

Problem Statement

Analyze the performance of movies across various industries and languages, identify the most successful actors and studios, and uncover key factors driving movie success (e.g., budget, revenue, IMDb ratings).

Objectives and Observations to Find

1. Top Performing Movies

- Movies with the highest IMDb ratings.
- Movies with the highest revenue.
- Movies with the highest ROI (Return on Investment).

2. Industry Analysis

- Comparison of industries (e.g., Bollywood, Hollywood) in terms of total revenue and average IMDb ratings.
- Industries producing the highest number of movies.
- Industry-specific trends in budget and ROI.

3. Language-Based Analysis

- Popular languages based on the number of movies made.

- Average IMDb rating for movies in each language.
- Revenue and budget comparison of movies across languages.

4. Studio Performance

- Top studios producing the highest-grossing movies.
- Studios with the highest average IMDb ratings.

5. Financial Analysis

- Average and median budgets and revenues across all movies.
- Conversion of budgets and revenues into INR and USD for global analysis.
- Correlation between budget and revenue or budget and IMDb ratings.

6. Time-Based Analysis

- Trend of budgets, revenues, and IMDb ratings over the years.
- Identification of the best year for the movie industry based on total revenue.

Metrics Needed for Observations

1. Revenue and ROI Calculations

- Revenue (in INR or USD).
- $ROI = (Revenue - Budget) / Budget * 100$.

2. Popularity and Success Metrics

- IMDb ratings (average or total).
- Movie counts grouped by industries, languages, and years.

3. Industry Metrics

- Total revenue and budget by industry.
- Average IMDb rating per industry.

4. Language Metrics

- Movie count per language.
- Average budget and revenue per language.

5. Studio Metrics

- Total revenue and average IMDb ratings for each studio.
- Number of movies produced by each studio.

6. Trend Metrics

- Annual trends of budgets, revenues, and IMDb ratings.

Steps Performed for Analysis

1. Data Cleaning

- Handle missing or NULL values (e.g., missing budgets or revenues).
- Check for duplicates in all tables.
- Ensure consistent data formats (e.g., for currency).

2. Data Preparation

- Join tables & Created Views.
- Convert budgets and revenues into INR/USD using columns in the `languages` table.

3. Data Analysis

- Perform group-by operations for aggregations (e.g., revenue per industry).
 - Calculate ROI and other derived metrics.
 - Use trend analysis for time-based observations.
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Observations

Detailed Observation Report

1. Top Performing Movies

- **Highest IMDb Ratings:**
 - *The Shawshank Redemption* leads with a rating of **9.3**, followed by *The Godfather* (9.2) and *Schindler's List* (9.0).
 - **Highest Revenue:**
 - *Avatar* generated the highest revenue at **₹240,514.56 million** or **\$2,847 million**.
 - **Highest ROI (Return on Investment):**
 - *The Godfather* has the highest ROI at **3941.67%**, showcasing exceptional profitability.
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2. Industry Analysis

- **Revenue and Ratings:**
 - **Hollywood** dominates with a total revenue of **₹1,569,460.99 million** and an average IMDb rating of **8.13**.
 - **Bollywood** has a total revenue of **₹80,909 million**, with an average IMDb rating of **7.62**.
- **Number of Movies:**
 - Hollywood has produced **20 movies**, while Bollywood has produced **17 movies**.

- **Budget and ROI Trends:**

- Hollywood movies tend to have higher budgets and ROIs, with notable years like 1997 (*Titanic*) and 2009 (*Avatar*) achieving exceptional success.
 - Bollywood's ROI peaked in 2007 with *Taare Zameen Par* (1025%).
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3. Language-Based Analysis

- **Popular Languages:**

- English leads with **20 movies**, followed by Hindi with **12 movies**.

- **Average IMDb Ratings:**

- Kannada movies have the highest average IMDb rating of **8.40**, followed by Bengali (**8.30**) and English (**8.13**).

- **Budget vs. Revenue:**

- English-language movies have the highest average budget (**₹12,965.91 million**) and revenue (**₹78,473.05 million**).
 - Kannada and Bengali movies operate on smaller budgets, achieving modest revenues.
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4. Studio Performance

- **Highest Revenue:**

- *Vinod Chopra Films* leads Bollywood with **₹18,440 million**.
- *Marvel Studios* dominates globally with **₹764,932.61 million** in revenue.

- **Highest IMDb Ratings:**

- Studios like *Castle Rock Entertainment* (9.3), *Syncopy* (9.0), and *Warner Bros.* (8.6) produce highly acclaimed movies.
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5. Financial Analysis

- **Average Budget and Revenue:**

- Bollywood's average budget: **₹688.33 million**, average revenue: **₹3850.75 million**.
- Hollywood's average budget: **₹12,965.91 million**, average revenue: **₹78,473.05 million**.

- **Global Analysis:**

- Conversion to USD and INR reveals Hollywood's dominance in terms of global financial performance.
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6. Time-Based Analysis

- **Trends Over the Years:**

- Revenues peaked in 2019 (₹258,601.73 million) with hits like *Avengers: Endgame*.

- Ratings have consistently been high for Hollywood movies produced in the 1990s (*The Shawshank Redemption*, *The Godfather*).

- **Best Years:**

- 2009 and 2019 stand out as landmark years for Hollywood.
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7. ROI and Profitability

- Top ROI Movies:
 - *The Godfather* (3941.67%), *Parasite* (1597.42%), and *Jurassic Park* (1560.32%) highlight the impact of low-budget, high-revenue successes.
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8. Studio Insights

- Marvel Studios leads in movie count (**8 movies**) and total revenue globally.
 - Bollywood studios like *Salman Khan Films* and *Vinod Chopra Films* show strong revenue performance.
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9. Key Metrics Summary

- **Top Industry:** Hollywood (Revenue: ₹1,569,460.99 million, Avg IMDb Rating: 8.13).
- **Top Studio by Revenue:** Marvel Studios (₹764,932.61 million).

- **Best Year by Revenue:** 2019 (₹258,601.73 million).
 - **Top Movie by IMDb Rating:** *The Shawshank Redemption* (9.3).
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Recommendations

1. Bollywood:

- Focus on high-quality, low-budget films with potential for high ROIs, like *Taare Zameen Par* and *3 Idiots*.
- Leverage strong narratives and local languages to improve global reach.

2. Hollywood:

- Continue investing in high-budget movies, leveraging franchises like *Marvel Cinematic Universe* for consistent global appeal.

3. Studios:

- Bollywood studios should collaborate with global platforms like *Netflix* and *Disney+* to enhance international distribution.
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