



# YouTube

## Song Video Analysis

*By*

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# Problem Statement:

- This project aims to conduct a comprehensive analysis of YouTube songs data using Power BI. The dataset contains key attributes such as video ID, channel title, title, description, tags, published date, view count, like count, favorite count, comment count, video duration, video definition, and caption details.
- The goal is to utilize Power BI to create insightful visualizations and reports that provide a deeper understanding of YouTube songs' performance, popularity, and user engagement. The analysis aims to uncover trends, preferences, and patterns in the data to aid content creators and stakeholders in optimizing their YouTube song content.

# Tool Used

- **Microsoft Power BI**

Which is a powerful tool that helps businesses gather data from various sources, analyze it and create visually appealing reports and dashboard.





# Dataset Description:

- 1. video\_id: Unique identifier for each YouTube video.
- 2. channelTitle: Title of the YouTube channel publishing the song.
- 3. title: Title of the YouTube song video.
- 4. description: Description provided for the YouTube song video.
- 5. tags: Tags associated with the YouTube song video.
- 6. publishedAt: Date and time when the YouTube song video was published.
- 7. viewCount: Number of views received by the YouTube song video.
- 8. likeCount: Number of likes received by the YouTube song video.
- 9. favoriteCount: Number of times the YouTube song video has been marked as a favorite.
- 10. commentCount: Number of comments posted on the YouTube song video.
- 11. duration: Duration of the YouTube song video.
- 12. definition: Video definition or quality (e.g., HD, SD).
- 13. caption: Availability of captions for the YouTube song video.



# Project Objectives:

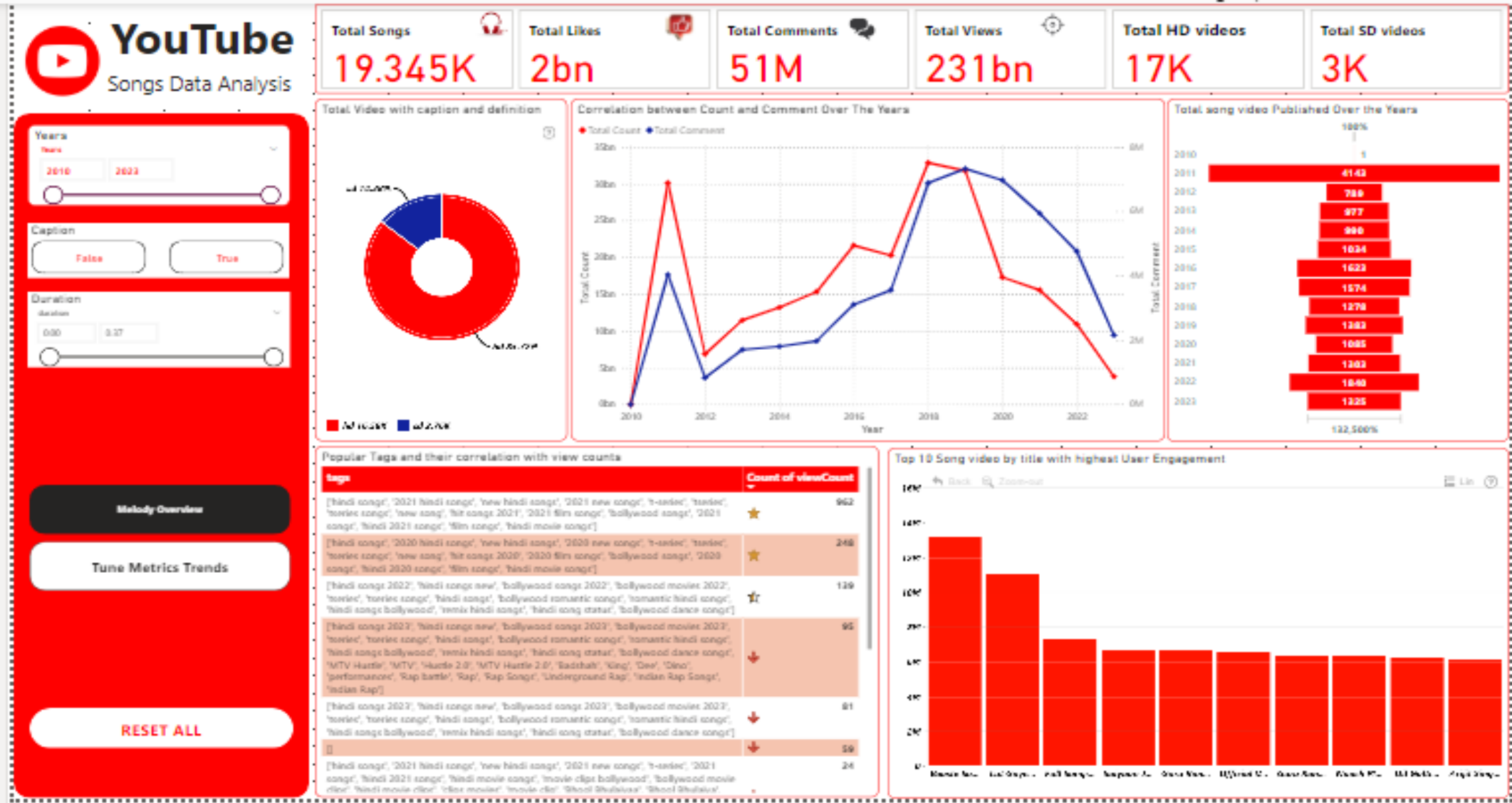
- Data Cleaning and Preparation
- Exploratory Data Analysis (EDA)
- Content and Channel Analysis
- Temporal Trends
- User Engagement Insight
- Recommendation



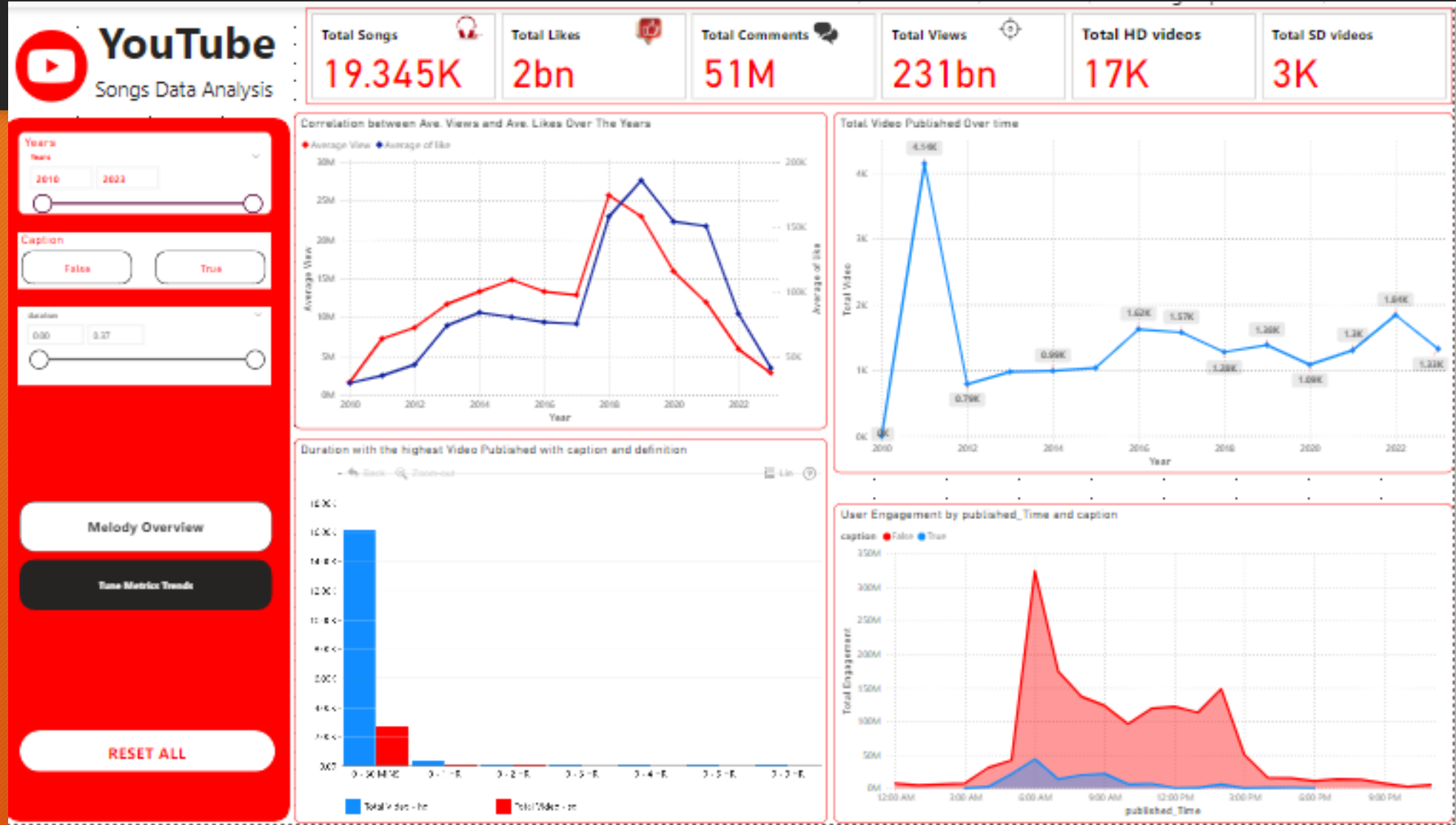


# DASHBOARD OVERVIEW

## Melody Overview



# DASHBOARD OVERVIEW



Tune Metrics  
Trends



# Data Cleaning and Preparation:

- **BI – POWER QUERY** was used to Clean and preprocess the dataset, handling missing values or outliers and Converting relevant columns to appropriate data types.

A <sub>C</sub> <sup>B</sup> description	duration	A <sub>C</sub> <sup>B</sup> tags
<div><div>Valid 99%</div><div>Error 0%</div><div>Empty &lt; 1%</div></div>	<div><div>Valid - %</div><div>Error 100%</div><div>Empty - %</div></div>	<div><div>Valid</div><div>Error</div><div>Empty</div></div>
Presenting the song "RAFTA RAFTA (Lo-Fi Mix)" by Dj Moody, Sung by #KK.	Error	['hindi songs 2023', 'hindi songs

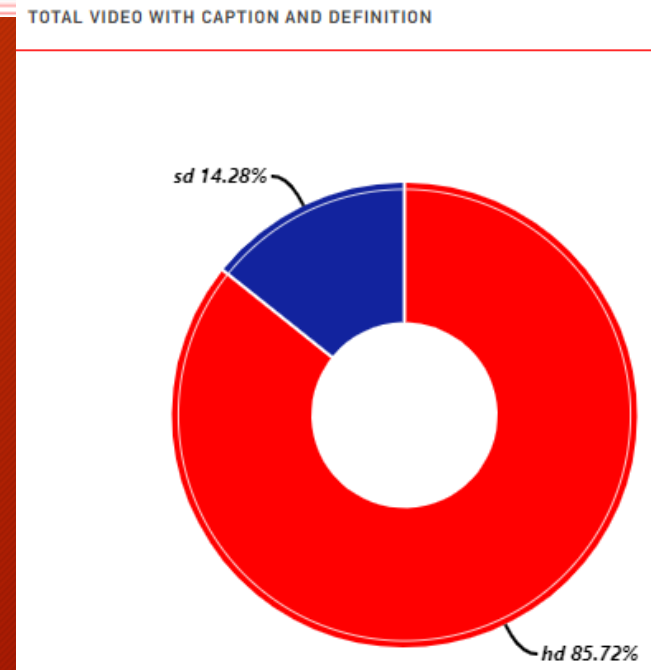
A <sub>C</sub> <sup>B</sup> description	duration	A <sub>C</sub> <sup>B</sup> tags	published_Date	published_Time	view
<div><div>Valid 100%</div><div>Error 0%</div><div>Empty 0%</div></div>	<div><div>Valid 100%</div><div>Error 0%</div><div>Empty 0%</div></div>	<div><div>Valid 100%</div><div>Error 0%</div><div>Empty 0%</div></div>	<div><div>Valid 100%</div><div>Error 0%</div><div>Empty 0%</div></div>	<div><div>Valid 100%</div><div>Error 0%</div><div>Empty 0%</div></div>	<div><div>Valid</div><div>Error</div><div>Empty</div></div>
Presenting the song "RAFTA ...	0.00:04:42	['hindi songs 2023', 'hindi son...	8/20/2023	1:30:08 PM	

# Exploratory Data Analysis (EDA)

EDA is a crucial first step in data analysis as it assist in the process of looking at the data before any assumptions or decisions are made. The Data provide information about YOUTUBE MUSIC VIDEOS exploring the patterns and distributions in view counts, like counts, and comments. With the following details :

 <b>YouTube</b> Songs Data Analysis	Total Songs	Total Likes	Total Comments	Total Views	Total HD videos	Total SD videos
	19.345K	2bn	51M	231bn	17K	3K

- Total Rows: 19,345
- Total Columns: 13
- Total ChannelTitle : 1 (T-Series)
- Total Video Definition: 2 (HD & SD)
- Column with Unique Values : “Video\_id column with 19,345 unique values”
- Total Likes: 2 Billion
- Total Comment: 51 Million
- Total Views: 231 Billion





# Content and Channel Analysis

Identifying and Analyzing popular tags and their correlation with view counts.

The analyses shows the tags with the highest views and their corresponding total user engagement over time

POPULAR TAGS AND THEIR CORRELATION WITH VIEW COUNTS		
tags	Total View	Total Engagement
['hindi songs', '2021 hindi songs', 'new hindi songs', '2021 new songs', 't-series', 'tseries', 'tseries songs', 'new song', 'hit songs 2021', '2021 film songs', 'bollywood songs', '2021 songs', 'hindi 2021 songs', 'film songs', 'hindi movie songs']	962	86581043
['hindi songs', '2020 hindi songs', 'new hindi songs', '2020 new songs', 't-series', 'tseries', 'tseries songs', 'new song', 'hit songs 2020', '2020 film songs', 'bollywood songs', '2020 songs', 'hindi 2020 songs', 'film songs', 'hindi movie songs']	248	6542596
['hindi songs 2022', 'hindi songs new', 'bollywood songs 2022', 'bollywood movies 2022', 'tseries', 'tseries songs', 'hindi songs', 'bollywood romantic songs', 'romantic hindi songs', 'hindi songs bollywood', 'remix hindi songs', 'hindi song status', 'bollywood dance songs']	139	5261624
['hindi songs 2023', 'hindi songs new', 'bollywood songs 2023', 'bollywood movies 2023', 'tseries', 'tseries songs', 'hindi songs', 'bollywood romantic songs', 'romantic hindi songs', 'hindi songs bollywood', 'remix hindi songs', 'hindi song status', 'bollywood dance songs', 'MTV Hustle', 'MTV', 'Hustle 2.0', 'MTV Hustle 2.0', 'Badshah', 'King', 'Dee', 'Dino', 'performances', 'Rap battle', 'Rap', 'Rap Songs', 'Underground Rap', 'Indian Rap Songs', 'Indian Rap']	95	183629
['hindi songs 2023', 'hindi songs new', 'bollywood songs 2023', 'bollywood movies 2023', 'tseries', 'tseries songs', 'hindi songs', 'bollywood romantic songs', 'romantic hindi songs', 'hindi songs bollywood', 'remix hindi songs', 'hindi song status', 'bollywood dance songs']	81	3626674
	59	6819759

# Temporal Trends

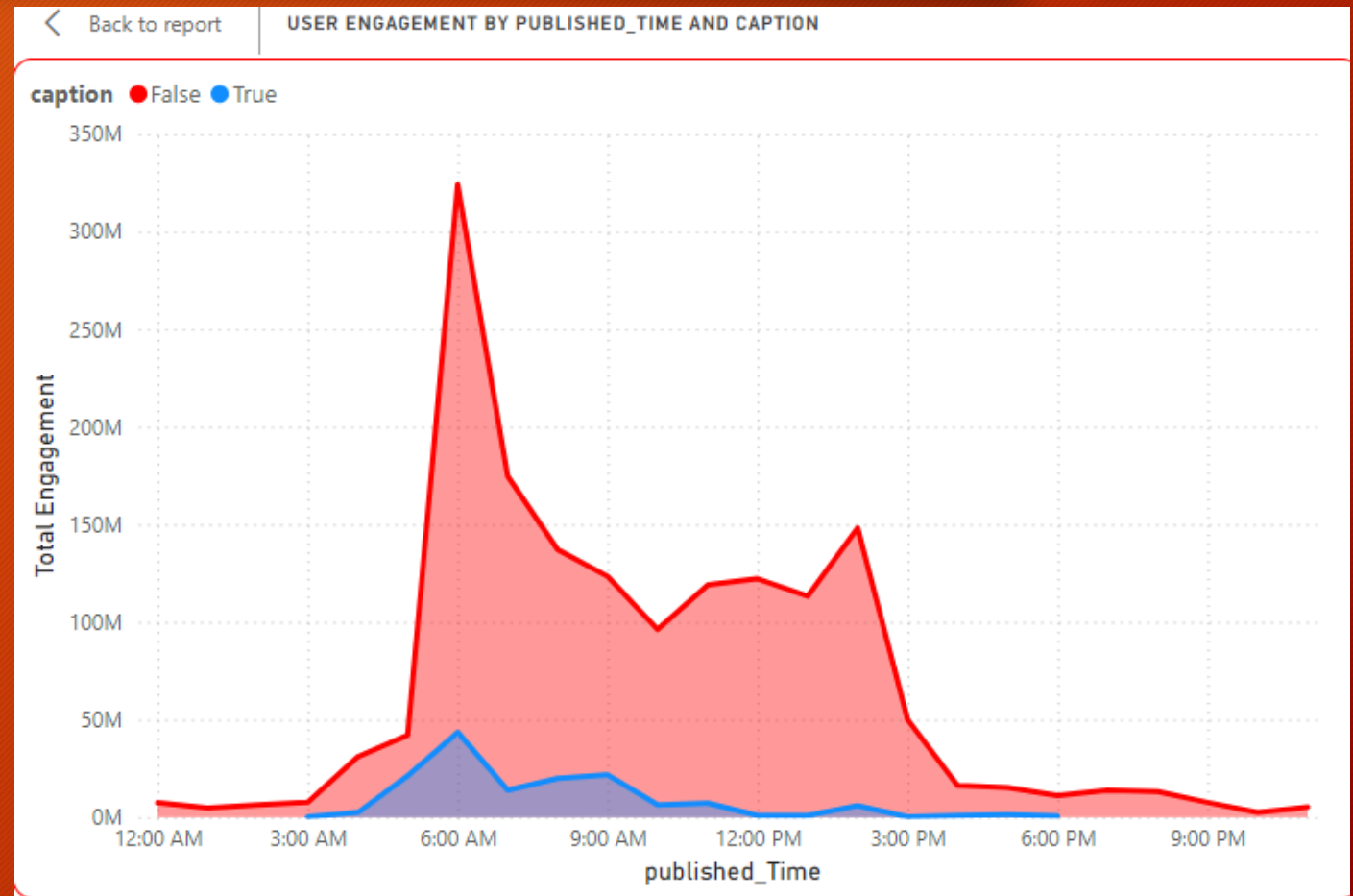


- The insight also explore deeper on how YouTube song video metrics vary over time in terms of the total song video published every year.
- However, result shows that year 2011 has the highest number of video published with 4,143 videos while year 2020 incurred the lowest number of video published with 1 video.

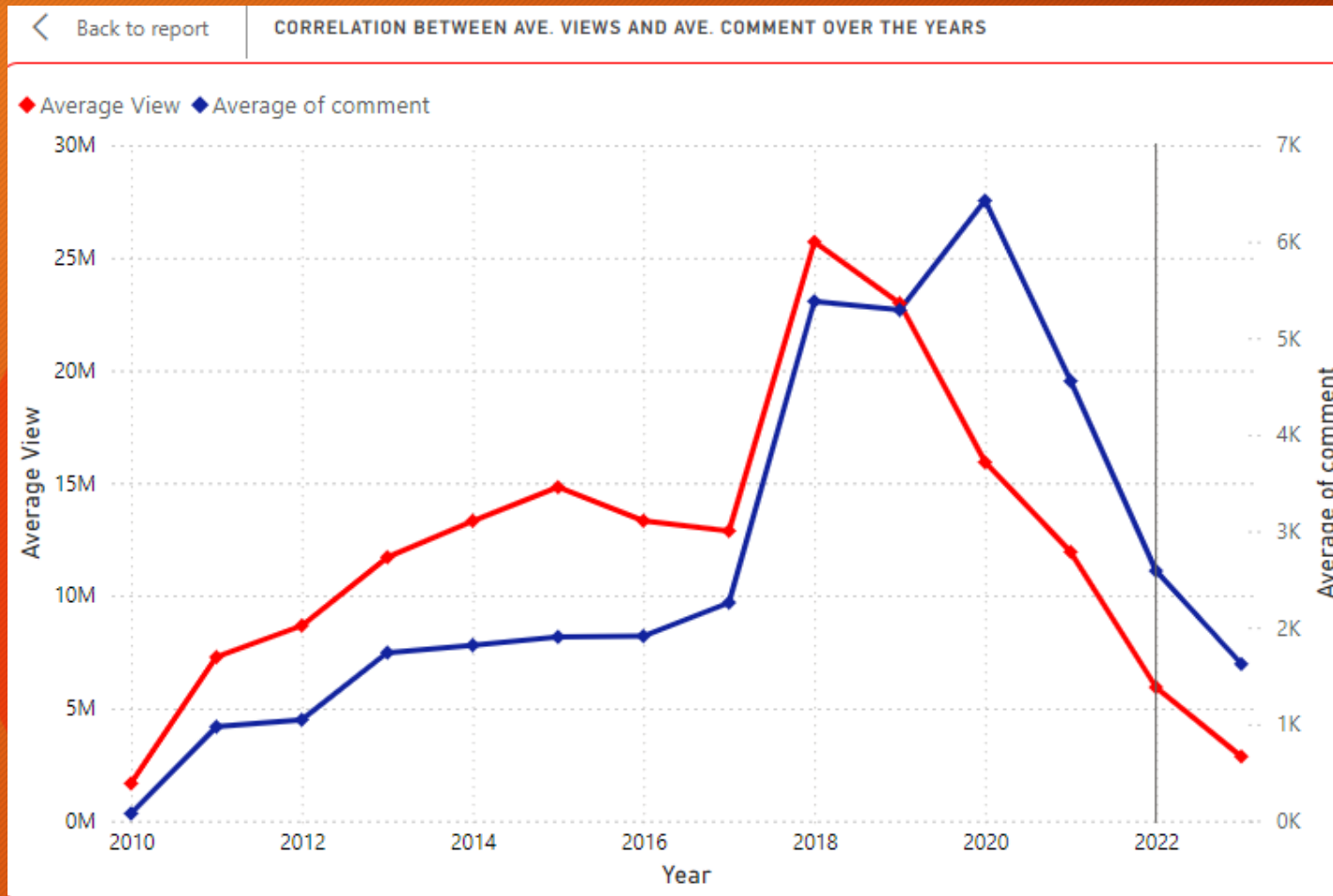


# Statistical Analyses on User Engagement

- Identifying the peak video publishing time and their impact on user engagement including video with caption or not.
- Analyses shows that users watching video with no caption are mostly active between 6:00am - 3:00pm with the average of 14million users.
- While user watching video with caption are mostly active between 6:00am - 9:00am with the average of 12.3million users.



# User Engagement Insights

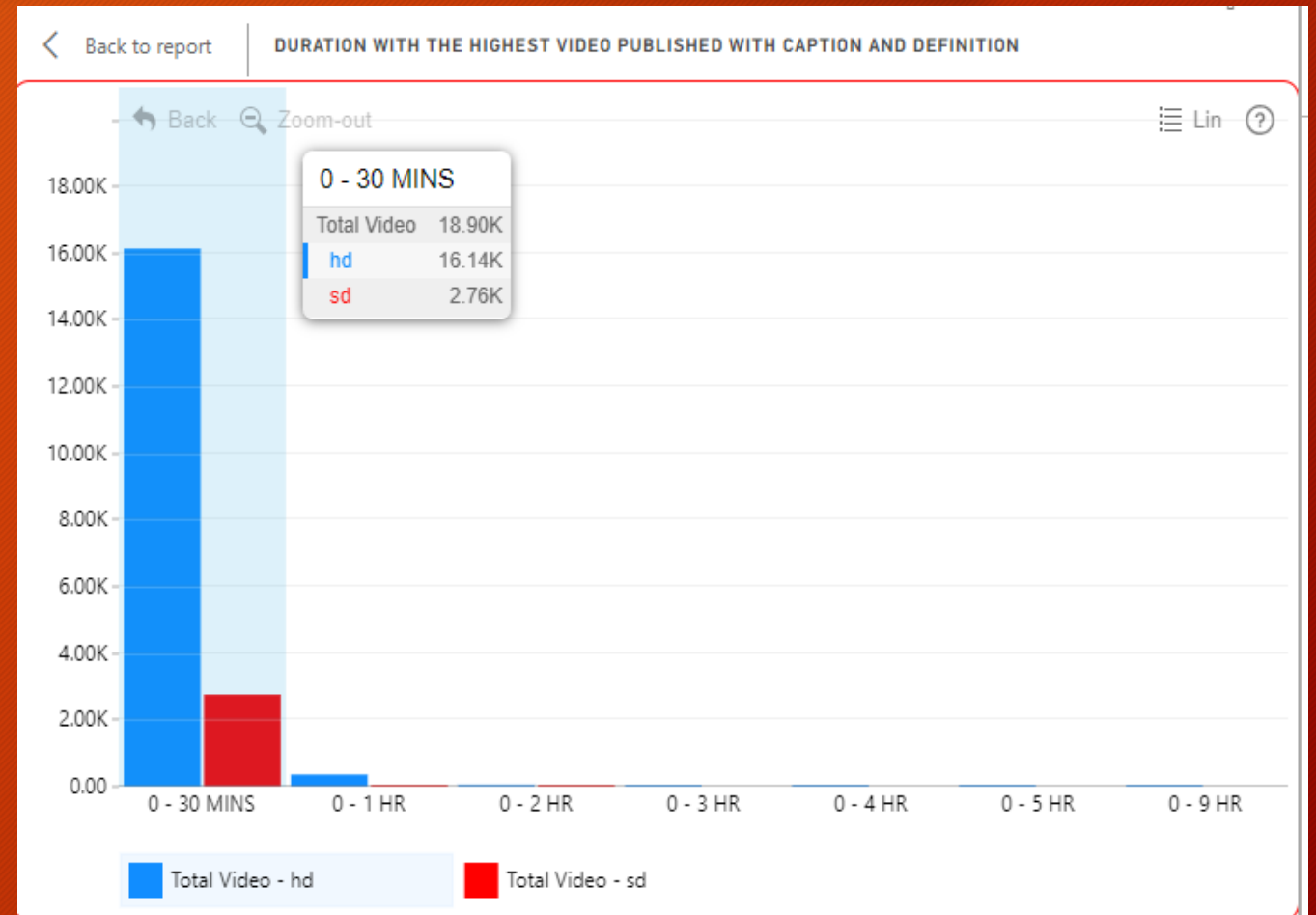


- The analyses investigate the relationships between the average views and average comments over the given years.
- Apparently year 2020 has the highest average of comment while year 2018 has the highest average of views.

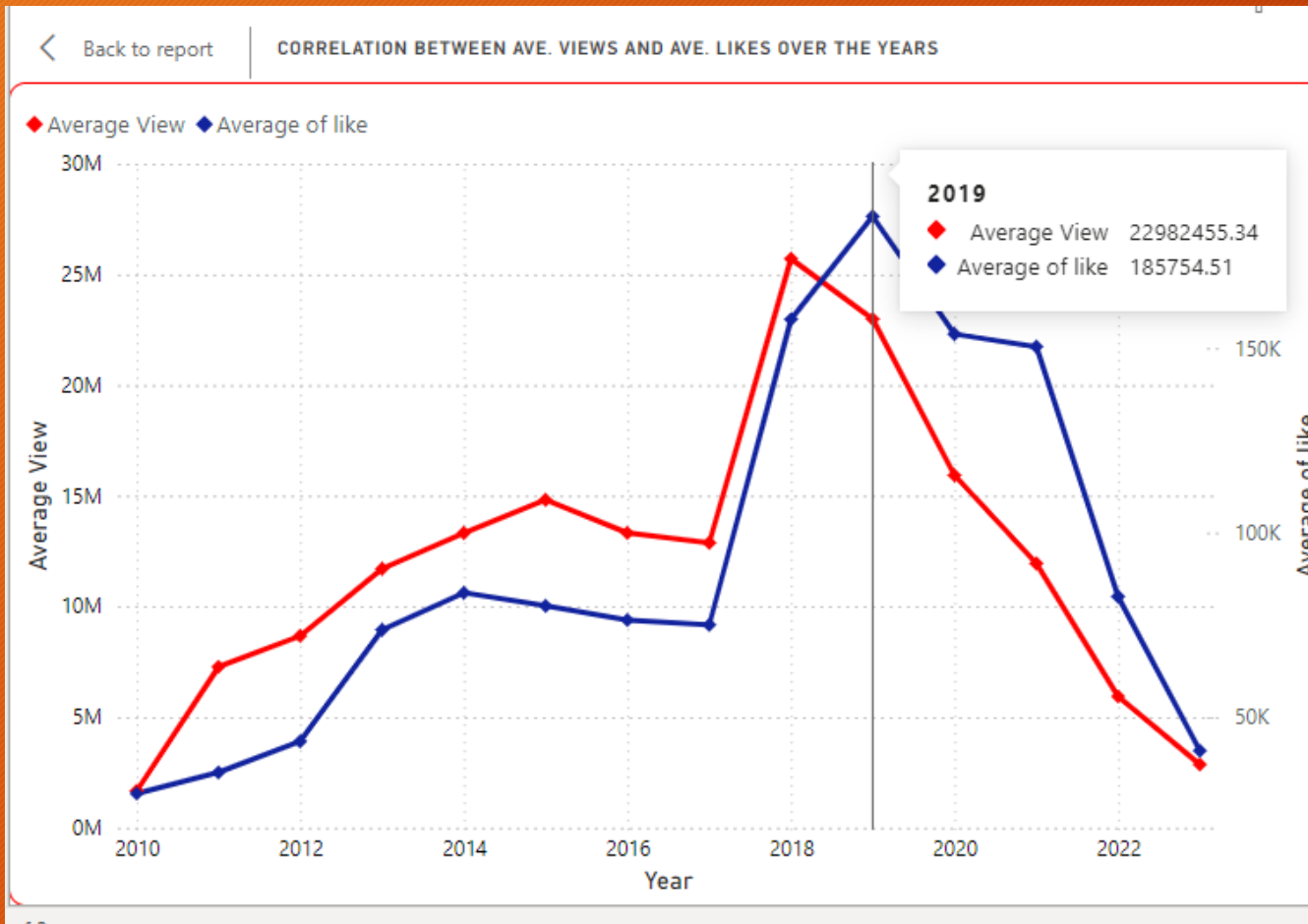


# Statistics on Video Duration & Video Quality by Content Creator

- Using the statistical method to explore the video duration and video quality by Contents Creator to ascertain video duration with the highest contents.
- Analyses show that 95% of video contents are mostly 0 - 30mins videos duration with HD video taking the lead



# Video Engagement Metrics



- The insight shows the relationships between the average views and average likes over the given years.
- However, year 2019 has the highest average of likes while year 2018 has the highest average of views.



# Recommendations

- Content creators are advised to use popular tags, attractive titles, clear descriptions and high quality thumbnails to improve discoverability and attract viewers.
- Encourage comments, likes and share also actively engage audience (users) to build a strong community.
- Content creator should publish video when the audience (users) is most active to maximize views and engagement.
- Regularly review YouTube Analytics to understand what works and refine your content strategy accordingly.
- Content creator should ensure good audio and video quality, create valuable contents, knowledgeable contents engaging the audience (users) .



# THANK YOU

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YouTube Song Video Analysis

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