**Sources of Data**

The dataset analysed in this paper has been assembled from a two public records. First, the Department for Transport’s Vehicle Licensing Database represents the source of the vehicle stock data, noting the number of cars registered across Northern Ireland by fuel type. Second, the Northern Ireland Population Census represents the source of the socioeconomic, household, and transport system data employed in the analysis. The variables incorporated into the dataset are described in Table Y.

**Spatial Resolution**

The variables incorporated in the dataset have been aggregated at the Super Output Area (SOA) of administrative geography in Northern Ireland. This covers 890 contiguous spatial units which each contain between XX and YY households/individuals.

**Measurement of Nearness**

Estimating how close a spatial unit is to the border with the Republic of Ireland represents an issue of central importance to the research. A set of different methods have been followed in this estimation in order to approach the issue from multiple directions. Each of the methods is employed in the analysis to consider if the association between nearness to the border and the ownership of diesel cars persists across different estimation procedures.

Contiguity Method

A set of distance based buffers from the border with the Republic of Ireland are set with spatial units assigned to the buffer if it intersects. These buffers incorporate spatial units that interest a 5 kilometre (n = 104), 10 kilometre (n = 45), 15 kilometre (n = 31), and 20 kilometre (n = 36) buffer to the border as well as those which comprise the remainder of Northern Ireland (n = 674). This arrangement is illustrated in Figure Y.

Proximity Method

The centroid for each spatial unit is extracted and the position of each road crossing between Northern Ireland and the Republic of Ireland is mapped. The Euclidean distance between each centroid and the nearest road crossing to the border is calculated.

Network Distance Method

Network Time Method

**Limitations**

While nearness to the border has been measured in this paper using multiple methods, this may still represent a crude proxy of the level of interaction between the spatial units of Northern Ireland and the Republic of Ireland. A superior method would be the level of trips per car that originate in each spatial unit and cross into the Republic of Ireland. Commuting patterns from the 2011 Northern Ireland census could offer such a proxy, but due to the small sample sizes observed for this characteristic and the level of spatial resolution employed by the analysis, the ……. declined to provide these statistics.