

Review of Using Social Media to Predict the Future

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ABSTRACT: *Social media has become widespread and essential for social networking and content - based distribution in recent years. However, the information created by these websites remains mostly unexplored. We show how social content delivery material may be utilized to predict real-world consequences in this article. We utilize Twitter.com buzz to predict box-office revenues for movies. We show that a simple model based on the rate at which tweets regarding certain subjects are generated may beat market-based predictions. We also show how emotions collected from Twitter may be used to enhance social media's predicting capability. We look at the problem of forecasting box-office sales for movies using Twitter buzz, which is one of the Internet's fastest growing social networks. We chose movies as the subject of our research for two primary reasons, which are described in this article.*

KEYWORDS: *Information, Predicting, Social Media, Social Networking, Twitter.*

1. INTRODUCTION

Social media has evolved as a kind of online discourse in which individuals pay a premium to produce, share, bookmark, and network. On the educational side, Facebook, Myspace, Digg, Twitter, and JISC lusters are examples [1]. Because of its ease of use, speed, and reach, social media is rapidly transforming public discourse in society and establishing trends and agendas in topics ranging from the environment and politics to era and the entertainment industry. Because social media can sometimes be construed as a form of collective awareness, we decided to investigate its ability to predict real-world c Surprisingly, we discovered that a community's chatter may be utilized to generate quantitative forecasts that beat those made by artificial markets [2].

These information markets typically include the trading of country-specific assets, and if they're big enough and well-designed, they're usually more accurate than other methods for collecting diffuse data, such as surveys and opinion polls. The costs in such marketplaces, in particular, have been shown to have strong correlates with recorded outcome frequencies, making them excellent predictors of future impacts. In the case of social media, the enormity and high variance of the data that spreads through large user groups presents an exciting opportunity for harnessing that data into a form that allows for specific predictions. One can also build models to aggregate the collective populace's evaluations and gain useful insights into their behavior, while predicting future development [3].

Furthermore, gathering data on how people talk about certain goods may be useful in the development of advertising and marketing efforts. This paper discusses this kind of investigation. We recall the difficulty of forecasting box-office sales for movies based on Twitter buzz, one of the fastest-growing social networks on the internet. Tweets 1, a microblogging community, has seen a surge in popularity in recent times, resulting in a large user-base of many tens of thousands of people who actively engage in the introduction and dissemination of information. For two major reasons, we've concentrated on movies in our examination [4].

- The subject of movies is of considerable interest within the social media user network, as shown by the large number of people discussing movies, as well as the wide variety of their criticisms.
- The actual-global results may be readily predicted based on box-office receipts for movies.
- The following are our goals for this paper. First, we look at how particular films generate discussion and interest, as well as how that changes over time. Movie producers put a lot of effort and money into promoting their films, and they've taken to using Twitter to do it. The process of viral advertising and marketing, as well as pre-release buzz on Twitter, are then discussed, as well as the role of attention in predicting real-world worldwide box-office performance. Our premise is that films that are widely discussed will be well-watched. Following that, we'll look at how emotions are formed, how positive and negative ideas spread, and how they affect people [5]. For a bad film, the first impressions are likely to deter people from seeing it; yet, great reviews and criticisms over time may help to increase interest. As a result, we do sentiment analysis at the statistical level, using textual content classifiers to distinguish positive from negative tweets. The following are our conclusions:
- We demonstrate that social media feeds may be useful indicators of overall success in the real world.
- We discovered that the cost of producing movie tweets may be utilized to create a strong model for forecasting box office receipts.

Furthermore, US forecasts are consistently better than those generated by an information marketplace, such as the Hollywood stock exchange, the industry's gold standard.

1.1 Social media concept:

It's crucial to understand the difference between social media and online networking. According to Wikipedia, a social networking service is "an electronic service, software, platform, or site utilized by people who share a similar interest, ideas, attitudes, culture, activities, or real-life connections." Wikipedia, on the other hand, addressed the idea of social media as communication tools, since they allow individuals to broadcast as well as approach and persuade other people [6]. As a result, Wells defined social networking as the use of social media to directly contact and engage with people with whom one has a genuine connection or with whom one wishes to develop a relationship. "Social networking sites, customer review sites, content community sites, wikis, Internet forums, and location-based social media are all good examples of social media applications." Another definition was suggested, which described social media as "new media technologies that enable the production and distribution of user-generated content among and between organizations and people." Indeed, the idea of social media has been used in a variety of settings. However, since the present research is focused on the impact of social media on marketing, it is necessary to approach it from a marketing viewpoint. "A dialogue often triggered by consumers/audiences, or an industry that circulate amongst the mentioned parties to set in motion a revealing communication on some relevant content so that it intuitive user interface from one someone else's use and experiences, eventually benefiting all of the involved parties," according to the definition of social media marketing. "The use of social media tools, platforms, and software is to develop, communicate, deliver, and trade products that have value for an organization and its stakeholders," according to Tuten and Solomon [7].

Specifications of the dataset: We obtained the dataset by crawling a daily stream of information from Twitter.com. To ensure that we got all of the tweets about a movie, we utilized key words from the title as seek arguments. We used the Twitter search Api 4 to extract tweets over a period of time, ensuring that we got the date, originator, and tweet content for our analysis. Over the course of three months, we gathered 2.89 million tweets on 24 exclusive movies. With the exception of a few films that are released on Wednesday, most films are released on Fridays. Given that two new films are released on average every week, we gathered data across a three-month period from November to February to have enough data to anticipate behavior [8].

We only considered movies that were released on a Friday and were in wide distribution for consistency's sake. We started collecting information on films that were originally released in limited release after they became popular. We define the critical period for any film as the time from one week before its release, when advertising efforts are in full swing, to two weeks following its release, when its popularity diminishes and public opinion is dispersed. In the desk, there are some facts about the films chosen and their release dates. Be advised that certain films that were released within the time period examined were no longer included in this analysis, owing to the difficulty in properly identifying tweets that were relevant to such films. For the film 2012, for instance, it became impossible to separate tweets on the film from those about the year. We went to great lengths to ensure that the data we utilized was accurate.

1.2 Reputation and Awareness:

Our aim is to see whether the information collected from tweets can be used to forecast future events in the actual world with reasonable accuracy. The issue that we want to address may be stated as follows: Can we correctly forecast the box-office revenue produced by a movie in its first weekend using tweets referring to it prior to its release? We need measurable metrics for capturing the attention and popularity that various movies get before we can develop a prediction model for real-world impacts on Twitter.

A. Promotional Material's Impact: Urls and Retweets:

Prior to the release of a film, media agencies and producers create promotional data in the form of trailers, news, blogs, and photographs. We expect that tweets for movies released before its release date will often include such advertising efforts aimed at promoting word-of-mouth cascades. Tweets pointing to specific urls (photographs, trailers, and other promotional material) as well as retweets, which consist of individuals sending tweet postings to everyone on their friend-list, may be used to define this on Twitter. Each of these types of tweets is critical for disseminating information about upcoming films. First, we examine the distribution of such tweets for exceptional films, and then we examine their relationship with the films' overall performance [9].

B. Twitter Mention Rate:

The rate of movie mentions on Twitter varies considerably across the films studied. The tweet-rate is defined as the number of tweets about a certain movie each hour. Our preliminary study of the average tweet rate and box-office revenue for the 24 films examined revealed a significant positive connection with a correlation coefficient of 0.90. This points to a strong linear connection between the variables in question. As a result, we built a linear regression model using the least squares of the average of all tweets for the 24 movies examined in the week leading up to their release, using least squares of the average of all tweets.

C. HSX price forecasting:

Given that social media can correctly anticipate box office results, we decided to see how well it might forecast the HSX index's stock values. The Hollywood stock market changes the price of a movie stock at the conclusion of the first weekend to reflect the real box office revenue. If a film fails to do well, the price drops, and vice versa. We ran a test to see whether we could forecast the price of HSX movie stock at the conclusion of the opening weekend for the films we were considering.

D. Predicting weekend box office receipts for all films:

We utilized the Hollywood Stock Exchange index to compare to our tweet-based model. It has already been shown that artificial online marketplaces such as the Foresight Exchange and the Hollywood Stock Exchange are excellent predictors of future events. The pricing in these marketplaces have been found to have significant relationships with the frequency of observed outcomes. The Hollywood Stock Exchange, in the context of movies, is a popular play money market where the values for movie stocks may correctly anticipate actual box office results. As a result, we used regression on the movie stock prices from the Hollywood Stock Exchange, which may be regarded the gold standard, to compare with our tweet-rate prediction. The findings in Table IV show that our social media-based regression model accurately predicts box office success. Furthermore, the tweet rate time series-based model beats the HSX-based model.

1.3 Adoption of social media:

Modern companies and administrators should start paying more attention to the younger generation's behavior and views about social media apps, as well as how consumers interact with them. This is because a better knowledge of social media platform use patterns may aid businesses in forming a clear picture of prospective consumers' perceptions and behaviors toward these organizations and their brand identities. The length of use, log on duration, log on frequency, and profile update incidence, as well as how consumers may access their mobile phones, PCs, and iPads, are all characteristics of social media platforms. These are critical factors to examine when assessing the impact of such platforms on consumer attitudes, intentions, and actions. Individuals are likely to have a favorable opinion about social media apps if they use them more often. Describe the main reasons why consumers are ready to use social media apps. In this respect, three types of user behaviors linked to social media adoption were identified: general usage of social media platforms, joining companies' social media pages, and opting in to social media advertisements[10]. To do this, they developed a conceptual model based on the deconstructed theory of planned behavior. The importance of attitudes, relative advantage, complexity, compatibility, and self-efficacy in influencing the adoption of social media platforms was highly confirmed by their findings. The function of hedonic motivation, according to Mahan, is more likely to motivate consumers to utilize social media platforms and engage with sport organizations utilizing such platforms.

2. DISCUSSION

The present research focused only on the major body of literature on social media in the marketing context, whereas a significant portion of studies performed in other fields such as education, politics, and sociocultural settings were disregarded. As a result, future research may want to take into account these studies performed in various regions. Even though this study contributes by theoretically scanning the main body of literature, statistical evidence from these studies is still needed by conducting a meta-analysis study, especially given the large number of quantitative studies that have been conducted in the field of social media marketing.

As a new trend and subject, academics must focus further on how such phenomena may act differently from platform to platform and across various cultures. Despite the fact that this research examines all of the major aspects addressed by previous work on social media marketing, it does not properly enumerate the key variables or how they interact. Future research may find this to be a good path. As a result, a theoretical basis for examining the associated problems in this developing field would be established. The major research techniques used by the evaluated studies were discussed in just a limited portion of the present study. As a consequence, future research may focus more on evaluating various techniques and determining which methods are most suitable for producing more accurate and trustworthy findings in future empirical investigations. This is in addition to the necessity to explore how future research might adapt and enhance new methodologies and approaches for studying customer behavior in the social media marketing field.

3. CONCLUSION

We've shown how social media may be used to predict future impacts in this article. We built a linear regression version for forecasting box-office revenues of films earlier in their release using the charge of conversation from almost 3 million tweets from the popular site Twitter. We then verified that the results beat the Hollywood stock market in terms of accuracy, and that there is a strong link between the amount of interest a particular subject has and its future rating. We also looked at the emotions expressed in tweets and saw how effective they were at improving forecasts after a film had been released. While we focused on the issue of forecasting movie box office sales in order to have a clear measure to compare with other methods in this research, this methodology may be applied to a wide range of topics, from future product scores to time schedule setting and election outcomes. On a deeper level, this picture depicts how social media represents a collective knowledge that, when correctly harnessed, may provide an extremely powerful and accurate predictor of future events.

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