

What Makes a Movie Successful?: ECON 323 Final Project Proposal

Submitted by: Rashi Selarka & Jesslyn Himawan

The English film industry is highly competitive, with hundreds of movies being released each year. There are various ways in which movies get categorized into being “successful”. For this project, we will be using the **Popularity** (quantified) of and the **Revenue** collected by a movie to determine its success, so we will be generating a function that will roughly look as follows:

$$Success = (\alpha * Popularity) + (\beta * Revenue), \text{ s.t. } \alpha + \beta = 1.0$$

Where α is the coefficient attached to popularity and β is the coefficient attached to revenue, and they indicate how much either the popularity or the revenue contribute to the success. With this project, we aim to gain insights on factors that may contribute to the success of a movie by performing multilinear regression analysis to develop predictive models.

We plan to analyse the following data set from Kaggle: [Movie Dataset: Budgets, Genres, Insights](#), in order to fit 2 models. We will be using the explanatory variables - **budget**, **genre**, **runtime** and **average viewer rating** of the movies - and fitting one model that predicts popularity (a numeric variable provided in the data), and one model that predicts the revenue. We expect to use a few interaction terms in our models, since we believe variables such as genre and runtime, for instance, most probably have some kind of significant interaction. We will then try to use statistics (such as the RMSE and the AIC) to assess the explanatory and predictive powers of our models, in order to gauge what the suitable weight coefficients α and β should be for our production function. Since we wish to find correlations that can help forecast the success of a movie in a holistic manner, we will potentially alter the Revenue term in our production function to a *Profit* term or a *Profit Margin* term that would represent $(Revenue - Budget)$ or $((Revenue - Budget) / Revenue) * 100$ respectively in order for it to be a fair indicator of a movie's success. Considering that the movies were released in different years, we think that perhaps using profit margin might be better considering inflation and how the value of money decreases over time.

Expected Timeline:

- June 4: Have an introduction and preliminary analysis
- June 5-11: All analysis to be done
- June 12-18: The discussion and conclusion to be done
- June 19-25: Submit a draft and make revisions or changes
- Last week: Final review and submission