

DELINEATING THE SERVICE HINTERLANDS OF IRISH TOWNS

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Objective: To identify a method of demarkating the service hinterlands of Irish towns

Issues:

- Different services/orders of services have different service hinterlands
- Towns vary in terms of the configuration of their service base (size and range of services provided)
- Data on service hinterlands are not available

Proposal:

- Use commuting data from census as proxy measure of service hinterlands

Questions

1. What commuting indicator to use?
2. To which towns should this indicator be applied?

Answers

1. Allocate each DED to that urban centre to which it sends most commuters
2. Apply to all towns of 5000+ population

Problems

Problem 1:

- "Swamping" of towns in the vicinity of major regional urban centres as most commuter flows are focused on the latter centres, even though these towns have substantial service hinterlands
 - The area from which each regional centre draws commuters is referred to as that centre's "urban shadow"
 - Towns located within the urban shadow are referred to as "shadow" towns

Possible solution: Use commuter hinterlands of non-shadow towns to estimate what the hinterlands of the shadow towns would have been in the absence of the regional centres

Problems

Problem 2:

- A town's population may not reflect the size of a town's economic base, depending on daily inward and outward flows of commuters

Solutions:

- Use employment level rather than population as criterion for including towns
 - Threshold employment level of 1,500 selected
 - This leads to inclusion of 17 extra towns in the mapping exercise
 - Not possible from available data to distinguish between employment in activities serving hinterland and employment in export-oriented activities (mainly manufacturing)
- Eliminate "dormitory" towns with large outflows of commuters relative to local employment levels

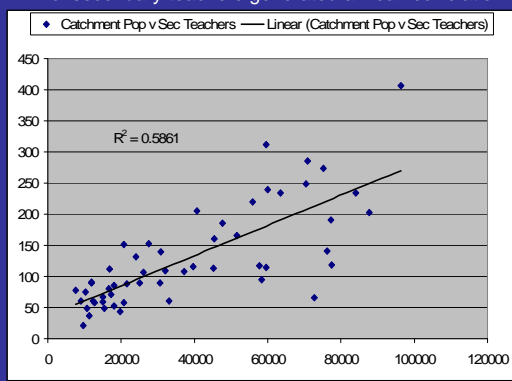
- Eight towns for which the number of daily outgoing commuters was over twice the number of people working in the towns were eliminated from the mapping exercise. In these cases, local services are more likely to be mainly serving the urban population itself rather than a surrounding hinterland. These were all located in the vicinity of Dublin and Cork
- Two towns whose employment is based mainly on large export-oriented firms and which have a weak local service base were also excluded
- Following these adjustments, 68 towns (excluding Dublin, Cork, Limerick, Galway) included in mapping exercise
 - Waterford not treated as a regional centre due to competition from four very large urban centres in the surrounding region

Comparison of population and employment levels

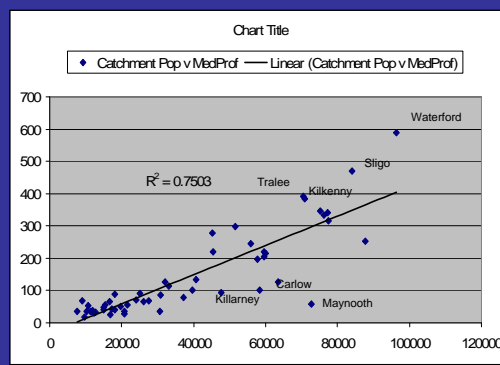
	Pop 2006	Employed in town	Residents working elsewhere	Incoming workers
Cashel	2,338	1,802	380	1,266
Youghal	6,785	1,830	893	719

- The commuter hinterlands of the 54 non-shadow towns were mapped using the commuting data from the 2006 population census
- The population of each of these hinterlands was computed
- This was added to the population of the focal town itself to produce the town's catchment population (i.e. the population served by the town's service functions)
- The catchment populations of the 54 non-shadow towns was regressed against the number of secondary teachers and medical professionals in the towns. These are classic central place functions for which the employment data are available from the census.

The regression between catchment population and number of secondary teachers generated a weak correlation

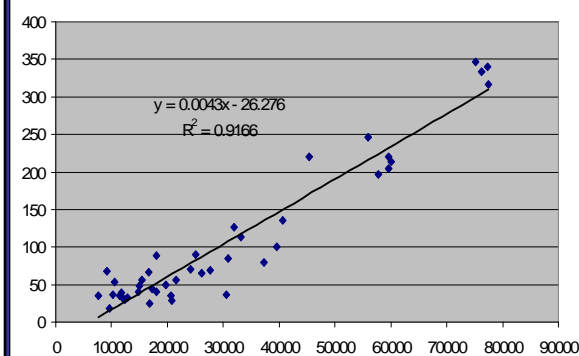


The correlation level between catchment population and number of medical professionals was much stronger



- Waterford, Sligo, Tralee and Kilkenny had much higher numbers of medical professionals than indicated by their populations. This suggests that their medical function extends beyond their immediate hinterland
- Carlow and Killarney had much lower numbers of medical professionals than expected: these clearly are dependent on Kilkenny and Tralee (respectively) for medical services.
- Maynooth also had far fewer medical professionals than expected, due to the fact that its service hinterlands includes several dormitory towns which have their own medical professionals
- Elimination of these anomalous towns from the calculations generated an extremely high level of correlation between catchment population and number of medical professionals ($R^2 = 0.9166$)

MedProf Excl Hspital Towns



- The resultant regression equation was used to estimate what the size of the shadow towns' catchment population should be (the number of medical professionals for these towns being known)
- A service hinterland for each shadow town was then delineated by combining DEDs until the projected catchment population was reached, in the following order
 - The town itself
 - Those unallocated DEDs on the side of the town away from the regional centre
 - DEDs on the other side of the shadow town, beginning with those nearest the town
- All remaining unallocated DEDs were considered to represent the hinterland of the relevant regional centre for the same level of services as provided by the shadow towns

Final hinterland map

This strictly speaking shows the hinterlands for secondary schools, but these can be regarded as reflecting the general hinterlands for the range of services provided by most of these towns (excluding those with significant regional functions).

Note: Dublin county was excluded from the mapping exercise

