Data-Driven Insights for Movie Box Investment Decisions

Presented by:

Abby Stacy | Brenda Chepkemoi| Daniel Owuor

Marian Omondi | Sonia Cherop

Project Overview

Movie production is capital intensive and risky

Poor decisions can lead to major financial losses

We use data analytics to guide strategic entry decisions

Business Understanding

Company plans to launch a new movie studio

Needs insight into profitability and risk

Focus on revenue, budget efficiency, and ROI

Project Objectives

Identify high-performing genres

Analyze ratings, revenue, and budgets

Evaluate ROI across genres
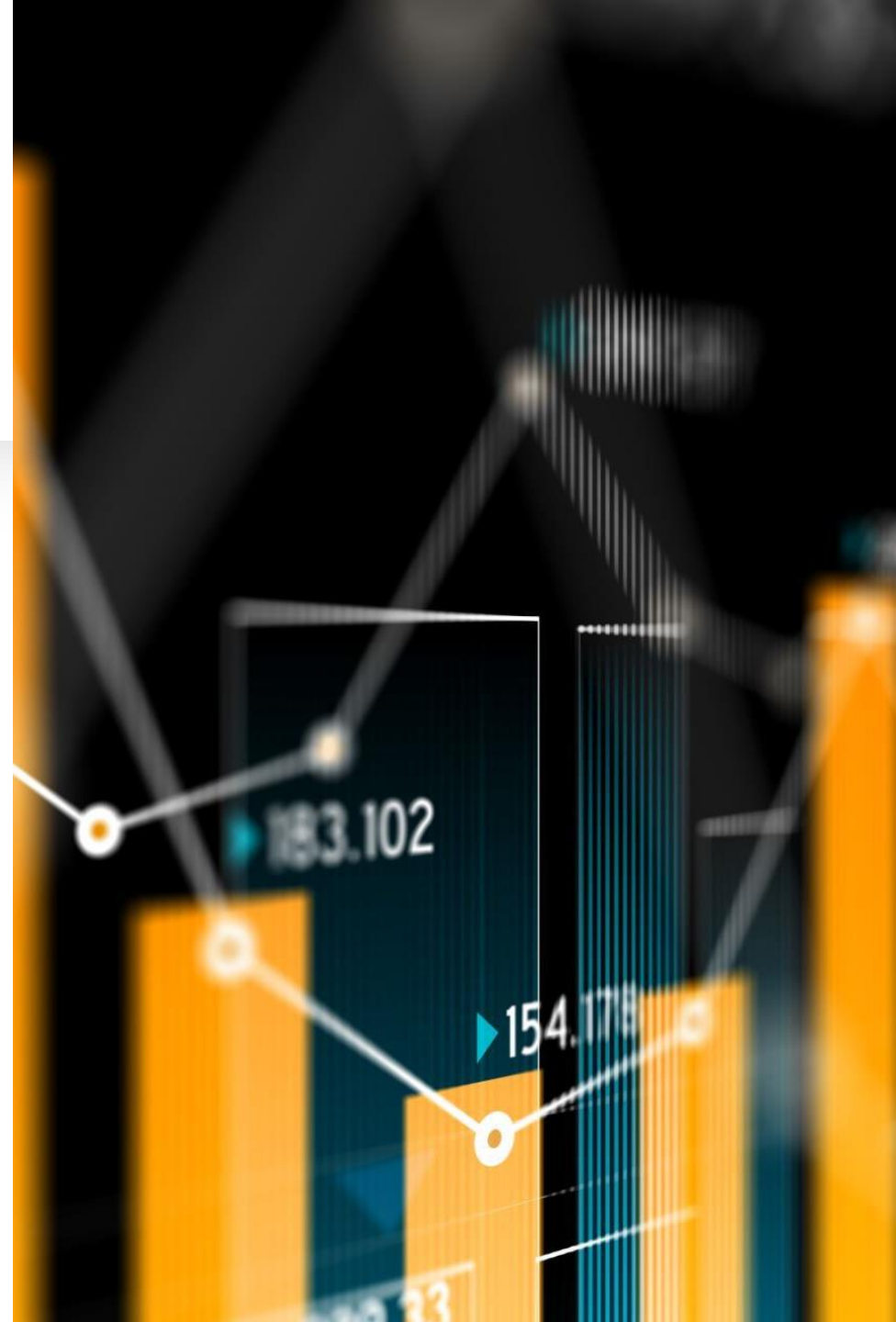
Provide actionable business recommendations

Data Understanding

- Box Office Mojo (bom.movie_gross): Provided the financial backbone, including domestic and foreign gross revenue for over 3,000 titles.

- IMDb Database (im.db): movie_basics: Contained the structural data—titles, release years, and genre classifications.

- Movie_ratings: Provided the average user ratings and the volume of engagement (vote counts).

Data Preparation and Cleaning

- Merged multiple data sources

- Handled missing and inconsistent values

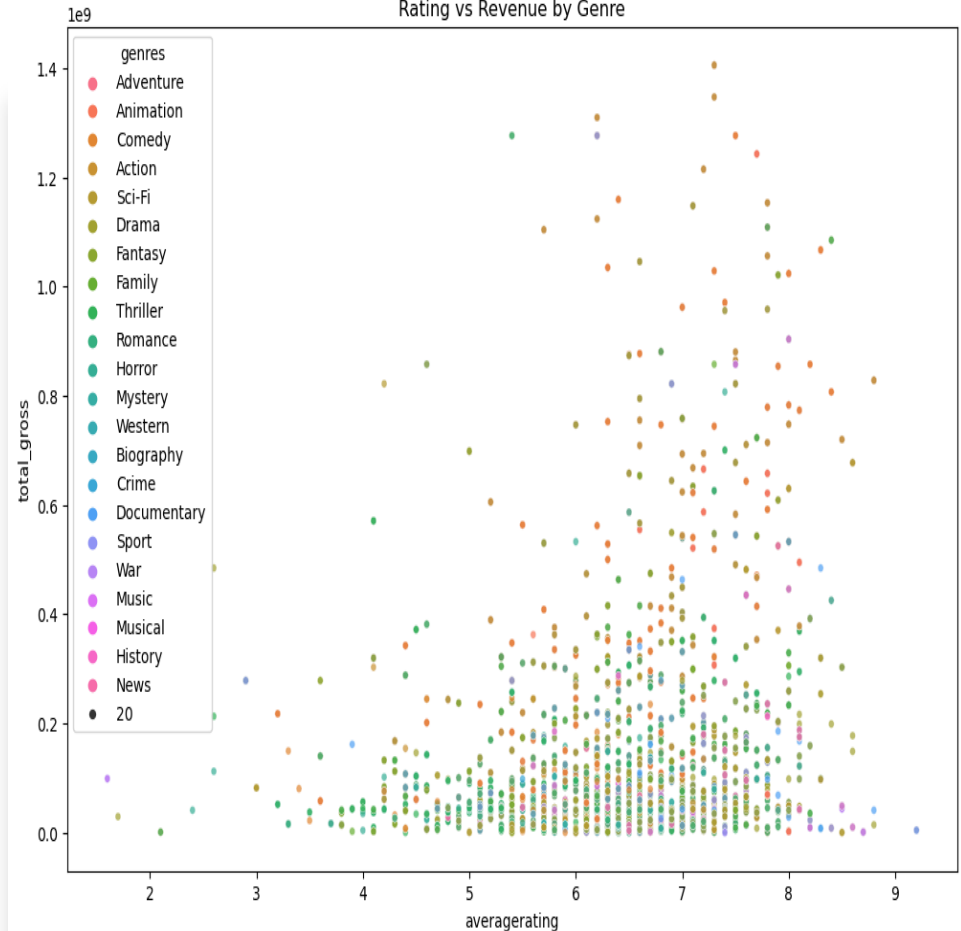- Prepared analysis-ready dataset
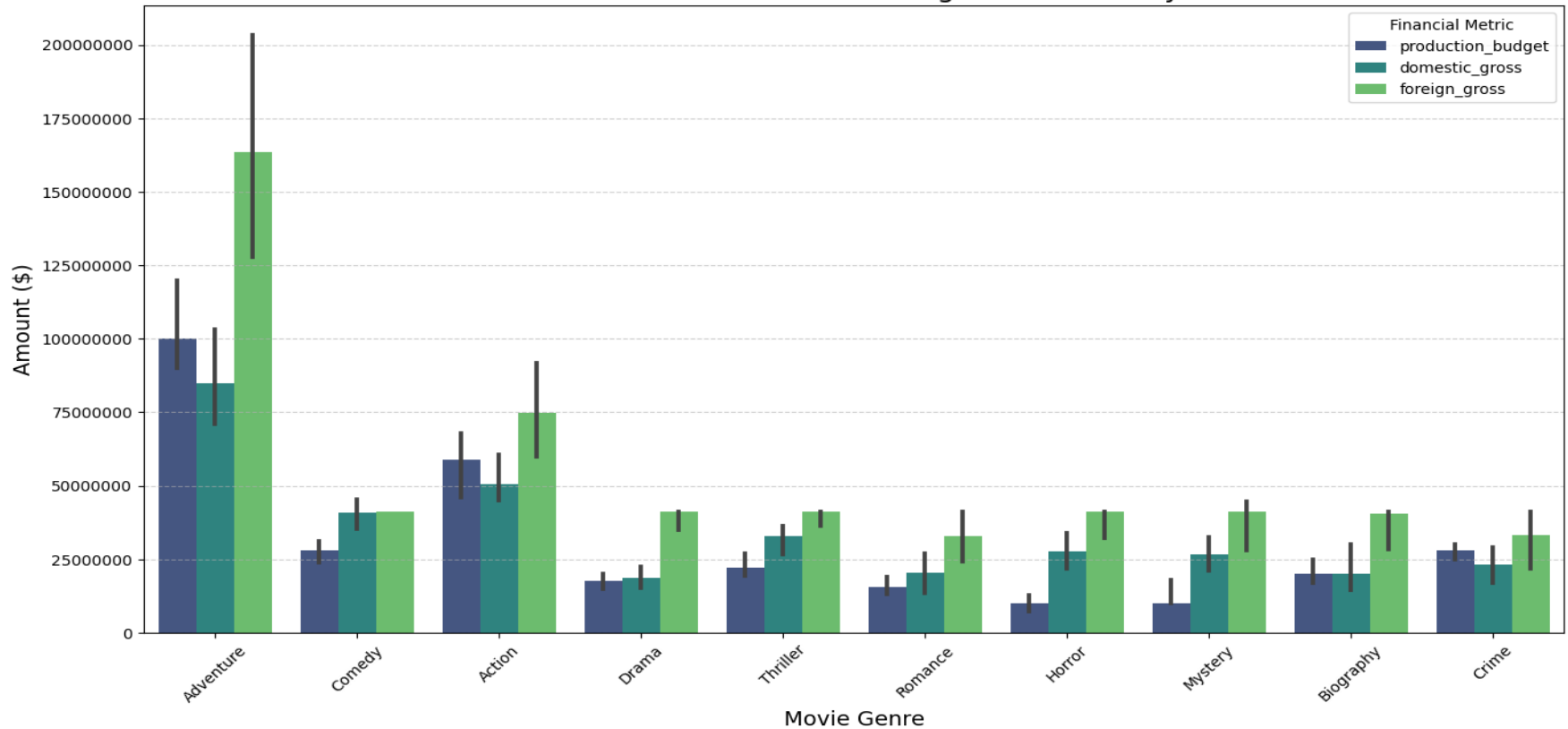
Data Analysis and Visualisation

Analyse and visualize relevant columns to our project after merging the Bom csv file and imdb.

Ratings vs Revenue by Genre

- Higher-rated movies generally achieve higher revenue

- Adventure, Action, Drama, Comedy and Sci-Fi dominate high revenue ranges

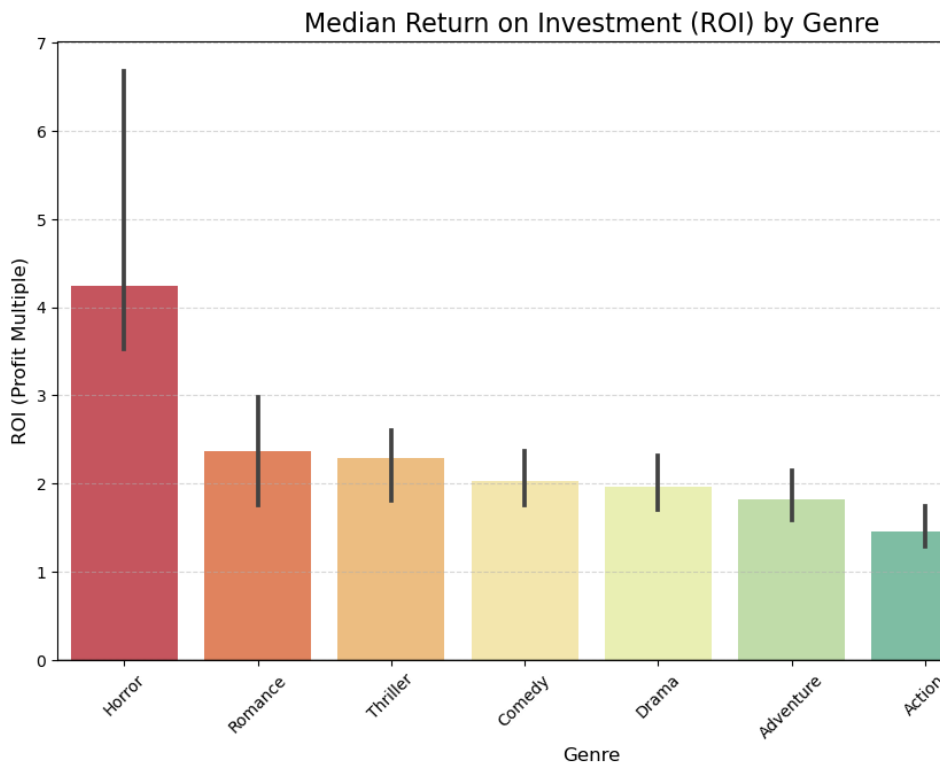- Documentary, News, Sport and War cluster at lower revenue levels

Rating vs Revenue by Genre

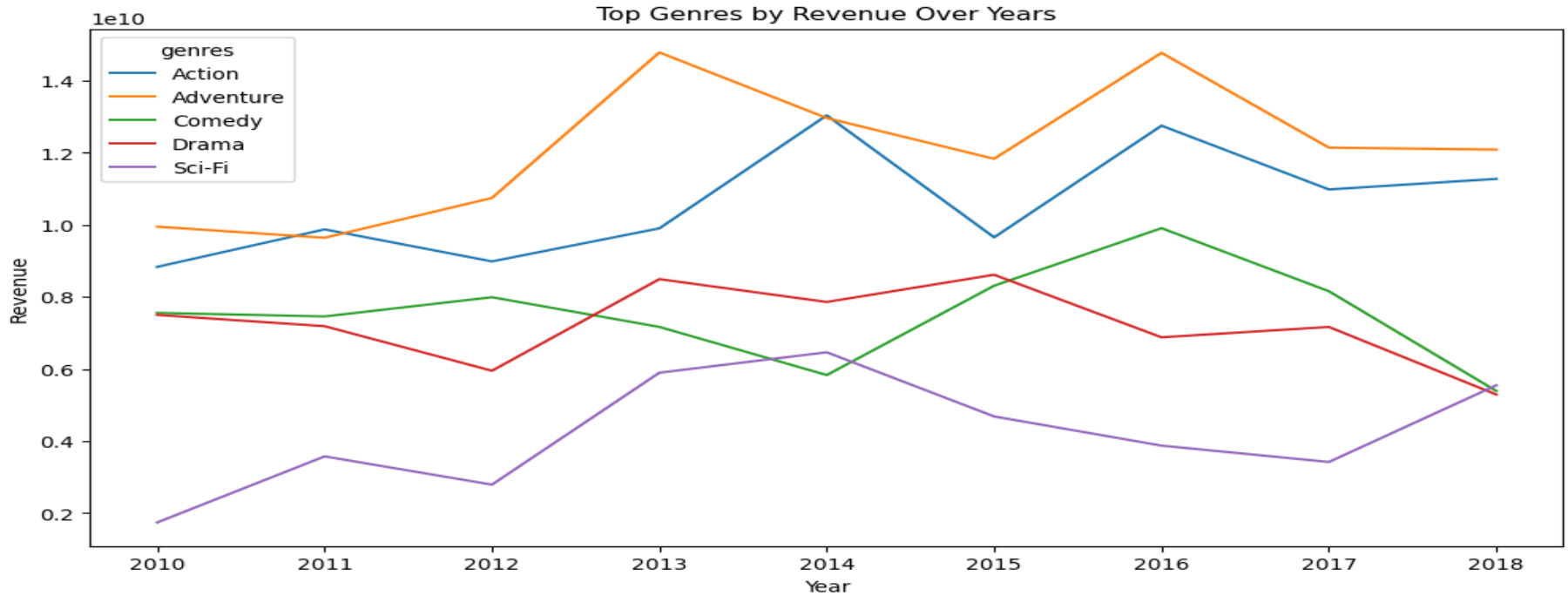Investment vs. Return: Median Budget and Gross by Genre

Investment vs Return by Genre

- High-budget genres generate large revenue but with high risk
- Foreign gross outperforms domestic gross in most genres
- Budget efficiency varies significantly by genre

ROI by Genre

Median Return on Investment (ROI) by Genre

- Horror has the highest median ROI
- Low production budgets reduce downside risk
- High-budget genres show lower efficiency despite high revenue

Top Genres by Revenue Over Years

Revenue Trends Over Time

- Adventure and Action dominate revenue over time

- Drama and Comedy show stable mid-level performance

- Animation shows occasional revenue spikes

Business Recommendations

- Low-budget horror films offer high returns, lower risk, and are the safest way for a new studio to enter the market.

- Scale Into big budget genres like action, adventure, and Sci-Fi after financial stability.

- Focus on production of movies for internationally as it generates more revenue that domestic production.

- The results demonstrate that high box office revenue does not always mean high profitability, making return on investment (ROI) a more reliable measure of success.

- Our findings confirm that genre selection and budget efficiency play a major role in determining movie performance and overall studio sustainability.

- Overall, using analytics enables studios to make strategic, informed, and sustainable investment decisions that support long-term growth.

Thank you!.

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