BIG DATA: GOOGLE SEARCHES PREDICT UNEMPLOYMENT

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There are over 100 billion searches on Google every month. This paper examines whether Google search queries can be used to predict the present and the near future unemployment rate in the US. Predicting the present and near future is of interest, as the official records of the state of the economy are published with a delay. To assess the information contained in Google search queries, the paper compares a simple predictive model of unemployment to a model that contains a variable, Google Index, constructed from Google data. In addition, descriptive cross-correlation analysis and Granger non-causality tests are performed. To study the robustness of the results, the paper considers state-level variation in the unemployment rate and Google Index using a fixed effects model. Furthermore, the sensitivity of the results is studied with regard to different search terms. The results suggest that Google searches contain useful information on the present and the near future unemployment rate. The value of Google data for forecasting purposes, however, tends to be time specific, and the predictive power of Google searches appear to be limited to short-term predictions. The results demonstrate that big data can be utilized to forecast economic indicators.