

Analysis of Movie Box Office Trend by Genre through Comparison of Economic Indicator

Many industries are impacted by economic situations around the world, and the film industry is no exception. According to a [research](#) conducted in South Korea, there is a significant correlation between the economic cycle and the box office performance of specific movie genres. The researcher found that fantasy and action genres are directly proportional to the economic trends, while comedy and romance genres are inversely correlated (Lee, 2019). Building on this insight, this project aims to determine whether these patterns apply to the U.S. film market by comparing U.S. box office data from 1995 to 2024 with economic data through a detailed genre based analysis.

The data used in this study is from two sources: Federal Reserve Bank of St. Louis ([FRED](#)) and [The Numbers](#). Economic cycle indicator, the Real GDP growth rate, comes from the FRED API. Movie genre popularity, as determined by box office success, is obtained from market share percentage data per genre, which is gathered through web scraping from The Numbers.

The real GDP growth rate data and market share percentage data will be structured into data frames using the Python Pandas library: `gdp_df` and `genre_df`. The data format of each column will be adjusted as needed, and in the case of the `genre_df`, market share changes will be calculated additionally to compare against the economic growth rate. Afterwards, the data will be merged into a unified data frame based on years, and regression analysis will be conducted. Scatter plots and line graphs will be used to visualize the correlation between economic growth and the box office performance of each genre. Additionally, standard deviation and range will be calculated for each genre, and these results will be compared using a bar graph and a violin plot to observe trends in box office fluctuations. Finally, a correlation analysis and heatmap will be used to confirm whether there is any interrelationship between the box office performance of different genres.

Reference

Lee. (2019). " A Study on the Relationship between Korean Economic Indicators and Genres of the Box Office Trend of Movies and Pop Music." *Chung-Ang University Graduate School of Art*. doi: 10.23169/cau.000000230461.11052.0000475