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BLOG POST

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Regional risk of poverty in the EU-27

A contemporary analysis of its correlates through At-Risk-of-Poverty rates

Thesis selected by the « *Institut Jacques Delors* » as the **Best Thesis** on a subject relating to the European Project of the College of Europe (academic year 2023-24)

• Executive summary of the thesis

The European integration project that gave birth to today's European Union (EU) was designed to bring peace and prosperity to a war-torn continent, at a time when European leaders were moving closer together. It seems to have done so, as most European citizens now enjoy a relatively affluent lifestyle. However, more than **70 million EU inhabitants were still at risk of falling into poverty in 2022**, posing a serious threat to social cohesion and the survival of the common project.

What is more, these people were not evenly distributed across the Union, but were over-represented in certain areas, indicating the existence of patterns of disadvantage and inequality over specific territories. As a result, **vulnerability to poverty**, although being ubiquitous, is also a spatially heterogeneous phenomenon that varies profoundly from place to place (Copus et al. 2015).

Vulnerability to poverty is a concept that illustrates the likelihood that people will be poor in the future. Since 2000, the EU has quantified its progresses in terms of vulnerability to poverty via the **'At-Risk-of-Poverty' (ARoP) rates**. These are a widely accepted statistical measure of relative income poverty, published annually by Eurostat, that represent the share of the population in a specific territory considered at risk of facing poverty. This is, the percentage of the population in that area whose equivalized disposable income after social transfers, over the last 12 months, was less than 60% of the national median equivalized disposable income.

ARoP rates were extensively studied in the 2000's and early 2010's, but studies after 2016 are scarce. Nevertheless, scientific evidence suggests that socioeconomic circumstances led to a decline in inequalities before the pandemic and their exacerbation after it, as the gap between affluent and vulnerable groups has widened both within and between countries, prompting updated research on the topic.

For international comparisons, EU Member States are often compared with one another, but comparing large and small countries is not the most appropriate methodology. For this reason, the use of **regional data** offers several advantages for studying poverty, including significance, accuracy, and a better spatial representation of the distribution of poverty at a more granular level, providing higher quality evidence to inform policy at smaller scale, closer to citizens.

In the EU, regional statistics are built upon the territorial NUTS (Nomenclature of Territorial Units for Statistics) classification which, developed by Eurostat, subdivides each country, hierarchically, into regions of different size (from NUTS 1, the biggest regions, to NUTS 3, the smallest ones). However, NUTS 2 regions are "the most commonly used units for the formulation and implementation of social policy: (…) well-defined and identifiable, [and] already widely accepted and used (…), [providing] a common framework which enhances comparability" (Verma et al. 2006, 7).

Consequently, this thesis aims to answer **how European regional ARoP rates have evolved recently, and to what extent they are correlated with key regional indicators** (which may be their determinants), **and with the EU Cohesion Policy regional expenditure** (through its main 3 funds: ERDF, ESF, CF). The reason to include Cohesion Policy is that it is the quintessential EU structural policy that considers geographical diversity while promoting well-being and a harmonious development, in absence of any concrete common EU policy addressing poverty and social exclusion in the Union (Copus et al. 2015).

Regarding the key regional poverty-related indicators to be analysed, the literature has progressively enrichened the knowledge of the potential causes, correlates and transmission mechanisms of poverty. While the very first studies on the distribution of poverty risk in Europe were merely descriptive, researchers then started to look at its relationship with critical regional factors.

As a result, consensus has been built around certain aspects which may be proxies or potential drivers of poverty and interregional differences in it. Some of these, relevant for the European case, can be grouped in: demographic characteristics of households, regional productivity and prosperity, characteristics of the labour supply and the functioning of the labour market, the outcomes of the education system, the geographic

location, the agglomerative advantages of economic centres, and the climate conditions.

Regarding the **data and methodology**, this thesis analyses the ARoP rates and their correlates in 205 NUTS-2 regions (the intermediate level of the EU-27 regional classification of its territories, explained before), observed between 2015 and 2022, using up-to-date data collected through the European Union Statistics on Income and Living Conditions (EU-SILC), and complementary data from Eurostat and DG REGIO, which resulted in an unbalanced panel with more than 1000 observations. Panel data is commonly used in this kind of studies, as they proportionate methodological advantages, such as allowing to account for geographical and time invariant features, as well as controlling for unobserved characteristics, resulting in a quality improvement of the analyses performed.

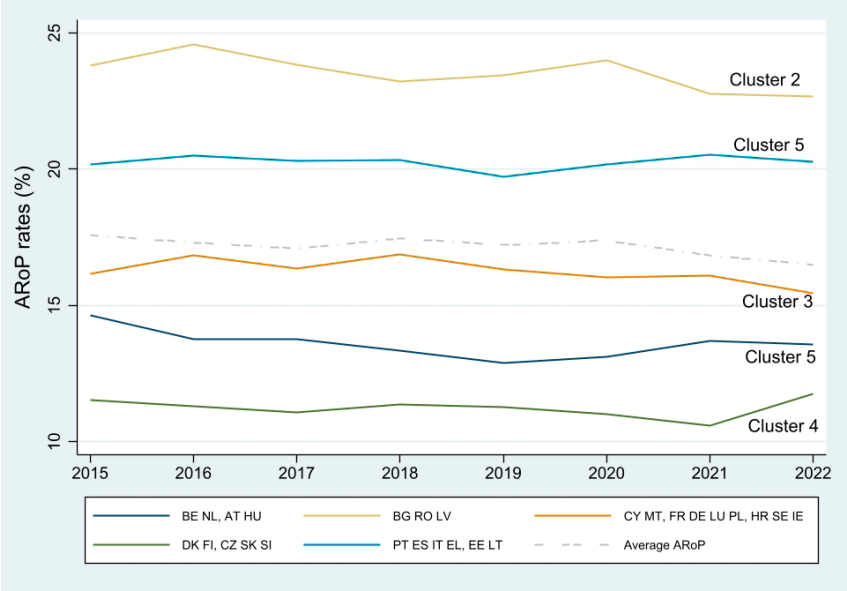
This thesis includes a descriptive and graphical analysis, combined with hypothesis testing and the estimation of a panel data regression model with time fixed effects and regional controls, whose results are discussed in depth in light of other authors.

The EU-SILC is a harmonized data source that collects "timely and comparable cross sectional and longitudinal multidimensional microdata on income distribution, poverty, (…) social exclusion" and living conditions (Eurostat 2021, 14). Each year a new wave of the EU-SILC is released, and offers information on different areas such as Risk of Poverty, inequality, income distribution, material deprivation and living conditions.

Regarding the ARoP rates within the EU-SILC, it exists data for the period 2003-2023. Nonetheless, not all the years are equally covered: the very first waves mainly focused on national level data, whereas regional statistics gained presence over time. Data for year 2023 were still incomplete when performing the analysis.

Focusing on the period of study, between 2015 and 2022, ARoP rates slightly declined (see "Average ARoP" in Graph 1), which is encouraging news for the continuation of the European project. However, despite this reduction, there were considerable dissimilarities between Member States that make them hardly comparable with each other, which suggests analysing "convergence clubs" or similar nations rather than the whole EU-27 in one go.

GRAPH 1. Evolution of average ARoP rates between 2015-2022 (%), per cluster.

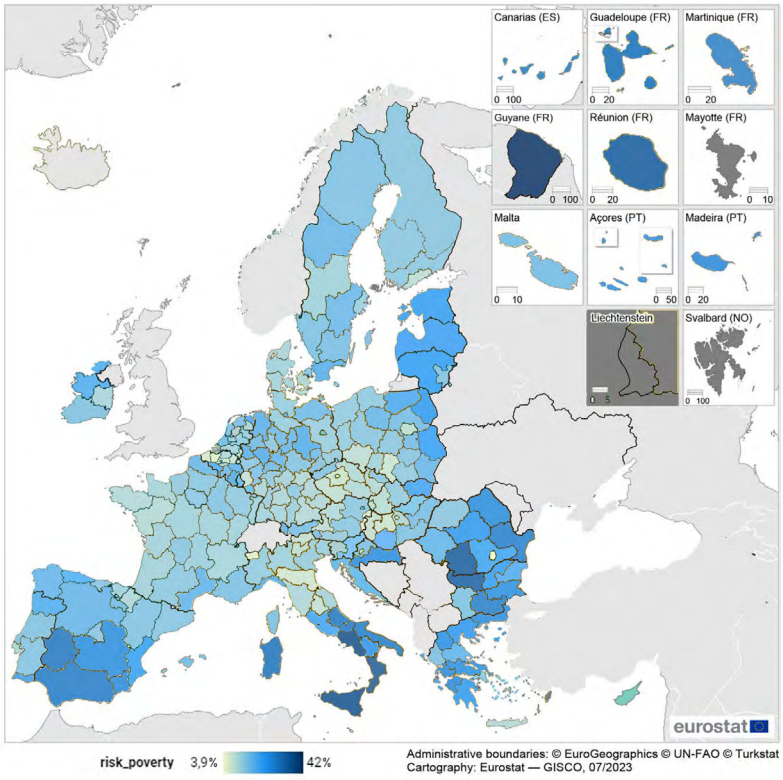


▲ Source: Author's calculations based on Eurostat.

For this reason, a hierarchical country-level cluster analysis is done in this thesis (**Graph 1**). Not surprisingly, neighbouring countries tend to belong to the same cluster, giving indications that there might be a geographic component connected to poverty risk. Although the sample mean decreased during the period, not all the conglomerates followed the same pattern, and there are great disparities between groups. Over the period studied, the countries with the lowest rates are some Nordic States, Belgium, the Netherlands, the Austro-Hungarian bloc, Czechia, Slovakia and Slovenia, while those with the highest rates are the Mediterranean and Baltic countries, plus Romania and Bulgaria. These results are coherent with existing literature.

When solely looking at the most recent data (year 2022), in order to understand the current distribution of the risk-of-poverty throughout the EU-27, some countries exhibit large intra-national heterogeneity between the ARoP rates of their own regions, like Belgium, Italy, Spain and Romania. On the contrary, the more uniform nations are Denmark, Finland, and Sweden, which supports the well-based idea on the literature that Nordic countries benefit from institutions that deal effectively with poverty risk. These intra-national similarities or dissimilarities can be observed in the palette of colours that each nation displays on **Map 1**.

MAP 1. EU-27 regional ARoP rates in 2022.



▲ Source: Own elaboration based on Eurostat.

Focusing now on the value of the rates, and not on how they differ from one region to another within the same country, the rates of the "Outermost regions" of France, Portugal and Spain are surprisingly high, locating these regions in the top 1 (top 5, for Spain) of their respective national rankings, which supports the specificities recognized by the Treaties in favour of these territories.

Looking more broadly, across the whole EU, the regions with higher risk of poverty are concentrated on the South, the Baltics and Bulgaria-Romania. This way, some of the most backward regions in terms of economic development, tend to present the highest ARoP rates. As the situation of these areas was a common feature in the literature that studied the topic in the 2000's and early 2010's, the situation appears to be more of a structural and persistent nature, rather than a temporary one. Indeed, it is a stylised fact that inequalities tend to reproduce themselves over time and to be transmitted from one generation to another.

In order to characterise the relationship between the risk of poverty and the historical proxies/correlates of it commented before, in addition to the EU Cohesion Policy expenditure, two **econometric models** are estimated. First, a general model that tries to measure the correlation between the ARoP rates and the historical factors mentioned before. Then, an extension of it that includes one by one each of the Structural and Investment Funds relevant for Cohesion Policy (ERDF, ESF; CF), to examine their relevance.

Both models are panel data models with time fixed effects and several controls. They were estimated using Ordinary Least Squares (OLS), including heteroskedasticity-robust standard errors, given its possible presence in the error terms. Alternative specifications of the models are also estimated, allowing to check the robustness of the results.

Our results are robust, and prove that when some variables that scholars have taken into account separately, in different partial studies, are brought carefully together, with up-to-date data, their results tend to remain consistent. In general, ARoP rates show a significant relationship with the national average household size (-), the regional median age (different direction of the correlation, if the median age is low (-) or high (+)), the 1-year lagged regional Gross Capital Formation per capita (-), the regional unemployment rate (+) and the regional dropout rates (+), meaning "(+)" a positive relationship, and "(-)" a negative one. Transition regions and the most developed ones show significantly lower ARoP rates than lagging regions, while island regions do not exhibit significant differences with respect to non-island ones. Divergences between different groups of countries were also found to be statistically significant.

A significant association was also found between ARoP rates and Cohesion Policy payments. However, the way in which the model was specified and the approach adopted made it possible for a potential reverse causality problem to arise, which prevented drawing valid conclusions from it. As a result, assessing the effectiveness of Cohesion Policy in reducing regional ARoP rates, constitutes a line of future research.

Regarding the **limitations** of this study, the main obstacle encountered has been the availability of the data. Those corresponding to the ARoP rates and independent variables are not equally available for all periods, which has resulted an unbalanced panel that made it more difficult to follow each region over time. Similarly, the fact that data on Cohesion Policy payments are only available for payments recorded up to the 2014-2020 Multiannual Financial Framework (MFF), implies that payments made under the 2021-2027 MFF are not included in the sample, which could modify the coefficients by constituting a larger monetary flow directed to the regions. Lastly, the approach taken in this thesis, managed to establish correlation, but not causation, and hindered the possibility to formulate solid conclusions about the Cohesion Policy effectiveness.

Possible **extensions** could include the use of new methods that search for causation and/or correct the potential reverse causality issue detected. Likewise, it could be possible to replace the dependent variable by: (i) ARoP rates before social transfers, to study the implications of redistribution on the drivers of poverty risk, or (ii) by the severe material deprivation indicator, to test whether the correlates of monetary poverty risk are equally relevant for other types of poverty.

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