

# Movies and Tv shows analysis

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## Movies and Tv Shows **Analysis**

- ★ Analysis boosts media appreciation
- ★ Visual media adapts to change
- ★ Analyse box office and popularity
- ★ Compare media within same genre

# Research Questions.



- ★ **Can we predict the box office success of a movie?**
- ★ **Does episode/season count and length impact TV show ratings, votes, and success?**
- ★ **What are the key attributes that create highly-rated movies, do they vary cultural contexts, and audience demographics?**
- ★ **Is there a trend of genre transitions in movies over time and does this effect the success**




# Related Work

Great Learning

## Building a movie recommendation system

Little look at the dataset



1. Dataset name: MovieLens Dataset
2. Number of movies: 45,000
3. Releases: Up until July 2017

Build a Movie Recommendation System using Python | Python Tutorial in 2022 | Great Learning



**Snehan Kekre**  
Machine Learning Instructor  
Coursera Project Network

# Data Sets

**YouTube API**



**IMDB Official Dataset Dump**



**Kaggle**

kaggle

# Movie-TV Show Dataset



**12,500+ Movies collected**



**6,000+ TV shows, over one million episodes**



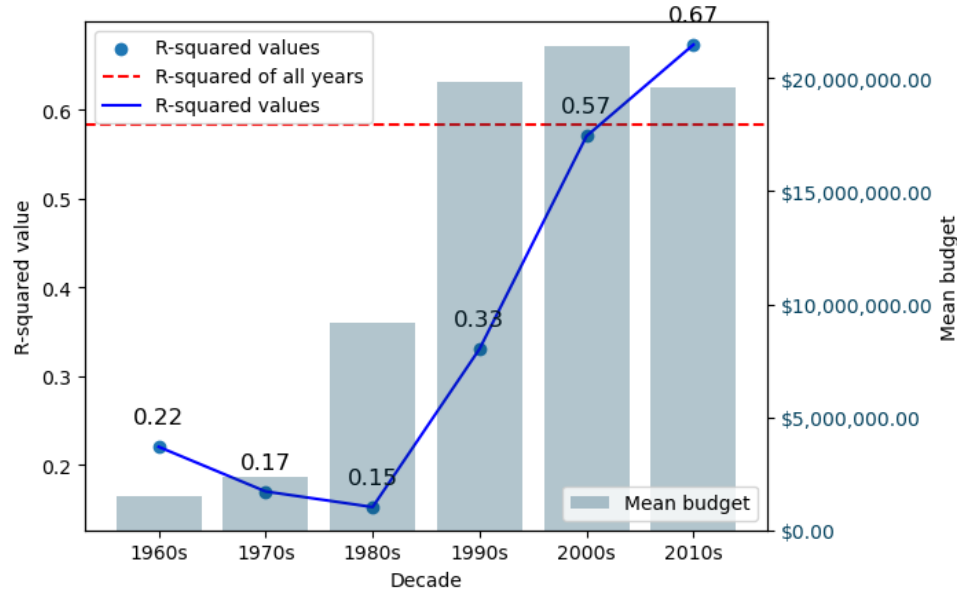
**1,500+ Movie trailers**

**RQ1: Can we predict the box office **success** of a movie?**



# Budget Factor For box office

R-squared values for movie budgets and box office revenue by decade



□ The relationship between Box office and movie budget

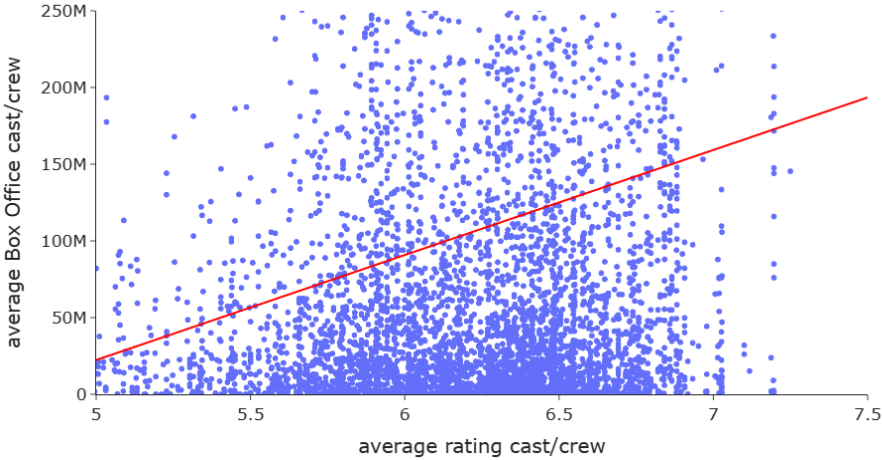


# Cast/crew popularity factor

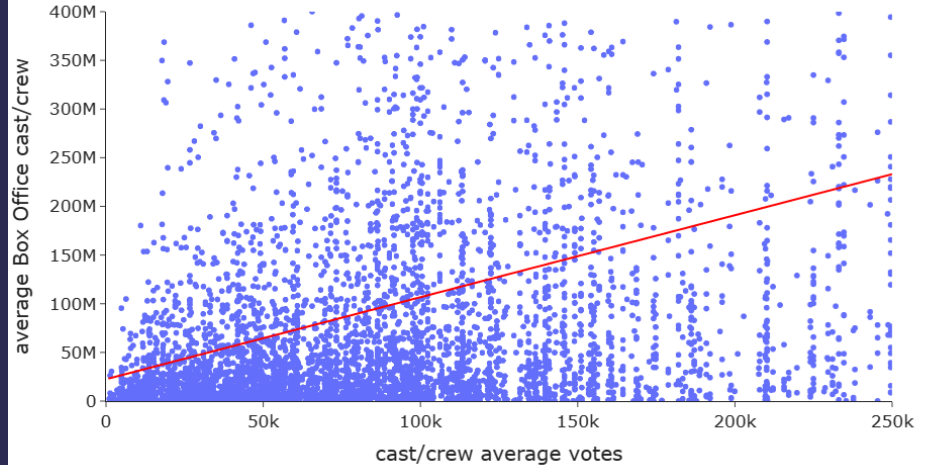


## Linear regression approach

cast/crew average Box Office vs. average rating (R-squared: 0.02)

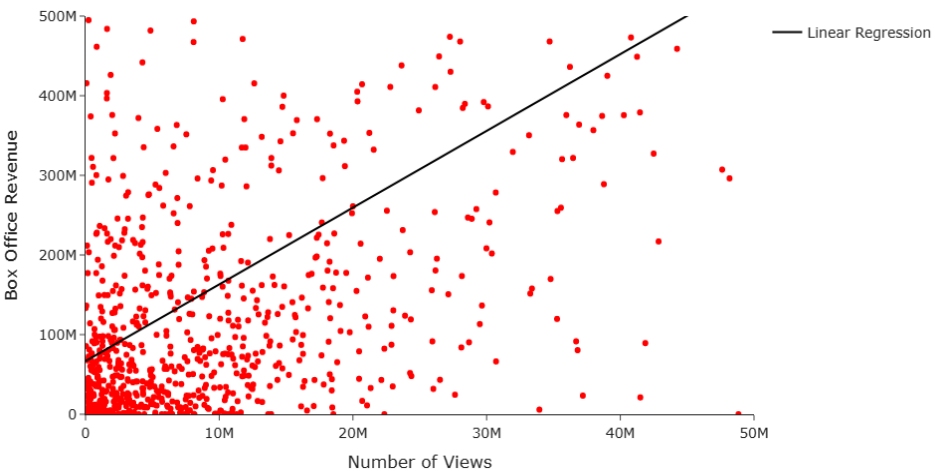


cast/crew average Box Office vs. average votes (R-squared: 0.09)

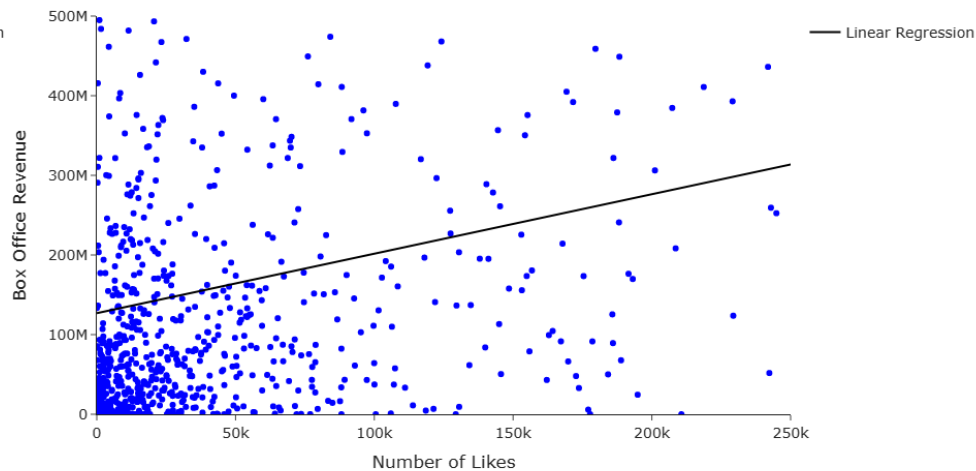


# Pre-release marketing factor

Box Office Revenue vs. Number of Views for Movie Trailers (R-squared: 0.47)



Box Office Revenue vs. Number of Likes for Movie Trailers (R-squared: 0.36)

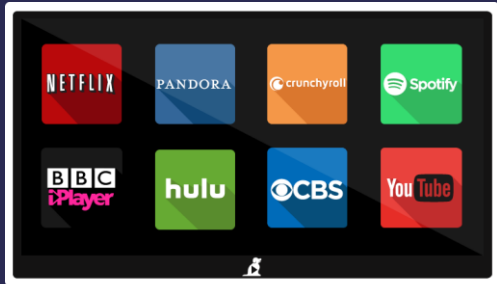


# **RQ1 : Can we predict box office success?**

**Given the budget and trailer views/likes, the R-squared value of 0.50 indicates that 50% of the variance in box office revenue can be explained by these factors, leaving the other 50% unexplained.**

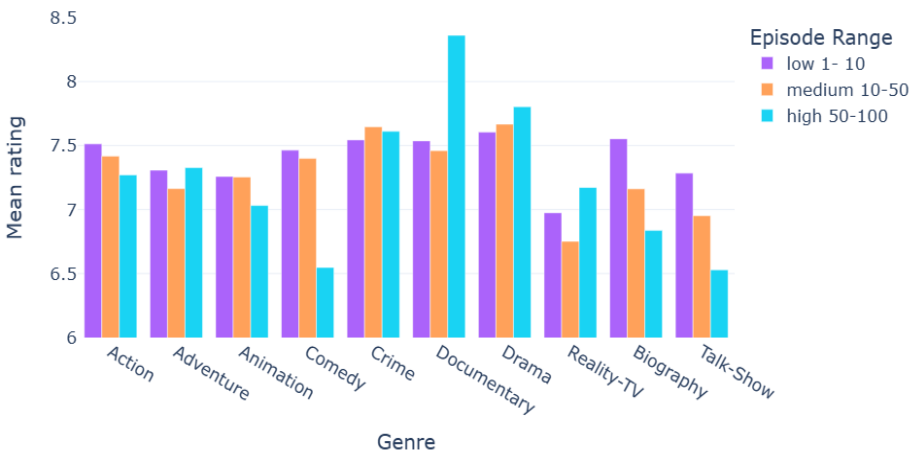
**→ Therefore, predicting the box office revenue based solely on budget and trailer views/likes is not very reliable**

# RQ2: Does episode/season count and length **impact** TV show ratings, views, and success?

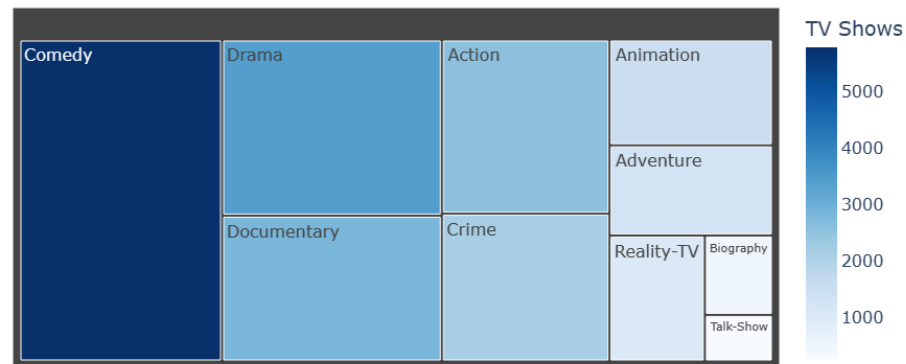


# Different ratings for different genres

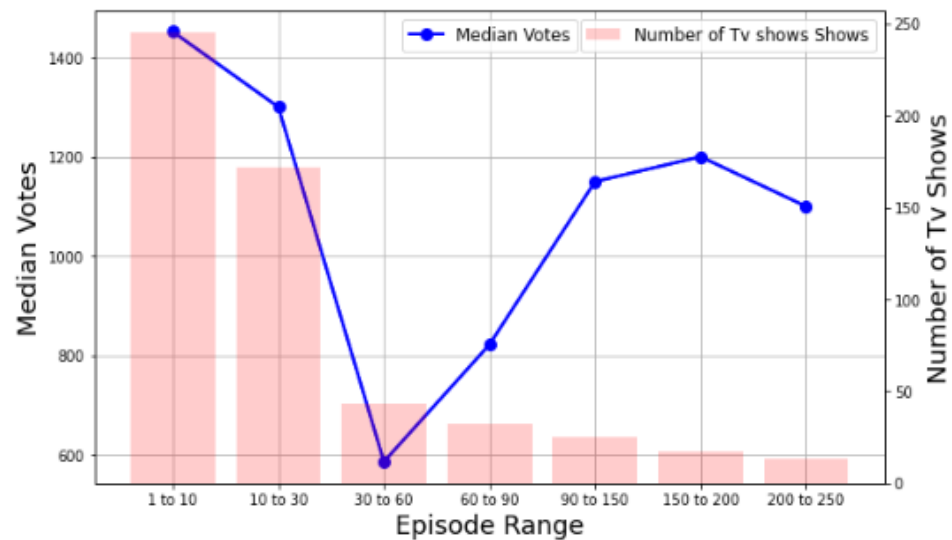
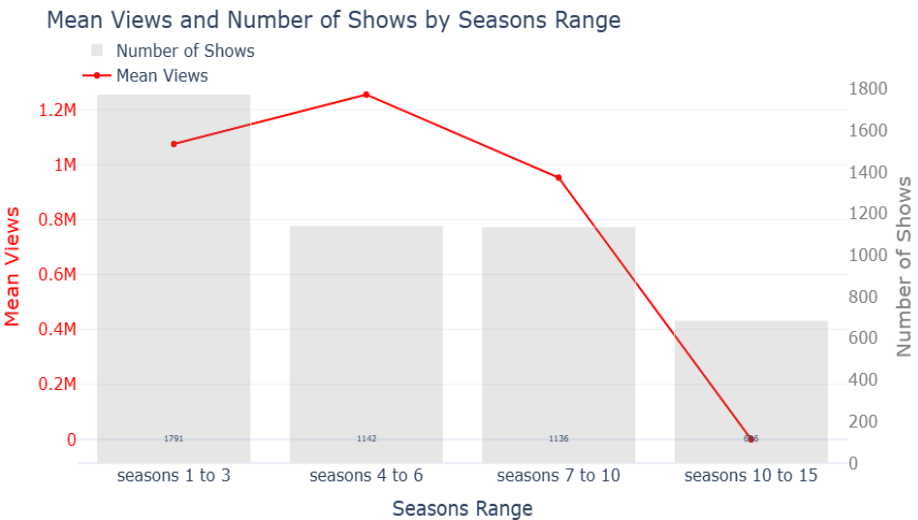
TV show mean ratings by genre and episode range



TV show distribution by genre



# Votes/ Views mean/median across seasons/episodes



## **RQ2: Does episode/season count and length **impact** TV show ratings, votes, and success?**

The number of episodes and length of a TV show can impact ratings, views, and success. Longer seasons may lead to lower ratings, while shorter seasons can create urgency. The length of individual episodes can also impact a show's success.



However, other factors can also play a role.

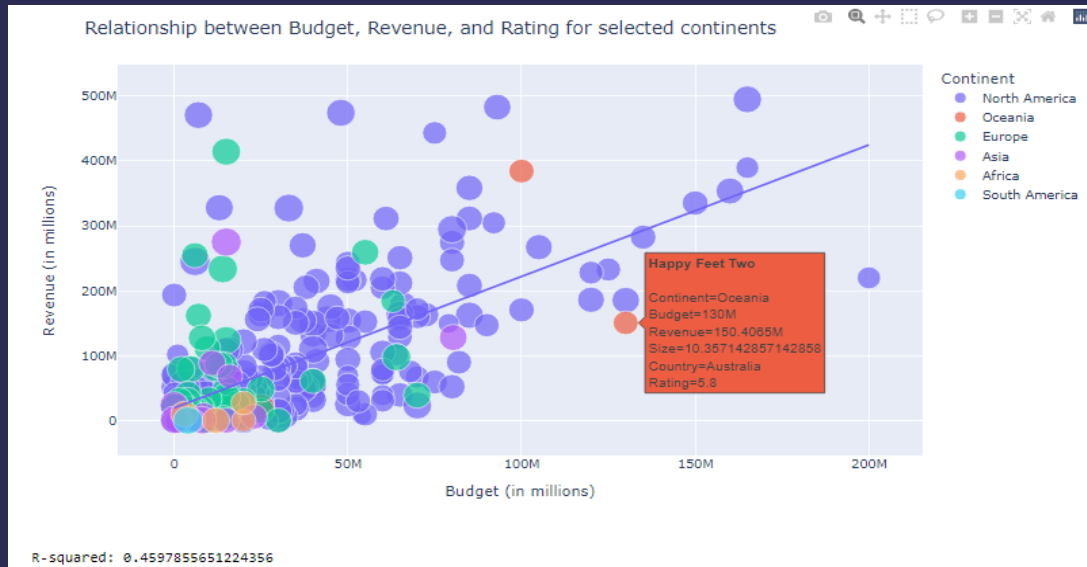
The background of the slide is a dark blue stage. At the top, there are red curtains with a black fringe. At the bottom, there are rows of red theater seats. The text is centered on the stage.

# Research Question 3

**What are the key attributes that create highly-rated movies, do they vary across cultural contexts?**

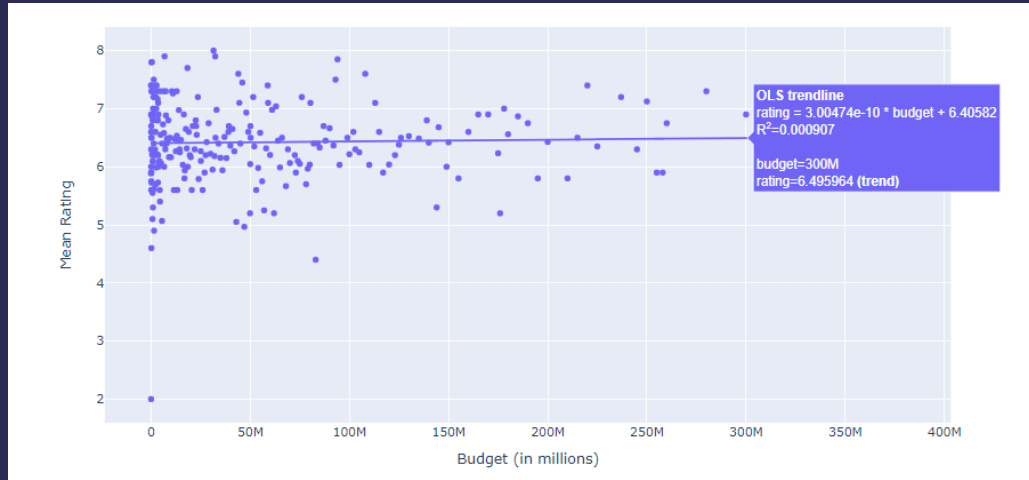


# Relationship between budget, revenue and Rating



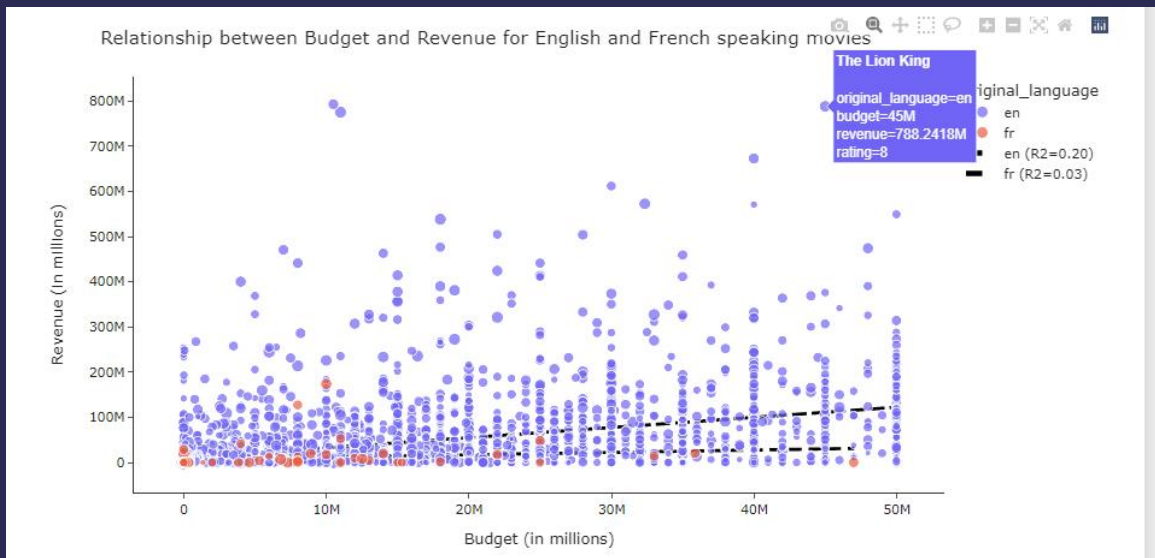
**This shows the higher the budget the more successful the movie is in terms of revenue but not in term of ratings we can also see the majority of successful movies tend to be from USA**

# Mean ratings against budget



**This is a graph proving that a higher budget doesn't tend to give you a higher rating**

# English vs French speaking movies



**This graph shows the relationship between budget, revenue and rating between English and French movies**

# Research Question 3 Answer

**We concluded that according to our research that movies with higher budget tend to do better than movies with a smaller budget,**

**we also concluded that movies that were made in USA tend to perform better than other countries**

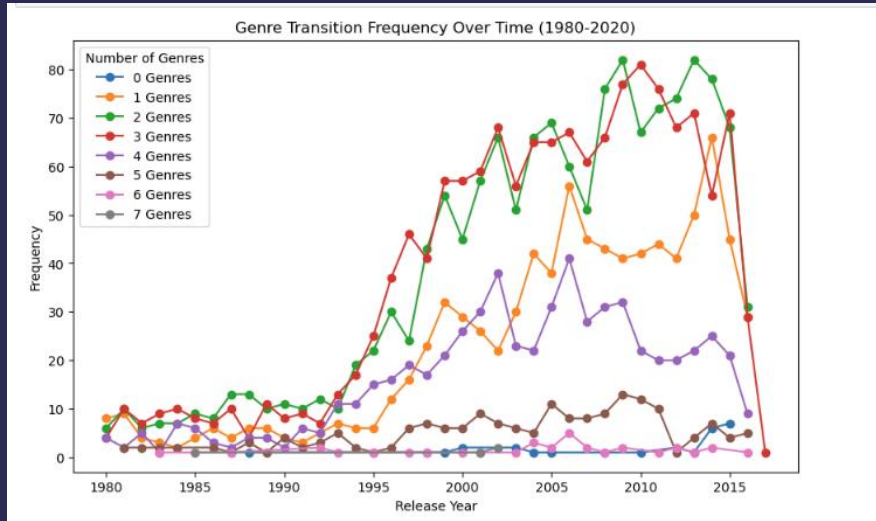
**and that English speaking movies tend to give a higher rating and box office than other spoken movies**



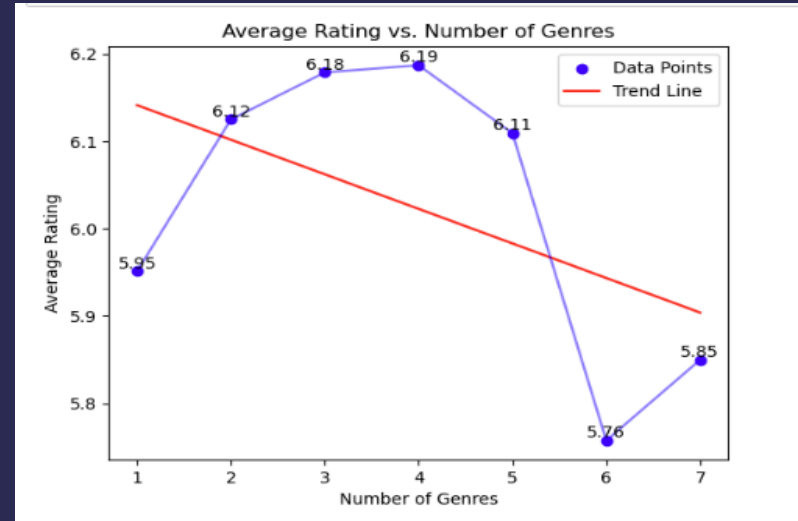
# Research Question 4

**Is there a trend of genre transitions in movies over time and does this effect the success**

# Genre Transition over time

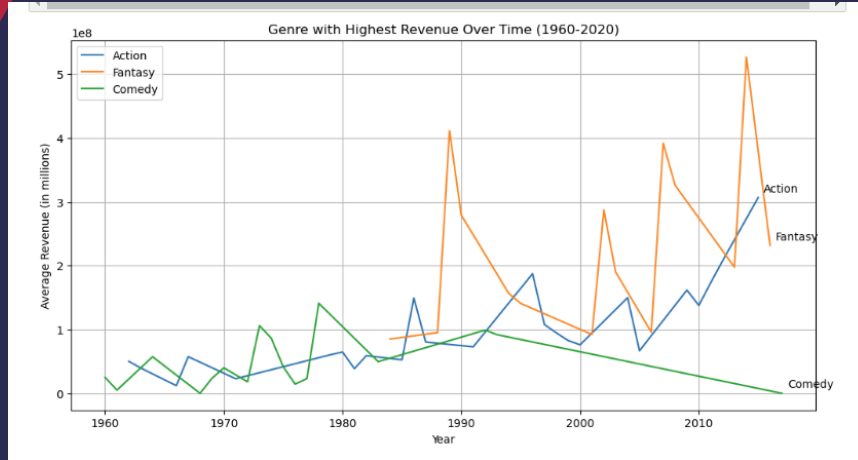


**Graphs showing the genre transition over the years**

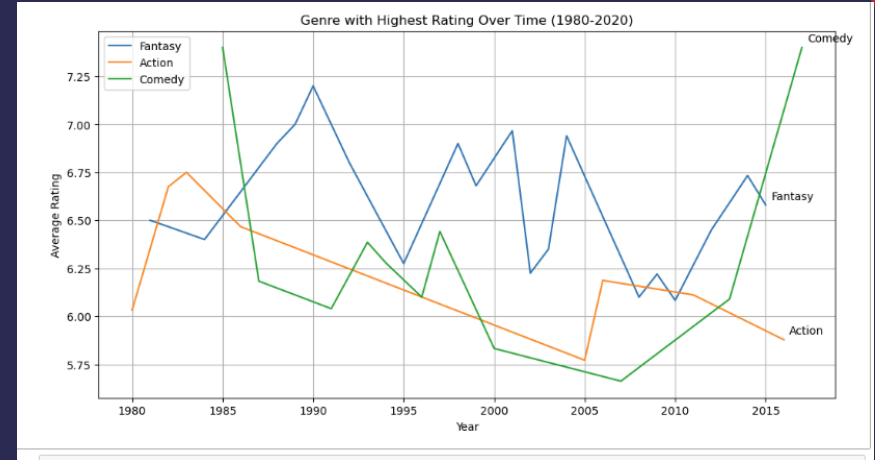


**Genre's rating depending on the amount of genre combinations**

# Measuring success



**Graph representing Action Fantasy and Comedy success over the years in terms of revenue**



**Graph representing Action Fantasy and Comedy success over the years in terms of ratings**

# Research Question 4 answer

**We concluded that movies with a combination of 2-4 genres tend to gain the most success in terms of ratings**

**We also concluded that genres tend to do better in terms of revenue**

**We had an interesting finding that genres with an increasing revenue over the years would not necessarily correlate in terms of rating**

```
Correlation between revenue and rating for each genre:  
modified_genres  
Action      revenue    0.283310  
Comedy      revenue    0.156157  
Drama       revenue    0.219371  
Horror      revenue    0.309994  
Romance     revenue    0.185014  
Horror      revenue    0.309994
```



## CONCLUSION

- ★ Can we predict the box office success of a movie?

**No: with only the factors we mentioned because it's a 50 percent chance. But other factors we can easily predict the success of a movie.**

- ★ Does episode/season count and length impact TV show ratings, votes, and success?

**Yes: the length and number of episodes can impact a TV show's success through viewer engagement and retention.**

- ★ What are the key attributes that create highly-rated movies, do they vary cultural contexts?

**We found the key attribute we're budget production country and movie language.**

- ★ Is there a trend of genre transitions in movies over time and does this effect the success ?

**There is a downward trend in the genre translation with the most successful movies having a combination of 2-4 genres.**

# Discussion

- ★ **Scraping movie trailers from YouTube posed challenges: complex APIs, missing data, and varied formats.**
- ★ **Data can easily get outdated or fetch the wrong video ID.**
- ★ **Our data was collected from publicly available sources and obtained ethically, without breaching any privacy or usage policies.**