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**ReGEM**

Regional Gender Equality Measurement in the EU

**Jean Monnet Project**

# **Regional Gender Equality Measurement in the EU/ ReGEM**

Aggregation of indicators and alternative results:  
does the method affect the result?

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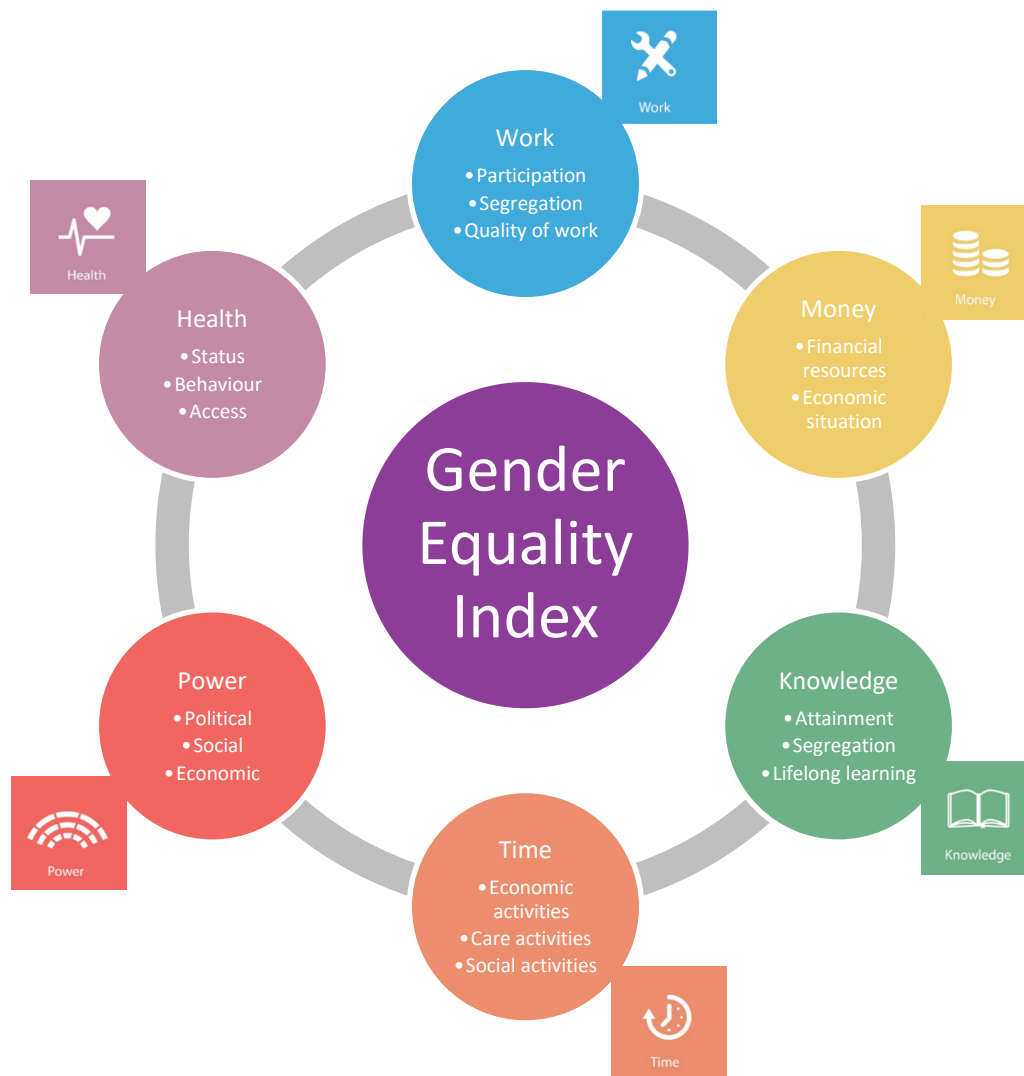


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# The original GEI method

# EIGE's GEI



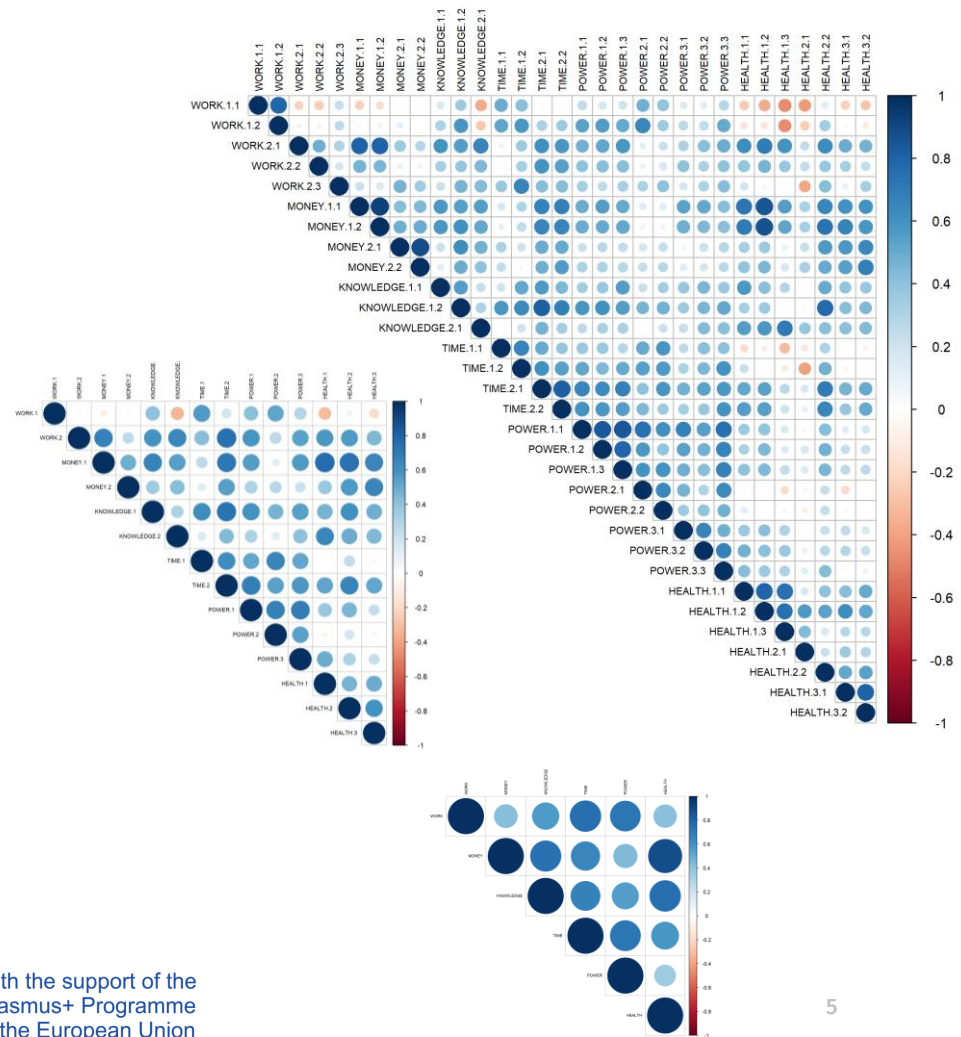
- 6 core domains
- 2 add. domains
- 14 sub-domains
- 31 indicators
- 6 years (2005, 2013, 2015, 2017, 2019, 2020)

# EIGE's GEI



Indicator	Sub-domain	Domain
1. Full-time equivalent (FTE) employment rate	Participation	Work
2. Duration of working life		
3. Employed in education, human health and social work		
4. Ability to take time off for personal or family matters		
5. Career Prospects Index		
6. Mean monthly earnings	Financial resources	Money
7. Mean equivalised net income	Economic situation	
8. Not at-risk-of-poverty		
9. S20/S80 income quintile share	Attainment and participation	Knowledge
10. Population with tertiary education		
11. Formal or non-formal education and training		
12. Tertiary students in education, health and welfare, humanities and arts	Segregation	
13. Caring for children or grandchildren or older or people of disabilities	Care activities	Time
14. People doing cooking and/or housework	Social activities	
15. Sporting, cultural or leisure activities		
16. Voluntary or charitable activities	Political	Power
17. Share of ministers		
18. Share of members of parliament		
19. Share of members of regional assemblies		
20. Share of members of boards in largest quoted companies	Economic	
21. Share of board members of central bank		
22. Share of board members of research funding organisations	Social	
23. Share of board members in publicly owned broadcasting organisations		
24. Share of members of highest decision-making body of the national Olympic sport organisations		
25. Self-perceived health	Status	Health
26. Life expectancy		
27. Healthy life years		
28. Smoking and harmful drinking	Behaviour	
29. Physical activities and/or consuming fruits and vegetables		
30. Unmet needs for medical examination	Access	
31. Unmet needs for dental examination		

Gender Equality Index



# Main issues moving from a national to a regional level

1. Assessment of the original GEI indicators → e.g.: sample size
2. Adjustment and substitution of the original GEI indicators to accommodate the regional perspective → e.g. 'percentage of women ministers or having a seat in parliament'

Survey	Population	Content	Years (frequency)	Geographic level (max)	Notes
<b>ECHP/ EU-SILC</b>	Households members	Income and Living Conditions	1994-2001/2004-2020 (yearly)	NUTS-2*	*NUTS-1 for Italy, NUTS-0 for Germany
<b>LFS</b>	Individuals aged 15+	Labour Market Status	1983-2020 (year/quarterly**)	NUTS-3	**Only for some years
<b>HETUS</b>	Households members	Daily Activity (ADL items)	2010*** (ten-years)	NUTS-0	***Collected in 2008-2015
<b>SES</b>	Employees	Structure of Earnings	2002****-2018 (four- years)	NUTS-1	****Not for Germany

*ECHP: European Community Household Panel; EU-SILC: European Union Statistics on Income and Living Conditions;*

*LFS: Labor Force Survey; HETUS: Harmonised European Time Use Surveys; SES: Structure of Earnings Survey*

# Main issues moving from a national to a regional level

DOMAIN	SUB-DOMAIN	GEI Description	RGEI Description
WORK	PARTICIPATION	Full-time equivalent employment rate	Same as GEI
WORK	PARTICIPATION	Duration of working life	NA at regional level
WORK	SEGREGATION AND QUALITY	Employed in education, human health, and social work	Same as GEI
WORK	SEGREGATION AND QUALITY	Ability to take 1 or 2 working hours off to take care of personal or family	NA at regional level
WORK	SEGREGATION AND QUALITY	Career Prospects Index	Subjective measure (Satisfaction with respect to past and future career opportunities)
TIME	CARE ACTIVITIES	People caring for and educating their children or grandchildren, elderly, or disabled	Minutes devoted to housework and family
TIME	CARE ACTIVITIES	People doing cooking and/or housework everyday	NA at regional level
TIME	SOCIAL ACTIVITIES	Workers doing sport, cultural or leisure activities outside their home several times a	Workers regularly attending leisure activities outside their home (cinema, concerts, sports)
TIME	SOCIAL ACTIVITIES	Workers involved in voluntary or charitable activities at least once a month	Workers involved in voluntary or charitable activities during the last 12 months (% 16+ population)
HEALTH	STATUS	Self-perceived good or very good health	Same as GEI
HEALTH	STATUS	Life expectancy at birth	Same as GEI
HEALTH	STATUS	Healthy life expectancy at birth	NA at regional level
HEALTH	BEHAVIOUR	People not smoking and not involved in harmful drinking	Same as GEI
HEALTH	BEHAVIOUR	People doing physical activities and/or consuming fruits and vegetables	Same as GEI
HEALTH	ACCESS	Population without unmet needs for medical examination	Same as GEI
HEALTH	ACCESS	Population without unmet needs for dental examination	Same as GEI
MONEY	FINANCIAL RESOURCES	Monthly Earnings in PPS	Same as GEI
MONEY	FINANCIAL RESOURCES	Equivalised net income	Same as GEI
MONEY	ECONOMIC RESOURCES	Not-at-risk-of-poverty as 60% median income	Same as GEI
MONEY	ECONOMIC RESOURCES	Income distribution as S20/S80	Same as GEI
KNOWLEDGE	ATTAINMENT AND PARTICIPATION	Graduates of tertiary education	Same as GEI
KNOWLEDGE	ATTAINMENT AND PARTICIPATION	People participating in formal and non-formal education and training	Same as GEI
KNOWLEDGE	SEGREGATION	Tertiary students in the fields of education, health and welfare, humanities and art	Same as GEI
POWER	POLITICAL	Share of Ministers	Share of members of regional boards and regional assessors
POWER	POLITICAL	Share of members of Parliament	Share of members of regional assemblies
POWER	POLITICAL	Share of regional assemblies	Share of city majors and municipality assessors
POWER	ECONOMIC	Share of boards in largest quoted companies	Share of working women in managerial positions
POWER	ECONOMIC	Share of board members of central banks	Share of managerial positions covered by women
POWER	SOCIAL	Share of board members of research funding organizations	NA at regional level
POWER	SOCIAL	Share of board members of publicly-owned broadcasting organizations	NA at regional level
POWER	SOCIAL	Share of board members in national Olympic sports organizations	NA at regional level

# Main issues moving from a national to a regional level

## *National level*

31 EIGE indicators

## *Regional level*

12 matching EIGE at NUTS2 level

5 close to EIGE at NUTS2 level

5 matching EIGE mixed NUTS1/2 levels

9 missing

# The EIGE's GEI METHOD

$$\tilde{X}_{it}^k = \frac{X_{it}^k}{\text{reference population}_{it}^k}$$

$$\begin{aligned} k &= w, m, a \\ i &= 1, \dots, 27 \\ t &= 2010 \end{aligned}$$

$$\alpha_{(X_{it})} = \frac{\tilde{X}_{it}^a}{\max \tilde{X}_{it}^a}$$

$$\Gamma_{(X_{it})} = 1 + [\alpha_{(X_{it})} \cdot (1 - Y_{(X_{it})})] \cdot 99$$

Table 1: Characteristics of the Gender Equality Index

	Variables	Sub-domains	Domains
<b>Weighting</b>	Equal	Equal	Experts (AHP)
<b>Aggregation</b>	Arithmetic	Geometric	Geometric
<b>Normalisation</b>	Metric by construction acts as a normalisation method		
<b>Imputation</b>	Closest values Average of MS for EU-28 Expectation-Maximisation (EM)	No imputation	No imputation

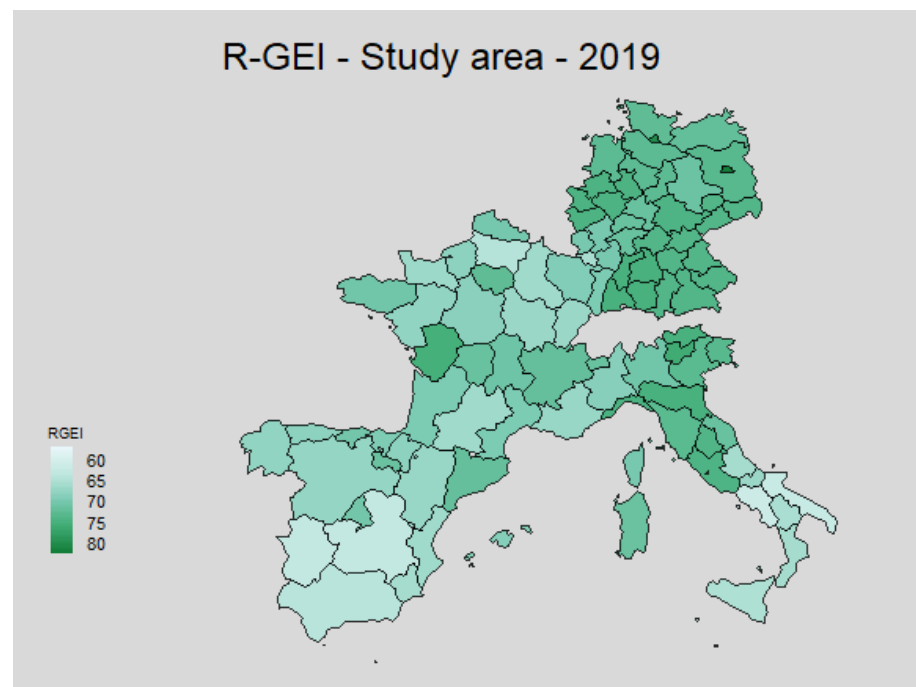
Table 2: Mean experts' weights used for the Gender Equality Index (rounded) <sup>(9)</sup>

Work	Money	Knowledge	Time	Power	Health
0.19	0.15	0.22	0.15	0.19	0.10



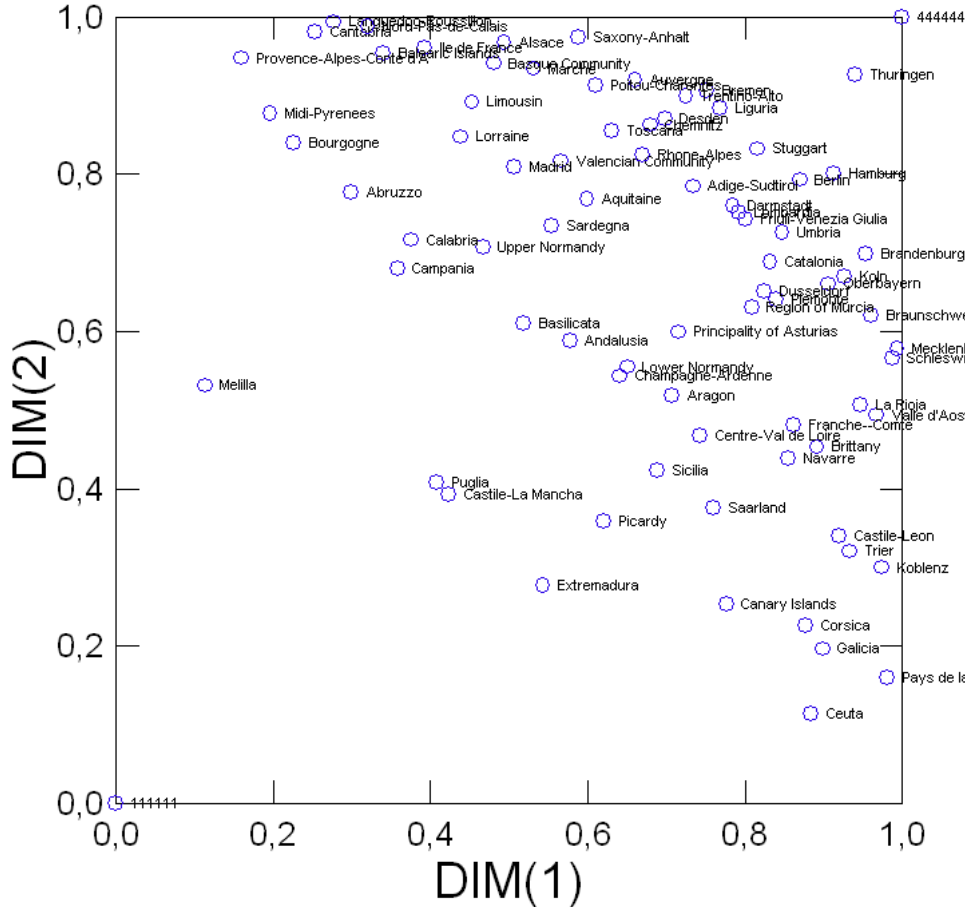
# Regional disparities in gender equality in the study region: ranking and mapping

COUNTRY	NUTS1	NUTS2	LABEL	RGEI	Rank
DE	DE3	DE30	Berlin	82,14	1
DE	DE6	DE60	Hamburg	80,24	2
IT	ITH	ITH2	Adige-Sudtirolo	76,18	3
FR	FRI	FRI3	Poitou-Charentes	75,38	4
DE	DE1	DE12	Karlsruhe	75,11	5
DE	DE1	DE14	Tubingen	75,11	6
DE	DE1	DE11	Stuggart	75,10	7
DE	DE1	DE13	Freiburg	75,10	8
IT	ITH	ITH5	Emilia-Romagna	75,09	9
IT	ITH	ITH1	Trentino	75,08	10
IT	ITC	ITC3	Liguria	74,85	11
...	...	...	...	...	...
DE	DEC	DEC0	Saarland	65,78	90
IT	ITF	ITF5	Basilicata	65,57	91
IT	ITG	ITG1	Sicilia	65,37	92
FR	FRE	FRE2	Picardy	64,64	93
ES	ES6	ES63	Ceuta	64,60	94
ES	ES6	ES61	Andalusia	64,29	95
ES	ES4	ES43	Extremadura	63,17	96
ES	ES4	ES42	Castile-La Mancha	63,02	97
IT	ITF	ITF4	Puglia	62,29	98
IT	ITF	ITF3	Campania	61,78	99
ES	ES6	ES64	Melilla	57,52	100



# Alternative methods: POSAC and BoD

## POSAC Profile Plot



NUTS-2	BoD Indicator	NUTS-2	BoD Indicator
Stuttgart	1,0000	Umbria	0,9918
Karlsruhe	1,0000	Marche	0,9918
Freiburg	1,0000	Toscana	0,9915
Tubingen	1,0000	Valle d'Aosta	0,9895
Oberbayern	1,0000	Valencian Community	0,9847
Niederbayern	1,0000	Ile de France	0,9814
Oberpfalz	1,0000	Poitou-Charentes	0,9796
Oberfranken	1,0000	La Rioja	0,9793
Mittelfranken	1,0000	Catalonia	0,9756
Unterfranken	1,0000	Ceuta	0,9727
Schwaben	1,0000	Basque Community	0,9723
Berlin	1,0000	Aquitaine	0,9717
Brandenburg	1,0000	Alsace	0,9711
Bremen	1,0000	Pays de la Loire	0,9703
Hamburg	1,0000	Franche-Comte	0,9703
Darmstadt	1,0000	Brittany	0,9692
Giessen	1,0000	Galicia	0,9666
Kassel	1,0000	Midi-Pyrenees	0,9653
Mecklenburg-Vorpommern	1,0000	Aragon	0,9613
Braunschweig	1,0000	Champagne-Ardenne	0,9611
Hannover	1,0000	Languedoc-Roussillon	0,9601
Luneburg	1,0000	Madrid	0,9570
WeserEms	1,0000	Provence-Alpes-Conte d'Azur	0,9569
Dusseldorf	1,0000	Castile-Leon	0,9538
Koln	1,0000	Sardegna	0,9518
Munster	1,0000	Nord-Pas-de-Calais	0,9515
Detmold	1,0000	Region of Murcia	0,9514
Arnsberg	1,0000	Rhone-Alpes	0,9506
Koblenz	1,0000	Bourgogne	0,9496
Trier	1,0000	Centre-Val de Loire	0,9455
Rheinessen-Pfalz	1,0000	Lorraine	0,9452
Saarland	1,0000	Navarre	0,9431
Desden	1,0000	Upper Normandy	0,9416
Chemnitz	1,0000	Lower Normandy	0,9402
Leipzig	1,0000	Cantabria	0,9372
Saxony-Anhalt	1,0000	Sicilia	0,9368
Schleswig-Holsten	1,0000	Picardy	0,9362
Thuringen	1,0000	Auvergne	0,9354
Limousin	1,0000	Principality of Asturias	0,9286
Corsica	1,0000	Canary Islands	0,9280
Liguria	1,0000	Extremadura	0,9170
Adige-Sudtirol	1,0000	Andalusia	0,9168
Emilia-Romagna	1,0000	Castile-La Mancha	0,9073
Balearic Islands	0,9980	Calabria	0,9013
Veneto	0,9969	Abruzzo	0,8991
Friuli-Venezia Giulia	0,9969	Molise	0,8965
Piemonte	0,9940	Basilicata	0,8959
Trentino-Alto	0,9937	Campania	0,8909
Lombardia	0,9927	Puglia	0,8907
Lazio	0,9926	Melilla	0,8781

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