Movie Studio Analysis

Data-Driven Insights for Strategic Growth

Empowering Decision-Making with Key Trends

Presented by: [Group 4]

Overview

This project aims to analyze movie data to uncover key trends and provide actionable insights for a new movie studio. The insights will help stakeholders make data-driven decisions about the types of films to produce, how to allocate production budgets effectively, and strategies to boost international market success.

Business Understanding

The company seeks to diversify its portfolio by entering the original video content space, following the success of major competitors in creating blockbuster films. However, the company lacks expertise in movie production and requires strategic guidance on how to approach this new venture.

The goal is to identify key trends and factors that contribute to box office success, such as genres, themes, target demographics, and other influential variables. This understanding will be critical in formulating a data-driven strategy for the company's new movie studio, enabling informed decisions about the types of films to produce and positioning the company for success in the competitive movie industry

Objectives

Goal: Provide actionable insights to help the studio to maximize profitability and market research.

Key Questions:

- What types of movies generate the highest returns?
- How should we allocate production budgets for optimal revenue?
- What strategies can improve movie performance in international markets?

Data Understanding

This project uses data from six primary sources:

tn.movie_budgets.csv.gz:

Contains data on production budgets, domestic gross, and worldwide gross for movies, which is critical for analyzing profitability and revenue trends.Key Features: production_budget, domestic_gross, worldwide_gross.

bom.movie_gross.csv.gz:

Includes additional data on domestic and foreign gross revenues by year, providing insights into international market performance. Key Features: domestic_gross, foreign_gross, year.

rt.movie_info.tsv.gz:

Provides detailed metadata about movies, including genres, synopses, and box office data.

Key Features: synopsis, genre, box_office.

rt.reviews.tsv.gz:

Audience and critic reviews that provide qualitative feedback and ratings for movies.

Key Features: review, rating, critic, publisher.

im.db:

An SQLite database from IMDb, offering details on movie genres, ratings, and metadata, which helps analyze audience preferences, crew performance, and genre-based trends.

Key Features: genres, averagerating, primary_title.

tmdb.movies.csv:

Metadata about movies from TMDB, including popularity, genres, and vote averages, which can be used to analyze audience preferences.

Key Features: popularity, vote_average, genre_ids.

Methodology

Steps;

❖ Data collection

Data was stored and managed using SQLite3, ensuring structured and efficient querying.

❖ Data cleaning and preprocessing

Pandas was used for data manipulation, cleaning, and transformation

❖ Exploratory data analysis

Seaborn, Tableau and Matplotlib were used to generate insightful visualizations to identify
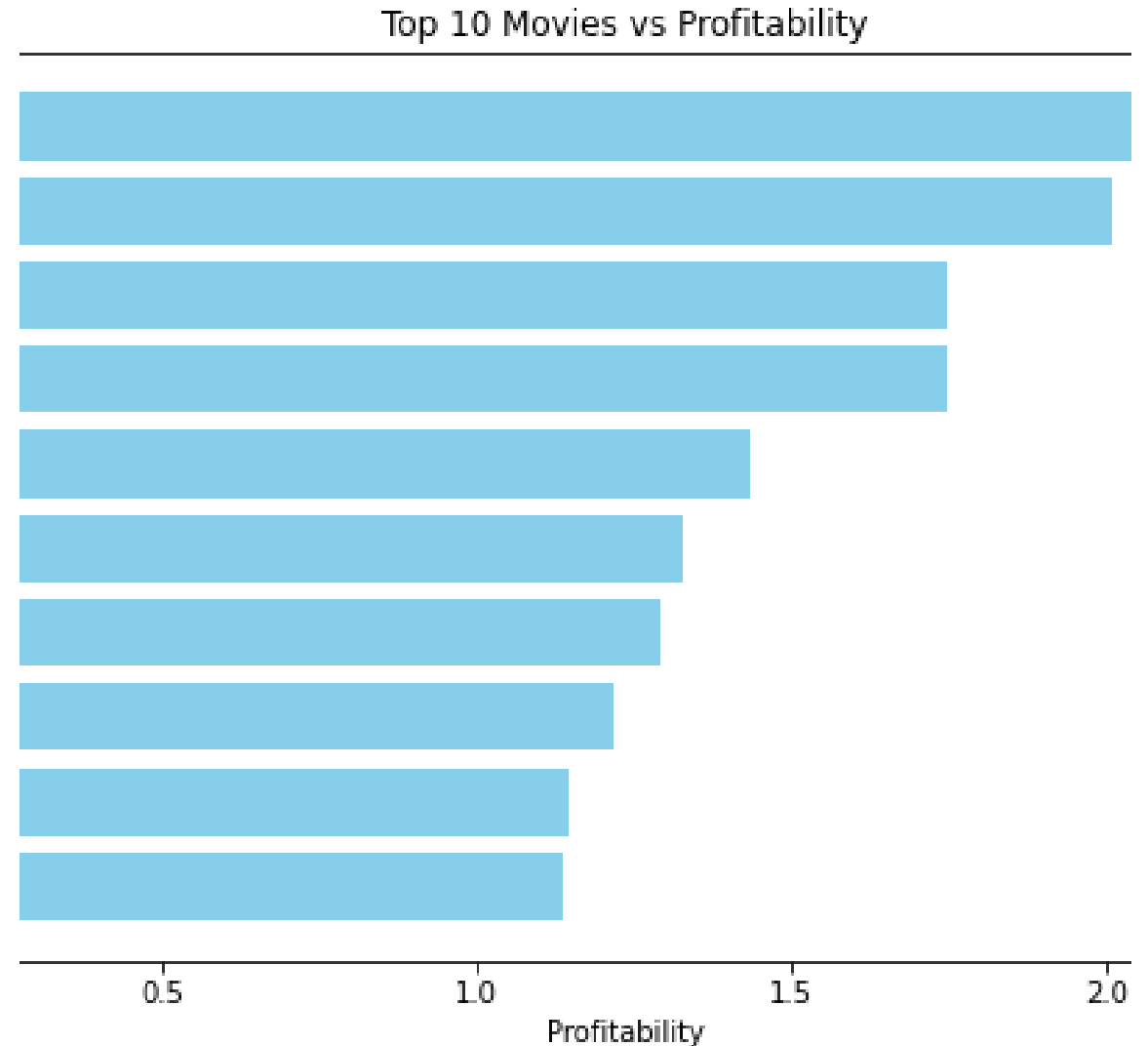
patterns and trends.

Implementations:

The entire workflow was implemented in Jupyter Notebook and Tableau worksheets, allowing interactive data exploration and visualization

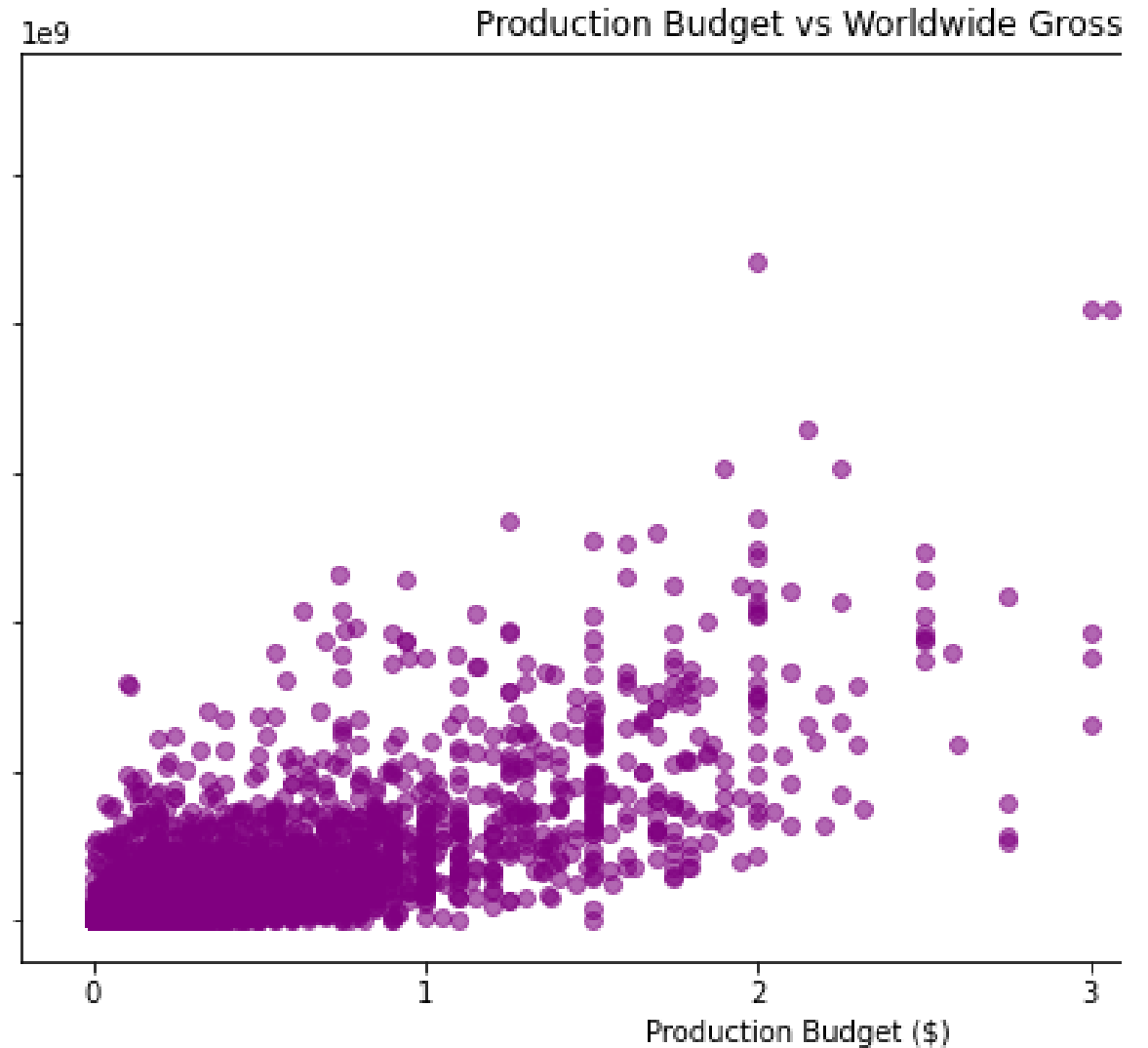# Data analysis and visualization Top 10 movies vs profitability

- **Insights**

- **Top Performers:** Movies such as Avatar, Titanic, and Avengers: Infinity War lead in profitability, generating billions in net earnings.

- **Common Traits**: These films belong to well-known franchises or have groundbreaking visuals, strong global appeal, and mass marketing efforts.

- **Franchise Impact**: Franchise-based movies (Star Wars, Avengers, Harry Potter, etc.) dominate profitability, highlighting the power of pre-established fan bases and sequels.

Top 10 Movies vs Profitability

Production budget vs worldwide gross($)

Insights

- **Positive Trend with Variability:** The scatter plot confirms a positive trend, with worldwide gross increasing as production budgets rise. However, there's considerable variability, especially for mid-range and high-budget films, with some underperforming despite high budgets.

- **Outliers in Performance:** A few films achieve exceptional gross revenue (above $2 billion), highlighting the potential for blockbuster success but also underscoring the risk of high-budget projects faimling to performance.
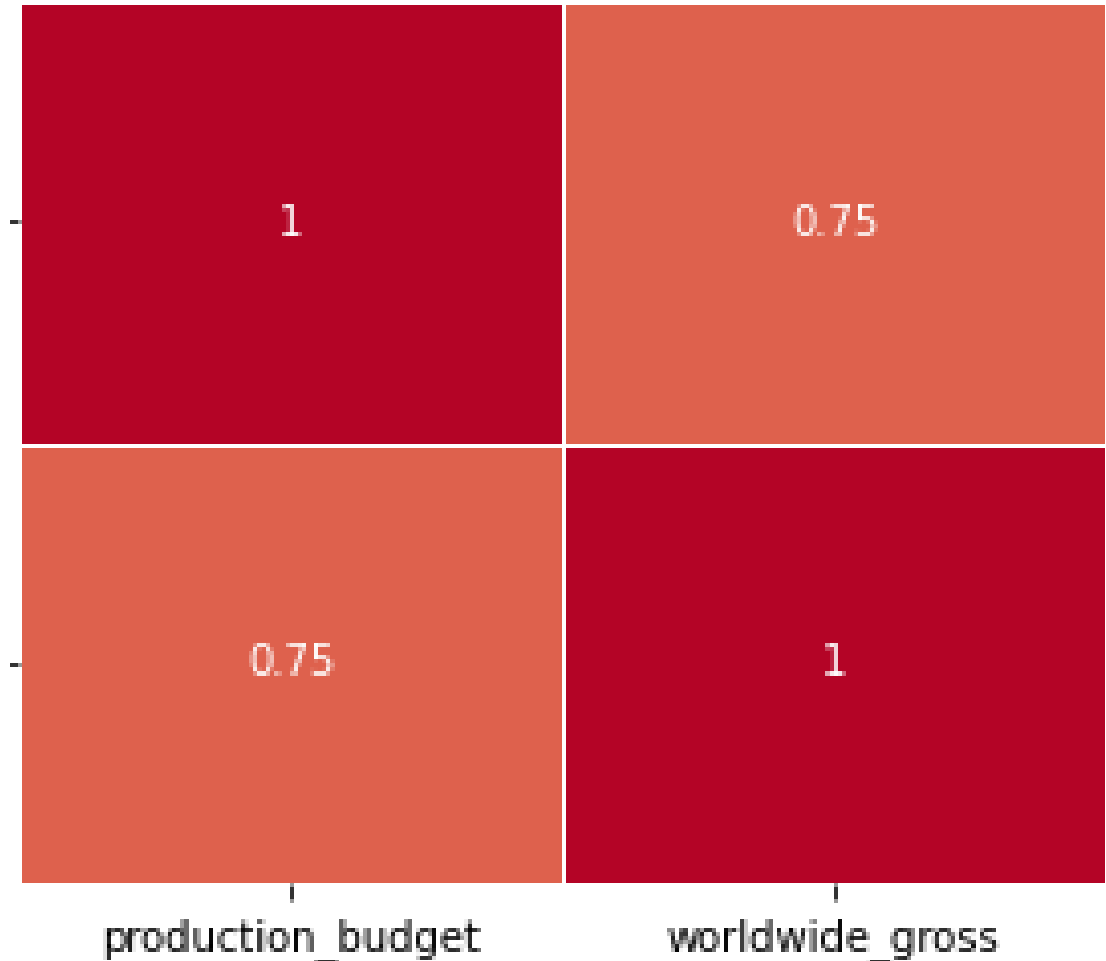

Production Budget vs Worldwide Gross

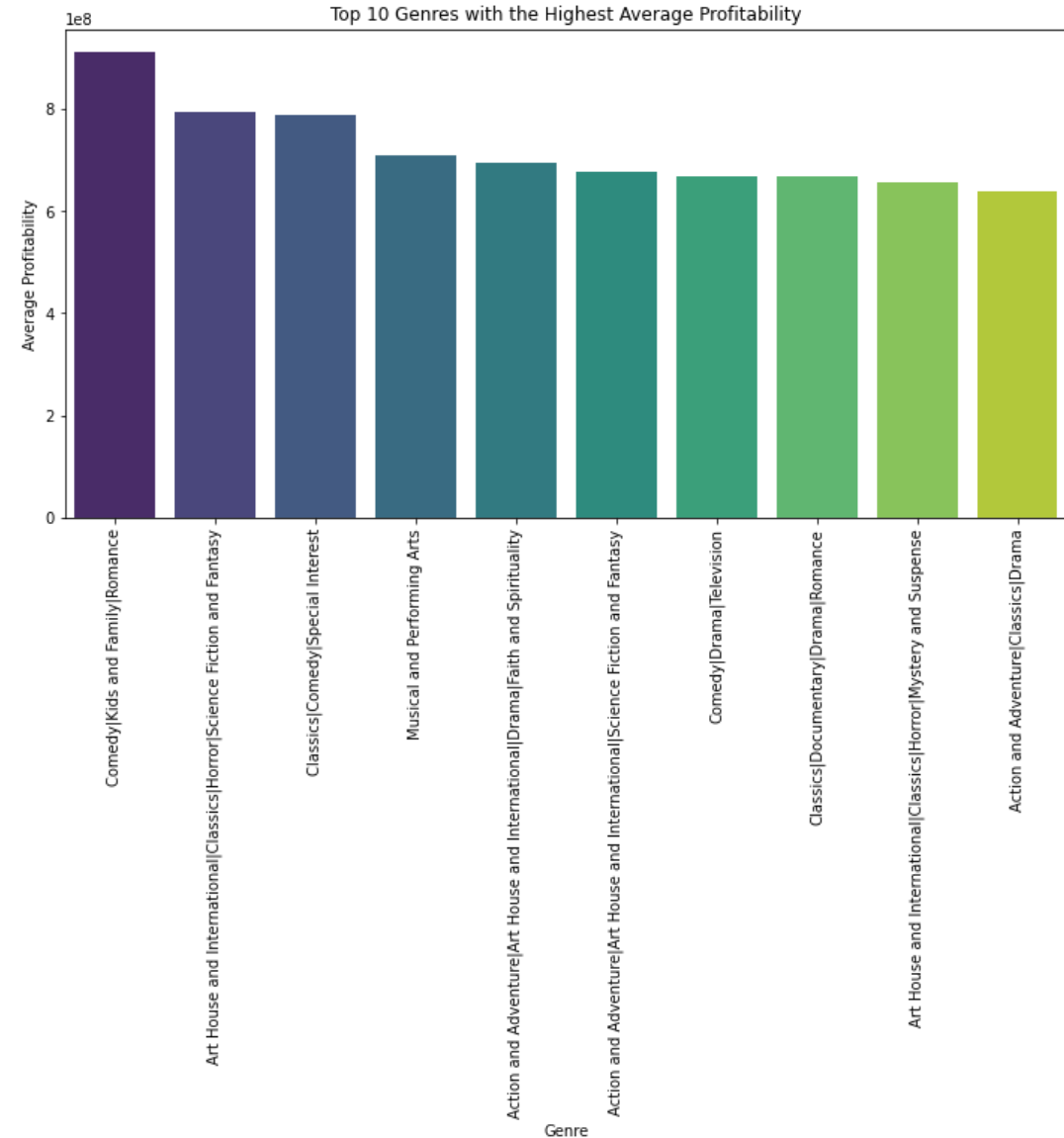# Correlation between production budget vs worldwide gross

Insights

• **Strong Positive Correlation:** The correlation coefficient of 0.75 between production budgets and worldwide gross indicates a strong positive relationship. Movies with higher production budgets generally tend to generate higher worldwide revenue.

• **Significant Dependency:** While production budget plays a significant role in determining gross revenue, other factors (e.g., marketing, genre, release timing) could also influence this outcome, as the correlation is not perfect.

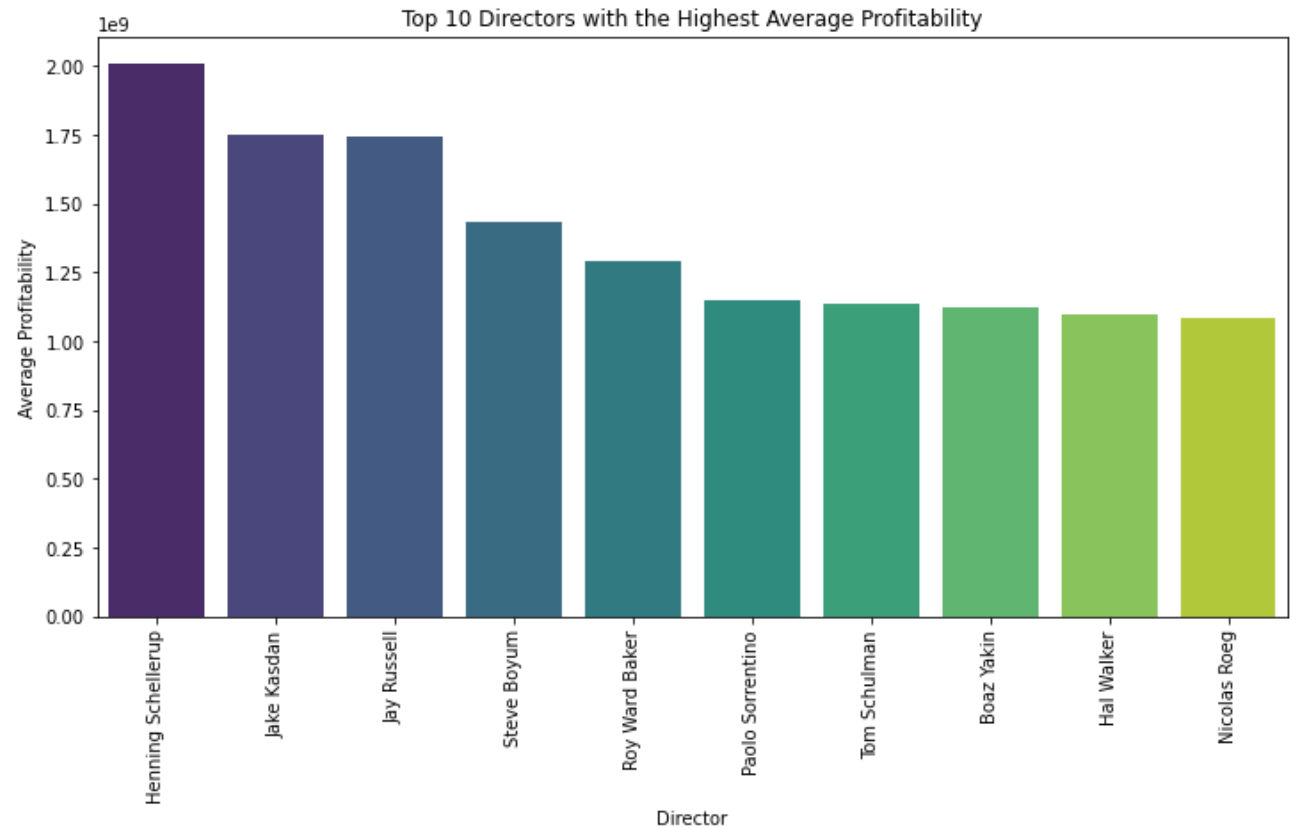:ion Heatmap: Production Budget vs Worldwide

Top 10 genre with the highest profitability

- **Insights**

- Genres like Comedy/Family/Romance and Art House and International/Classic rank highest in profitability, suggesting strong global appeal.

- High-performing genres include those catering to universal themes like Fantasy, Science Fiction, and Drama, which resonate with diverse audiences.

Top 10 Genres with the Highest Average Profitability

Top 10 Directors vs profitability

- **Insights**

- Directors like Henning Schellerup, Jake Kasdan, and Jay Russell lead in profitability, indicating their ability to deliver successful movies.

- Consistent profitability suggests strong decision-making in casting, budgeting, and storytelling.
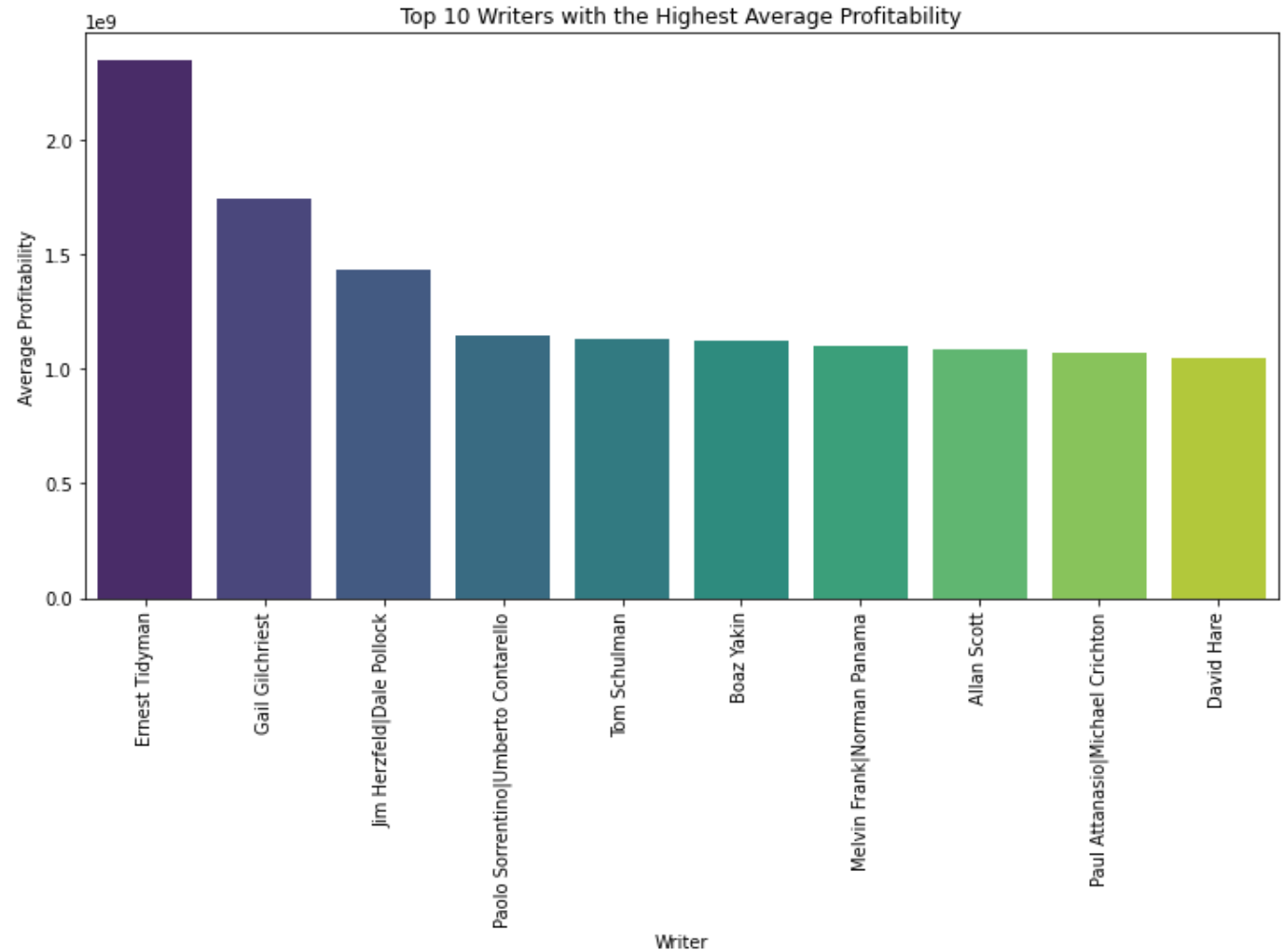

Top 10 Directors with the Highest Average Profitability

Top 10 writers with the highest average profitability

Insights

Writers like Ernest Tidyman and Gail Gilchriest contribute to highly profitable movies, showcasing their skill in crafting compelling stories.
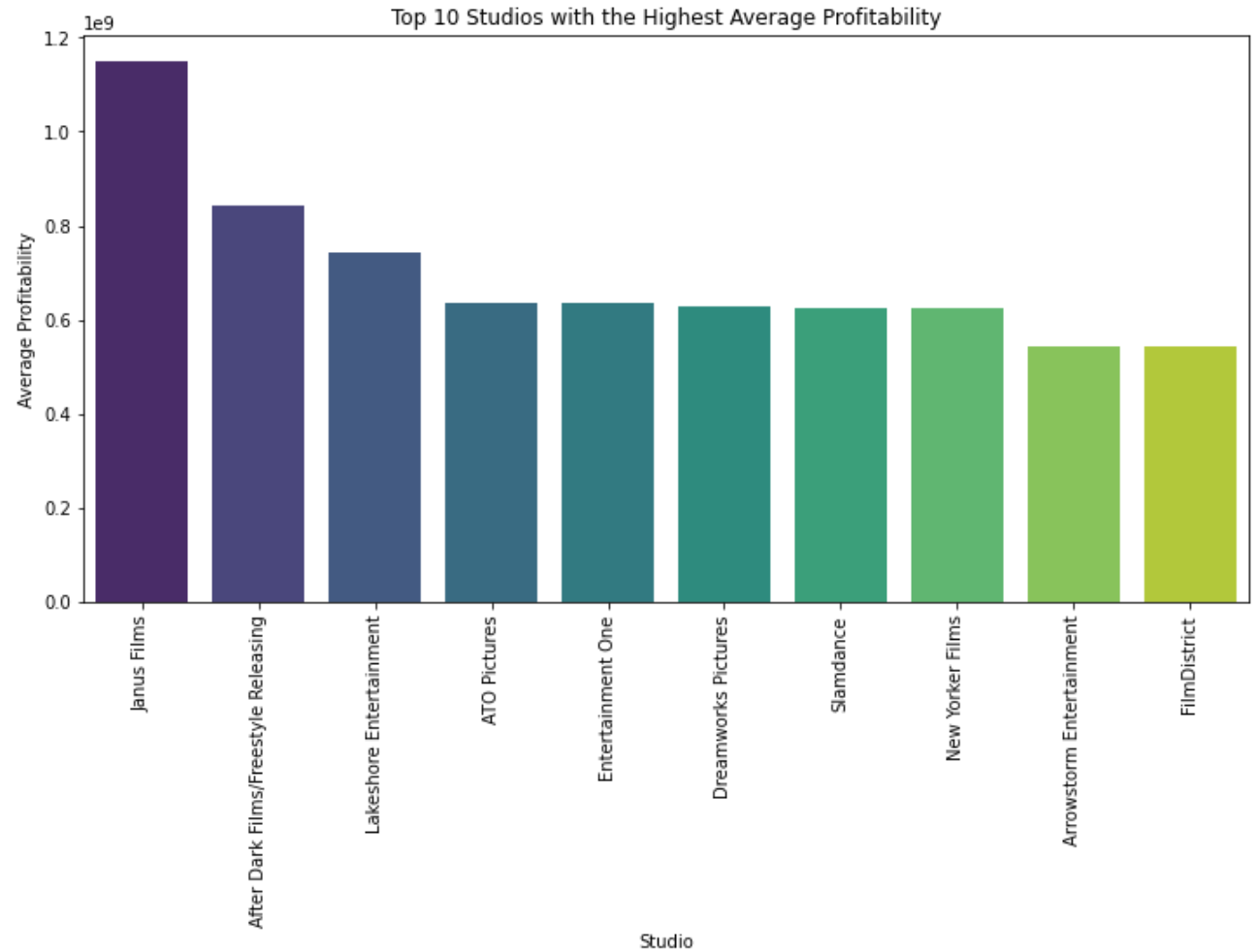
Consistency across multiple writers suggests the value of collaboration and narrative innovation.

Top 10 Writers with the Highest Average Profitability

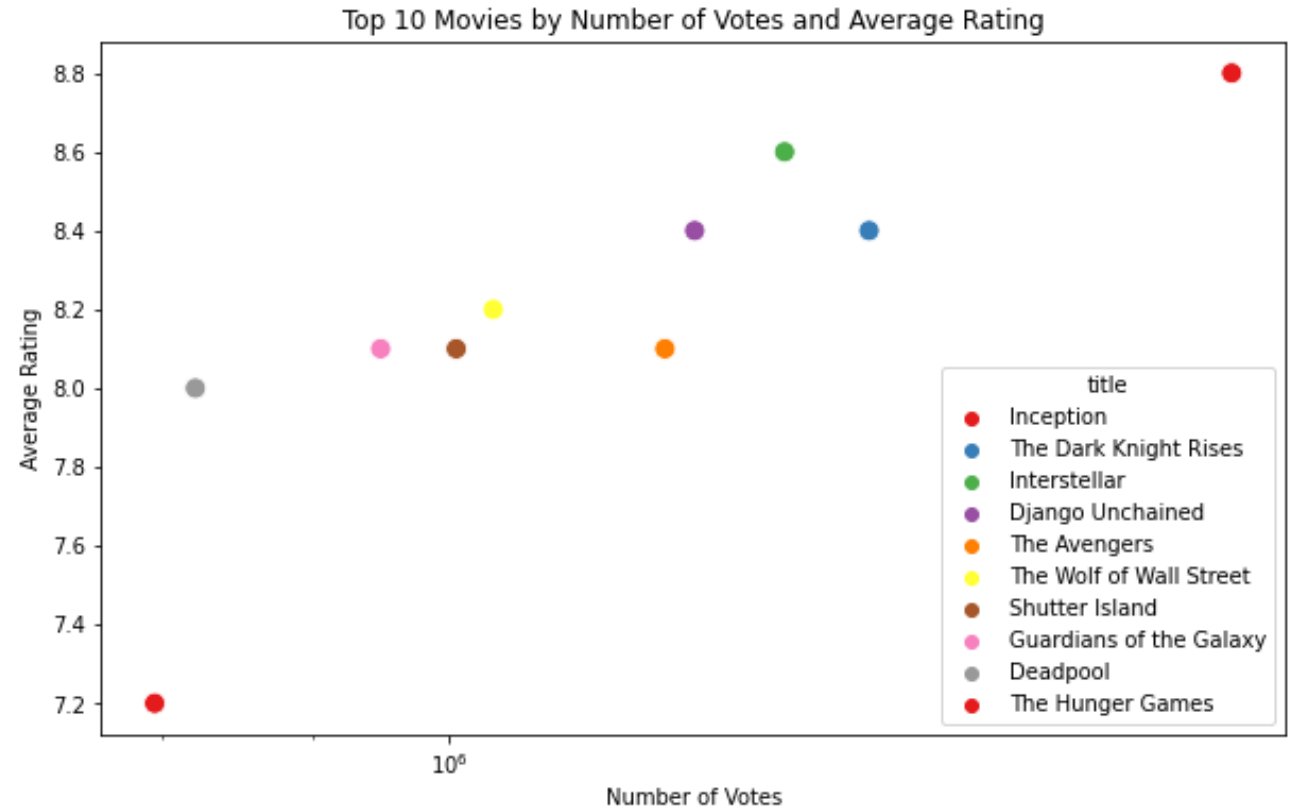# Top 10 studios with the highest average profitability

- **Insights**

- Studios such as Janus Films and After Dark Films show exceptional profitability, reflecting effective production and marketing strategies.

- Mid-tier studios with consistent profitability suggest scalability and targeted audience strategies.

Top 10 Studios with the Highest Average Profitability

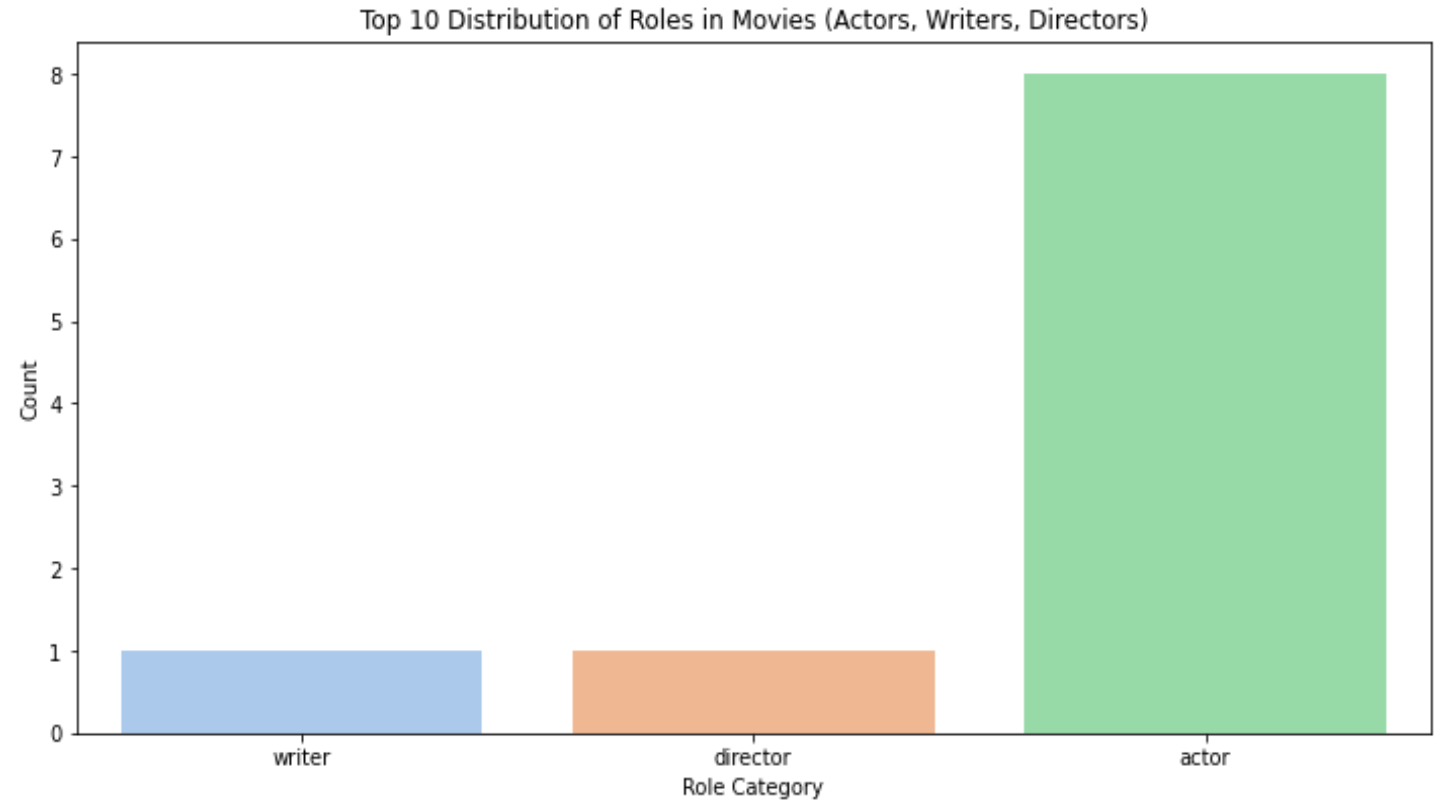# Top 10 movies by number of votes and average rating

- **Insights**

- Popular movies such as Inception, The Dark Knight Rises, and Interstellar have both high ratings and substantial audience votes.

- The correlation between high IMDb ratings and a large number of votes indicates strong audience engagement.

Top 10 distribution of roles in movies (actors, writers, directors)

Insights

- Actors dominate the distribution of roles, indicating their pivotal role in movie success.

- Directors and writers, while fewer in number, significantly influence profitability through storytelling and creative decision

Top 10 Distribution of Roles in Movies (Actors, Writers, Directors)

Recommendations

01

Invest in franchise-based movies with universal themes, strong visuals, and global marketing to maximize profitability.

02

Prioritize strategic investment in high-budget films supported by robust market analysis and diversify production portfolios to balance risk and maximize profitability.

03

Focus on high-performing genres like Comedy, Family, and Fantasy, and collaborate with proven directors and writers to produce globally appealing movies.

04

Benchmark successful studios for effective production and marketing strategies, while leveraging internationally recognized actors to maximize audience engagement and profitability.

Conclusion

This analysis has shown that franchise-based movies, particularly in high-performing genres such as Comedy, Family, and Fantasy, are most successful in delivering strong profitability and broad international appeal. While larger production budgets are often linked to higher worldwide gross, some high-budget films still underperform, underscoring the importance of well-researched market strategies and effective execution.

Furthermore, successful crew collaboration plays a decisive role: proven directors and writers infuse compelling narratives, while recognized actors draw significant audience attention. Benchmarking top studios provides vital lessons in robust marketing and distribution methods that allow franchises like Star Wars and Marvel to thrive across diverse markets.

Cont...

To maximize performance in international markets,

production teams should:

- Invest strategically in major franchises and universal themes, ensuring a balanced portfolio to mitigate risk.
- Adopt strong global marketing campaigns, including localization efforts that resonate with regional audiences.
- Prioritize narrative quality by enlisting top talent and aligning content with audience interests. By combining budget optimization, thorough market analysis, targeted marketing, and high-quality storytelling, studios can significantly enhance their ability to reach global audiences and sustain profitability

Q&A

Thank you!