Study Case: Lisbon

This study focuses on developing a comprehensive redistricting plan for the Lisbon administrative area. The primary goal is to ensure that the proposed administrative boundaries are equitable, functional, and reflective of Lisbon's changing demographics. This study employs a mixed-methods approach, combining quantitative and qualitative data analysis techniques.

Data Preparation

The primary data source for this research is the 2011 Portuguese National Census conducted by the Portuguese National Institute of Statistics (INE). Before conducting any analysis, the raw census data will be preprocessed, cleaned, and transformed as needed to ensure its usability for the study. The descriptive analysis will involve calculating summary statistics for each demographic variable of interest. Spatial cluster analysis techniques, such as k-means clustering and hierarchical clustering, will be employed to identify areas within Lisbon that share similar demographic characteristics.

Redistricting Lisbon parishes using a data science approach

The redistricting plan development will involve integrating the findings from the descriptive analysis and spatial cluster analysis to propose new administrative boundaries, resource allocations, and policies. Key considerations during this stage will include ensuring equitable representation, maintaining the integrity of communities, and facilitating efficient governance. The proposed plan will be refined iteratively based on stakeholder input, feasibility assessments, and alignment with research objectives. The final stage of the methodology involves synthesizing the research findings, redistricting plan, and validation results into a comprehensive report. Recommendations for implementing the proposed plan will be provided, including steps for engaging stakeholders, conducting public consultations, and integrating the new administrative boundaries into existing governance structures.