Model analysis of box office fluctuations in the 2021 movie market

1.The background of movie box office forecasting modeling

With the increase of people's cultural consumption demand, the number of theaters and screens, my country's film industry continues to show a prosperous scene. In 2019, the national movie box office totaled 64.266 billion yuan. Movie box office not only directly reflects the economic value created by a movie for investment companies, but also reflects the film's artistic quality and business strategy from the side. It is an important indicator to measure the success of a movie. It naturally reflects the degree of the market demand and investment attraction of the film works.. If it is possible to predict the acceptance and profitability of film products in the market in advance, it will have a huge impact on the decision-making of each link of the film industry chain. Therefore, accurate prediction of movie box office is undoubtedly of important practical significance for risk control and decision-making.

There are many factors that affect the box office of a movie, such as the quality of the movie itself, the show time, advertising, social environment, the number of cinemas where the movie is shown, and even the weather during the show. According to different prediction stages, box office prediction is divided into pre-prediction and post-prediction, that is, the prediction of the box office before and after the movie is released. According to different prediction stages, box office prediction is divided into pre-prediction and post-prediction. For pre-predictions of movies, current research results include: research on the relationship between movie types and movie box office based on Internet text; research on the impact of grades on box office based on star effect, the gender of the actor and director level; the study of the relationship between movie release date, time, season and other factors with box office based on neural network algorithm; training multi-layer perceptron MLP neural network to process pre-release data, such as movie quality and popularity, etc. Variables and classify movies according to their expected income. The box office prediction in the

later stage of the film uses the feedback neural network movie box office prediction model; the box office prediction takes into account factors such as directors, actors, and schedules; research on the positive impact of the audience's word-of-mouth communication in social networks, network information dissemination, and network search on the movie box office.

2.The Influence of Movie Online Public Opinion Scoring on Box Office

With the continuous development of Internet technology in our country, the Internet has become the core propaganda medium for movie marketing. At present, most of the film evaluation platforms such as Douban and Maoyan do not implement the real-name system, and their participants are characterized by diversity and complexity. Plus, with the characteristics of the Internet itself, the film network evaluation behavior has strong anonymity and concealment. This has also made it uncommon for the hiring of "Internet naval forces" to improperly evaluate movies, buy box offices, and lock-ups in the film industry. First of all, the concealment of the network often makes it difficult for the victim to accurately identify the "network navy". Secondly, there are still imperfections in the current Chinese law for identifying and regulating the improper evaluation of movies by the " Network Water Army". Based on this, how to identify and manage the network navy on film ratings has become an urgent problem in the development of my country's film industry.

3.The impact of emergencies on movie box office

Movies are a kind of public entertainment, and emergencies in moral and legal forms have a huge impact on the box office of movies. The sudden outbreak of the new corona-virus in 2020 has almost destroyed the publicly assembled movie market; how to apply models to analyze the impact of various emergencies on movie box office is obviously very important.

The main problems that need to be solved in modeling:

1. The core of early prediction of movie box office is to select effective predictive features. The factors that affect the box office of a movie are complex and vary in measurement methods. Features include: movie duration, actors, director, movie type, movie format (2D, 3D, IMAX), whether the movie is a sequel, release date, production company, and distribution Company and so on. According to the characteristics of movie classification, consider the characteristics of movie classification, movie type, director and other classification characteristics, director rating and other classification characteristics, cluster and classify the movies in the provided data set, and verify the effectiveness of the classification.

2. Common box office prediction models include multiple regression, neural network, etc., and some scholars predict the box office by studying audience word-of-mouth communication, network information communication and network search in social networks (see references), and establish a positive influence on movie box office Movie box office prediction model, for the box office of the movie market, a classification model (result of title 1) is given based on the provided data, and the estimated box office forecast and the overall box office forecast for each category are given in advance.

3. Collect online public opinion evaluation data about movies from platforms such as Douban and Maoyan, and establish an algorithm to identify the positive and negative scores of online public opinion (standardized to [-1,1]); establish a model to extract topic words, topic classification or Other important indicators; establish a model to analyze the correlation between online public opinion and the box office and the degree of influence on the box office; design ideas and specific methods to identify the movie scoring network navy based on the problem and the current situation. The method needs to be logically self-consistent and feasible.

4. In response to the sudden outbreak of the new corona-virus, the state's

guidelines for the prevention and control of epidemics in cinemas opening up: The attendance rate of each venue shall not exceed 30%, 50%, 75%, etc., considering the impact of the epidemic on the model, and analyzing its impact Realistic influence and future prediction of movie box office. Using the data provided, the model analyzes the impact of different attendance requirements (30%, 50%, 75%) on movie box office forecasts after the epidemic has stabilized.

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The description of data:

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