

Week 8 Project: Data Visualization Project on Movie Genres

Binayak Bartaula

Anderson College of Business and Computing, Regis University

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John Koenig

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Introduction:

In this final project, I will explore various movie genres. Analyzing genres is essential as it allows for a detailed examination of IMDb's dataset, which encompasses information on 10,865 films released from 1966 to 2015, providing valuable insights into the film industry.

Research Questions:

1. What are the most common genres based on the number of films produced?
2. Which genres typically feature high average budgets and revenues?
3. Which genres exhibit strong average popularity?

Methodology:

Utilized Python along with several statistical tools to interpret the data. The methodology involves:

Gathered and cleaned the data: The dataset included information about movie genres, release years, budgets, and revenues. I used Pandas and NumPy to clean and prepare it for analysis.

Used different visualization techniques:

Bar charts to compare how many movies were made in each genre.

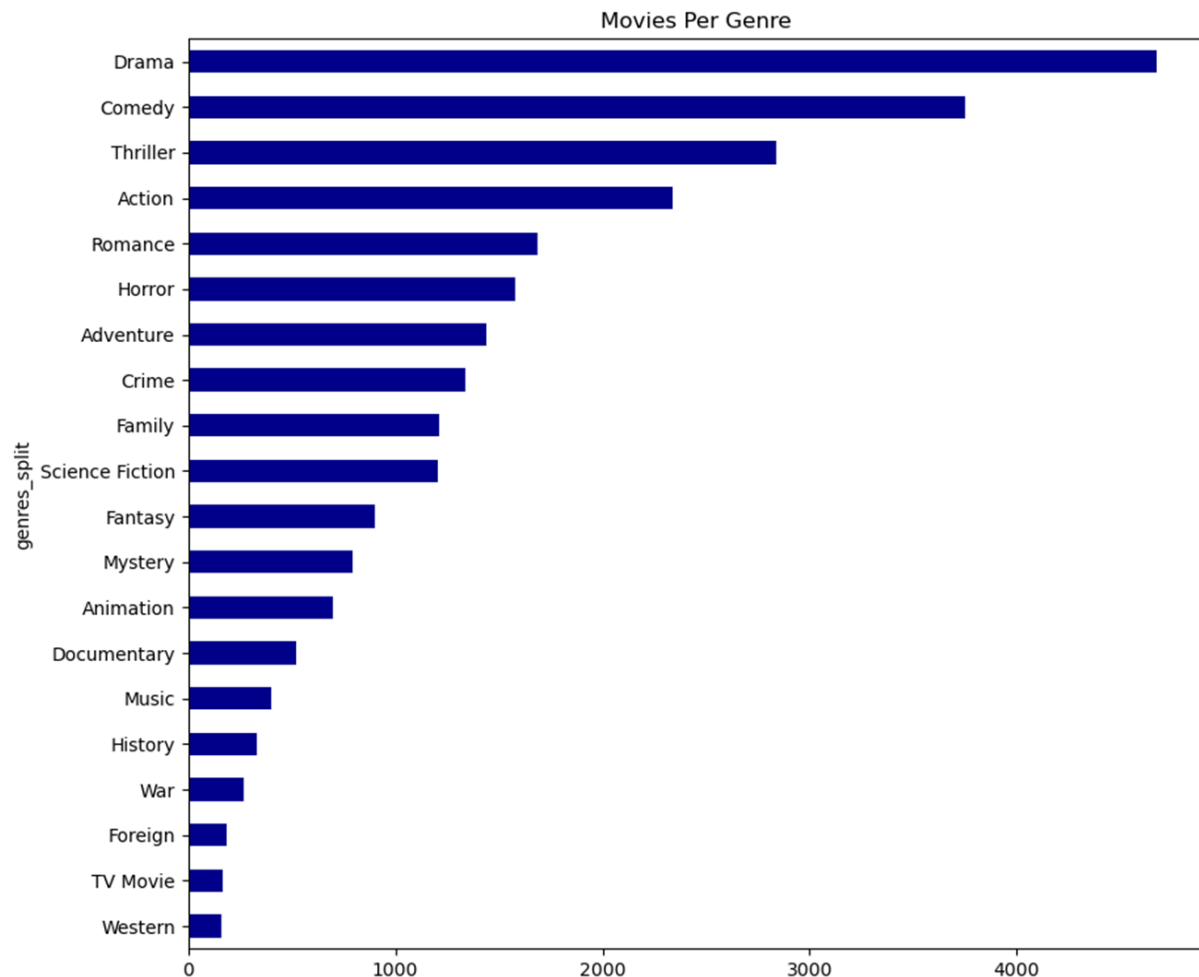
Heatmaps to track profitability trends over time.

Summaries of key stats to highlight budget and revenue patterns across genres.

Results:

The bar chart indicates the number of movies produced by genre, noting those most popular in the film industry. Drama stands as the most common genre (4,672 of the movies, at 17.6%), closely followed within Comedy (3,750 of the movies, at 14.2%), suggesting that audiences and filmmakers prefer, in general, emotionally driven narratives along with humor.

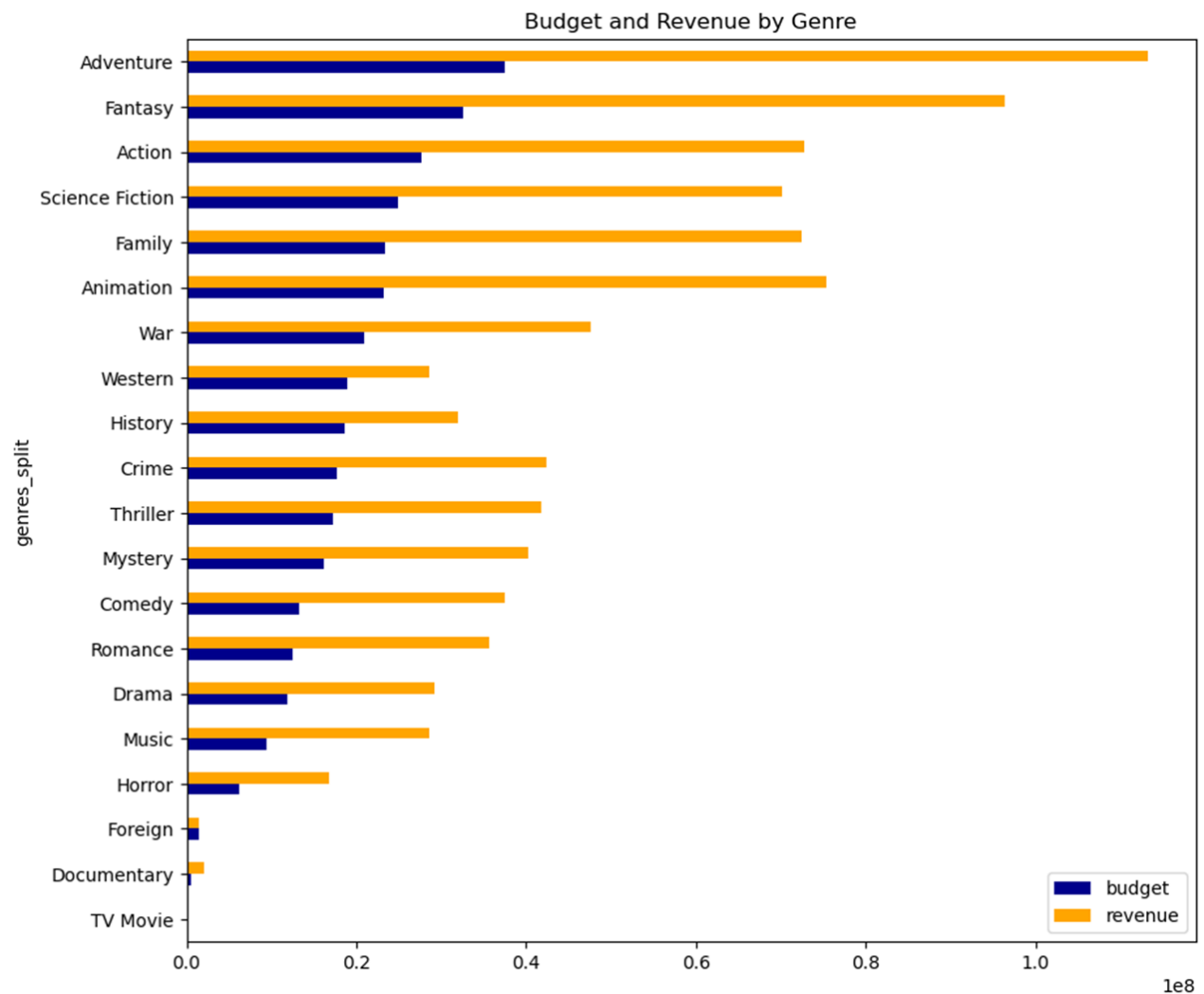
Thriller in addition to Action are other big genres, which is quite logical. I think a lot of people enjoy exciting and very lively amusement. Horror, Adventure, and Romance are represented in strong ways, too. In contrast, Western films and television films have the least movies, probably since their draw has waned with time. A few documentaries, musical works, and historical works have a reduced number of films but serve particular niche audiences.



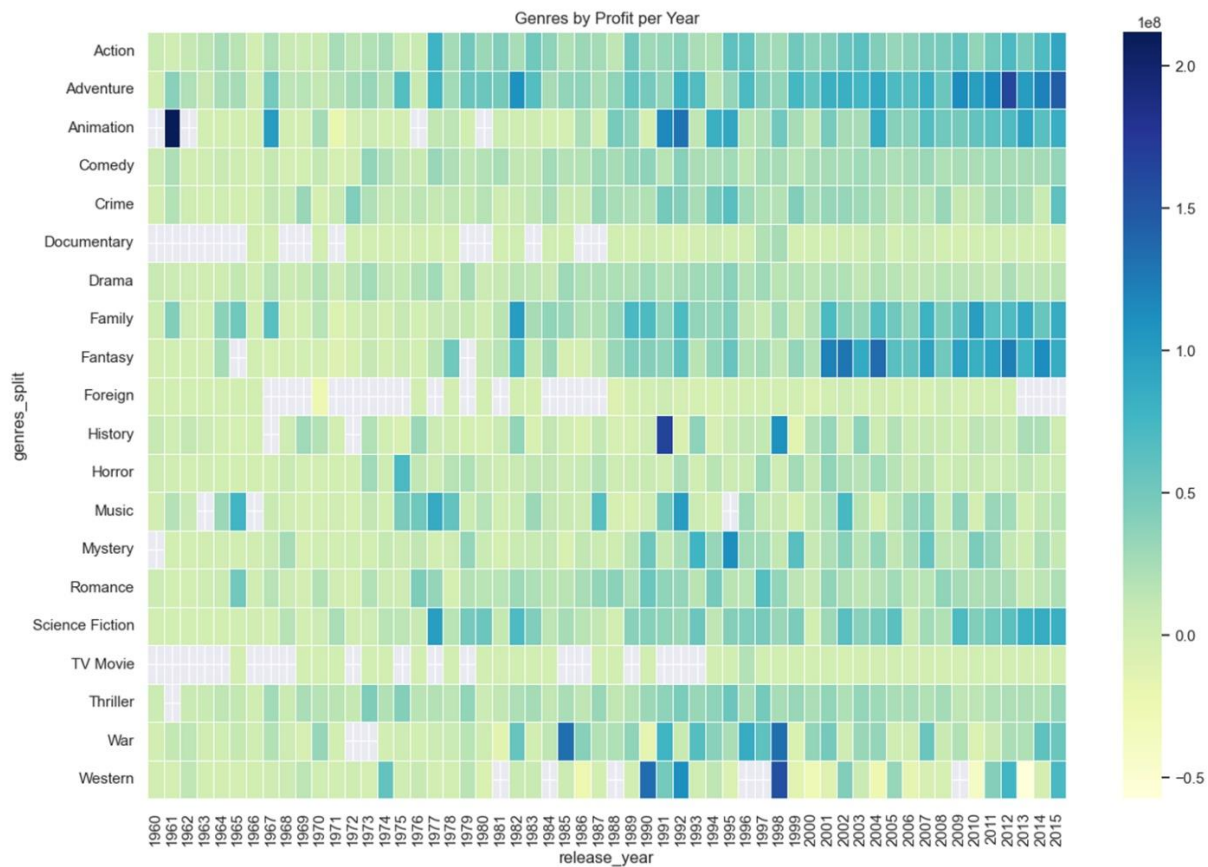
Adventure and Fantasy movies typically make a lot of money when analyzing average budgets and revenues. This is because their profits usually beat the average budget and revenues. These genres dominate at the box office because of their appeal and the rise in franchises. Action and Sci-Fi movies often have wide-ranging budgets and meaningful earnings, largely because of their special effects, famous actors, and international fans across many countries.

Crime, Thriller, and Mystery movies are usually made with less money, but they still make good profits, so studios often choose them. Horror is also quite prominent. It generally has fairly low production costs while often remaining profitable.

Conversely, TV movies, foreign films, and documentary films generally have smaller budgets and often generate lower income. Even though these films lack mass-market appeal, audiences are still attracted.



A heatmap of profitability trends indicates that since the 1990s, Action, Adventure, and Sci-Fi films have also generated profits consistently. These genres use meaningful budgets, impressive visual effects, and wide-ranging distribution worldwide. In contrast, Documentary, History, and foreign films have been insignificant earners; those cinematic works usually draw narrower yet faithful viewers instead of obtaining large box office results. The overall pattern indicates that movie earnings have increased, most notably in the late 1990s, because studios have adopted expensive films to develop franchises.



Conclusion:

In conclusion, Drama and Comedy represent the most films produced, though Adventure, Action, and Fantasy outperform in revenue. This strongly suggests that popularity does not necessarily lead to profitability. Since the late 1990s, movie revenues have increased greatly, especially in Adventure and Sci-Fi, due to big franchises like Jurassic World. Genres such as Action, Sci-Fi, and Animation, which tend to have higher budgets, usually yield meaningful income. Horror and Crime movies offer studios affordable production. This yields meaningful profits from relatively small expenditures. Categorizations, including documentaries, Histories, and foreign films, are not especially lucrative, and they have received fewer releases, particularly prior to the 1980s. That shows they appeal to a smaller, more dedicated group. Profitability patterns have, during all decades, varied, with relatively lower earnings noted in the course of the 1960s and 1970s. Otherwise, the 21st century's initial decades saw more popular movies across several categories, displaying effects from major projects and broad public interest.