

# Geographic Data Science

Non-spatial clustering

Dani Arribas-Bel

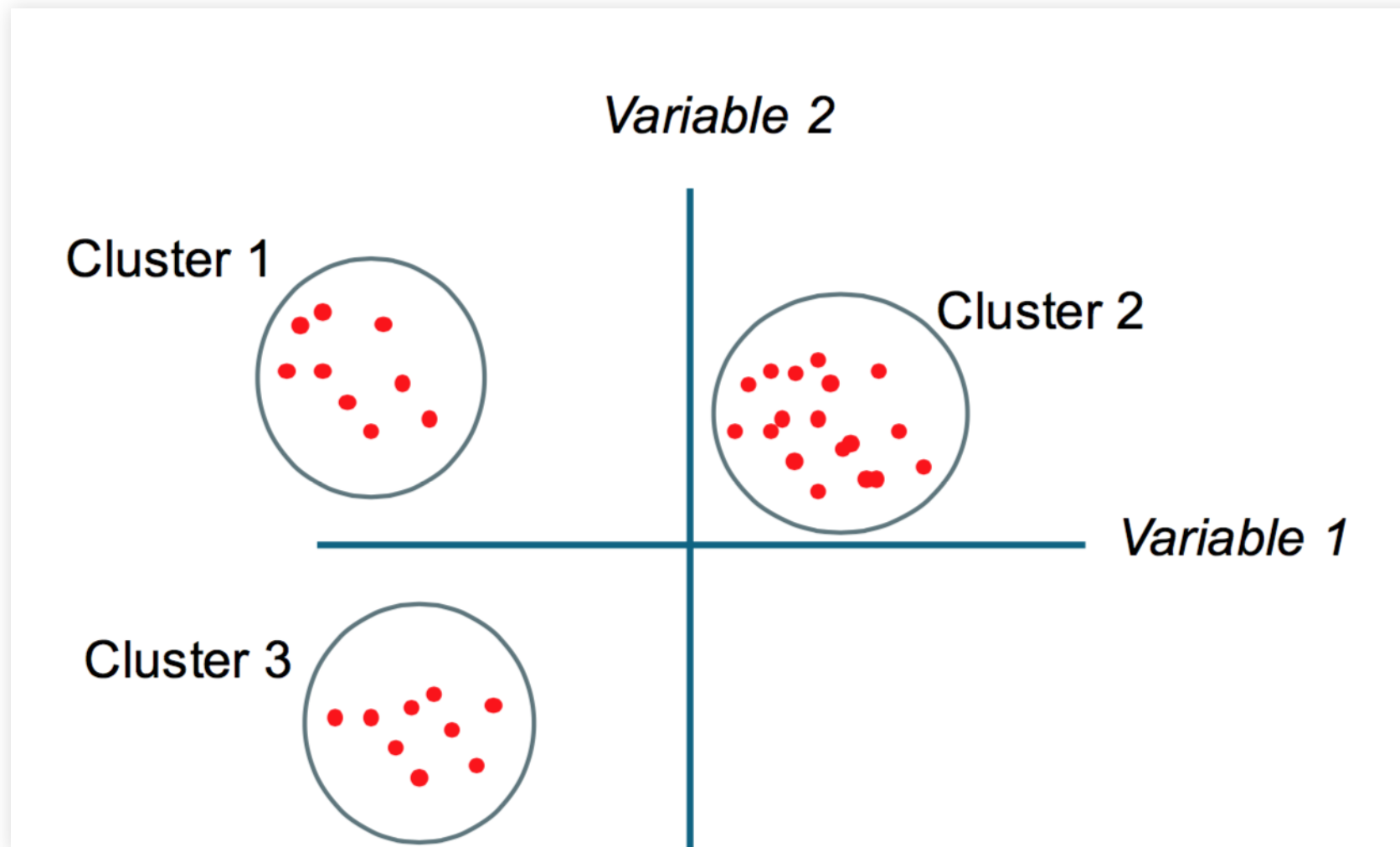
# Non-spatial clustering

Split a dataset into groups of observations that are similar within the group and dissimilar between groups, based on a series of attributes

**Machine learning**

**Unsupervised**

# Intuition



# K-means

- Most popular clustering algorithm
- Good but not perfect
- Watch video for int

# More clustering...

- Hierarchical clustering
- Agglomerative clustering
- Spectral clustering
- Neural networks (e.g. Self-Organizing Maps)
- DBSCAN
- ...

Different properties, different best usecases

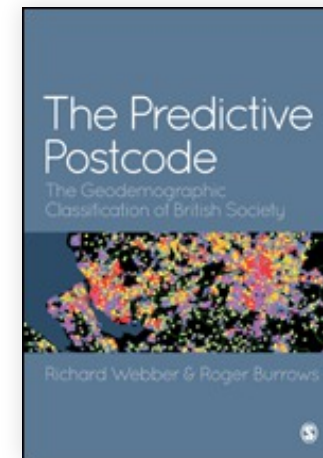
See [interesting comparison](#) table

# Geodemographic analysis



# Geodemographic analysis

- 1970's, Richard Webber
- Identify similar neighborhoods  
→ Target urban deprivation  
funding
- Public Sector (policy) →  
Private sector (marketing and  
business intelligence)





Consumer Data Research Centre

An ESRC Data Investment

# CDRC Maps

## DATA CHOOSER

Classifications Retail

Select a map:

2011 Area Classif/n of OAs

Download this data

## MAP OPTIONS

Layers: Land Labels

Toggle: Retail Centres

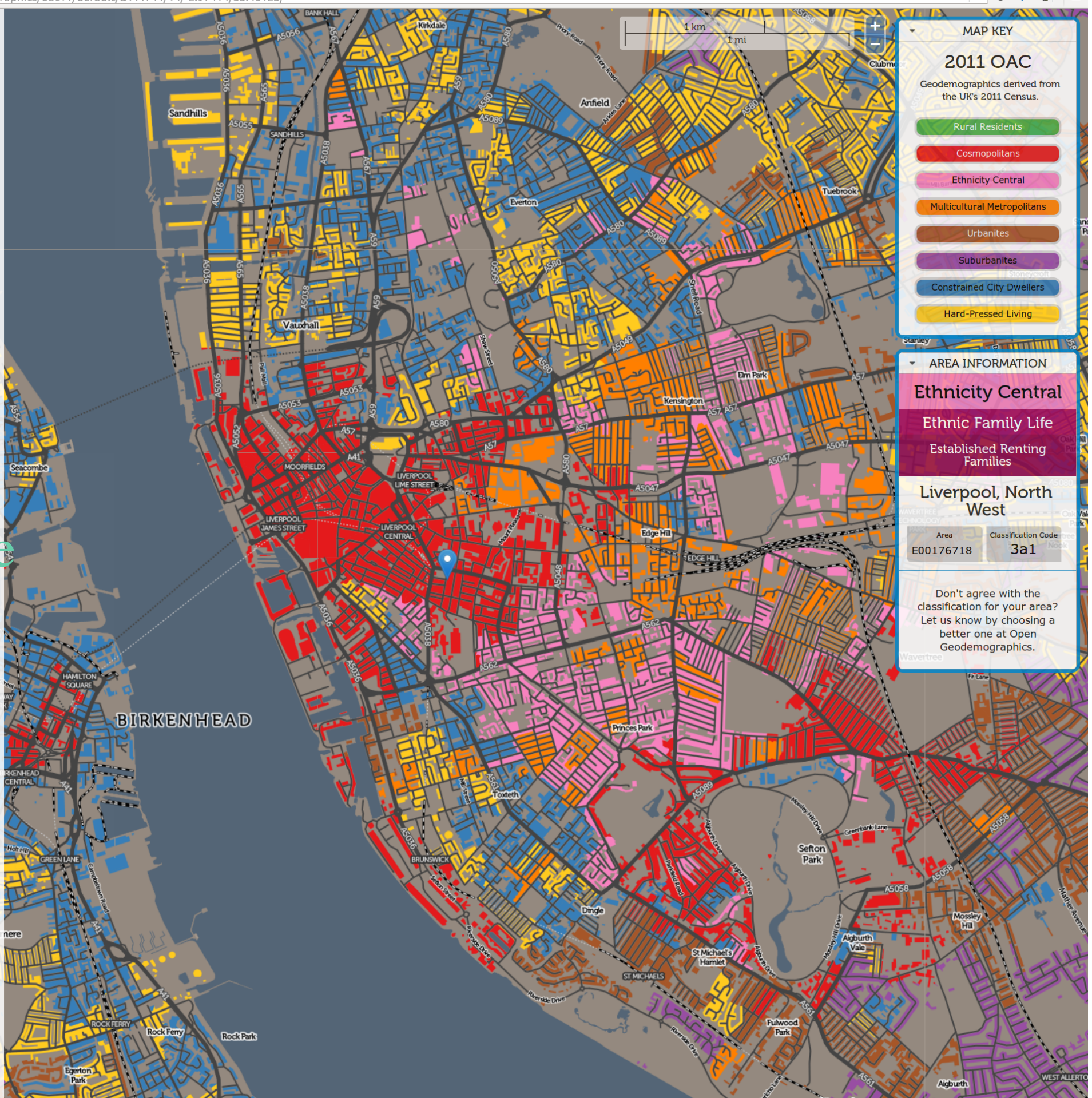
Download: retail centre locations

Postcode: |19dw| Go

# Source

Like Share Tweet

Important note: Classifications are an average across the local area, rather than for individual houses, therefore the colour coding on a building is not necessarily indicative of that building.



## MAP KEY

### 2011 OAC

Geodemographics derived from the UK's 2011 Census.

- Rural Residents
- Cosmopolitans
- Ethnicity Central
- Multicultural Metropolitans
- Urbanites
- Suburbanites
- Constrained City Dwellers
- Hard-Pressed Living

## AREA INFORMATION

### Ethnicity Central

#### Ethnic Family Life

Established Renting Families

#### Liverpool, North West

Area	Classification Code
E00176718	3a1

Don't agree with the classification for your area? Let us know by choosing a better one at Open Geodemographics.



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