European Commission

MAPPING THE GLASS CEILING: THE EU REGIONS WHERE WOMEN THRIVE AND WHERE THEY ARE HELD BACK

Monitoring EU regional gender equality with the female achievement and disadvantage indices

Hedvig Norlén, Eleni Papadimitriou, Laura de Dominicis and Lewis Dijkstra

Regional and Urban Policy

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COUNTRY CODES AND COUNTRY GROUPING

BE   Belgium
BG   Bulgaria
CZ   Czechia
DK   Denmark
DE   Germany
EE   Estonia
IE   Ireland
EL   Greece
ES   Spain
FR   France
HR   Croatia
IT   Italy
CY   Cyprus
LV   Latvia
LT   Lithuania
LU   Luxembourg
HU   Hungary
MT   Malta
NL   Netherlands
AT   Austria
PL   Poland
PT   Portugal
RO   Romania
SI   Slovenia
SK   Slovakia
FI   Finland
SE   Sweden

Southern EU: CY, EL, ES, IT, MT and PT
North-western EU: AT, BE, DK, DE, IE, FI, FR, LU, NL, and SE
Eastern EU: BG, CZ, EE, HR, HU, LT, LV, PL, RO, SI, and SK

ABSTRACT

In some EU regions women are able to flourish, while in others they languish behind. This paper presents two regional indices: the Female Achievement Index and the Female Disadvantage Index. They reveal in which regions women are achieving more and in which women are at a disadvantage compared to men. The two indices are based on 33 indicators grouped into seven domains. The paper shows that, on average, women in more developed regions are able to achieve more and are at less of a disadvantage, while most women in less developed regions face big challenges. Within countries, women in capital regions tend to achieve more and are at less of a disadvantage. In general, regions with a lower female achievement index have a lower gross domestic product per capita, while regions with a higher level of female achievement have a higher level of human development. Finally, the quality of government is higher in regions where women achieve more.

1. INTRODUCTION

Gender equality is attained when women and men enjoy the same rights and opportunities across all areas of life, including economic participation and decision-making. It can only be achieved when women's and men's behaviours, aspirations and needs are equally valued. Equality between women and men is and always has been one of the core values of the European Union (EU). It goes back to the beginning of the European Communities, in 1957, when the principle of equal pay for equal work formed part of the Treaty establishing the European Economic Community (Article 157).

Over the last 60 years, EU legislation and changes to the treaties have reinforced this core value and its implementation in the EU: 'In all its activities, the Union shall aim to eliminate inequalities, and to promote equality, between men and women' (Article 8 of the Treaty on the Functioning of the European Union) [1]. Equality between women and men is also one of the founding values of the EU (Articles 2 and 3 of the Treaty on European Union) [2], and is included in the Charter of Fundamental Rights of the European Union (Article 21) [3] as a right of EU citizens and residents under EU law, with the charter stating that any discrimination based on gender, among other forms of discrimination, is prohibited.

Gender equality remains one of the fundamental values of the EU and has been included in the European Pillar of Social Rights. The newly adopted EU gender equality strategy for 2020–2025 aims at ensuring that all EU policy areas contribute to gender equality. In addition, the United Nations (UN) sustainable development goals (SDGs) aim to achieve gender equality and to empower all women and girls by 2030 (SDG 5).

The EU's newly adopted multiannual financial framework for 2021–2027 ensures the integration of a gender dimension throughout the EU's financial framework, and more specifically in various EU funding and budgetary guarantee instruments, in particular the **European Social Fund Plus**, the **European Regional Development Fund**, the **creative Europe programme**, the **European Maritime, Aquaculture and Fisheries Fund** and the **investEU programme**. Funding will support actions to promote women's labour market participation and work–life balance, invest in care facilities, support female entrepreneurship, combat gender segregation in certain professions and address the unbalanced representation of girls and boys in some sectors of education and training.

Despite the strong political commitment to achieving gender equality in the EU, large differences between women and men still exist in various domains of life, such as equal access to the labour market, equal working conditions and gender-balanced leadership in decision-making [4]. In addition, there are early warning signs that the current pandemic may disproportionally affect women in Member States and regions – and beyond – thus undermining the progress made so far in reducing gender inequalities (European Commission, 2021) [5]. The Recovery and Resilience Facility, which was launched in 2020, aims to support women in the post-pandemic period and requires Member States to show how their national recovery plans will promote gender equality.

Gender equality strategy 2020–2025

The gender equality strategy frames the European Commission's work on gender equality and sets out the policy objectives and key actions for the 2020–2025 period.

The key objectives are ending gender-based violence, challenging gender stereotypes, closing gender gaps in the labour market, achieving equal participation across different sectors of the economy, addressing the gender pay and pension gaps, closing the gender care gap and achieving gender balance in decision-making and in politics.

The implementation of this strategy will be based on the dual approach of targeted measures to achieve gender equality combined with strengthened gender mainstreaming. The Commission will enhance gender mainstreaming by systematically including a gender perspective in all stages of policy design in all EU policy areas, both internal and external.

For more details see: https://ec.europa.eu/info/policies/justice-and-fundamental-rights/gender-equality/gender-equality-strategy_en

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1. European Union (2012), Consolidated version of the Treaty on the Functioning of the European Union, OJ C 326, 26.10.2012, p. 47 (https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:12012E/TXT).
2. European Union (2012), Consolidated version of the Treaty on European Union, OJ C 326, 26.10.2012, p. 13 (https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:12012M/TXT).
3. European Union (2012), Charter of Fundamental rights of the European Union, OJ C 326, 26.10.2012, p. 391, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:12012P/TXT
4. The European Pillar of Social Rights provides a roadmap for addressing some of these challenges, in particular by calling, in principle 2, for equality of treatment and opportunities between women and men in the labour market, terms and conditions of employment, career progression and the right to equal pay.
5. European Commission (2021), *2021 Report on Gender Equality in the EU*, Publications Office of the European Union, Luxembourg (https://ec.europa.eu/info/policies/justice-and-fundamental-rights/gender-equality/gender-equality-strategy_en#annual-report-on-equality-between-women-and-men).

While there are several measures of gender (in)equality at the country level, a regional measure was lacking. The EU regional gender equality monitor fills this gap. The monitor was first tested and piloted in 2019 (Norlén et. al, 2019). This paper presents the revised and definitive version. It consists of two composite indices that address two specific and complementary aspects of gender equality and female achievement. The first index measures the level of female achievement compared to the best regional performance. The second index assesses female disadvantage by measuring regional differences when females are doing worse than males. Viewed together, the two indices facilitate an understanding of where women are disadvantaged and where they are performing well across the different regions. Reducing the disadvantages women face and ensuring they can achieve more will help everyone. As this paper will show, it could boost income and human development and improve the quality of government.

The objective of this paper is to summarise the most salient findings of the 2021 edition of the gender equality monitor. As a new element, a number of interactive tools are available online to monitor gender equality in the EU, concerning both the main composite indicators and their seven domains.

They are available at the URL: https://ec.europa.eu/regional_policy/en/information/maps/gender-equality-monitor

2. THE REGIONAL GENDER EQUALITY MONITOR

The regional gender equality monitor consists of two composite indices: the Female Achievement Index (FemAI) and the Female Disadvantage Index (FemDI). They address two specific and complementary aspects of gender equality.

The first index, FemAI, measures the level of female achievement compared to the best regional female performance. FemAI varies between 0 (lowest performance) and 100 (best performance).

The second index, FemDI, assesses the level of female disadvantage by measuring regional differences when women are doing worse than men. The lowest possible score is 0 (no disadvantage) and the highest possible score is 100 (largest disadvantage).

These two indices are the first to capture aspects of gender equality at the regional level for all EU regions. Female achievement and disadvantage are assessed in 235 regions (NUTS 2 level) [6].

Several national indices of gender equality are computed for the EU and the world (see box), but the subnational levels have mostly been overlooked. This regional dimension is important because significant differences are found within Member States for both the achievement index and the disadvantage index.

This gender equality monitor captures 33 issues that are relevant across all regions and contexts (Figure 1). They are grouped into the following seven domains: 1. Work and money; 2. Knowledge; 3. Time; 4. Power; 5. Health; 6. Safety, security and trust; and 7. Quality of life [7].

The **Work and money** domain measures to what extent women and men can benefit from equal access to employment and good working conditions, and assesses gender inequalities in financial resources. The **Knowledge** domain assesses gender inequalities in educational attainment, participation in education and training, gender segregation and leavers from education. How women and men engage in social activities is measured in the **Time** domain, while gender equality in decision-making political positions is assessed in the **Power** domain. The domain of **Health** measures the health status and access to health services. The **Safety, security and trust** domain measures people's perceptions concerning their personal safety and security in the areas where they live and the trust they feel towards their family, social circle and authorities. The framework's last domain deals with **Quality of life** and the life satisfaction of women compared to men.

Both official statistics and other data are used in the monitor. Over half of the indicators (18 out of 33 indicators) capture people's perceptions. The data sources are from Eurostat (Labour Force Survey, EU LFS) [8] Structure of Earnings Survey, EU SES [9]; Statistics on Income and Living Conditions, EU-SILC [10]), the Gallup World Poll [11] and EIGE's Gender Statistics Database [12]. Most data points refer to the year 2019. For some indicators, NUTS 0 or NUTS 1 data were assigned to NUTS 2 regions because data were not available at the NUTS 2 level.

Overview on indices measuring gender equality

Many indices that measure gender equality at the international level are available, and they have been developed from several theoretical perspectives, including human development, women's empowerment and gender equality. Since 1995, the United Nations Development Programme has monitored gender equality through a number of indices. Currently, two indices are published annually: the Gender Inequality Index and the inequality-adjusted UN Human Development Index (UN-HDI). Since 2020, the Gender Inequality Index has also been available at the subnational level.

Since 2006, the World Economic Forum has published the Global Gender Gap Index, a framework for capturing the magnitude of gender-based disparities and tracking their progress over time.

The Social Institutions and Gender Index is a composite measure of discrimination against women and girls in social institutions, developed by the Organisation for Economic Co-operation and Development's Development Centre, launched in 2009.

In 2013, the European Institute for Gender Equality (EIGE) launched the Gender Equality Index. This index has been developed to assess the levels of gender equality across the Member States of the European Union in line with the EU's framework on gender equality for both women and men. A newly published index is Equal Measures 2030's SDG Gender Index, which was launched in 2018. This index measures the state of gender equality in relation to 14 of the 17 SDGs.

FemAI measures the level of female achievement compared to the best regional female performance, while FemDI measures gender gaps within a region. The regional gender equality framework builds on a robust methodology based on the 10-step guide on building composite indicators developed by the European Commission's Joint Research Centre (JRC) and the Organisation for Economic Co-operation and Development.

FemAI is calculated in the following way. For each of the 33 indicators, the difference between the best regional score and

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6. Due to missing data at the regional level, the six French outermost regions (Guadeloupe, Guyane, La Réunion, Martinique, Mayotte and Saint-Martin) could not be included.
7. See the Annex for more details on the methodology.
8. https://ec.europa.eu/eurostat/web/microdata/european-union-labour-force-survey
9. https://ec.europa.eu/eurostat/web/microdata/structure-of-earnings-survey
10. https://ec.europa.eu/eurostat/web/microdata/european-union-statistics-on-income-and-living-conditions
11. https://www.gallup.com/analytics/232838/world-poll.aspx
12. https://eige.europa.eu/gender-statistics/dgs

Figure 1: Regional gender equality conceptual framework (top) and indicators (bottom)
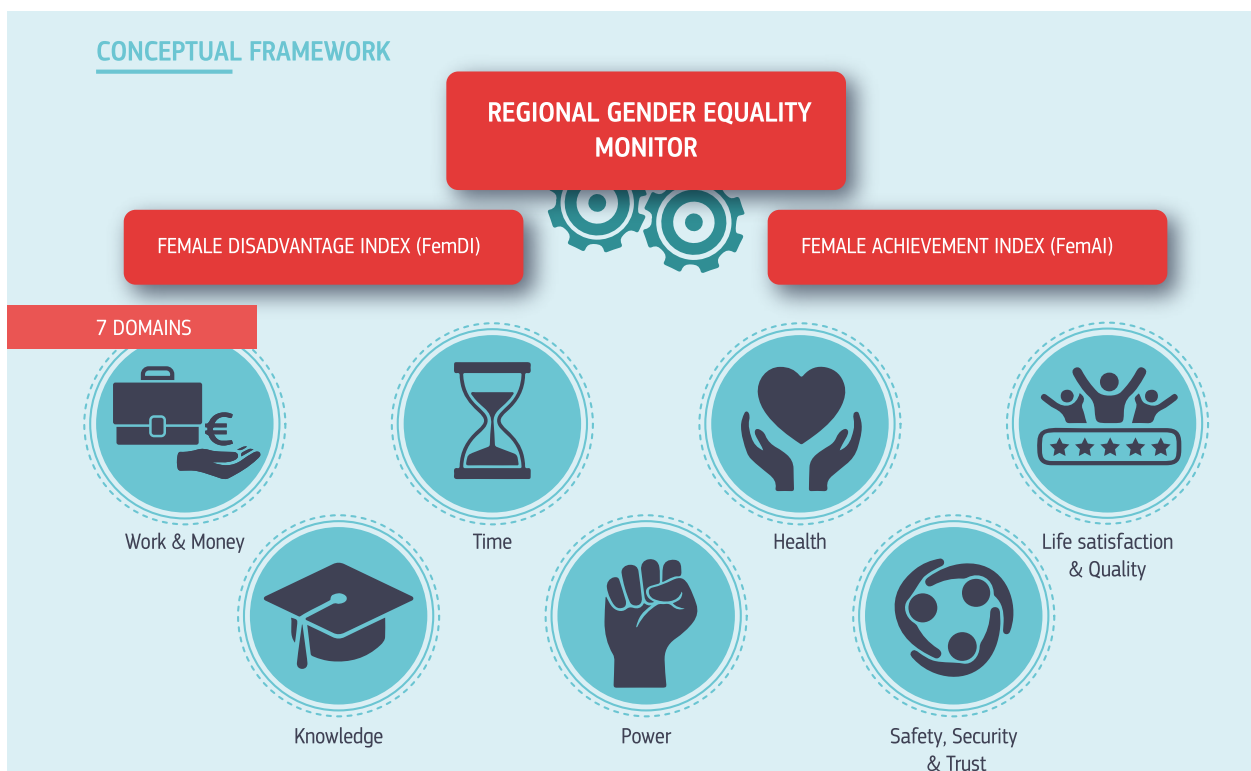
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Regional Gender Equality Monitor 2021			
1. Work and Money	**2. Knowledge**	**3. Time**	**4. Power**
Full-time and part-time employment rate	Graduates of tertiary education	Regularly participate in a leisure activity	Share of ministers in national governments
Unemployment rate	Formal or non-formal education and training	Donated money to a charity	Share of members in national parliaments
Employed with tertiary education	Early leavers from education and training*	Helped a stranger who needed help	Share of members in regional assemblies
Mean monthly earnings	Young people neither in employment nor in education and training	Volunteered time to an organisation	Share of members of regional executives
			Share of members of local/municipal councils
5. Health	**6. Safety, Security and Trust**	**7. Quality of Life**	
Self-perceived good or very good health	Safety at night	Feel well-rested	
Health problem that prevents from living a normal life	Relatives and friends count on for help	Smile or laugh a lot	
Life expectancy in absolute value at birth*	Women treated with respect and dignity	Experience enjoyment	
Malignant neoplastic and cardiovascular diseases death rate*	Voiced your opinion to a public official	Life satisfaction	
No unmet medical needs		Opportunities to make friends	
No unmet dental needs		Satisfied with the freedom	

33 indicators in Female Achievement Index
30 indicators in Female Disadvantage Index
(missing in FemDI are indicated with *)

Maximum number of indicators by domain 6 in Health and Quality of Life

Minimum number of indicators by domain 4 in Work and Money, Knowledge, Time and Safety, Security and Trust

a region's score is calculated (after treating outliers). This difference is transformed into a score ranging from 0 to 100, where 0 represents the worst regional score and 100 the best. These scores are aggregated into seven domains using a simple arithmetic average. The final index is a simple arithmetic average of the seven domains. If a region scored the highest on all indicators it would have the score of 100. Because the highest-scoring region differs for each indicator, the highest score is not 100 but 79 (the Finnish capital region of Helsinki-Uusimaa). The Romanian Sud-Est region has the lowest index score of 30, which shows that it does not score lowest on all 33 indicators.

FemDI assesses how far women lag behind men in a region. It does not reward or punish regions where women perform better than men. The goal is only to measure when female performance lags behind that of men. Regions where women perform equally to or outperform men are both scored as having no female disadvantage. As such, FemDI differs from indices that consider all gender gaps, regardless of whether they favour men or women, such as EIGE's Gender Equality Index. This means that those regional gender equality monitor domains in which women have an advantage (such as education or life expectancy) cannot compensate for domains where they have a disadvantage (such as employment or income).

FemDI is calculated in the following way. It is based on 30 indicators, instead of 33, because three indicators (early leavers from education and training; life expectancy; and death rate caused by malignant neoplastic and cardiovascular diseases) show no or almost no female disadvantage. For each indicator, the difference ([13]) between male and female performance is calculated, after treating outliers. If, in a region, female performance is equal to or better than that of men for a specific indicator, the difference is set to 0, because no female disadvantage has been detected. These differences are transformed into scores ranging from 0 to 100, where 0 represents no disadvantage and 100 the biggest disadvantage. In contrast to FemAI, indicators are aggregated to the seven domains using weightings, because some indicators have a high number of 0 values, i.e. no disadvantage. The weightings are simply the share of non-zero values. In this way, indicators that reveal a disadvantage in many regions have a bigger impact than indicators that only show a disadvantage in a few regions. To calculate the final index, a simple arithmetic average of the seven domains is taken. The French region of Auvergne has the smallest disadvantage, with a FemDI of 13. The Greek region of Sterea Ellada has the biggest disadvantage, with a FemDI of 50, which shows that this region scored poorly only on some of the indicators, as the score is well below the theoretical maximum of 100.

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[13]   For indicators for which the direction of the indicator is opposite (for example unemployment rate), the difference of female minus male performance is calculated.

Figure 2: Indicators by domain and source of data

Domain	Nr	Variable	Source	Code	Female Achievement Index	Female Disadvantage Index	Data	Direction	Last available year	Status
1. Work & Money	1	Full-time and part-time employment rate excluding involuntary part-time work, 20-64 years	Special request Eurostat - EU LFS	lfs_empl_ special_ extr	YES	YES	NUTS2	+	2019	Available
	2	Unemployment rate, 20-64 years	Eurostat - EU LFS	lfst_r_ lfu3rt	YES	YES	NUTS2	-	2019	Available
	3	Persons with tertiary education who are employed, 20-64 years	Eurostat - EU LFS	lfst_r_ lfe2emprc	YES	YES	NUTS2	+	2019	Available
	4	Mean monthly earnings (NACE Rev. 2, categories B-S excluding O), in PPS	Eurostat - EU SES	earn_ ses18_20	YES	YES	NUTS0	+	2018	Available
2. Knowledge	5	Graduates of tertiary education (ISCED 5-8), 25-64 years	Eurostat - EU LFS	edat_ lfse_04	YES	YES	NUTS2	+	2019	Available
	6	People participating in formal or non-formal education and training, 25-64 years	Eurostat - EU LFS	trng_ lfse_04	YES	YES	NUTS2	+	2019	Available
	7	Early leavers from education and training, 18-24 years	Eurostat - EU LFS	edat_ lfse_14	YES	NO	NUTS0	-	2019	Available
	8	Young people neither in employment nor in education and training, 15-29 years	Eurostat - EU LFS	edat_ lfse_22	YES	YES	NUTS2	-	2019	Available
3. Time	9	Regularly participate in a leisure activity	Eurostat - EU-SILC	silc_leisure	YES	YES	NUTS0-1-2	+	2018/2019	Available
	10	Donated money to a charity	Gallup World Poll	gallup_ money_ charity	YES	YES	NUTS1-2	+	2019	Available
	11	Helped a stranger/ someone you didn't know, who needed help	Gallup World Poll	gallup_ help_ stranger	YES	YES	NUTS1-2	+	2019	Available
	12	Volunteered the time to an organization	Gallup World Poll	gallup_ volunteer_ time	YES	YES	NUTS1-2	+	2019	Available
4. Power	13	Share of ministers in national governments	EIGE Gender Statistics Database	Natgov	YES	YES	NUTS0	+	2020	Available
	14	Share of members in national parliaments	EIGE Gender Statistics Database	Natparl	YES	YES	NUTS0	+	2020	Available
	15	Share of members in regional assemblies	EIGE Gender Statistics Database	Regas	YES	YES	NUTS0-2	+	2020	Available
	16	Share of members of regional executives	EIGE Gender Statistics Database	Regexe	YES	YES	NUTS0-2	+	2020	Available
	17	Share of members of local/municipal councils	Special request EIGE and Gender Statistics Database	Locpol	YES	YES	NUTS0-2	+	2020	Available

5. Health	18	Self-perceived health, good or very good (% population)	Eurostat - EU-SILC	silc_health	YES	YES	NUTS0-1-2	+	2018/2019	Available
	19	Health problem that prevents you from doing any of the things people your age normally can do	Gallup World Poll	gallup_ health_ probl_ prevents	YES	YES	NUTS1-2	–	2019	Available
	20	Life expectancy in absolute value at birth	Eurostat	demo_r_ mlifexp	YES	NO	NUTS2	+	2018	Available
	21	Death rate caused by malignant neoplastic and cardiovascular diseases	Eurostat	hlth_cd_ ysdr2_CI	YES	NO	NUTS2	–	2016	Available
	22	Population without unmet needs for medical examination (% population)	Eurostat - EU-SILC	silc_med	YES	YES	NUTS0-1-2	+	2018/2019	Available
	23	Population without unmet needs for dental examination (% population)	Eurostat - EU-SILC	silc_dental	YES	YES	NUTS0-1-2	+	2018/2019	Available
6. Safety, Security and Trust	24	Safe walking alone at night in the city/ area where you live	Gallup World Poll	gallup_ safe_ walking_ alone	YES	YES	NUTS1-2	+	2019	Available
	25	Relatives/ friends you can count on to help you	Gallup World Poll	gallup_ count_on_ friends	YES	YES	NUTS1-2	+	2019	Available
	26	Women in this country are treated with respect and dignity	Gallup World Poll	gallup_ women_ treated_ with_ respect	YES	YES	NUTS1-2	+	2019	Available
	27	Voiced your opinion to a public official	Gallup World Poll	gallup_ voiced_ opinion_ officer	YES	YES	NUTS1-2	+	2019	Available
7. Life satisfaction/quality	28	Feel well-rested	Gallup World Poll	gallup_ well_ rested	YES	YES	NUTS1-2	+	2019	Available
	29	Smile or laugh a lot	Gallup World Poll	gallup_ smile_ laugh	YES	YES	NUTS1-2	+	2019	Available
	30	Experience enjoyment	Gallup World Poll	gallup_ex- perience_ enjoyment	YES	YES	NUTS1-2	+	2019	Available
	31	Life satisfaction	Gallup World Poll	gallup_ satisfied_ with_life	YES	YES	NUTS1-2	+	2019	Available
	32	Opportunities to make friends	Gallup World Poll	gallup_ opportun_ make_ friends	YES	YES	NUTS1-2	+	2019	Available
	33	Satisfied with the freedom in your life	Gallup World Poll	gallup_ satisfied_ with_ freedom_ in_life	YES	YES	NUTS1-2	+	2019	Available

3. FEMALE ACHIEVEMENTS AND DISADVANTAGES

The achievements of women and the disadvantages they face differ significantly among and within Member States. This section describes the results of these two indices, how they compare and how they relate to regional development.

The highest level of female achievement is seen in Nordic regions and in the majority of Austrian regions. At the opposite end of the spectrum, regions in south-eastern Member States are performing at a much lower level (Map 1). Female achievement tends to be higher in capital regions in almost all Member States (Figure 3). While women in capital regions tend to achieve more, they nonetheless feel less secure and safe than in the other regions in the same country (Figure 4).

Figure 3: FemAI, by region and Member State, 2021 edition

Female Achievement Index (FemAI)
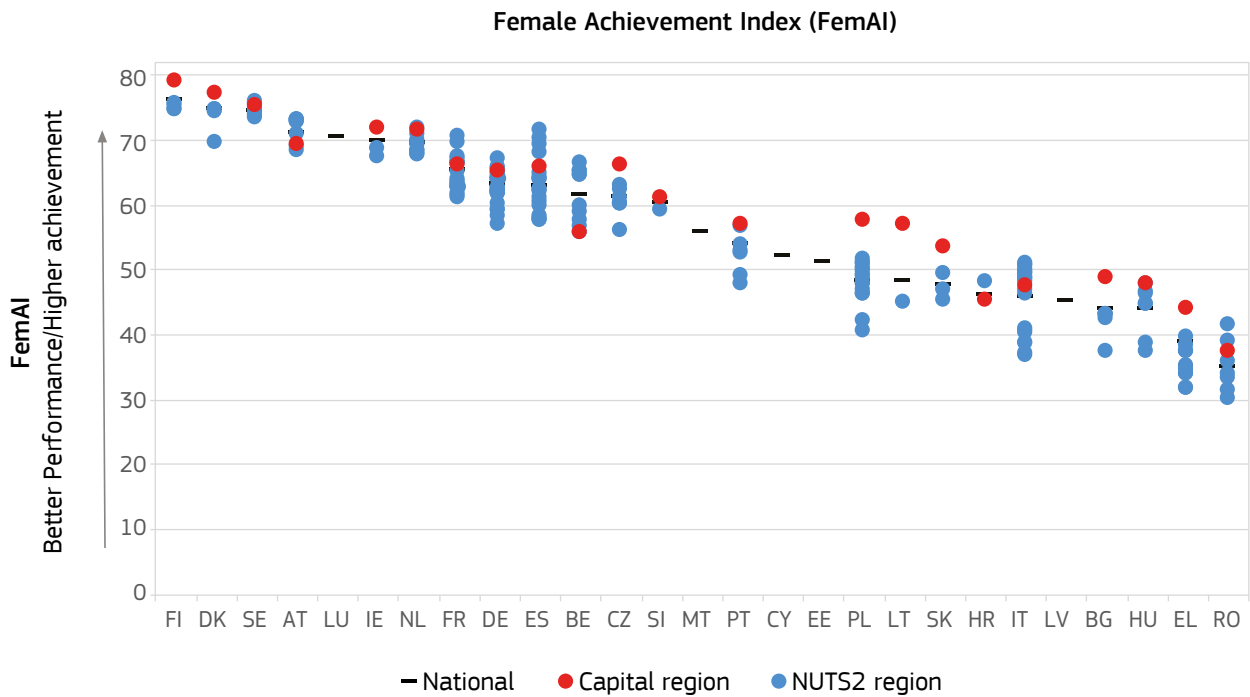
Figure 4: 'Safety, security and trust' domain of FemAI by region and Member State, 2021 edition

FemAI – 'Safety, security and trust' domain
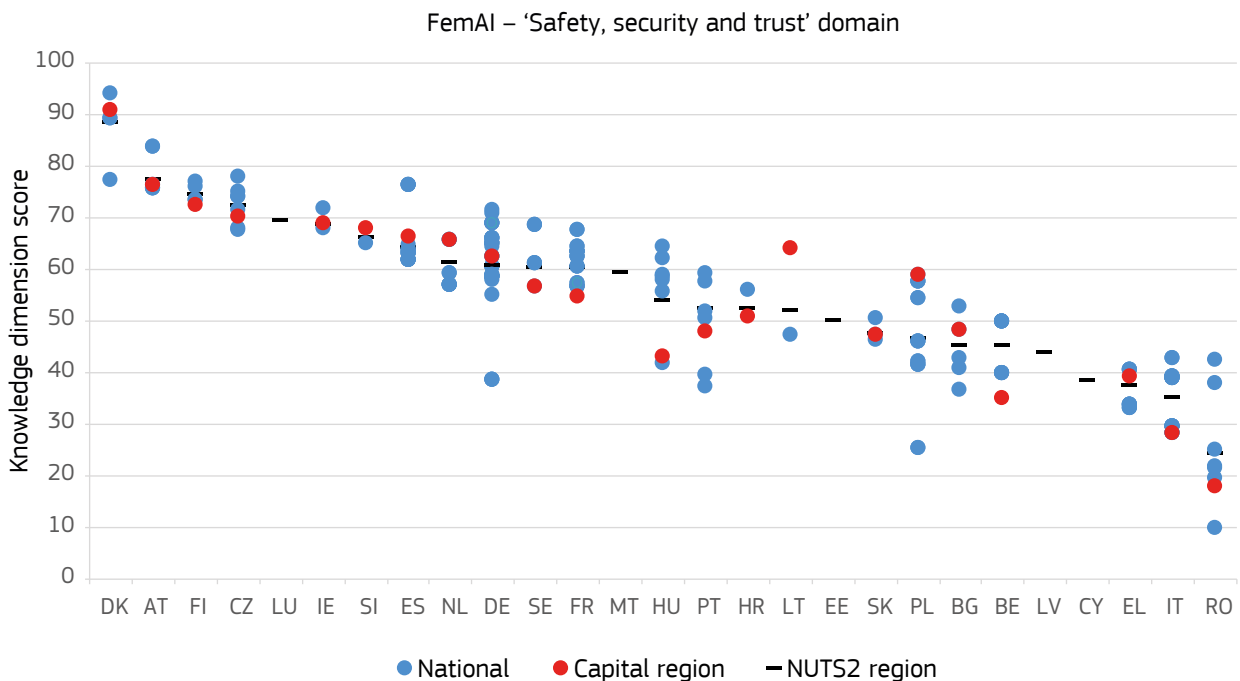
Maps 1–3: Regional FemAI (Map 1, left), Regional FemDI (Map 2, centre), Female disadvantage versus female achievement (Map 3, right), 2021 edition
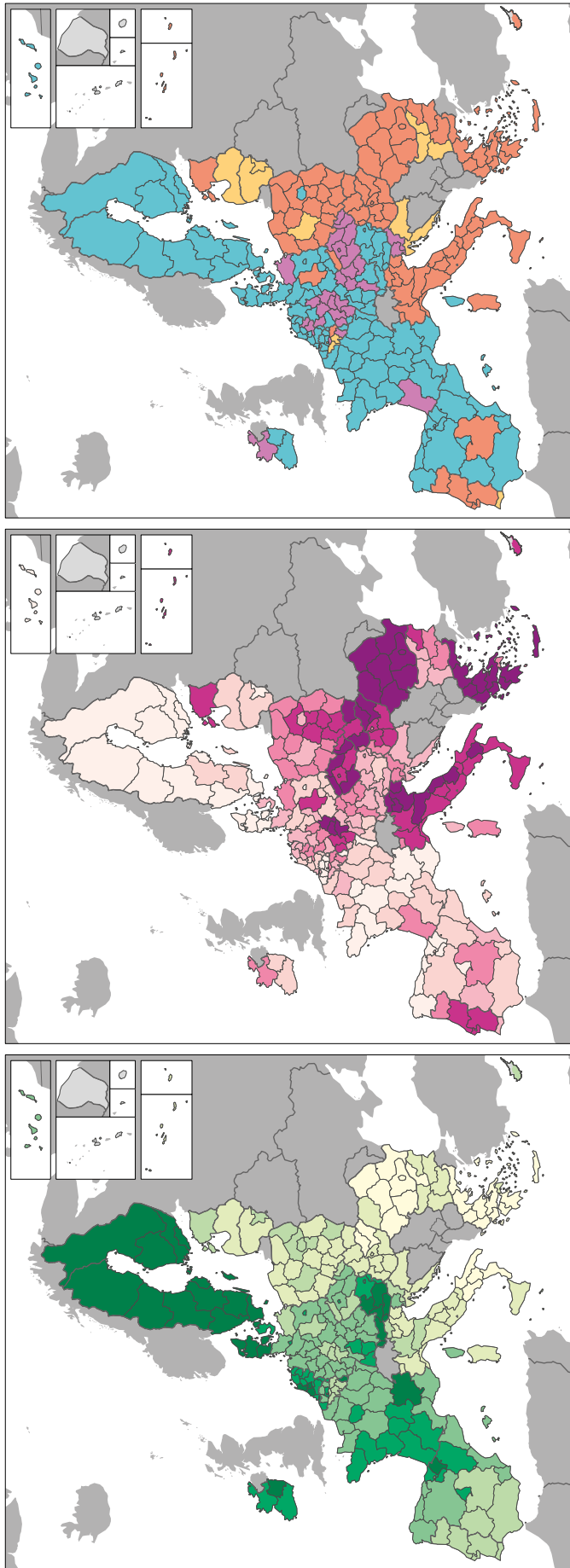
Female Achievement Index

Low index = low achievement
High index = high achievement

- 0 – 40
- 40 – 50
- 50 – 60
- 60 – 65
- 65 – 70
- > 70
- no data

EU-27 = 57.4
This index measures the regional differences in achievement relative to the region with the highest female achievements. If women score as well as those in the region with the best performing women, the index is high.

Female Disadvantage Index

Low index = low disadvantage
High index = high disadvantage

- 0 – 19
- 19 – 23
- 23 – 27
- 27 – 31
- 31 – 37
- > 37
- no data

EU-27 = 27.0
This index measures the difference between the performance of men and women in a region. Low scores mean that women score the same as men or outperform them. High scores mean that women are at a significant disadvantage in that region.

0   1,000Km

Female Disadvantage vs. Female Achievement

- LOW disadvantage and HIGH achievement
- LOW disadvantage but LOW achievement
- HIGH achievement but HIGH disadvantage
- HIGH disadvantage and LOW achievement
- no data

Low and high:
below and above the EU average.
Source: JRC

© EuroGeographics Association for the administrative boundaries

Figure 5: FemDI by region and Member State, 2021 edition

Female Disadvantage Index (FemDI)
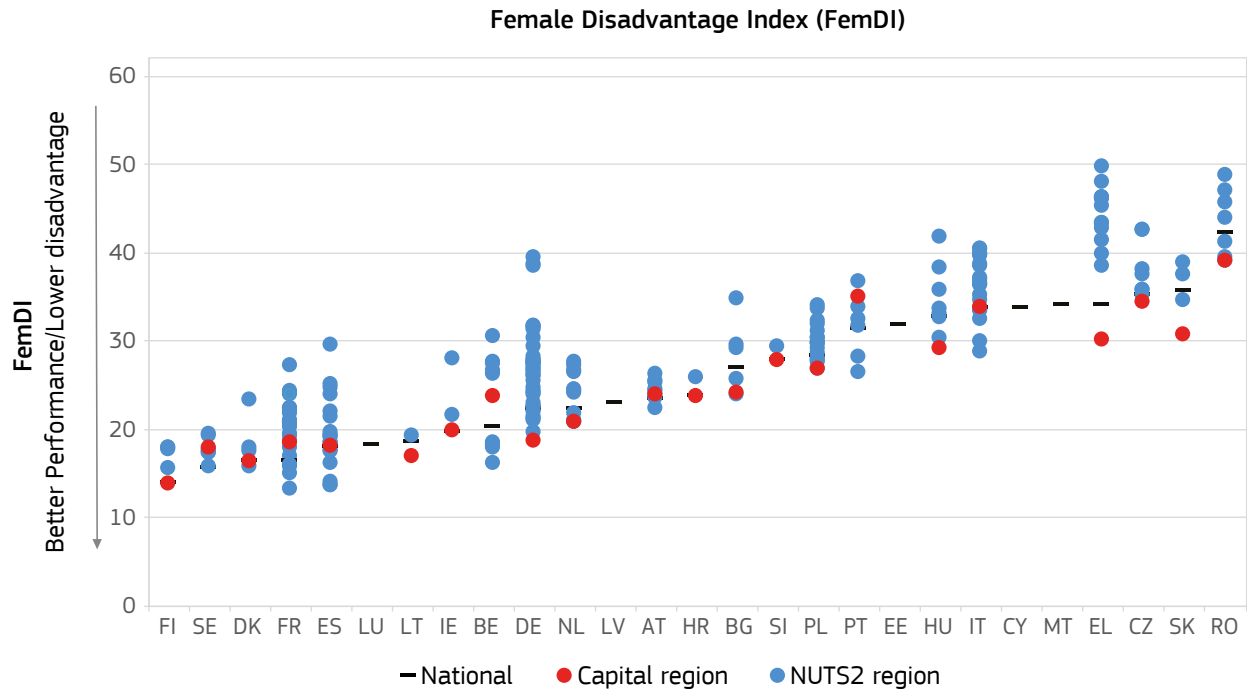
Women in Nordic countries, France and Spain face the smallest disadvantage, while women in Greece and Romania face the biggest disadvantage (Map 2). The four regions with the smallest disadvantage are Auvergne, in France, followed by the Spanish regions of La Rioja and Galicia and the capital region of Finland (Helsinki-Uusimaa).

3.1. COMPARING FEMALE ACHIEVEMENTS AND DISADVANTAGES

EU regions can be mapped into four groups according to whether they score above or below the EU average in terms of female achievement and disadvantage (Map 3).

Having an above-average level of achievement and a below-average level of disadvantage is the best combination, and fortunately almost half the EU population lives in such a region (Figure 7). Most regions in north-western Member States and Spain belong in this category.

The second-best combination is high achievement and high disadvantage. This means that although women achieve quite a lot in these regions, men achieve even more. This grouping can be found in Czechia, Slovenia and some north-western regions, but it is not so common, with only 11 % of the EU population living in this type of region.

The third-best combination is low achievement and low disadvantage. In these regions, female achievement is below average. However, this low achievement is not due to disadvantages but more due to general low achievement. This group is relatively small, consisting of only 13 regions: three each in Belgium and Bulgaria; two each in Croatia and Lithuania; and one each in Latvia, Poland and Portugal. Only 4 % of the EU population lives in these 13 regions.

The least-favourable combination is low achievement and high disadvantage. This means women are not able to achieve a lot and suffer a big disadvantage relative to the men in the region, who also do not perform that well. This is quite prevalent, with 36 % of the EU population living in such regions, mostly in eastern and southern Member States.

3.2. REGIONAL DEVELOPMENT AND FEMALE ACHIEVEMENTS AND DISADVANTAGES

Using the 2021–2027 regional classification for EU cohesion policy (Figure 6), which is based on the average gross domestic product (GDP) per capita of the regions, the impact of regional development on female achievement and disadvantage becomes clear. Four out of five residents of less developed regions live in a region with below-average female achievement and above-average female disadvantage. Only one out of five residents living in a transition or more developed region is faced with below-average female achievement and above-average female disadvantage (Figure 7 and Figure 8).

Figure 6: Regions and population by level of development, 2020

Type of region	Number of regions	Share of regions	Share of population, 2020
Less developed (GDP per head below 75 % of the EU average)	74	31 %	27 %
Transition (GDP per head between 75 % and 100 % of the EU average)	66	28 %	25 %
More developed (GDP per head above 100 % of the EU average)	95	40 %	47 %
EU	235	100 %	100 %

NB: Population on 1 January by age, sex and NUTS 2 region from 2020, Eurostat code: demo_r_d2jan. The French outermost regions could not be included due to missing data for FemAI and FemDI.

Figure 7: Population by level of development and female achievement and disadvantage, 2020

	Low achievement		High achievement		Total
	High disadvantage	Low disadvantage	High disadvantage	Low disadvantage	
Less developed regions	80 %	8 %	4 %	8 %	100 %
Transition regions	15 %	7 %	10 %	69 %	100 %
More developed regions	21 %	1 %	16 %	62 %	100 %
EU	36 %	4 %	11 %	49 %	100 %

NB: Population on 1 January by age, sex and NUTS 2 region from 2020, Eurostat code: demo_r_d2jan.

Figure 8: Female achievement versus female disadvantage
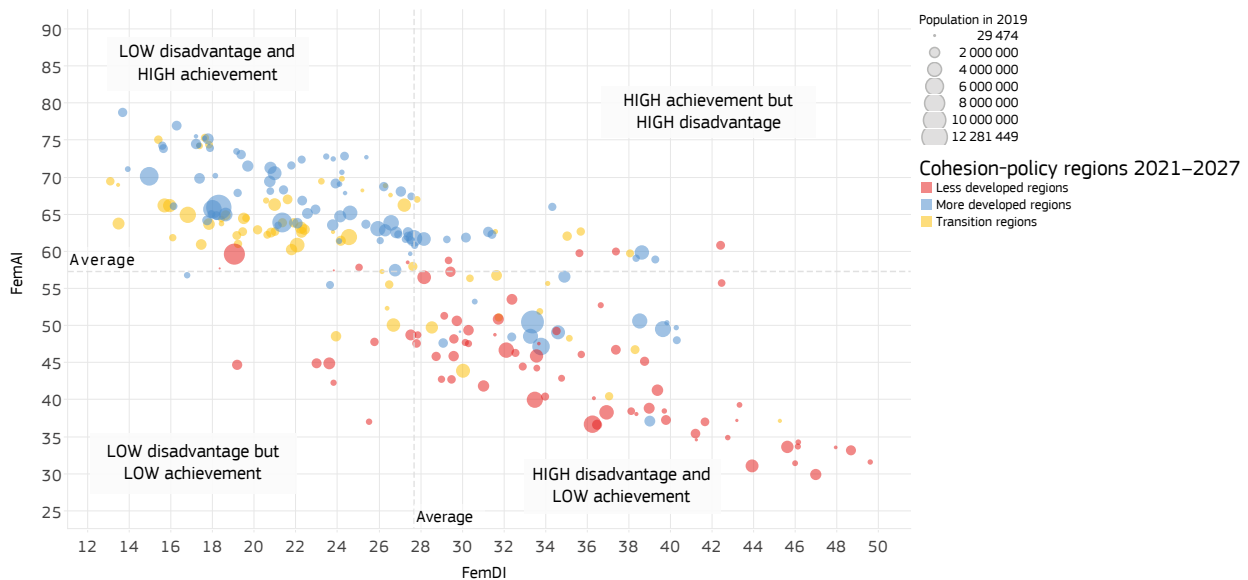
In more developed regions women tend to achieve more (Figure 9). In less developed regions women are less likely to work, have less free time and achieve less in terms of education and training. Political positions in less developed regions are predominantly held by men. This means female experiences are less likely to be considered when designing public policies.

Women are also at a significant disadvantage in less developed regions, where they lag behind men in particular in the subdomains of the index linked to the labour market and political power (Figure 10).

Figure 9: FemAI, by type of region
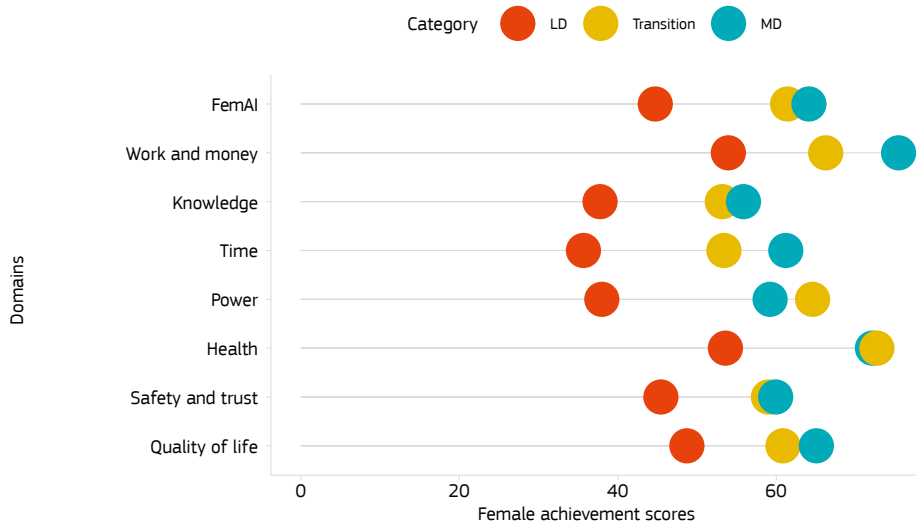
NB: The dot plot shows the domain averages for the three types of region: more developed (MD, blue circles), transition (yellow circles) and less developed (LD, red circles).

Figure 10: FemDI, by type of region
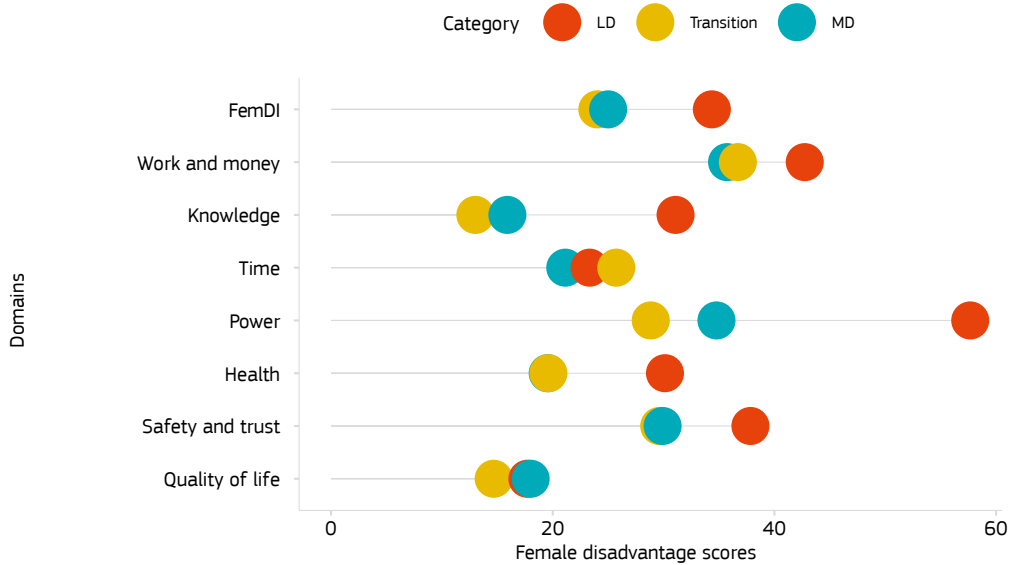
NB: The dot plot shows the domain averages for the three types of region: more developed (MD, blue circles), transition (yellow circles) and less developed (LD, red circles).

4. WOMEN IN POLITICAL POWER

In 2003, the Council of the European Union recommended the balanced participation of women and men in any decision-making body in political or public life, with the percentage of women not falling below 40 %. The UN 2030 Sustainable Development Agenda, which was adopted in 2015, calls for the full and effective participation of and equal leadership opportunities for women at all levels of political and economic decision-making (SDG 5 ([14])). To date, progress is still slow, and ample differences exist among EU Member States and regions.

In 2020, only one in three members of national governments and parliaments, regional executives and assemblies and local councils were women (Figure 11). The share of women has increased by 8 percentage points (pp) since 2011 in national governments and parliaments. The increase for regional executives and assemblies and local councils, however, was considerably slower (2.0, 2.9 and 3.6 pp respectively). At this rate, the national level will reach a share of 50 % women by 2040. Local councils would reach this share only in 2060, regional assemblies in 2070 and regional executives in 2090. Part of the reason for the relatively slow progress at the regional and local levels may be that they started from a significantly higher share in 2011 compared to national governments and parliaments.

Some Member States have had close to 50 % women in elected positions for a decade. For example, Sweden has had a share of over 40 % in their national parliament and their local councils since 2011 (Figure 12 and Figure 13). France has had close to 50 % women in their regional assemblies since 2011 (Figure 14). Some national governments even had more than 50 % women in 2020, including Austria, Finland and Sweden.

Figure 11: Women and political power in the EU, 2011–2020
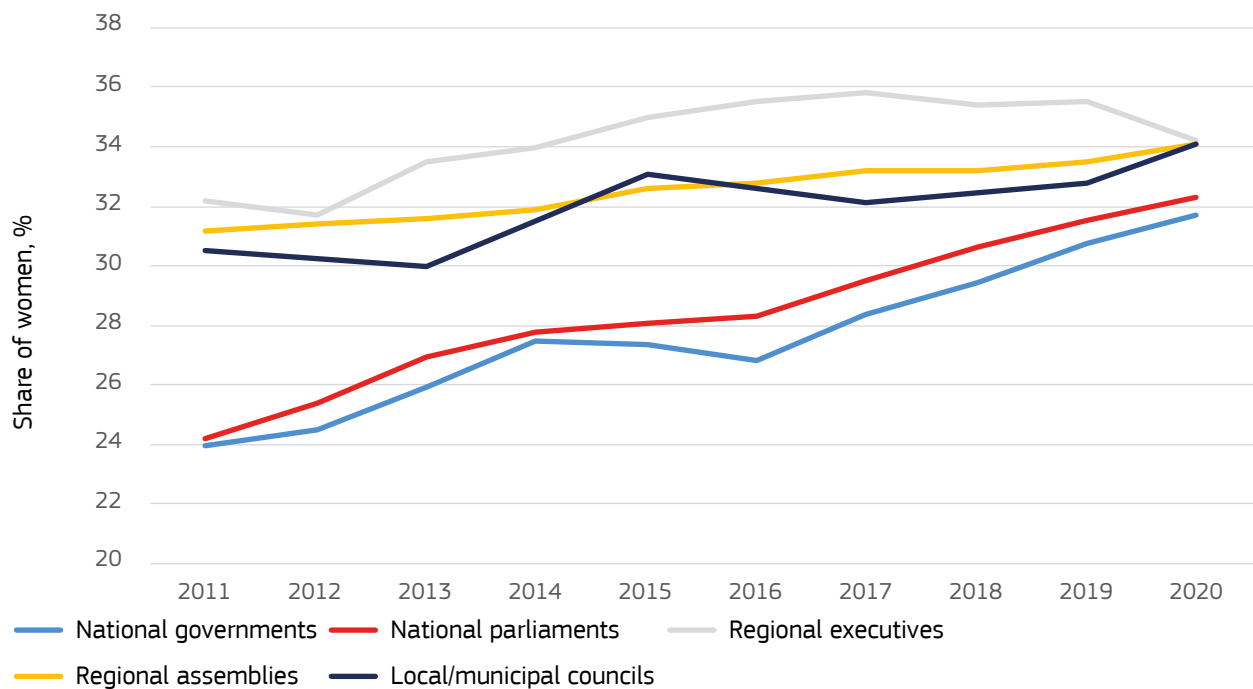
Figure 12: Women in national parliaments per Member State, 2011–2020
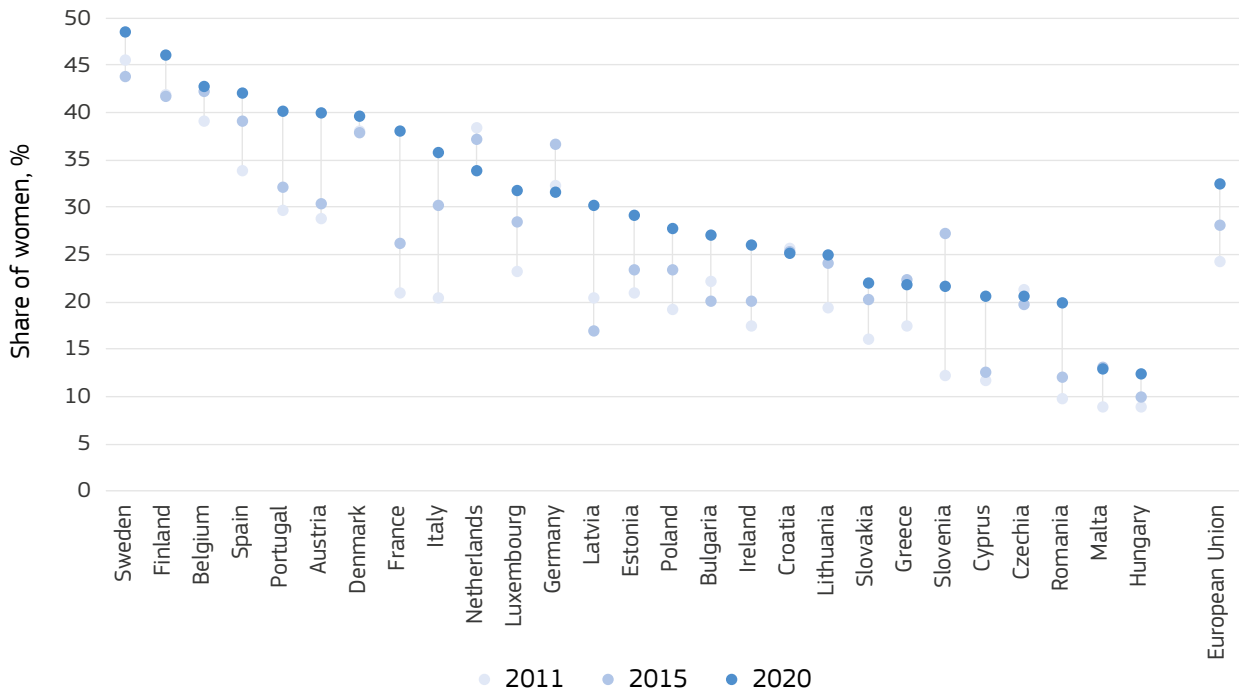
Figure 13: Women in local councils per Member State, 2011–2020
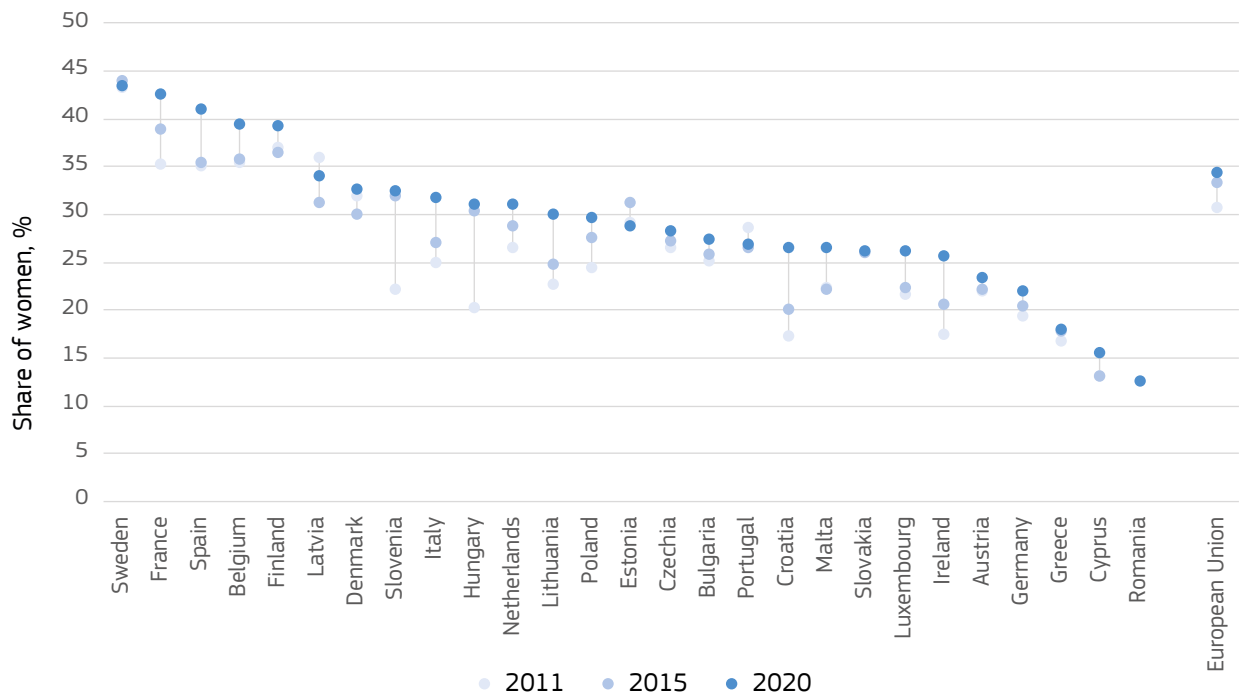
Figure 14: Women in regional assemblies per Member State, 2011–2020

● 2011   ● 2015   ● 2020
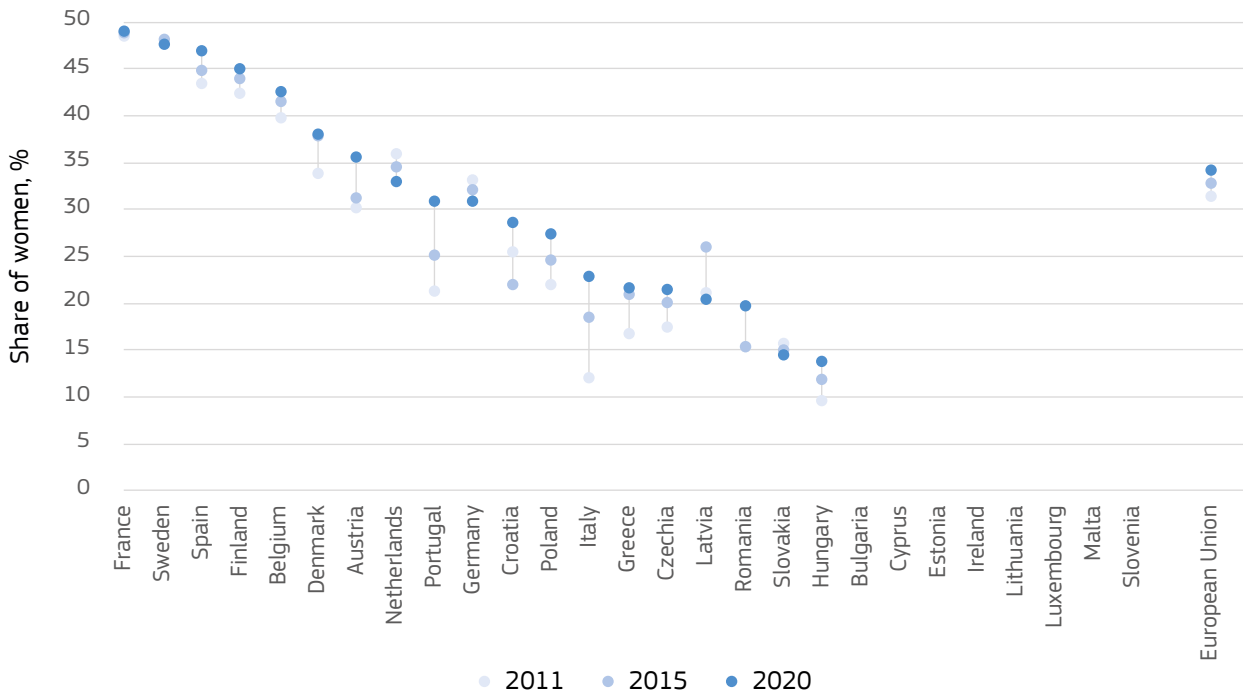
Although the share of women in local councils is a UN SDG indicator, it is not available by NUTS 2 region or by municipality in several countries. As a result, national figures were used in Bulgaria, Croatia, Italy, Hungary, the Netherlands, Austria and Portugal and NUTS 1 figures in Belgium, Germany and France (Map 4). The share of women in regional assemblies (Map 5) was available for some of these countries and revealed substantial variation, highlighting the need also to monitor this below the national level.

Across the EU, in 2021, women made up at least half of the members of regional assemblies in only 16 out of 285 cases. Two regional assemblies in Hungary have no women at all. In several regional assemblies in Hungary and Romania, less than 10 % of members were women. Regional assemblies in Spain, France, Sweden and Finland had the highest share of women: 40 % or more.

Map 4: Women in local councils, 2020
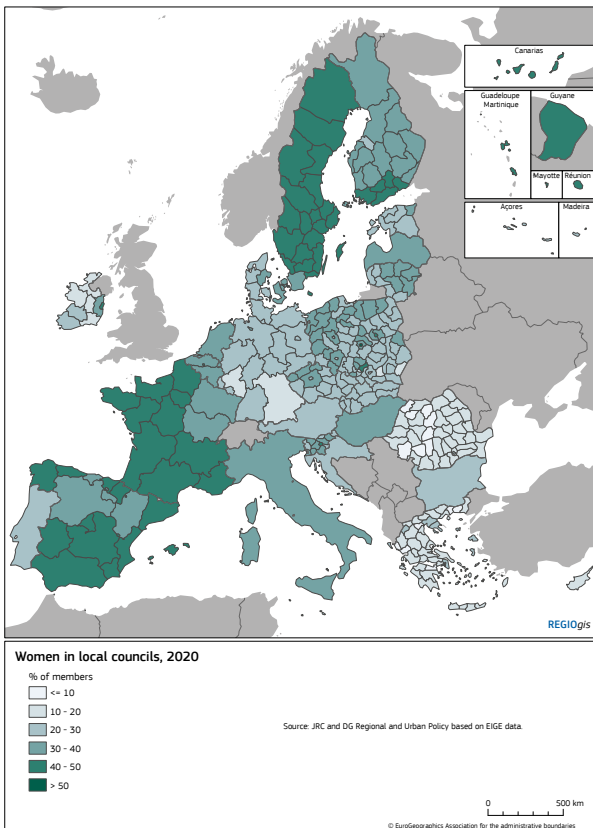
Map 5: Women in regional assemblies, 2021
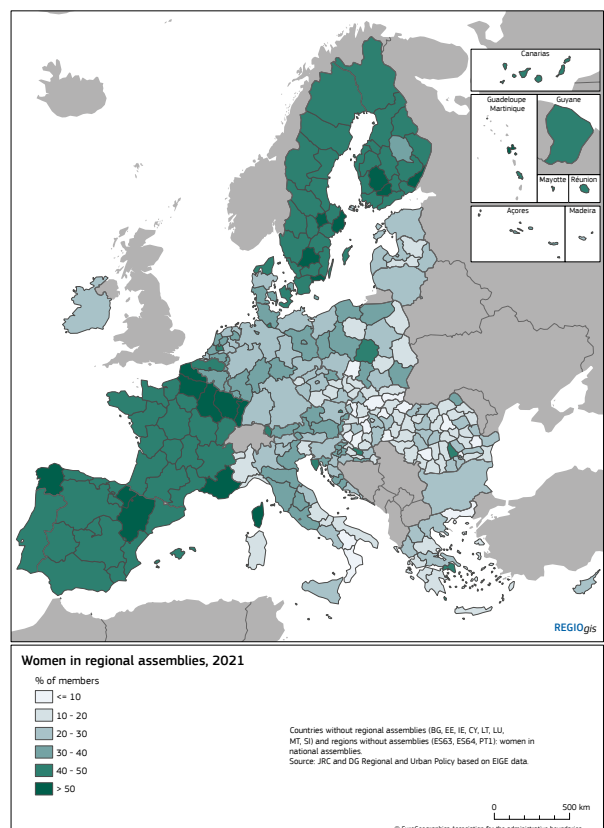
5. FEMALE LIFE SATISFACTION, SAFETY AND CHARITY

People's well-being depends on aspects that someone else can verify and aspects that only the individual can verify. For example, someone's income can be verified, but not whether they are satisfied with that income. This also applies to many other issues, such as satisfaction with life, air quality, public transport or safety. Only a survey can reveal people's actual experiences, opinions, feelings and perceptions. Many issues linked to quality of life, and whether women are at a disadvantage with respect to any of these issues, also depend on where you live. Data from a recent survey on quality of life in European cities (European Commission, 2020) show, for instance, that women are less likely to feel safe in the city than men.

In 2019, Gallup, on behalf of the European Commission, asked people living across the EU's regions about their experiences of and perceptions on several aspects of life, such as well-being, satisfaction with household income, safety and the availability of quality healthcare ([15]). Data show that marked differences exist not only among and within EU Member States but also between men and women.

If we look at life satisfaction, on average and across EU regions, 33 % of women declare themselves to be satisfied with the life they lead (against 35 % for men). This small difference in the EU average hides profound differences among and within EU Member States (Map 6). Women's satisfaction with their life ranges from a percentage of less than 20 % for all regions in Bulgaria and Croatia and a number of regions in Greece and Italy. Satisfaction is particularly low (below 10 %) in the regions of Severoiztochen (5.7 %) and Severen tsentralen (7.1 %) in Bulgaria and Kontinentalna Hrvatska (8.6 %) in Croatia ([16]). At the other end of the scale, more than 70 % of women declare themselves to be satisfied with their current life in all regions in Finland. Moreover, in the two Finnish regions of Helsinki-Uusimaa and Länsi-Suomi more women than men declare themselves to be satisfied with their life, with percentage differences of more than 13 pp. Women are much less satisfied than men in particular in the German region of Sachsen-Anhalt (– 25 pp) and in Nord-Est in Italy (– 16 pp, NUTS 1).

People who feel safe and trust other people also tend to be more satisfied with their life. Individuals who have experienced or who fear crime tend to engage less in outdoor activities and to report higher levels of distress and lower levels of well-being (Hanslmaier, 2013; Brereton et al., 2008; Denkers and Winkel, 1998). Safety is one of the aspects of people's life where the place where one lives does matter, in particular for women. According to a recent survey conducted across European cities, women feel less safe in cities than men (European Commission, 2020). This result is also confirmed across EU regions, where around 80 % of men declared themselves in 2019 to feel safe walking alone at night – a percentage that goes down to 64 % for women (Map 7).

Less than 40 % of women feel safe when walking alone at night in the NUTS 2 regions of Észak-Alföld in Hungary (34.5 %) and Nord-Est in Romania (38.2 %), and in the NUTS 1 region of Kentriki Ellada in Greece (39.3 %). In contrast, more than 8 out of 10 women feel safe in Luxembourg (81 %), in the capital region of Lithuania (82 %), in a number of regions in southern Austria and in Slovenia (both at around 83 %) and in the Spanish NUTS 1 region of Noreste (84 %). Differences between women and men are particularly large (above 30 pp) in the NUTS 1 regions of Région wallonne in Belgium, Voreia Ellada in Greece and Centro in Italy, and in the NUTS 2 regions of Dél-Dunántúl and Észak-Alföld in Hungary.

Volunteering and charitable giving are widely seen as two major indicators of the strength of a civil society. There is a vast body of research finding that volunteering and charitable giving are strongly influenced by the socioeconomic and demographic background characteristics of individuals, including gender. Research on gender differences in charitable giving finds that women are more likely to donate money and volunteer time to charitable organisations than men (Einolf, 2011; Rooney et al., 2005; Simmons and Emanuele, 2007).

Across EU regions, on average, 3 out of 10 people declared that they had donated money to charity, with no marked differences between women and men. Differences do exist, however, among EU regions (Map 8). While less than 10 % of women in the Greek regions of Voreia Ellada and Kentriki Ellada declared that they had donated money to charity ([17]), more than 7 out of 10 women declared that they had done so in the Dutch NUTS 1 regions of Oost-Nederland and Noord-Nederland, and in the NUTS 2 regions of Jihovýchod and Střední Morava in Czechia.

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[15]   A minimum of 500 interviews were conducted in each NUTS region, amounting to around 60 000 interviews across EU 125 NUTS 1/NUTS 2 regions.
[16]   In these regions, satisfaction with life is below 10 % for men as well.
[17]   In these regions the percentages are below 10 % for men as well.

Map 6: Women's life satisfaction, 2019

Women who feel satisfied with their current life, 2019

% of women aged 15+

- <= 20.0
- 20.1 - 25.0
- 25.1 - 30.0
- 30.1 - 40.0
- 40.1 - 50.0
- > 50.0
- No data

Percentages are based on respondents who answered 8, 9 or 10 to the question:
'Please imagine a ladder with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you.
On which step of the ladder would you say you personally feel you stand at this time?'
Source: Gallup World Poll (WP16).

0   500 km

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Map 7: Women who feel safe walking alone at night, 2019

Women who declared that they feel safe walking alone at night, 2019

% of women aged 15+

- <= 40.0
- 40.1 - 50.0
- 50.1 - 60.0
- 60.1 - 70.0
- 70.1 - 80.0
- > 80.0
- No data

Percentages are based on all respondents excluding don't know and refused to answer.
Question: 'Do you feel safe walking alone at night in the city or area where you live?
Source: Gallup World Poll (WP113).

0   500 km

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Map 8: Female charitable giving, 2019

Share of women who donated money to a charity, 2019

% of women

- <= 20.0
- 20.1 - 30.0
- 30.1 - 40.0
- 40.1 - 50.0
- 50.1 - 60.0
- > 60.0
- No data

Source: JRC based on Gallup data.

0   500 km

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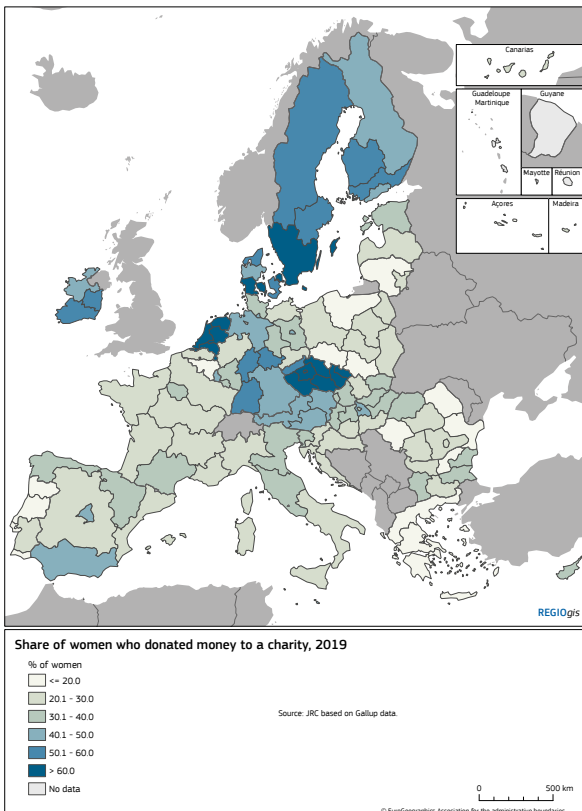
6. WHY EVERYONE BENEFITS FROM MORE GENDER EQUALITY

6.1. LOW FEMALE ACHIEVEMENT IS LINKED TO LOW GROSS DOMESTIC PRODUCT PER CAPITA

Equality between men and women not only positively affects people's well-being, it also has an impact on the economy as a whole, by stimulating economic growth via, for instance, increased productivity driven by a higher rate of women's participation in the labour market (Morais Maceira, 2017; Bertay et al., 2020).

Gender equality, as measured by FemAI, is positively correlated to GDP per capita (Figure 15, with an R^2 of 0.3), but the relationship is not very strong and is far from linear. A closer look at the data shows that, as regions reach higher levels of income, this positive relationship becomes weaker. Also, a high level of GDP per capita does not necessarily imply a more gender-equal society. For instance, the capital region of Bucureşti-Ilfov in Romania and the capital regions in Denmark and Sweden have similar levels of GDP per capita, but very different gender achievement scores (among the highest for Hovedstaden (the Danish capital region) and Stockholm but one of the lowest for Bucureşti-Ilfov). Some women live in regions with similar levels of female achievement, although with very different levels of GDP per capita (e.g. the Limousin region in France, with a low level of GDP her head, and the NUTS 2 Southern region in Ireland, with one of the highest levels of GDP per capita in the EU).

Figure 15: Relationship between FemAI and GDP per capita at the EU regional level
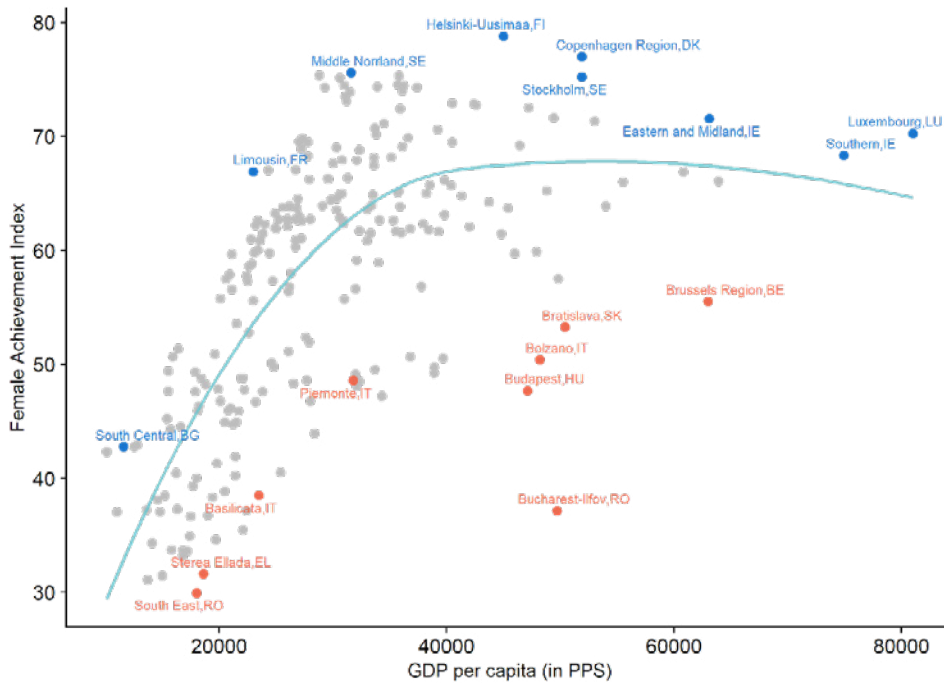
6.2.   WHEN WOMEN ACHIEVE MORE, HUMAN DEVELOPMENT IS HIGHER

While GDP could be a viable measure of economic performance, it is ultimately too narrow an indicator to describe human development in its full extent (Stiglitz et al., 2009). Income, commodities and wealth, taken alone, may fail to capture some basic features of people's standards of living, such as a long and healthy life, being knowledgeable and having a decent standard of living (Bubbico and Dijkstra, 2011). The UN-HDI, initially developed as an alternative to GDP per capita to measure human development, has been adapted to the regional case and to the specific situation of EU regions ([18]) by Bubbico and Dijkstra (2011) and Hardeman and Dijkstra (2014).

Female achievement and human development are highly correlated (Figure 16), with an R^2 of 0.6. Female achievement goes hand in hand with the measure of human development in many regions in Denmark, the Netherlands, Finland and Sweden, where the performance is at the top end for both indices. In contrast, in a number of regions in Bulgaria, Greece, Hungary and Romania, performance is low for both dimensions. Some regions (e.g. Île-de-France in France, along with Prov. Brabant Wallon and Région de Bruxelles-Capitale/Brussels Hoofdstedelijk Gewest in Belgium) have higher scores of human development compared with the expected female achievement scores. The opposite holds true for the Região Autónoma dos

Açores in Portugal and Severozapaden in Bulgaria. Only two regions are at the top in both indices (having scores greater than the 95th percentile), and these are the capital regions in Finland (Helsinki-Uusimaa) and Sweden (Stockholm).

The EU Human Development Index at the regional level

Based on the UN-HDI, a composite indicator at the subnational level has been developed by DG Regional and Urban Policy to describe regional performance that goes beyond GDP (Bubbico and Dijkstra, 2011).

The EU Human Development Index (EU-HDI) is a human development indicator that (i) is based on the tripartite structure of the UN-HDI, but (ii) is relevant to the European context, (iii) takes the region instead of the country as the basic unit of analysis and (iv) enables one to compare regions both across sections and over time.

More precisely, the EU-HDI looks at human development across three dimensions: health, knowledge and income. Four indicators are used in total: life expectancy at birth for the health dimension; share of people with low and high educational attainment for the knowledge dimension; and GDP per capita for the income dimension.

Figure 16: Relationship between FemAI and EU-HDI, at the EU regional level

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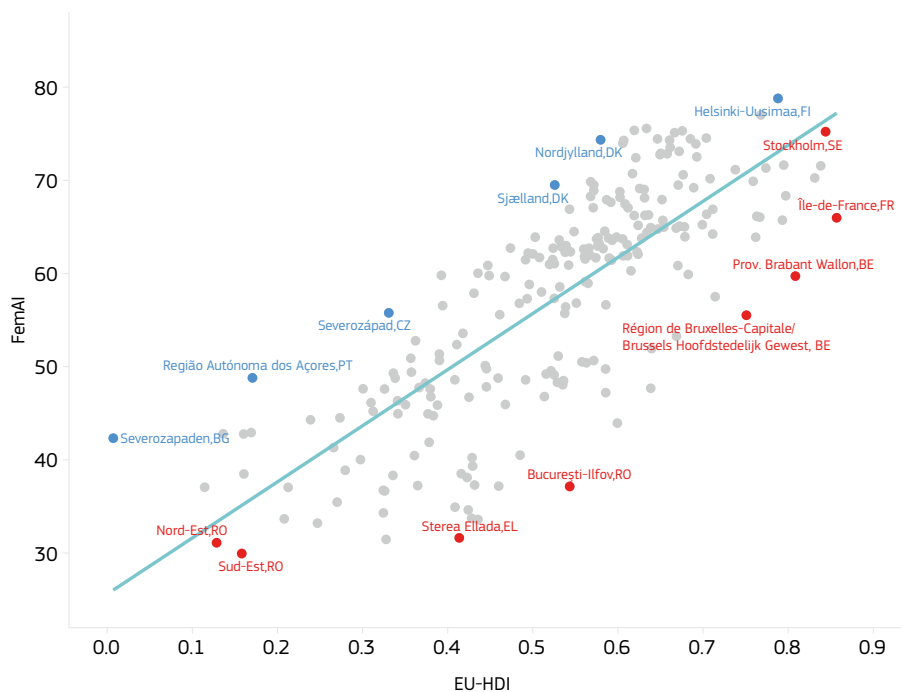
[18].   The UN-HDI, at the country level, uses a definition of human development that is especially suited to describing the performance of developing countries.

6.3. WOMEN FLOURISH IN REGIONS WHERE THE QUALITY OF THE INSTITUTIONS IS HIGHER

The quality of institutions – a term for describing how impartial, efficient and uncorrupted a government is – is a major factor for understanding differences in the socioeconomic performance of countries and regions (Kaufmann et al, 1999; Charron et al., 2014; Rodríguez-Pose and Garcilazo, 2015). The relationship between FemAI and EU-EQI is positive and strong (Figure 17, with an R^2 of 0.8).

Indeed, the hypothesis that regions do better in gender-related matters when the quality of institutions is higher is confirmed ([19]). In regions with better female achievement, such as those in Denmark, the Netherlands, Finland and Sweden, the quality of the institutions is higher. Half of the Greek regions, along with the Romanian regions of Sud-Est and Nord-Est, score better in the Quality of Government Index than on female performance. In contrast, the Bulgarian region of Yugozapaden and the Romanian București-Ilfov region perform better in FemAI than on quality of governance ([20]).

This correlation does not tell us what causes what, but it is likely that the influence runs both ways. For example, it could be that women can achieve more in less corrupt regions, and that having more women in power reduces corruption.

The European Quality of Government Index at the regional level

The European Quality of Government Index (EQI)[21] has been developed by the Quality of Government Institute of Gothenburg University. It is a metric that allows the quality of government, i.e. how impartial, efficient and uncorrupted a government is, to be compared within and across countries in a multi-country context. It aims to provide researchers and policymakers with a tool to better understand how governance varies within countries and over time. Institutional quality is defined as a combination of high impartiality, high quality of public-service delivery and low corruption. The index focuses on both perceptions of and experiences with public-sector corruption, along with the extent to which citizens believe various public-sector services are impartially allocated and of good quality. The 2021 EQI provides data for 238 NUTS 2 regions in the EU, in addition to the time-series regional data set, where a common sample of regions over the four waves is kept. The data are standardised with a mean of zero, and higher scores imply a higher quality of government.

For more details see: https://www.gu.se/en/quality-government/qog-data/data-downloads/european-quality-of-government-index

Figure 17: Relationship between FemAI and EQI at the EU regional level
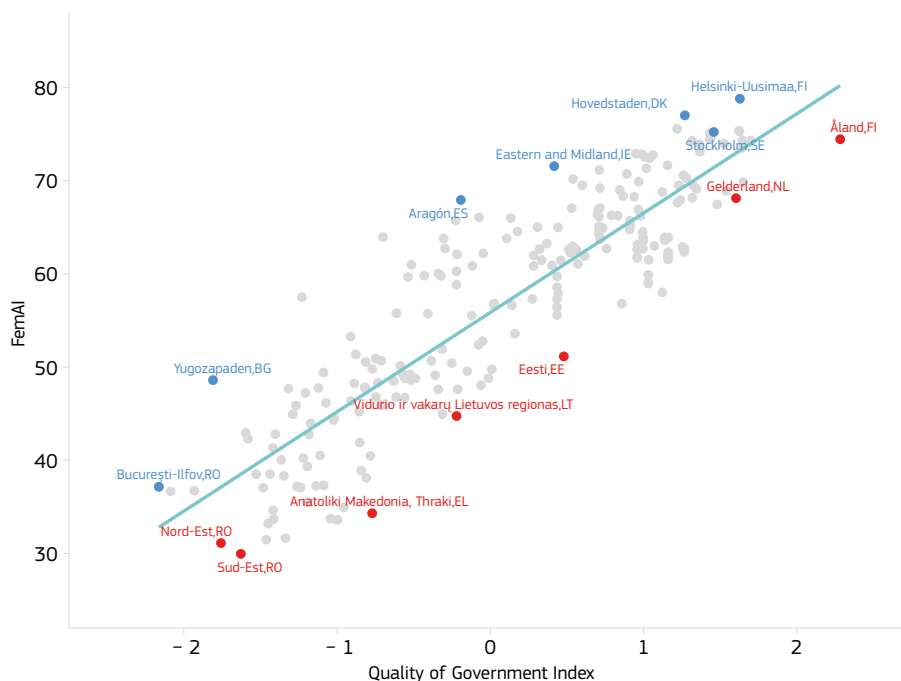
19. As in the previous version of data for both FemAI and EQI, both indices converge on the better scoring countries, while at the other end of the distributions there is a larger level of heteroscedasticity.
20. There is a noticeable change concerning the Bulgarian and Hungarian regions that score worse on quality of governance than on gender-related matters. This may be related to the drop in EQI scores in most regions in Hungary, as cited in Charron et al. (2021).
21. https://www.gu.se/en/quality-government/qog-data/data-downloads/european-quality-of-government-index

7. CONCLUSIONS

The two regional indices, FemAI and FemDI, show two sides of the problems faced by women. The first measures how women perform relative to the best-performing women. The second reveals whether women are at a disadvantage compared to the men in the same region. They show that in many EU regions, women could achieve more and still face disadvantages in the EU. Almost no regions have a low level of female disadvantage and a low level of female achievement. This suggests that the lower performance of women in a region is always accompanied by disadvantages. If there are fewer jobs or resources to be had, a smaller share of them go to women.

The level of development of a region also plays a clear role. Women in a less developed region are four times more likely to live in a low-achievement and high-disadvantage region than women in a more developed region.

While the share of women in power has increased since 2011 at the national, regional and local levels, it is still too low (33 %). At the current speed, it will take multiple decades to reach parity. Several Member States are already close to parity, however.

Asking women about their life satisfaction, whether they feel safe or if they donate money to charity also reveals stark differences within the EU. Life satisfaction tends to be higher in more developed regions. Feeling safe differs widely, and does not seem to be influenced by the level of development of a region.

The positive correlations with three other indicators suggest that allowing women to flourish has broader benefits. First, in regions where women achieve more, GDP per capita is higher. This is especially the case at the lower end of the development spectrum. Second, human development is higher in regions where women achieve more, which suggests that both men and women are better off in such regions. Third, regions where women achieve more also have a higher quality of government.

This new regional gender equality monitor was designed to inspire policies that allow women to achieve more and reduce the disadvantages they face. It will be updated every 3 years.

8. ANNEX. METHODOLOGY

The gender equality monitor captures 33 issues that are relevant across all regions and contexts. These are grouped into the following seven domains: 1. Work and money; 2. Knowledge; 3. Time; 4. Power; 5. Health; 6. Safety, security and trust; and 7. Quality of life.

The **Work and money** domain measures: first, the extent to which women and men can benefit from equal access to employment and good working conditions; and second, the gender inequalities in access to financial resources. It combines four indicators: the full-time and part-time employment rate, excluding involuntary part-time work; the unemployment rate; employed persons with tertiary education; and mean annual earnings.

The **Knowledge** domain measures gender inequalities in educational attainment, participation in education and training, gender segregation and leavers from education. It is measured through four indicators: the percentage of tertiary graduates; participation in formal and non-formal education and training; early leavers from education and training; and young people neither in employment nor in education and training.

The **Time** domain measures how women and men engage in social activities. Concretely, it measures gender gaps in women's and men's engagement in sport, cultural or leisure activities outside of their home, combined with their engagement in voluntary and charitable activities. It combines four indicators: the percentage of people regularly participating in leisure activities; those donating money to a charity; those helping a stranger who needed help; and those volunteering time to an organisation.

The **Power** domain measures gender equality in decision-making positions in the political field. The domain comprises five indicators: the share of ministers in national governments; the share of members in national parliaments; the share of members in regional assemblies; the share of members in regional executives; and the share of members in local or municipal councils. Regional assemblies ([22]) and executives ([23])

exist in diverse territorial units, from NUTS 1 level to NUTS 3 level. The data from municipal councils ([24]) have been collected in various territorial units, from NUTS 0 level to NUTS 3 level. For Member States where regional assemblies and executives do not exist ([25]), national figures from parliaments are imputed for regional assemblies and national figures from governments are imputed for regional executives.

The **Health** domain measures health status and access to health services. It combines six indicators: self-perceived health; health problems; life expectancy; death rate caused by malignant neoplastic and cardiovascular diseases; population without unmet needs for medical examination; and population without unmet needs for dental examination.

The **Safety, security and trust** domain measures the perceptions of people concerning their personal safety and security in the areas where they live and the trust they feel towards their family, their social circle and authorities. It consists of four indicators: share of people who feel safe walking alone at night; share of people who have relatives or friends to count on for help; share of people who believe that women are treated with respect; and share of people who voice their opinion to a public official.

Lastly, the **Quality of life** domain captures the level of well-being using the following six indicators: the share of people who feel well-rested; the share of people who smile or laugh a lot; those who experience enjoyment; those who feel satisfied with life; those who have opportunities to make friends; and those who feel satisfied with the freedom in their life. The indicators distributed in the seven domains are illustrated in Figure A1.

As already stressed in the pilot edition of *The Regional Gender Equality Monitor* ([26]) the objective has been to include both the gender gaps and the levels of achievement in the monitor. However, these are kept separate in order to ensure that their contributions are clear and transparent. Therefore, two composite indices are constructed that address two specific and complementary aspects of gender equality: one index assesses the level of female achievement and the other index assesses gender gaps. The indices are called the Female Achievement Index (FemAI) and the Female Disadvantage Index (FemDI).

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[22]. NUTS 3 level for CZ, HR, LV, HU, RO, SK, FI and SE (converted to NUTS 2 in the monitor). NUTS 2 level for DK, EL, ES, FR (except Alsace, Champagne-Ardenne, Lorraine, Aquitaine, Limousin, Poitou-Charentes, Auvergne, Rhône-Alpes, Bourgogne, Franche-Comté, Languedoc-Roussillon, Midi-Pyrénées, Nord-Pas de Calais, Picardie and Normandie, which refer to NUTS 1), IT, NL, AT and PL. NUTS 1 level for BE, DE and PT (only two NUTS 1 regions – Madeira and Azores. Continental NUTS imputed with national values).

[23]. NUTS 3 for CZ, HR, FI and SE (converted to NUTS 2 in the monitor). NUTS 2 level for EL, ES, IT, NL, AT and PL. NUTS 1 level for BE, DE and PT (only two NUTS 1 regions – Madeira and Azores. Continental NUTS imputed with national values).

[24]. Municipality data are collected and converted to NUTS 2 level for DK, EE, EL, IE, LT, LU, MT, PL, RO, SI, SK, FI and SE. Data for CZ are collected at NUTS 3 level (and converted to NUTS 2 level), data for ES and FR are collected at NUTS 2 level and data for BE and DE (with DE3, DE6, DE8, DEC, DEE and DEG missing) are collected at NUTS 1 level. Municipality data for BG, IT, HR, CY, LV, HU, NL, AT and PT have not been collected but are given at aggregate national level in the gender equality monitor.

[25]. Eight Member States do not have regional assemblies (BG, EE, IE, CY, LT, LU, MT and SI) and 14 Member States do not have regional executives (BG, DK, EE, IE, FR, CY, LV, LT, LU, HU, MT, RO, SI and SK).

[26]. Norlén, H., Papadimitriou, E. and Dijkstra, L., *The Regional Gender Equality Monitor – Measuring female disadvantage and achievement in EU regions*, EUR 29679 EN, Publications Office of the European Union, Luxembourg, 2019, doi:10.2760/472693 (https://publications.jrc.ec.europa.eu/repository/handle/JRC115814).

Figure A1: Indicators in the framework

Domain	Nr	Variable	Source (code)	Geographic Level	Year
1. Work & Money	1	Full-time and part-time employment rate excluding involuntary part-time work, 20-64 years	Special request Eurostat - EU LFS	NUTS2	2019
	2	Unemployment rate, 20-64 years	Eurostat - EU LFS (lfst_r_lfu3rt)	NUTS2	2019
	3	Persons with tertiary education who are employed, 20-64 years	Eurostat - EU LFS (lfst_r_lfe2emprc)	NUTS2	2019
	4	Mean monthly earnings (NACE Rev. 2, categories B-S excluding O), in PPS	Eurostat - EU SES (earn_ses18_20)	NUTS0	2018
2. Knowledge	5	Graduates of tertiary education (ISCED 5-8), 25-64 years	Eurostat - EU LFS (edat_lfse_04)	NUTS2	2019
	6	People participating in formal or non-formal education and training, 25-64 years	Eurostat - EU LFS (trng_lfse_04)	NUTS2	2019
	7	Early leavers from education and training, 18-24 years	Eurostat - EU LFS (edat_lfse_14)	NUTS0	2019
	8	Young people neither in employment nor in education and training, 15-29 years	Eurostat - EU LFS (edat_lfse_22)	NUTS2	2019
3. Time	9	Regularly participate in a leisure activity	Eurostat - EU-SILC (PD060)	NUTS0 for DE, NL NUTS1 for AT, BE, BG, DK, EL, HR, HU, IE, IT, LT, PL, RO, SE, SI, SK NUTS2 for all other countries	2018 IE and IT 2019 for all other countries
	10	Donated money to a charity	Gallup World Poll (WP108)	NUTS1 for AT, BE, DE, EL, ES, FR, IT, NL, PL, SE NUTS2 for all other countries	2019
	11	Helped a stranger/ someone you didn't know, who needed help	Gallup World Poll (WP110)	NUTS1 for AT, BE, DE, EL, ES, FR, IT, NL, PL, SE NUTS2 for all other countries	2019
	12	Volunteered the time to an organization	Gallup World Poll (WP109)	NUTS1 for AT, BE, DE, EL, ES, FR, IT, NL, PL, SE NUTS2 for all other countries	2019

4. Power	13	Share of ministers in national governments	EIGE Gender Statistics DB (pdt_wmid_natgov)	NUTS0	2020
	14	Share of members in national parliaments	EIGE Gender Statistics DB (pdt_wmid_natparl)	NUTS0	2020
	15	Share of members in regional assemblies	EIGE Gender Statistics DB (pdt_wmid_region)	Regional assemblies missing in BG, CY, EE, IE, LT, LU, MT, SI (imputing NUTS0 from national parliaments) NUTS1 for BE, DE and PT NUTS2 for all other countries	2020
	16	Share of members of regional executives	EIGE Gender Statistics DB (pdt_wmid_region)	Regional executives missing in BG, CY, DK, EE, FR, HU, IE, LT, LU, LV, MT, RO, SI, SK (imputing NUTS0 from national goverments) NUTS1 for BE, DE and PT NUTS2 for all other countries	2020
	17	Share of members of local/municipal councils	Special request EIGE and Gender Statistics DB	Aggregate municipal NUTS0 for AT, BG, CY, HR, HU, IT, LV, NL, PT NUTS1 for BE and DE NUTS2 for all other countries	2020
5. Health	18	Self-perceived health, good or very good (% population)	Eurostat – EU-SILC (PH010)	NUTS0 for DE, NL NUTS1 for AT, BE, BG, DK, EL, HR, HU, IE, IT, LT, PL, RO, SE, SI, SK NUTS2 for all other countries	2018 IE and IT 2019 for all other countries
	19	Health problem that prevents you from doing any of the things people your age normally can do	Gallup World Poll (WP23)	NUTS1 for AT, BE, DE, EL, ES, FR, IT, NL, PL, SE NUTS2 for all other countries	2019
	20	Life expectancy in absolute value at birth	Eurostat (demo_r_mlifexp)	NUTS2	2018
	21	Death rate caused by malignant neoplastic and cardiovascular diseases	Eurostat (hlth_cd_ysdr2)	NUTS2	2016
	22	Population without unmet needs for medical examination (% population)	Eurostat – EU-SILC (PH040)	NUTS0 for DE, NL NUTS1 for AT, BE, BG, DK, EL, HR, HU, IE, IT, LT, PL, RO, SE, SI, SK NUTS2 for all other countries	2018 IE and IT 2019 for all other countries
	23	Population without unmet needs for dental examination (% population)	Eurostat – EU-SILC (PH060)	NUTS0 for DE, NL NUTS1 for AT, BE, BG, DK, EL, HR, HU, IE, IT, LT, PL, RO, SE, SI, SK NUTS2 for all other countries	2018 IE and IT 2019 for all other countries

6. Safety, Security and Trust	24	Safe walking alone at night in the city/ area where you live	Gallup World Poll (WP113)	NUTS1 for AT, BE, DE, EL, ES, FR, IT, NL, PL, SE NUTS2 for all other countries	2019
	25	Relatives/ friends you can count on to help you	Gallup World Poll (WP27)	NUTS1 for AT, BE, DE, EL, ES, FR, IT, NL, PL, SE NUTS2 for all other countries	2019
	26	Women in this country are treated with respect and dignity	Gallup World Poll (WP9050)	NUTS1 for AT, BE, DE, EL, ES, FR, IT, NL, PL, SE NUTS2 for all other countries	2019
	27	Voiced your opinion to a public official	Gallup World Poll (WP111)	NUTS1 for AT, BE, DE, EL, ES, FR, IT, NL, PL, SE NUTS2 for all other countries	2019
7. Quality of Life	28	Feel well-rested	Gallup World Poll (WP60)	NUTS1 for AT, BE, DE, EL, ES, FR, IT, NL, PL, SE NUTS2 for all other countries	2019
	29	Smile or laugh a lot	Gallup World Poll (WP63)	NUTS1 for AT, BE, DE, EL, ES, FR, IT, NL, PL, SE NUTS2 for all other countries	2019
	30	Experience enjoyment	Gallup World Poll (WP67)	NUTS1 for AT, BE, DE, EL, ES, FR, IT, NL, PL, SE NUTS2 for all other countries	2019
	31	Life satisfaction	Gallup World Poll (WP16)	NUTS1 for AT, BE, DE, EL, ES, FR, IT, NL, PL, SE NUTS2 for all other countries	2019
	32	Opportunities to make friends	Gallup World Poll (WP10248)	NUTS1 for AT, BE, DE, EL, ES, FR, IT, NL, PL, SE NUTS2 for all other countries	2019
	33	Satisfied with the freedom in your life	Gallup World Poll (WP134)	NUTS1 for AT, BE, DE, EL, ES, FR, IT, NL, PL, SE NUTS2 for all other countries	2019

The first index, FemAI, measures the level of female achievement compared to the best regional female performance. FemAI varies between 0 (lowest performance) and 100 (best performance). The second index, FemDI, assesses female disadvantage by measuring regional differences when women are doing worse than men. The lowest possible score is 0 (no disadvantage) and the highest possible score is 100 (largest disadvantage). Female disadvantage and achievement are assessed in 235 regions (NUTS 2 level).

Female Achievement Index (FemAI) measures the level of female achievement compared to the best regional female performance. For this reason, only the percentages of women individuals for each indicator are used in the construction of the index. The seven domains assign scores for each region between 0 (lowest performance) and 100 (best performance). Combining them into a single summary measure allows us to synthesise female achievement into a single measure.

The following steps are used to construct FemAI.

OUTLIER DETECTION
Potentially problematic indicators that could bias the overall index results were identified on the basis of two measures related to the shape of the distributions, skewness and kurtosis. A practical rule suggested by the Joint Research Centre is that a value should be treated if the indicators have absolute skewness greater than 2.0 and kurtosis greater than 3. In the current version, no outliers were found.

NORMALISATION
The metric used is the distance from the best performer for each indicator (min-max normalisation). This is reflected on a scale from 0 to 100, where 0 represents the lowest performance and 100 represents the best. At the same time, the indicators that have a negative direction are reversed.

$$y = 100 \times (x - min) / (max - min)$$

where min and max are the minimum and maximum values in the set of observed values.

AGGREGATION
Simple arithmetic averages were used at the two aggregation levels: each of the seven domains uses a simple arithmetic average of the underlying indicators and the overall index score is, again, an arithmetic average of the seven domains mentioned above. The rationale for this choice is that arithmetic averages are easy to interpret and allow perfect compensability between indicators, whereby a high score in one indicator can fully offset low scores in other indicators.

If a region scored the highest on all indicators it would have the score of 100. Because the highest-scoring region differs per indicator, however, the highest score is not 100 but 79 (the

Finnish capital region Helsinki-Uusimaa). The Romanian region Sud-Est has the lowest index score of 30, which shows that it does not score lowest on all 33 indicators.

Female Disadvantage Index (FemDI) measures gender gaps. It investigates women's disadvantage, i.e. how close women are to reaching equality with men. At the same time, however, it does not reward or penalise regions for having a gender difference in the other direction. It is based on 30 indicators, instead of 33, because three indicators (early leavers from education and training; life expectancy; and death rate caused by malignant neoplastic and cardiovascular diseases) show no or almost no female disadvantage. The metric used is the difference ([27]) between men and women, and the scale is one sided.

Our aim is to focus on whether the gaps between women and men in the chosen indicators are small, rather than whether women are winning the 'battle'. Hence, the index rewards regions that reach the point where outcomes for women equal those for men, but it neither rewards nor penalises cases in which women are outperforming men in particular indicators in some regions. If, in a region, female performance is equal to or better than that of men for a specific indicator, the difference is set to 0 because no female disadvantage was detected. To truncate the gender gaps at the equality point is in line what is highly recommended in the literature ([28]) ([29]) ([30]) ([31]) ([32]) ([33]). Thus, a region that has a lower unemployment rate for women than men will score equal to a region where men's and women's unemployment rates are the same.

The overall FemDI is constructed using the following steps.

CONVERT TO DIFFERENCES
Initially, all data are converted to male minus female differences or the other way round when the direction of the indicator is opposite. The exception to this rule is the indicator 'Mean monthly earnings' (indicator 4, earn_ses18_20), for which a ratio is used instead, as a difference would make little sense.

OUTLIER DETECTION
Potentially problematic indicators that could bias the overall index results were identified using the same skewness and kurtosis rule as in the FemAI. In this case, only the indicator 'Relatives/friends you can count on to help you' (indicator 25, WP27) was treated using a winsorisation method by having the three highest – outlying – values replaced with the subsequent highest value.

NORMALISATION
The truncated indicators measuring the difference between men and women are normalised using the min-max normalisation method:

$$y = (x - min) / (max - min)$$

where min and max are the minimum and maximum values in the set of observed values.

WEIGHTING
In contrast to FemAI, indicators are aggregated to the seven domains using weightings, because some indicators have a high number of 0 values, i.e. no disadvantage. The weightings are the share of non-zero values of each indicator. These values are rescaled so they sum to 1 within each domain. In this way, indicators that reveal a disadvantage in many regions have a bigger impact than indicators that only show a disadvantage in a few regions.

AGGREGATION
As stated above, at the first aggregation level (from indicators to the seven domains) weighted arithmetic mean was used. However, at the second aggregation level simple (equal) arithmetic average was used to go from the seven domains to the overall index score, as was the case for the FemAI.

For all domains, the lowest possible score is 0 (parity) and the highest possible score is 100 (imparity). Similar to the domain scores, the final index value ranges between 0 (parity) and 100 (imparity), thus allowing for comparisons relative to ideal standards of equality, in addition to relative country rankings.

The French region of Auvergne has the smallest disadvantage, with a FemDI of 13. The Greek region of Sterea Ellada has the biggest disadvantage, with a FemDI of 50, which shows that this region scored poorly only on some of the indicators, as the score is well below the theoretical maximum of 100.

[27.] Plantenga, J., Remery, C., Figueriredo, H. and Smith, M. (2009), 'Towards a European Union gender equality index', *Journal of European Social Policy*, Vol. 19, No 1, pp. 19–33.

[28.] Klasen, S. and Schüler, D. (2011), 'Reforming the gender-related index and the gender empowerment measure: Implementing some specific proposals', *Feminist Economics*, Vol. 17, No 1, pp. 1–30, doi:10.1080/13545701.2010.541860.

[29.] Beneria, L. and Permanyer, I. (2010), 'The measurement of socio-economic gender inequality revisited', *Development and Change*, Vol. 41, No 3, pp. 375–399.

[30.] Permanyer, I. (2013), 'A critical assessment of the UNDP's Gender Inequality Index', *Feminist Economics*, Vol. 19, No 2, pp. 1–32.

[31.] Klasen, S. (2017), 'UNDP's gender-related measures: Current problems and proposals for fixing them', *Discussion Papers*, No 220, Georg-August-Universität Göttingen, Göttingen (https://www.econstor.eu/bitstream/10419/157265/1/882698184.pdf).

[32.] Klasen, S., (2018), 'Human development indices and indicators: A critical evaluation', United Nations Development Programme, New York (http://hdr.undp.org/sites/default/files/klasen_final.pdf).

[33.] Anand, S. (2018), 'Recasting human development measures', United Nations Development Programme, New York (http://hdr.undp.org/sites/default/files/anand_recasting_human_development_measures.pdf).

9. REFERENCE LIST

Bertay, A. C., Dordevic, L. and Sever, C. (2020), 'Gender inequality and economic growth: Evidence from industry-level data', *Comparative Political Economy: Comparative Capitalism eJournal*.

Brereton, F., Clinch, J. P. and Ferreira, S. (2008), 'Happiness, geography and the environment', *Ecological Economics*, Vol. 65, No 2, pp. 386–396.

Bubbico, r. L. and Dijkstra, L. (2011), 'The European regional human development and human poverty indices', *Regional Focus*, No 2.

Charron, N., Dijkstra, L. and Lapuente, V. (2014), 'Regional governance matters: Quality of government within European Union Member States', *Regional Studies*, Vol. 48, No 1, pp. 68–90.

Charron, N., Lapuente, N. and Bauhr, M. (2021), 'Sub-national quality of government in EU Member States: Presenting the 2021 European Quality of Government Index and its relationship with COVID-19 indicators', *Working Paper Series*, No 4, The Quality of Government Institute: pp, University of Gothenburg

Denkers, J. M. and Winkel, F. W. (1998), 'Crime victims' well-being and fear in a prospective and longitudinal study', *International Review of Victimology*, Vol. 5, No 2, pp. 141–162.

Einolf, C. J. (2011), 'Gender differences in the correlates of volunteering and charitable giving', *Nonprofit and Voluntary Sector Quarterly*, Vol. 40, No 6, pp. 1092–1112.

European Commission (2020), *Report on the quality of life in European cities, 2020*, Publications Office of the European Union: Luxembourg.

Hanslmaier, M. (2013), 'Crime, fear and subjective well-being: How victimization and street crime affect fear and life satisfaction', *European Journal of Criminology*, Vol. 10, No 5, pp. 515–533.

Hardeman, S. and Dijkstra, L. (2014), *The EU Regional Human Development Index*, EUR 26817, Publications Office of the European Union, Luxembourg.

Kaufmann, D., Kraay, A. and Zoido-Lobaton, P. (1999), 'Governance matters', *Policy Research Working Paper Series*, No 2196, The World Bank.

Morais Maceira, H. (2017), 'Economic benefits of gender equality in the EU', *Intereconomics*, Vol. 52, No 3, pp. 178–183.

Norlén, H., Papadimitriou, E. and Dijkstra, L. (2019), *The Regional Gender Equality Monitor – Measuring female disadvantage and achievement in EU regions*, EUR 29679 EN, Publications Office of the European Union, Luxembourg.

Rodríguez-Pose, A. and Garcilazo, E. (2015), 'Quality of government and the returns of investment: Examining the impact of cohesion expenditure in European regions', *Regional Studies*, Vol. 49, No 8, pp. 1274–1290.

Rooney, P. M., Mesch, D. J., Chin, W. and Steinberg, K. S. (2005), 'The effects of race, gender, and survey methodologies on giving in the US', *Economics Letters*, Vol. 86, No 2, pp. 173–180.

Simmons, W. and Emanuele, R. (2007), 'Male–female giving differentials: are women more altruistic?' *Journal of Economic Studies*, Vol. 34. No 6, pp. 534–550.

Stiglitz, J. E., Sen, A. and Fitoussi, J.-P. (2009), 'Report by the commission on the measurement of economic performance and social progress', Commission on the Measurement of Economic Performance and Social Progress.

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