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Research Question

How do socioeconomic and environmental attributes effect household energy in different communities? How do differences in local regulatory environments affect household emissions and the effects of other attributes on household emissions?

Motivation

- Household energy usage accounts for 29% of energy use and CO_2 emissions in the UK
- New data has been released since the 2011 census that allows the extension of existing research agenda

Theory

- “The emissions of human settlement types are characterized by unique, place-specific combinations of emission drivers” [Baiocchi et al., 2015]
- Following Baiocchi et al., we assume that a global linear model does not explain household emissions.
- Instead, we assume unique place-specific combinations of drivers and build on the typology of settlement types created by Baiocchi.

Methodology

- Following Baiocchi, the paper will use a “recursive sample splitting method [...] that repeatedly splits the data into increasingly homogeneous groups and allows to fit a linear model on each subsample”
- Baiocchi uses cross-sectional data, this paper will use two time points and run a fixed-effects model
- As an extension, a three-way fixed effects model will test for a local authority effect

$$E_{itl} = \beta_0 + \beta_1 Y_{itl} + \beta_2 X_{itl} + \alpha_{il} + \gamma_{it}$$

- Data for local authority environmental performance is rather qualitative.

Work Plan

November and December Finish gathering data, play with it a bit more, and finish reading

January and February Run the analysis and begin to write it up

March and April Get finished version by (When's the deadline??)

Figure : Distribution of household energy usage across MSOAs

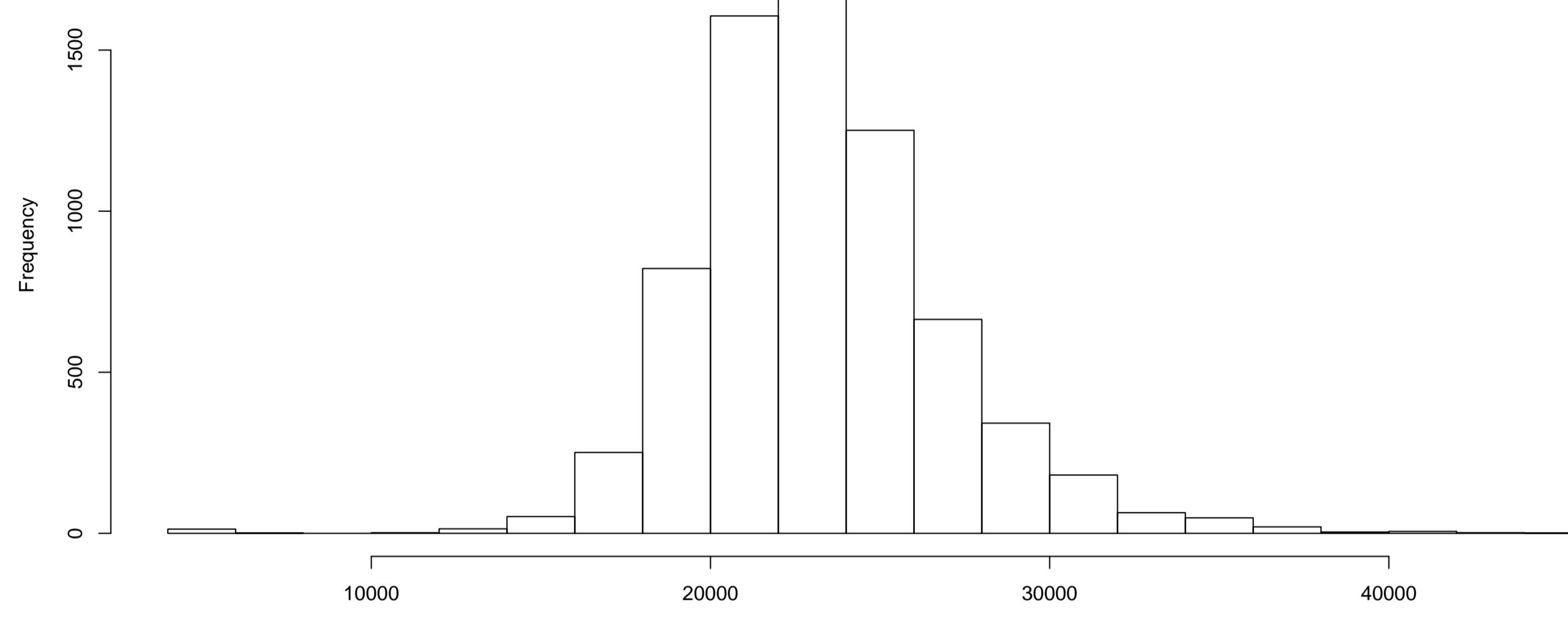
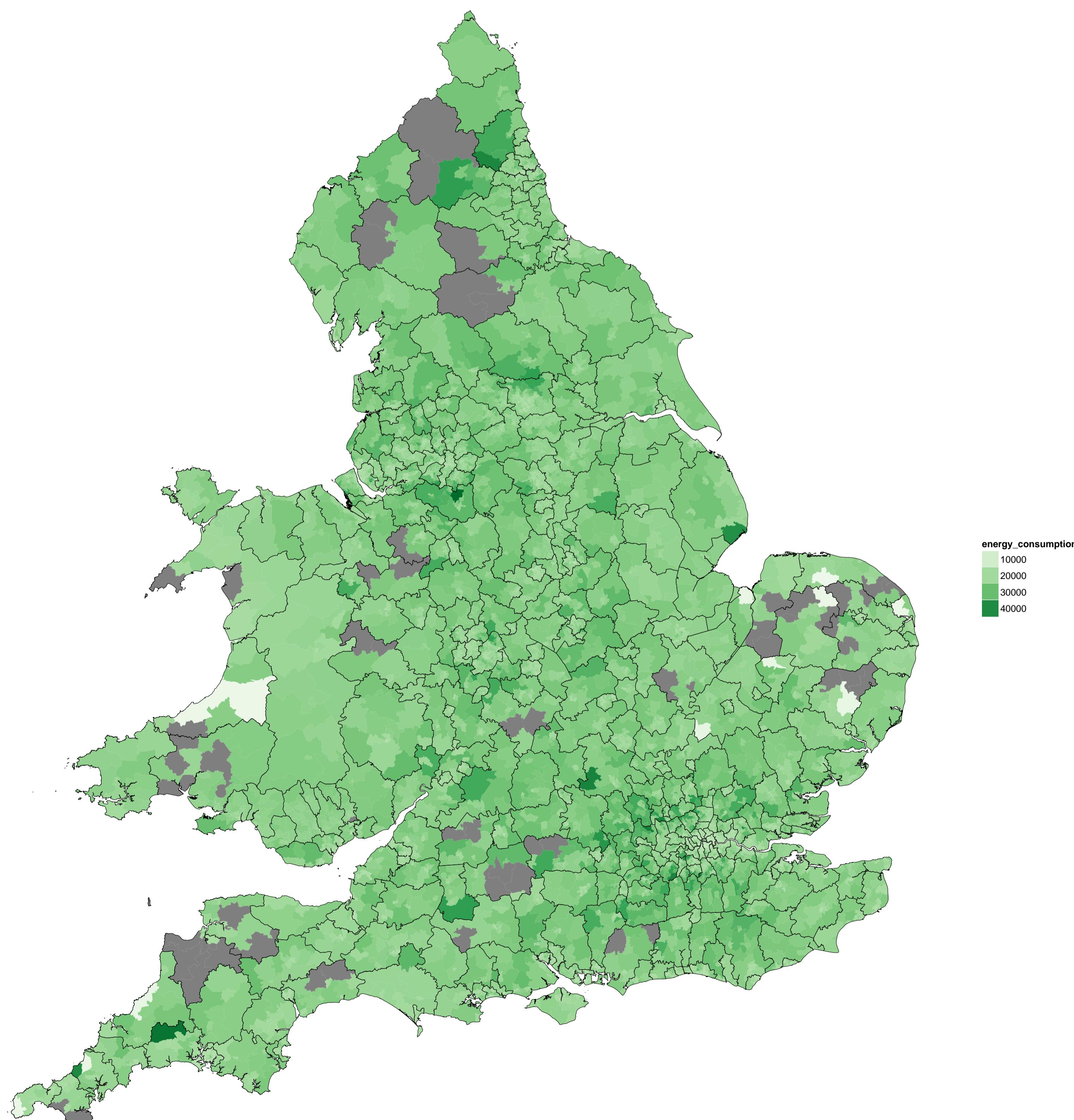


Figure : Map of energy usage



References

Baiocchi, G., Creutzig, F., Minx, J., and Pichler, P.-P. (2015).

A spatial typology of human settlements and their $\{CO_2\}$ emissions in england.

Global Environmental Change, 34:13 – 21.