



**INNOVATION. AUTOMATION. ANALYTICS**

**PROJECT ON**

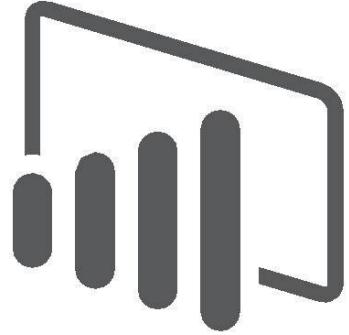
# **Movie Sales Analysis**

## **Using Power BI**

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**Nihith Gone**

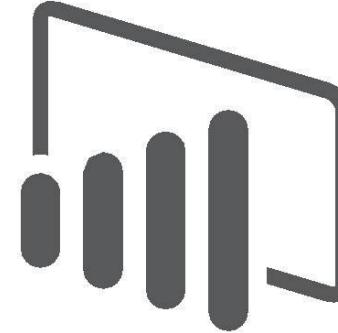
**Batch No: 435, Dilsukhnagar**



# Agenda

- Project Overview
- Data Source
- Data Preparation
- Dashboard Visualizations
- Applications & Recommendations
- Conclusion





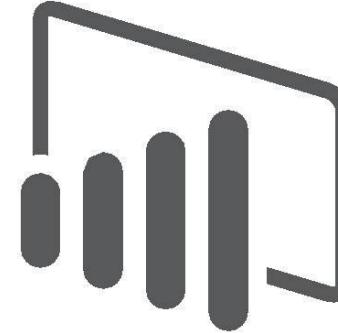
# Project Overview

- To analyze movie sales performance and identify the key factors influencing box office success.
- To understand audience behavior based on demographics such as genre, runtime, release year, and ratings.
- To measure revenue distribution across various segments including top 10 movies, directors, and genres.
- To visualize business performance using interactive Power BI dashboards with cards, bar charts, scatter plots, and slicers.
- To highlight correlations between revenue, IMDb ratings, votes, and runtime for deeper insights.
- To support data-driven decisions that can optimize content strategy, improve audience satisfaction, and maximize revenue potential.



# Data Source

- **Dataset Name:** IMDB Movie Dataset
- **File Type:** CSV file
- **Total Records:** 1000 Records
- **Total Columns:** 11 columns



# Data Preparation

- Imported dataset into Power BI Desktop from CSV file.
- Performed data cleaning using Power Query Editor to ensure accuracy and consistency.
- Checked and removed null values in columns Revenue (Millions) and Metascore where necessary.
- Performed genre column transformation by splitting into rows for better analysis of popularity, trends, and revenue.
- Removed extra spaces at the beginning or end of text (Title, Genre, Director, Actors, Description).
- Removed non-printable characters (like hidden line breaks, tabs, or special symbols) of text (Title, Genre, Director, Actors, Description).
- Trimming and cleaning are done to ensuring consistency in analysis.
- Validated the dataset to ensure no duplicates or mismatched entries.
- Loaded the cleaned data into the Power BI Model for visualization and analysis.



# Dashboard Visualizations

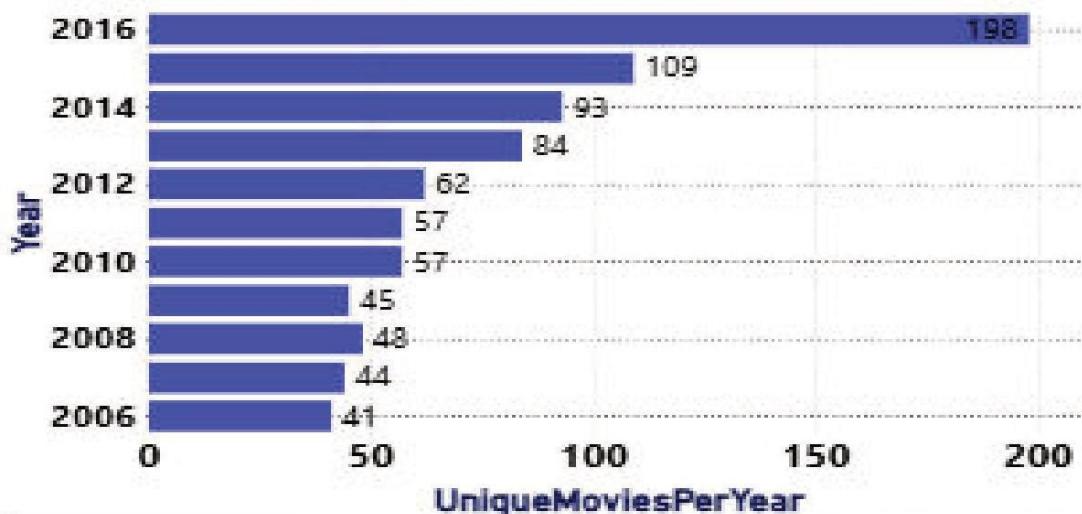
## 1. Movie Overview & Time Trends

- **Column Chart** → Number of movies released per year
- **Line Chart** → Total box office revenue trend
- **Line Chart** → Average IMDb rating over time
- **Line Chart** → Average runtime trend
- **Column Chart** → Top 5 years with highest movie releases
- **Line and Clustered column chart** → Average IMDB Rating, Average Runtime, Total Movies released, and Total Revenue over time.

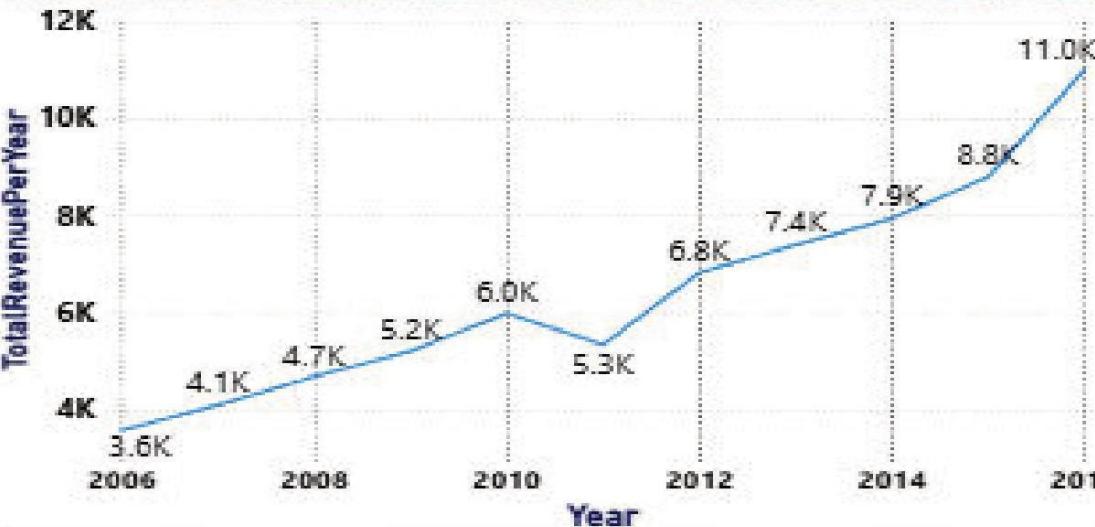
Purpose: ~~Analyze~~ movie release patterns, revenue growth, and audience engagement over time.

# Movie Overview & Time Trends

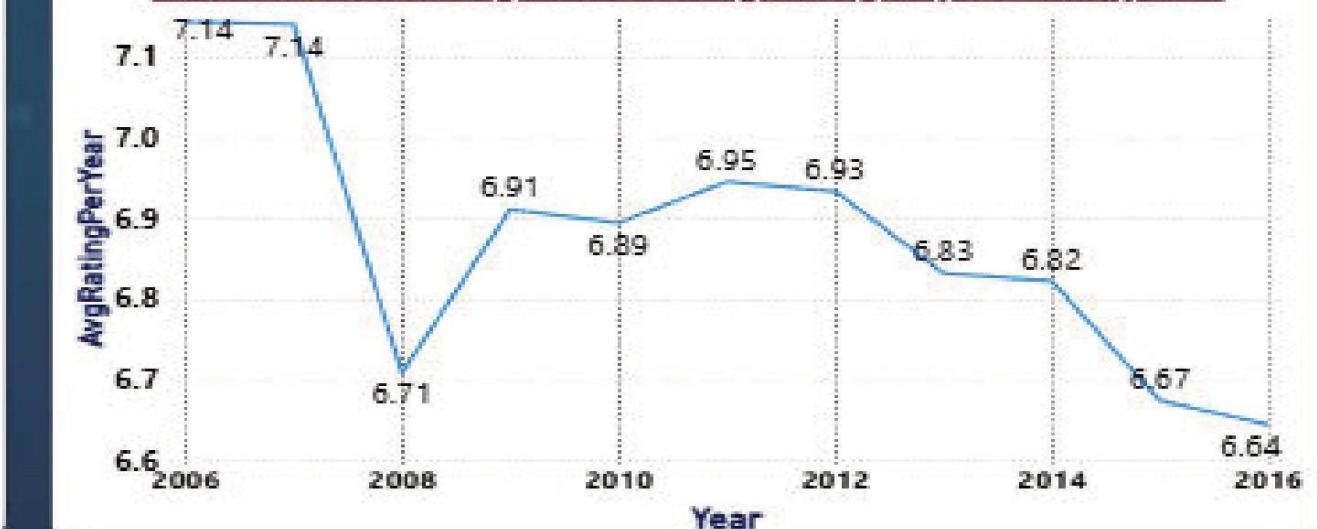
How many movies were released each year?



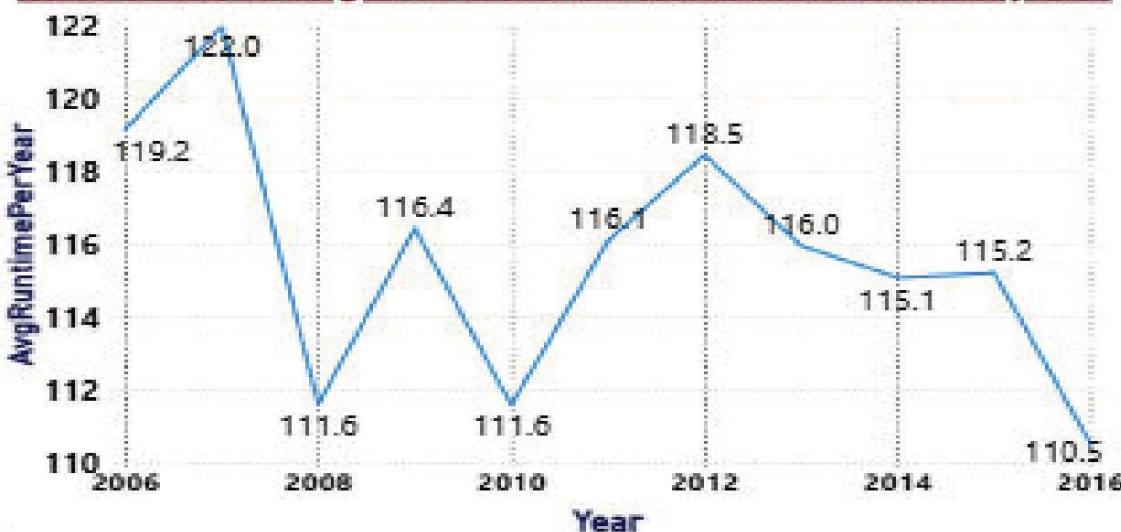
What is the trend in total box office revenue over the years?



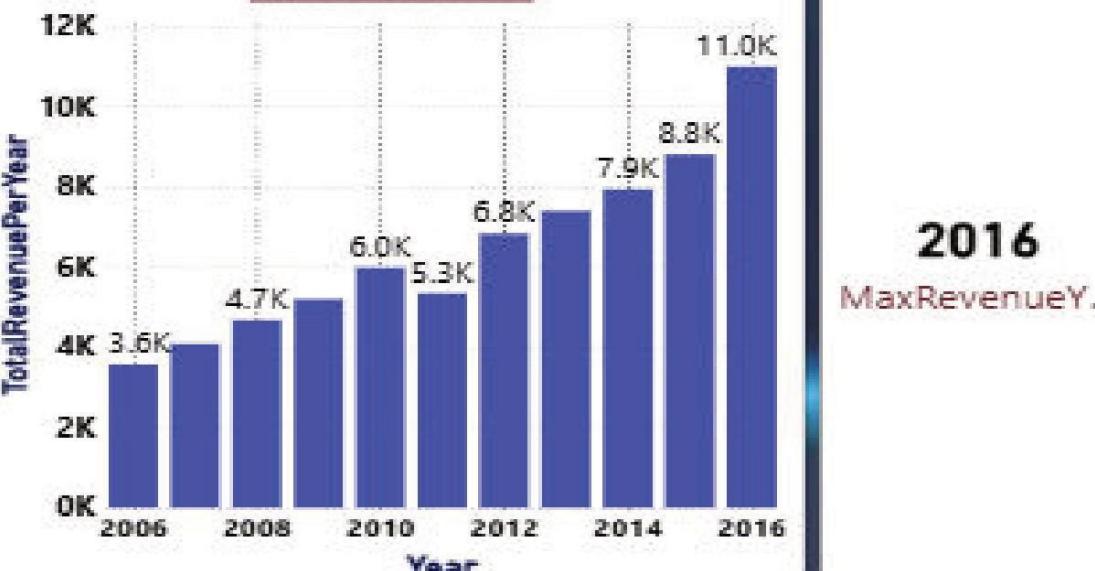
How has the average IMDb rating changed year over year?



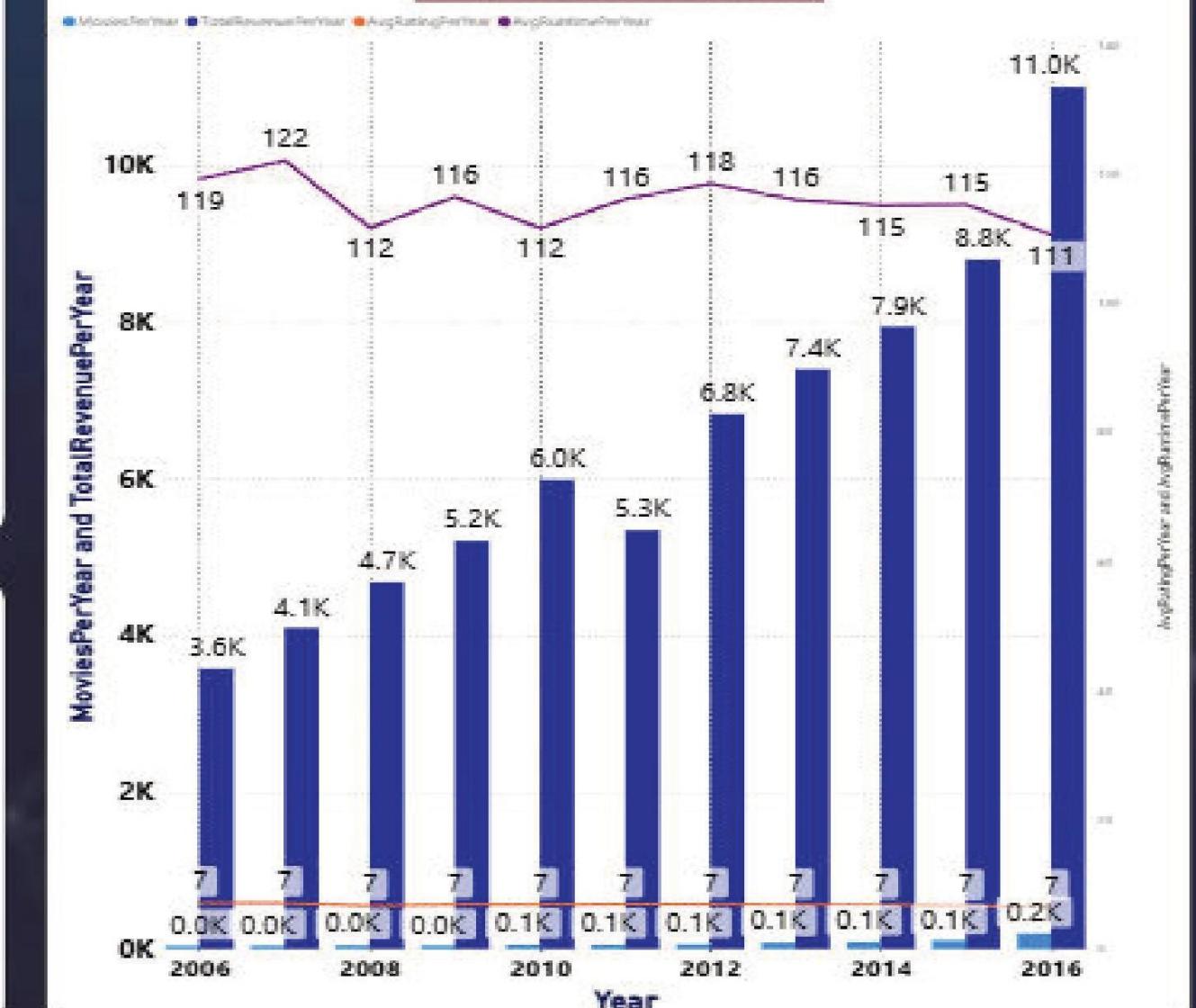
What is the average runtime of movies released each year?



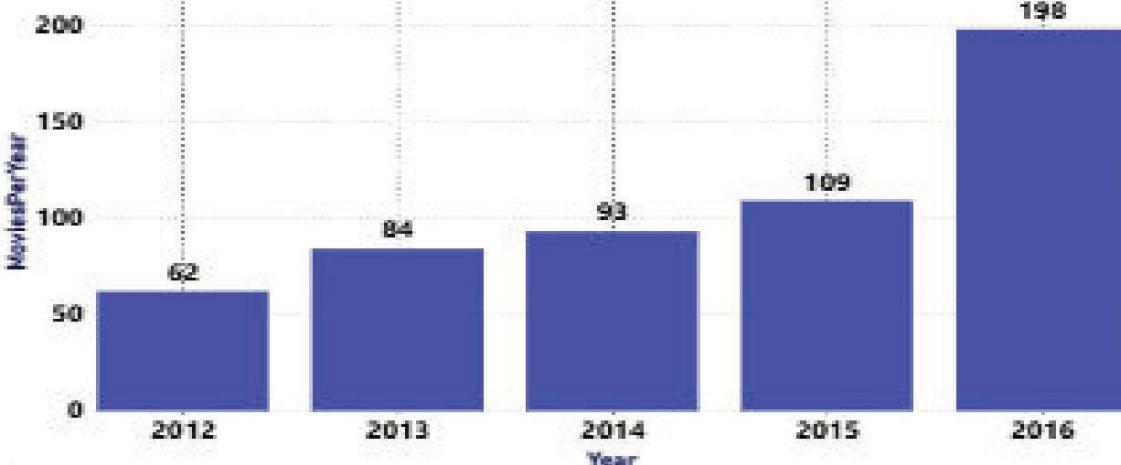
Which year recorded the highest total box office revenue?



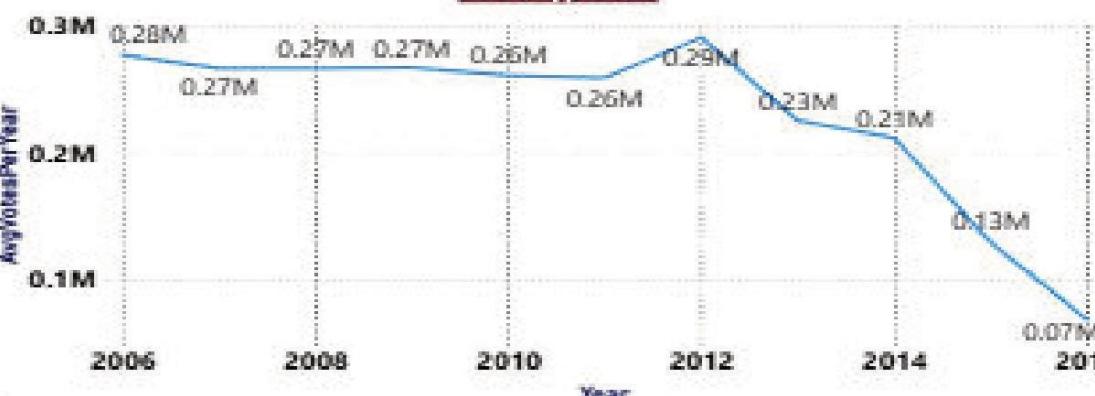
Average IMDB Rating, Average Runtime, Total Movies released, and Total Revenue over time.

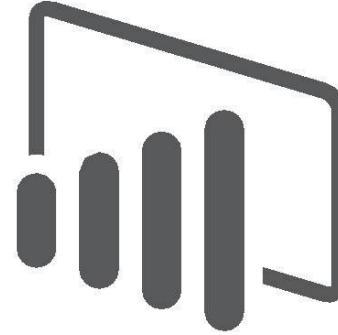


Which are the top five years with the highest number of movie releases?



What is the average number of votes received by movies each year?





# Dashboard Visualizations

## 2. Genre & Rating Analysis

- **Pie Chart** → Genre distribution
- **Bar Chart** → Average IMDb rating by genre
- **Bar Chart** → Total revenue by genre
- **Bar Chart** → Average Metascore per genre
- **Pie Chart** → Total votes by genre
- **Cards** → Total Genres, Highest Rated Genre, Most Common Genre, Avg. Metascore

**Purpose:** Evaluate genre performance across ratings, revenue, votes, and critic scores to identify audience preferences.

# Genre & Rating Analysis

20

TotalGenres

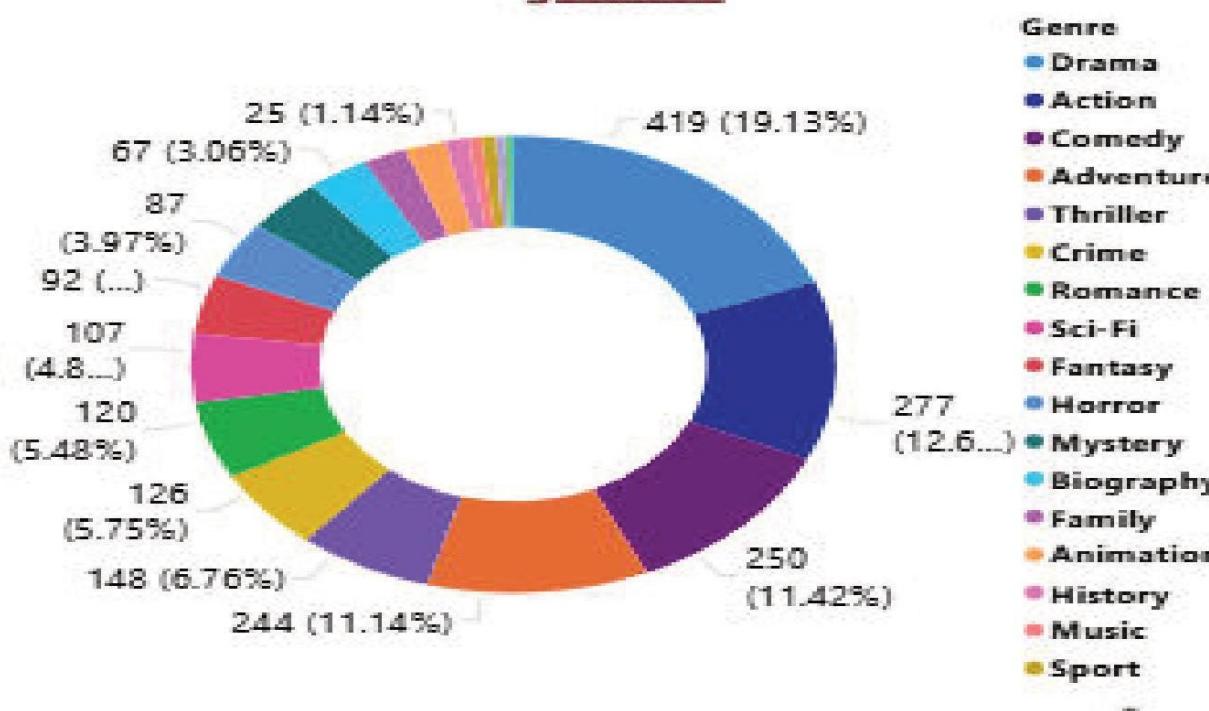
Drama

HighestGenre

59.60

AvgMetascorePerGenre

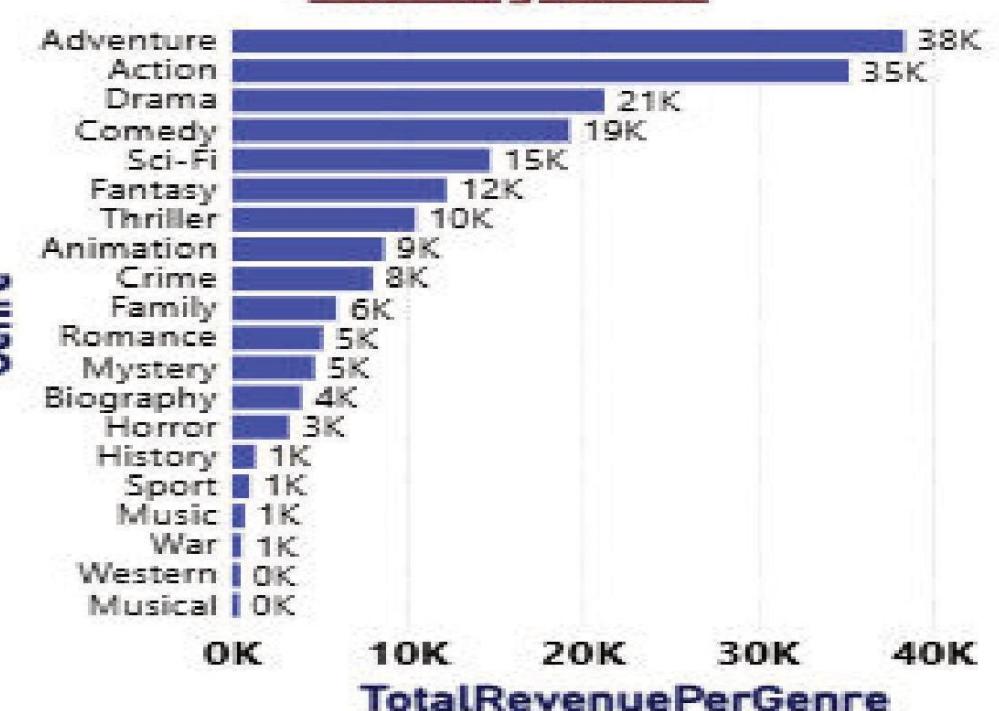
How are movies distributed across different genres?



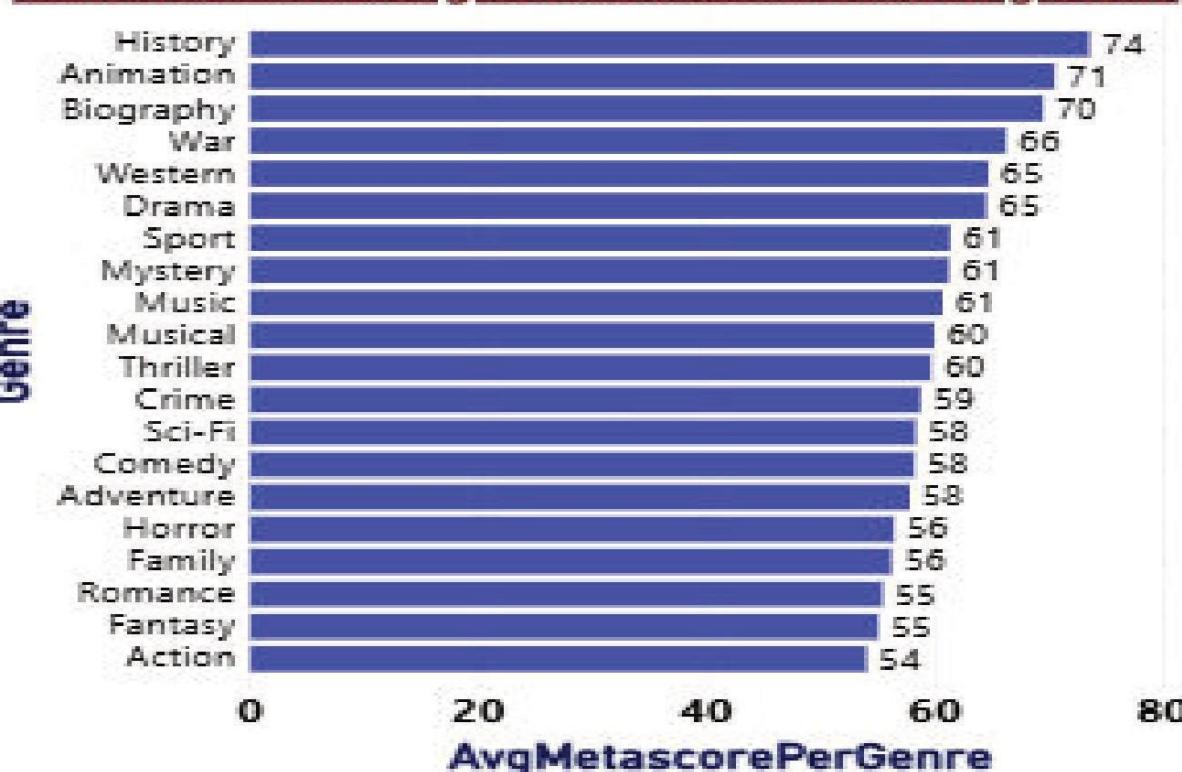
Which genres have the highest average IMDb ratings?



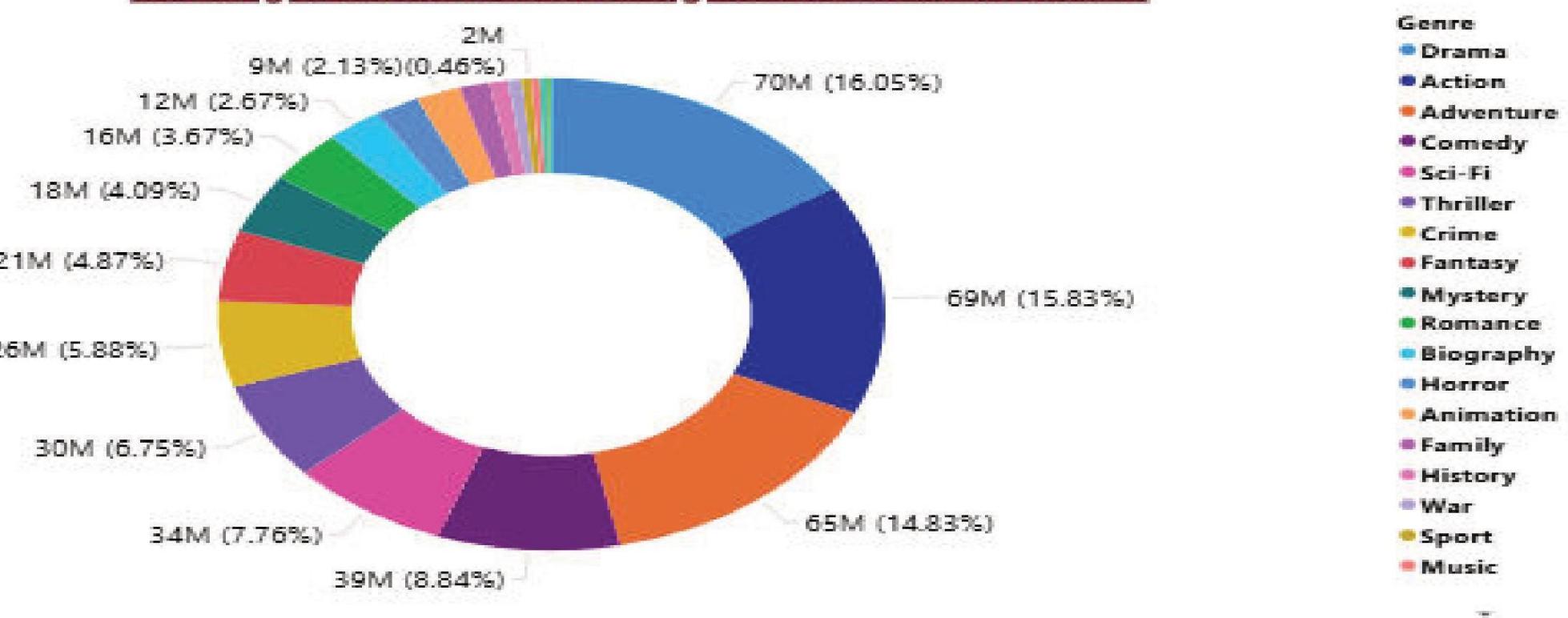
How is total revenue distributed among various genres?



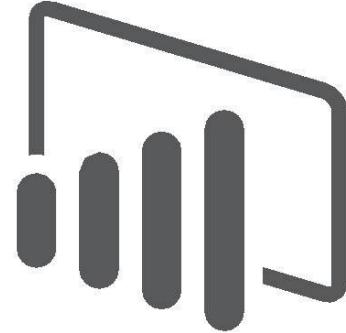
What is the average Metascore for each genre?



Which genres receive the highest number of votes?



Genre  
 Drama  
 Action  
 Adventure  
 Comedy  
 Sci-Fi  
 Thriller  
 Crime  
 Fantasy  
 Mystery  
 Romance  
 Biography  
 Horror  
 Animation  
 Family  
 History  
 War  
 Sport  
 Music



# Dashboard Visualizations

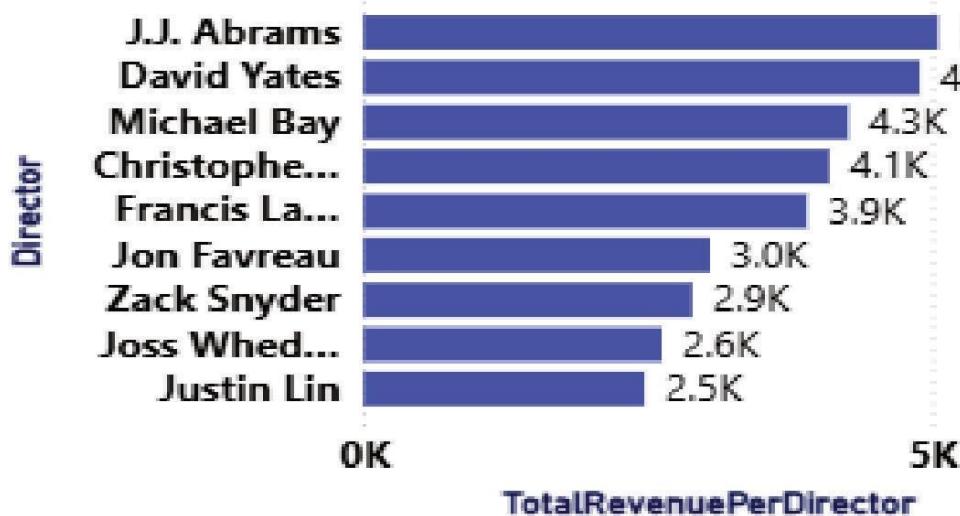
## 3. Top Performers & Box Office Insights

- **Bar Chart** → Total revenue by director
- **Table** → Total votes per movie
- **Stacked Column Chart** → Revenue contribution of top 10 movies vs all movies
- **Combo Chart** → Revenue and IMDb rating by movie title
- **Cards** → Highest Movie Revenue, Average Revenue, Unique Actors, Total Votes Casted, Total Movies Released

**Purpose:** Identify top-performing directors and movies, analyze vote and revenue distribution, and highlight blockbuster impact.

# Top Performers & Box Office Insights

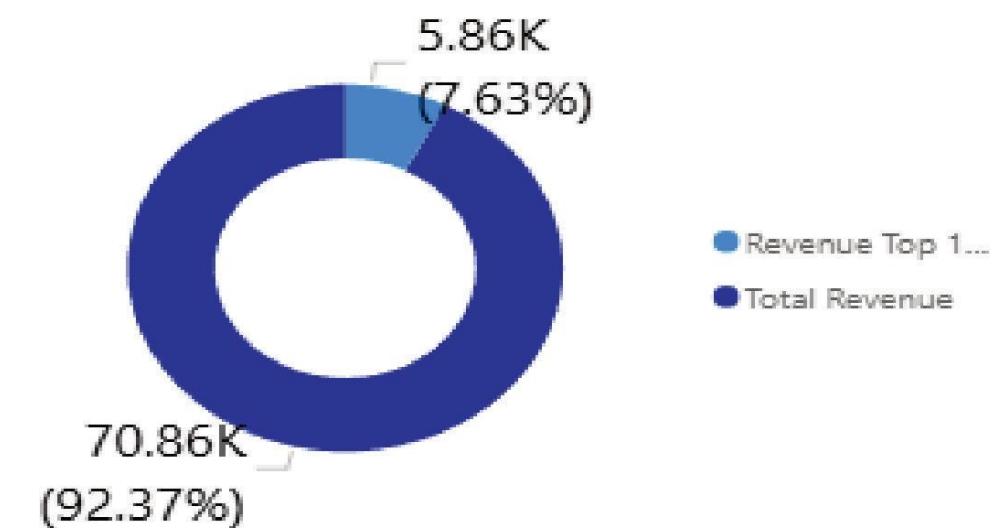
## Total Revenue Per Director by Director



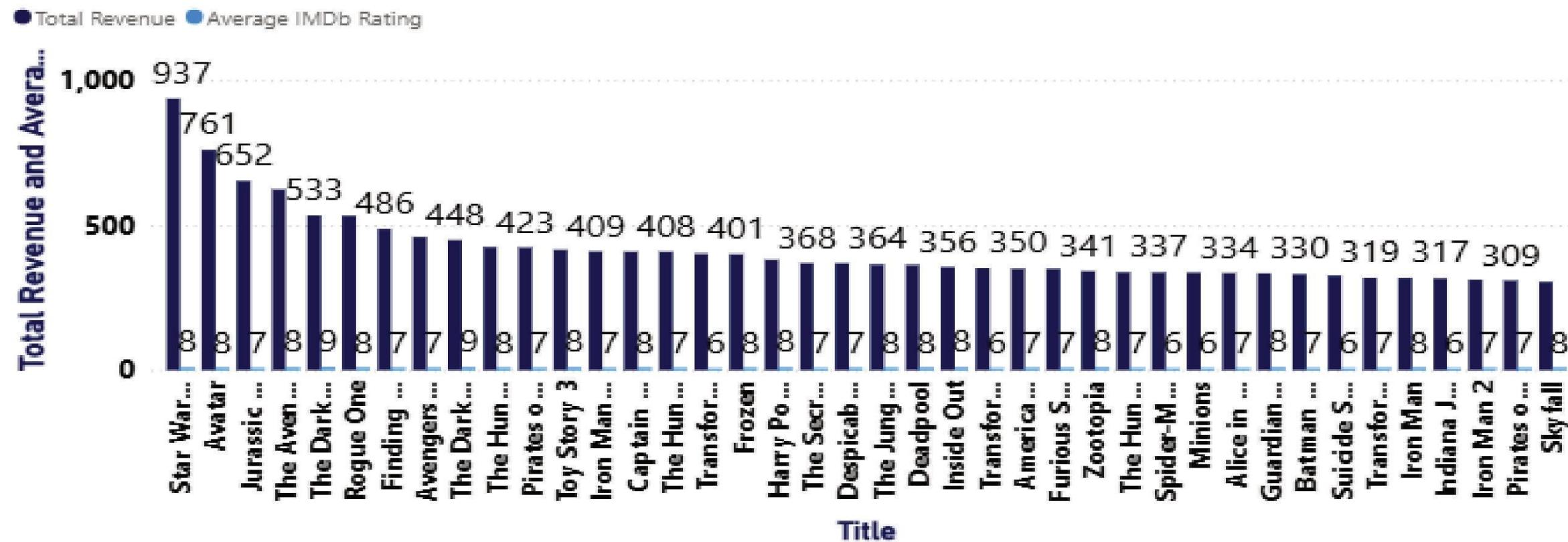
## Title Total Votes Per Movie

Title	TotalVotesPerMovie
The Dark Knight	5375748
Inception	4750875
Interstellar	3143241
Inglourious Basterds	2877195
The Departed	2812242
Avatar	2806224
The Prestige	2739456
The Wolf of Wall Street	2595402
The Dark Knight Rises	2445290
Guardians of the Galaxy	2271222
<b>Total</b>	<b>31816895</b>

## Revenue Top 10 Movies and Total Revenue

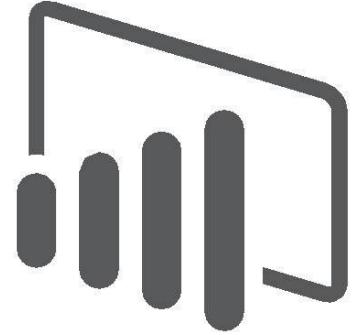


## Total Revenue and Average IMDb Rating by Title



Highest movie Revenue, Avg Revenue, Unique actors, Total votes casted, Total Number of Movies Released.

936.63    84.66    834  
 Highe...    Avera...    Unique ...  
 1618...    837  
 Total V...    Distinct ...



# Dashboard Visualizations

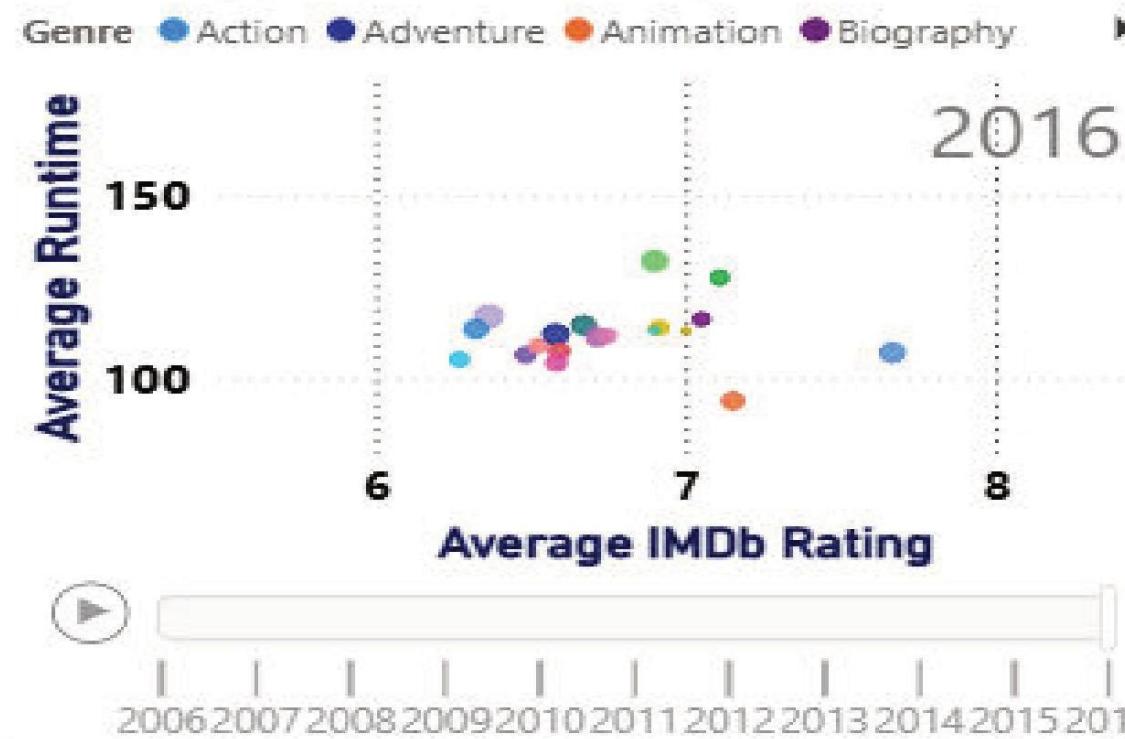
## 4. Correlation & Advanced Metrics

- **Scatter Plot** → Runtime vs IMDb rating by genre and year
- **Line Chart** → Average IMDb rating and total revenue over time
- **Stacked Column Chart** → Total revenue by year and genre
- **Combo Chart** → Average revenue and IMDb rating by runtime
- **Cards** → Average Revenue, Average Metascore, Average Runtime

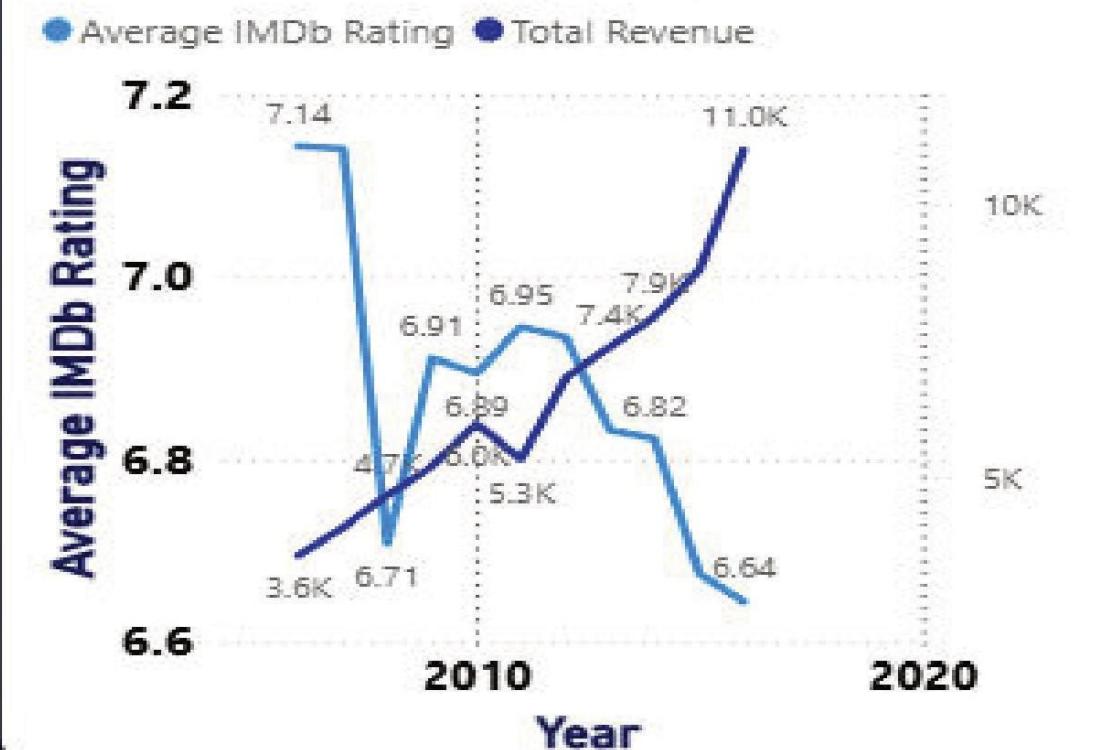
**Purpose:** Explore relationships between runtime, ratings, revenue, and genre to uncover performance patterns and audience preferences.

# Correlation & Advanced Metrics

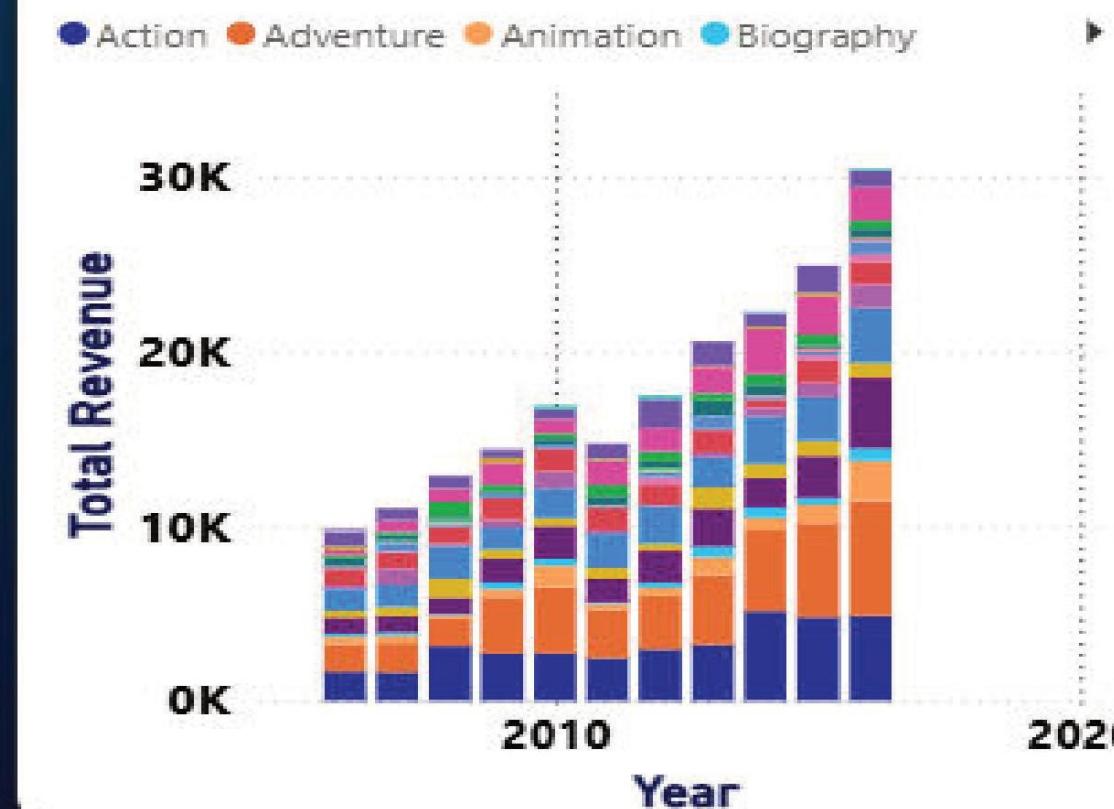
## Average IMDb Rating, Average Runtime and AvgVotesPerYear by Genre and Year



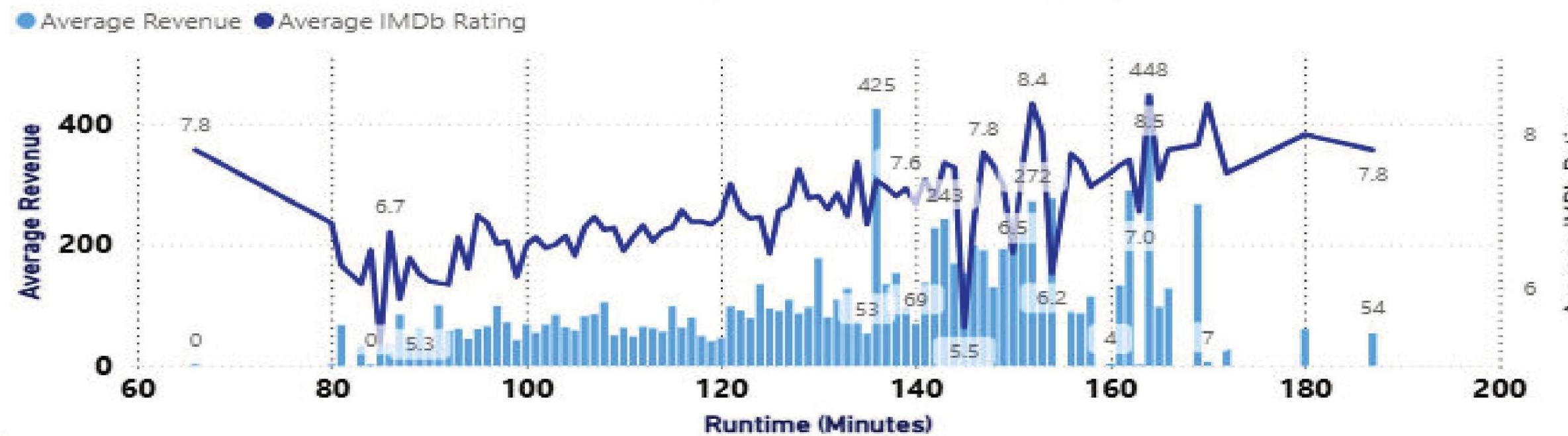
## Average IMDb Rating and Total Revenue by Year



## Total Revenue by Year and Genre

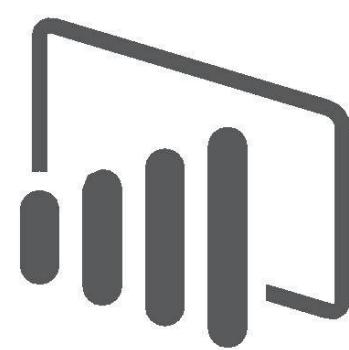


## Average Revenue and Average IMDb Rating by Runtime (Minutes)



average revenue overall, average metascore , and average runtime

59.60      114.63      84.66  
Averag...      Averag...      Average ...



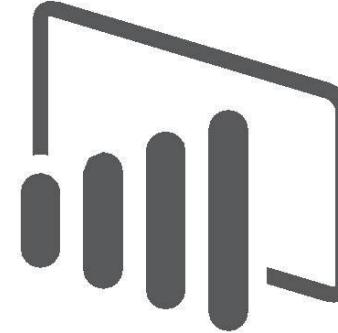
# Applications & Recommendations

## Application

- Used by Marketing Teams to identify high-performing genres and target audiences for future releases.
- Helps Production Studios prioritize investments in genres with strong revenue and rating performance.
- Enables Management to track key KPIs like revenue, votes, and ratings for strategic planning
- Supports Content Teams in curating genre mixes and optimizing runtime for audience engagement.

## Recommendations

- Invest more in high-rated genres like War, Biography, and History to boost critical acclaim.
- Promote genre bundles (e.g., Action + Adventure + Sci-Fi) to maximize audience reach and revenue.
- Optimize runtime around 120–160 minutes, where revenue and ratings peak.
- Focus on directors with proven box office success for future projects.
- Monitor vote trends and rating shifts to detect early signals of audience fatigue or genre saturation.



# Conclusion

- The Power BI dashboards provided clear visibility into movie performance trends across genres, ratings, revenue, and audience engagement.
- Analysis revealed that high-rated genres, optimal runtimes, and proven directors are key drivers of box office success.
- Movies with longer runtimes and strong IMDb ratings tend to generate higher revenue and attract more votes.
- Genre preferences and vote patterns offer valuable insights into audience behavior and content demand.
- The insights enable studios and content teams to design targeted release strategies and optimize production investments.
- Implementing data-driven decisions can help boost audience satisfaction, increase revenue, and improve critical reception.
- Overall, the project demonstrates how Power BI transforms raw movie data into actionable insights for strategic planning in the film industry.



ANY  
Queries?

THANK  
YOU

