

TITLE

**"From Budget to Box Office:
Analyzing Movie Success (2000–
2024)"**

INTRODUCTION

- **Objective:** Analyze how movie attributes (budget, genre, rating, and popularity) influence box office performance.
- **Datasets Used:**
 - Movies Metadata (TMDb / Kaggle)
 - Enhanced Box Office Data (2000–2024)
- **Scope:** Covers 5,000 global releases from 2000–2024.

DATASET DETAILS

Primary Dataset: Movies Metadata

- ~45,000 movies from TMDb
- Key Columns: title, budget, revenue, popularity, runtime, vote_average, genres, release_date

Secondary Dataset: Box Office Data

- 5,000 top global box-office movies
- Key Columns: title, release_year, worldwide_gross, domestic_gross, foreign_gross, rating, genres

DATA CLEANING

Movies Metadata

- Dropped irrelevant columns (**homepage**, **poster_path**, **status**, etc.)
- Converted **budget**, **revenue**, **popularity** → numeric
- Extracted **release_year** from **release_date**
- Created **title_norm** for merging

Box Office Data

- Removed **\$** and **%** symbols
- Converted money and percentages to numeric
- Normalized **title** (lowercase, punctuation removed)
- Created **title_norm** for merging

DATA MERGING

- Joined datasets on `title_norm + release_year`
- Created new features:
- `profit = worldwide_gross - budget`
- `profit_ratio = profit / budget`
- Final dataset size: ~3,500 matched movies

DESCRIPTIVE STATISTICS

METRIC	MEAN	MEDIAN	MAX
BUDGET	\$47M	\$25M	\$350M
WORLD WIDE GROSS	\$210M	\$85M	\$2.8B
PROFIT	\$163M	\$65M	\$2.4B
RATING	7.1	7.0	9.5

VISUALIZATIONS (1)

- Top 10 Highest-Grossing Movies

(Pandas `.plot(kind='barh')`)

Insight: Franchise films (Marvel, Avatar, Star Wars) dominate global revenue.

- Budget vs Worldwide Gross (Scatter)

(Pandas `.plot(kind='scatter')`)

Insight: Positive correlation between budget and revenue, but diminishing returns after ~\$200M.

VISUALIZATIONS (2)

Average Profit by Genre

(Pandas `.plot(kind='bar')`)

Insight: Action, Adventure, and Sci-Fi yield the highest profits.

Worldwide Gross by Year

(Pandas `.plot(kind='Line')`)

Insight: Global box office peaked in 2018–2019; slight decline post-pandemic.

CORRELATION INSIGHTS

Variable Pair	Correlation
Budget ↔ Worldwide Gross	0.74
Budget ↔ Profit	0.68
Rating ↔ Worldwide Gross	0.31
Vote Count ↔ Gross	0.62

CONCLUSIONS

- Higher budgets generally lead to higher gross, but not always higher ROI.
- Action and Adventure dominate profitability.
- Ratings influence long-term performance, not initial revenue.
- Global box office revenue dipped in 2020 but rebounded after 2022.

The background is a solid blue color with a repeating pattern of overlapping circles and leaf-like shapes. The circles are arranged in a grid, and the leaf-like shapes are positioned at the intersections of the circles, creating a stylized, organic pattern.

THANKYOU