The Relationship Between YouTube Thumbnail Characteristics and View Counts

By: Landon Bragg and Ben Kim

Overview of thumbnail importance in media

- Thumbnails are the first impression of video content, acting as the gateway for viewer engagement.

- A well-designed thumbnail can significantly influence click-through rates and overall video performance.

- In highly competitive platforms like YouTube, visual appeal is a key driver of audience behavior.

- Li studied how aspects of images impact human decision making and found that brightness had a significant impact on their decisions.

- Optimization of this visual appeal is important to YouTubers who want more clicks on their videos which was studied by Poudel et. Al, who found that thumbnails do have an impact on user engagement.

Null Hypotheses

1. There is no relationship between the brightness level of a YouTube thumbnail and video view counts.

2. There is no relationship between the saturation level of a YouTube thumbnail and video view counts.

3. The distribution of view counts does not differ across the different facial expressions in YouTube thumbnails.

4. There is no relationship between the number of words in a YouTube thumbnail and video view counts.

Data Collection & Methods

- Wrote a Python Script that fetches thumbnails within our specified requirements (10 videos per specified channel within the time range of 1-3 years old).

- Collected 2 channels per genre and had 6 genres so there could be diversity in our data, leading to a dataset with 120 rows of data.

- Used another script to collect data from the thumbnails and return values for view count, brightness, saturation, facial expression, and word count into an Excel file.

- Ranked the view count, brightness, and saturation values in each channel so bigger channels don't have a larger effect on our results.

- Used Spearman Correlation Test for brightness, saturation, and Word Count hypotheses and we used the Kruskal-Wallis Test for Facial Expression evaluation.

	Channel N	Video Address	Title	Views	Face in Th	Word Cou	Views Ranking	Brightness	Saturation	Genre	Brightness	Saturation	Date
22	CaseOh	n_mIO1P0g2g	Discord Roasted me.......Again (pt 2)	158000	Neutral	0	1	9	5	Gaming	41.07	42.02	4/25/2023
23	CaseOh	wyl8Esp9fPU	Best Bigman Park Build In 2k23???	220000	Neutral	0	2	6	4	Gaming	33.08	37.11	9/12/2022
24	CaseOh	ItFuDS6PWHU	Caseoh Rage Compilation #1 (!WARNING) [EXTREME LOUDNESS]	399000	Sad	0	3	2	7	Gaming	19.04	44.28	9/11/2023
25	CaseOh	M0qkF4Wp6gc	FALL GUYS (I am HIM!) 2 Night Streak	425000	Fear	0	4	5	9	Gaming	32.59	60.05	10/24/2023
26	CaseOh	YlCi2FcicMY	UNO: The Never Ending Game	428000	Fear	0	5	7	6	Gaming	36.7	42.55	6/9/2023
27	CaseOh	3OWPGJan5Q	DUCK SEASON (I'm A Demon)	934000	Sad	0	6	4	8	Gaming	27.62	51.04	7/16/2023
28	CaseOh	Xv6aiC5fFQc	CaseOh Goes to the Gym for the FIRST TIME [Gym or Jail?]	1366000	Neutral	3	7	10	2	Gaming	47.52	22.54	12/3/2023
29	CaseOh	FPphb-Z6GqU	Best Of CaseOh (FUNNY MOMENTS) #1	2842000	Happy	2	8	3	3	Gaming	21.4	35.04	9/30/2023
30	CaseOh	wDo3uoQfuK4	FEAR OF FATHOM: Carson House [Bout To Get Banned]	3525000	Neutral	0	9	1	10	Gaming	15.21	64.83	10/6/2023
31	CaseOh	PqK3_x1JqNM	I Opened My Own Supermarket...	6416000	Angry	3	10	8	1	Gaming	40.83	16.88	4/17/2023

Results

Variable	Test Used	p-value
Brightness	S. Correlation	0.504
Saturation	S. Correlation	0.240
Facial Expressions	Kruskal-Wallis	0.07
Word Count	S. Correlation	0.225

• We found no statistically significant results/p-values with our threshold of 0.05.

• Facial expression was close to being significant and as we see anger and surprise seem to have a negative impact on viewership according to our study.

Distribution of Views by Facial Expression in Thumbnails
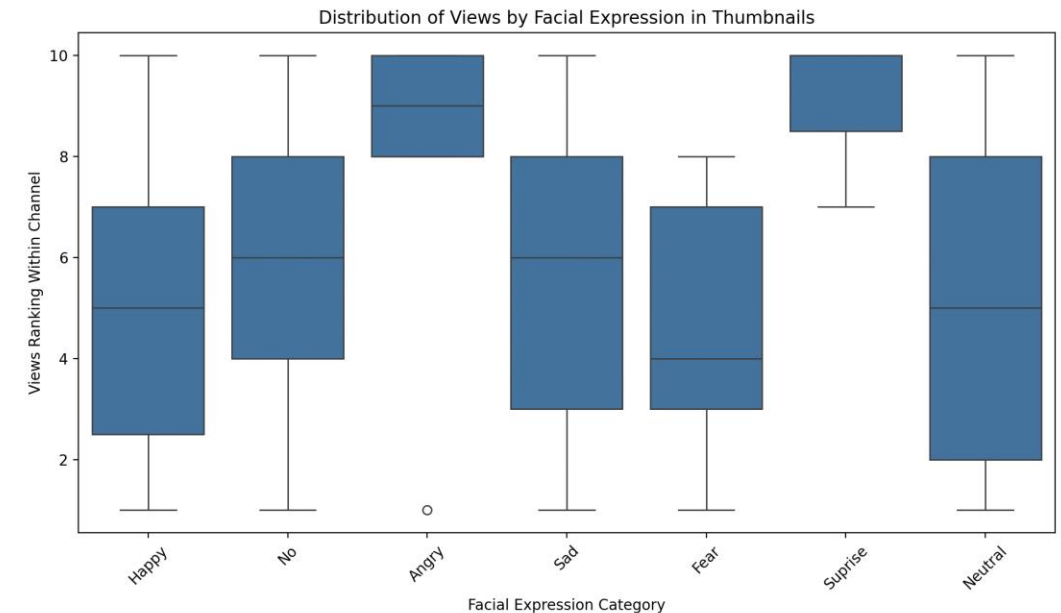
Discussion and Future Work

- None of the tested variables played a significant role in video view counts.

- We could find more variables that are part of thumbnails that might impact user decisions.

- The facial expression feature had a near-significant result.
  - o Increase sample size and additional factors

  - o If we were to find statistically significant results, YouTubers could use our findings to optimize their thumbnails for more clicks and consequently more revenue.

  - o Businesses could also employ these methods to attract more business.

Conclusion

- The variables we researched have little to no relationship with video view counts

- Our findings suggest that additional research is needed to better understand how different variables contribute of design elements impact viewership.