K-pop Phenomenon On YouTube

US YouTube Trending Videos Data Analysis and Storytelling

DAMG6105 Final Project - Team 6

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Intro

K-pop, which stands for *popular music originating in South Korea*, has no doubt become a global phenomenon featuring idol groups and fandom culture.
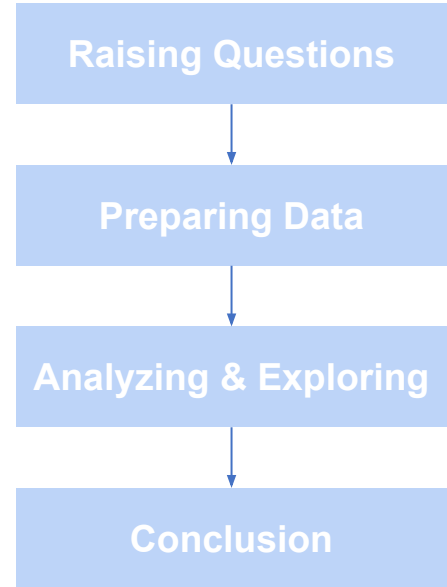
In the past few years, big K-pop entertainment companies have made lots of attempts to break into the US market. Have they succeeded? How does K-pop perform in the US?

This report will examine K-pop videos' performance on the YouTube Trending Page. The focus will be on K-pop-related descriptive, correlational and distributive analysis.

Raw Data Source:
https://www.kaggle.com/rsrishav/youtube-trending-video-dataset

Teamwork Process

Raising Questions

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Preparing Data

↓

Analyzing & Exploring

↓

Conclusion

Problems

- **Are K-pop videos the all-rounder top-ranker?**
  - Which videos rank top according to the number of *views, likes, comments* and *times of appearance* on the trending page?
  - What are the *correlations* between these rankings?

- **Are K-pop related channels also popular in the US region?**
  - Which *channels* have a large number of trending videos?
  - Select a K-pop channel to analyze *the time* it takes for its videos to be posted to the Youtube trending.

- **Are K-pop released dates and popularity related to the months？**
  - Which *month* has the most videos *in all category* channel, *in only music* channel, and *in a certain K-pop group* channel?
  - Does every video in one month by one group be *popular as others*? How to *measure the popularity* of a video?

Analysis

1. Are K-pop videos the all-rounder top-ranker?

(1) Top 5 **Most-viewed** Trending Videos

	video_title	channel_title	view_count
0	BTS (방탄소년단) 'Butter' Official MV	HYBE LABELS	264407389
1	BTS (방탄소년단) 'Dynamite' Official MV	Big Hit Labels	232649205
2	BLACKPINK - 'Ice Cream (with Selena Gomez)' M/V	BLACKPINK	184778248
3	BTS (방탄소년단) 'Life Goes On' Official MV	Big Hit Labels	150622781
4	BLACKPINK – 'Lovesick Girls' M/V	BLACKPINK	140685439

(2) Top 5 **Most-liked** Trending Videos

	video_title	channel_title	likes
0	BTS (방탄소년단) 'Butter' Official MV	HYBE LABELS	16021534
1	BTS (방탄소년단) 'Dynamite' Official MV	Big Hit Labels	15735533
2	BLACKPINK - 'Ice Cream (with Selena Gomez)' M/V	BLACKPINK	11795670
3	BTS (방탄소년단) 'Life Goes On' Official MV	Big Hit Labels	11405030
4	BLACKPINK – 'Lovesick Girls' M/V	BLACKPINK	9217876

(3) Top 5 **Most-commented** Trending Videos

video_title	channel_title	comment_count
BTS (방탄소년단) 'Butter' Official MV	HYBE LABELS	6738537
BTS (방탄소년단) 'Dynamite' Official MV	Big Hit Labels	6065230
BTS (방탄소년단) 'Life Goes On' Official MV	Big Hit Labels	4160903
Shooter Kahlon	Sidhu Moose Wala	Hunny PK Films	Gold Media	5911 Records	5911 Records	3431431
EXO 엑소 'Don't fight the feeling' MV	SMTOWN	2857602

(4) Top 5 **Most-frequently-trending** Trending Videos

video_title	channel_title	trending_times
ogan Paul: Fight goes the distance [Highlights, recap]	CBS Sports HQ	CBS Sports HQ	35
Israeli Iron Dome filmed intercepting rockets from Gaza	The Telegraph	34
eries win, end Australia's Gabba streak	Vodafone Test Series 2020-21	cricket.com.au	34
Justin Bieber - Holy ft. Chance The Rapper	JustinBieberVEVO	27
ginal Song Makes Simon Cowell Emotional - America's Got Talent 2021	America's Got Talent	24

From four rankings above, we could clearly see that:

- K-pop videos **truly top the rankings** of *views, likes, and comments*. For example, "Butter", "Dynamite" and "Life Goes On" from BTS are all on the top 5 lists.
- However, the ranking of *trending times* is very different from the other three. **There appears to be none** K-pop videos on the top 5 list.
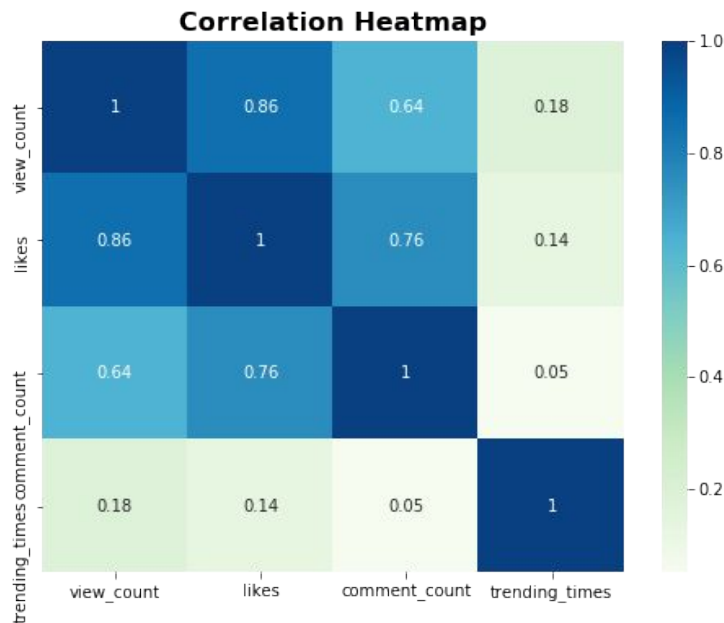
Here comes the question:

Why is the frequency ranking so different from other rankings?

What are the correlations between them?

From the correlation matrix, we could easily see that:

- The number of *views, likes and comments* are **strongly correlated** to each other.
- The number of *trending times* shows **very weak correlations** to other three variables.

Thus, it makes sense that the trending time ranking is totally different from other three rankings.

Correlation Heatmap

	view_count	likes	comment_count	trending_times
view_count	1	0.86	0.64	0.18
likes	0.86	1	0.76	0.14
comment_count	0.64	0.76	1	0.05
trending_times	0.18	0.14	0.05	1

Analysis

Sorting the Youtube channels according to the number of popular videos.

From the form, we could easily see that:

- *SMTOWN* is the only one about K-pop in the top 20 channels.

	Channel_title	Total_videos
0	NBA	492
1	NFL	410
2	MrBeast Gaming	310
3	SSSniperWolf	301
4	ESPN	272
5	MrBeast	268
6	Saturday Night Live	247
7	Dude Perfect	227
8	Champions League on CBS Sports	215
9	SpaceX	209
10	Fortnite	195
11	The Game Theorists	183
12	NBC Sports	179
13	beIN SPORTS USA	178
14	SMTOWN	166
15	Nintendo	162
16	Marvel Entertainment	156
17	James Charles	155
18	The Food Theorists	154
19	The Try Guys	154

Analysis

Select a K-pop channel to analyze *the time* it takes for its videos to be posted to the Youtube trending.
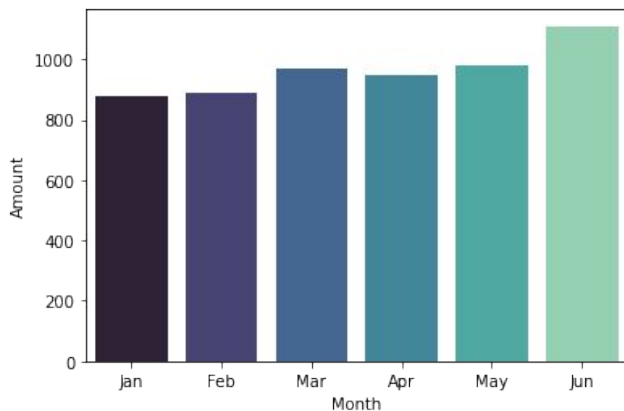
From the chart, we could easily see that:

• It takes less than five days for most of *BLACKPINK*'s videos to become trending on the YouTube.
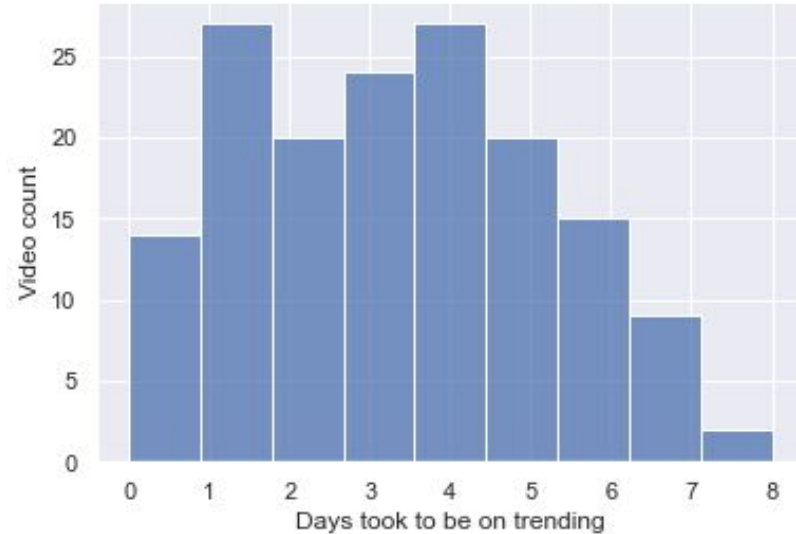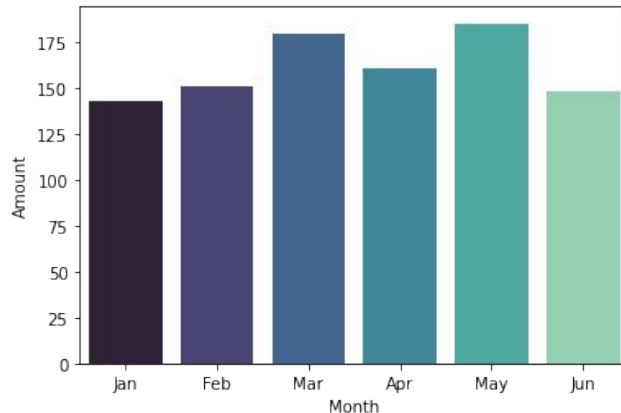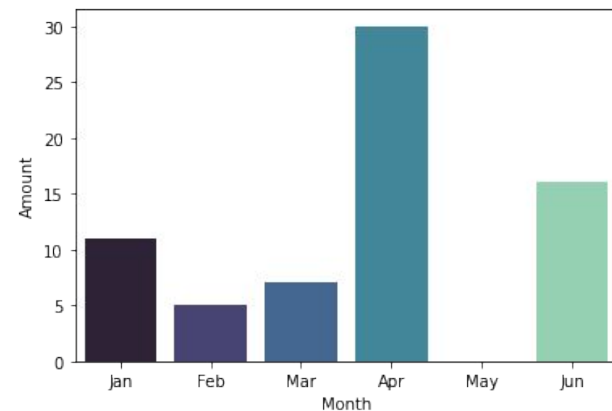
Analysis

- For all types of videos on YouTube, in the six months of the first half of 2021, the number of uploads **increased month by month,** with *the most being in June.*

- For YouTube's music videos uploaded in the first half of 2021, **May** had **the largest number** of releases, *followed by March.*

- Among the videos uploaded by blackpink in the six months of the first half of 2021, the number of videos in **April is the largest,** and *far exceeds* that of other months.

Analysis

- We *randomly select* a month (March) to analyze the videos **released by blackpink** in this month.

- We dsign a parameter called ***HeatIndex*** which measures the popularity of **each video** by calculating *view_count, likes, dislikes, and comment_count*.

- Then pick one month the see the ***HeatIndex of each video*** of the month by BLACKPINK to find the *popularity diffrences* in one month.
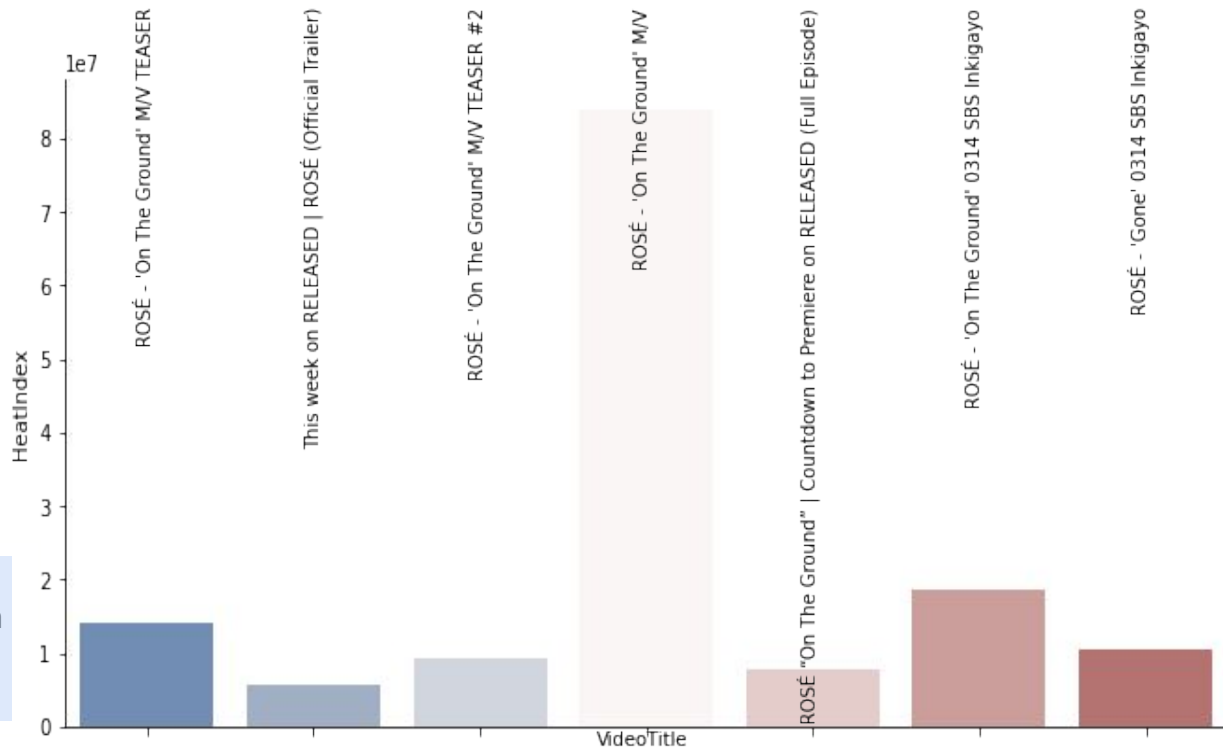
Conclusion

- **K-pop videos are top-rankers, but not on all levels.**

  - They **top the rankings** of the count of *views, likes and comments*; however, they are **not outstanding** in the ranking of *trending frequency*.

  - The variables of *views, likes and comments* are **strongly correlated**, while the *trending frequency* has a **very weak correlation** with other three indicators.

- **Only a small percentage of K-pop related channels in the U.S. region remain popular.**

  - *A small number of K-pop channels* such as: SMTOWN and BLACKPINK are popular in the U.S. region.

  - The *polarization is serious*, a small number of kpop channels are very popular, most of the videos can be on trending within four days, and other kpop channels are unattended.

- **K-pop videos uploaded amount is partly related to the month, while the HeatIndex is not.**

  - **Youtuber uploaders** like to post videos *in June*. **Music uploaders** prefer to post videos *in May*, and **BLACKPINK** prefer to post videos *in April* in terms of data for the first half 2021.

  - The *Heat Index* of videos uploaded by the same **uploader and mont**h is *quite different*. The gap between *the most* and *the least popular* can reach about **10 times**.

Reference:

https://en.wikipedia.org/wiki/K-pop

https://pixabay.com/illustrations/bts-kpop-boy-band-minimalist-6687939/

https://www.kaggle.com/yogidsba/pandas-tutorial-and-cheat-sheet

Thanks for you time!