Department of Geography
MSc Geospatial Analysis

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Relations between structure and performance of retail centres in England and Wales and demographics of their catchment areas
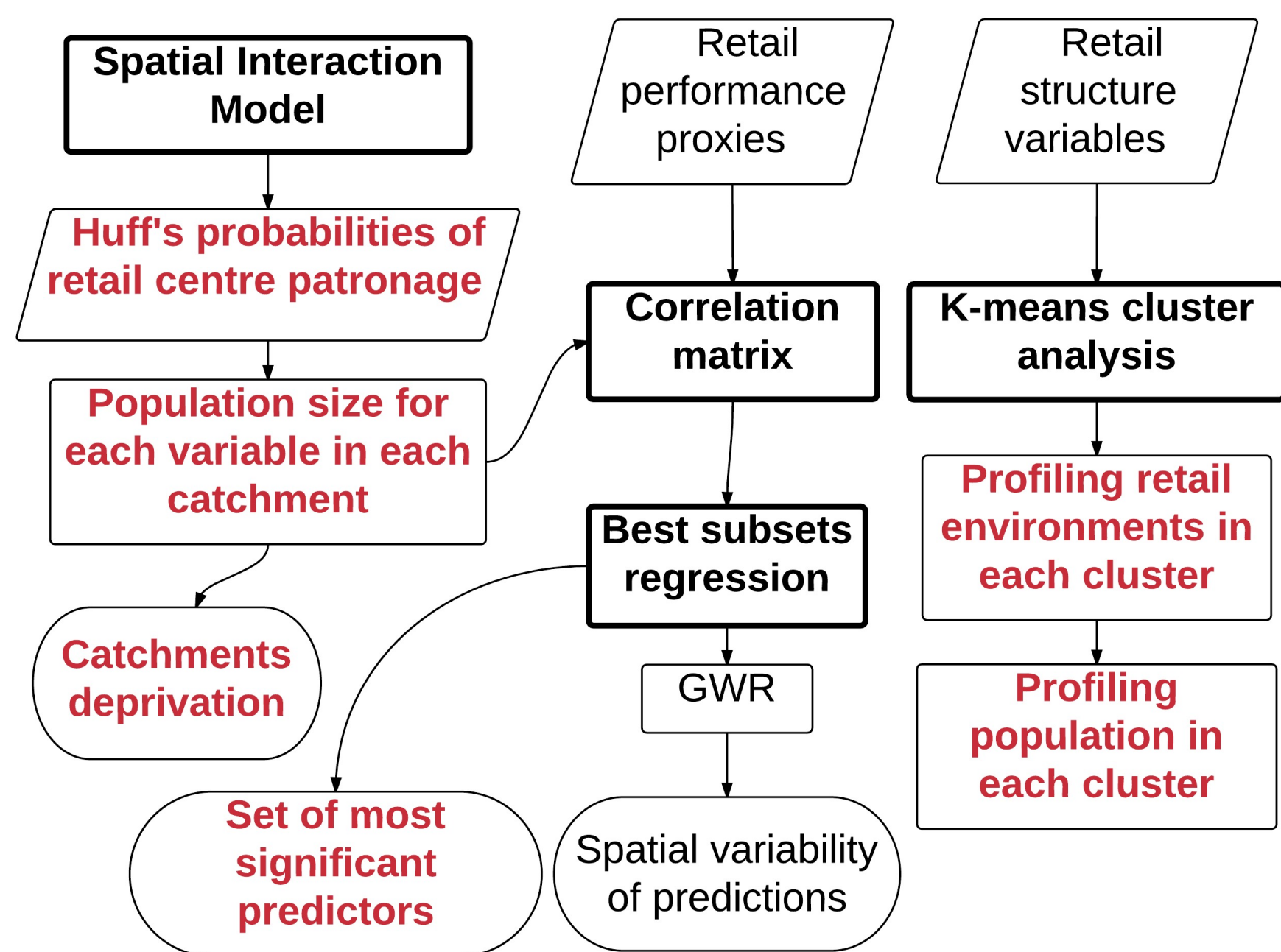## by Karlo Lugomer

UCL

Background

There has been a lot of research on the population and retail geographies of the UK and their interdependence through popular academic and commercial topics such as catchment areas delineation and assessment of the impact of different factors influencing the store location. However, topics that bring those problems together and analyse how demographics of the actual catchments are related to the composition and success of the **retail centres** (central areas of towns with high concentration of retail activities) have not been researched into detail.

Methodology and aims

Methodological framework of this research is shown by the flowchart, with main research aims and outputs bolded and marked in red:

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Spatial Interaction          Retail              Retail
     Model            performance           structure
                        proxies             variables
        |                   |                   |
Huff's probabilities        |                   |
of retail centre      Correlation          K-means cluster
   patronage             matrix              analysis
        |                   |                   |
Population size for         |              Profiling retail
each variable in each  Best subsets        environments in
   catchment            regression           each cluster
        |                   |                   |
  Catchments              GWR              Profiling
  deprivation              |             population in
        |            Spatial variability   each cluster
  Set of most        of predictions
  significant
  predictors
```
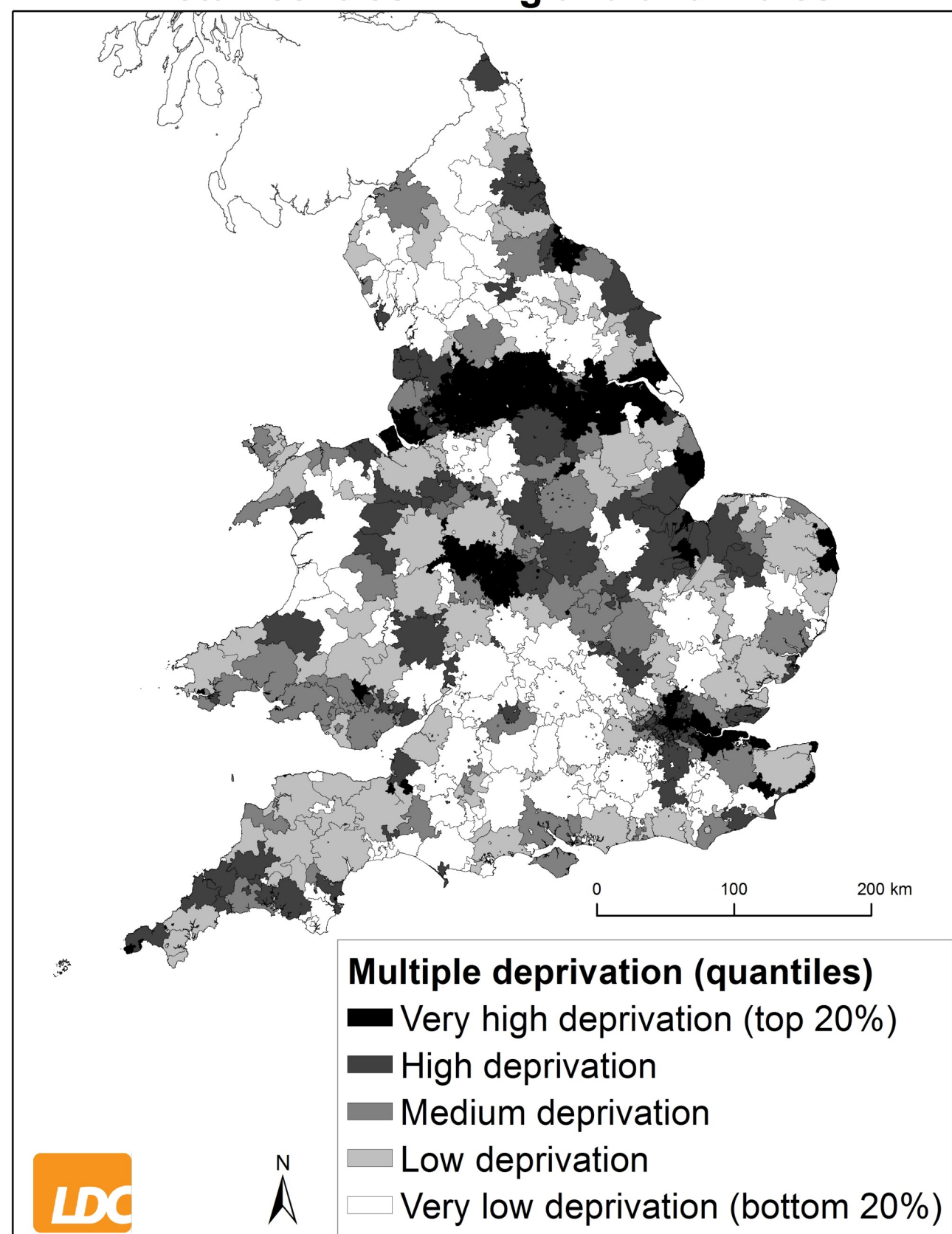
Catchments and deprivation

Catchments depict areas in which majority of the residential (night time) population patronises certain retail centre. Map below shows spatial distribution of the indices of the multiple deprivation. Indices present an aggregate score of four deprivation dimensions: housing, employment, health and education.

Most deprived catchments are rather small in size and are situated near Liverpool (West End-Morecambe, South Shore-Blackpool, Ellesmere Port and Fleetwood). Catchments of large cities, such as London, Birmingham, Manchester, Leeds, Liverpool) also have high deprivation levels.
Least deprived catchments are situated in Oxfordshire, Surrey, Buckinghamshire, Gloucestershire and Dorset.

Multiple deprivation levels in catchment areas of retail centres in England and Wales

Multiple deprivation (quantiles)
- Very high deprivation (top 20%)
- High deprivation
- Medium deprivation
- Low deprivation
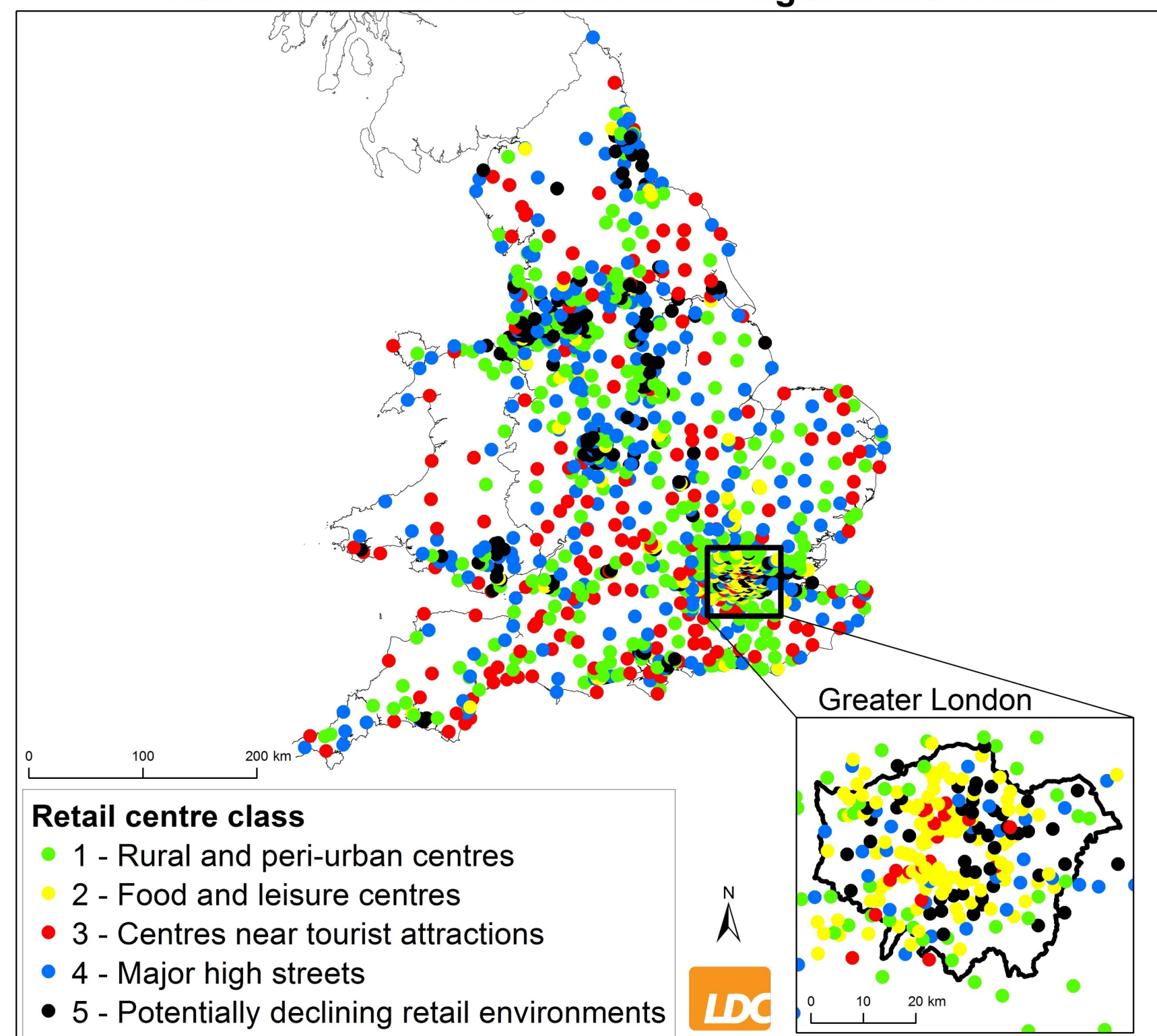- Very low deprivation (bottom 20%)

What type of population shops at what type of a retail centre?

Five classes of retail centres were identified through cluster analysis, each having a distinctive set of respective catchments' demographic features.

Class	Most common retail categories	Demographic characteristics
1: Rural and peri-urban centres	Pet shops, charity shops, footwear, banks, household/home, estate agents	Pensioners, agricultural workers, owners of two or more cars, property owned outright, using private transportation
2: Food and leisure centres	Restaurants, supermarkets, launderettes/dry cleaners, cafes & fast food, DIY, off-licence stores	Student accommodation, using public transportation, poor English skills, no kids households with HRP's age < 35
3: Centres near tourist attractions	Gift and China shops, books/arts/crafts, accommodation, clothing, furniture/carpets, jewellers/clocks	Agricultural workers, working at home, small employers and own account workers, rent free, age 65+, accommodation/food industries
4: Major high streets	Department stores, electrical goods, pawnbrokers, clothing, sports/hobbies, footwear	Manufacturing and extractive industries, routine and semi-routine workers, using private transportation, DE soc. grade
5: Potentially declining retail environments	Entertainment, discount stores, pawnbrokers, supermarkets, bakers	High deprivation, poor English skills, bad health, socially rented housing, unemployed, no cars owned

Classification of retail centres in England and Wales

Greater London

Retail centre class
- 1 - Rural and peri-urban centres
- 2 - Food and leisure centres
- 3 - Centres near tourist attractions
- 4 - Major high streets
- 5 - Potentially declining retail environments

What catchment demographic characteristics make a well-performing retail centre?

Among three different retail performance proxy indicators **health index** designed by Morgan Stanley Research (2014) had the highest correlations with demographic variables and **occupancy rates** the lowest. Suitability of **attractiveness score** as a proxy was in between those two.

- **Both variables representing residents (drawn from LSOAs) and workers (drawn from workplace zones) are similarly important predictors of retail performance.**
- **The most important predictors are socioeconomic and education variables.** Five most significant predictors combined into a MR model (R^2 = 0.238) are: *(RES—residents, W—workplace population)*
  % RES semi-routine workers (<u>most important predictor alone, $R^2 = 0.203$</u>)
  % W with no qualifications
  % W with level 4 qualifications
  % RES manufacturing workers
  % RES information/finance/real estate/science workers
- **Ethnicities, family composition and age were less significant.**

References: Local Data Company (2015); Nomis (2013; 2014), 2011 Census—Quick Statistics; Geolytix (2013), Open Census Pack; Morgan Stanley Research (2014), 'UK General Retail: Dying High streets'

This project has been conducted in collaboration with Local Data Company.