

## URBAN SCALING IN THE UNITED KINGDOM

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Recently, many scaling laws have been reported to model relationships between American urban areas' population and a broad class of economic metrics. Such techniques improve on traditional per capita measures, which risk confounding the general nonlinear effects fundamental to the nature of dense human populations with deviations from these due to local influences. We intend to extend this work in an analysis of data regarding energy use and criminal activity collected in the United Kingdom. We will aggregate reports from Local Administrative Units to the city level, considering all 65 UK centers with population above ca. 100,000, and apply maximum likelihood estimation techniques to compare various distributions' explanatory power over the observed trends. If power-law scaling is found, we will have a broader domain of support for this theoretical explanation of urban phenomena and the impetus to further generalize understanding of this fundamental constraint on mass social phenomena. The complement to this work will be measuring cities' deviations from the theoretical predictions derived in this way, which information may find applicability to a range of further research in urban planning and public policy.