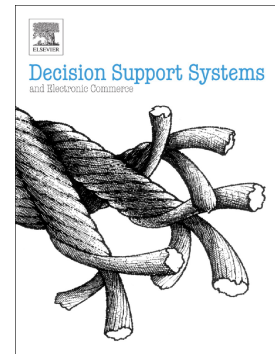


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Improving Crime Count Forecasts Using Twitter and Taxi Data

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Abstract

Crime prediction is crucial to criminal justice decision makers and efforts to prevent crime. The paper evaluates the explanatory and predictive value of human activity patterns derived from taxi trip, Twitter and Foursquare data. Analysis of a six-month period of crime data for New York City shows that these data sources improve predictive accuracy for property crime by 19% compared to using only demographic data. This effect is strongest when the novel features are used together, yielding new insights into crime prediction. Notably and in line with social disorganization theory, the novel features cannot improve predictions for violent crimes.

Keywords: Predictive Policing, Crime Forecasting, Social Media Data, Spatial Econometrics

1. Introduction

Every day, people leave their neighbourhood to commute to work, shop in malls or relax in museums and bars. Such travel creates a social flow of both crime targets and perpetrators that connect areas beyond spatial distance and facilitates criminal activity (Wikström et al., 2010).

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