

## **PREDICTING STOCK PRICES USING GOOGLE TRENDS AND S&P 500 BASED ON TIME SERIES MODELS**

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### **ABSTRACT**

Using time series models, this study examines the applicability of predicting stock prices using Google Trends search data in comparison to traditional financial indicators, such as the S&P 500 index, as a benchmark. Google Trends is an important search metric that is used widely in business research. However, little is known about the increasing integration of digital information into financial prediction models. The study begins by collecting historical Google Trends data on specific search keywords related to the individual stocks and compares these search trends of each stock to the actual stock market performance (e.g., closing prices). A time series analysis is performed to analyze the correlation between Google Trends data, the S&P 500's historical prices, and the prices of each individual stock.

Our findings suggest that there is a weak correlation between Google Trends and the stock market movement. In addition, there are certain instances in which economic uncertainties or breakthrough events may play an important role. In addition to the traditional stock tickers we used, other keywords like “AI”, “VR”, “Technology”, etc. were also used for predicting the prices of the stocks in the technology industry in this study. We found that these keywords offer better exploratory power when it comes to predicting stock prices. The research contributes to the ongoing debate about the efficacy and limitations of alternative data sources, such as Google Trends, in predicting stock market movements.