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closing gaps in European social citizenship

Intersectionality and the assessment of gaps in social citizenship

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i) to advance the knowledge base that underpins the formulation and implementation of relevant policies in Europe with the aim of exercising the EU social rights as an integral part of EU citizenship and promoting upward convergence, and
ii) to engage with relevant communities, stakeholders and practitioners in the research with a view to supporting social protection policies in Europe. Contributions to a dialogue about these results can be made through the project website (euroship-research.eu), or by following us on Twitter: @EUROSHIP_EU.

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Abstract

This paper presents an attempt to operationalise the theoretical concept of intersectionality by using quantitative methods to apply this analytical perspective to the assessment of social rights in Europe. To be precise we are implementing an analytical model simultaneously disaggregated by gender and at the territorial level. The paper is the result of a coherent development of the work done along the EUROSHIP project. The national level version was developed and presented in EUROSHIP Working Paper n°13 (Biggeri et al. 2022). In this paper we take it one step further and develop a NUTS2 level and gender-sensitive disaggregation of the European Social Rights Indicator (ESRI). Thanks to the development of a tailored dataset, the new analyses included in this paper allows the comparison of the evolution of social rights across European NUTS2 regions and over time. The analysis has been conducted using GIS-based data visualisation techniques that proved to be extremely effective in identifying regions where the level of social rights is particularly high/low, where the evolution of the social rights level over the last 10 years is particularly positive/negative and regions where the gender gap in social rights is particularly wide/narrow. Moreover, this analysis has led to the identification of divergent and convergent trends between regions as well as across and within macro areas (i.e. Norther, Eastern and Southern Europe).

Keywords: Europe, social citizenship, social rights, intersectionality, measurement, regional level

1. Introduction

Following the 2008 economic and social crisis, the European Union began to question the role of social rights as a founding component of European citizenship and cohesion (Vesan and Corti, 2019). According to several analysts, while the positions of the European institutions on macro-stability and budgetary discipline have always been clearly expressed, the centrality of the defence and promotion of social rights has often taken a back seat (Gomez, 2015; Arpino et al., 2020). The growing awareness about this issue led the European Parliament, the European Council and the European Commission to officially and jointly launch the European Pillar of Social Rights (EPSR) in 2017. The EPSR lists 20 general principles[1] operationalised through the EPSR Action Plan. Moreover, the concerned institutions released the Social Scoreboard (SSB)[2]: the Social Scoreboard is a dashboard of 35 indicators (14 headlines + 21 secondary indicators) meant to monitor the actual implementation of the European Pillar of Social Rights. The Social Scoreboard is focused on three main areas that are (i) equal opportunities, (ii) fair working conditions and (iii) social protection and inclusion. Since then, the debate on 'upward social convergence' within the EU has benefited from the presence of an official, shared and freely accessible information set (Mascherini et al., 2018).

The purpose of this paper is thus twofold. First, to explore whether and how it is possible to analyse the level and evolution of social rights in the EU by monitoring the implementation of the European Pillar of Social Rights while adopting intersectionality as an analytical perspective. Second, to verify whether this can be done by using the Social Scoreboard as an original information set and then to propose an analysis simultaneously disaggregated by gender and by NUTS2 region.

This paper recognizes the role of multiple identities and territorial heterogeneity in determining the actual level of social rights across Europe (and not only). Coherently with the theoretical framework described in EUROSHIP Working Paper n°19 (Arciprete et al. 2022), this paper represents an effort to address territorial and gender-related inequalities while dealing with the SSB. Focusing on the territorial dimension, it is worth remembering that the actual individual level of social rights enjoyment depends on individual characteristics (level of education, gender,

[1] See https://ec.europa.eu/info/strategy/priorities-2019-2024/economy-works-people/jobs-growth-and-investment/european-pillar-social-rights/european-pillar-social-rights-20-principles_en
[2] See https://op.europa.eu/webpub/empl/european-pillar-of-social-rights/en/

etc.) as well as on how individual characteristics interact with the structural characteristics of the place where one lives. Places as such have the potential to shape the barriers\facilitators that prevent\foster the full and effective realisation of social rights (Biggeri and Ferrannini, 2014). Researchers' and practitioners' attention to the asymmetric impacts of intra-country social and economic inequalities has been growing since the 2008 recession. The ability of the current development model to favour social cohesion is nowadays largely questioned (Rodriguez-Pose 2018). Moreover, the actual and\or perceived marginalisation of certain areas is empirically associated with the rise of far-right populism (Rebechi and Rohde, 2022) and the growth of anti-EU feelings (Dijkstra, 2020). Furthermore, an additional and more practical reason in support of the sub-national disaggregation technique to monitor the implementation of the European Pillar of Social Rights is that many EU-level policies (including the key actions for social cohesion such as the programs funded through the European Social Fund) are not addressed to the central state but to regions. This means that NUTS2-disaggregated data drives the allocation of funds (Hermans et al., 2021).

To achieve its main goals, this paper extends the methods used in EUROSHIP Working Paper n°13 (Biggeri et al., 2022). In that paper, the authors showed the potential of applying the Multidimensional Synthetic Indicator (MSI) procedure to the SSB dashboard of indicators to develop the European Social Rights Indicator (ESRI) (Mauro et al., 2018). All in all, the main added value of the development of a composite indicator comes from the capacity to measure multi-dimensional phenomena at a unidimensional scale thus facilitating across time and unit comparisons (Noll, 2018). The development of a composite index can thus be useful to summarise information, attract the attention of decision makers as well as non-technical audiences and raise attention towards the underlying complexity of the ESRI. Similar to Sen's criticism of (1999, p.23) the Human Development Index (HDI), *'the HDI, which is inescapably a crude index, must not be seen as anything other than an introductory move in getting people interested in the rich collection of information that is present in the Human Development Report"*. Extending his observation to the domain covered by the current paper, we may argue that the European Social Rights Indicator has not the ambition to substitute the SSB dashboard nor to disregard the relevance of qualitative analysis concerning the realisation of social rights in the EU: quite the contrary, the European Social Rights Indicator should be conceived as a first gateway for those who are willing to embrace the complexity of such a multilevel and

multidimensional phenomenon. In this paper, the work done by Biggeri et al. (2022) is thus expanded by developing a NUTS2-level and gender disaggregation of the ESRI.

A further ambition of this paper is to move beyond "average" quantitative and qualitative information and discover what happens to specific subgroups of the population. Using disaggregated and subgroup analysis techniques is particularly relevant when we deal with characteristics that could be linked to disadvantaged and intersecting identities – i.e., identities systematically associated with a weaker enjoyment of social rights (Arciprete et al. 2022). Nonetheless, the empirical challenges to be faced when operationalising this kind of approach are non-negligible. In EUROSHIP working paper n°2, Gabos et al. (2021) focus on the relevant data-related limitations to apply an intersectional approach: data about many vulnerable groups (e.g., migrants) are simply not available and\or not reliable given the coverage and the sampling structure of many official surveys. The problem is even more accentuated with further disaggregation (e.g., young migrant women). This paper proposes a first step in this direction by presenting the results of a gendered NUTS2 disaggregation of the ESRI to simultaneously tackle gender and territorial inequalities in the realisation of social rights in the EU.

The paper is structured as follows, following the introduction Section 2 presents the dataset used for the analysis. Section 3 will briefly introduce the MSI procedure. Section 4 will focus on the results while the final part of the paper will present conclusions and policy implications.

2. The dataset

To facilitate the analysis, a regional dataset was constructed at the NUTS2 level for the 27-member states of the European Union (EU) covering 2010-2019. As anticipated our starting point was the Social Scoreboard indicators set. Coherently with Biggeri et al. (2022), several indicators were excluded for both practical and methodological reasons, resulting in a final list of 18 out of 36 initial indicators. In some cases, indicators were dropped due to poor data availability (e.g., the indicator concerning students' performances). In others, input indicators (e.g., expenditure indicators) were excluded to avoid biases in the aggregation. Lastly, a few indicators are already composite: we decided to keep At Risk of Poverty and Social Exclusion Rate and At Risk of Poverty Rate but not their components to avoid the duplication of existing information. The main data source was Eurostat although for a single indicator (namely, the

share of housing cost as a percentage of disposable income) we used the OECD regional database[3].

The dataset was harmonized to the 2016 NUTS classification which covers 235 NUTS2 regions excluding the five French overseas territories. To address missing data, a three-step procedure was used. First, a linear interpolation was made for variables with data in prior and subsequent years by assuming a linear trend over this period. Following this, values from the NUTS1 level were distributed to the NUTS2 level based on population share. Lastly, a multiple imputation by chained equations procedure[4] was applied separately for each macro-region[5] of Europe to allow for some degree of structural heterogeneity (Royston and White, 2011). To prevent any imputed outliers, an upper and lower bound was set for each imputed variable as the max and min from the observable values in each macro-region using a truncated regression specification.

Table 1 shows the ESRI framework, and the indicator list used in this analysis, highlighting for which indicators a gender-based disaggregation is available. Indicators are ordered by pillar and by domain.

Table 1: ESRI framework and indicator list

Pillar	Domain	Indicator	Gender
Equal Opportunities	Education, skills, and lifelong learning	Early leavers from education and training % of population 18-24	T, M, F
		Adult participation in learning % of population 25-64	T, M, F
		Tertiary education attainment % of population 30-34	T, M, F
	Gender equality in the labour market	Gender employment gap Percentage points	T
	Inequality and upward mobility	Income inequality - quintile share ratio (S80/S20) Ratio	T
	Youth	Young people neither in employment nor in education and training (NEET) % of population 15-29	T, M, F
Fair Working Conditions	Labour force structure	Employment rate % of population 20-64	T, M, F
		Unemployment rate % of labour force 15-74	T, M, F
		Youth unemployment rate % of labour force 15-24	T, M, F
	Labour market dynamics	Activity rate % of population 15-64	T, M, F
		Long-term unemployment rate % of labour force 15-74	T, M, F
	Income	Household Net Disposable Income (PPS per capita, EU27 from 2020)	T
Social Protection and Inclusion	Living conditions and poverty	AROPE % of population	T
		Share of Housing Cost as percentage of household disposable income	T
	Impact of public policies on reducing poverty	Impact of social transfers (other than pensions) on poverty reduction % reduction of AROP	T
	Healthcare	Self-reported unmet need for medical care % of total population 16+	T
		Healthy life years at age 65: Women	F
		Healthy life years at age 65: Men	M

Source: Author's elaboration

[3] Eurostat data under "Regional statistics by NUTS classification (reg)" from https://ec.europa.eu/eurostat/data/database and OECD data under "Regional Social and Environmental Indicators" from https://stats.oecd.org/Index.aspx?DataSetCode=REGION_DEMOGR# last accessed September 23, 2022

[4] Additional covariates used in the mi impute chained Stata command for each macro-region included: GDP per capita, total population, population density, birth rate, net migration rate, infant mortality rate, weekly work hours, all from Eurostat, and the Quality of Government Index from (Charron et. al., 2020, Charron et. al., 2019). The average from 20 imputations was used in the final dataset.

[5] The macro-regions used in this analysis are as followed:
Northern Europe = Finland, Sweden, Denmark, Germany, Netherlands, Belgium, Luxembourg, France, Austria, and Ireland
Southern Europe = Portugal, Spain, Italy, Malta, Greece, and Cyprus
Eastern Europe = Estonia, Latvia, Lithuania, Poland, Czechia, Slovenia, Hungary, Slovakia, Romania, Croatia, and Bulgaria

3. From MSI to ESRI

The MSI is a procedure to synthetize multidimensional phenomena by ranking units on a mono-dimensional metric (Mauro et al., 2018). The main innovative feature of the MSI approach it deals with heterogeneity and substitutability. It is a tricky point as aggregation methods always have implicit or explicit consequences on the way the aggregation method deals with heterogeneity. Following Biggeri et al. (2022, p.17), *"[…] arithmetic mean assumes perfect substitutability among dimensions: this means that, once the values of the different dimensions are expressed as standardized scores, proportionally higher values in one dimension can always offset low values in other dimensions regardless how low they are. The geometric mean assumes that the closer you are to zero in one dimension, the higher is the value needed in other dimensions to offset the low performance. In case the value is zero in at least one dimension, no compensation will be possible, and the value of the aggregate index will collapse to zero*". In the case of MSI, the degree of substitutability is a function of the score achieved by each specific unit. Focusing on the ESRI:

$$\mathrm{ESRI_i} = 1 - \left[\frac{1}{K}\sum_j (1 - X_{it})^{g(X_i)}\right]^{\frac{1}{g(X_i)}}$$

Where X is the NxK data matrix, K is the number of dimensions, N is the number of observations (i.e., number of countries or NUTS2 areas [C] * number of years[T]). The g(.) function is what allows us to model substitutability in a more flexible way compared to the arithmetic and the geometric mean. Following Bourguignon and Chakravarty (2003) and coherently to what already done in Biggeri et al. (2022), the degree of substitutability between dimensions is defined by a function g(.) whose argument is the simple mean of the relevant Social Scoreboard dimensions:

$$g(x_i) = \begin{cases} \frac{b}{a} & if \quad \mu < a \\ \frac{b}{\mu} & if \quad a \leq \mu < b \\ 1 & if \quad \mu \geq b \end{cases}$$

where μ is the arithmetic mean of x it and $0 \leq a < b \leq 1$ are two thresholds selected so that all units above b (or below a) have their achievements aggregated under the assumption of a perfect (or almost complementary) substitutability rate. In the specific case of ESRI, a=0 and b=1.

To construct the ESRI index from the indicators in table 1, all indicators were first standardized using the min-max method based on theoretical maximum and minimum values outlined in Appendix B. The standardized indicators (Z_{it}) were aggregated into domains using the geometric mean:

$$Domain_{it} = \left(\prod_{j} Z_{it} \right)^{\frac{1}{K}}$$

The domains were aggregated into pillars and then in the final ESRI index using the MSI procedure in each step.

To measure the differences in the level of enjoyment of social rights among genders, the domains and final ESRI index were each re-constructed using the values for male and female population separately resulting in an ESRI index for the total regional population in addition to a female and male ESRI scores.

The decision to conduct an analysis at a regional level obviously multiplies the number of units (namely 235 NUTS2 units): this led to the use of GIS-based data visualization techniques. Mainly two types of maps are presented in this study. The first simply represents the level of a given variable of interest (e.g., the level of ESRI in each region or the variation experienced by ESRI in each region). A second type of representation focuses on the identification of significant spatially defined clusters (e.g., a cluster of NUTS2 regions with significantly higher\lower ESRI levels). To identify significant spatial clusters, a spatial weighting matrix was defined in GeoDa as the inverse distance weighting to the power of two with a bandwidth of 450km based on the centroids of each NUTS2 region. Based on this specification, each region has on average 31 neighbours, with a maximum of 74 and a minimum of 0.

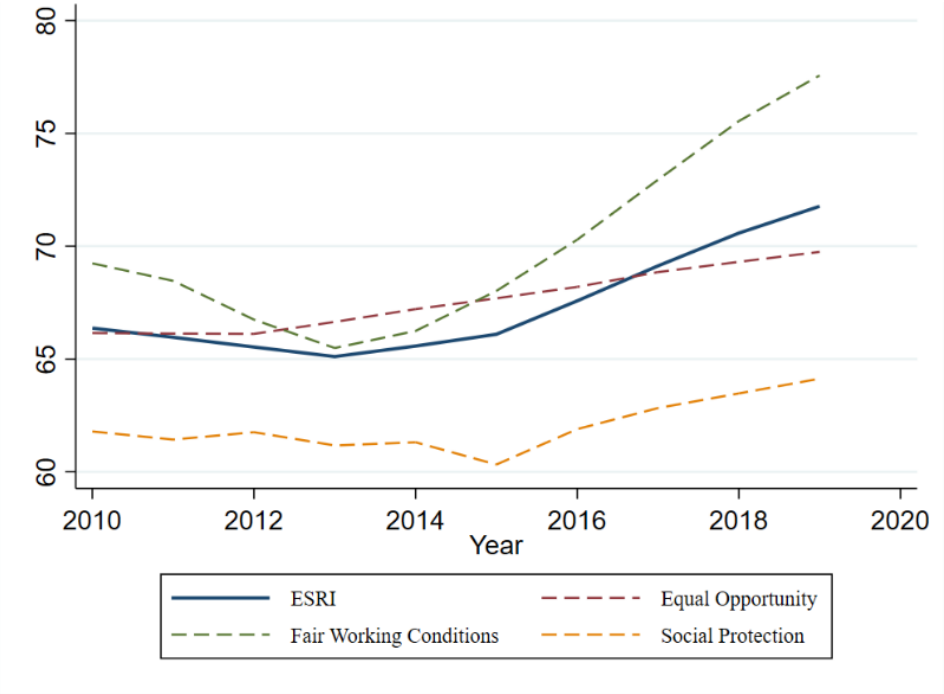
4. Results

This section will report the main results achieved by analysing the available data following what is described in Section 2. The analysis is divided into three main parts. The first is focused on the description of the levels of the NUTS2 ESRI (including its gender disaggregation) and on its evolution over time. The second part will deal with the analysis of convergence. The third and last part will present a few preliminary findings about the relationship between the ESRI and other social and economic variables.

4.1. Levels and longitudinal evolution of the ESRI

Figure 1 reports the evolution of the average ESRI indicator in the EU over the period 2010-2019. As clearly shown by the graph, total ESRI scores slightly declined from 2010-2013 driven by worsening scores in the fair working condition domain due to the 2008-2009 economic crisis, followed by a continuous improvement until 2019. The equal opportunity domain saw relatively constant improvements over the entire period, while the social protection domain had the lowest scores, with a slight dip in 2015 followed by improvements until 2019.

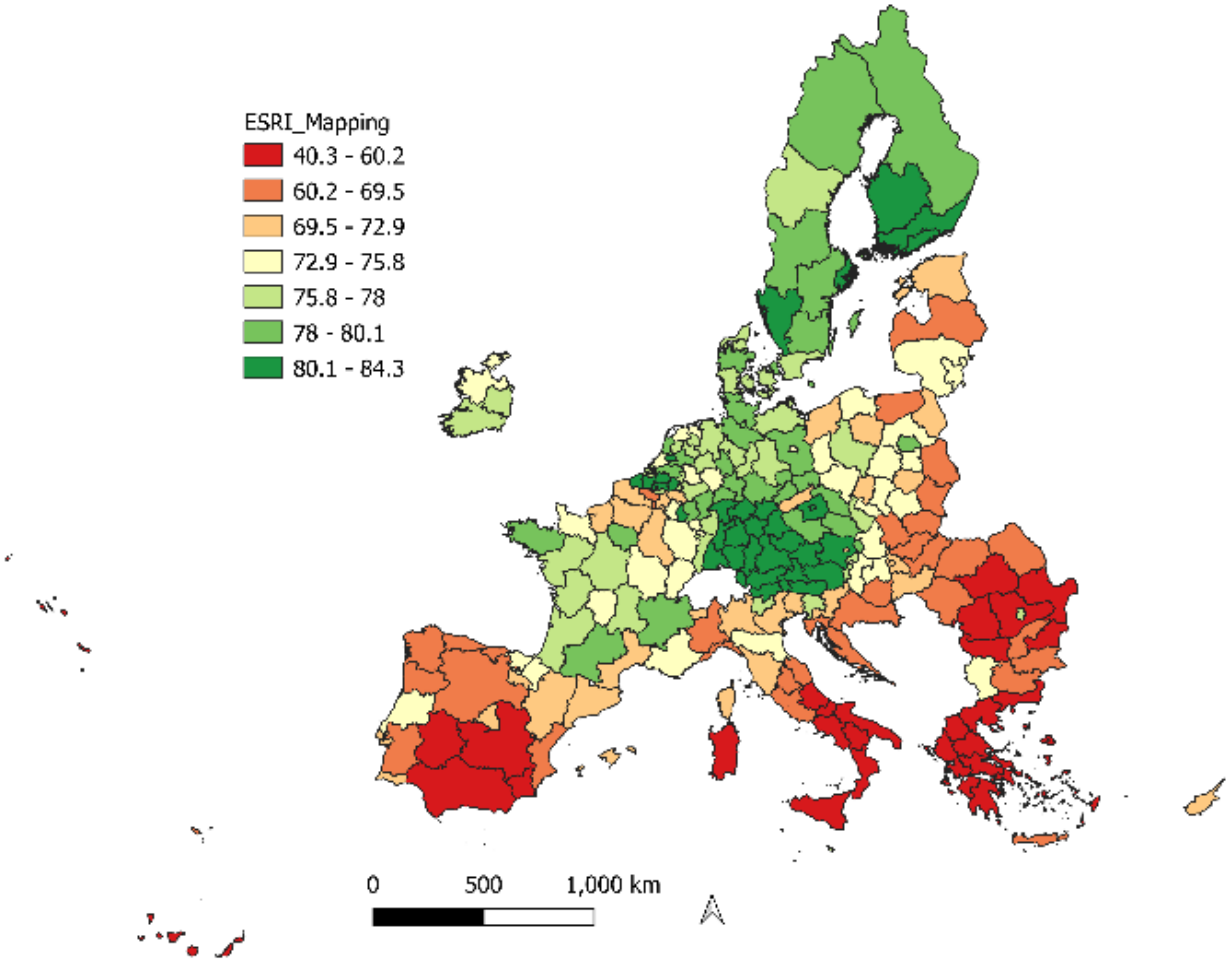
Figure 1- ESRI trend 2010-19 by domain



Source: Authors' elaboration

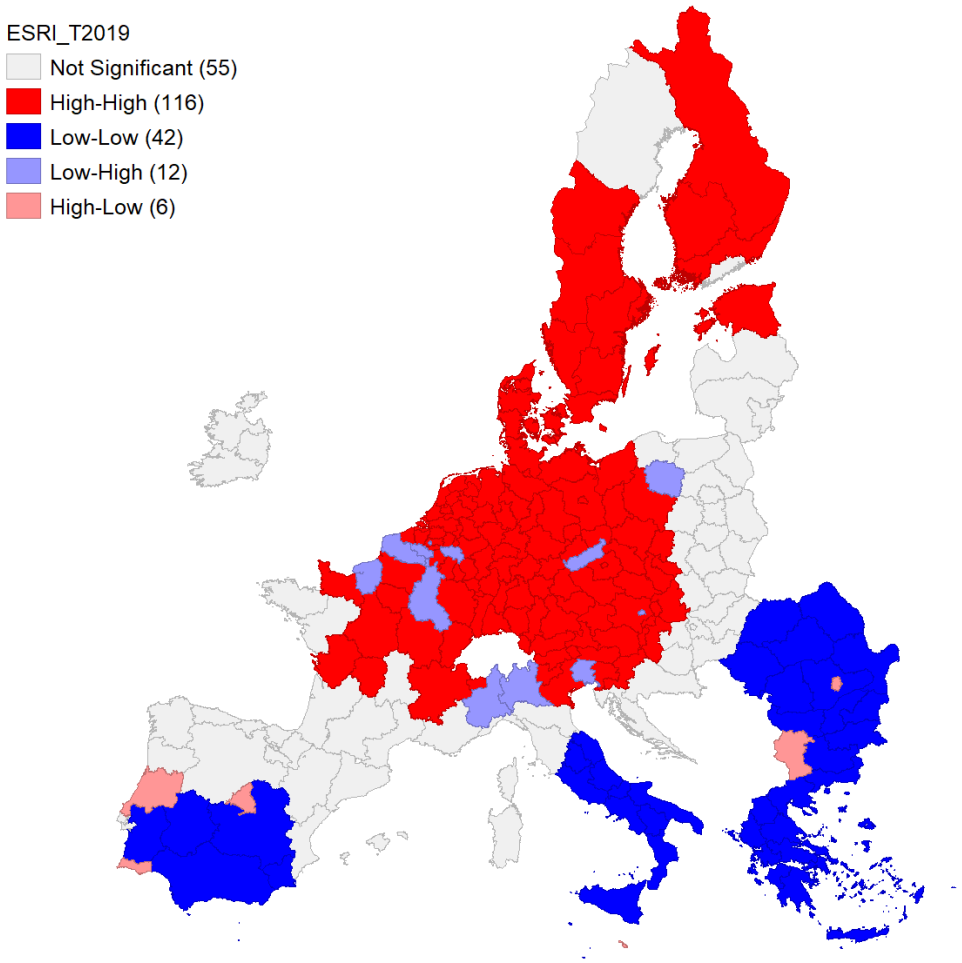
Figure 2a presents the spatial distribution of the total ESRI scores in 2019. The figure clearly identifies lower scores in Southern and Eastern EU regions, with Central and Northern regions having the highest scores. Additionally, Figure 2b identifies significant clusters of high ESRI scores (central and northern Europe) in red and low ESRI scores in blue (Southern Spain, Southern Italy, large part of Greece, Bulgaria and Romania). Of particular interest are the regions in light blue predominantly in France and Northern Italy which represent regions with below-average ESRI scores compared to neighbouring regions.

Figure 2a- Spatial distribution of the ESRI score (2019) for total population



Source: Authors' elaboration

Figure 2b- Spatial clustering of the ESRI score (2019) for the total population



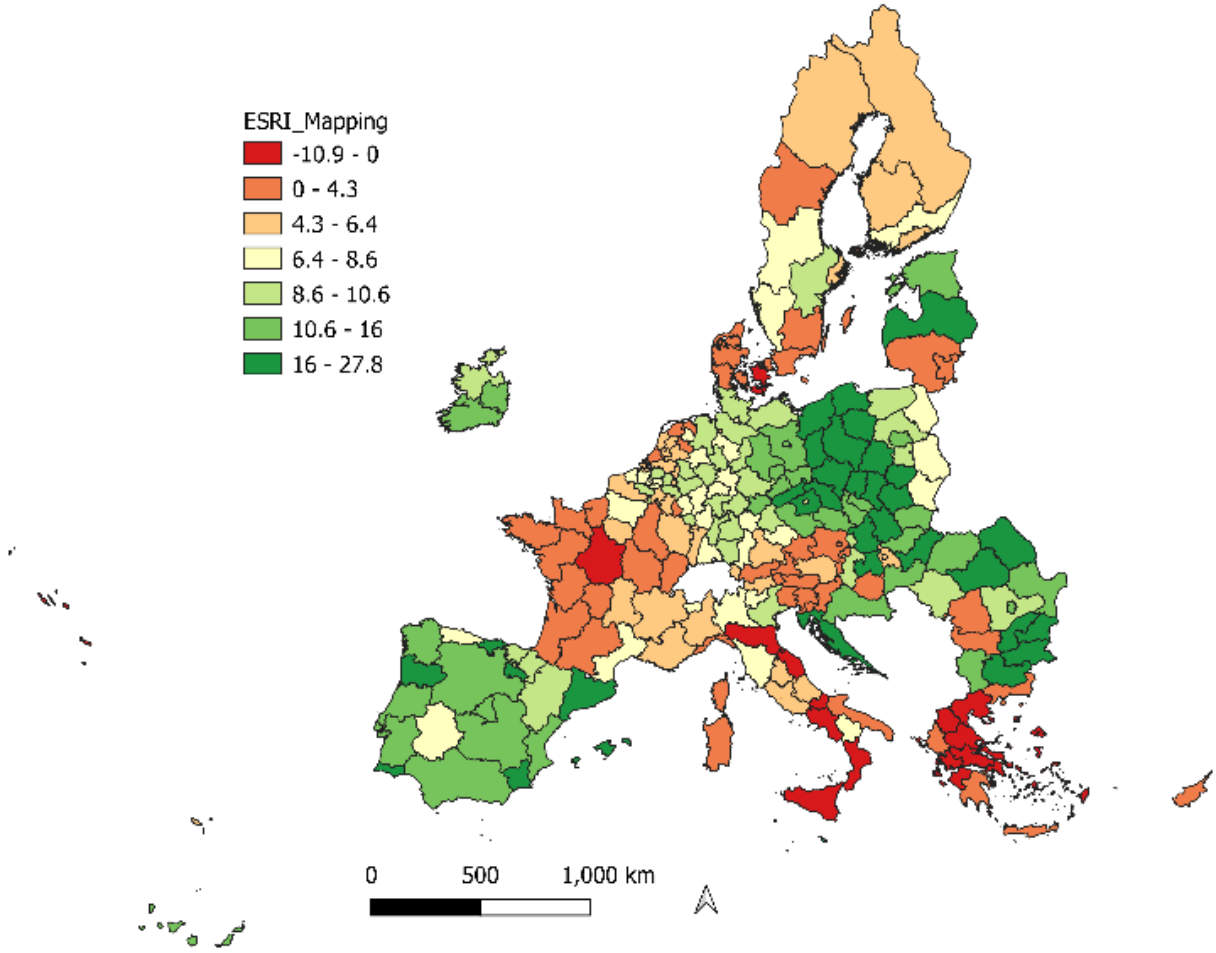
Source: Authors' elaboration

Figure 3a shows the spatial distribtion of the 10-year (2010-2019) percentage change in ESRI scores for the total population. Considering the regions who had lower values in Figure 2a, it is possible to identify two main patterns. On the one hand we have the Iberian paeninsula and Eastern Europe whose trend over the last 10 year has been markedly positive despite the level they reached by 2019 was still lower than the levels generally observed in Central and Eastern Europe. Alternatively, Southern regions, mainly in Italy and Greece have both low and declining ESRI scores: following Biggeri et al. (2022) this may be linked to the extremely slow recovery after the 2008-2009 crisis. The spatial clustering in Figure 3b coherently identifies two

significant clusters of positive trend-contries in Iberian paeninsula and Eastern Europe and a negative trend-cluster that includes Greece, Italy and large part of France.

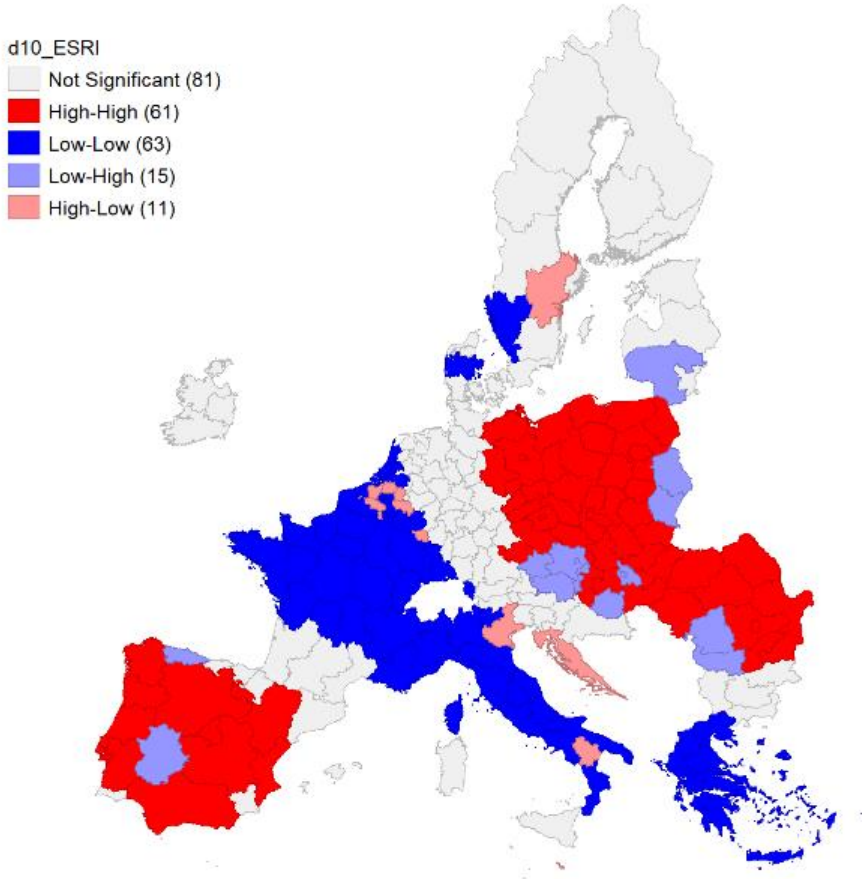
Figure 4 summarises the relationship between ESRI levels and trends. Basically, according to the figure, we can see that almost all Northern NUTS2 regions are in the upper right quadrant (i.e., above average ESRI scores in 2019 + positive trend over the period 2010-19). Interestingly, all the NUTS2 regions in the bottom left quadrant (i.e., below average ESRI scores in 2019 + worsening scores between 2010-19) belong to Southern Europe countries. On average, Eastern regions show the most improvement.

Figure 3a- Spatial distribution of the ESRI 10-year percentage change (2010-19) for the total population



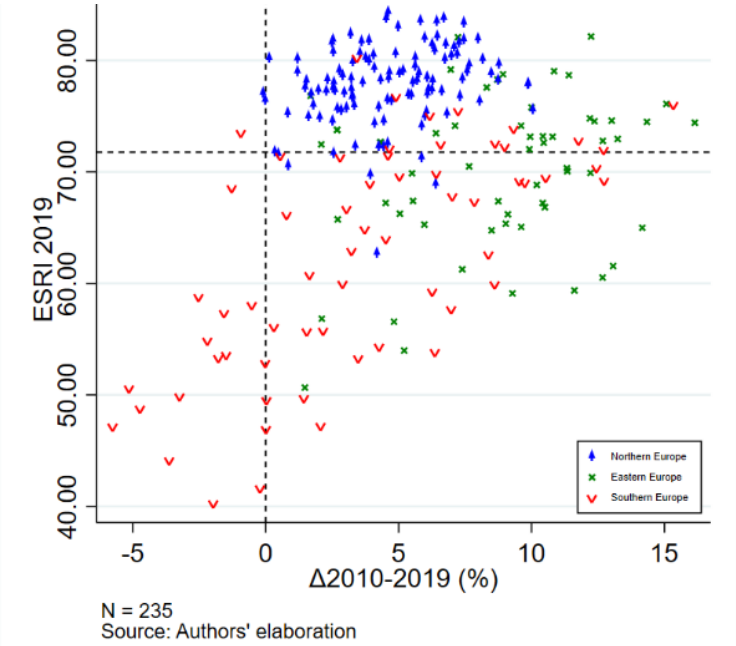
Source: Authors' elaboration

Figure 3b- Spatial clustering of the ESRI 10-year percentage change (2010-19) for the total population



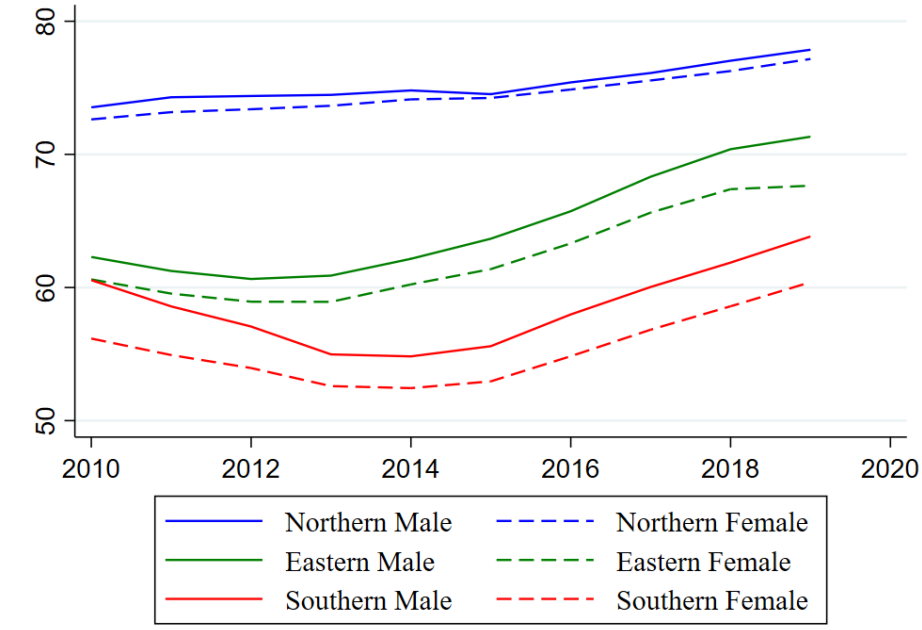
Source: Authors' elaboration

Figure 4- ESRI 10-year percentage change and 2019 level



As reported in Table 1, a gender disaggregation is available for 11 indicators[6] included in the ESRI which allowed us to compute a M-ESRI and an F-ESRI[7]. The difference between M and F ESRI can be considered as a proxy of the gender gap in social rights. Figure 5 reports the trend of F-ESRI and M-ESRI in Northern, Southern and Eastern Europe. Northern EU regions exhibit consistently higher and relatively equal scores bewteen male and females, while both Southern and Eastern EU regions have lower and more inequal scores between males and females. Furthermore, we can see that scores moved similarly for both genders while macro-regions saw different transitionary paths over 2010-19, with Northern regions consistently improving slightly, while Southern regions saw large reductions bewteen 2010-14. Lastly, there is a widening gender inequality gap in Eastern EU regions, with male scores improving faster than female scores.

Figure 5- ESRI transition by macro-region and gender



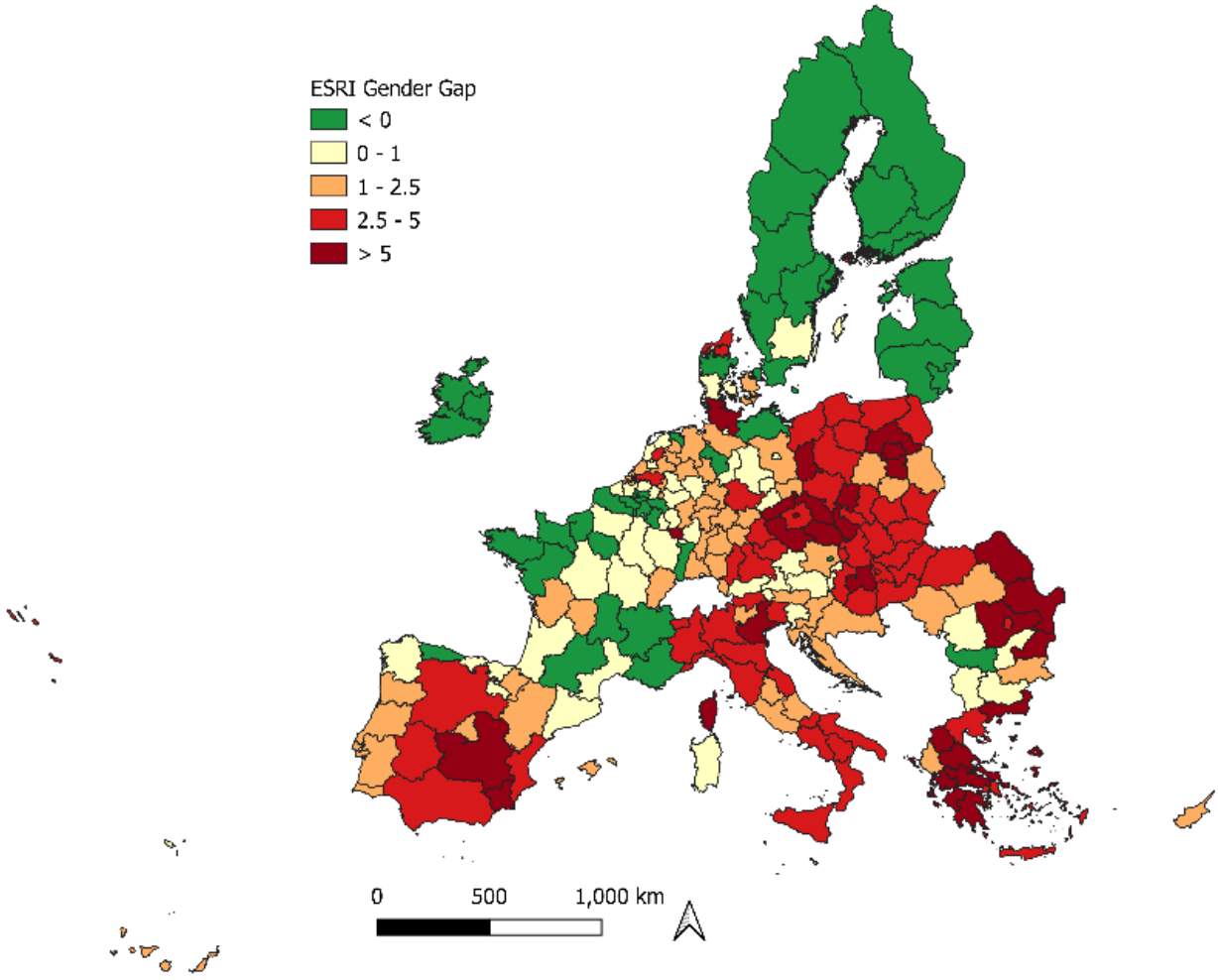
Source: Authors' elaboration

Figure 6a, reports more in detail the spatial distribution of gender gaps in ESRI scores in 2019. On average, we have negative gaps (i.e. ESRI scores are higher for females than males) in France and in the Scandinavian and Baltic countries (also see the blue spatial clusters in Figure

[6] Note that gender disaggregated indicators are mainly focused on employment and education
[7] The comparability between M-ESRI and F-ESRI is ensured by the use of the same set of maxima and minima for the max-min standardisation.

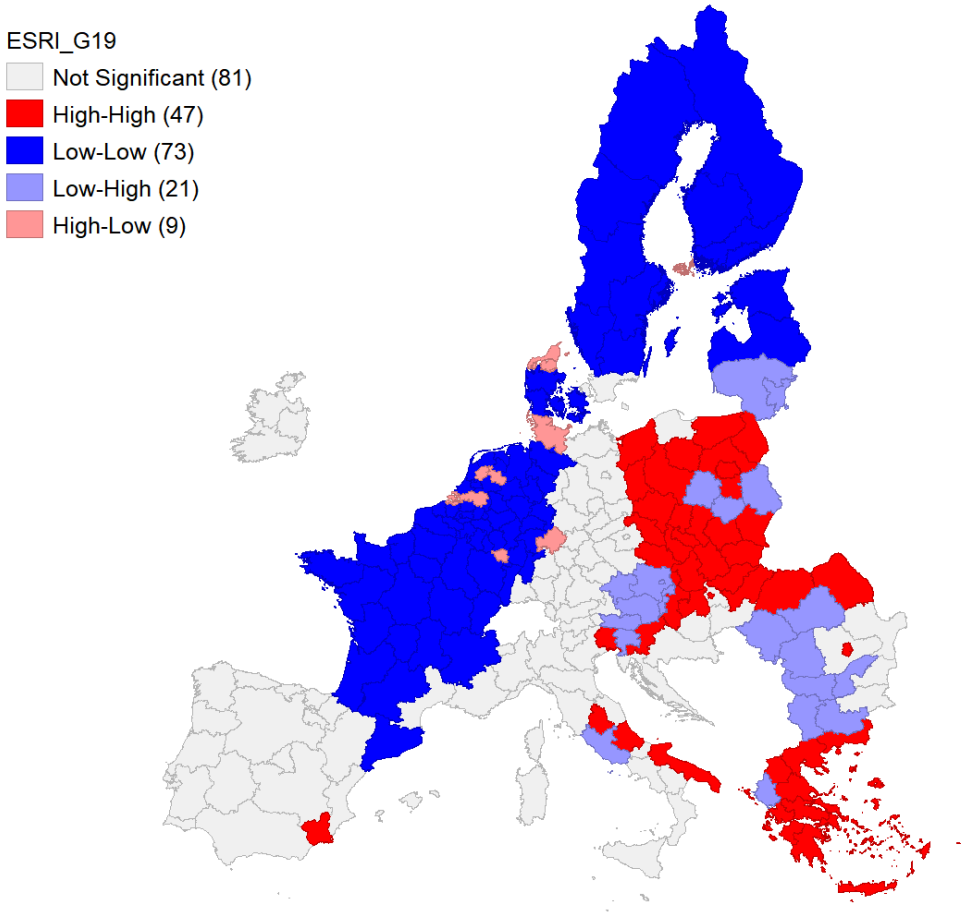
6b). Alternatively, Eastern and Southern EU regions have the largest gender gaps in ESRI scores. Other significant spatial clusters of high gender gap values are identified in Greece and Eastern Europe.

Figure 6a- Spatial distribution of the ESRI gender gap (male - female ESRI score) for 2019



Source: Authors' elaboration

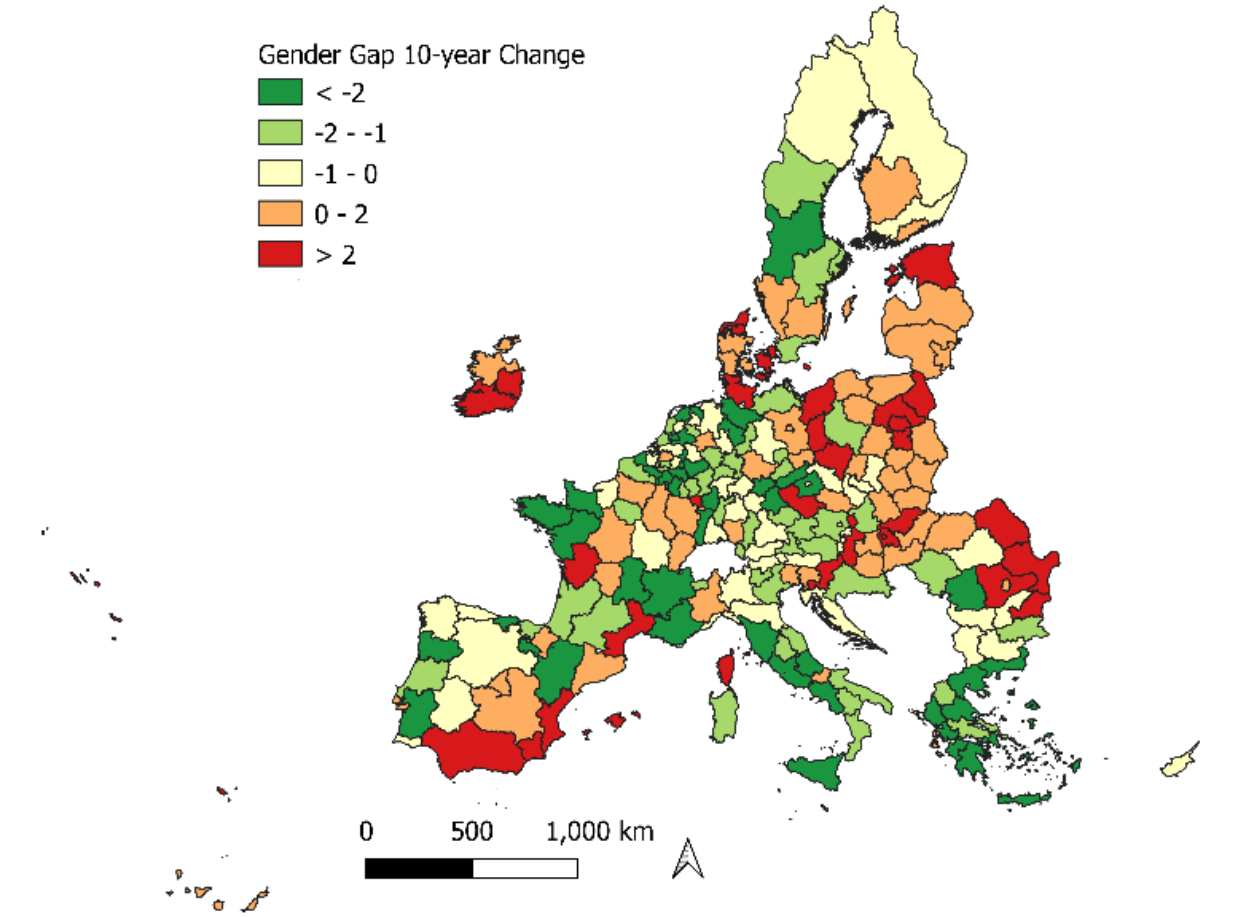
Figure 6b- Spatial clustering of the ESRI gender gap (male - female ESRI score) for 2019



Source: Authors' elaboration

Figure 7a displays the spatial distribution of the 10-year change in the gender gap, with reductions in the gender gap in green regions and worsening gender gaps in the red regions. Although the spatial distribution is less connected, signficant clusters of worsening scores can still be seen in Eastern Europe (see Figure 7b), the same regions which had the lowest scores in 2019. Many Southern Europe regions in Italy, Greece and Spain saw reductions in the gender gap between 2010-19, despite still having large relative gaps in 2019

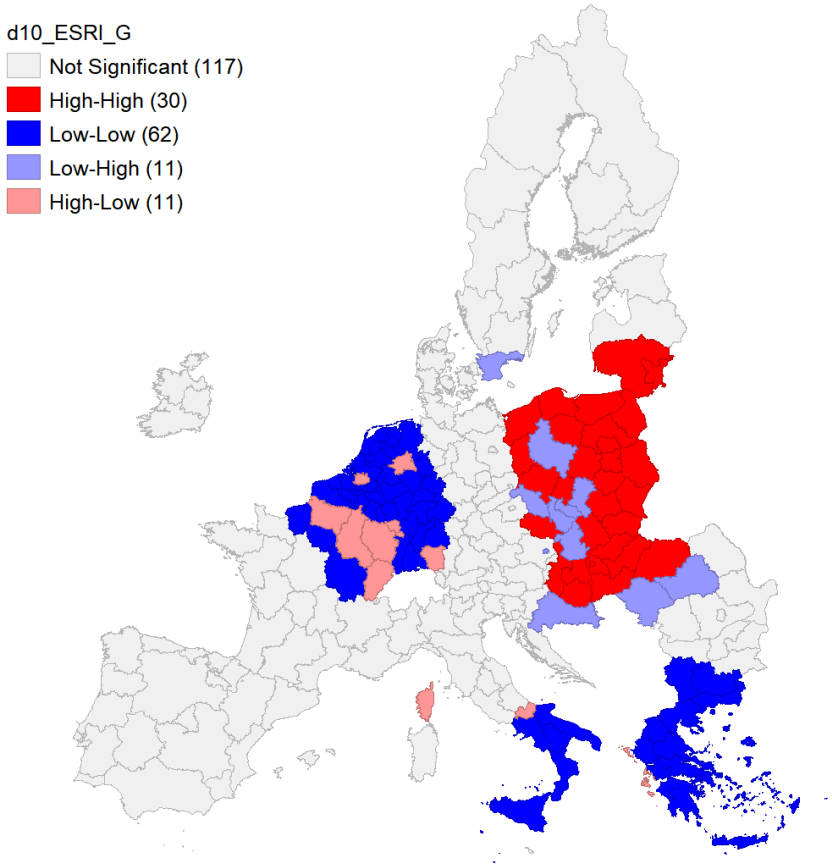
Figure 7a- Spatial distribution of the 10-year percentage change in the ESRI Gender Gap (M - F ESRI scores) between 2010-19



Source: Authors' elaboration

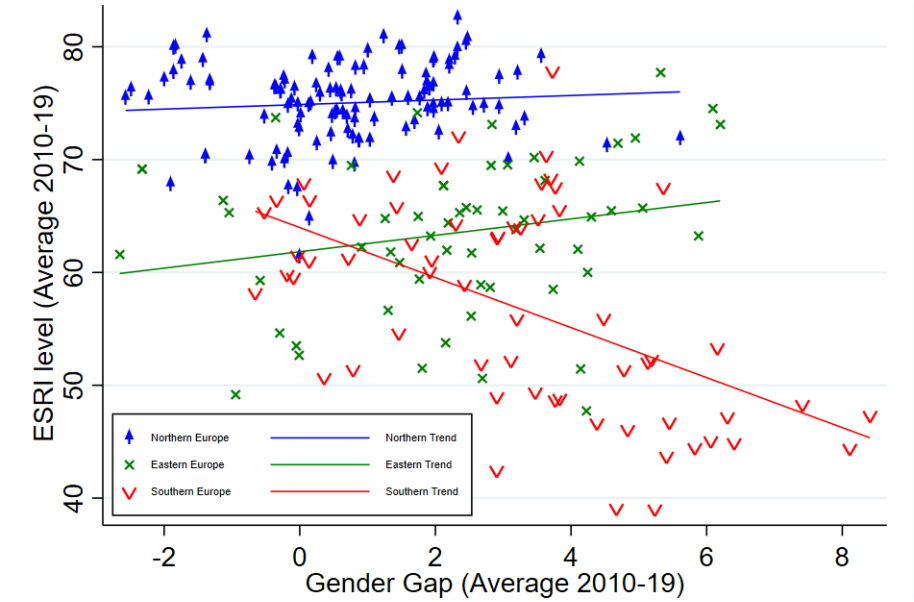
Lastly, Figure 8 plots the average level of total ESRI against the change in the ESRI gender gap and identifies that in Southern Europe, lower ESRI scores are associated with widening gender gaps. While this relationship is not evident in Northern or Eastern European regions on average.

Figure 7b- Spatial clustering of the 10-year percentage change in the ESRI Gender Gap (M - F ESRI scores) between 2010-19



Source: Authors' elaboration

Figure 81- Average ESRI vs. ESRI Gender Gap (2010-19)



Source: Authors' elaboration

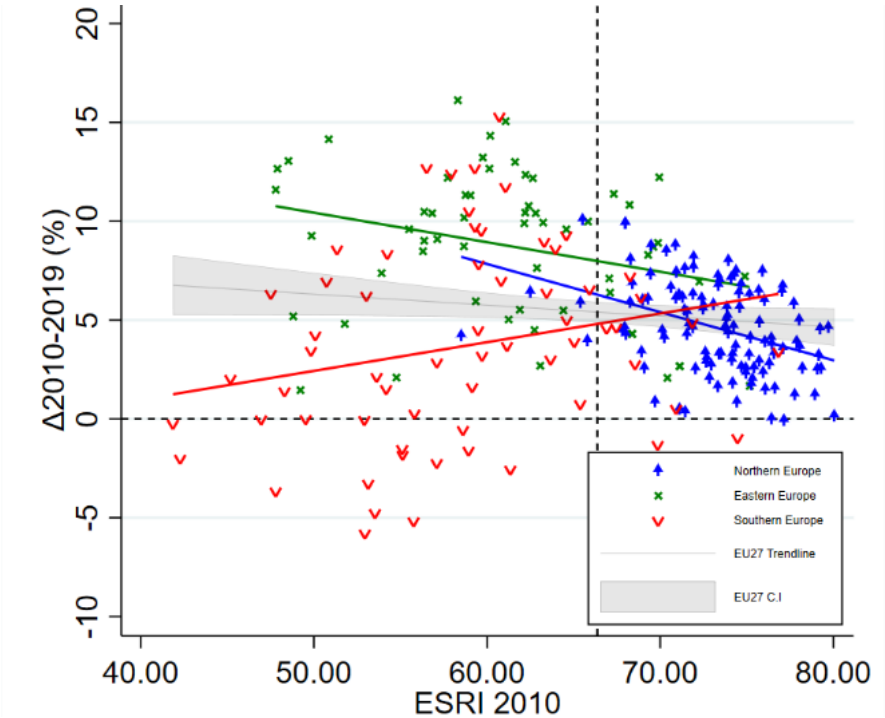
The analysis of the NUTS2 level gendered ESRI and of its evolution over time represents only a partial operationalisation of the concept of intersectionality. As clearly shown by the analysis of the life-course interviews collected in the domain of the EUROSHIP project, many other factors interact with gender and shape the actual level of social rights that can be achieved by people: as an example Ibanez and Leon (2023) show how being a woman and being a migrant or belonging to an ethnic minority deeply influences the real opportunity to find a fair work-life balance. Besides that, a number of further characteristics play a fundamental role: *"intra-family chronic violent abuses, addictions, no schooling, child work, serious disabilities, human and social capital gaps, early single motherhood, or homelessness. All these disadvantages are present in different combinations, but when several of them appear together, they generate intersectional situations of despairing hardship"* (Ibanez and Leon 2023, p.9). A further level of complexity emerges in case we include a focus on age. As an example, Grages and Pfau-Effinger (2023), while analyzing the risk of poverty in old age (as emerged from EUROSHIP life course interviews), stress how women with histories of familial care obligations tend to have fragmented employment biographies and thus lower pensions and stronger vulnerabilities in old age. This is even more relevant for women coming from countries that experienced a transition from a socialist to a market-based economy.

4.2. Assessing social upward convergence (or the lack of it)

The overall aim of the Social Pillar is to fuel the upward social convergence across Europe: in other words, a fair development model for the EU should favor a general improvement in the realisation of Social Rights for all. Ideally, countries (regions) presenting lower social rights standards should catch up to better off countries (regions). Conditional Beta convergence can be used to empirically verify whether upward social convergence in the EU is achieved or, at least, is in progress.

Figure 9 presents Beta convergence in total ESRI scores for the EU27 as well as each macro-region. Across the entire EU27, there is evidence of a barely detectable convergence as witnessed by the slighlty downward sloping trendline in black. Higher levels of convergence are seen within both Northern and Eastern regions, while Southern regions have experienced increased divergence in ESRI scores between 2010-19.

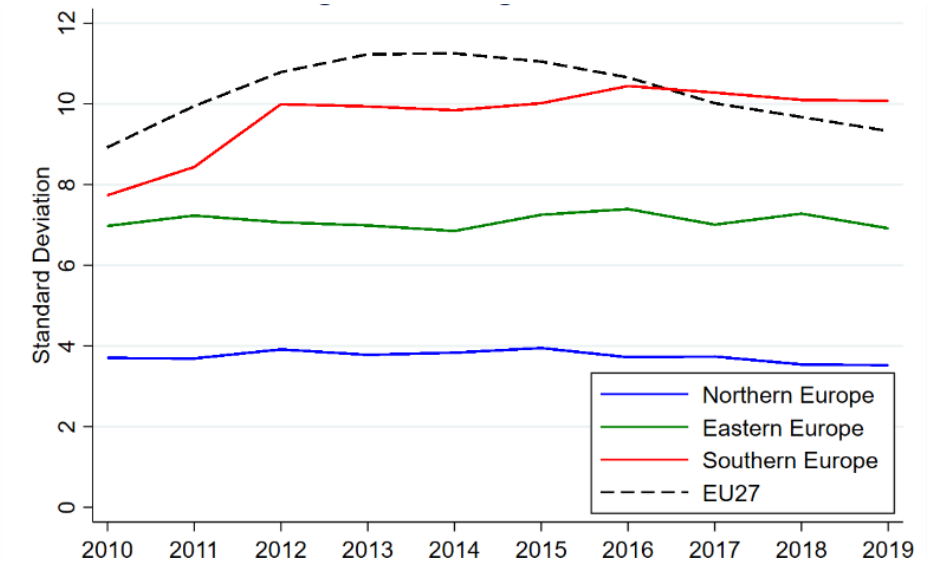
Figure 9- Beta convergence



Source: Authors' elaboration

Figure 10 presents the sigma convergence for the entire EU27 and each macro-region. We can see an initial increase in deviations in ESRI scores across the EU27 between 2010-2013 implying divergence within this timeframe, driven mainly by increasing deviations within Southern regions as seen in red. The trend reverses from 2014-2019 with reduced deviations across Europe suggesting convergence in ESRI scores. It can also be seen that ESRI scores were most varied in Southern regions, followed by Eastern regions. In comparison, Northern regions ESRI scores were more consistent as seen by the relatively low standard deviations in ESRI scores over the entire period.

Figure 10- Sigma convergence



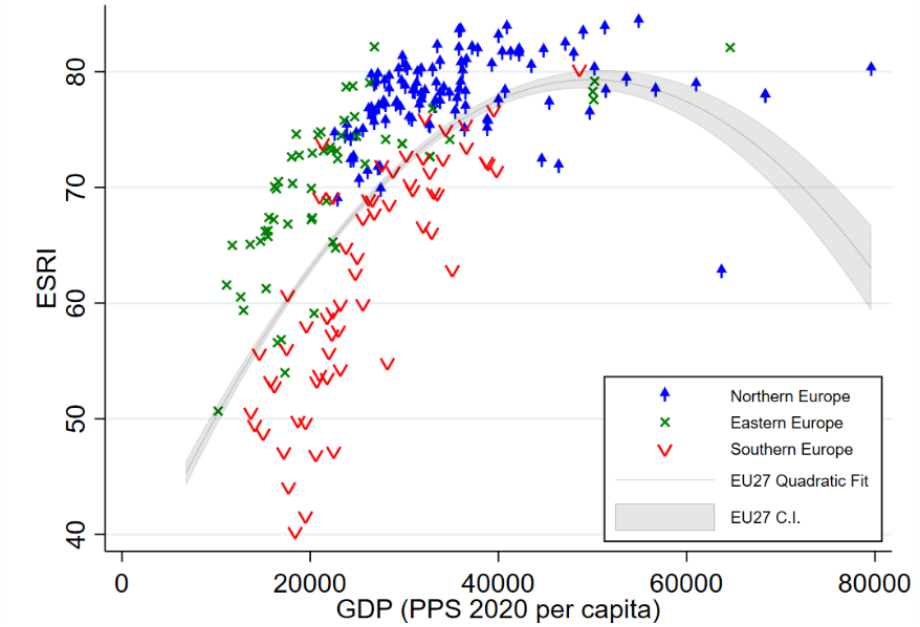
Source: Authors' elaboration

4.3. ESRI and key sustainable human development indicators

Nowadays we have quite a strong consensus about the need to embrace an approach to development that goes beyond the increase in national income, wealth and\or added value. Instead we aim for a multidimensional approach mainly focused on measuring the ends of the development process rather than the means (Land and Michalos 2018; Stiglitz, Sen and Fitoussi 2010). The development of the sustainable human development framework can be framed within this stream of research and debate (Pelenc et al., 2013). Basically, the sustainable human development framework is based on four main pillars: (i) productivity\value addiction, (ii) equality, (iii) environmental sustainability and (iv) participation (Biggeri and Mauro, 2018). In this sub-section, the relation between ESRI and four indicators considered as proxy of the four sustainable human development pillars.

Figure 11 plots the nonlinear relationship between total ESRI score and GDP per capita in 2019. Highlighting a strong positive correlation between the two up until around 40,000 GDP per capita, after which the relationship becomes much more varied suggesting that, beyond a certain threshold, the regional marginal ability to convert income into social rights tends to decrease.

Figure 11- ESRI vs. GDP Per capita (2019)

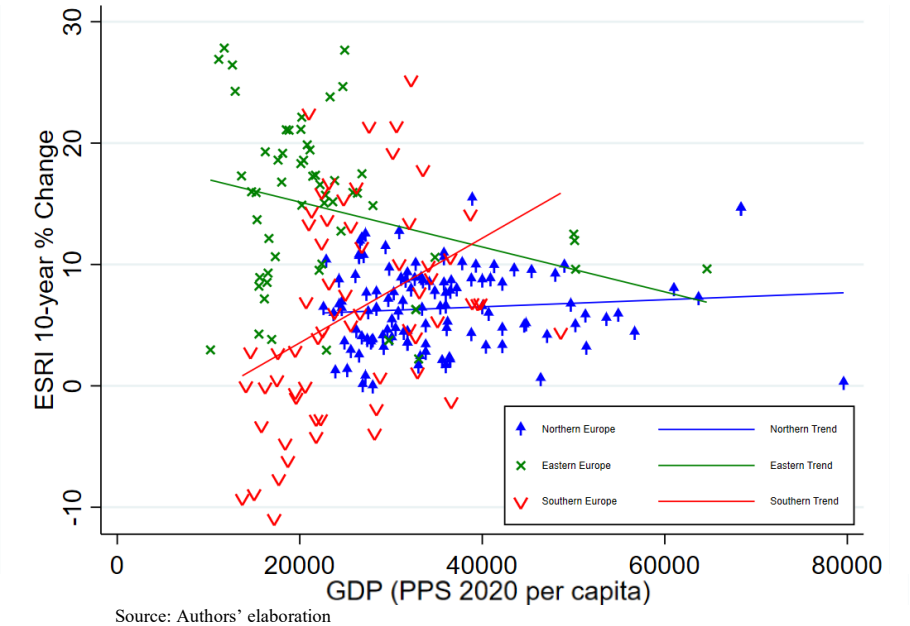


Source: Authors' elaboration

Figure 12 highlights the diverging relationship between GDP per capita and the 10-year change in ESRI, with a negative relationship in Eastern European regions and a positive relationship in Southern regions. Indicating that the ability of an economic system to improve social conditions through increased income is not consistent across areas of analysis and requires further analysis to understand the main determinants and contextual factors.

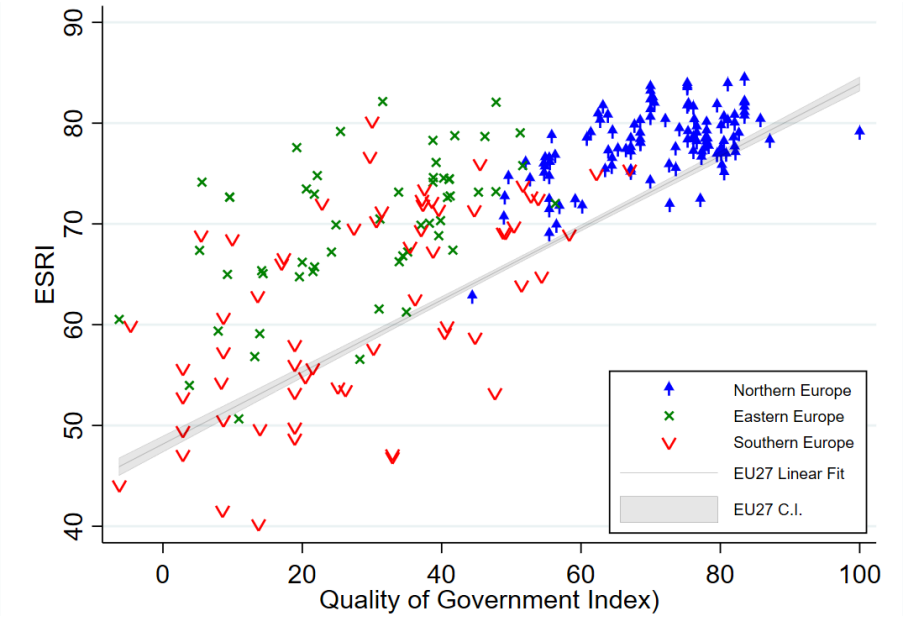
The association between good governance and social rights seems to be confirmed in Figure 13. The plot show that in all of Europe, the quality of government is highly correlated with ESRI scores, showcasing the importance of strong institutions and democratic systems in achieving strong social condition.

Figure 22- ESRI 10-year change (%) vs. GDP per capita



Source: Authors' elaboration

Figure 13- ESRI vs. Quality of Government Index (2019)

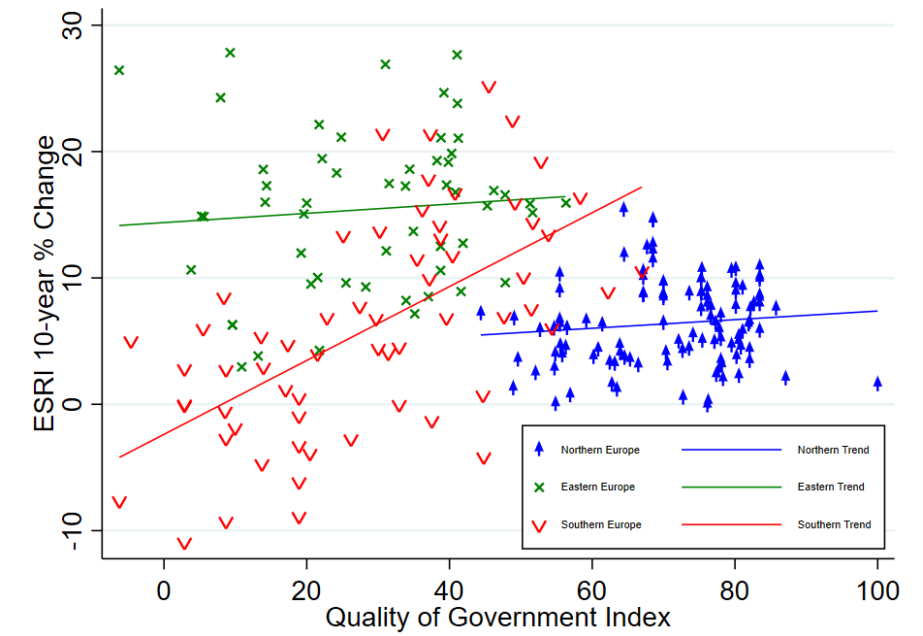


Source: Authors' elaboration

Additionally, in Figure 14, we can see that the strong institutional scores are positively correlated with improvements in ESRI conditions in Southern Europe, with a less markedly positive relationship in the rest of Europe. Again demonstrating how the effectiveness of contextual

factors (conversion factors in capability approach terms) on enabling improvements in social conditions is highly variable and context specific.

Figure 14: ESRI 10-year change (%) vs. Quality of Government Index (2019)



Source: Authors' elaboration

5. Limits of the research

Conducting this analysis has shown the potential and limitations of this method. A relevant part of the limitation is related to data availability. Despite the massive effort to create a NUT2 level dataset (see Section 2), the disaggregation had some costs in terms of the reduced number of indicators included in the ESRI: 18 indicators against 21 in the national level ESRI and 24 in the national level ESRI+ (see Biggeri et al., 2022). Additionally, as already underlined in Biggeri et al. (2022), indicators linked to employment are over-represented in the indicator because they are over-represented in the Social Scoreboard. In this sense the European Social Rights Indicator mirrors the "neo-liberal paternalism" that is permeating in the overall social policy architecture at EU level (Soss et al., 2011). Also, for now, our methods are temporally constrained to the period of 2010-2019. Data gaps before 2010 are too significant to be filled through imputation techniques. Similarly, data availability for 2020 and 2021 is still too limited to be used in analysis. Meaning that the impact of the Covid-19 pandemic and the social and economic

consequences of the Ukrainian crisis cannot still be analysed. Hence, we recommend keeping the database up to date.

Different options are available to relax the impact of the above-mentioned data constraints. A first stream of work is related to the use of additional non-quantitative data sources. As usual, while dealing with the operationalisation of complex concepts such as intersectionality, it is necessary to come to terms with the limitations of a quantitative analysis and to explore complexity by combining quantitative and qualitative methods. Combining quantitative and qualitative methods has proven extremely rewarding for the EUROSHIP project where the use of qualitative methods such as life course interviews allowed to shed light on the actual enjoyment of social citizenship rights for particular subgroups of the population (e.g. people in long term care, see Grages and Pfau-Egginger 2023) or in particular life domains (e.g. work-life balance, see Ibanez and Leon 2023). A second directrix deals with the improvement of existing quantitative data sources. The limits of the main data sources in terms of operationalising intersectionality were identified in EUROSHIP Working Paper N°1 (Gabos et al., 2021): Gabproved that data reliability is challenged when samples are stratified by two or more key variables. Moreover, hidden groups (e.g., irregular migrants, homeless etc.) are barely detected by existing surveys.

6. Conclusion

This paper presented the preliminary results of a quantitative analysis aimed at proposing a gender sensitive NUTS2 disaggregation of a synthetic indicator on social rights in the EU.

Notwithstanding the above-mentioned limits, the analysis has provided valuable results. Interestingly, the use of GIS tools and data visualisation techniques has proven to be a valuable support to present the main points raised by the analysis. GIS tools and data visualisation techniques allowed us to identify the divergent trends across different European macro-regions. Going forward, GIS should be used as a valuable support to deal with the heterogeneities that characterise the European context. Moreover, it is worth remembering that a large share of the EU social and cohesion policy tools are defined at the NUTS2 level: in this sense, a NUTS2 disaggregated European Social Rights Indicator can help for both targeting and evaluating purposes. Innovative data visualisation methods may provide further options to increase the

usability of the results by unlocking a more interactive and customized approach to the production of knowledge.

, *The most striking evidence presented in this paper is the enduring crisis experienced by Southern Europe even if the Iberian Peninsula is performing better than Italy and Greece*. Within this subregion, using NUTS2 it is possible to identify areas that are particularly problematic, with southern Italy a clear example. Southern Europe is characterised by lower ESRI levels and by weak if not negative ESRI growth rates for the duration of the analysed period. The gender gap is significantly stronger than in Northern Europe, even though recent years have shown a clearly detectable convergence of M- and F-ESRI. The comparative analysis of the ESRI trends shows a double-level social divergence of Southern Europe. Southern Europe is significantly diverging from the rest of Europe (while we have a substantial convergence between Eastern and Northern Europe). At the same time, while Eastern and Northern Europe are experiencing a moderate internal convergence (i.e., convergence among the regions within each macro-region), Southern Europe presents a marked internal divergence in the considered period: *this makes a strong case for a carefully place-based analysis particularly for the regions presenting the most problematic performances.*

Unlike Southern Europe, the Eastern European trend is largely coherent with the "social upward convergence" objective advocated by the European Union. the ESRI of the Eastern Euroupean subregions has the most markedly positive trend. The only negative news for Eastern Europe concerns the ESRI gender gap. The distances between F and M ESRI did not show a significant decline during the period we have analysed. In the case of the Eastern Europe, the "genderisation" of social policies could be a key to promote positive change.

Here, we have laid out several key areas of development that will improve this area of analysis moving forward:

- First and foremost, more efforts are needed to set up a more structured system to collect and release NUTS2 level information at the EU level: the imputation effort needed to structure the dataset was based on robust techniques, but it is, nonetheless, a second best if compared to the availability of official data collected by national statistical offices under the coordination of EUROSTAT.

- Second, the range of used indicators could be expanded to include indicators more closely related to the “influence” component of citizenship definition (Halvorsen et al., 2022).
- Third, more efforts will be needed to update the dataset: the current analysis still does not cover 2020 and 2021 (i.e., the years more negatively impacted by the COVID-19 pandemic and by its social and economic consequences).
- Fourth, the current analysis is limited to the description of what is going on in the different areas of the EU. A decisive step forward could be to shift\expand the analysis from the “WHATs” to the “WHYs”: the use of more refined econometric analysis techniques (panel models, structural equation models etc.) could contribute to shed light on the social, political and economic mechanisms behind the pictures we are observing through the European Social Rights Indicator.

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APPENDIX A: NUTS2 REGIONS

BE	Belgium
BE10	Région de Bruxelles-Capitale
BE21	Prov. Antwerpen
BE22	Prov. Limburg (BE)
BE23	Prov. Oost-Vlaanderen
BE24	Prov. Vlaams-Brabant
BE25	Prov. West-Vlaanderen
BE31	Prov. Brabant Wallon
BE32	Prov. Hainaut
BE33	Prov. Liège
BE34	Prov. Luxembourg (BE)
BE35	Prov. Namur
BG	**Bulgaria**
BG31	Северозападен
BG32	Северен централен
BG33	Североизточен
BG34	Югоизточен
BG41	Югозападен
BG42	Южен централен
CZ	**Czechia**
CZ01	Praha
CZ02	Střední Čechy
CZ03	Jihozápad
CZ04	Severozápad
CZ05	Severovýchod
CZ06	Jihovýchod
CZ07	Střední Morava
CZ08	Moravskoslezsko
DK	**Denmark**
DK01	Hovedstaden
DK02	Sjælland
DK03	Syddanmark
DK04	Midtjylland
DK05	Nordjylland
DE	**Germany**
DE11	Stuttgart
DE12	Karlsruhe
DE13	Freiburg
DE14	Tübingen
DE21	Oberbayern
DE22	Niederbayern
DE23	Oberpfalz
DE24	Oberfranken
DE25	Mittelfranken
DE26	Unterfranken
DE27	Schwaben
DE30	Berlin
DE40	Brandenburg
DE50	Bremen
DE60	Hamburg
DE71	Darmstadt
DE72	Gießen
DE73	Kassel
DE80	Mecklenburg-Vorpommern
DE91	Braunschweig
DE92	Hannover
DE93	Lüneburg
DE94	Weser-Ems
DEA1	Düsseldorf
DEA2	Köln
DEA3	Münster
DEA4	Detmold
DEA5	Arnsberg
DEB1	Koblenz
DEB2	Trier
DEB3	Rheinhessen-Pfalz
DEC0	Saarland
DED2	Dresden
DED4	Chemnitz
DED5	Leipzig
DEE0	Sachsen-Anhalt
DEF0	Schleswig-Holstein
DEG0	Thüringen
EL	**Greece**
EL30	Attiki
EL41	Voreio Aigaio
EL42	Notio Aigaio
EL43	Kriti
EL51	Anatoliki Makedonia, Thraki
EL52	Kentriki Makedonia
EL53	Dytiki Makedonia
EL54	Ipeiros
EL61	Thessalia
EL62	Ionia Nisia
EL63	Dytiki Ellada
EL64	Sterea Ellada
EL65	Peloponnisos

ES	Spain
ES11	Galicia
ES12	Principado de Asturias
ES13	Cantabria
ES21	País Vasco
ES22	Comunidad Foral de Navarra
ES23	La Rioja
ES24	Aragón
ES30	Comunidad de Madrid
ES41	Castilla y León
ES42	Castilla-La Mancha
ES43	Extremadura
ES51	Cataluña
ES52	Comunidad Valenciana
ES53	Illes Balears
ES61	Andalucía
ES62	Región de Murcia
ES63	Ciudad Autónoma de Ceuta
ES64	Ciudad Autónoma de Melilla
ES70	Canarias
FR	**France**
FR10	Ile-de-France
FRB0	Centre — Val de Loire
FRC1	Bourgogne
FRC2	Franche-Comté
FRD1	Basse-Normandie
FRD2	Haute-Normandie
FRE1	Nord-Pas de Calais
FRE2	Picardie
FRF1	Alsace
FRF2	Champagne-Ardenne
FRF3	Lorraine
FRG0	Pays de la Loire
FRH0	Bretagne
FRI1	Aquitaine
FRI2	Limousin
FRI3	Poitou-Charentes
FRJ1	Languedoc-Roussillon
FRJ2	Midi-Pyrénées
FRK1	Auvergne
FRK2	Rhône-Alpes
FRL0	Provence-Alpes-Côte d'Azur
FRM0	Corse
HR	**Croatia**
HR03	Jadranska Hrvatska
HR04	Kontinentalna Hrvatska
IT	**Italy**
ITC1	Piemonte
ITC2	Valle d'Aosta/Vallée d'Aoste
ITC3	Liguria
ITC4	Lombardia
ITF1	Abruzzo
ITF2	Molise
ITF3	Campania
ITF4	Puglia
ITF5	Basilicata
ITF6	Calabria
ITG1	Sicilia
ITG2	Sardegna
ITH1	Provincia Autonoma di Bolzano/Bozen
ITH2	Provincia Autonoma di Trento
ITH3	Veneto
ITH4	Friuli-Venezia Giulia
ITH5	Emilia-Romagna
ITI1	Toscana
ITI2	Umbria
ITI3	Marche
ITI4	Lazio
CY	**Cyprus**
CY00	Κύπρος
LV	**Latvia**
LV00	Latvija
LT	**Lithuania**
LT01	Sostinės regionas
LT02	Vidurio ir vakarų Lietuvos regionas
LU	**Luxembourg**
LU00	Luxembourg
HU	**Hungary**
HU11	Budapest
HU12	Pest
HU21	Közép-Dunántúl
HU22	Nyugat-Dunántúl
HU23	Dél-Dunántúl
HU31	Észak-Magyarország
HU32	Észak-Alföld
HU33	Dél-Alföld
EE	**Estonia**
EE00	Eesti

MT	Malta
MT00	Malta
NL	**Netherlands**
NL11	Groningen
NL12	Friesland (NL)
NL13	Drenthe
NL21	Overijssel
NL22	Gelderland
NL23	Flevoland
NL31	Utrecht
NL32	Noord-Holland
NL33	Zuid-Holland
NL34	Zeeland
NL41	Noord-Brabant
NL42	Limburg (NL)
AT	**Austria**
AT11	Burgenland
AT12	Niederösterreich
AT13	Wien
AT21	Kärnten
AT22	Steiermark
AT31	Oberösterreich
AT32	Salzburg
AT33	Tirol
AT34	Vorarlberg
PL	**Poland**
PL21	Małopolskie
PL22	Śląskie
PL41	Wielkopolskie
PL42	Zachodniopomorskie
PL43	Lubuskie
PL51	Dolnośląskie
PL52	Opolskie
PL61	Kujawsko-pomorskie
PL62	Warmińsko-mazurskie
PL63	Pomorskie
PL71	Łódzkie
PL72	Świętokrzyskie
PL81	Lubelskie
PL82	Podkarpackie
PL84	Podlaskie
PL91	Warszawski stołeczny
PL92	Mazowiecki regionalny
PT	**Portugal**
PT11	Norte
PT15	Algarve
PT16	Centro (PT)
PT17	Área Metropolitana de Lisboa
PT18	Alentejo
PT20	Região Autónoma dos Açores
PT30	Região Autónoma da Madeira
RO	**Romania**
RO11	Nord-Vest
RO12	Centru
RO21	Nord-Est
RO22	Sud-Est
RO31	Sud-Muntenia
RO32	Bucureşti-Ilfov
RO41	Sud-Vest Oltenia
RO42	Vest
SI	**Slovenia**
SI03	Vzhodna Slovenija
SI04	Zahodna Slovenija
SK	**Slovakia**
SK01	Bratislavský kraj
SK02	Západné Slovensko
SK03	Stredné Slovensko
SK04	Východné Slovensko
FI	**Finland**
FI19	Länsi-Suomi
FI1B	Helsinki-Uusimaa
FI1C	Etelä-Suomi
FI1D	Pohjois- ja Itä-Suomi
FI20	Åland
SE	**Sweden**
SE11	Stockholm
SE12	Östra Mellansverige
SE21	Småland med öarna
SE22	Sydsverige
SE23	Västsverige
SE31	Norra Mellansverige
SE32	Mellersta Norrland
SE33	Övre Norrland
IE	**Ireland**
IE04	Northern and Western
IE05	Southern
IE06	Eastern and Midland

Source: Author's elaboration

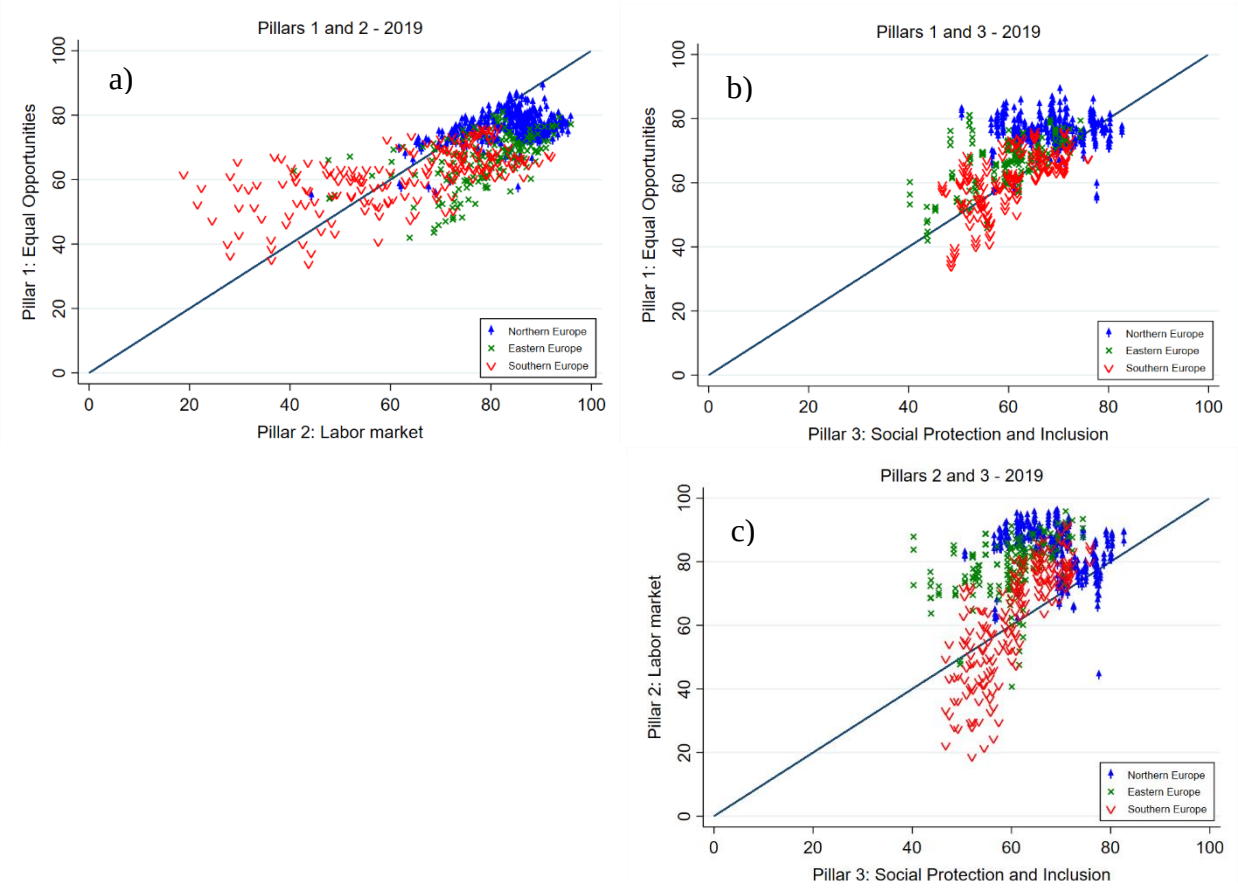
APPENDIX B: DESCRIPTIVE STATISTICS AND TECHNICAL MIN/MAX

Pillar	Domain	Indicator	Mean	SD	Min	Max	Technical Min	Technical Max
Equal Opportunities	Education, skills, and lifelong learning	Early Leavers	11.40	6.12	0.90	45.80	0	50
		Adult Learning	9.92	7.01	0.60	36	0	38
		Tertiary Educ	35.37	10.81	8.40	74	3.36	70
	Gender equality in the labour market	Gender Gap	11.80	5.92	-1.50	36.60	-1.6	45.4
	Inequality and upward mobility	Income Ineq.	4.546	1.27	2.70	11	0	12
	Youth	NEET	11.86	6.11	2	35.90	0	50
Fair Working Conditions	Labour force structure	Employment	69.61	8.58	40.80	88.20	25	90
		Unemployment	9.61	6.40	1.30	37	2	33
		Youth Unemp.	23.11	14.58	2.80	79.20	2	70
	Labour market dynamics	Activity Rate	71.90	6.38	42.40	85.90	35	90
		LT Unemp.	4.644	4.37	0.30	28.70	0	19.8
	Income	HH Income	14,833	4,097	4,400	27,000	4,000	25,000
Social Protection and Inclusion	Living condition and poverty	AROPE	23.04	9.35	7.10	59.50	5	70
		HH Cost Share	22.30	5.99	5.21	44	5.21	50
	Impact of public policies on reducing poverty	Impact Transf.	38.14	13.75	5.30	67.87	5	70
	Healthcare	Unmet Health	6.85	3.81	0.10	22.10	0	28
		HLY65 M	17.72	1.73	13.10	21.30	10	25
		HLY65 F	21.28	1.69	16.30	25.20	10	25

Source: Author's elaboration

APPENDIX C: COVARIATION OF ESRI PILLARS

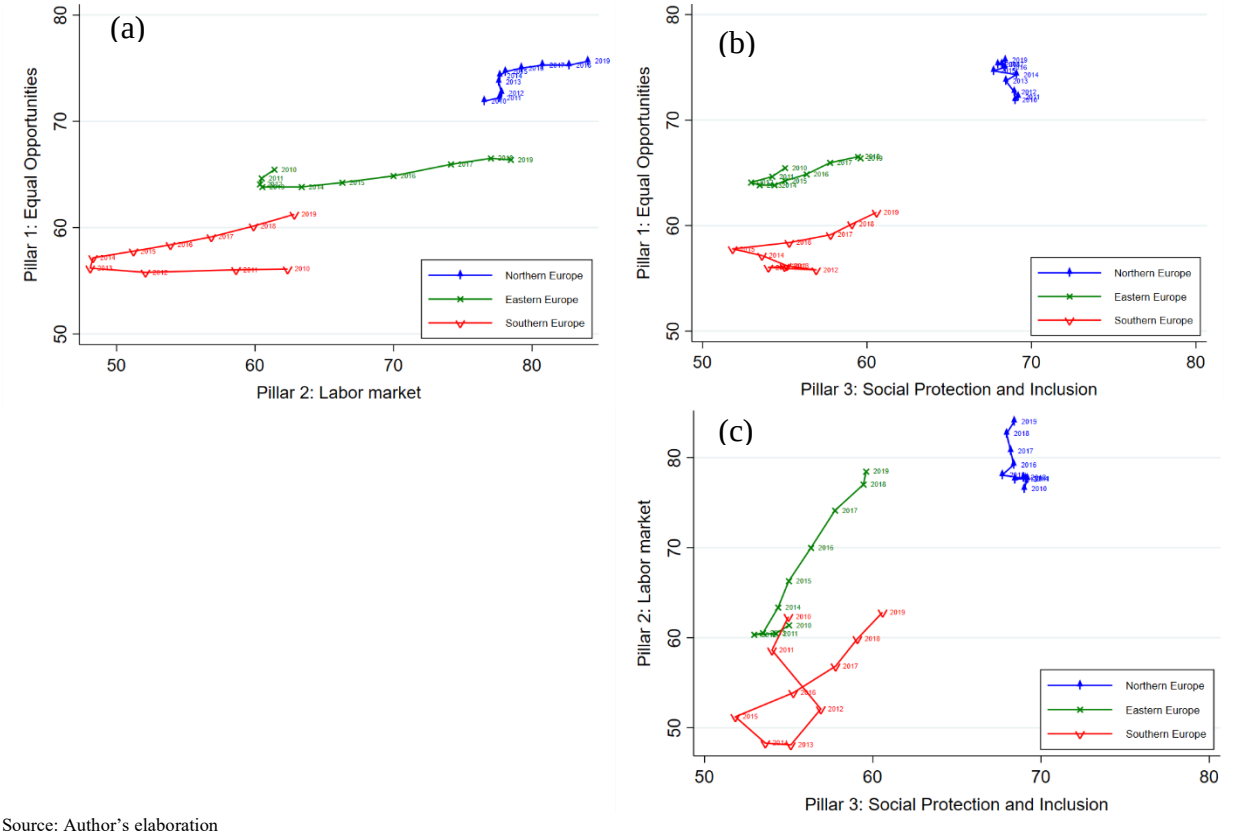
Here we compare the ESRI pillar scores in 2019. Each dot is a NUT2 region whose color represents the related macro-region. The three plots show a positive correlation among the three pillars. As you can see in plot (a), on average, Pillar 2 (labour market) scores are higher than Pillar 1 (equal opportunity) scores for regions with higher overall scores. Alternatively, for those regions with lower overall scores, predominately located in Southern Europe, Pillar 1 scores are higher than Pillar 2 scores. According to plot (b), we can see that on average Pillar 1 scores are higher than Pillar 3 (social protection and inclusion) in Northern and Eastern Europe but not in Southern Europe. Lastly, plot (c) stress a different pattern for Northern and Eastern regions compared to Southern Europe ones: for the first ones Pillar 2 scores are higher than Pillar 3 while the opposite is true in the case of Southern Europe.



Source: Author's elaboration

APPENDIX D: TRANSITION OF ESRI PILLARS

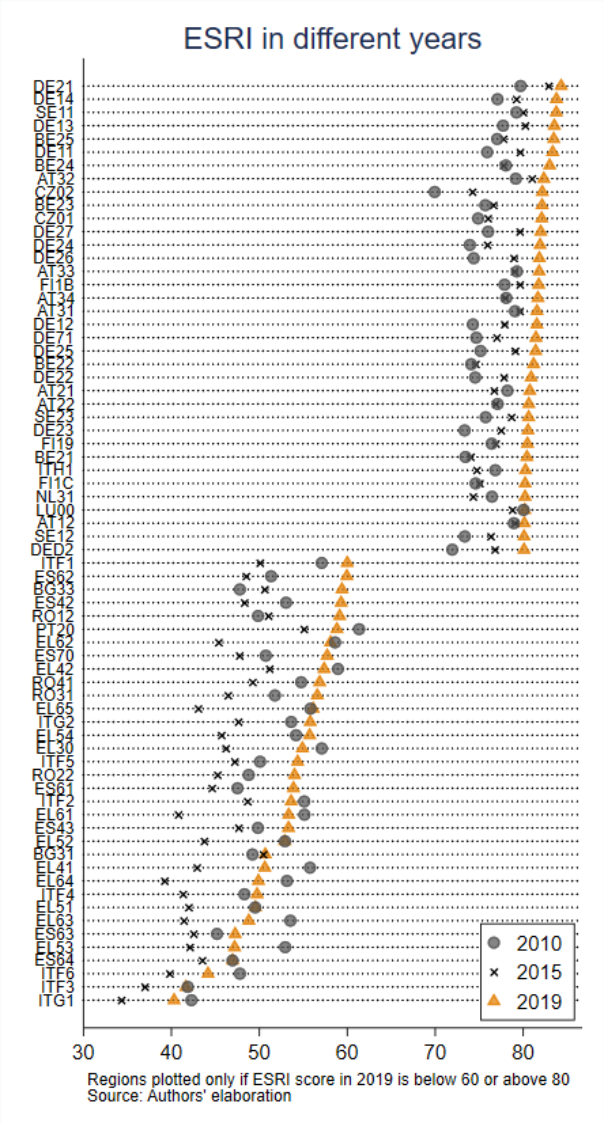
The following plots present a comparison of the transition of each ESRI Pillar in each macro-region. From plot (a), we can see the disparities in both the level and transition between equal opportunities and labour market conditions among European macro-regions, with improvements in both Pillars in Northern regions, while Southern regions saw an initial worsening in labour market conditions and stagnant equal opportunities conditions between 2010-14. Similar levels and transitions can also be seen between equal opportunities and social protection and inclusion. Eastern Europe, alternatively, saw the strongest improvements in labour market conditions, from 2012-2019, and smaller improvements in both equal opportunities and social protection and inclusion.

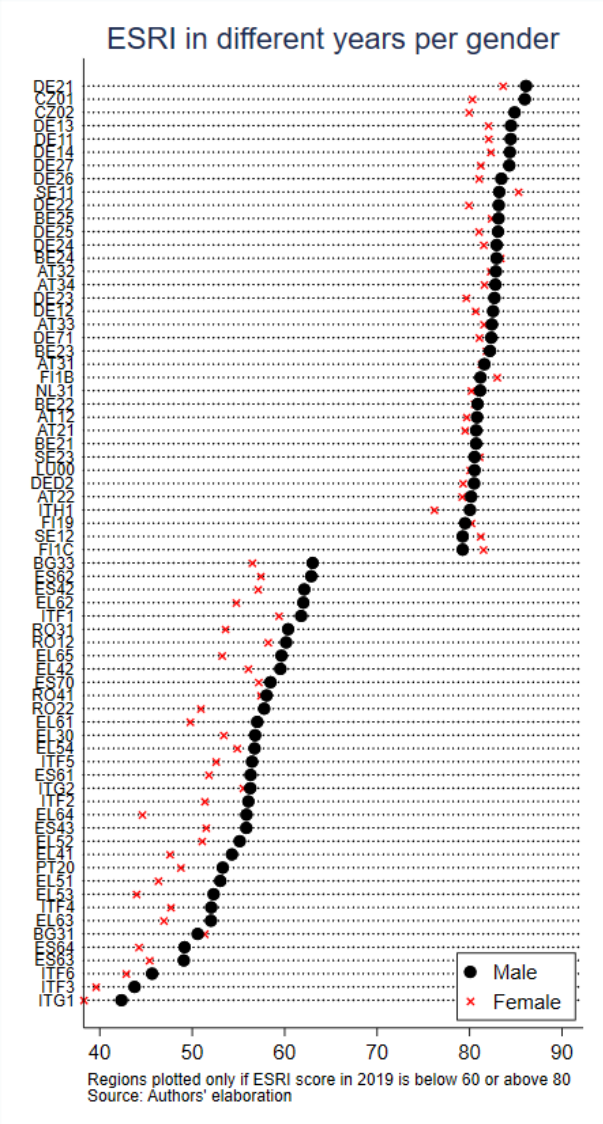


Source: Author's elaboration

APPENDIX E: BEST AND WORSE PERFORMING NUTS2 REGIONS (ESRI SCORES)

The following figures list the best and worst performing NUTS2 regions based on total ESRI scores, identifying those with above 80 and below 60 in 2019. The figure on the left identifies the ESRI score in 2010, 2015, and 2019 which highlights the increased variability in ESRI scores the lower the score. The Figure on the right presents the male and female ESRI scores in 2019 which similarly shows more variability among scores for lower scores compared to the highest scores.





Source: Author's elaboration