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The factors driving shrinkage within Irish Electoral Divisions (1986 – 2016)

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Aim / Research Question

What factors drive Regional Shrinkage across Irish Electoral Divisions (EDs) over a 30-year period ranging from 1986 to 2016.

What is Regional Shrinkage?

Regional shrinkage reflects the definition of shrinkage used by Grasland et al. (2008) who classified a region as shrinking if it loses a significant proportion of its population over a period equal to or more than one generation (20-30 years). In our analysis a significant proportion is classified as above average population loss for the 1986 – 2016 period.

Data

Spatially rectified Small Area Data (Electoral Division, ED) data from the seven Irish Census of Populations between 1986 and 2016 (1986, 1991, 1996, 2002, 2006, 2011, and 2016). In total, there are 3,440 EDs in Ireland. Low population EDs are amalgamated by the CSO to provide anonymity. The exact number of EDs varies from Census to Census. As such certain EDs had to be amalgamated to ensure consistency across time. Following processing, the dataset consisted of 3,384 EDs which are consistent across time. Variables were taken from the 1986 Census to avoid possible endogeneity.

Hypothesis Development

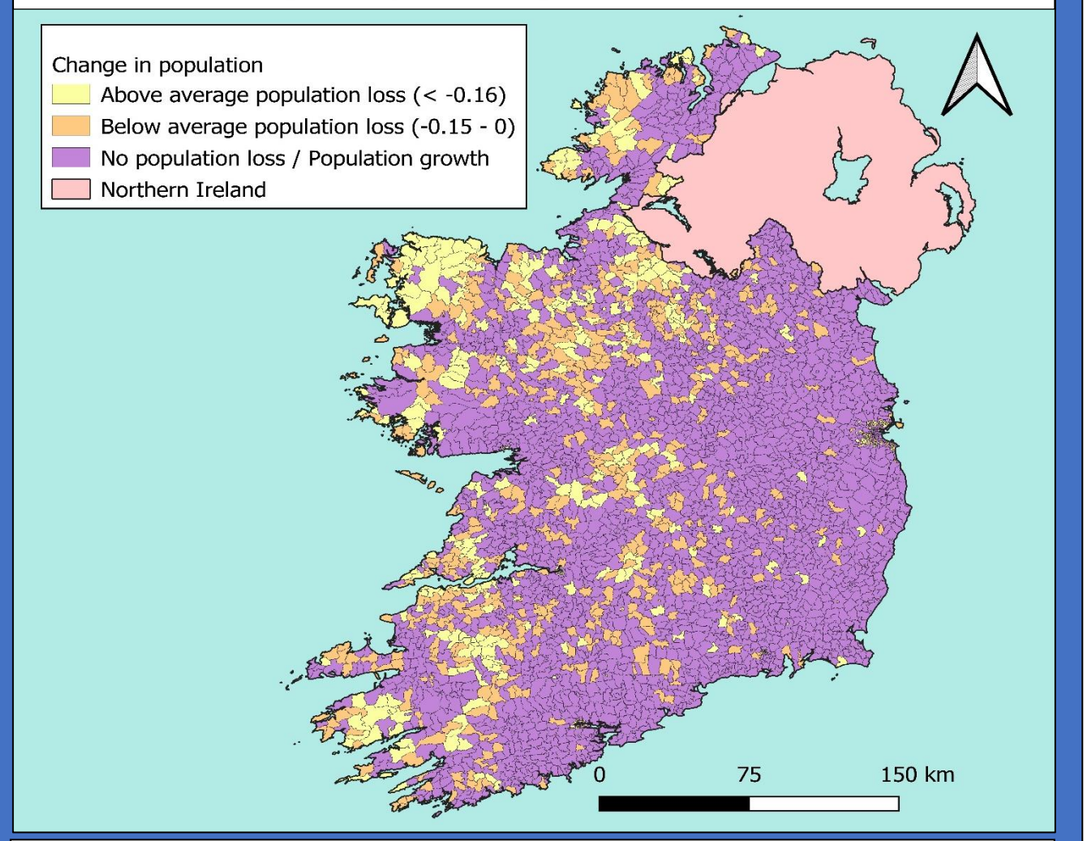
After an extensive literature review, a series of hypotheses were developed to assess the drivers of shrinkage across Irish EDs. These hypotheses are as follows:

H1: Regions experiencing higher unemployment rates are more likely to experience shrinkage

H2: Regions with higher percentage of population with third level education are less likely to experience shrinkage.

H3: Regions with a higher population density are less likely to experience shrinkage.

Figure 1: Population Change in Ireland (1986-2016)



Methodology

EDs experiencing shrinkage between 1986 – 2016 were identified (See figure 1). This study uses a probit model reporting marginal effects with robust standard errors. The dependent variable is Shrinkage (1 = shrinking, 0 = not shrinking). Independent variables are included that examine economic, sociodemographic, and locational factors identified to influence population change are included. Specifically, these variables are unemployment rate, proportion of the population that are male, proportion of the population employed in different industries, the proportion of household with children, the population density, and the age share within the respective EDs. A positive effect is a driver of shrinkage, while a negative effect stops shrinkage.

Conclusions

The results show that unemployment positively effects shrinkage. The higher proportions of individual with higher education and families with children have negative effects. These results are in line with the neo-classical view of migration, i.e., people follow jobs.

Preliminary Results

VARIABLES	Population Shrinkage 1986-2016	VARIABLES	Population Shrinkage 1986-2016
Unemployment rate	0.3018*** (0.0703)	Population Density between 13 and 21	-0.0278*** (0.0099)
Prop. male	0.4488** (0.1766)	Population Density between 22 and 29	-0.0439*** (0.0106)
Prop. Employed Mining	-0.1126 (0.1087)	Population Density between 30 and 43	-0.0176 (0.0163)
Prop. Employed Manufacturing	-0.2757*** (0.0705)	Population Density between 44 and 73	-0.0434** (0.0173)
Prop. Employed Building and Construction	-0.4535*** (0.1318)	Population Density between 74 and 150	0.0627 (0.0543)
Prop. Employed Electric and Gas	0.8538*** (0.2065)	Urban Population Density	0.5112*** (0.0702)
Prop. Employed Commerce	-0.2457** (0.0982)	Prop. Population Aged 15-24 years old	-0.0451 (0.1638)
Prop. Employed Transport and Communications	0.2613* (0.1520)	Prop. Population Aged 24-34 years old	-1.0603*** (0.2360)
Prop. Employed Public Admin	-0.1425 (0.1843)	Prop. Population Aged 34-44 years old	-0.4798* (0.2874)
Prop. Employed Professional Services	-0.0469 (0.0956)	Prop. Population Aged 44-54 years old	0.2646 (0.2468)
Prop. Employed Other	-0.5315*** (0.1727)	Prop. Population Aged 54-64 years old	-0.0647 (0.1898)
Prop. with higher education	-1.3459*** (0.2023)	Prop. Population Aged 64-74 years old	0.5645*** (0.1881)
Prop. of families with children	-0.4847*** (0.1449)	Prop. Population Aged 74 years old and over	-0.2648 (0.2498)
Observations 3,384			