* Online workshop: Using Crime Data in R – how to work with it, visualise and map it!
* Organised by the UK Data Service, methods@manchester and the University of Leeds
* More info: https://www.ukdataservice.ac.uk/news-and-events/eventsitem/?id=5722

# Assessing the impact of measurement error in crime data: Applications to regression modelling and geographic crime analysis

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Police-recorded crimes are used by police forces to document community differences in crime and design spatially-targeted strategies. Police statistics are also used by researchers in the process of building and testing crime theory. Nevertheless, crimes known to police are affected by different forms of measurement error driven by underreporting and underrecording. We will present the results of two simulation studies to assess the extent to which measurement error in police recorded crime data impact the estimates of regression models exploring the causes and consequences of crime, and our knowledge of the geographic distribution of crime. Our results indicate that most coefficients and measures of uncertainty from regression models where crime rates are included in their original scale are severely biased. However, in most cases, this problem could be minimised, or altogether eliminated by log-transforming crime rates. We also observe that micro-level analyses of the geographic distribution of crime are affected by a larger risk of bias than crimes aggregated at larger scales. These results raise awareness about an important shortcoming of police-recorded crime data, and further efforts are needed to improve crime estimates and quantitative criminological research.