

Movie Success Analysis

Guiding Data-Driven Decisions for Our New Studio

Prepared by:
Morvine Otieno
Stella Kiarie
Kumati Dapash
Doris Mutie

Overview

Goal:

- ▶ Identify key factors that drive box office success to guide our studio's production strategy.

Approach:

- ▶ Analyze 3,000+ films (2010-2019) from Box Office Mojo and IMDB.
- ▶ Explore relationships among genres, runtimes, audience ratings, and studio performance.

Outcome: Adventure and Action films with strong audience approval and 90-130-minute runtimes consistently perform best.

Business Understanding

- ▶ **Background:**
The entertainment market is shifting rapidly as streaming and global distribution expand.
- ▶ Our company seeks to enter film production with a clear understanding of what makes a movie profitable.
- ▶ **Business Problem:**
We lack insights into which types of films perform best commercially.
- ▶ **Goal:**
Use data analysis to support smart investment and creative decisions.

Data Understanding

Sources:

- ▶ **Box Office Mojo:** revenue (domestic + international).
- ▶ **IMDB:** movie genres, runtimes, ratings, votes, and release years.

Key Variables:

- ▶ `domestic_gross`, `foreign_gross` → movie earnings
- ▶ `averagerating`, `numvotes` → audience response
- ▶ `runtime_minutes`, `genres`, `studio` → production traits

Why These Data:

They connect what audiences see and rate with how films perform financially.

Data Analysis Approach

- ▶ While analysis was done using Python (`pandas`, `matplotlib`, `seaborn`, `SQLite`), the focus is on *interpreting insights*, not the code.
We explored:
 - ▶ **Genre performance** – which categories earn the most.
 - ▶ **Ratings impact** – does audience approval predict earnings?
 - ▶ **Runtime correlation** – is there an optimal length?

Hypothesis Testing: Genre vs. Box Office Success

Objective: Test whether movie genre is significantly related to box office performance.

Method: Chi-Square Test of Independence

- ▶ H_0 : No relationship between movie genre and box office success.
- ▶ H_1 : A relationship exists.

Results:

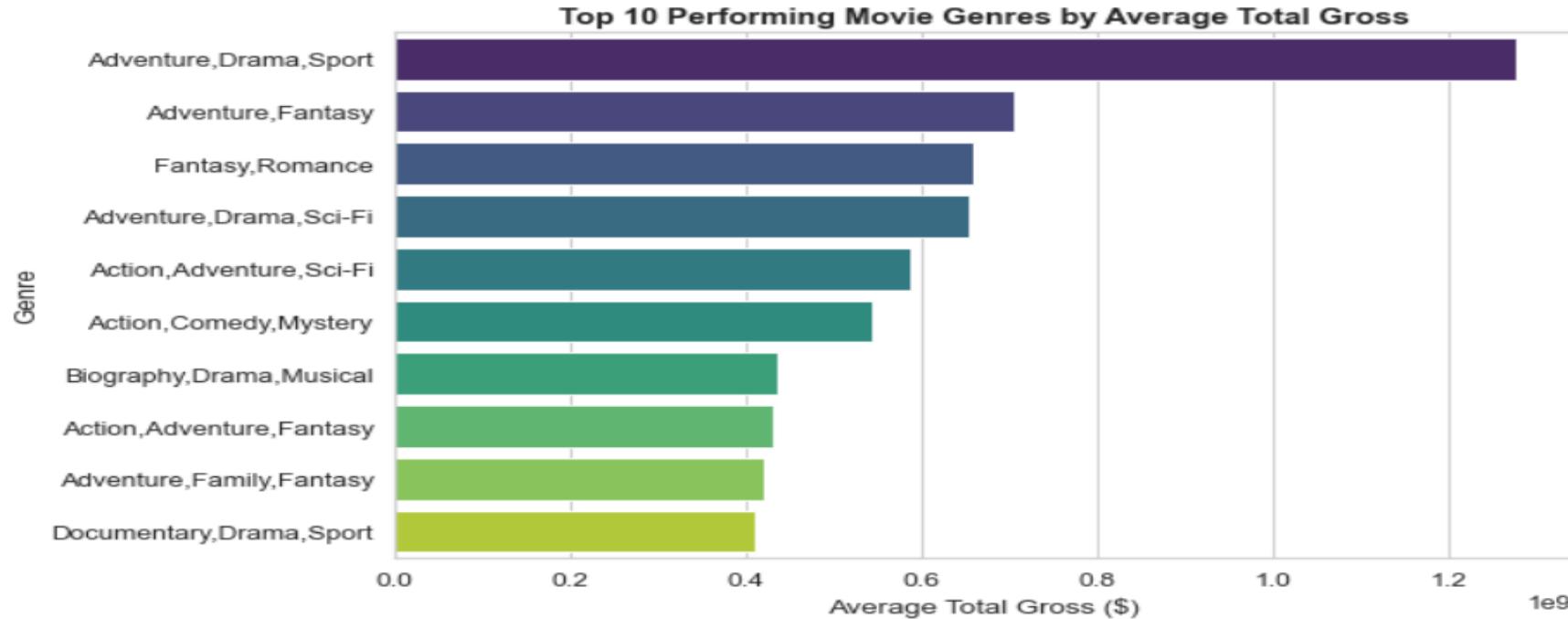
- ▶ $\text{Chi}^2 = 736.65$
- ▶ $p\text{-value} = 1.06 \times 10^{-34}$
- ▶ $df = 321$

Interpretation:

Since the $p\text{-value} < 0.05$, we **reject H_0** .

✓ **Conclusion:** Movie genre has a statistically significant relationship with box office success.

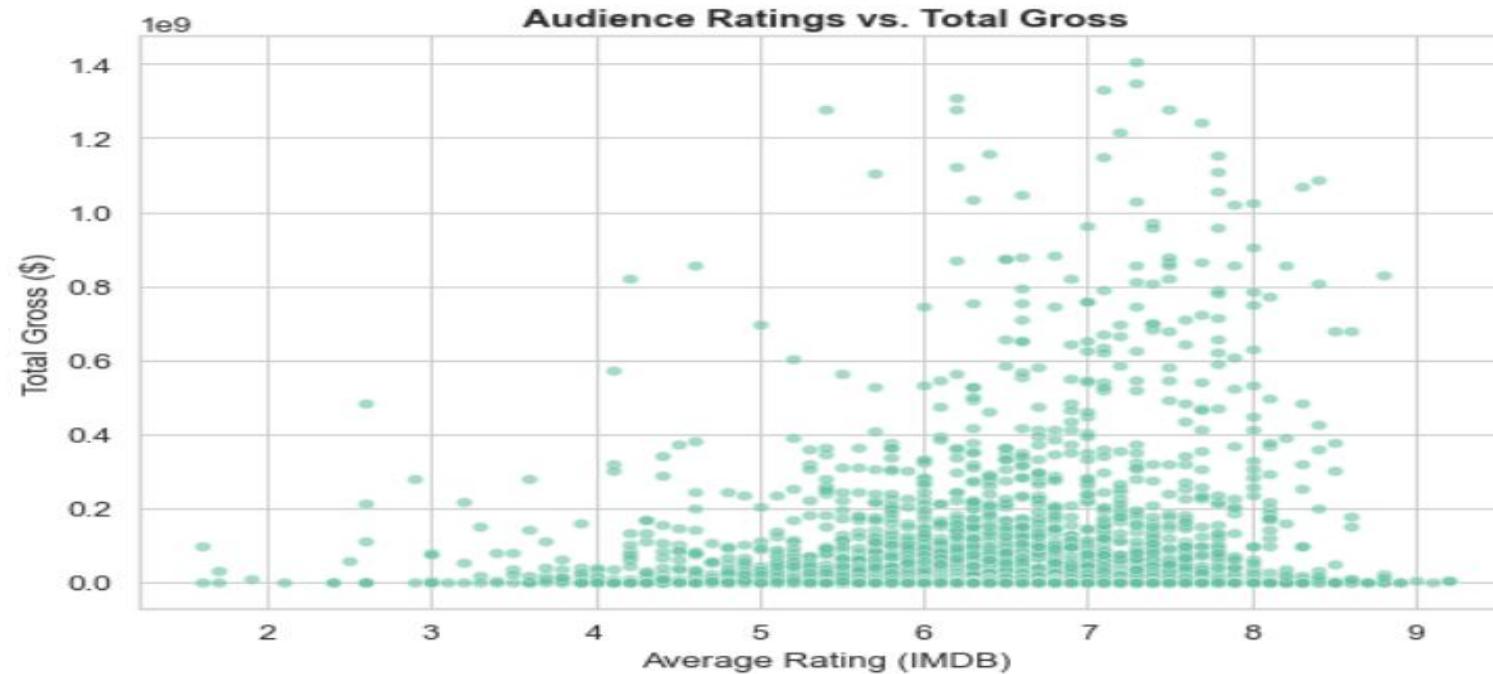
Top Performing Genres



Insight: Adventure and Action-based genres dominate global box-office revenue, especially when combined with Drama or Fantasy.

Business Implication: Invest in visually engaging, emotionally rich Adventure-Action hybrids.

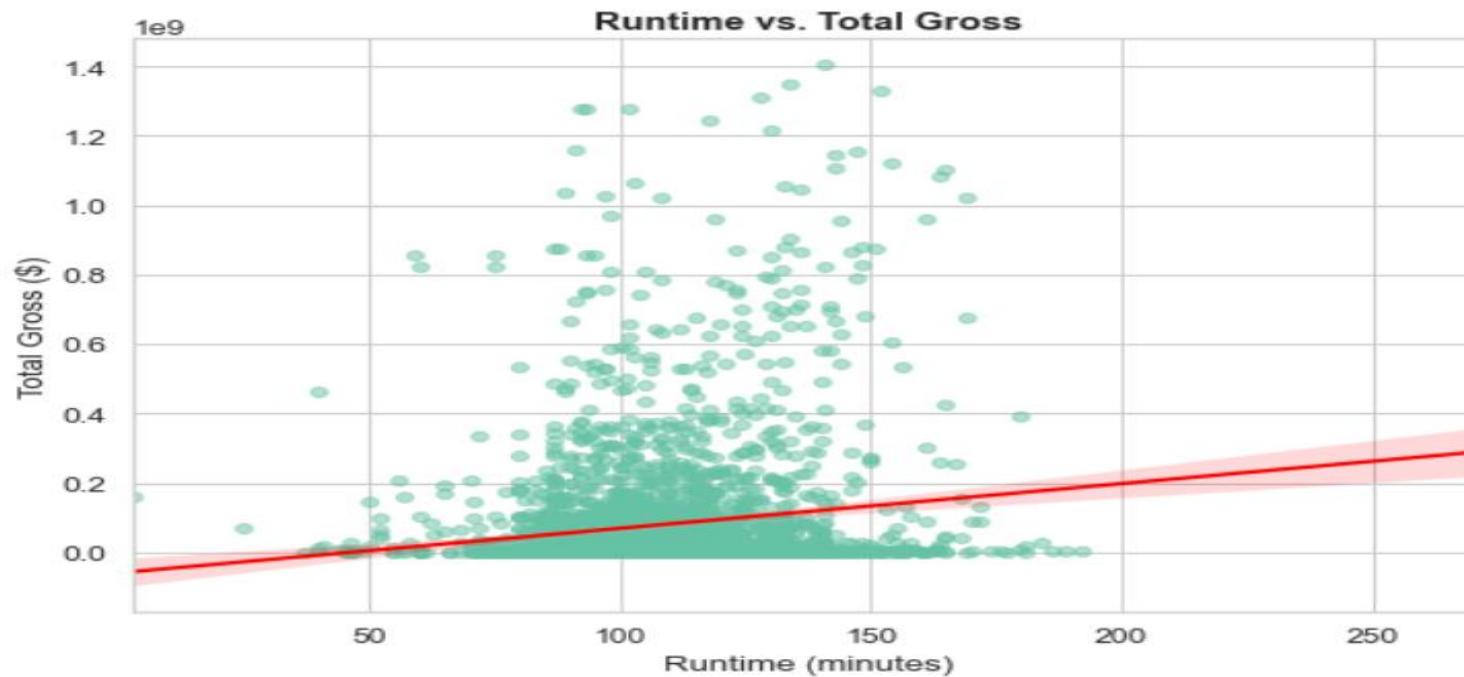
Ratings vs. Box Office



Insight: Movies with IMDB ratings above 6.0 consistently earn higher revenues.

Business Implication: Focus on story quality and audience satisfaction through strong scripts and editing.

Runtime vs. Box Office



Insight: Films between 90-130 minutes perform best, balancing storytelling depth and audience attention.

Business Implication: Maintain optimal runtime; avoid overly short or excessively long productions.

Recommendations

- ▶ Prioritize Profitable Genres: Focus on Adventure, Action, and Fantasy with emotional storytelling.
- ▶ Emphasize Quality: Target IMDb-equivalent ratings ≥ 6.0 through strong writing and production value.
- ▶ Optimize Runtime: Keep films between 90-130 minutes for maximum engagement.
- ▶ Leverage Experience: Collaborate with or hire from top studios (BV, P/DW, WB) to replicate proven success models.

Next Steps

- ▶ Deepen analysis with release timing and budget data.
- ▶ Conduct market testing and audience surveys.
- ▶ Develop predictive models for revenue estimation.
- ▶ Apply insights to select first production slate (3-5 Adventure/Action titles).

Thank You

💡 Questions?

📌 Contact Information Names

Morvine Otieno

Stella Kiarie

Kumati Dapash

Doris Mutie

LinkedIn: www.linkedin.com/in/morvine-otieno-14837a180

Email: morvineawuor93@gmail.com