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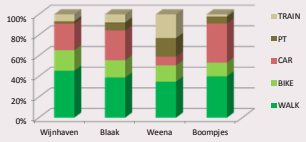
Living Patterns of High-rise Inhabitants in Rotterdam

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Condensation of the city centre. Only five percent of the inhabitants of Rotterdam live in the city centre. To improve the centre, the City of Rotterdam intends to add 10,000 new dwellings. But like most centres, Rotterdam doesn't have much space left, so the city will build high-rise to accommodate its new inhabitants. *What could be done to facilitate these new inhabitants, make them feel at home and make them actually 'use' the city centre?*

Research into living patterns city centre inhabitants. TU Delft carried out research into the living patterns of city centre inhabitants. The results could guide the city's further development. For example, they could be used in *decisions regarding where new dwellings or facilities should or should not be built.* They could also *provide information about the facilities that these residents need.*

Activity patterns measured with GPS devices. For the first time ever, the activity patterns of fifty residents in Rotterdam city centre were monitored using GPS devices. The subjects, inhabitants of ten high-rise apartment buildings, each carried a GPS tracker for a week. The towers are combined into *four clusters: Weena, Blaak, Wijnhaven and Boompjes*. For Weena train and other public transport are the dominant modes (40%). For Wijnhaven walking as the main mode is dominant (45%). Car is dominant in Boompjes (38%). Finally, Blaak shows an average across all modes.





Results. The study revealed interesting details about the routes used by the residents as well as revealing their objectives when visiting the city centre. The survey also shows that Rotterdam city centre meets most residents' demands and expectations, especially the accessibility and the shopping and cultural offerings are appreciated. However, residents do indicate a demand for more sports facilities, parks and nature and facilities for daily groceries in the direct vicinity of their tower.

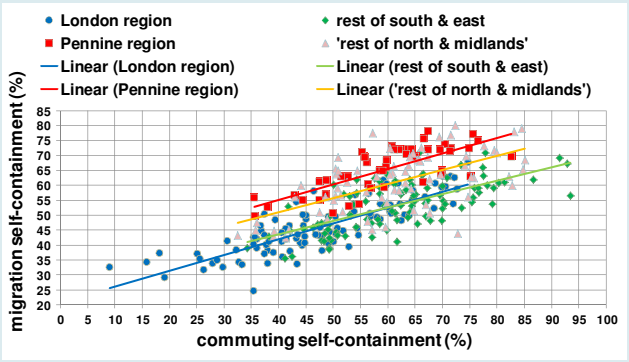
For more information, visit the Urbanism on Track website: http://bk.tudelft.nl/uot

Mobility in City Regions: the complex relationship between commuting and migration patterns.

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Increasing mobility has enabled people to live in or near one town or city and work in another. Whilst it is well known that longer-distance commuting is more likely among better-paid people and rural residents, little is known about the length of migration moves, especially where households move within a city region. Census data shows a far stronger urban-rural contrast in distance travelled for migration than commuting. This suggests that urban residents have rather more narrow horizons when finding work and, more especially, when changing where they live.

To explore north-south variation in these contrasts, England was divided by a line from Severn to Humber. Within the south the areas in or near London are distinguished, and in the north a similarly-sized "Pennine" region is centred on Manchester. The graph then shows the relationship between levels of self-containment of areas in terms of migration and commuting: high level self-containment shows people are moving locally.



The trend lines indicate that in all parts of England there is a link between migration and commuting lengths. An area where people tend to have localised commuting flows is likely to see few people moving into it from further afield. The trend lines for the London region and the rest of the south overlap, showing that the relationship between the two types of mobility is almost identical in both parts of the south.

But in the north – and especially ihe Pennine region's old industrial towns – the trend lines are shifted upwards. Thus for any level of commuting self-containment, northern areas have more self-contained migration flows. This shows northerners willingly travel to access job opportunities, but are less willing to move to live in other areas of the same city region. This greater local 'rootedness' needs to be considered in policy making.

The Vulnerability of Commuter Patterns to Oil Shocks: A case study from Yorkshire and the Humber

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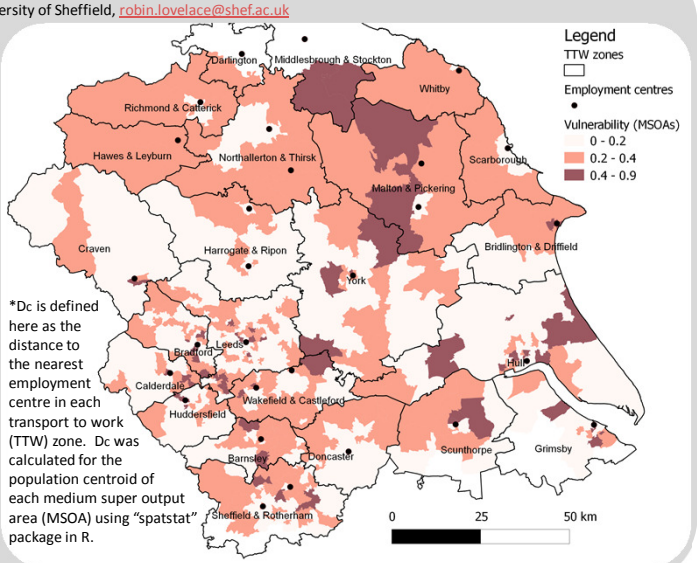
Commuting is energy intensive and highly reliant on oil in high income nations. This is cause for concern in light of peak oil. International transport statistics support the idea that G8 nations have reached 'peak travel'. **Energy use for commuting** appears to have reached a plateau in the UK. This raises some questions: Is this due to peak oil? What are the implications? Do certain people and areas have greater levels of 'oil vulnerability' than others?

Commuter oil vulnerability can be defined at individual or geographic levels using a range of variables: distance to work, isolation, car dominance, and energy and monetary costs. The map shows the results of the following metric:

$$V_e = (P_{ET} + \alpha) \times \sqrt{\beta D_c} \times P_{car}$$

Ve is a vulnerability proxy, P_{ET} is proportion of energy use spent on commuting, D_c is distance to employment centre* and P_{car} is car dominance. α and β are parameters to be set (in this case to 0.1 and 0.3, respectively) externally. **Other metrics** are available: which one to use? This is a subjective question, so a range of metrics were developed and tested: users can decide which best suits their needs. All metrics imply a link between rural isolation and vulnerability.

Further work will apply vulnerability metrics to policy scenarios: telecommuting, car sharing, localisation. Which is most effective? This is designed to identify the most effective strategies for encouraging 'oil resilience'.



*Dc is defined here as the distance to the nearest employment centre in each transport to work (TTW) zone. Dc was calculated for the population centroid of each medium super output area (MSOA) using "spatstat" package in R.