MICROSOFT VISUAL STUDIO

BLUEPRINT

REPORTED BY:
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SUMMARY

- Microsoft wants to enter into the lucrative business of creating original video content by coming up with a new movie studio. Based on scientific research on the domain, the following were the insights found:

  - The movie genres **Action**, **Adventure** & **Drama** are the most popular.

  - Summer months (**June**, **July**, and **August**) are peak performance months in terms of both average worldwide gross and average rating.

  - The safest budget range is **$170M - $255M**, with the highest profitability index of **96.96%**.

CONTENTS

1 BUSINESS PROBLEM

BUSINESS PROBLEM

- Microsoft wants a piece of the cake in the movie industry, however, it is limited in the domain knowledge. The research was done based on the following research questions:
  - Which are the **top performing movie genres**?
  - What are the **preferences** of the **target audience**?
  - How to break **market barriers**?

BUSINESS PROBLEM

- The following are the **data questions** answered in this analysis:
  1. What types of films are currently performing best at the box office?
     - What are the characteristics of top-performing movies based on box office gross?
  2. Which movie genres have been the most popular and successful over time?
     - What are the trends in genre preferences?
  3. How does the movie budget impact box office revenue, and can smaller budget films be profitable?
     - How does the movie budget affect box office revenue?
  4. Are there seasonal trends in movie performance, and when is the best time to release a movie?


DATA

DATA

- The research retrieves information from IMDb, Box Office Mojo and The Numbers.

Data Description

1. IMDb

IMDb Basics:

- Dataset: imdb.title.basics
- Description: ‘movie_id’, ‘primary_title’, ‘original_title’, ‘start_year’, ‘runtime_minute’, ‘genres’
- Relationship to Data Analysis Questions: Provides information on movie genres and basic movie details required for genre analysis.

IMDb Ratings:

- Dataset: imdb.title.ratings
- Description: ‘movie_id’, ‘averagerating’, ‘numvotes’
- Relationship to Data Analysis Questions: Allows us to explore audience preferences based on user ratings and reviews.

DATA

2. Box Office Mojo by IMDbPro

- Dataset: bom.movie_gross
- Description: Contains box office gross information for movies;
  i.e 'title', 'studio', 'domestic_gross', 'foreign_gross', 'year'
- Relationship to Data Analysis Questions: Essential for analyzing box office success and financial performance of movies.

DATA

3. THE NUMBERS

- Dataset: tn.movie_budgets
- Description: Contains movie financials;

    i.e. 'id', 'release_date', 'movie', 'production_budget', 'domestic_gross', 'worldwide_gross'

- Relationship to Data Analysis Questions: Enables us to analyze the impact of movie budgets on box office revenue.

3 METHODS

DATA PREPARATION

- The following describes the conventional data cleaning process used to remove inconsistencies and operate on standardized data:

1. **Data Loading**

   - The datasets were loaded into DataFrames in the working environment.

2. **Data Cleaning**

   - Irrelevant variables & missing values were dropped; Relevant datasets were merged.

3. **Handling Outliers**

   - Outliers i.e. genre outliers were put into consideration.

4. **Feature Engineering**

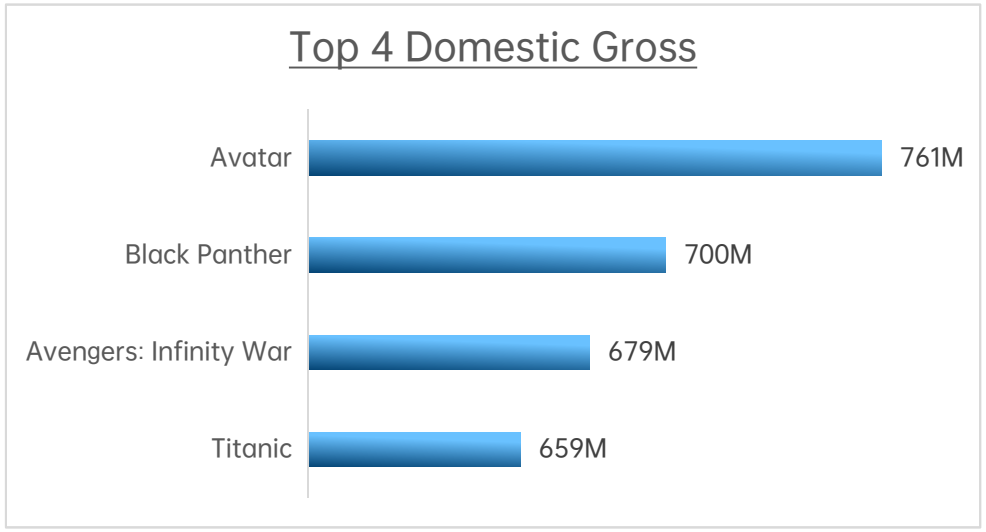
   - Involves creating new variables that best suit the overall analysis;

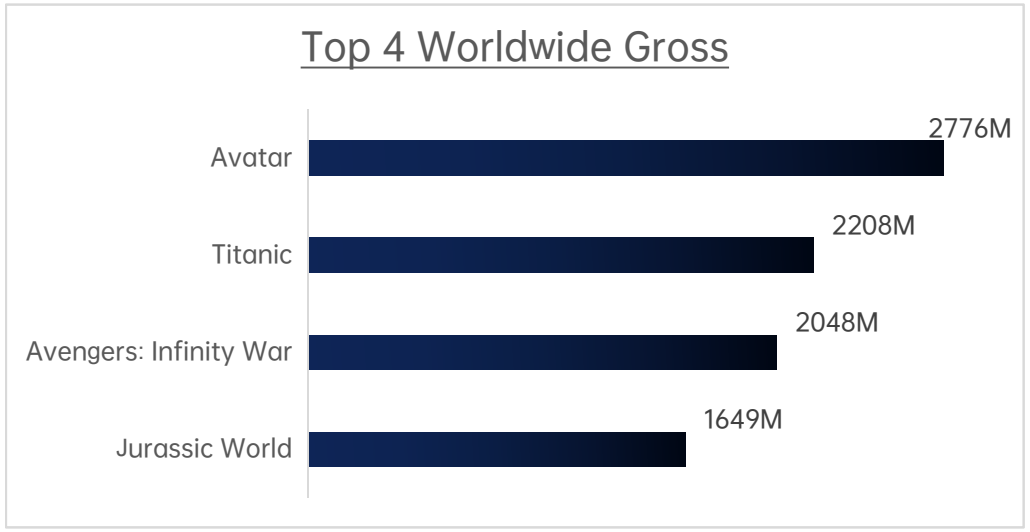
     i.e. ‘profit’, ‘release_month’ and ‘foreign_gross’

ANALYSIS

- Exploratory Data Analysis was carried out in order to provide answers to our business questions defined earlier.

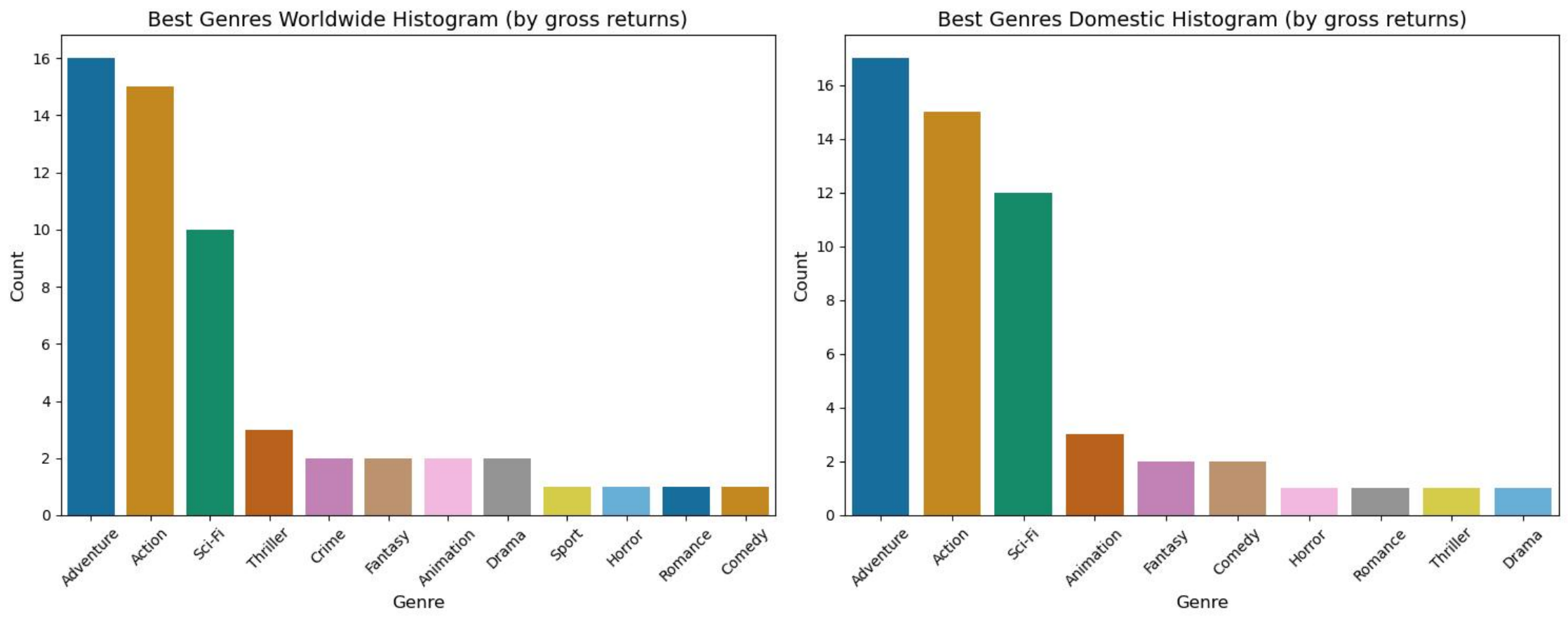
1. What types of films are currently performing best at the box office (based on box office gross)?





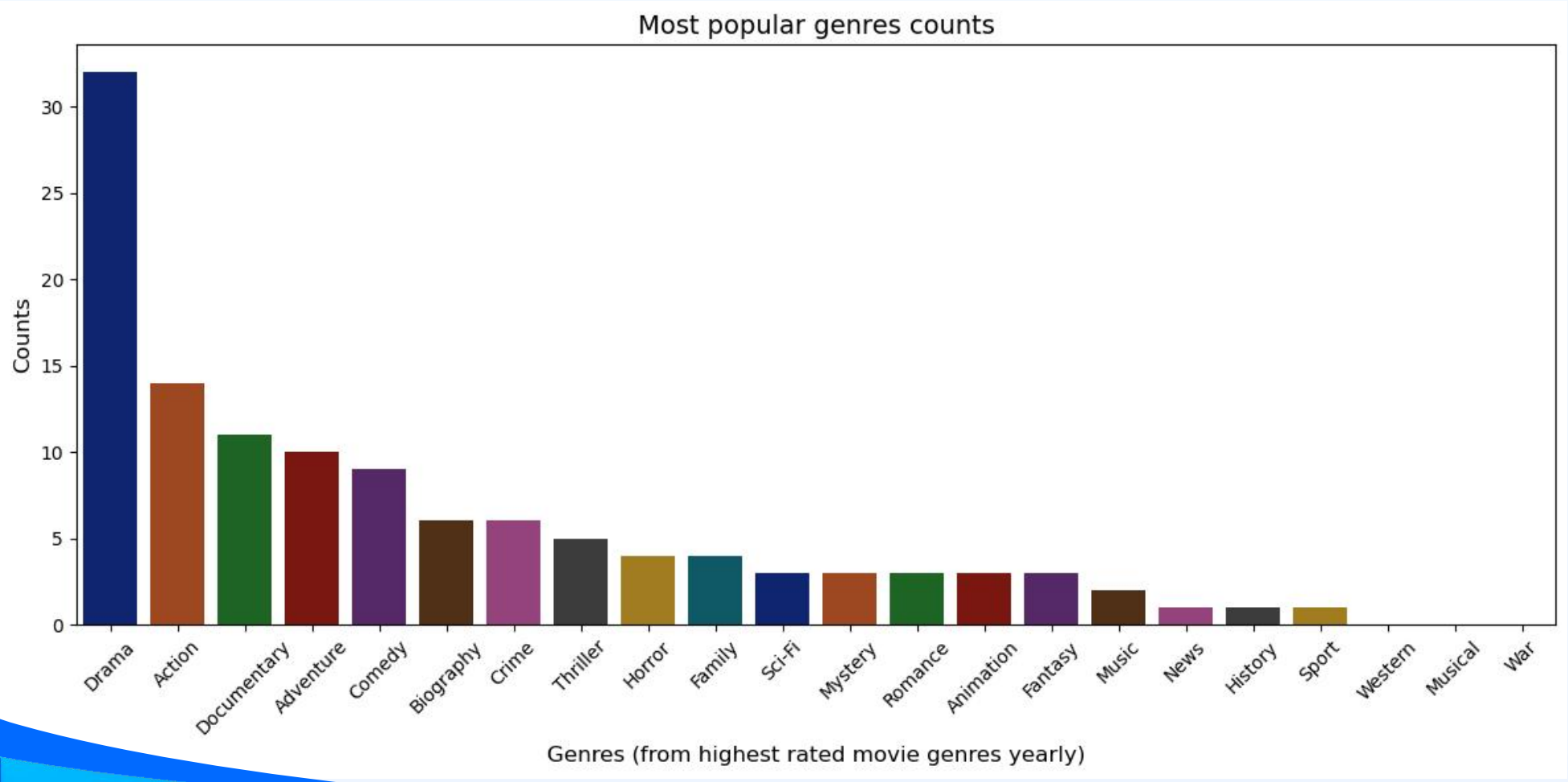
ANALYSIS

- The most occurring genre in the top 20 best performing movies?



ANALYSIS

2. Which movie genres have been the most popular and successful over time?



- Drama
- Action
- Documentary
- Adventure
- Comedy

ANALYSIS

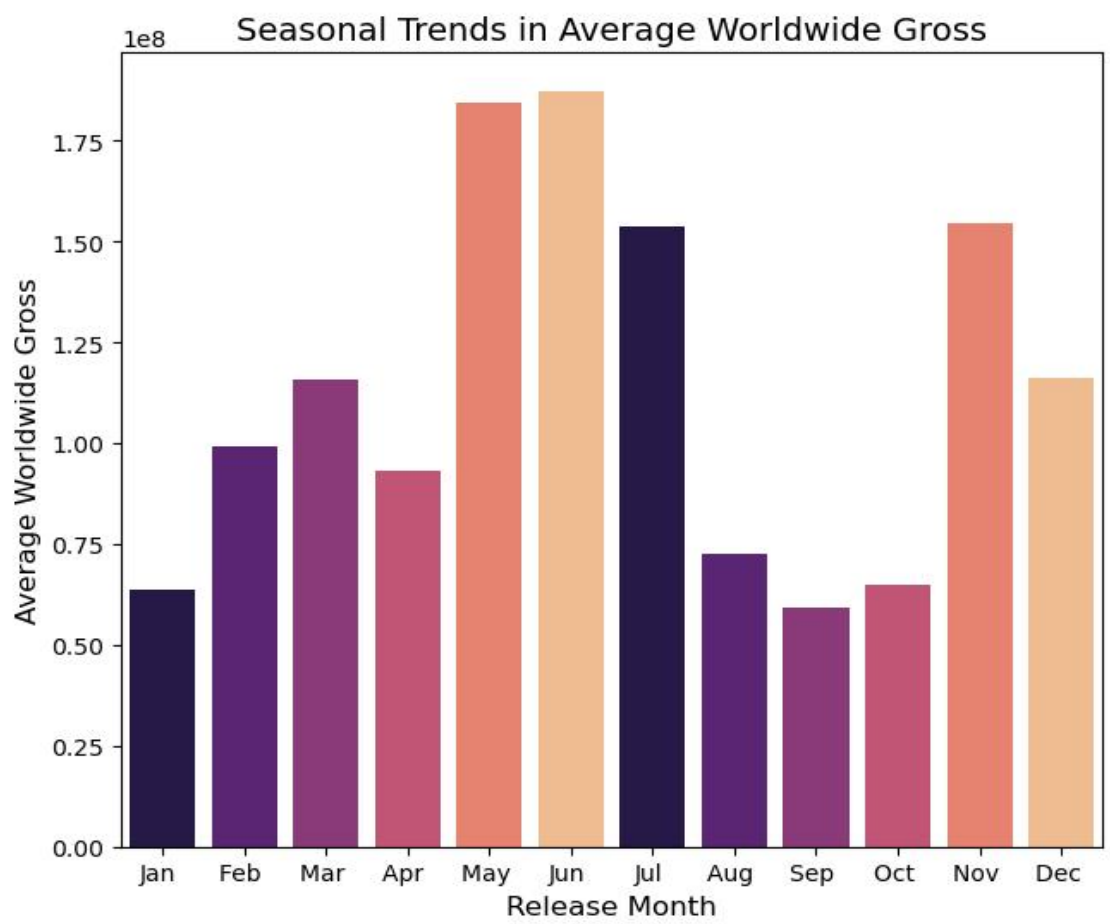
3. How does the movie budget impact box office revenue, and can smaller budget films be profitable?

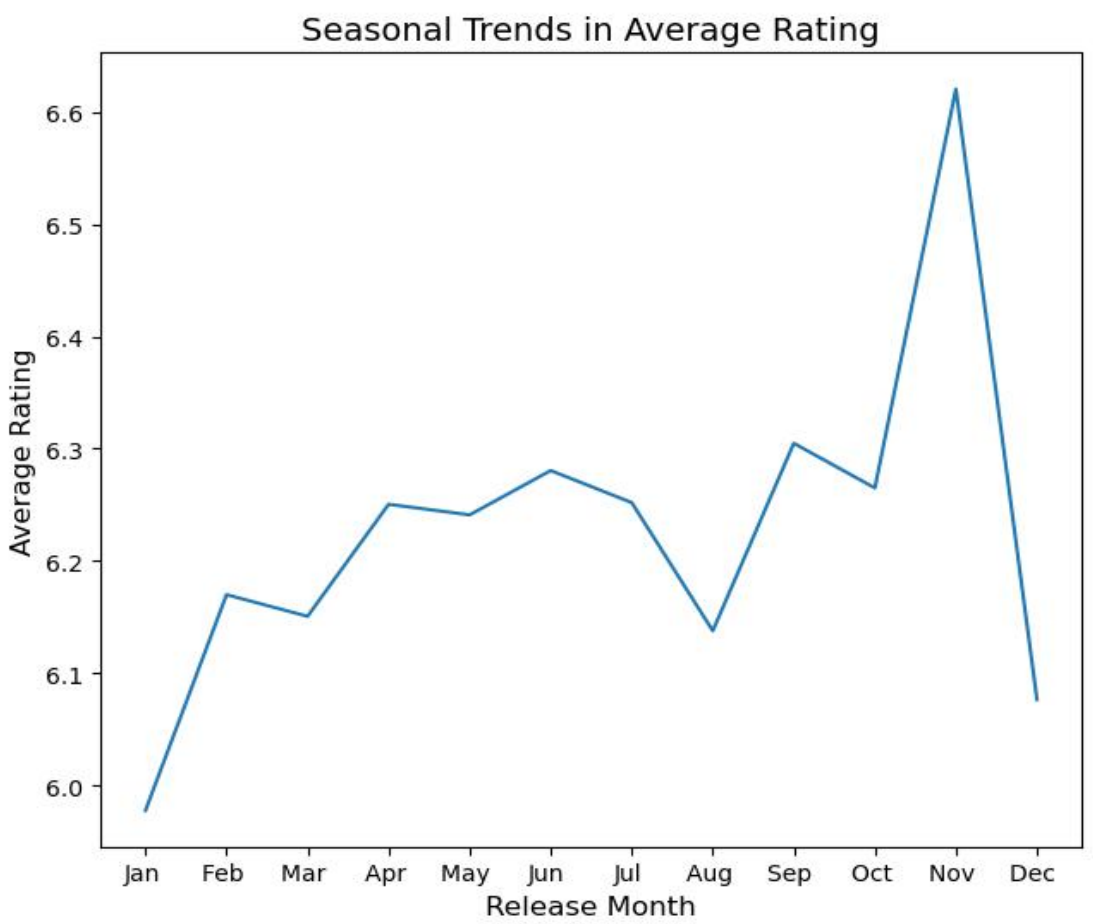
- The relationship between movie budget and worldwide gross was determined by calculating Pearson's correlation coefficient. (corr = 0.78 ; strong positive linear correlation)

budget_range	profitability(%)
1.4K - 85M	58.7
85M - 170M	91.0
170M - 255M	97.0
255M - 340M	88.9

ANALYSIS

4. Are there seasonal trends in movie performance, and when is the best time to release a movie?





4 RESULTS

RESULTS

- Months with Higher Average Worldwide Gross:
  - June has the highest average worldwide gross among all months, followed closely by May and December.
  - These months could be considered the best time to release a movie for maximum revenue, as they tend to generate higher box office gross on average.
- Seasonal Patterns:
  - Summer months (June, July, and August) show strong performance in terms of both average worldwide gross and average rating.
  - This could be due to the summer vacation period and increased movie going during this time.
  - December, being the holiday season, also exhibits high average worldwide gross and average rating, making it a potential lucrative period for movie releases.
- Top 5 best performing genres in terms of gross are:
  - Adventure
  - Action
  - Sci-fi
  - Thriller
  - Drama

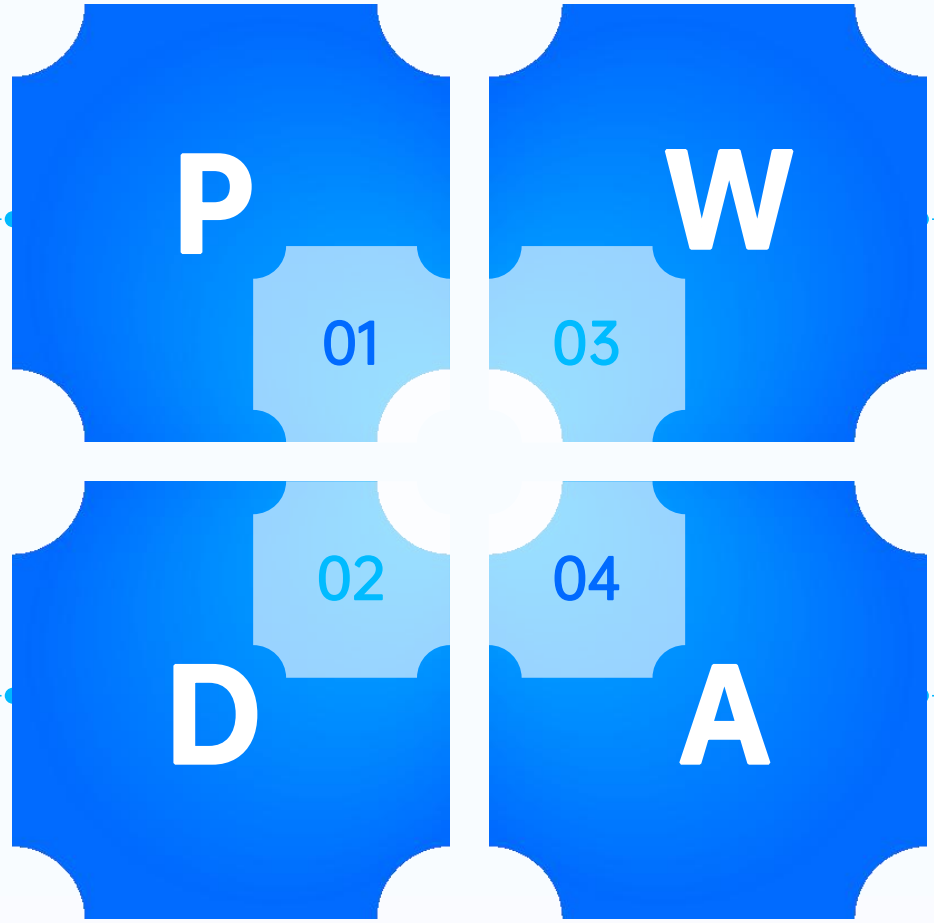
RESULTS

Production Budget

On average, movies with higher budgets tend to have slightly higher domestic grosses, but the relationship is not very strong.

Domestic Gross

Movies that perform well in the domestic market are highly likely to perform similarly well in the worldwide market.



Worldwide Gross

Movies with higher budgets are more likely to have significantly higher worldwide grosses.

Average Rating

Movies with higher worldwide grosses may slightly tend to have slightly higher average ratings, but the relationship is not very strong.

The above information is based on the correlation coefficients between variables.

5 CONCLUSION

CONCLUSION

1. Recommendations for the Business:

- Focus on Popular Genres

  The genres that are likely to perform well are:

  - Action
  - Adventure
  - Animation
  - Comedy
  - Documentary
  - Drama
  - Fantasy
  - Scifi
  - Thriller

CONCLUSION

- Optimize Release Timing

  Target months with historically higher average worldwide gross and audience ratings to maximize revenue and audience reach.
  The best months of release are:
  - August
  - December
  - July
  - June
  - May
  - November

CONCLUSION

- Budget Allocation

  Analyze the relationship between movie budgets and box office revenue to make informed decisions about budget allocation for different movie projects. This can help optimize resources and manage financial risks.

  The safest budget range is: $170M - $255M, with the highest profitability index 96.96%.

CONCLUSION

2. Limitations of the Analysis:

a.) Data Quality: The accuracy and completeness of the analysis depend on the quality of the data used. Incomplete or biased data could impact the reliability of the results.

b.) External Factors: The movie industry is influenced by various external factors, such as competitor strategies, economic conditions, and cultural events, which are not directly captured in the analysis.

c.) Subjective Nature: Movie success involves subjective elements such as artistic creativity, storytelling, and audience emotional connection, which cannot be fully captured through data analysis alone.

CONCLUSION

3. Future Improvements:

To enhance the project in the future, consider the following:

a.) Validation and Testing: Validate the analysis results using external datasets or real-world performance. Testing the model on a separate hold-out dataset can help assess its generalizability.

b.) Incorporate Audience Sentiment Analysis: Analyze audience sentiments and reviews using natural language processing techniques to gain deeper insights into audience preferences and reactions.

c.) Market Research: Conduct market research and audience surveys to complement data analysis and gather qualitative feedback on movie preferences and expectations.


“IT’S NOT ABOUT IDEAS.
IT’S ABOUT MAKING
IDEAS HAPPEN.”
— SCOTT BELSKY
CO-FOUNDER OF BEHANCE

THANK YOU

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