

# **BOX OFFICE BREAKDOWN: DATA-DRIVEN INSIGHTS FOR SMARTER MOVIE PRODUCTION**



# BUSINESS PROBLEM

The Company aims to create a new movie studio to compete in the Movie industry maximizing profits while reducing business risk





# OBJECTIVES

- I. Are certain movie directors more likely to have more revenue in the box office?
- II. Which genres are more likely to highest audience and critics ratings?
- III. Is there a relationship between the production budget and revenue in worldwide gross?
- IV. Which original languages are more popular in screening in box office?

# DATA UNDERSTANDING

Our Data Sources are as follows:

- Box Office Mojo
- im.db (SQLite database)
- Rotten Tomatoes movies
- The tmdb movies
- The tn movies budgets

The primary goal of the analysis is to uncover meaningful trends in production budgets, gross earnings, and audience ratings. These insights will support strategic decision-making for a new movie studio, enabling it to identify profitable genres and themes. By aligning content production with market demand and audience preferences, the studio can optimize its investment and increase the likelihood of producing successful original video content.



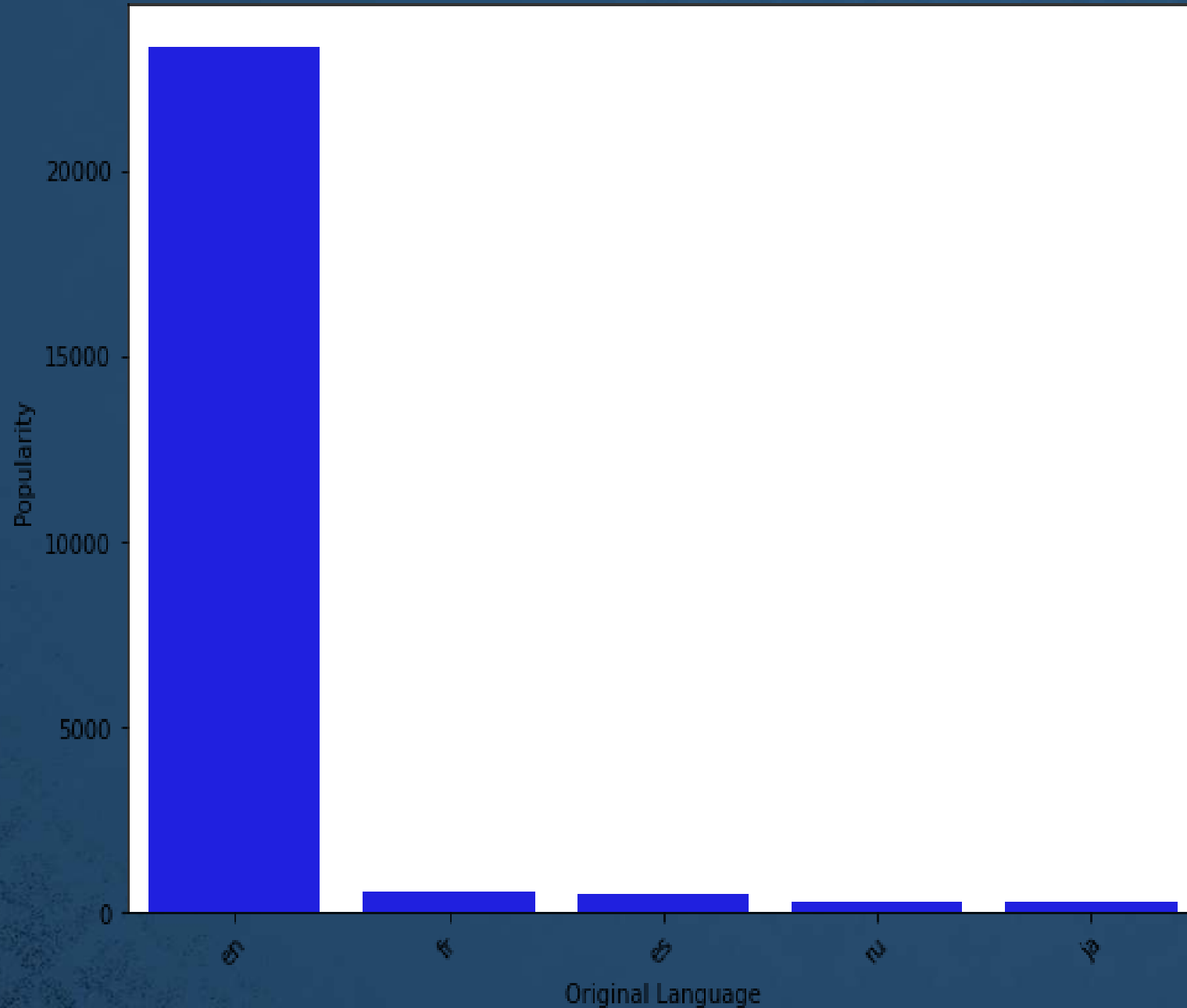
# DATA EXPLORATION

- In analyzing the data sets, we utilized Python using
  - Pandas
  - Data Wrangler
  - numpy
  - scipy
  - matplotlib
  - pathlib
  - SQLite3
  - Seaborn

To explore the structure ,quality and contents of the data to better understand the variables and identify any potential issues.

# LANGUAGE AND POPULARITY

Top 5 Languages by Average Popularity



The bar chart reveals that the top five most popular original languages in films are English (en), French (fr), Spanish (es), Russian (ru), and Japanese (ja), respectively.

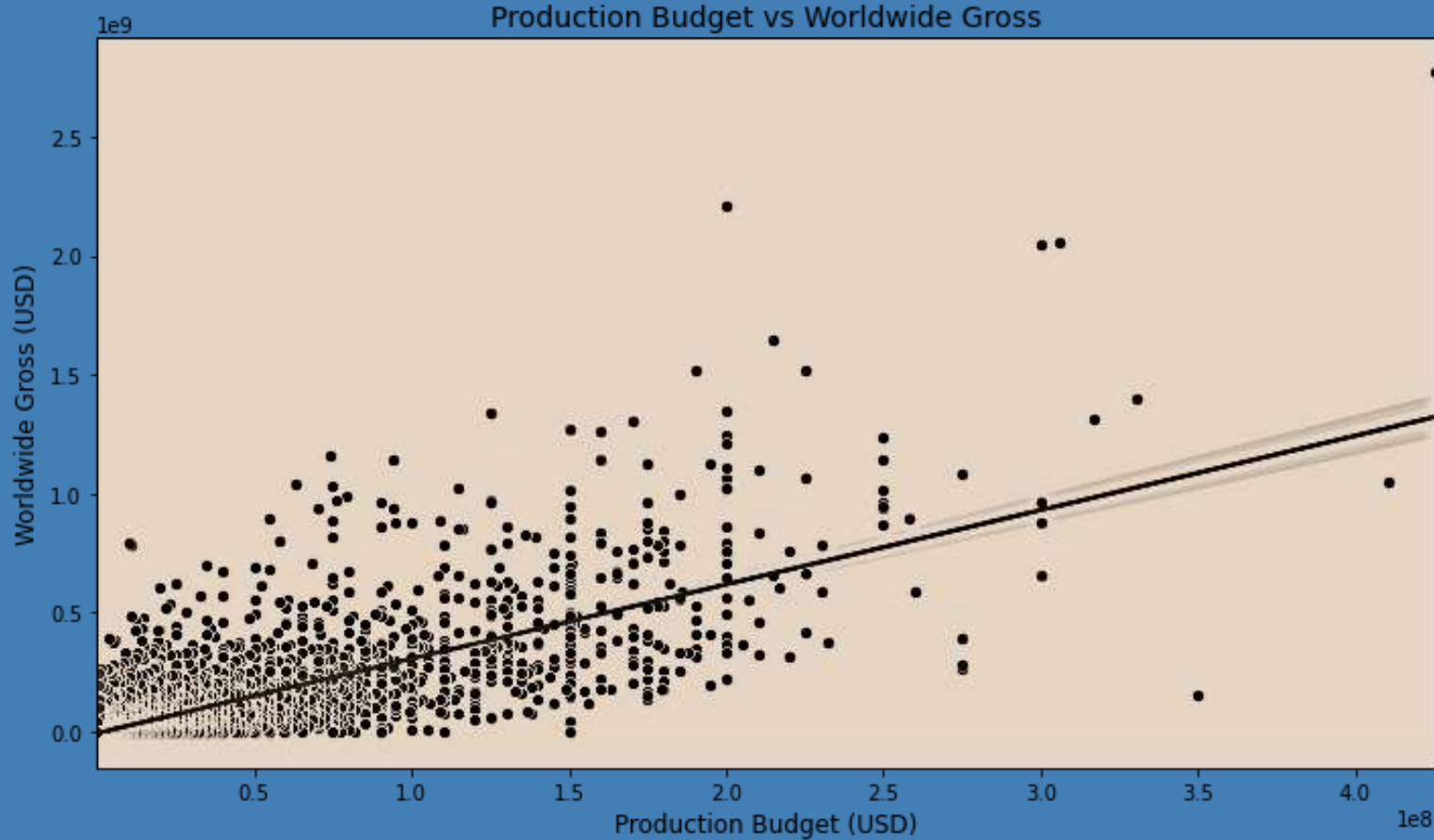
# DIRECTOR AND REVENUE

- The analysis shows that Anthony Russo and Joe Russo are the top directors in terms of generating high box office revenue. They are closely followed by Pierre Coffin, Christopher Nolan, and Joss Whedon.





# PRODUCTION BUDGET AND WORLDWIDE GROSS REVENUE



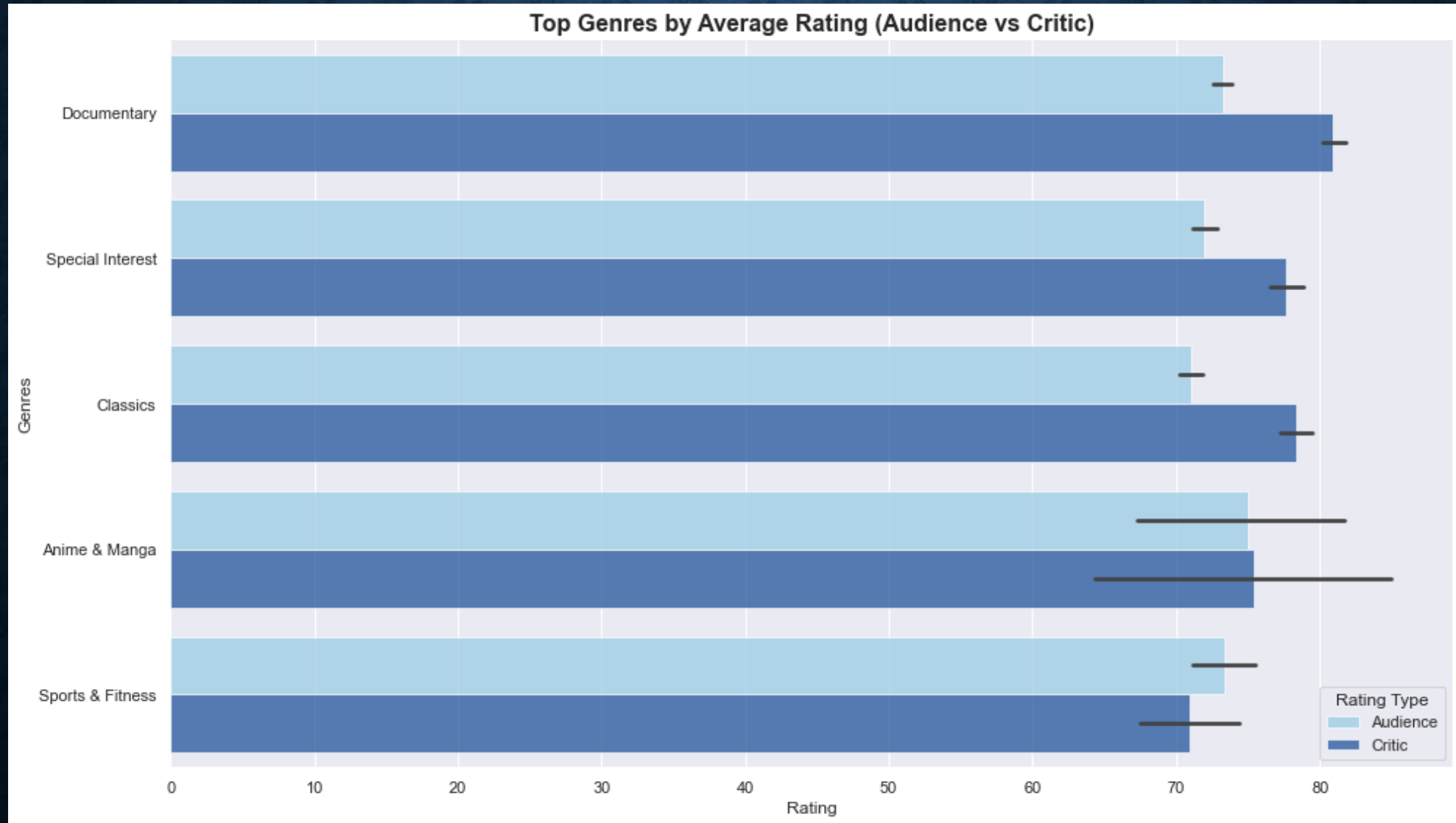
From the plot, we observed a positive correlation, suggesting that movies with higher production budgets tend to generate higher worldwide gross revenues.

To further validate the observed relationship between production budget and worldwide gross, we conducted a statistical test by calculating the p-value. This helps determine whether the relationship observed in the scatter plot is statistically significant or could have occurred by chance. We set the significance level (alpha) at 0.05, which is a common threshold in hypothesis testing.

Since the p-value ( $2.99e-135$ ) is less than alpha (0.05), we reject the null hypothesis ( $H_0$ ). This indicates that there is strong statistical evidence of a significant relationship between production\_budget and worldwide\_gross.



# TOP GENRES VS CRITIC



- The horizontal bar chart compares Audience Ratings and Critic Ratings across the top five genres based on average scores:
- Documentary stands out as the highest-rated genre by both audiences and critics, with critics showing slightly higher ratings than audiences.
- Special Interest and Classics follow closely, with both groups rating these genres similarly high.
- Anime & Manga shows a slight divergence—audiences tend to rate it lower than critics, though the error bars suggest greater variability in critic ratings.
- Sports & Fitness receives relatively lower ratings from both audiences and critics compared to the other genres.

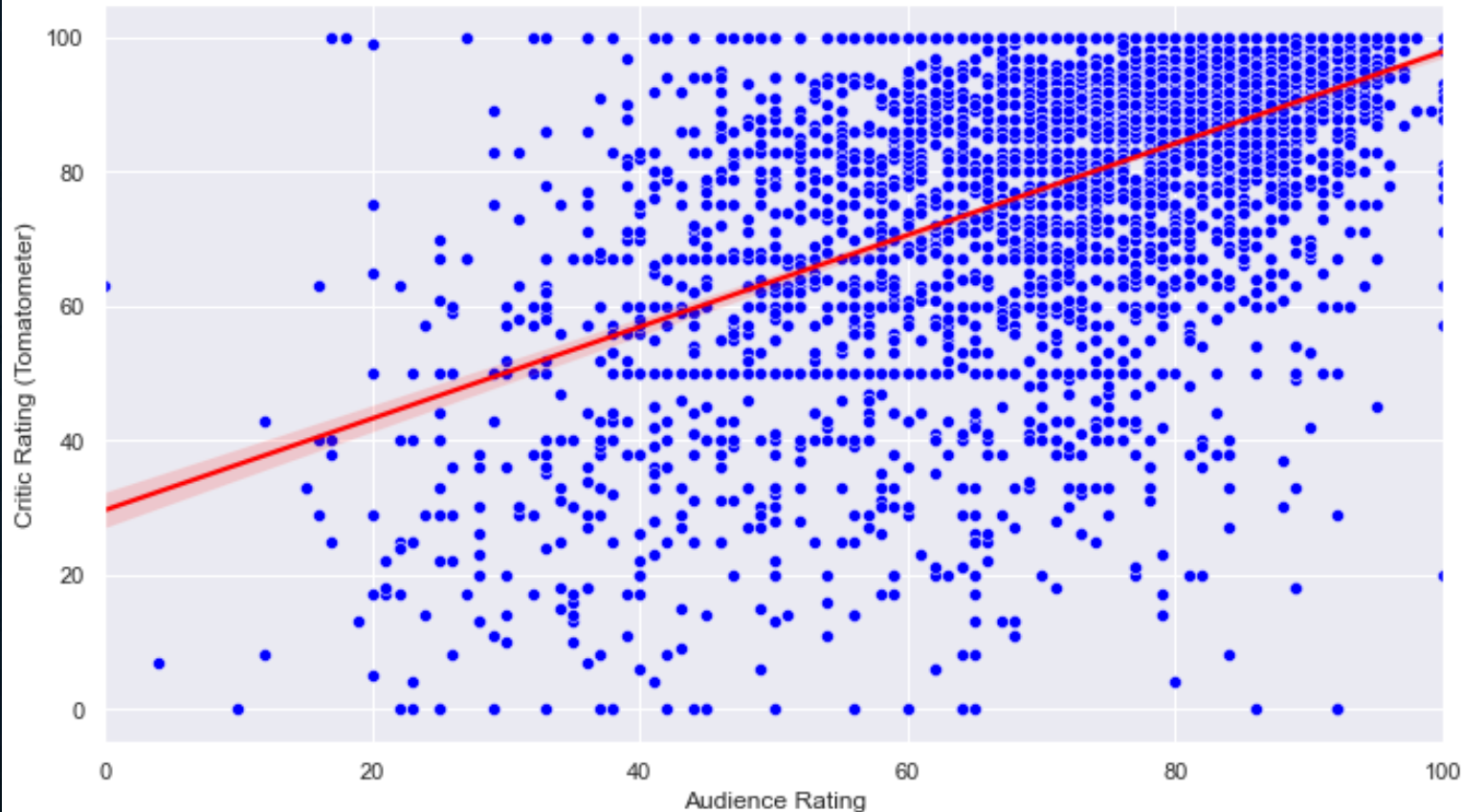
#### Insights:

- Critics tend to rate most genres slightly higher than general audiences.
- The narrow error bars for genres like Documentary and Special Interest suggest more consistent opinions from critics and audiences.
- Anime & Manga has the widest error margin, especially among critics, indicating a split in perception or variability in quality within the genre.



# AUDIENCE VS CRITIC

Correlation between Audience Rating and Critic (Tomatometer) Rating



The scatter plot reveals a strong positive relationship between audience ratings and critic (Tomatometer) ratings. This suggests that, generally, as audience ratings increase, critic ratings tend to increase as well. The clustering of data points along an upward trend line indicates a consistent agreement between the two groups — meaning that movies appreciated by audiences are also likely to be favored by critics. This correlation supports the idea that overall quality or appeal in film is often recognized similarly by both viewers and professional reviewers.

# BUSINESS RECOMMENDATIONS

- It is recommended that movies be produced primarily in English (en), as it is the most dominant and popular original language in the box office market.





- It is recommended that the studio prioritize working with proven high-revenue directors such as Anthony and Joe Russo. Additionally, exploring partnerships with other successful directors like Pierre Coffin, Christopher Nolan, and Joss Whedon could further enhance the studio's chances of achieving box office success. Their track records indicate a strong ability to attract audiences and deliver commercially successful films



- It is advisable for the new movie studio to allocate sufficient resources toward production. Higher budgets—when strategically invested—can lead to better box office performance, potentially through improved production quality, marketing, casting, or visual effects.





## NEXT STEP

- The Company Should produce movies in the English language as it's the most popular language in box office Market
- Work with proven high-revenue directors such as Anthony and Joe Russo. Additionally, explore partnerships with other successful directors like Pierre Coffin, Christopher Nolan, and Joss Whedon to enhance the studio's chances of achieving box office success.
- Allocate enough resources in movie production. Higher budgets—when strategically invested—can lead to better box office performance, potentially through improved production quality, marketing, casting, or visual effects.

The image shows a classic 'The End' title card. The background consists of several concentric red circles that create a tunnel-like effect, drawing the eye towards the center. In the middle of these circles, the words 'The End' are written in a white, elegant, cursive script. The overall aesthetic is reminiscent of mid-20th-century film title cards.

*The End*

Produced by

- NICK MWAI
- ERIC OKACHA
- AGNES CHOMBA
- OLGAH OMOLLO
- JUDAH ODIDA
- DERRICK MALING'A
- LUCAS OMINDE