Climate Change und Rural Depopulation

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Table of contents

Abstract

This website contains the contents of my master's thesis. In essence, it is a Quarto book project in HTML output format. Naturally, the final submission of the thesis will be rendered to PDF.

I kindly ask for your understanding for the incompleteness of this website. At the moment, my master's thesis is still a work in process, and this website will be updated accordingly on a regular basis.

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1 Introduction

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2 Related Literature

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3 Data

The empirical analysis of the effect of climate change on population size in rural areas relies on two main data sets: Historic climate data and historic population data. Both of these

3.1 Historic LAU Population Data Set

The source of the historical population data for European LAUs is Eurostat. The data includes LAUs of EU member states, certain candidate and EFTA countries, as well as the United Kingdom, and can be downloaded from Eurostat's website.

Since LAUs are (public) Local Administrative Units, they are subject to continuous changes and adjustments as local, national, and European policies change. These reforms of administrative boundaries can highly complicate the analysis of the units' characteristics because the statistical units lose inter- and intra-unit comparability over time when their sizes change. Additionally, census time points vary among countries and regions, which complicates cross-section comparability for a single time point. The creators of the data set took this into account and estimated harmonized population figures to enable further analysis and research.

Due to the continuous changes of the administrative boundaries of the LAUs throughout time, their boundaries were fixed to the base year 2012 to allow for comparability across time points. Frequency and scope of reforms of administrative boundaries was diverse among countries. For this reason, the techniques chosen to harmonize the population figures with respect to their spatial attributes varied with the country and sometimes even the region. For example, while for some countries a backward approach adjusting only the figures subject to known boundary changes was applied, for others spatial overlay of decade-specific boundary maps was necessary. Special cases, for instance where two LAUs were combined to a single one, are also labeled with footnotes pointing to metadata distributed with the data tables. The report of the data collectors outlines this in more detail **(add citation)**.

Besides space, the second dimension that needed to be harmonized to ensure comparability is time. Countries did not collect their census data at the same points in time. Instead, the creators of the data set aimed to collect LAU population figures for at least one year in each decade of the years 1960 to 2011. While figures for some countries were exactly on or only few days apart from the proposed reference dates and could be used directly, others had to be estimated with a geometric interpolation method. Finally, population data for the reference dates January 1st of 1961, 1971, 1981, 1991, 2001, and 2011 was derived.

Besides the estimated figures for harmonization along with the original ones, the data is also delivered with geographic references such that the population figures can be integrated into maps and other spatial analyses. For the majority of the countries, these references correspond to the *Eurogeographics national Euroboundary maps* of the year 2012, as the population figures were harmonized for 2012 LAU boundaries. However, some countries' LAU population figures are delivered with different geographic referencing, to which the maps are provided. Similarly, there are also exceptions regarding the spatial level of detail: For most countries, the population figures are geographically referenced to the lower LAU2-level, but for some countries population data could only be estimated for the upper LAU1-level. Table 3.1 gives a complete overview of these aspects.

Table 3.1: Types of LAU-levels and underlying sources for geographic attributes for all countries in the data set

Country	LAU-Level	Corresponding Geographic Attributes/Maps
Greece	LAU1	Delivered with data set
Ireland	LAU2	Delivered with data set
Lithuania	LAU1	Eurogeographics
Portugal	LAU1	Eurogeographics
Slovenia	LAU1	Eurogeographics
Turkey	LAU1	Delivered with data set
All other countries	LAU2	Eurogeographics

3.2 Climate Data

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3.3 Mapping Climate onto Weather Data and Descriptive Evidence

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4 Methodology

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mean(2, 5, 6)
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[1] 2
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print("This is an R code chunk to test the freeze code capabilities for rendering and publis
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5 Results

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6 Conclusion

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References