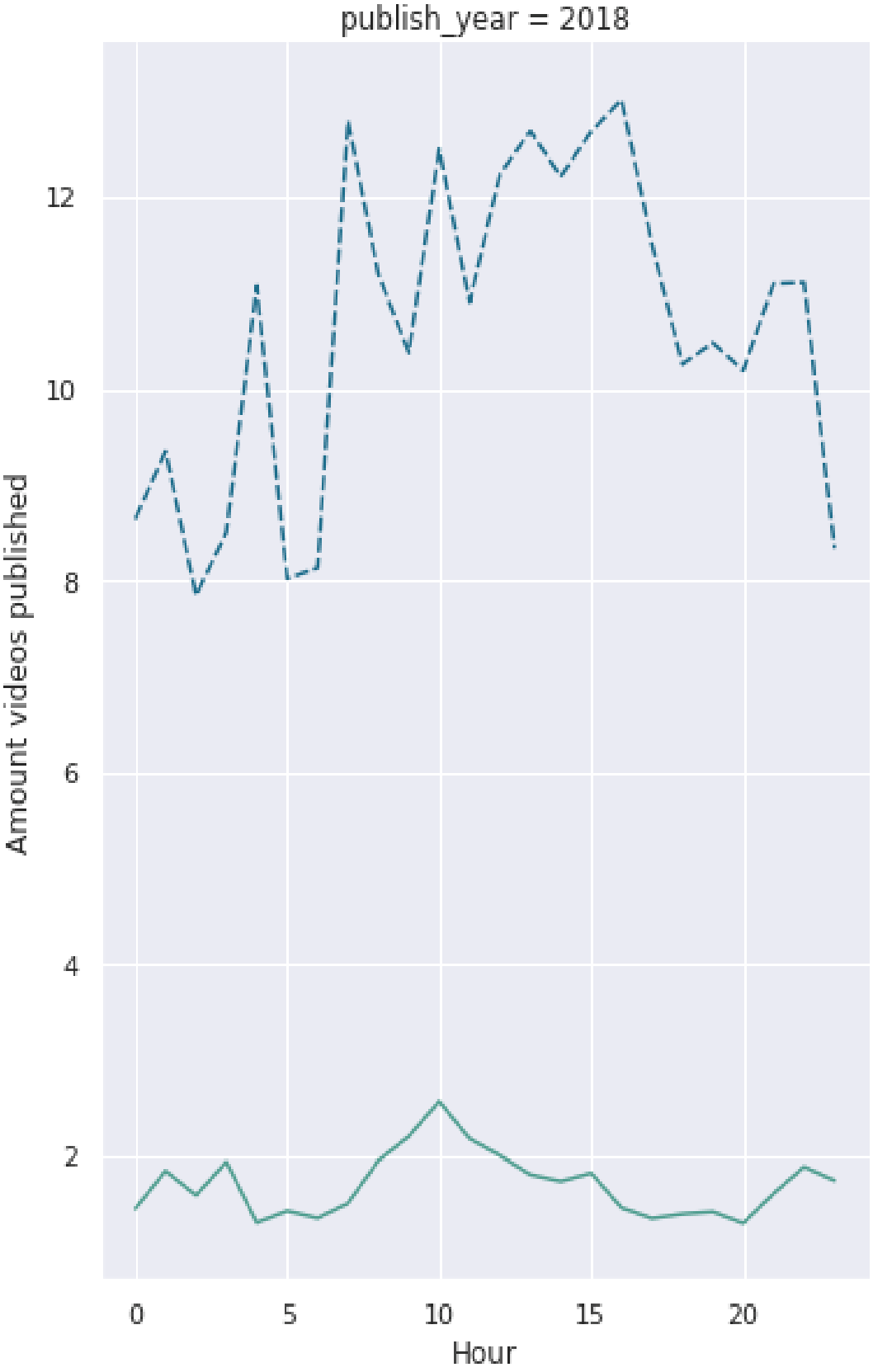
# Channel Publish Hour Time Series for US and Japan

**2018**



**Japan ~10 am**

**US ~ 3 pm**



**2020**

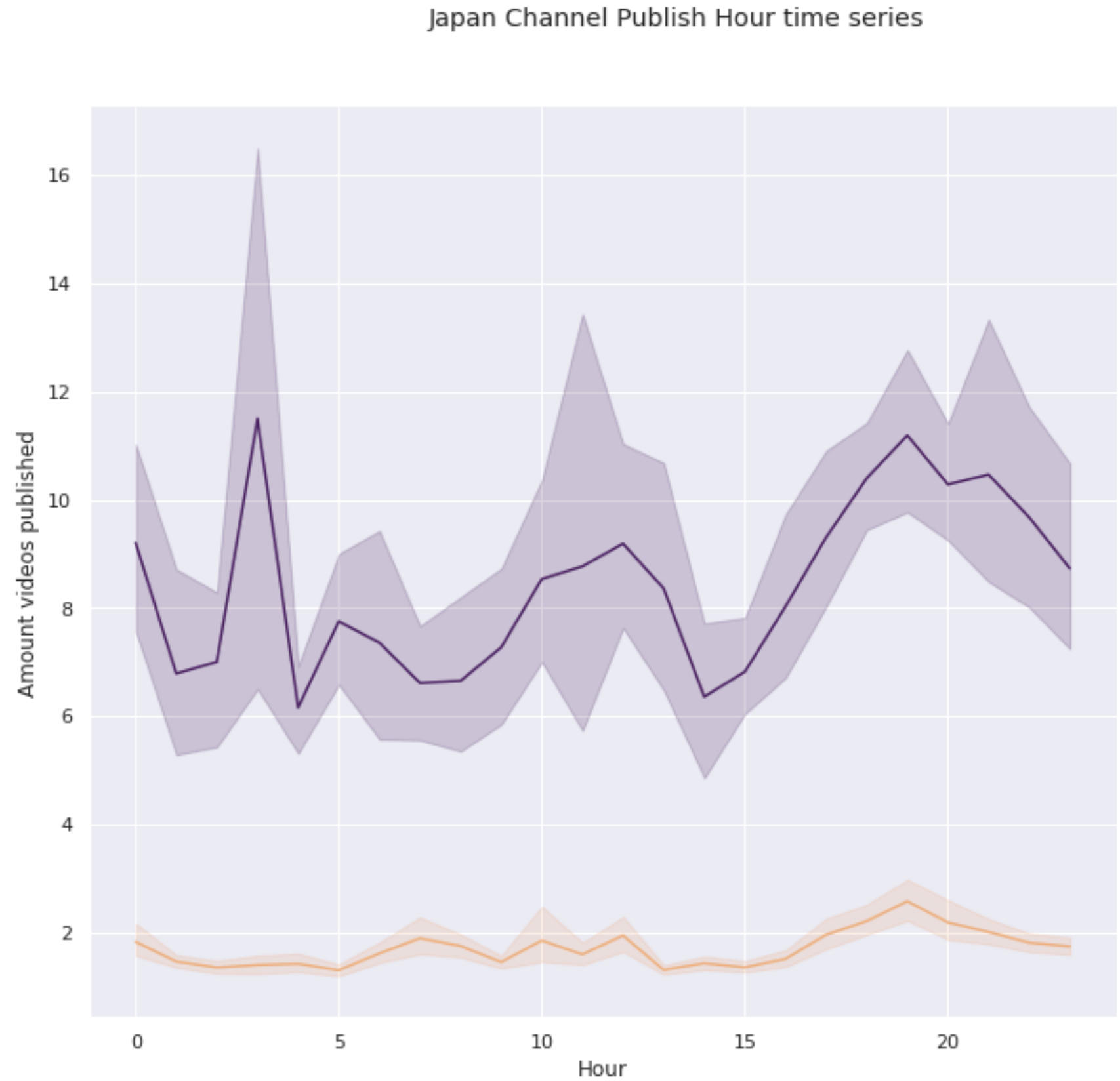


**~3-5 am**

**~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**

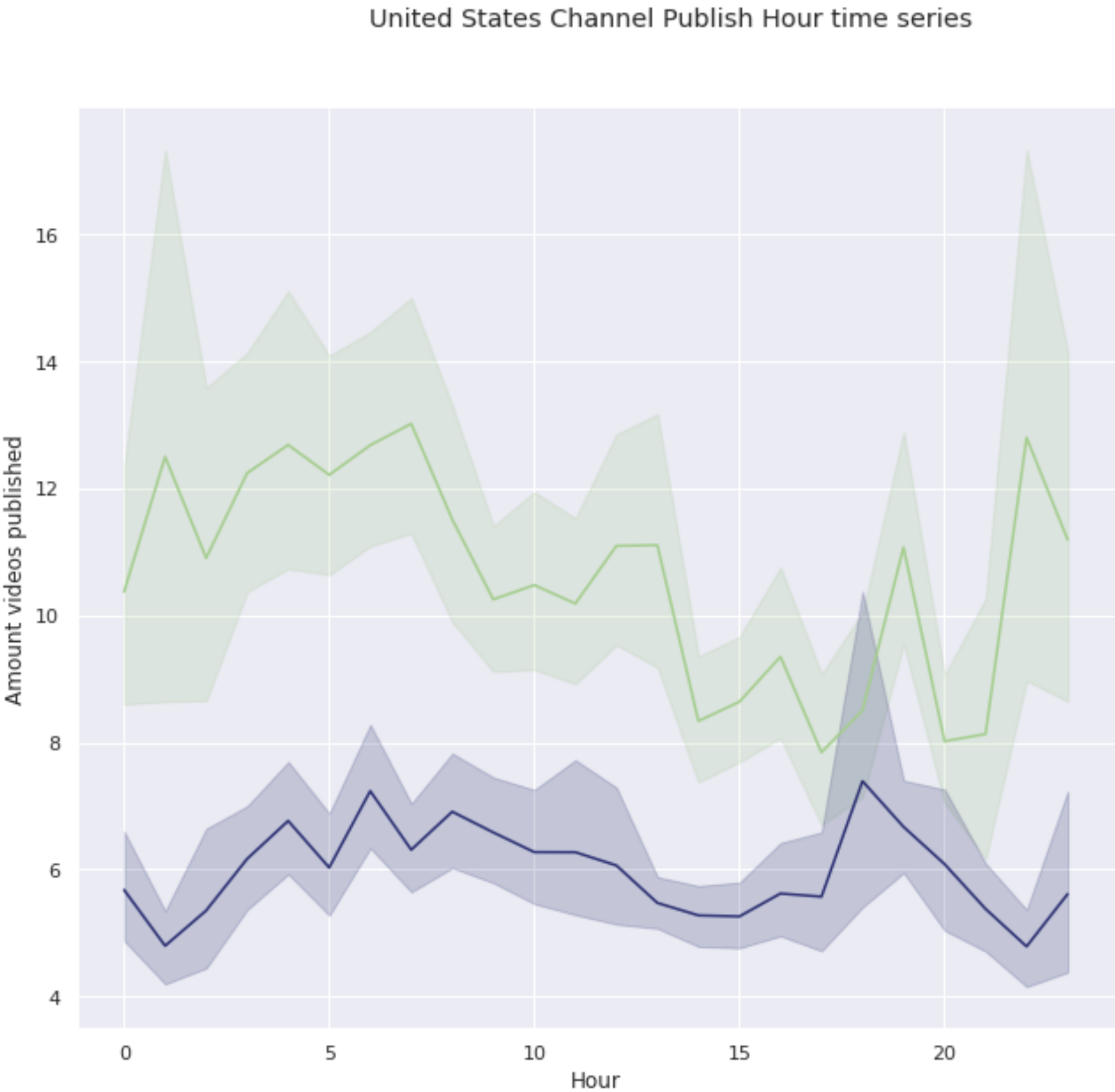


**More videos in 2018**



**2018- Early morning  
and afternoon**

**2020-Early morning and  
afternoon**





# Channel Publish Day Series for US and Japan

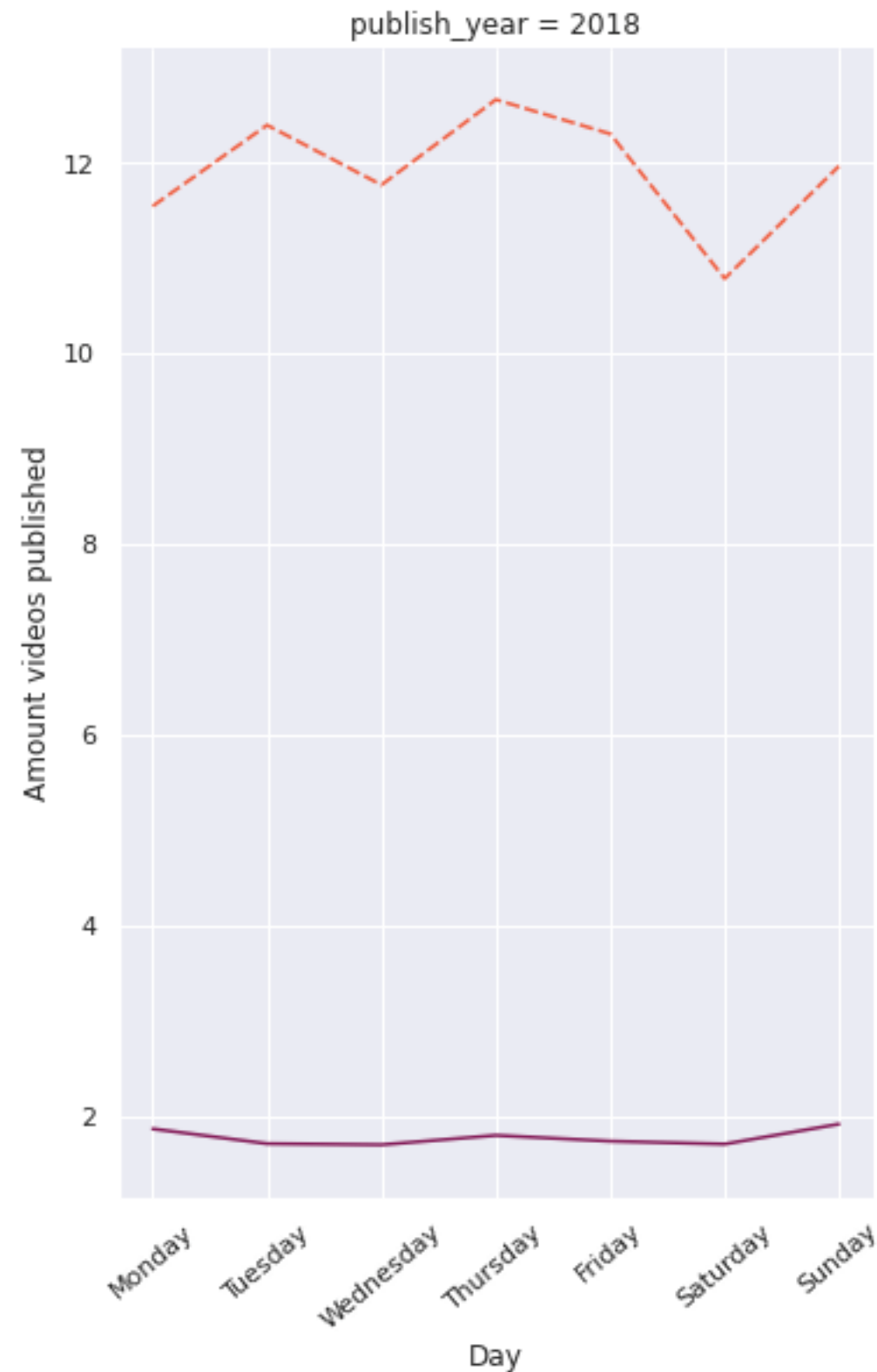
Channel Publish Weekday series

**2018**

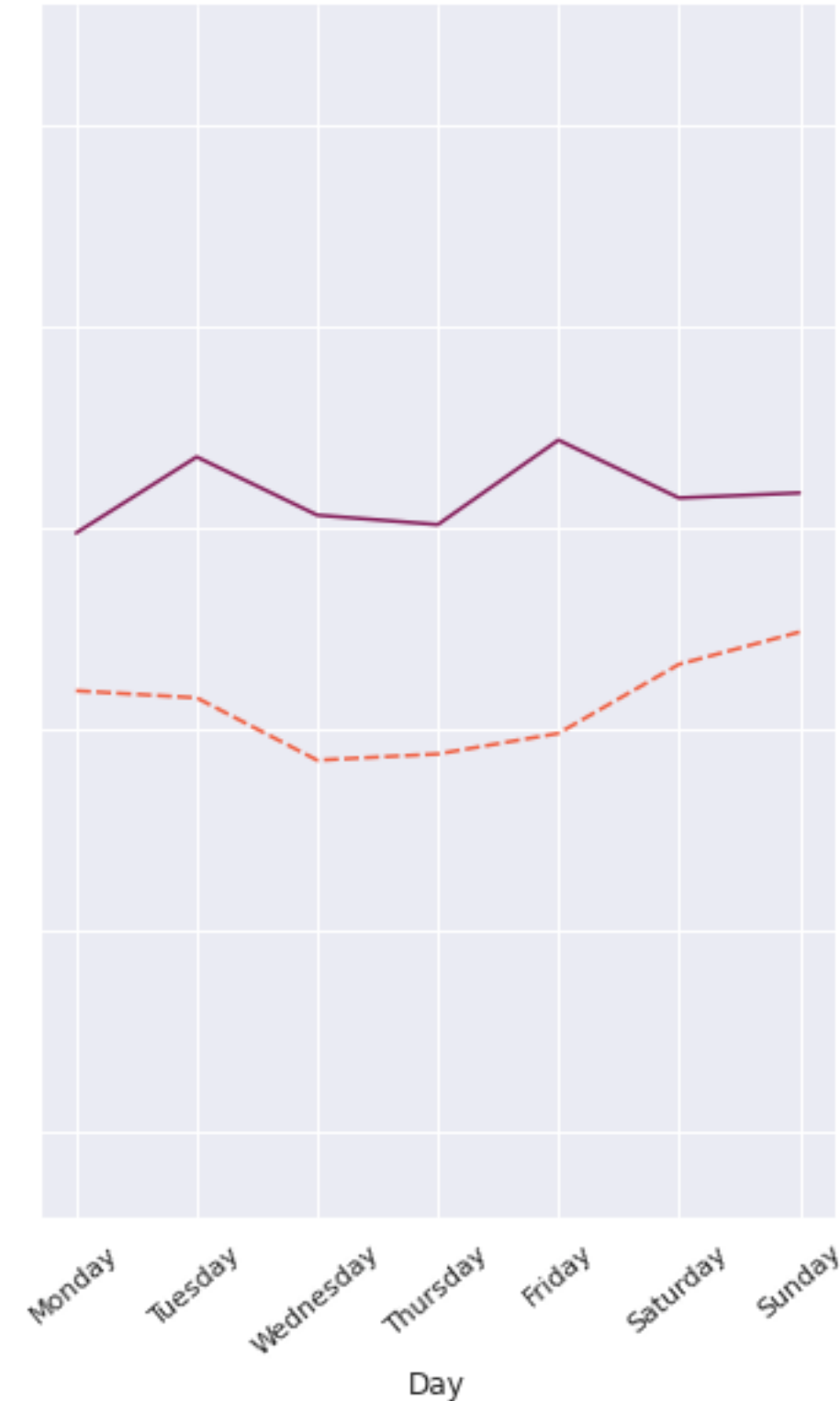


**US - Preferred to publish in weekdays**

**Japan - No much difference when compared to US**



publish\_year = 2020



**2020**



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

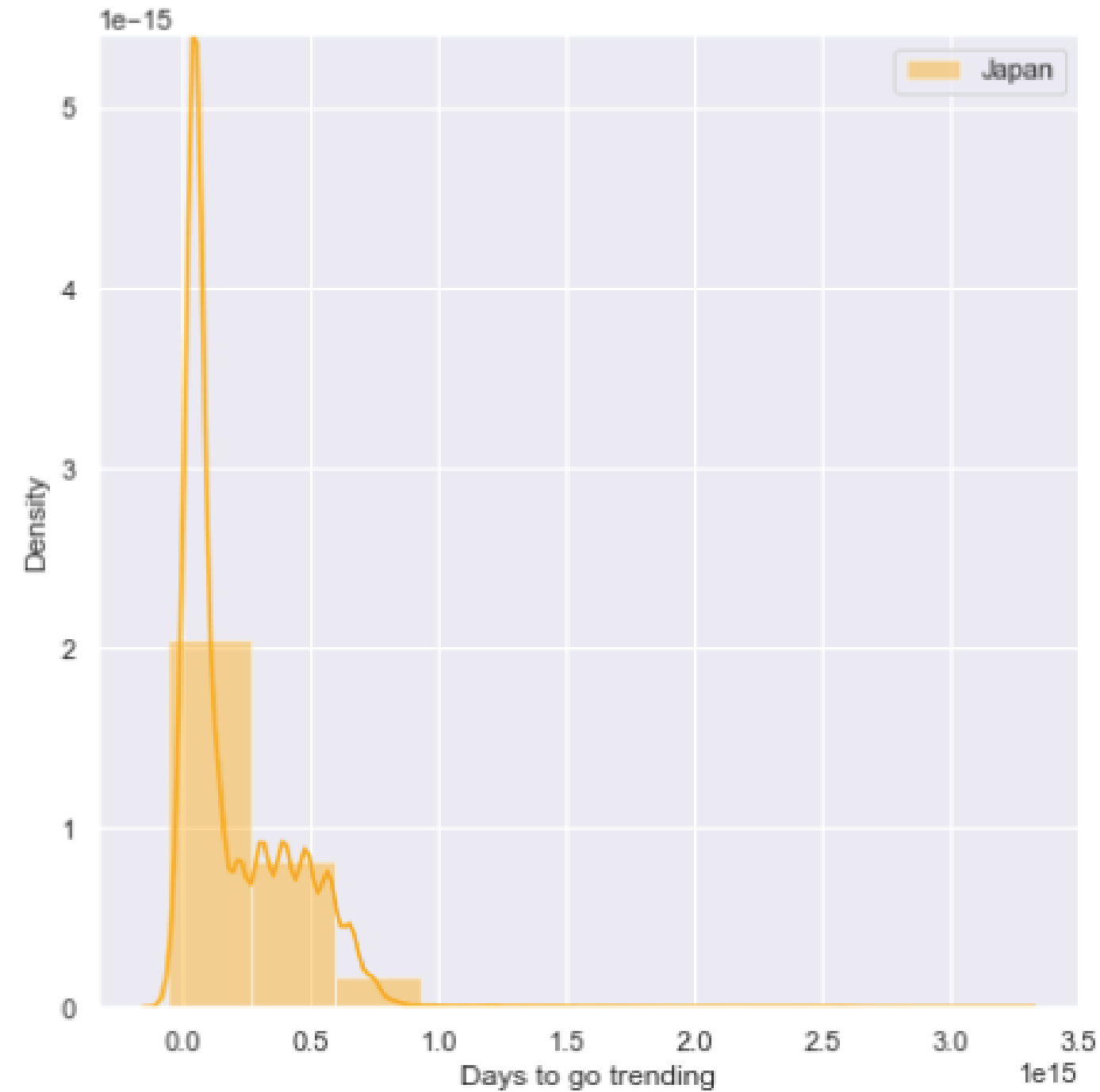
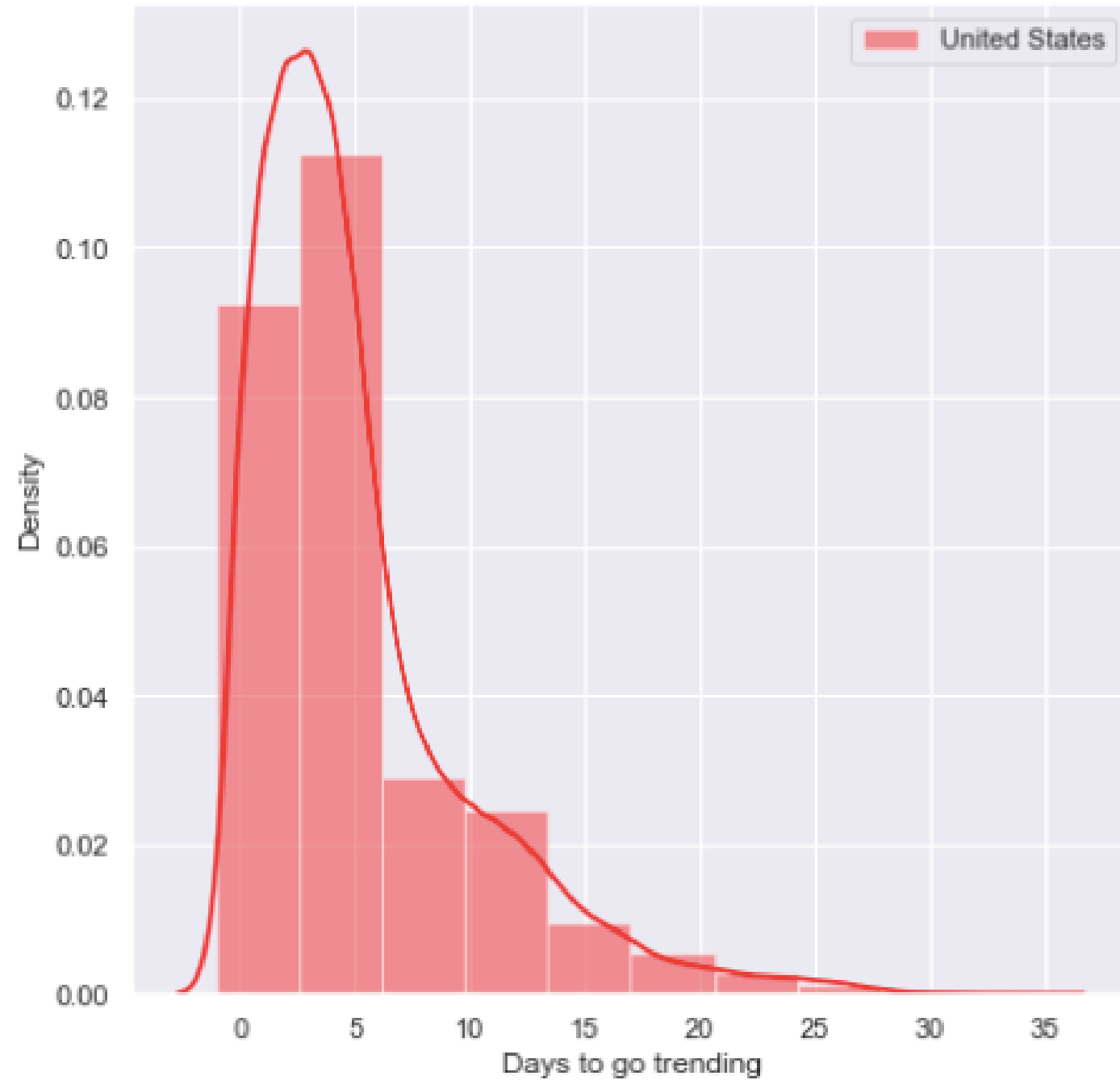
**Japan - Preference publishing in weekends (Since Thursday)**





# 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**

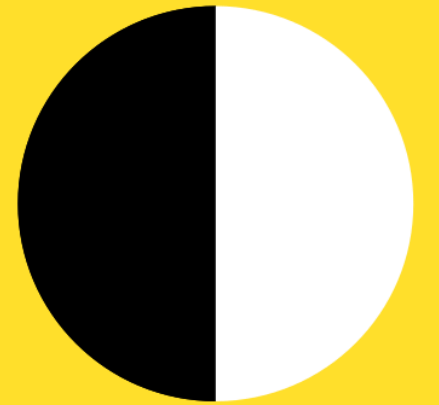
Comments per  
100 viewing

**2~3**

Days for a published  
video go trending

**4**

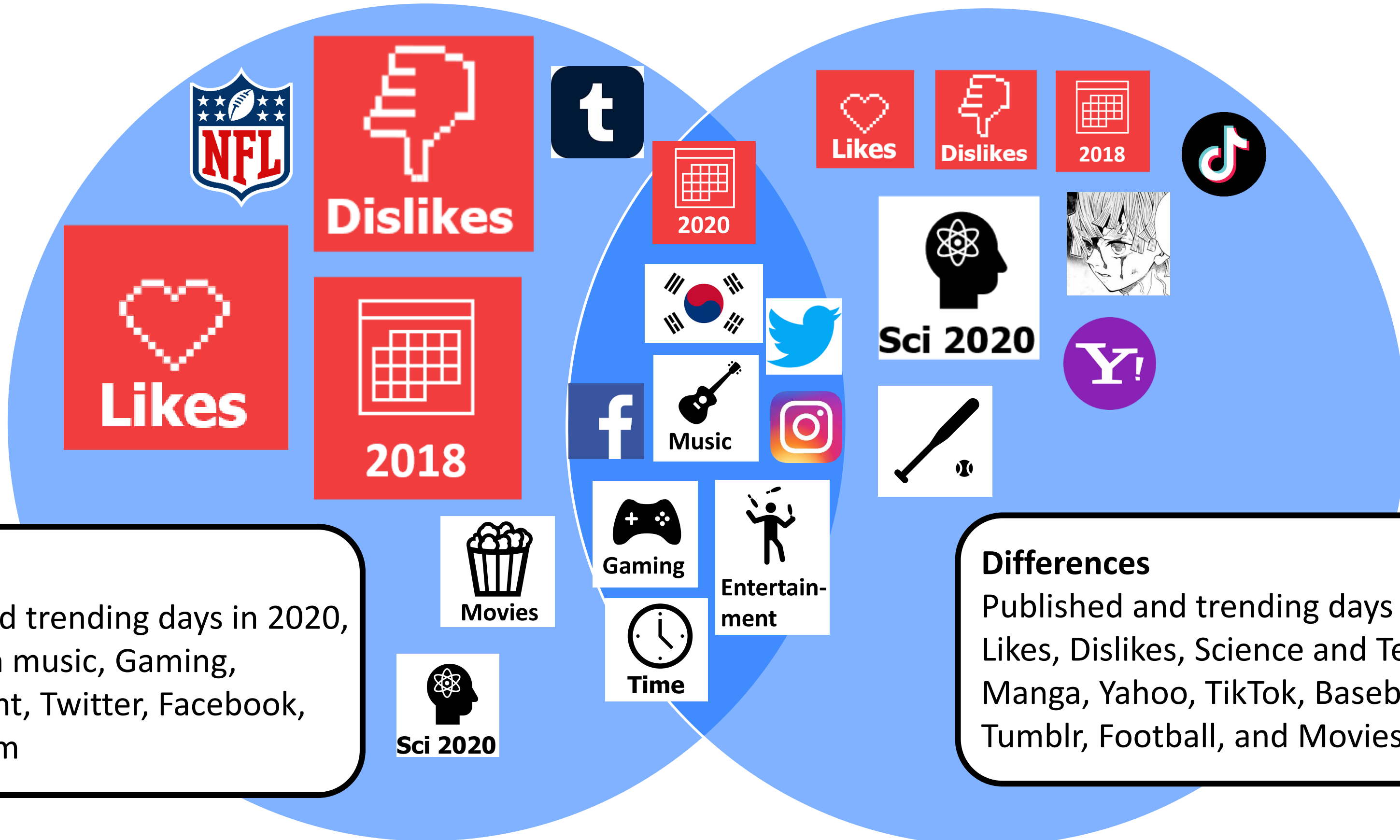
Likes per 100  
viewing



# Similarities and Difference

U.S.A

Japan



## Similarities

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

## Differences

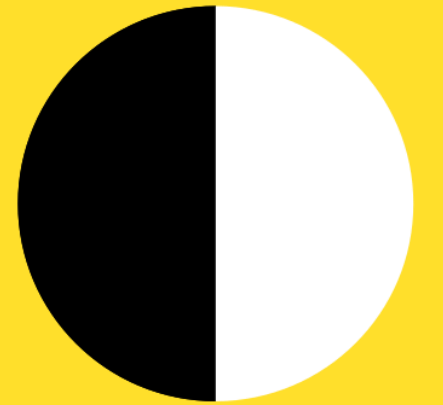
Published and trending days in 2018, Likes, Dislikes, Science and Tech, Manga, Yahoo, TikTok, Baseball, Tumblr, Football, and Movies



# Thank you!

Team 6A

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





# **YouT ube Trend ing Pred ictive Model**

