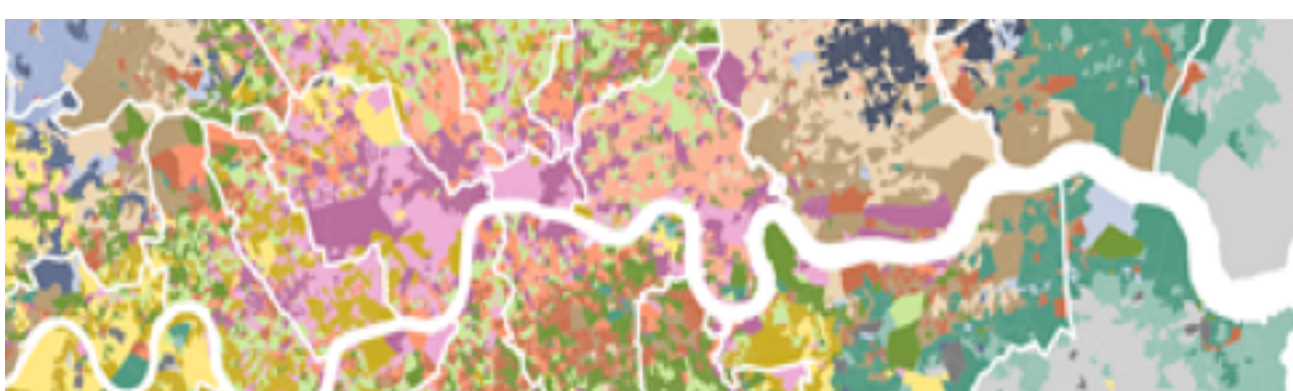


What is Geodemographics?

Geodemographics is the analysis of people by where they live, with the assumption that where an individual lives, gives insight to their demographics and behaviours. This is because socio-economic characteristics can filter people to live within certain types of neighbourhoods.

Geodemographic classifications therefore aim to segment populations into homogenous groups that are as heterogeneous as possible from another.



Current Geodemographics

CAMEO, Acorn, Mosaic, and OAC are the major current general purpose geodemographic classifications.

The granularity of these systems are postcode to individual (OAC, at Census OA), providing greater discrimination for a range of purposes including:

- Market and consumer analysis:
 - Direct advertising
 - Retail location
- Public health interventions
- Identify areas of risk
 - Increased house fire risk
 - Increased risk of heart disease
- Improved allocative efficiency of police, and education resources

The majority of geodemographic classifications' methodologies are not published, in a method called 'black-boxing'. This prevents their exact data inputs, data pre-processing and classification techniques from being known, and their classification unreproducible and invalidatable. However, there are some known limitations.



Limitations of Current Geodemographics:



Although censuses provide reliable national data for a wide range of topics, they are only conducted every 10 years. Therefore, the data becomes dated quickly, especially in areas of change.

Temporality of spatiotemporal data is neglected, in part due to data sources such as the census, leading to static representations of the segmented populations. Also, classifications only represent night time residences, and are ignorant of daily and other time cycle processes.

Ecological fallacy and Modifiable Areal Unit Problem interject levels of spatial uncertainty within classifications. The scale at which is used for analysis can impact results, and not all individuals within the group will have the ascribed group characteristics.

Geodemographic classifications create a social structure that limits individuals' life choices, due to the direct targeting dependant upon classification. An divisive all responding to such only reinforces the classification.

Why Predictive Geodemographics?

Predictive geodemographics will explore the limitations of current geodemographics to progress the field.

Explore a geodemographic classification system with degrees of belonging, of individuals' likely trajectories of future clusters.

Wide range of Big Data Sources

Spatial Big Data provides high spatiotemporal resolution data, that is capable of identifying social processes that may influence geodemographic change. Location Aware Technologies and other appropriate sources will be used.

Explore the temporality of data

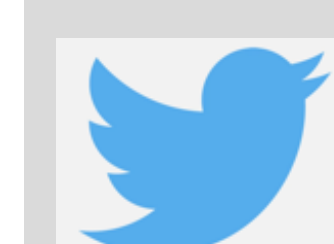
Data will be analysed via a range of space-time algorithms such as ARIMA, in order to analyse and identify both the temporality and spatiality of any arising patterns. A number of algorithms may be used where appropriate, in a spatially arming regression model.

Fuzzy Geodemographic Classification with Individual level prediction

Fuzzy geodemographics accounts for spatial uncertainty within geodemographics, by displaying degrees of belonging to various classifications. Whilst individual level prediction offers the greatest insight at a truly homogenous scale.

Regular updates

Regular updates of the predictive geodemographic classification will prevent individuals from being constrained to the single trajectory of geodemographic classifications.



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