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**Individual Trust and Quality of
Regional Government**

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Objective

- To analyse the effect on individual trust of the quality of institutions at the regional level in a multi-country context

Contributions

- How the quality of regional institutions affects individual trust is a question not adequately explored.
- Individual trust is shaped by macro-level and micro-level processes.
- To consider these two levels in a same framework the multilevel approach seems the more appropriate

Multilevel has been used to analyse how country context influences individual trust (Paxton, 2007; Freitag and Bühlmann, 2009)

We adopt the multilevel approach in a multi-country context to determine how the Quality of Regional Institutions affects individual trust

Data and Methods

Trust and Individual characteristics

- **Source:** the ESS
- **Countries:** 29
- **Year:** 2012

European Quality of Government Index (EQI)

- **Source:** Charron et al (2014)
- **Countries** 27 EU members.
- **Year:** 2010

The indicator takes into account 3 pillars:

- Corruption
- Quality of services
- Impartiality of public services

- **Countries:** 15 EU members
 - **Regions:** 142
 - **Individuals:** 22891

Data and Methods

Distribution of Individuals by countries

	ESS dataset 2012		Sample used	
Countries	Number	%	Number	%
Belgium	1869	6%	1704	7%
Bulgary	2260	8%	1908	8%
Czech Republic	2009	7%	1332	6%
Denmark	1650	6%	2543	11%
Germany	2958	10%	1401	6%
France	1968	7%	1564	7%
Hungary	2014	7%	1779	8%
Italy	960	3%	1777	8%
Spain	1889	6%	1398	6%
Great Britain	2286	8%	566	2%
Netherland	1845	6%	1562	7%
Poland	1898	6%	1458	6%
Portugal	2151	7%	1001	4%
Sweden	1847	6%	1662	7%
Slovakia	1847	6%	1236	5%
Total	29451	100%	22891	100%

Data and Methods

The dependent variable Trust is taken from responses to the question

“Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?”

Answers are recorded on an 11-point scale from “not at all” (coded as 0) to “complete trust” (coded as 10).

Data and Methods.



Clustered data



Data and Methods

As far as the specific scope of this paper, the idea is that within the same country people can have different access to collective provisions such as education, health care and law enforcement depending on the region where they live.

Therefore, the generalized trust of individuals living the same country may differ by regions depending also on the quality of public administration at a regional level.

Data and Methods

Why Multilevel Model (ML)?

- Multilevel procedures allow relationships to vary according to context and to determine the portion of the total variance due to differences in the regional context
- ML relaxes the assumption of independence among errors that is violated in clustered data (two individuals from the same region tend to be more alike than two individuals selected from different regions).

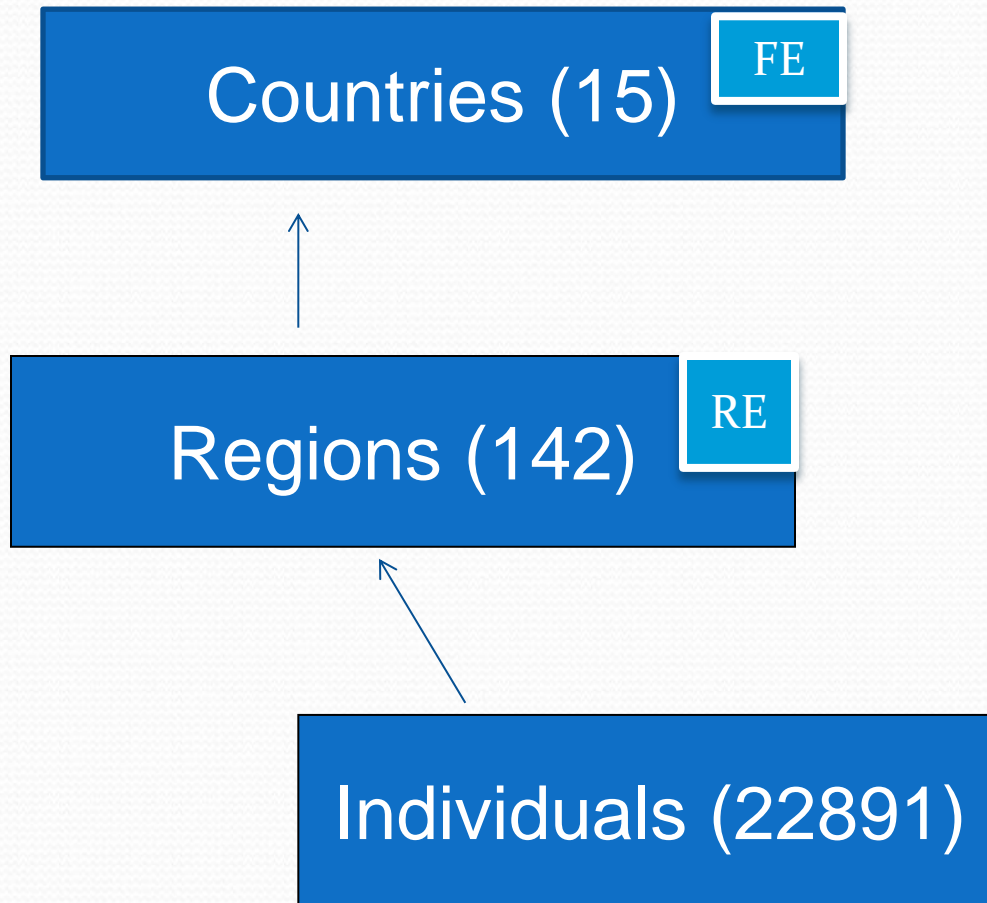
Data and Methods (Number of clusters)

Given the hierarchical structure of the data, a two-level mixed model with random intercepts at both region and country level could be used.

However, in the sample used the data of only **15** countries are available.

Since to measure accurately the between-group variance, at least **20** clusters (Heck and Thomas 2000; Rabe-Hasketh and Skondal 2008) are needed, countries (C) are treated as **fixed effects**

Data and Methods (The structure of the data)



Preferred Specification: random-intercept model at the regional level and countries modelled with dummy variables.

Data and Methods (Econometric specification)

The specification adopted is a random intercept model

$$t_{ij} = \beta_0 + \sum_{v=1}^k \beta_v X_{vij} + \psi QoG + \sum_{q=1}^n \omega_q R_{qi} + \sum_{c=1}^{14} \eta_c C_{ci} + u_{0j} + e_{ij}$$

t_{ij} is the level of trust of the i -th individual living in region j

\mathbf{X} is a vector of individual-level variables

QoG is our variable of interest (the indicator of the quality of government or its components)

R represents control variables at the regional level that may affect individual level of trust.

C are country fixed effects

Multilevel Model

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Country dummies	No	Yes	Yes	Yes	Yes	Yes	Yes
Regional variables	No	No	No	No	Yes	Yes	Yes
Individual variables	No	No	No	Yes	Yes	Yes	Yes
EQI	No	No	0.185*	0.182*	0.199**	0.203**	0.228**
Variance							
Regions	0.726	0.118	0.117	0.093	0.090	0.086	0.091
Individuals	4.804	4.807	4.807	4.451	4.451	4.452	4.451
Total	5.530	4.925	4.924	4.544	4.541	4.538	4.542
VPC	13%	2%	2%	2%	2%	2%	2%
LR test	3747.8	254.9	246.6	181.8	167.5	145.0	150.3
Number of groups	142	142	142	142	142	142	142
Number of obs.	22,891	22,891	22,891	22,891	22,891	22,891	22,891

LR test compares multilevel model to OLS regression ($H_0: \sigma^2_u = 0$)
Highly significant: it supports Multilevel Model

$$VPC_{u0} = \frac{\sigma_{u0}^2}{\sigma_{u0}^2 + \sigma_e^2}$$

Fixed part: individual and regional variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Level 1: Individuals							
Life satisfaction				0.169***	0.169***	0.169***	0.169***
				(23.62)	(23.58)	(23.58)	(23.58)
Frequent social engag.				0.164***	0.164***	0.164***	0.164***
				(5.42)	(5.43)	(5.44)	(5.42)
Health				-0.188***	-0.187***	-0.187***	-0.186***
				(-10.52)	(-10.48)	(-10.48)	(-10.42)
Actively religious people				0.0807*	0.0810*	0.0805*	0.0837*
				(1.81)	(1.82)	(1.81)	(1.87)
Citizen of the country				-0.105	-0.0995	-0.0994	-0.0858
				(-1.24)	(-1.17)	(-1.17)	(-1.00)
Victim of crime				-0.186***	-0.189***	-0.189***	-0.189***
				(-4.94)	(-5.00)	(-5.02)	(-5.00)
Gender: male				0.0834***	0.0842***	0.0847***	0.0838***
				(2.95)	(2.98)	(3.00)	(2.96)
Age				0.00456***	0.00457***	0.00457***	0.00464***
				(5.09)	(5.09)	(5.09)	(5.16)
Education: tertiary				0.807***	0.803***	0.803***	0.804***
				(18.43)	(18.34)	(18.34)	(18.33)
Education: secondary				0.298***	0.297***	0.297***	0.296***
				(8.39)	(8.37)	(8.37)	(8.34)
Unemployed				-0.00321	-0.00238	-0.00325	-0.00358
				(-0.05)	(-0.04)	(-0.05)	(-0.06)
High Household income				0.195***	0.191***	0.191***	0.190***
				(6.12)	(5.99)	(5.98)	(5.95)
Constant	4.795***	3.539***	3.533***	2.658***	0.0424	0.134	4.251*
	(63.51)	(19.34)	(19.35)	(13.20)	(0.04)	(0.12)	(1.89)
Level 2: Regions							
EQI			0.185*	0.182*	0.199**	0.203**	0.228**
			(1.77)	(1.91)	(2.09)	(2.16)	(2.26)
GDP-Euro per inhab. 2010 (ln)					0.162*	0.172*	0.0894
					(1.74)	(1.86)	(0.80)
Population size 2010 (ln)					0.0718	0.0857	0.0755
					(1.32)	(1.59)	(1.28)
Share of missing values (income)						-0.749*	
						(-1.75)	
Mundlak correction							YES

Quality of Government Components

	(1)	(2)	(3)	(4)
Individual variables	No	Yes	Yes	Yes
Level 2: Regions				
Corruption		0.235** (2.29)		
Quality			0.160** (2.08)	
Impartiality				0.0899 (0.99)
GDP - Euro per inhab. 2010 (ln)		0.174* (1.88)	0.160* (1.72)	0.180* (1.92)
Population size 2010 (ln)		0.0763 (1.43)	0.0797 (1.49)	0.0808 (1.47)
Share of missing values (income)		-0.730* (-1.71)	-0.788* (-1.84)	-0.705 (-1.63)
Country fixed effects	NO	YES	YES	YES
Random-Effects				
Variance				
Regions	0.726	0.085	0.086	0.089
Individuals	4.804	4.451	4.452	4.452
Total	5.530	4.536	4.538	4.541
VPC	13%	2%	2%	2%
LR test	3747.8	154.2	149.7	151.1
Number of groups	142	142	142	142
Observations	22891	22891	22891	22891

Random intercept ordered logit model to *be continued*

	(1)	(2)	(3)	(4)	(5)
Fixed effects					
Level 1: Individuals					
Life satisfaction		0.149***	0.149***	0.148***	0.148***
		(0.006)	(0.006)	(0.006)	(0.006)
Frequent social engagment		0.141***	0.141***	0.141***	0.141***
		(0.025)	(0.025)	(0.025)	(0.025)
Health		-0.167***	-0.167***	-0.166***	-0.166***
		(0.015)	(0.015)	(0.015)	(0.015)
Actively religious people		0.069*	0.069*	0.068*	0.068*
		(0.037)	(0.037)	(0.037)	(0.037)
Citizen of the country		-0.114	-0.111	-0.114	-0.112
		(0.072)	(0.072)	(0.072)	(0.072)
Victim of crime		-0.151***	-0.151***	-0.151***	-0.151***
		(0.031)	(0.031)	(0.031)	(0.031)
Gender: male		0.069***	0.069***	0.069***	0.069***
		(0.023)	(0.023)	(0.023)	(0.023)
Age		0.005***	0.005***	0.005***	0.005***
		(0.001)	(0.001)	(0.001)	(0.001)
Education: tertiary		0.721***	0.722***	0.722***	0.721***
		(0.037)	(0.037)	(0.037)	(0.037)
Education: secondary		0.262***	0.263***	0.262***	0.263***
		(0.030)	(0.030)	(0.030)	(0.030)
Unemployed		0.004	0.004	0.004	0.004
		(0.050)	(0.050)	(0.050)	(0.050)
High Household income		0.150***	0.149***	0.150***	0.150***
		(0.026)	(0.026)	(0.026)	(0.026)
Country fixed effects	NO	YES	YES	YES	YES

Random intercept ordered logit model *continued*

	(1)	(2)	(3)	(4)	(5)
Level 2: Regions					
GDP - Euro per inhabitant 2010 (ln)		0.127*	0.129*	0.116	0.131*
		(0.073)	(0.073)	(0.073)	(0.073)
Population size 2010 (ln)		0.068*	0.061	0.064	0.064
		(0.041)	(0.040)	(0.040)	(0.042)
Share of missing values (income)		-0.667**	-0.649*	-0.706**	-0.634*
		(0.334)	(0.334)	(0.334)	(0.338)
EQI		0.157**			
		(0.071)			
Corruption			0.182**		
			(0.078)		
Quality				0.129**	
				(0.058)	
Impartiality					0.058
					(0.067)
Variance : regions	0.496***	0.043***	0.043***	0.043***	0.045***
VPC	13.1%	1.3%	1.3%	1.3%	1.3%
Observations	22,891	22,891	22,891	22,891	22,891

Some Conclusions 1/2

The paper focuses on the relationship between Trust and EQI in a multi-country context at a regional level.

1. The country in which one resides has a non-negligible effect on individual trust.
2. To live in environments with a high quality of local government seems to be correlated with a higher propensity to trust other people.

Some Conclusions 2/2

3. As far as the EQI components are concerned:

- **Corruption** and the **Quality of services** appear to be positively correlated to trust
- the evidence is inconclusive for the **Impartiality indicator**.

An efficient provision of public services as well as a low level of local corruption seem to be important factors for generalized trust.



Thank you for your attention

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