

# Analyzing Box Office Trends for Microsoft's New Movie Studio



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# Overview:

Microsoft's foray into the realm of original video content marks a strategic response to the burgeoning demand for entertainment on digital platforms. Despite its technological prowess, the company acknowledges its lack of experience in movie production. Therefore, this project centers on unraveling the enigmatic world of box office success, with a keen focus on film genres, audience inclinations, and industry trends. The overarching goal is to furnish Microsoft's nascent movie studio with actionable insights to make calculated decisions about film production.

This endeavor's significance ripples across stakeholders, from eager shareholders anticipating market success to the dedicated project team responsible for delivering comprehensive analyses and strategic recommendations. The project's tangible outputs include exhaustive reports, visually compelling data representations, and an executive presentation—all indispensable tools guiding Microsoft's confident stride into the dynamic domain of original video content.

# Business Understanding:

Microsoft's new movie studio is venturing into the competitive movie production industry with the goal of creating films that connect with audiences and generate substantial box office revenue. This strategic expansion into entertainment recognizes the industry's potential in the digital age.

Microsoft aims to compete with established studios, focusing on audience engagement and revenue generation. Challenges include intense competition and meeting diverse audience preferences. Microsoft seeks to produce high-quality, innovative content using its technological expertise. Success in this venture will depend on producing movies that resonate with viewers, both creatively and financially.

# Problem Statement:

Microsoft is entering the competitive world of original video content creation and aims to establish a successful movie studio. However, lacking experience in the film industry, there is a critical need to analyze the current box office trends to determine which film genres are thriving.

Our mission is to provide actionable insights to guide Microsoft's new movie studio in strategically choosing the types of films that will resonate with audiences and ensure a successful entry into the market.

# Project objective:

## **1. To Analyze Budget vs. Revenue Relationship:**

- Investigate how production budgets influence the box office success of movies.

## **2. To Explore Genre-Based Revenue Performance:**

- Examine how different movie genres correlate with box office revenue.

## **3. To Analyze the Influence of Release Time on Revenue:**

- Explore how the timing of a movie's release (e.g., seasonal trends, and holiday releases) impacts its box office revenue.

## **4. To Provide Actionable Insights for Movie Production:**

- Translate the budget vs. revenue analysis findings into actionable recommendations for Microsoft's movie production decisions.

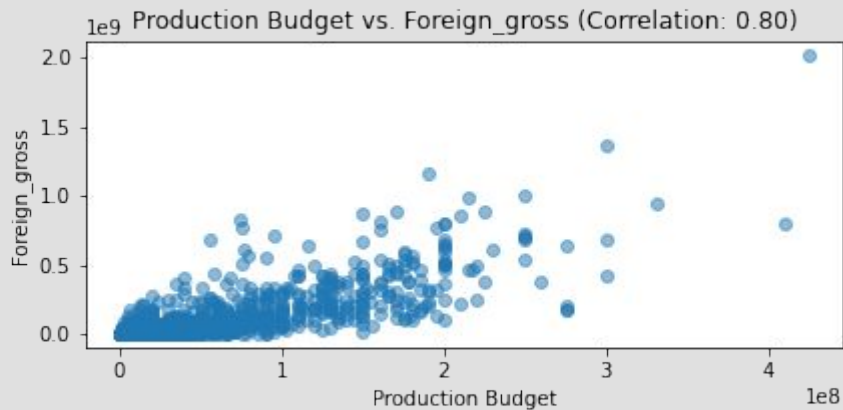
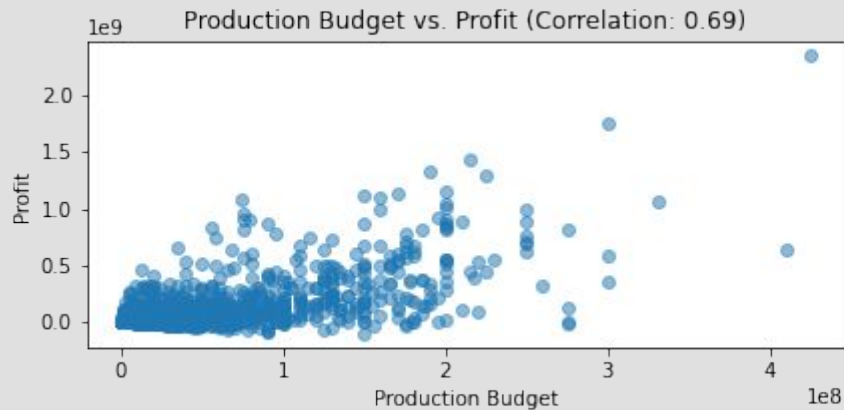
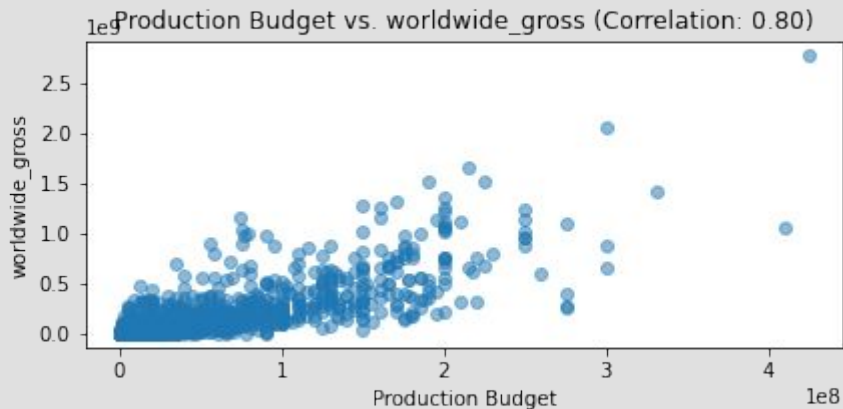
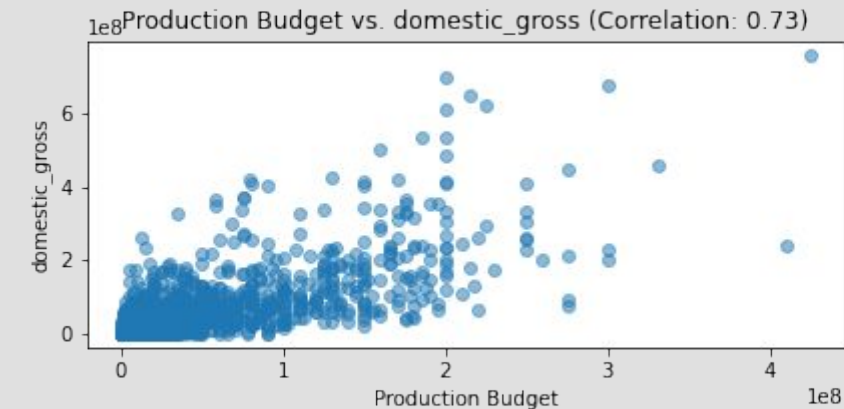
# Analysis

For the analysis the data collected from IMDB and The Number sites was merged into one. The columns of interest are Production Budget, Worldwide Gross Revenue and Genre.

To be able to achieve the objectives the data was cleaned up where the duplicates were removed and also the null values were dropped. I used correlation analysis to be able to see the relationships between production budget and revenue. Summary statistics was also used to check the genres with the largest revenues. It was also used to check the relationship between the release time and revenue.

Visualizations techniques were employed to be able to show the distribution of the data and relationship between the columns. The plots used were boxplots, barplots and scatter plots. Below shows the plots that we used in the analysis and the results are interpreted below.

# Correlation scatter plots.



In summary, the analysis revealed strong positive linear relationships between production budgets and various key factors in the movie industry:

**Domestic Gross:** A correlation coefficient of 0.73 suggests that as the production budget increases, the domestic gross tends to rise as well. In simpler terms, movies with higher budgets tend to earn more at the domestic box office.

**Worldwide Gross:** With a correlation coefficient of 0.80, there is a strong positive relationship between production budget and worldwide gross. Movies with higher budgets generally achieve higher earnings in the global box office.

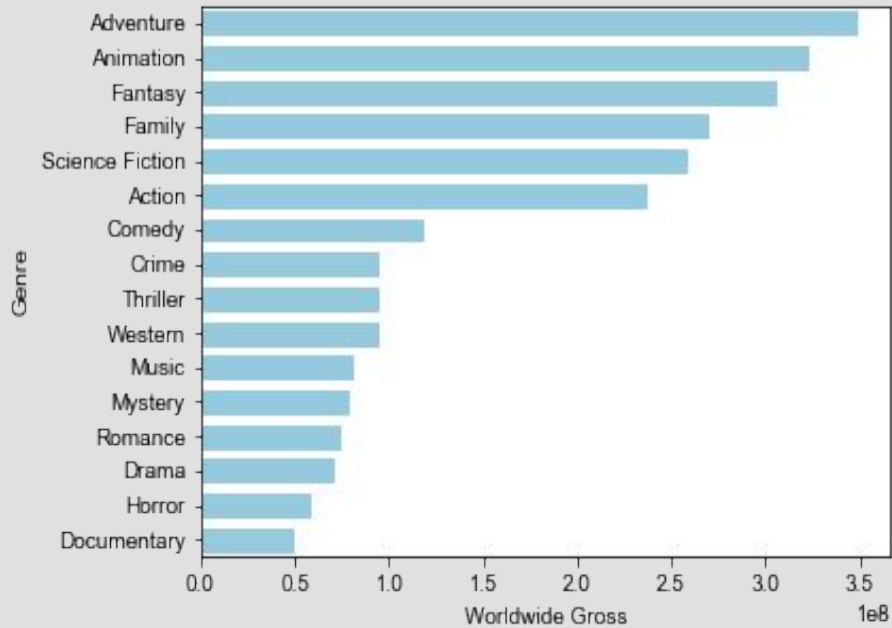
**Profit:** The correlation coefficient of 0.69 indicates that as the production budget increases, the profit tends to increase as well. Movies with larger budgets are more likely to generate greater profits.

**Foreign Gross:** Similarly, a correlation coefficient of 0.80 highlights a strong positive connection between production budget and foreign gross. Movies with higher budgets tend to perform better in terms of worldwide box office earnings.

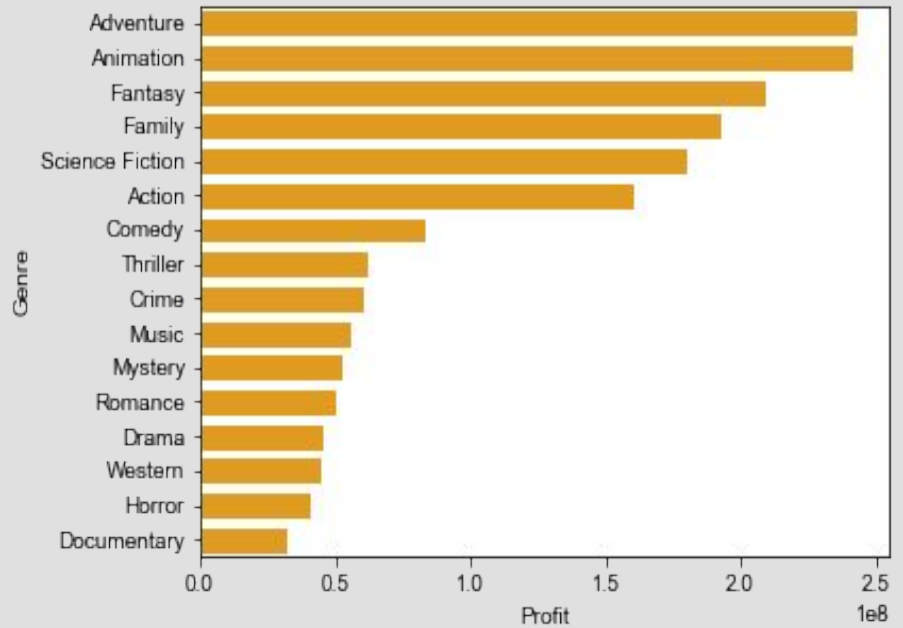


# Barplots of movie genres and worldwide gross and profit.

Worldwide Gross by Genre



Profit by Genre



The analysis of genre-based revenue performance highlights the following key points:

**Top Revenue-Generating Genres:** Adventure, animation, fantasy, and family genres consistently generate the highest total revenues and profits in the movie industry.

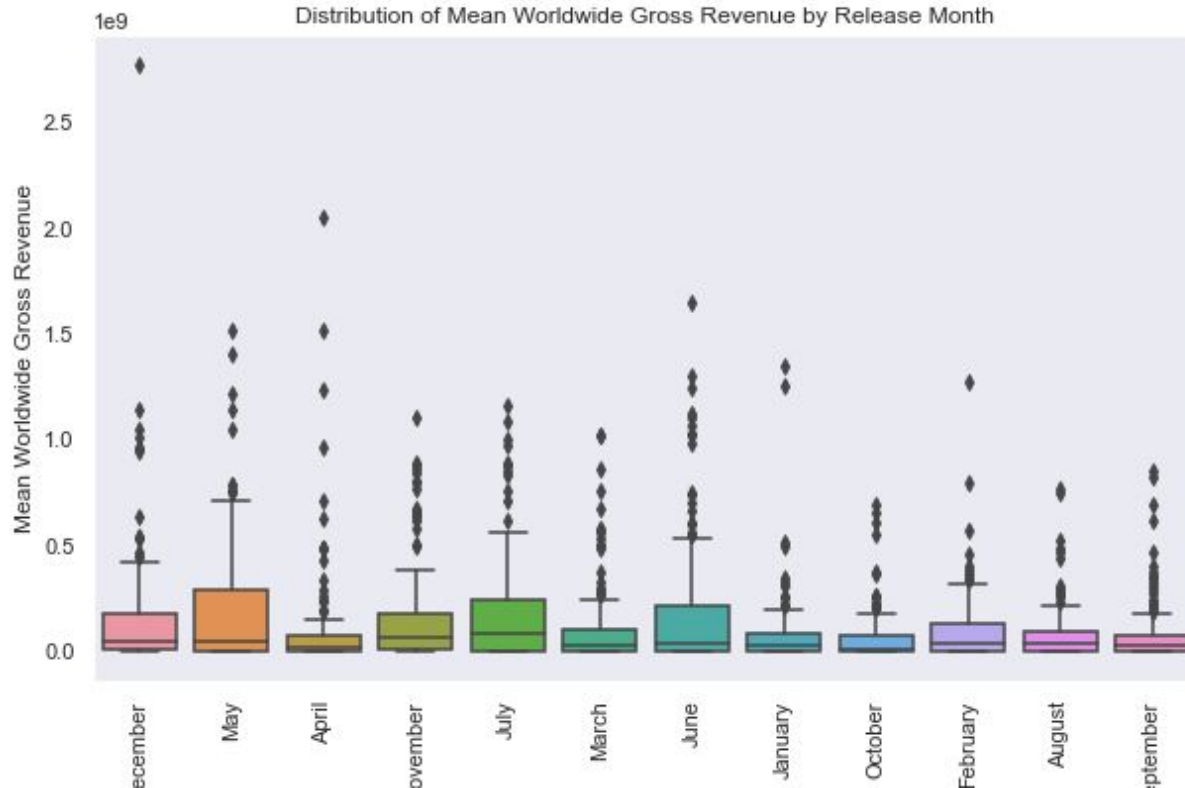
**Prolific Genre Production:** Surprisingly, drama followed by comedy are the most frequently produced genres, indicating their broad appeal and popularity among filmmakers.

**Diversity of Genre Combinations:** The prevalence of drama and comedy as sub-genres within various genres underscores the complexity of genre combinations in modern filmmaking, allowing for a diverse range of films.

**Genre Strategy Implications:** Microsoft's movie studio should consider a strategic approach to genre selection, balancing the revenue potential of popular genres with the competitive landscape they entail.

In essence, the movie industry showcases a diverse array of genres, with specific genres consistently delivering high revenues, while drama and comedy remain prolific due to their broad audience appeal.

# Boxplot for release month against revenue



The analysis of box office trends by release month provides the following insights:

**Best Months for Releases (December, May, April, November):** These months are considered optimal for movie releases due to their higher median revenue. On average, movies released during these months tend to perform well at the box office. December stands out, primarily because of holiday-themed movies that attract a larger audience during the festive season, resulting in higher revenue.

**Greater Variability (May, July, June):** Months such as May, July, and June exhibit taller boxes in the box plots, indicating a greater interquartile range (IQR) and higher revenue variability among movies released during these months. This suggests that box office performance during these months can be less predictable, with some movies performing exceptionally well while others may not fare as well. Factors contributing to this variability include competition, changing audience preferences, and the timing of major movie events or holidays.

**Wider Revenue Range (May and Others):** Months with longer whiskers, including May, have a wider range of revenue. This implies that box office performance varies more during these months, with movies achieving both high and low revenue. The broader distribution of outcomes can be attributed to factors like diverse movie genres released during these months and the influence of external events or marketing campaigns.

Overall, the analysis suggests that while summer is generally a favorable time for movie releases, specific months like December and May stand out as particularly promising for higher box office revenue. However, a more detailed understanding of genre preferences and audience demographics is essential to fully leverage this seasonality information for revenue maximization.

# Conclusions.

Based on the analysis findings, we offer actionable insights to guide Microsoft's new movie studio in its entry into the movie production industry:

- 1. Strategic Investment:** The analysis reveals that higher production budgets can lead to better box office performance. However, it's crucial to allocate budgets strategically, considering genre and release timing. Microsoft should ensure efficient budget allocation to maximize returns.
- 2. Genre-Centric Approach:** Genres play a significant role in revenue generation. Microsoft should focus on producing movies in genres that have consistently performed well at the box office. Stay adaptable to evolving audience preferences and emerging trends.

**3. Release Timing Strategy:** The timing of movie releases is pivotal. Microsoft should create a well-planned release calendar, capitalizing on months like December, May, April, and November. Pay close attention to seasonal trends and avoid months with high revenue variability, such as May, June, and July.

By following these recommendations and maintaining a data-driven, adaptable approach, Microsoft can position itself for success in the dynamic and competitive movie production industry.

# Recommendations

In the future, we recommend:

- **Data Enhancement:** Focus on collecting additional data in areas where it is currently missing, such as comprehensive audience feedback and demographic data. This will provide a more comprehensive understanding of the audience and also the specific release times in days so as to be able to get a good grasp of the data for analysis
- **Ongoing Market Monitoring:** Continuously monitor industry trends, audience preferences, and box office performance. Adapt strategies to changing dynamics and evolving tastes.
- **Data-Driven Decision-Making:** Continue to use data analytics and insights to guide production decisions. Utilize predictive modeling to assess potential box office performance, optimize release timing, and tailor content to audience preferences.