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README.md

# Microsoft Movie Analysis Project



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## Overview

This project analyzes box office trends for Microsoft, who have decided to create a new movie studio. The goal was to explore what types of films have been excelling at the box office and to deliver our actionable insights to Microsoft's new movie studio executives. Our exploratory data analysis of the movie industry shows how genres and actors affect the popularity and rating of a movie. We have also explored the Return On Investments based on genres and when the movie was released within the film industry.

### About

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### Languages

- Jupyter Notebook 100.0%

# Repository Contents

- README.md
- Data Folder
- Visualizations Folder
- .gitignore
- Final\_Notebook.ipynb
- Presentation Slides

## Business Understanding

Microsoft wants to create a new movie studio, but they are unsure where to begin and need our data analysis expertise to help inform their business decisions. We have looked at movies that were the most popular at the box office, rated highly by the audience, and have had the highest ROI in the past ten years. By analyzing these data points, we are able to make recommendations about these attributes Microsoft's movies should make to be successful.

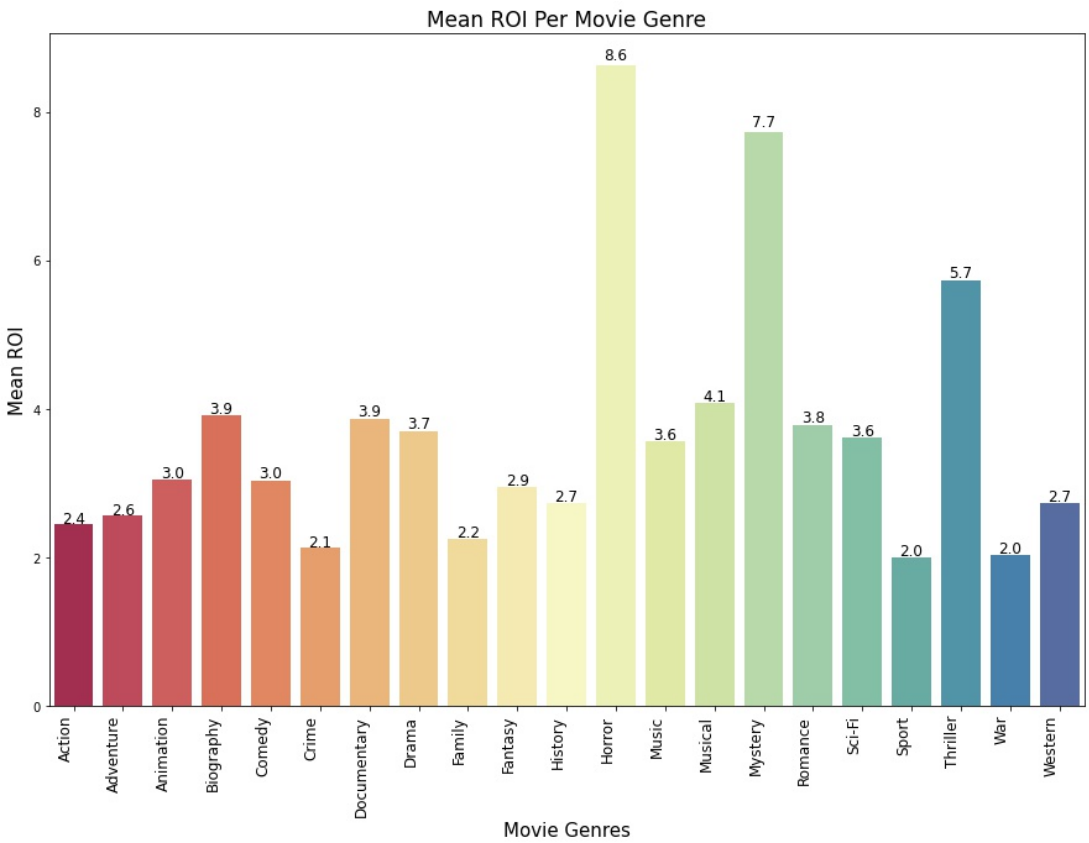
- Movie Type (Genre): What types of movies do audiences most want to watch?
- Movie Type (Genre): What movie genre has the highest ROI?
- Release Month: When is the best time of year to release a movie?
- Casting: What type of actors and actresses should be cast?

## Data Understanding and Analysis

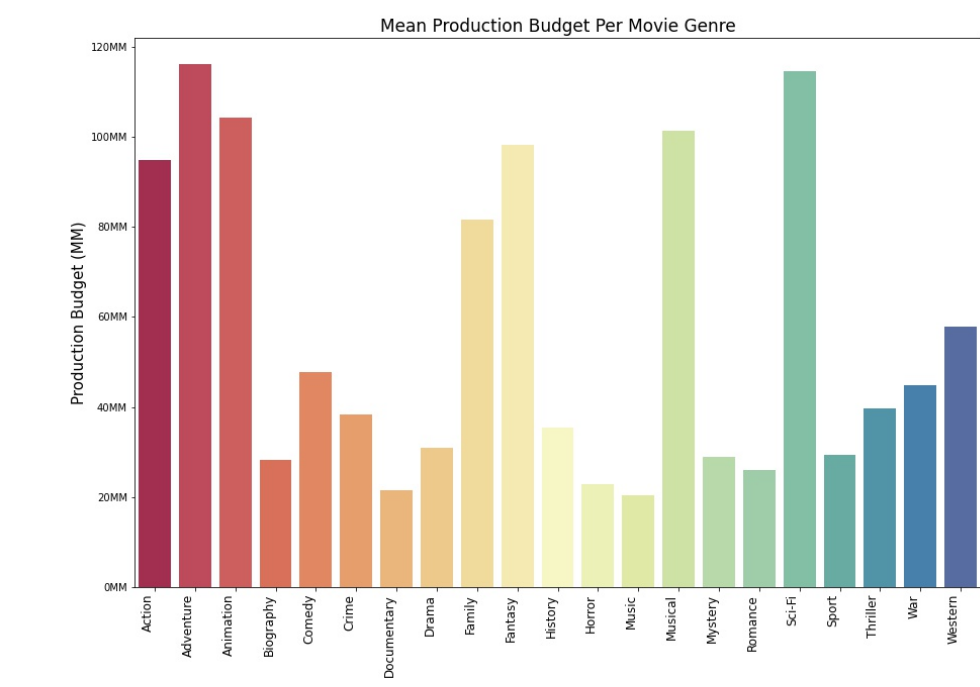
We utilized four different data sources for our analysis to obtain a better understanding of the movie industry and its ongoing trends. In these datasets, we can see the popularity of the movies, their rating with critics and the general public, and their ROI based on the production value and worldwide gross. Lastly, we saw the actors and actresses that were cast in the movies along with their average ratings.

- The Movie Database (TMDb)
- Internet Movie Database (IMDb)
- The Numbers
- Rotten Tomatoes

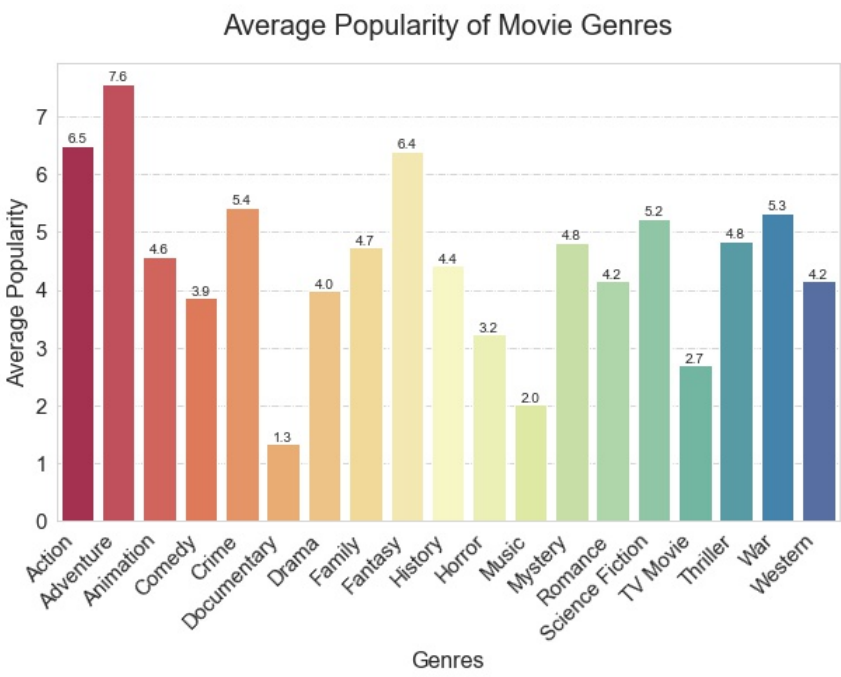
The movie genres with the highest return on investment were Horror, Mystery, and Thriller.



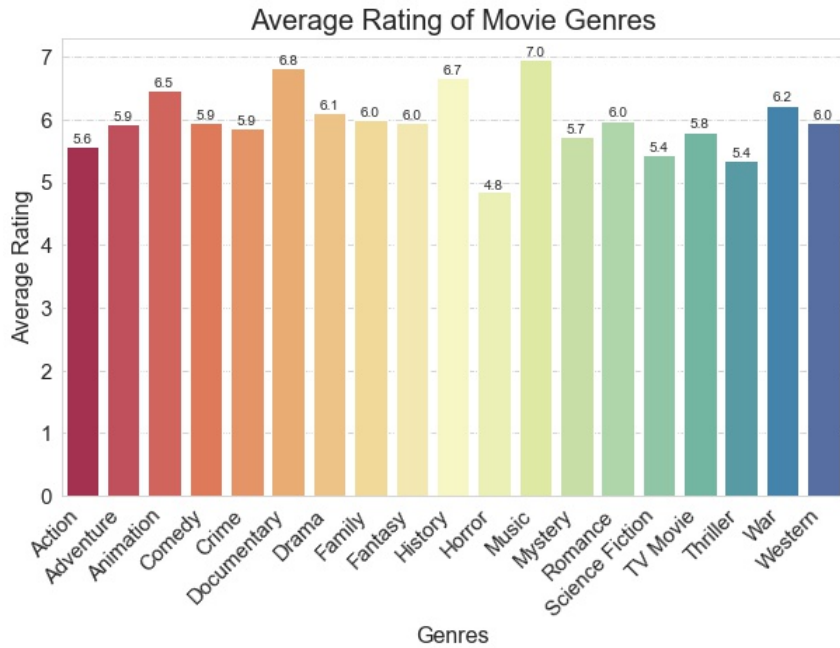
The movie genres with the lowest production budgets were Music, Documentary, and Horror.



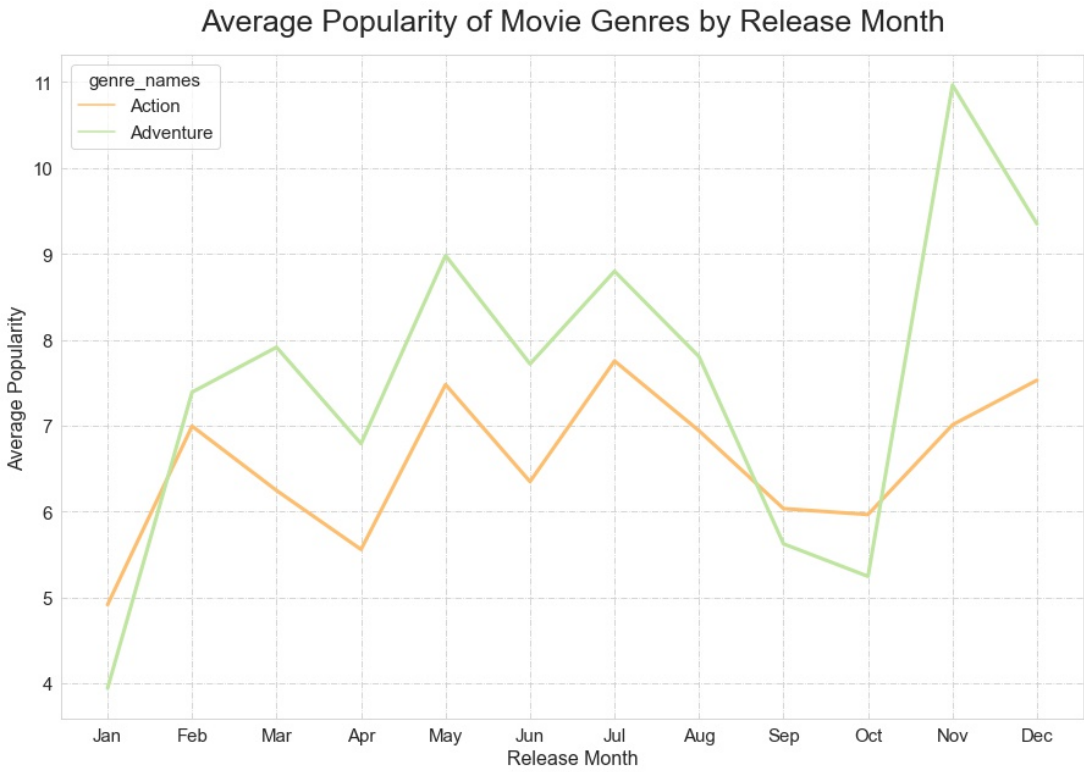
The most popular movie genres are Adventure, Action and Fantasy.



The highest audience rated movie genres are Music, Documentary, and History.

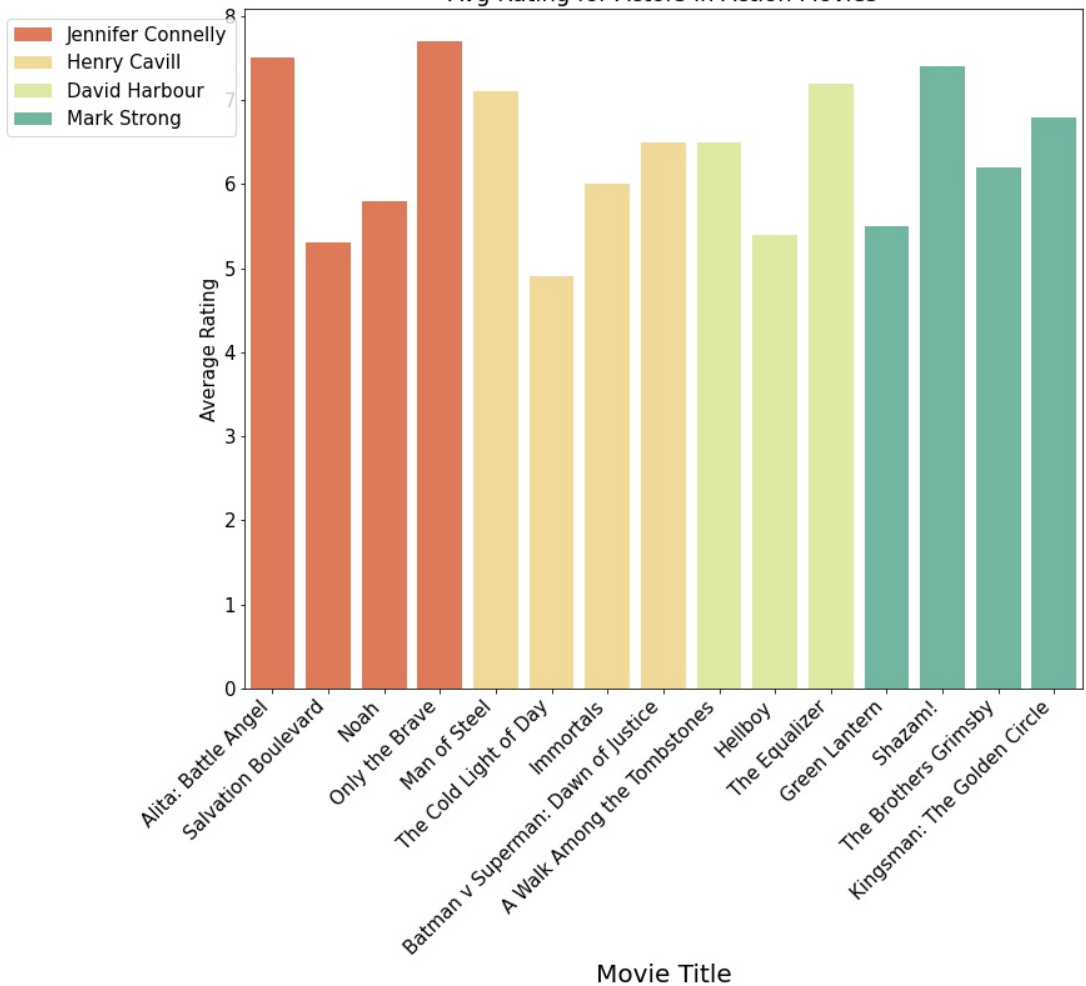


The most popular movies in the Adventure genre are released in November, while in the Action genre they are released in July.

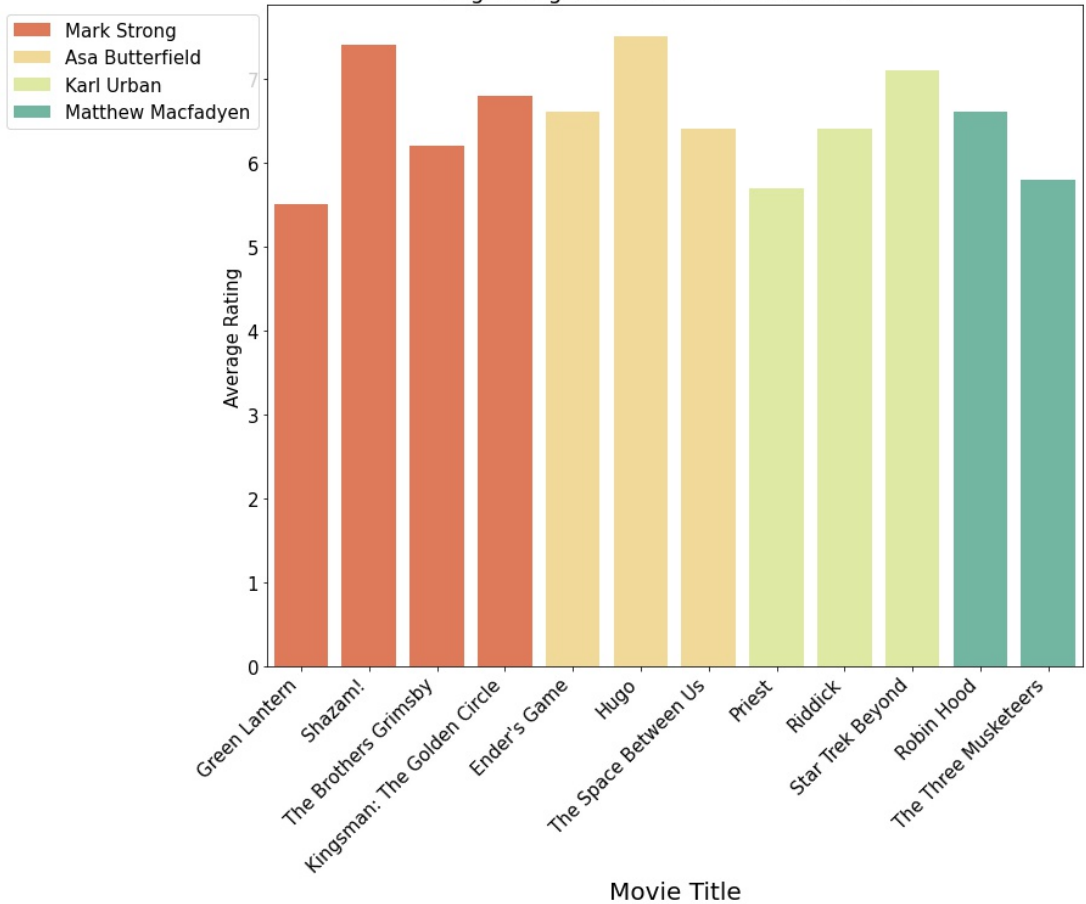


The best actors/actresses should be cast based on their consistent average rating between the popular genres.

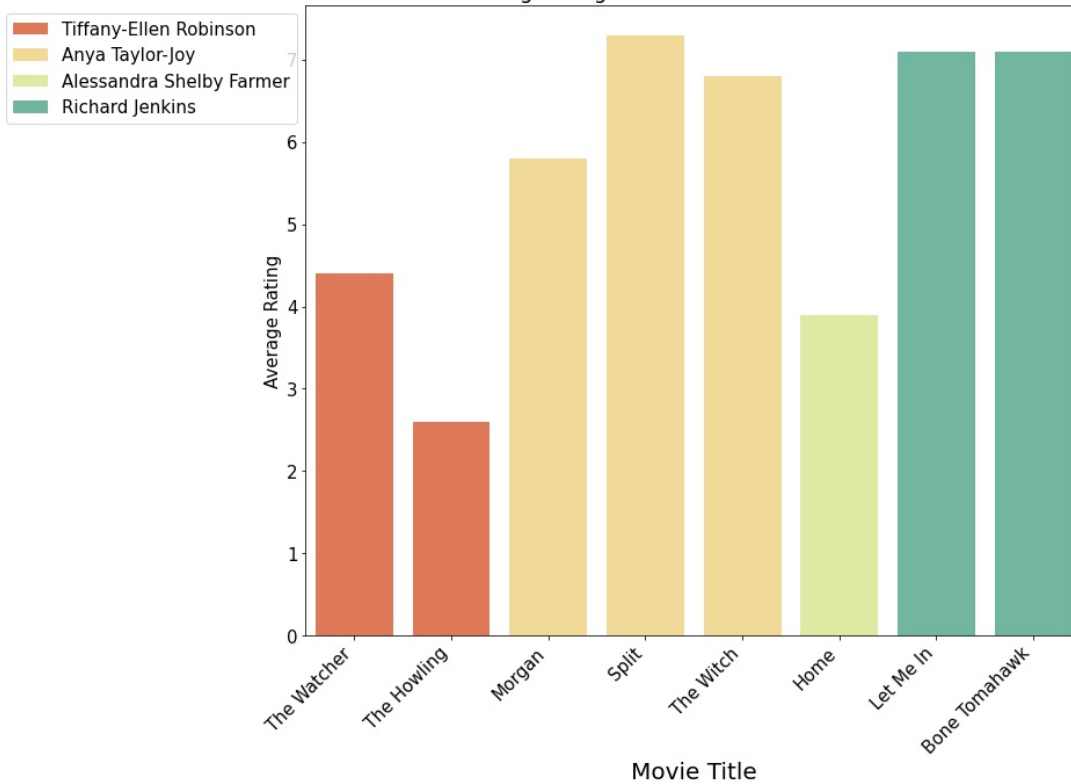
Avg Rating for Actors in Action Movies



Avg Rating for Actors in Adventure Movies



Avg Rating for Actors in Horror Movies



## Conclusion

To conclude, we recommended either a low risk approach with horror movies or a high risk approach with action/adventure films.

- Low Risk - The benefit of the low risk approach is the high ROI and low cost of production although Horror is considered less popular with consumers. If Microsoft decided to move forward with this approach, we recommend for the movie to be released in February featuring popular horror actress Anya Taylor-Joy.
- High Risk - Going with an Action/Adventure film is beneficial because it is the most popular genre amongst consumers and normally has a high budget for advertisement which is likely to draw in a larger audience but needs to earn a significant amount to maintain a reasonable ROI. Based on this recommendation, if Microsoft wishes to proceed with this route, we suggest the movie to be released in November featuring popular action/adventure actor Mark Strong.

## Further Analysis

Potential opportunities for further analysis:

- Obtain a database with more actors/actresses and their ratings across various castings.
- Look into the profitability of an actor/actress and how well they perform based on the director or writer they are working with.
- View ROI based on a director and their works.
- See how the ratings and popularity scales differ between different reviewing platforms and how it influences the average viewer and their likelihood to view the movie.
- Compare the ROI difference between domestic gross and worldwide gross. How some types of movies perform better in some countries compared to others.
- Discuss who the studio's main target audience is and perform a data analysis based on those traits.