



UNIVERSITY OF
GOTHENBURG

QUALITY OF GOVERNMENT IN EU REGIONS: SPATIAL AND TEM- PORAL PATTERNS

NICHOLAS CHARRON

VICTOR LAPUENTE

WORKING PAPER SERIES 2018:1

QOG THE QUALITY OF GOVERNMENT INSTITUTE

Department of Political Science

University of Gothenburg

Box 711, SE 405 30 GÖTEBORG

February 2018

ISSN 1653-8919

© 2018 by Nicholas Charron & Victor Lapuente. All rights reserved.

Quality of Government in EU Regions: Spatial and Temporal Patterns
Nicholas Charron
Victor Lapuente
QoG Working Paper Series 2018:1
February 2018
ISSN 1653-8919

ABSTRACT

A wave of recent cross-national research has pointed to the positive consequences for countries with high levels of ‘quality of government’ (QoG), broadly defined, such as corruption, impartiality, and quality of public services (Mauro 2004; Norris 2012; Holmberg et al 2009). Yet the question of how QoG varies at the sub-national level is still widely overlooked. To address it, we present the third round of data from the regional ‘European Quality of Government’ (EQI) survey (Charron, Dijkstra and Lapuente 2014; Charron, Lapuente and Rothstein 2013), collected in 2017 and built upon the opinions of 78.000 respondents from 202 regions from 21 European countries. The data provides several contributions to the literature. First, while the majority of QoG-type indices rely on expert assessments, the EQI relies on the assessments of citizens, who are the on-the-ground consumers of public services. Second, the data begins to show trends on QoG variation over time, as well as across European regions. Consequently, this data is the most comprehensive sub-national data to date; mapping of QoG within and across EU countries over the past decade. Building on previous rounds of data collected in 2010 and 2013, the 2017 EQI, which is published free for scholarly use, the EQI builds on both perceptions and experiences of citizens in public service areas such as health care, education, and law enforcement. This paper presents the final results of the survey, sensitivity analyses and checks for external and internal validity, as well as the preliminary that we detect across European regions.

Nicholas Charron
The Quality of Government Institute
Department of Political Science
University of Gothenburg
nicholas.charron@pol.gu.se

Victor Lapuente
The Quality of Government Institute
Department of Political Science
University of Gothenburg
victor.lapuente@pol.gu.se

I. Introduction

Over the past two decades, a growing body of evidence supports the hypothesis that the “quality of government” – understood as a government that acts in an impartial, efficient way, and without corruption – is a crucial factor for explaining the remarkable differences in socio-economic performance across political communities. Scholars have pointed to a host of negative consequences for countries that demonstrate sufficiently low levels of quality of government (QoG) (Mauro 2004; Norris 2012; Holmberg et al 2009). The cross-country empirical literature has found that states that suffer from high corruption, weak rule of law, and low impartiality are associated with, among other, lower levels of economic development (Mauro 2004), poorer health (Holmberg and Rothstein 2012), poorer environmental outcomes (Welsch 2004), greater income inequality (Gupta et al. 2002), lower levels of happiness (Veenhoven 2010), and lower overall subjective well-being (Helliwell and Huang 2008).

While the vast amount of work on governance and corruption studies in a comparative perspective has focused on the national level (Kaufman et al 2011), a recent surge in studies focusing on the sub-national level have shown that regional differences in the quality of governance are at times greater than national ones (Tabellini 2010; Charron, Dijkstra and Lapuente 2014, 2015; Rodríguez-Pose, and Garcilazo 2015). There are regions with high quality of government – such as those in Scandinavian countries, the Netherlands, but also some Northern regions in Italy or Spain – and regions with low quality of government – mostly in Eastern and Southern Europe, but not only there –. These differences do not always coincide with national borders. There can be regions with very diverse levels of quality of government within the same country, such as in Italy, Belgium, France or Romania.

This paper asks which the current level of quality of government in European regions is and how it has changed over time since it was first recorded by the *European Quality of Government Index* (EQI) survey in 2010 (Charron, Dijkstra and Lapuente 2014). The paper maps out both spatial and temporal patterns in regional and national governance for EU countries with the help of the third wave of the EQI survey, conducted in 2017. The paper is organized as follows. Section II justifies theoretically the importance of attempting to measure the level of quality of government across different European political units. Section III explains how quality of government across Europe has previously been measured. Section IV presents the questions included in the 2017 EQI survey. Section V describes how the EQI index of European regions is built from the answers to those questions. Section VI discusses the preliminary cross-time trends in quality of government we see from the 2010 EQI

to the 2017 EQI. Section VII concludes with a discussion of the main findings and their potential implications for policy-makers, particularly for cohesion policy.

II. Why Measure the Quality of Government of European Regions

Despite an initial goal of the European Union was the convergence in well-being of European citizens irrespective of the territory they live, there is evidence pointing out that regional divergence has actually increased over time, in terms of economic growth, productivity, and employment (Farole, Rodríguez-Pose and Storper 2011:1090). Over time, there has been a slow process of peripheral regions in the European periphery catching up with core regions. Yet, at the same time, some differences between well-off and worse-off regions within the same country have risen. Up to a certain extent, the growing differences between countries and between regions within countries owe a lot to the asymmetric impact of the financial crisis (Berkowitz, Von Breska, Pienkowski and Rubianes 2015).

However, researchers note that the different regional performances are also the result of the formal and informal institutions prevailing in a region either now (Farole, Rodríguez-Pose and Storper 2011) or historically (Tabellini 2010). There is thus a growing consensus within both policy and academic circles that the quality of institutions and governments makes “an important difference for economic development” (Rodríguez-Pose and Garcilazo 2015:1275). There are numerous indications that socio-economic disparities among regions are due to differences in the governance of public institutions (Charron, Dijkstra, and Lapuente 2014, 2015). There is a very high correlation between, on the one hand, a regional indicator or quality of government, and, on the other, all sort of variables capturing the well-being of a community, such as from economic inequality and gender inequality, to unemployment and educational levels, infant mortality, and social trust.

Correlations sometimes implies causation, and the quality of institutions – and, in particular, the concept of quality of government (QoG) – has recently emerged as “a key factor” for understanding gaps in development across nations (Holmberg, Rothstein and Nasiritousi 2009) or European regions (Charron and Lapuente 2013). Governments with high QoG – that is to say governments that are impartial in the exercise of power, and do not discriminate along political, cultural, ethnic lines, and that have low corruption (Rothstein and Teorell 2008) – deliver essential public goods and facilitate processes. These, in turn, are conducive to economic growth and social development, ultimately explaining national, regional or local divergences in socio-economic development (Charron and Lapuente 2013; Pike, Rodríguez-Pose and Tomaney 2007; Rodríguez-Pose and Garcilazo, 2015). A

government with high quality of government facilitates economic interactions (Rodríguez-Pose and Garcilazo 2015:1276) and is the strongest determinant of social trust (Charron and Rothstein 2014:2). On the contrary, territories with low levels of quality of government endure lower levels of economic development (Mauro 2004), higher income inequality (Gupta et al. 2002), and worse environmental outcomes (Welsch 2004).

To study quality of government, scholars use the following proxies: control of corruption, rule of law, government effectiveness, or protection of property rights (Charron and Lapuente 2013). Irrespective of the type of data or methodology employed to construct them, these indicators are highly correlated (Kaufman et al 2011). The same polities – national or sub-national governments – tend to be at the top (like Denmark and the Netherlands in Europe) or at the bottom (like Greece or Romania in Europe) of the rankings. That is, these different indicators of government performance do seem to capture a latent variable, a common denominator of how the public sector operates in a territory. Consequently, “it makes sense to talk about the quality of government as a general feature of countries” (Tabellini 2008:263).

In other words, analyzing the quality of government in a territory is fundamental for understanding why some regions within not only the same continent (Europe), but also within the same country – think of the well-known differences between Northern and Southern Italian regions, or Wallonia and Flanders in Belgium – presents divergence socio-economic indicators. And, therefore, exploring the causes of differences in quality of government has attracted the attention of a wide range of scholars of comparative politics, economics, law and history, especially during the latest two decades (see for example La Porta et al. 1999; Persson and Tabellini 2005; Rothstein 2011; Treisman 2007). The latter task is outside the scope of this paper. We will focus here on describing those differences in quality of government across European regions – a first and crucial step, to try to understand what explains them.

III. How Quality of Government has been measured within EU Countries

The *European Quality of Government Index* (‘EQI’) builds on a previously published data from 2010 (Charron, Lapuente and Rothstein 2013; Charron, Dijkstra and Lapuente 2014) and from 2013 (Charron, Dijkstra and Lapuente 2015)¹. It has had a wide impact in research on the EU, economic geography and entrepreneurship and innovation at the sub-national level since its conception and has been included as a part of multiple rounds of EU Cohesion reports published by the Commission. Based on one of the largest regionally-focused surveys to date, the 2017 data draws on over 78,000 respondents in 192 NUTS 1 and NUTS 2 regions in 21 countries². Together with national estimates from the *World Bank Governance Indicators* (Kaufmann, Kraay and Mastruzzi 2011), we report data on Quality of Government (‘QoG’) for all EU 28 countries, for a total of 220 political units^{3,4,5}. The QoG questions are based around a conceptual framework which views QoG as a broad, latent multi-dimensional concept consisting of high **impartiality** and **quality** of public service delivery, along with low **corruption**. The survey thus aimed at capturing average citizens’ perceptions and experiences with *corruption*, and the extent to which they rate their public services as *impartial* and of good *quality* in their region of residence.

The EQI data intends to provide scholars and policy makers with a more nuanced metric when comparing governance across political units in Europe and is the first to provide comparable QoG data that can be used to compare regions within and across countries. The 2013 data follows closely the method used to build the EQI in 2010, which has been published in several top journals (see Charron and Lapuente 2013 and Charron, Dijkstra and Lapuente 2014).

¹ Data was originally funded by the EU Commission (REGIO) and published in a report by Charron, Lapuente and Rothstein (2010). Report can be found here: <http://nicholascharron.wordpress.com/current-projects/regional-qog-in-the-european-union/>

² NUTS stands for ‘Nomenclature of territorial units for statistics’ and more can be read about this at: http://epp.eurostat.ec.europa.eu/portal/page/portal/nuts_nomenclature/introduction Kosovo is included, and because it is technically still a region in Serbia according to the EU, it is coded as such here as well. The 2010 and 2013 rounds had 33,000 and 85,000 respondent respectively.

³ The 2017 round of survey data and research was funded by the EU Commission in a competitive Tender “Measuring Quality of Government and Sub-national variation”. Previous round in 2013 was funded by the Commission via ANTI-CORRP project and contained Turkey and Serbia in the sample.

⁴ The 2017 round of survey data and research was funded by the EU Commission via an EU Tender “Measuring Quality of Government and Sub-National Variation”

⁵ NUTS stands for ‘Nomenclature of territorial units for statistics’ and more can be read about this at: http://epp.eurostat.ec.europa.eu/portal/page/portal/nuts_nomenclature/introduction Kosovo is included, and because it is technically still a region in Serbia according to the EU, it is coded as such here as well.

While this round of data largely builds on the work of previous rounds, there are several alterations based on suggestions from a Rasch analysis of the 2010, and 2013 rounds of the EQI data (Annoni and Charron 2017), as well as moving Hungary from the NUTS 1 to NUTS 2 level. In this document, we highlight the sample, summary statistics and question items that are included in the 2017 round of the EQI. The regional level data is comprised of 18 QoG-focused questions⁶ from our large citizen-based survey, which are aggregated to the regional level in each country. The next section briefly outlines the method of aggregation, weighting of variables, and the combination with national level QoG data, yet more information can be found in previous publications. All regional and national level data used in the index is made freely available so that scholars can replicate the data if they so choose, or use individual indicators that more suit their needs. For example, those interested in a particular public sector area, such as health care, education or elections, can reference individual question or aggregated indicators regionally. In addition, corruption perception and experiences are distinguished.

IV. The EQI Survey Questions

Prior to highlighting the survey questions used to build the EQI, two issues in the preparation of this study are worthy of mention here. First, in some areas, such as immigration, customs, defence or the judicial arena, we do not expect much variation from region to region within countries at all. Thus to maximize regional variation on the QoG-oriented question in the survey, we elected to limit the questions in the survey to only those policy areas that are most often either governed or administered by sub-national bodies. In the end, three policy areas were selected – health care, education and law enforcement. In addition to these three policy areas, we also inquire with one question each about the integrity of regional elections as well as the impartiality of the tax authorities. More information about the survey and sample can be found in the appendix.

The second issue to deal with is the fact that in some countries – such as Germany, Belgium, Italy or Spain – the regions that we are targeting in the questions are both politically and administratively meaningful. That is to say that these regional governments are elected by their local constituents,

⁶ In prior years, the number of questions was 16. This year, an additional experience with corruption question was added as well as a question about the extent to which people feel they are treated fairly by the tax authorities.

and that these governments have their own autonomous revenues (either from directly taxing citizens, or central government transfers or both) and have a degree of autonomy with which to redistribute resources in the form of public services. However, in more politically centralized countries, such as Bulgaria, Romania, Slovakia or Portugal, this issue becomes more challenging, as their relevant administrative level corresponds to NUTS3, which would have exceeded our budget to sample on. So while the regions that we are targeting (NUTS 1 or NUTS 2) while meaningful in the sense that EU development funds are targeted directly to them and that Eurostat reports annual data on them, they have in some cases been mainly an invention for EU statistical purposes, yet not *politically* meaningful. Therefore asking a respondent in some cases ‘how would you rate the quality ‘X’ service in your region of ‘Y’” might be very confusing, since respondents from countries like Hungary or Romania might not recognize that they are even living in region ‘Y’. It can therefore be argued that the administrative and political responsibility of the regions in these three public services varies in different countries and thus this may be problematic for this data gathering. However this study argues otherwise, in that we attempt to capture all regional variation within a country and, as several other scholars have noted (e.g. Tabellini 2010; Charron and Lapuente 2013), there are numerous empirical indications and anecdotal evidence pointing out that the provision and quality of public services controlled by a powerful central government can nonetheless largely vary across different regions.

In the 2010 and 2013 rounds, in order to synthesize the survey and make the results as comparable between and within countries as possible, we asked respondents about questions focusing around three key concepts of QoG – the ‘quality’ of the services themselves, the extent to which they are administered ‘impartiality’ and extent to which ‘corruption’ exists *in their area*. In countries where the NUTS region is not recognizable, we continue with this approach. However, in 2017, for countries with politically relevant regions, we elected to attempt to maximize validity and regional variation at the regional level by substituting the local word for the regional level in question in lieu of ‘*in your area*’. For example, in Germany, a respondent would hear the phrase ‘in your *Bundesland*’.

While some slight changes have occurred through the three years, we begin however by highlighting the ‘core’ questions that have remained in the three rounds of the survey over time.

First, in question 4-6 in the current survey, respondents rate the quality of their three public services in question on a scale of ‘1’ (extremely poor quality) to ‘10’ (extremely high quality):

4. *‘How would you rate the quality of public education **in your area**?’ (edqual)*

5. *‘How would you rate the quality of the public health care system in your area?’ (helqual)*

6. *‘How would you rate the quality of the police force in your area?’ (lawqual)*

The next six questions try to capture the extent to which public services are delivered impartially in the regions of Europe. ‘Impartiality’ is admittedly a more complicated concept to put forth to respondents than ‘quality’, so we framed this question in two ways –with a more negative tone, and a more positive tone. In the first three questions (7-9), we asked citizens to rate whether they agreed that ‘certain people’ get special advantages when dealing with the public service in question from 1 (strongly disagree) to 10 (strongly agree). The second set of questions (10-12) asks respondents whether all people in their region are ‘treated equally’ by the service in question on a four point scale (1. *Agree*, 2. *Rather agree*, 3. *Rather disagree* or 4. *Disagree*). We use all six questions in the final index to allow for as much variation as possible while not letting either the ‘positively’ or ‘negatively’ framed question determine the impartiality data alone.

7. *“Certain people are given special advantages in the public education system in my area.” (edimpart1)*

8. *“Certain people are given special advantages in the public health care system in my area.” (helimpart1)*

9. *“The police force gives special advantages to certain people in my area.” (lawimpart1)*

10. *“All citizens are treated equally in the public education system in my area” (edimpart2)*

11. *“All citizens are treated equally in the public health care system in my area” (helimpart2)*

12. *“All citizens are treated equally by the police force in my area” (lawimpart2)*

The next three questions deal with respondents’ perception of the extent to which corruption is present in their public services, along with a general question of how often they believe that ‘others in their area’ use corruption to obtain public services. Again, perceptions may not capture the full story, however, as Kaufman et al (2009:3) argue “perceptions matter because agents base their actions on their perceptions, impression, and views”, thus if citizens believe their public services are inefficient or corruption, they are less likely to use their services, likewise with foreign firms and investment

⁷ In cases where countries have politically relevant or recognizable regions at the NUTS 1 or NUTS 2 level in question, we substitute this phrase with the regional name.

in countries perceived to be plagued with problems of rent-seeking and public sector mismanagement⁸. However, we complement these questions with additional questions about respondents' actual experience with bribery later on. The first three questions are scaled as 1-10, with '1' being "strongly disagree" and '10' being "strongly agree".

13. *"Corruption is prevalent in my area's local public school system" (edcorr)*

14. *"Corruption is prevalent in the public health care system in my area" (belcorr)*

15. *"Corruption is prevalent in the police force in my area" (lawcorr)*

The following two questions constitute a slight change from the previous 2010 and 2013 rounds, whereby instead of asking citizens about either 'how often others engage in bribery to obtain public services' (2010), or asking respondents about corruption for 'special advantages' (2013), we split these ideas of so called 'need' and 'greed' corruption (Bauhr 2014) into the following two questions (1-10, with '1' being "strongly disagree" and '10' being "strongly agree")

16a. *People in my **area** must use some form of corruption to just to get some basic public services*

16b. *Corruption in my **area** is used to get access to special unfair privileges and wealth.*

In addition to corruption perceptions questions, we ask about citizens' direct *experience* with corruption. In contrast to 2010 and 2013, where we only inquired about whether a respondent paid a bribe for one of the public service in question, we add whether the respondent was asked to pay a bribe by a public sector employee at one of the services in question so as to attempt to capture the direction of who is the 'initiator'. For the final index, we code a respondent as '1' for Q17 or 18 if they answered 'yes' to any of the four sub-questions.

17. *In the last 12 months, have you or anyone in your family been asked by a public official to give an informal gift or bribe in: (a): Education services? (b): Health or medical services? (c): Police? d) any other public service? '(yes/ no)' (bribe)*

18. *In the past 12 months have you or anyone living in your household paid a bribe in any form to: (a): Education services? (b): Health or medical services? (c): Police? d) any other public service? '(yes/ no)' (bribe)*

⁸ In addition, Charron (2016) shows that the relationship between aggregated citizen perceptions and experiences with corruption is quite strong, and moreover, highly correlated with expert assessments.

Taking a brief look at the responses on these previous two questions, Table 1 reports the cross-tabulations. We see a slight increase in the percentage of respondents who claim to have paid a bribe in the past 12 months for a service – 9.1% of the sample in total, compared with 7.8% in 2013. We also see that 6.8% were *asked* to pay. However, lower left and upper right columns reveal something quite interesting – just less than half of respondents who were asked to pay, did not (lower left), while 61.5% (4358/7088) of those who did pay a bribe were not asked to do so by a bureaucrat working in the service sector in question, thus we might conclude that the bribe was initiated by the respondent.

TABLE 1, (CROSS-TABULATION SUMMARY OF CORRUPTION EXPERIENCE)

askB_ANY	payB_ANY		Total	
	no	yes		
no	68,153	4,358	72,511	(93.20%)
yes	2,557	2,730	5,287	(6.80%)
Total	70,710	7,088	77,798	

(90.90%) (9.10%)

Note: unweighted totals reported. ‘ask’ and ‘pay’ combine ‘yes’ responses from a-d in the previous two questions.

Finally, we ask about two other relevant regional aspects of QoG, namely the extent to which corruption is present in their area’s elections and the respondents’ view of how fair the tax authorities are. In previous rounds, we inquired about one’s trust in their area’s media in reporting on matters of corruption in the public sector and among politicians. As our media question from previous rounds produced suspect results (Annoni and Charron 2018), we now inquire about the impartiality of the tax authorities.

Q19-20: Please respond to the following 2 questions with the following ('1' strongly disagree - '10' strongly agree)

Q18: “Elections in my area are clean from corruption” (elections)

Q20: The tax authorities in my area treat all people equally (tax)

Table 2 summarizes the survey questions that go into the final index, grouping the questions in to one of the three pillar dimensions – corruption, impartiality or quality.

TABLE 2, (SUMMARY OF EQI SURVEY QUESTION ITEMS)

Pillar	Variable Description	Variable name in dataset
Corruption Items		
<i>a. perceptions</i>		
	corruption in education	stEdCorr
	corruption in health care	stHelCorr
	corruption in law enforcement	stLawCorr
	need corruption	stNeedCorr
	greed corruption	stGreedCorr
	elections clean from corruption	stElecCorr
<i>b. experiences</i>		
	asked to pay a bribe for public service	stnoAskB_any1
	paid a bribe for public service	stnopayB_any1
Impartiality Items		
	some get special advantages in education	stEdImpart1
	some get special advantages in health care	stHelImpart1
	some get special advantages in law enforcement	stLawImpart1
	all treated equally in education	stEdImpart2
	all treated equally in health care	stHelImpart2
	all treated equally in law enforcement	stLawImpart2
	all treated equally by tax authorities	stTaxImpart
Quality Items		
	quality of education	stEdQual
	quality of health care	stHelQual
	quality of law enforcement	stLawQual

V. Construction of the EQI

In this section, we briefly highlight the steps in building the indicator. For more thorough information, see Charron, Lapuente and Rothstein (2013). As there are undoubtedly much unobserved country-level factors that are not measured in our regional survey, we elect to anchor our regional estimates with country-level QoG data from the World Bank’s ‘World Governance Indicators (WGI)’. In the two previous rounds, we have taken the four indicators: ‘*control of corruption*’, ‘*government effectiveness*’, ‘*rule of law*’ and ‘*voice and accountability*’ and combined them into one composite index (equal

weighting)⁹, around which the regional estimates were centered. The data is taken for the most recent year of publication (in this case 2015)¹⁰. Then, the combined WGI data is standardized for the EU sample. This figure is used as country's mean score in the *EQI* for all countries in the sample so as to combine those countries outside the survey with those in it as well as to 'anchor' the regional QoG estimates in a national context that is not captured by the regionally-based survey questions¹¹.

The regional data itself combines 18 survey questions about QoG in the region (see Table 2 – and Table A3 in the appendix for a correlation matrix for the 18 indicators). As noted, the questions are centered on three QoG concepts: 'quality', 'impartiality' and 'corruption', with the latter having two sub-groups consisting of perceptions and experience questions respectively. In building the regional index, we adjust each variable so that higher numbers equate to higher QoG and then the 18 questions/indicators to three pillars based on factor analysis¹²; then we averaged these three pillars together to form the final index figure for each region. After each stage of aggregation, the data are standardized. For the seven EU28 countries outside of the regional survey, there is nothing to add to the WGI Country score, thus the WGI data is used as the QoG estimate alone, as regional variation is unobserved. With respect to countries *with* the regional data, we set the national average as the WGI and explain the within-country variance using the regional-level data.

In this 2017 round we make a few slight adjustments. First, in order to better make the three main dimensions of QoG – corruption, impartiality and quality – more comparable over time; we elect to center the regional estimates on the pillars rather than the final index. This means that the questions pertaining to corruption for example are centered on the national WGI corruption score for example¹³. Moreover, we have retroactively adjusted previous years (2010, 2013) so that regional data is centered on pillars to make these more comparable over time. Second, the principle component analysis pointed to two sub-dimensions within the corruption pillar – items that capture perceptions

⁹ In addition, we underwent extensive sensitivity testing of each of these 4 pillars of QoG from the World Bank and found the data to be highly robust. For a closer look at the sensitivity tests and results for the EU sample of countries see Charron, Nicholas. 2010. "Assessing The Quality of the Quality of Government Data: A Sensitivity Test of the World Bank Government Indicators." QoG Working paper.

¹⁰ The latest national-level WGI scores by country and indicator can be found in appendix table 2a.

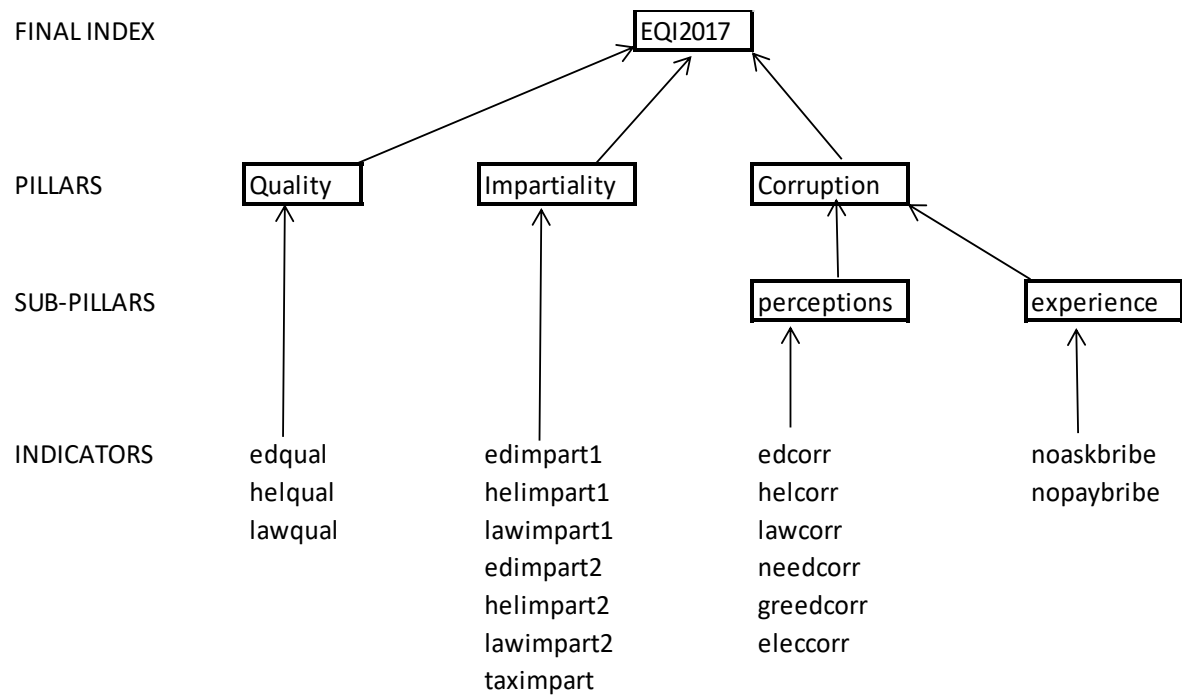
¹¹ Charron et al. 2013 provides more on this point.

¹² Results of the factor analysis can factor weights are found in the appendix 2, Table A.3 of this paper. In all years, the underlying pillars were determined by the concepts, and confirmed with a principle component factor analysis.

¹³ Corruption indicators are centered on the WGI's 'control of corruption' indicator, impartiality items are centered around the WGI's 'rule of law' index, and quality items are centered on the WGI's 'government effectiveness' and 'voice and accountability' measures.

and experiences respectively. These items are thus aggregated into sub-pillars of corruption (yet not centered on WGI), and then combined with equal weighting into the corruption pillar. The ‘roadmap’ so to speak of the aggregation process can be seen in Figure 1.

FIGURE 1, (EQI 2017 ROADMAP)



VI. The 2017 EQI and comparisons over time

The full list of EQI estimates for this 2017 data can be found in Table A4 in the appendix. In this section, these 2017 estimates are compared with those from the previous two years. The three figures below highlight the spatial patterns in governance according to the EQI index. In each case, the number of units is the same to make comparisons over time more valid and previous years have been

adjusted to match the methodology of the 2017 approach¹⁴. Units in blue (red) are above (below) the mean score of the EQI, with darker regions representing the more extreme ends of the scale.

FIGURE 2, (EQI 2017)

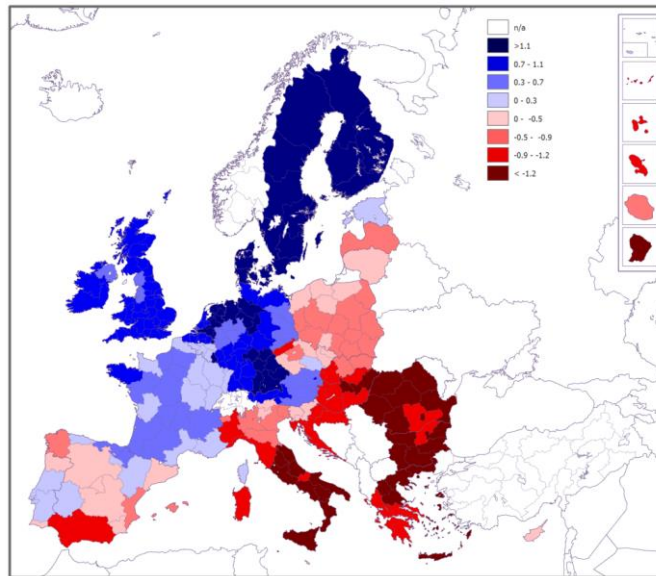


FIGURE 3, (EQI 2013)

¹⁴ Retroactive changes were made to previous years when new countries/regions were added in order to make more valid comparisons. Due to the process of standardization, the simple fact of adding or subtracting units that are below or above the mean can impact the scores of other units artificially, which we sought to avoid. For example, the 2017 tracked Hungary at NUTS 2 level (seven regions), while in previous years it was tracked at the NUTS 1 level (three regions). To compare across time, we thus calculated Hungary with seven regions for all three years, with the NUTS 1 level data providing a fixed effect so to speak for NUTS 2 level estimates.

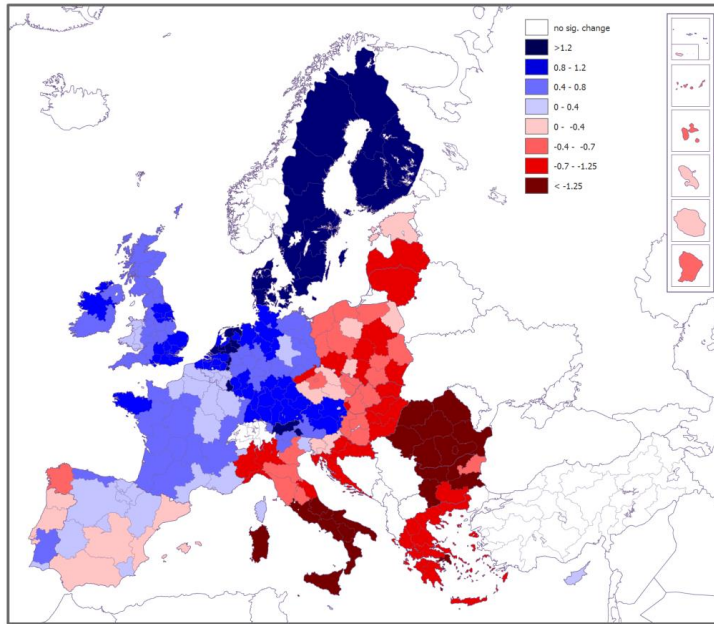
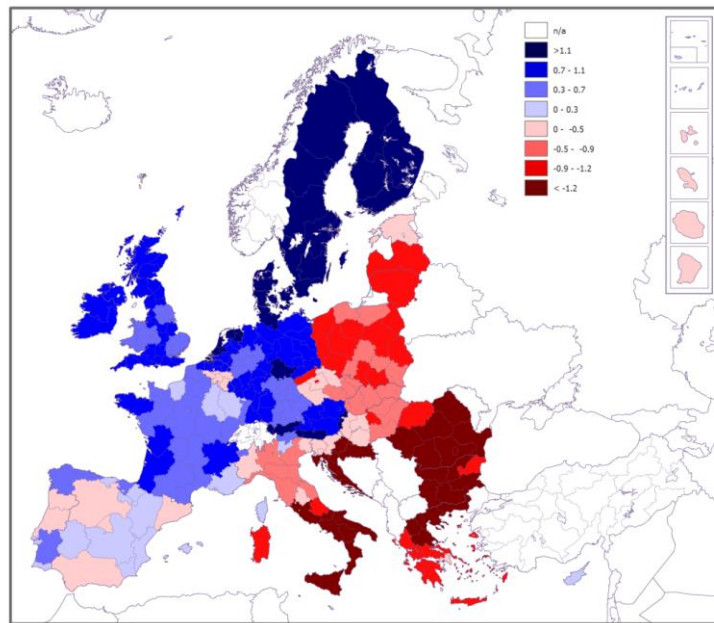


FIGURE 4, (EQI 2010)



Observable patterns

- QoG tends to be stable over time. EQI index correlations and Spearman Rank coefficients across years are all over 0.9 for the index on whole, and 0.82 and greater for the individual pillars, as shown in Table 3. Further analysis in the subsequent section show that just 11.5% and 16.9% of units in the sample have had a significant change ($p < 0.05$ or $p < 0.10$ respectively) in score (positive or negative) during the time span. This finding is quite consistent with country level data that shows that time trends in governance are remarkably ‘sticky’ (Andersson and Heywood 2009).

TABLE 3, (PAIRWISE CORRELATION OF EQI AND PILLARS ACROSS TIME)

variable	EQI 2017	quality 2017	impartity 2017	corrupt-ion 2017	EQI 2013	quality 2013	impartity 2013	corrupt-ion 2013	EQI 2010	quality 2010	impartity 2010
quality 2017	0.955										
impartity 2017	0.973	0.893									
corruption 2017	0.965	0.870	0.920								
EQI 2013	0.938	0.894	0.914	0.907							
quality 2013	0.906	0.887	0.875	0.859	0.971						
impartity 2013	0.919	0.868	0.907	0.883	0.978	0.927					
corruption 2013	0.918	0.858	0.889	0.909	0.973	0.913	0.934				
EQI 2010	0.913	0.862	0.903	0.875	0.953	0.922	0.936	0.927			
quality 2010	0.873	0.843	0.858	0.824	0.928	0.922	0.902	0.887	0.967		
impartity 2010	0.885	0.827	0.887	0.844	0.907	0.863	0.914	0.873	0.973	0.910	
corruption 2010	0.900	0.839	0.884	0.880	0.939	0.898	0.909	0.939	0.971	0.905	0.922

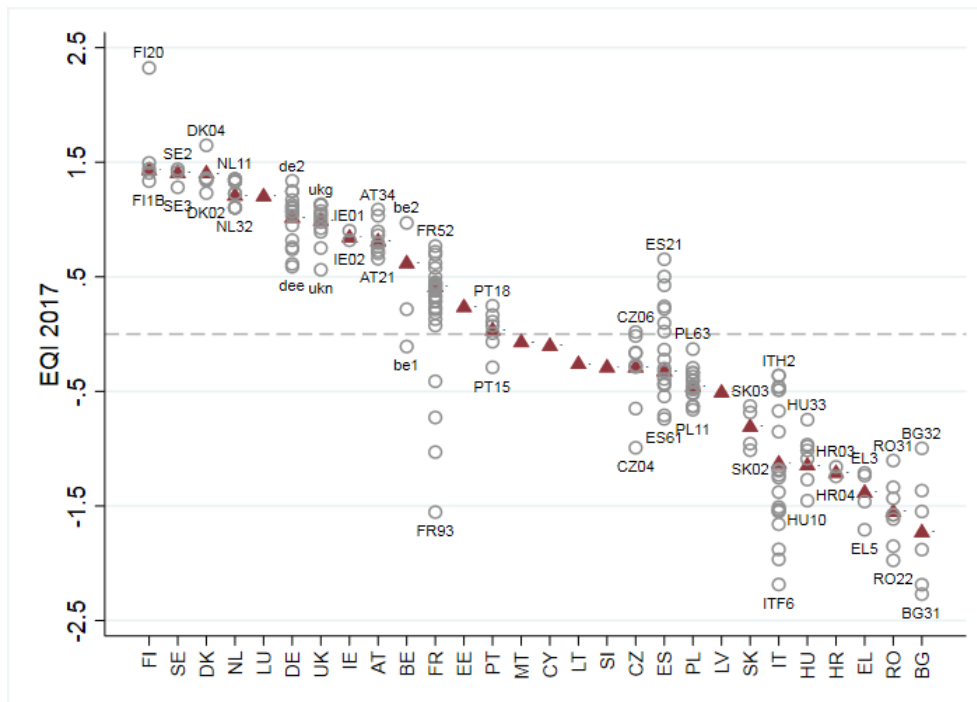
Note: Pearson's pairwise correlation coefficient reported. All correlations significant, $p < 0.001$

- Geography still matters: yet a bit less so in 2017 than in 2010. In the earliest round of the EQI, we observed a clear East-West pattern whereby all regions and countries of the former socialist bloc were below the EU28 mean in the EQI, with southern EU15 states and regions (albeit more spread out in some cases) in the next group, followed by a group of strong performing northern countries and regions. While this pattern to a large degree persists,

there are several cases where we observe that areas from newer member state (NMS13) have risen just at, or above the mean score: the Czech regions of Jihovychod (CZ06), Stredni Morava (CZ07) and the country of Estonia (EE). Moreover, several other regions have made considerable progress in governance convergence, namely Prague region (CZ01) and Pomorskie (PL63) in Poland; several regions in Poland and Lithuania have all progressed near the EU28 average. On the other hand, while the Northern parts of the EU28 have remained strong, the south of Europe has slid, led by decline in Italian, Greek and many Spanish regions, yet Portugal and some regions in Northern Spain have made some slight increases since 2010.

- Countries with lower QoG tend to have wider divergence of QoG at the sub-national level, as can be generally observed in Figure 5. This is a trend that has remained since 2010. Top performers, such as Finland, Denmark, Sweden and the Netherlands show no significant regional variation (Åland (FI20) maybe is an exception scoring so high). And despite being federal countries, places like Germany and Austria have much less regional variation in their QoG than countries like Bulgaria or Czech Republic which are more centralized. Countries at or below the EU mean for the EQI tend to be the ones with the largest regional variation – Italy, Spain, Bulgaria, Czech Republic, Portugal (in some cases), with Belgium and France being somewhat exceptional in this case. A counter example is also Poland, which has 16 provinces with political significance, clear East/West/South historical differences in culture and development, yet has consistently shown moderate levels of regional variation in all three years of the data. However, the northern region of Pomorskie (PL63) has made improvements and is significantly stronger than most other Polish provinces in the data.

FIGURE 5, (EQI 2017 IN COUNTRY RANK ORDER AND REGIONAL VARIATION)



Note: triangles represent country estimates, while hollow grey circles represent EQI estimates of regions.

- Some countries have persistent and large gaps in QoG: Italy, Belgium and France. In these cases, there is a clear geographic divide - north-south. In Italy and Belgium in particular - that persists in each of the three rounds and is highly significant according to our margin of error calculations. In Belgium in all cases, the Flemish speaking region of Vlaams Gewest (BE2) outperforms the Wallonie (BE3) region as well as the capital region of Brussels (BE1). BE2 stands out in particular with citizen satisfaction of the quality of public services and how they are delivered impartially, as this region is an EU28 leader on several indicators, while the other two regions are near or below the EU mean on such indicators. In the case of Italy, the south is a consistent low performer both within Italy and throughout the EU28, while the Northern regions, in particular the smaller Alpine regions of Trento, Bolzano, Friuli and Valle d'Aosta, are consistently higher performers on all underlying items and are above or just below the EU28 mean score. Although in the 2017 round we do observe a slight move toward convergence, as the northern regions show a modest decline. In France we observe a stand-out region in each of the three rounds: Bretagne, with the western part of the country in the next group of region, followed by the northeast and southern regions with the overseas regions lagging significantly behind.

- Some countries have demonstrated a growing divergence in QoG: Spain and Czech Republic. The 2017 data show a widening gap in the regions of the Czech Republic, and even more so in Spain. For the latter, Spain is now the country with the second most regional variation in terms of dispersion in the data (behind Italy). In fact, while the country average in the WGI declined by 0.27 (resulting in a drop of 6 places in the national rankings) and many regions showed declining score in particular in the south (Andalucía, Valencia), several northern regions showed improvement in their EQI scores (Cantabria, Navarra, Pais Vasco). Czech Republic showed several regions with significant improvement – Prague (CZ01), Jihovýchod (CZ06), Stredni Morava (CZ07), while the border region of Severozapad (CZ04) has consistently lagged behind and

Can we identify more systematic changes among regions and countries? We seek to identify now if any of the units has shown a significant trend in a positive or negative direction in the data over time. This is useful to identify potentially interesting case studies and to investigate policy ideas from recent success cases, which is the intention for future work within this project. While three years in a panel data set per observation is of course difficult to identify a clear trend, even based on limited observations, we can do a simple test that can help us reveal and possible time trends in the data. The regression model is specified as the following:

$$EQI_{rt} = \varphi_r N_r + \theta_r t + \beta_r (N_r * t) + \varepsilon_{rt} \quad (1)$$

Where EQI is the index used to capture institutional quality in region (or country) r in the year t ($r = 1, 2, \dots, r$, and $t = 0, 1, \text{ and } 2$, which equate to 2010, 2013 and 2017), and where $N_r = 1$ for region r and 0 if otherwise, and ε_{rt} is the error term. The constant term is omitted. This model can be estimated with simple ordinary least squares (OLS) regression, where φ_r elucidates fixed spatial differences in levels of the EQI and θ_r captures the fixed time effects (e.g. a year count). The interaction term $N_r * t$ thus captures temporal trends in the EQI for each region. As regards time trends within regions over time, the null hypothesis states that there are no significant time trends (e.g. β_r is insignificant). Where we observe significant trends (positive or negative) from the baseline year, such regions can be considered to have made a significant change in governance. The interpretation

of β_r is thus the average per year marginal change in the EQI for each region over the two years since the baseline year of 2010.

TABLE 4, (LIST OF REGIONAS WITH SIGNIFICANTLY POSITIVE CHANGES IN THE EQI: 2010-2017).

Number	Nuts code	Region name	β_r	t-score	p value
1	RO32	Bucharesti	0.671	3.95	0.000
2	BG32	Severen tsentralen	0.642	3.78	0.000
3	CZ01	Prague	0.468	2.75	0.003
4	RO42	Vest	0.467	2.75	0.003
5	PL63	Pomorskie	0.420	2.47	0.010
6	LT	Lithuania	0.404	2.38	0.010
7	DE2	Bayern	0.385	2.27	0.016
8	RO31	Sud-Muntenia	0.373	2.19	0.016
9	CZ07	Střední Morava	0.369	2.17	0.021
10	PL22	Slaskie	0.361	2.13	0.024
11	PL61	Kujawsko-Pomorskie	0.360	2.12	0.024
12	PL51	Dolnoslaskie	0.359	2.11	0.033
13	UKI	London	0.357	2.10	0.034
14	CZ06	Jihovýchod	0.348	2.05	0.037
15	PL41	Wielkopolskie	0.317	1.86	0.059
16	PL42	Zachodniopomorskie	0.313	1.84	0.067
17	PL43	Lubuskie	0.309	1.82	0.070
18	PL34	Podlaskie	0.301	1.77	0.073
19	PL21	Małopolskie	0.296	1.74	0.079
20	DE7	Hessen	0.291	1.71	0.082
21	PL12	Mazowieckie	0.286	1.68	0.085
22	UKG	W. Midlands	0.284	1.67	0.089

Table 4 reports the results for those regions where we observe a positive significant result ($p < 0.10$). Regions in darker blue shade have made a positive trend at $p < 0.05$, while regions in lighter blue shade have made a change at the 90% level of confidence. In total, 14 regions made a significant positive change at the 95% level of confidence (or greater), while eight regions made a change at the 90% level of confidence. Several Bulgarian and Romanian regions have made positive advances in the data over time, mainly due to their very low rank in the first year. For example, Bucharest had the second lowest score (-2.84) in 2010, and increase to -2.46 and -1.58 in 2013 and 2017 respectively. While this constitutes an increase by about 1.25 standard deviations in the data, the region still remains in the bottom 10th percentile of regions in the sample for 2017. Similar patterns also describe the other Romanian and Bulgarian regions on this list. Other regions on the list, such as Prague, Pomorskie, Lithuania and Jihovýchod, have made more substantial climbs in the data. Prague, for

example has moved from -1.02 to -0.55 to -0.14 in the three respective years, going from the bottom 15th percentile to near the median of the sample distribution. While we see that country averages have moved in some cases, Lithuania is the only country to make a significant advance in this time period according to the data, an improvement that certainly warrants further investigation. This list does not exclusively cover the EU13 area, but also regions from the EU15 are also on this top list, including Bayern, London, West Midlands and Hessen. Near the 90% level of significance is also the region of Navarra (not shown), which is one of the most interesting. Despite the negative trend in country average of Spain over time, as well as the negative decline in many of the (Southern) Spanish regions, Navarra (as well as Cantabria and Pais Vasco), has in fact shown steady improvement over time from 0.07 to 0.26 to 0.51 in the three years of the data.

Conversely in Table 5, nine regions made a negative change at the 90% level of confidence or greater. The regions with a significant decline in governance assessments include several Italian regions, mostly in the north and central part of the country. In addition, Hungary, Spain and France (overseas regions) and the Greek capital region of Athens have regions that have seen a significant decline in their EQI scores over time, with the overseas French region of Guyane (FR93) showing the largest decline in the data, with an average decline of just over 0.5 a standard deviation in the range of the data per year. In addition, we report the significant positive and negative change by EQI pillar in the appendix, Tables A5 and A6.

TABLE 5, (LIST F REGIONS WITH SIGNIFICANT NEGATIVE CHANGES IN THE EQI)

Number	Nuts code	Region name	Beta	t-score	p value
1	FR93	Guyane	-0.512	-3.02	0.000
2	ITC2	Valle d'Aosta	-0.499	-2.93	0.000
3	ITF1	Abruzzo	-0.431	-2.54	0.001
4	ITC1	Piemonte	-0.394	-2.32	0.003
5	ES70	Canarias	-0.396	-2.33	0.004
6	EL3	Athens	-0.394	-2.32	0.005
7	ES11	Galicia	-0.391	-2.3	0.005
8	HU32	Észak-Alföld	-0.333	-1.96	0.009
9	RO11	Nord Vest	-0.287	-1.69	0.033

VII. Conclusions

At the heart of the EU lies the idea of a growing convergence in the well-being of its citizens, irrespective of the territory they live in. Moving towards a greater convergence in socio-economic indicators as well as in quality of government has thus been a priority among EU policy-makers for long. Consequently, and especially since the territorial enlargement in the 1980s with the accession of Greece, Spain, and Portugal, cohesion has been made a key strategy for supporting regional development (European Union 2014). The regional, or cohesion, policy is currently the EU's main investment policy. It aims to foster economic, social, and territorial cohesion, and to reduce disparities between regions (European Union 2014; 2010).

Nevertheless, as this paper has shown, divergences in one decisive factor for socio-economic development – i.e. the quality of government or capacity to implement policies in an impartial, non-corrupt, and efficient way – are still wide across both European countries and regions. On the one hand, the findings of this paper seem in line with the pessimistic literature noting that, instead of regional convergence, Europe is experiencing, if any, an increase in regional divergence in terms of economic growth, productivity, and employment (Farole, Rodríguez-Pose and Storper 2011:1090).

On the other hand, there is also a more optimistic interpretation of the results of this paper. Although a principal finding of this study is the relatively high stability in quality of government, it is also important to note that the old dividing lines in quality of government, between Northern and Southern Europe, and very particularly, between Western and Eastern Europe, do seem to be, even if slowly, blurring. The divergences in quality of government are not as stark in 2017 as they were in 2010. And, for instance, we have high-performing Eastern regions that have surpassed many Western regions in quality of government, such as Jihovýchod (CZ06), or Stredni Morava (CZ07) in the Czech Republic, and the country of Estonia (EE). In addition, the list of regions with the most significant improvements in quality of government in the period under study is dominated by Eastern regions, such as Bucharesti, (RO32) in Romania, Severen tsentralen (BG32) in Bulgaria, Prague (CZ01) in the Czech Republic, or Pomorskie (PL63) in Poland.

In contrast it is regions in Western Europe that are the ones demonstrating the most noticeable declines in quality of government, such as Guyane (FR93) in France, Valle d'Aosta (ITC2), Abruzzo

(ITF1), or Piemonte (ITC1) in Italy, Canarias (ES70) in Spain, or Athens (EL3) in Greece. Yet regions in Western Europe are quite heterogeneous in terms of quality of government. While most regions in Northern Europe have remained among the top performers in quality of government, recent years have seen a fall of numerous Southern regions, particularly in Italy, Greece and Spain. At the same time, most regions in Portugal, as well as some Spanish ones in the northern part of the country, have shown improvements since 2010. In other words, geography does seem to matter, but it does not fully determine the quality of government in a region. Quality of government does seem to be a generally stable characteristic of the regions, but there are also notable changes.

All in all, this paper has highlighted the variations in governance across European countries and regions from the period 2010-2017, using the latest wave of the EQI survey data. We have mapped out regional governance as it stands today and compared with the two previous rounds of the EQI survey: 2010 and 2013. Despite the intrinsic value of this quantitative mapping of the quality of government, in order to understand what explains the remarkable regional differences – and the contrast between the “stickiness” of the quality of government in some regions and the variability in others – further analytical work is in order.

One first step in the future research aiming at disentangling the factors explaining the increase, or decrease, of quality of government across EU regions, could be selecting case study regions that either fit – or, quite the opposite, go against – the trend observed in their neighboring regions within the same country. Particularly valuable lessons of ‘best practices’ may be extracted from regions that, in countries that have hardly experienced an improvement in quality of government (or that actually do seem to have worse levels), have nonetheless experienced significant improvements in quality of government. For instance, that is the case of Prague (CZ01) in the Czech Republic, Pomorskie (PL63) in Poland, or Navarra (ES22) in Spain.

REFERENCES

Andersson, S., Heywood, P. M. (2009). The Politics of Perception: Use and Abuse of Transparency International’s Approach to Measuring Corruption. *Political Studies* 57, 746–767.

Annoni, P., & Charron, N. (2017). Measurement Assessment in Cross-Country Comparative Analysis: Rasch Modelling on a Measure of Institutional Quality. *Social Indicators Research*, 1-30. doi.org/10.1007/s11205-017-1821-z

Bauhr, M. (2012). Need or Greed Corruption. *Good Government: The Relevance of Political Science*, 68-86.

- Berkowitz, Peter, Eric Von Breska, Jerzy Pieńkowski and Angel Catalina Rubianes. 2015. "The impact of the economic and financial crisis on the reform of the Cohesion Policy 2008-2013", Working Paper Series 03/2015. Directorate-General for Regional and Urban Policy, European Commission.
- Charron, N., Dijkstra, L., & Lapuente, V. (2014). Regional governance matters: quality of government within European Union member states. *Regional Studies*, 48(1): 68-90.
- Charron, N., Dijkstra, L., & Lapuente, V. (2015). Mapping the regional divide in Europe: A measure for assessing quality of government in 206 European regions. *Social Indicators Research*, 122 (2): 315-346.
- Charron, Nicholas and Victor Lapuente. 2013. "Why do Some Regions in Europe Have Higher Quality of Government?" *Journal of Politics*. 75(3): 567-582.
- Charron, Nicholas, Victor Lapuente and Bo Rothstein. 2013 'Quality of Government and Corruption from a European Perspective: A Comparative Study of Good Governance in EU Regions'. Edward Elgar Publishing.
- Charron, N. (2016). Do corruption measures have a perception problem? Assessing the relationship between experiences and perceptions of corruption among citizens and experts. *European Political Science Review*, 8(1), 147-171.
- European Union. 2014. Investments for jobs and growth. Promoting development and good governance in EU regions and cities. *Sixth report on economic, social and territorial cohesion*. Luxembourg: Publications office of the European Union.
- Fazekas, M., & Kocsis, G. (2017). Uncovering High-Level Corruption: Cross-National Objective Corruption Risk Indicators Using Public Procurement Data. *British Journal of Political Science*, 1-10.
- Farole, Thomas, Andrés Rodríguez-Pose and Michael Storper. 2011. "Cohesion policy in the European Union: Growth, geography, institutions", *Journal of Common Market Studies*, 49(5): 1089–1111.
- Gupta, S., Davoodi, H., & Alonso-Terme, R. (2002). Does corruption affect income inequality and poverty? *Economics of Governance*, 3(1), 23–45.
- Helliwell, J. F., & Huang, H. (2008). How's your government? International evidence linking good government and well-being. *British Journal of Political Science*, 38, 595–619.
- Holmberg, S., & Rothstein, B. (Eds.). (2012). Good government: The relevance of political science. Cheltenham, UK: Edward Elgar Publishing.
- Holmberg, S., Rothstein, B., & Nasiritousi, N. (2009). Quality of government: What you get. *Annual Review of Political Science*, 12, 135-161.

- Kaufmann, Daniel, Aart Kraay and Massimo Mastruzzi. 2009. 'The Worldwide Governance Indicators: Methodology and Analytical Issues.' *World Bank Policy Research Working Paper*, No. 5430.
- Kaufmann, D., Kraay, A., & Mastruzzi, M. (2011). The worldwide governance indicators: methodology and analytical issues. *Hague Journal on the Rule of Law*, 3(2), 220-246.
- La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny. 1999. "The quality of government." *Journal of Law, Economics, and organization* 15, no. 1: 222-279.
- Mauro, P. (2004). The persistence of corruption and slow economic growth. IMF staff papers, 1–18.
- Nardo, Michela, Michaela Saisana, Andrea Saltelli and Stefano Tarantola. 2008. 'Handbook on Constructing Composite Indicators: Methodology and User Guide'
- Norris, P. (2012). Making democratic governance work: How regimes shape prosperity, welfare, and peace. Cambridge, UK: Cambridge University Press.
- OECD, European Commission, Joint Research Centre. Published by : OECD Publishing
- Persson, T. and Tabellini, G.E., 2005. The economic effects of constitutions. MIT press.
- Pike, Andy, Andrés Rodríguez-Pose and John Tomaney. 2007. "What kind of local and regional development and for whom?", *Regional Studies*, 41(9): 1253-1269.
- Rodríguez-Pose, A., & Garcilazo, E. (2015). Quality of government and the returns of investment: Examining the impact of cohesion expenditure in European regions. *Regional Studies*, 49(8), 1274-1290.
- Rodríguez-Pose, A., & Di Cataldo, M. (2014). Quality of government and innovative performance in the regions of Europe. *Journal of Economic Geography*, 15(4), 673-706.
- Rothstein, Bo and Jan Teorell. 2008. "What is quality of government? A theory of impartial government institutions", *Governance*, 21(2): 165–190.
- Tabellini, Guido. 2008. "The scope of cooperation: Values and incentives", *Quarterly Journal of Economics*, 123(3): 905-950.
- Tabellini, G. (2010). Culture and institutions: Economic development in the regions of Europe. *Journal of the European Economic Association*, 8(4), 677–716.
- Treisman, D., 2007. What have we learned about the causes of corruption from ten years of cross-national empirical research?. *Annu. Rev. Polit. Sci.*, 10, pp.211-244.
- Veenhoven, R. (2010). Greater happiness for a greater number. *Journal of Happiness Studies*, 11(5), 605–629.

Welsch, H. (2004). Corruption, growth, and the environment: A cross-country analysis. *Environment and Development Economics*, 9(5), 663–693.

APPENDIX

Appendix 1: Background, Methodology and Sample

The field work began during the month of May, 2017 and were conducted in the local majority language in each country/region. The results were returned to the Quality of Government Institute in August, 2017.

The E.U. regional survey was undertaken by Efficienc 3 (E3), a French market-research, survey company specializing in public opinion throughout Europe for researchers, politicians and advertising firms. E3 has also conducted the 2010 and 2013 rounds of the EQI and were thus familiar with the question format and goals of the survey. E3 conducted the interviews themselves in several countries and used sub-contracting partners in others¹⁵. The respondents, from 18 years of age or older, were contacted randomly via telephone in the local language. Telephone interviews were conducted via both landlines and mobile phones, with both methods being used in most countries. Decisions about whether to contact residents more often via land or mobile lines was based on local expertise of market research firms in each country. For purposes of regional placement, respondents were asked the post code of their address to verify the area/ region of residence if mobile phones were used.

Ideally, a survey would be a mirror image of actual societal demographics – gender, income, education, rural-urban, ethnicity, etc. However, we are not privy to exact demographic distributions; in particular at the regional level in most cases, thus imposing artificial demographic lines might lead to even more problems than benefits. We thus sought the next best solution. Based on their expert advice, to achieve a random sample, we used what was known in survey-research as the ‘next birthday method’. The next birthday method is an alternative to the so-called quotas method. When using the quota method for instance, one obtains a (near) perfectly representative sample – e.g. a near exact proportion of the amount of men, women, certain minority groups, people of a certain age, income, etc. However, as one searches for certain demographics within the population, one might end up with only ‘available’ respondents, or those that are more ‘eager’ to respond to surveys, which can lead to less variation in the responses, or even bias in the results. The ‘next-birthday’ method, which simply requires the interviewer to ask the person who answers the phone who in their household will

¹⁵ <http://www.efficienc3.com/en/accueil/index.html>. For names of the specific firms to which Efficienc 3 sub-contracted in individual countries, please write cati@efficienc3.com

have the next birthday, still obtains a reasonably representative sample of the population. The interviewer must take the person who has the next coming birthday in the household (if this person is not available, the interviewer makes an appointment), thus not relying on whomever might simply be available to respond in the household. So, where the quota method is stronger in terms of a more even demographic spread in the sample, the next-birthday method is stronger at ensuring a better range of opinion. The next-birthday method was thus chosen because we felt that what we might have lost in demographic representation in the sample would be made up for by a better distribution of opinion. In attempt to compensate for some key demographic over/under-representation, E3 provides weights based on age and gender for each region, comparing the sample drawn to actual demographic statistics from Eurostat. In the end, we find variation in response and refusal rates by country, which could have to do with many factors including the sensitivity of one of the primary the topics at hand – corruption. A breakdown of the sample is listed in the table below by country.

TABLE 1A, (SAMPLE BY COUNTRY OF 2017 EQI SURVEY)

COUNTRY	NUTS level sampled	no. NUTS regions	Sample per NUTS region	Sample	% total sample
1 France	2	26	401	10422	13.4
2 Belgium	1	3	450	1350	1.7
3 Bulgaria	2	6	400	2400	3.1
4 Czech Republic	2	8	450	3600	4.6
5 Slovakia	2	4	450	1800	2.3
6 Hungary	2	7*	400	2800	3.6
7 Croatia	2	2	450	900	1.2
8 Romania	2	8	450	3600	4.6
9 Finland	2	5	400	2000	2.6
10 Italy	2	21	400	8400	10.8
11 Greece	1	4	405	1620	2.1
12 Portugal	2	7	400	2800	3.6
13 Denmark	2	5	450	2250	2.9
14 Sweden	1	3	400	1200	1.5
15 Germany	1	16	450	7200	9.2
16 UK	1	12	450	5400	6.9
17 Ireland	2	2	450	900	1.2
18 Austria	2	9	450	4050	5.2
19 Netherlands	1	4*	460	1840	2.4

20 Poland	2	16	403	6442	8.3
21 Spain	2	17	411	6992	9.0
Total		185		77966	100.0

Note: *Hungary was a NUTS 1 country in 2010 and 2013 and is now at NUTS 2. Netherlands was a NUTS 1 and NUTS 2 country in 2010 and 2013 respectively and is now at NUTS 1, yet NUTS 2 regions are calculated so as to make comparisons with 2013 data. Finland, which has the same number of NUTS 2 regions (5), had one region split – (FI18 became FI1B and FI1C), while two regions merged (FI13 and FI1A became FI1D), for which researchers should treat over time comparisons with caution.

TABLE 2A, (COUNTRY LEVEL GOVERNANCE INDICATORS AND RANKINGS)

2017 rank	Country/Territory	CoC	RoL	GEE	VAA	total AVE	ST_AVE within EU28	previous rank	rank change
1	FINLAND	2.28	2.07	1.82	1.56	1.93	1.446	2	1
2	SWEDEN	2.25	2.04	1.81	1.60	1.92	1.428	3	1
3	DENMARK	2.23	2.04	1.85	1.57	1.92	1.425	1	-2
4	NETHERLANDS	1.89	1.93	1.84	1.57	1.81	1.232	4	0
5	LUXEMBOURG	2.12	1.86	1.72	1.52	1.81	1.226	5	0
6	GERMANY	1.82	1.78	1.74	1.43	1.69	1.034	7	1
7	UK	1.87	1.81	1.74	1.27	1.67	0.995	8	1
8	IRELAND	1.64	1.79	1.54	1.35	1.58	0.839	9	1
9	AUSTRIA	1.49	1.85	1.47	1.40	1.55	0.796	6	-3
10	BELGIUM	1.58	1.42	1.44	1.39	1.46	0.636	10	0
11	FRANCE	1.28	1.41	1.44	1.18	1.33	0.413	11	0
12	ESTONIA	1.25	1.33	1.09	1.17	1.21	0.213	15	3
13	PORTUGAL	0.92	1.14	1.23	1.12	1.10	0.031	16	3
14	MALTA	0.92	1.15	0.85	1.18	1.03	-0.101	13	-1
15	CYPRUS	0.98	1.01	1.04	1.04	1.02	-0.116	12	-3
16	LITHUANIA	0.56	0.98	1.20	0.97	0.93	-0.270	22	6
17	SLOVENIA	0.73	0.95	0.97	0.95	0.90	-0.317	17	0
18	CZECH REPUBLIC	0.39	1.12	1.05	1.02	0.90	-0.323	18	0
19	SPAIN	0.49	0.90	1.18	1.02	0.89	-0.325	14	-5
20	POLAND	0.58	0.80	0.80	1.04	0.81	-0.478	19	-1
21	LATVIA	0.40	0.79	1.10	0.82	0.78	-0.527	23	2
22	SLOVAK REP.	0.15	0.48	0.84	0.97	0.61	-0.812	20	-2
23	ITALY	-0.05	0.25	0.45	1.01	0.42	-1.138	24	1
24	HUNGARY	0.10	0.40	0.49	0.52	0.38	-1.203	21	-3
25	CROATIA	0.20	0.20	0.51	0.50	0.35	-1.248	26	1
26	GREECE	-0.13	0.24	0.25	0.59	0.24	-1.444	25	-1
27	ROMANIA	-0.05	0.15	-0.04	0.43	0.12	-1.637	28	1
28	BULGARIA	-0.31	-0.12	0.22	0.39	0.04	-1.777	27	-1

Note: colors represent six groups, determined by hierarchical cluster analysis (Ward's Linkage, squared Euclidean distancing)

TABLE 3A, (PAIRWISE CORRELATION MATRIX OF THE 18 EQI INDICATORS)

	stEdQual	stHelQual	stLawQual	stEdImpart1	stHellmpart1	stLawImpart1	stEdImpart2	stHellmpart2	
stEdQual									
stHelQual	0.641								
stLawQual	0.711	0.818							
stEdImpart1	0.310	0.177	0.139						
stHellmpart1	0.346	0.430	0.270	0.729					
stLawImpart1	0.391	0.466	0.427	0.755	0.776				
stEdImpart2	0.628	0.469	0.399	0.566	0.497	0.415			
stHellmpart2	0.592	0.794	0.573	0.352	0.744	0.528	0.655		
stLawImpart2	0.545	0.575	0.601	0.559	0.618	0.730	0.750	0.675	
stEdCorr	0.322	0.384	0.251	0.674	0.608	0.778	0.381	0.434	
stHelCorr	0.392	0.604	0.393	0.507	0.737	0.776	0.334	0.684	
stLawCorr	0.355	0.444	0.373	0.682	0.680	0.907	0.392	0.492	
stNeedCorr	0.305	0.557	0.383	0.618	0.675	0.810	0.494	0.581	
stGreedCorr	0.261	0.451	0.243	0.512	0.637	0.718	0.450	0.517	
stElecCorr	0.362	0.250	0.238	0.606	0.502	0.551	0.626	0.392	
stTaxImpart	0.376	0.213	0.153	0.686	0.510	0.523	0.611	0.367	
stnoAskB_any	0.494	0.673	0.651	0.175	0.311	0.452	0.355	0.535	
stnoPayB_any	0.243	0.520	0.375	-0.063	0.250	0.283	0.157	0.418	
	stLawImpart2	stEdCorr	stHelCorr	stLawCorr	stNeedCorr	stGreedCorr	stElecCorr	stTaxImpart	stnoAskB_any
stLawImpart2									
stEdCorr	0.467								
stHelCorr	0.510	0.881							
stLawCorr	0.666	0.917	0.874						
stNeedCorr	0.702	0.840	0.842	0.891					
stGreedCorr	0.611	0.727	0.775	0.792	0.906				
stElecCorr	0.646	0.557	0.432	0.589	0.671	0.631			

stTaxImpart	0.540	0.459	0.348	0.483	0.509	0.468	0.745		
stnoAskB_any	0.515	0.509	0.585	0.533	0.597	0.456	0.309	0.136	
stnoPayB_any	0.304	0.308	0.497	0.333	0.477	0.537	0.067	-0.111	0.695

TABLE 4A, (EQI DATA 2010, 2013 AND FULL 2017 BY COUNTRY AND REGIONS)

nuts	name	EQI_2017	Quality_17	Impartia- lity_17	Corrupt- ion_17	EQI_2013	EQI_2010
AT	Austria	0.807				0.820	1.063
AT11	Burgenland	0.792	0.385	1.315	0.575	0.945	1.310
AT12	Niederösterreich	0.727	0.448	1.064	0.582	0.998	1.062
AT13	Wien	0.862	0.709	1.050	0.727	0.391	1.088
AT21	Kärnten	0.657	0.355	0.993	0.542	0.778	1.213
AT22	Steiermark	0.763	0.611	0.952	0.637	1.010	0.936
AT31	Oberösterreich	0.705	0.713	0.701	0.625	0.886	0.984
AT32	Salzburg	0.896	0.833	1.031	0.723	0.778	0.964
AT33	Tirol	1.032	1.271	1.066	0.647	1.247	1.192
AT34	Voralberg	1.087	0.844	1.373	0.917	0.452	1.135
BE	Belgium	0.615				0.629	0.345
be1	Brussels	-0.109	-0.343	-0.477	0.516	0.043	-0.416
be2	Vlaams Gewest	0.970	1.125	0.875	0.802	1.088	0.733
be3	Wallonie	0.217	0.082	-0.215	0.772	0.001	-0.098
BG	Bulgaria	-1.733				-1.860	-1.902
BG31	Severozapaden	-2.270	-2.113	-2.781	-1.654	-2.270	-2.655
BG32	Severen Tsentralen	-0.997	-1.581	-0.955	-0.347	-1.677	-2.200
BG33	Severoiztochen	-1.366	-1.317	-1.524	-1.104	-0.467	-1.195
BG34	Yugoiztochen	-2.187	-1.814	-1.957	-2.561	-1.860	-2.275
BG41	Yugozapaden	-1.881	-1.778	-1.676	-1.992	-2.817	-2.016
BG42	Yuzhen Tsentralen	-1.548	-1.272	-2.264	-0.921	-1.245	-1.344
CY	Cyprus	-0.106	-0.134	-0.215	0.044	0.011	0.198
CZ	Czech Rep.	-0.294				-0.498	-0.582
CZ01	Praha	-0.161	0.153	0.104	-0.728	-0.534	-1.016
CZ02	Stredni Cechy	-0.650	-0.075	-0.940	-0.856	-0.486	-0.410
CZ03	Jihozapad	-0.287	-0.250	0.115	-0.707	-0.344	-0.212
CZ04	Severozapad	-0.992	-0.740	-0.869	-1.262	-0.989	-1.007
CZ05	Severovychod	-0.167	-0.247	0.280	-0.527	-0.388	-0.302
CZ06	Jihovychod	0.018	0.066	0.382	-0.406	-0.277	-0.598
CZ07	Stedni Morava	-0.017	-0.081	0.315	-0.299	-0.452	-0.675
CZ08	Moravskoslezsko	-0.273	-0.085	-0.031	-0.681	-0.662	-0.527
DE	Germany	1.012				0.770	0.773

de1	Baden Wuttemberg	1.074	1.238	0.833	1.041	0.889	0.877
de2	Bavaria	1.338	1.924	0.809	1.152	0.946	0.648
de3	Berlin	0.612	0.008	0.742	1.015	0.410	0.869
de4	Brandenburg	0.740	0.372	0.874	0.890	0.511	0.864
de5	Bremen	1.098	0.632	1.407	1.127	0.753	0.847
de6	Hamburg	1.245	1.316	1.096	1.193	0.688	0.853
de7	Hessen	1.066	0.888	1.145	1.046	0.755	0.565
de8	Mecklenburg-Vorpommen	1.169	0.975	1.333	1.067	0.750	0.840
de9	Lower Saxony	1.247	1.200	1.286	1.119	0.965	0.830
dea	North Rhine Westphalia	0.757	0.483	0.704	1.003	0.636	0.648
deb	Rhineland-Palatinate	1.128	1.205	1.025	1.035	0.931	0.732
dec	Saarland	1.034	0.984	0.847	1.166	0.927	0.932
ded	Saxony	0.819	0.615	0.787	0.967	0.710	0.969
dee	Saxony-Anhalt	0.588	0.288	0.636	0.776	0.322	0.771
def	Schleswig-Holstein	1.108	0.875	1.249	1.078	0.995	1.129
deg	Thuringia	0.949	0.871	0.885	0.991	0.425	1.181
DK	Denmark	1.399				1.545	1.549
DK01	Hovedstaden	1.339	1.097	1.197	1.584	1.518	1.431
DK02	Sjaelland	1.230	0.861	1.145	1.553	1.347	1.557
DK03	Syddanmark	1.361	1.239	1.209	1.491	1.576	1.542
DK04	Midtjylland	1.647	1.674	1.528	1.566	1.638	1.762
DK05	Nordjylland	1.350	1.164	1.322	1.420	1.636	1.441
EE	Estonia	0.232	0.054	0.248	0.369	-0.052	-0.103
ES	Spain	-0.328				-0.047	-0.054
ES11	Galicia	-0.431	-0.194	-0.309	-0.747	-0.511	0.432
ES12	Principado de Asturias	0.220	0.529	0.387	-0.286	0.423	0.371
ES13	Cantabria	0.426	0.631	0.726	-0.133	0.407	0.048
ES21	Pais Vasco	0.653	0.948	0.672	0.268	0.283	0.511
ES22	Navarra	0.502	0.732	0.486	0.235	0.263	0.073
ES23	La Rioja	0.242	0.885	0.104	-0.284	0.368	0.137
ES24	Aragón	0.097	0.380	0.097	-0.195	0.111	0.204
ES30	Comunidad de Madrid	-0.222	0.494	-0.452	-0.679	0.262	-0.153
ES41	Castilla y León	-0.326	0.309	-0.689	-0.552	0.243	-0.130
ES42	Castilla-La Mancha	-0.300	-0.127	-0.223	-0.519	-0.221	0.107
ES43	Extremadura	0.022	0.353	-0.023	-0.264	0.144	0.289
ES51	Cataluña	-0.392	-0.168	-0.445	-0.520	-0.181	-0.480
ES52	Comunidad Valenciana	-0.446	-0.046	-0.564	-0.678	-0.275	0.053
ES53	Illes Balears	-0.544	-0.429	-0.411	-0.738	-0.026	0.019
ES61	Andalucia	-0.740	-0.606	-0.805	-0.728	-0.119	-0.251
ES62	Región de Murcia	-0.136	0.302	-0.143	-0.551	0.326	0.164
ES63	Ceuta (ES)						

ES64	Melilla (ES)						
ES70	Canarias (ES)	-0.709	-0.814	-0.471	-0.773	-0.574	0.163
FI	Finland	1.427				1.497	1.398
FI13	Itä-Suomi					1.419	1.398
FI18	Etelä-Suomi					1.525	1.398
FI19	Länsi-Suomi	1.494	1.203	1.269	1.597	1.496	1.398
FI1A	Pohjois-Suomi					1.521	1.398
FI20	Åland	2.323	2.033	2.176	2.512	2.639	1.398
FI1B	Helsinki-Uusimaa	1.335	1.106	1.218	1.540		1.398
FI1C	Etelä-Suomi	1.406	1.315	1.407	1.602		1.398
FI1D	Pohjois- ja Itä-Suomi	1.441	1.114	1.380	1.676		1.398
FR	France	0.408				0.421	0.690
FR10	Ile-de-France	0.498	0.343	0.486	0.612	0.401	0.536
FR21	Champagne-Ardenne	0.336	0.464	0.175	0.338	0.258	0.211
FR22	Picardie	0.406	0.194	0.377	0.605	0.258	0.463
FR23	Haute-Normandie	0.453	0.524	0.280	0.510	0.319	0.153
FR24	Centre	0.420	0.328	0.443	0.443	0.774	0.595
FR25	Basse-Normandie	0.391	0.304	0.495	0.328	0.683	0.496
FR26	Bourgogne	0.283	0.162	0.228	0.430	0.289	0.474
FR30	Nord - Pas-de-Calais	0.290	0.637	0.074	0.136	0.145	0.531
FR41	Lorraine	0.233	0.479	-0.109	0.316	0.359	0.262
FR42	Alsace	0.377	0.648	0.128	0.321	0.555	0.468
FR43	Franche-Comte	0.185	0.164	0.209	0.162	0.511	0.483
FR51	Pays de la Loire	0.719	0.694	0.712	0.674	0.577	0.362
FR52	Bretagne	0.768	0.795	0.744	0.683	0.961	0.973
FR53	Poitou-Charentes	0.319	0.446	0.169	0.313	0.723	0.733
FR61	Aquitaine	0.693	0.850	0.513	0.648	0.767	0.779
FR62	Midi-Pyrenees	0.434	0.381	0.471	0.403	0.722	0.394
FR63	Limousin	0.619	0.587	0.642	0.561	0.546	0.692
FR71	Rhone-Alpes	0.577	0.635	0.489	0.548	0.624	0.752
FR72	Auvergne	0.440	0.490	0.370	0.416	0.693	0.550
FR81	Languedoc-Roussillon	0.130	0.225	0.162	-0.012	0.369	0.522
FR82	Provence-Alpes-Cote d'Azur	0.215	0.259	0.377	-0.020	0.058	0.232
FR83	Corse	0.074	-0.091	0.318	-0.020	0.180	0.152
FR91	Guadeloupe	-1.030	-1.294	-1.014	-0.672	-0.402	-0.484
FR92	Martinique	-0.728	-0.835	-0.886	-0.379	-0.101	-0.358
FR93	Guyane	-1.554	-2.700	-1.191	-0.613	-0.617	-0.449
FR94	Reunion	-0.412	-0.221	-0.322	-0.651	-0.100	-0.106
EL	Greece	-1.387				-0.326	-0.300
EL5	Voreia Ellada	-1.708	-1.756	-1.737	-1.445	-1.142	-1.333
EL6	Kentriki Ellada	-1.235	-1.181	-1.069	-1.325	-1.213	-1.040

EL3	Attica	-1.212	-1.302	-1.153	-1.053	-1.297	-0.343
EL4	Nisia Aigaiou-Kriti	-1.462	-1.262	-1.378	-1.590	-0.906	-0.909
HR	Croatia	-1.214				-1.003	-0.997
HR03	Jadranska Hrvatska	-1.159	-1.225	-1.282	-0.839	-1.503	-1.494
HR04	Kontinentalna Hrvatska	-1.242	-1.224	-1.431	-0.929	-1.294	-1.494
HU	Hungary	-1.150				-0.564	
HU10	Közép-Magyarország	-1.454	-1.469	-1.312	-1.427	-0.972	-1.046
HU21	Közép-Dunántúl	-0.965	-1.334	-0.660	-0.807	-0.689	-0.391
HU22	Nyugat-Dunántúl	-1.016	-1.237	-1.010	-0.693	-0.607	-0.417
HU23	Dél-Dunántúl	-0.980	-0.961	-0.956	-0.917	-0.607	-0.417
HU31	Észak-Magyarország	-1.088	-1.481	-0.925	-0.745	-0.802	-0.524
HU32	Észak-Alföld	-1.270	-1.019	-1.565	-1.080	-0.802	-0.524
HU33	Dél-Alföld	-0.747	-0.769	-0.717	-0.677	-0.802	-0.524
IE	Ireland	0.840					
IE01	Border, Midland and Western	0.902	0.844	0.901	0.862	0.844	0.797
IE02	Southern and Eastern	0.818	0.639	0.918	0.806	0.621	0.586
IT	Italy	-1.132					
ITC1	Piemonte	-1.193	-0.769	-1.509	-1.163	-0.878	-0.324
ITC2	Valle d'Aosta	-0.671	-1.417	-0.098	-0.444	-0.894	-0.815
ITC3	Liguria	-1.253	-0.589	-1.433	-1.595	-1.057	-0.665
ITC4	Lombardia	-0.488	0.512	-1.098	-0.806	-0.773	-0.781
ITH1	Bolzano	-0.362	-0.496	-0.151	-0.405	0.686	0.526
ITH2	Trento	-0.362	-0.496	-0.151	-0.405	0.720	0.268
ITH3	Veneto	-0.462	0.399	-0.728	-1.000	-0.433	-0.621
ITH4	Friuli-Venezia Giulia	-0.489	-0.353	-0.540	-0.519	0.092	-0.037
ITH5	Emilia-Romagna	-0.460	-0.028	-0.766	-0.528	-0.464	-0.518
ITI1	Toscana	-0.852	-0.942	-1.049	-0.466	-0.760	-0.704
ITI2	Umbria	-1.510	-1.418	-1.481	-1.468	-0.725	-0.383
ITI3	Marche	-1.379	-1.398	-0.890	-1.714	-0.760	-0.624
ITI4	Lazio	-1.531	-1.353	-1.691	-1.380	-1.679	-1.340
ITF1	Abruzzo	-1.966	-2.404	-0.779	-2.539	-1.291	-1.023
ITF2	Molise	-1.181	-0.787	-0.868	-1.768	-1.822	-1.308
ITF3	Campania	-1.879	-1.642	-2.004	-1.783	-2.370	-2.284
ITF4	Puglia	-1.546	-1.096	-1.587	-1.786	-1.771	-1.756
ITF5	Basilicata	-1.659	-1.766	-0.889	-2.168	-1.602	-1.333
ITF6	Calabria	-2.185	-2.574	-2.293	-1.449	-1.845	-2.167
ITG1	Sicilia	-1.549	-1.381	-1.875	-1.212	-1.749	-1.843
ITG2	Sardegna	-1.230	-1.186	-0.813	-1.572	-1.488	-0.999
LT	Lithuania	-0.264	-0.043	-0.253	-0.467	-0.809	-0.992
LU	Luxembourg	1.199	1.051	1.019	1.401	1.223	1.031

LV	Latvia	-0.514	-0.298	-0.533	-0.654	-0.885	-0.937
MT	Malta	-0.074	-0.179	-0.003	-0.034	0.028	0.297
NL	Netherlands	1.204				1.198	1.093
nl11	Groningen	1.353	1.357	1.426	1.127	1.296	1.430
nl12	Friesland (NL)	1.353	1.357	1.426	1.127	1.333	1.430
nl13	Drenthe	1.353	1.357	1.426	1.127	1.120	1.430
nl21	Overijssel	1.331	1.273	1.362	1.214	1.530	1.030
nl22	Gelderland	1.331	1.273	1.362	1.214	1.226	1.030
nl23	Flevoland	1.331	1.273	1.362	1.214	1.191	1.030
nl31	Utrecht	1.103	1.081	0.981	1.132	1.333	1.122
nl32	Noord-Holland	1.103	1.081	0.981	1.132	1.114	1.122
nl33	Zuid-Holland	1.103	1.081	0.981	1.132	1.274	1.122
nl34	Zeeland	1.103	1.081	0.981	1.132	1.173	1.122
nl41	Noord-Brabant	1.227	1.420	1.060	1.071	1.154	0.945
nl42	Limburg (NL)	1.227	1.420	1.060	1.071	1.210	0.945
PL	Poland	-0.462				-0.579	-0.864
PL11	Lodzkie	-0.661	-0.474	-0.757	-0.676	-0.782	-0.878
PL12	Mazowieckie	-0.523	-0.477	-0.648	-0.384	-0.826	-1.014
PL21	Malopolskie	-0.402	-0.267	-0.472	-0.422	-0.567	-0.913
PL22	Slaskie	-0.481	-0.390	-0.594	-0.405	-0.933	-1.123
PL31	Lubelskie	-0.634	-0.300	-0.891	-0.635	-0.687	-0.931
PL32	Podkarpackie	-0.627	-0.332	-0.725	-0.755	-0.801	-0.886
PL33	Swietokrzyskie	-0.513	-0.407	-0.680	-0.391	-0.731	-0.842
PL34	Podlaskie	-0.458	-0.075	-0.727	-0.517	-0.399	-0.979
PL41	Wielkopolskie	-0.466	-0.364	-0.754	-0.222	-0.666	-1.019
PL42	Zachodniopomorskie	-0.370	-0.178	-0.565	-0.320	-0.543	-0.907
PL43	Lubuskie	-0.409	-0.711	-0.267	-0.210	-0.433	-0.955
PL51	Dolnoslaskie	-0.482	-0.509	-0.380	-0.507	-0.936	-1.120
PL52	Opolskie	-0.295	-0.379	-0.065	-0.416	-0.250	-0.672
PL61	Kujawsko-Pomorskie	-0.335	-0.535	-0.082	-0.360	-0.289	-0.973
PL62	Warminsko-Mazurskie	-0.341	-0.423	-0.199	-0.369	-0.500	-0.723
PL63	Pomorskie	-0.131	-0.034	0.096	-0.447	-0.425	-0.890
PT	Portugal	0.031				-0.004	-0.022
PT11	Norte	-0.067	0.368	-0.359	-0.193	-0.295	-0.411
PT15	Algarve	-0.290	-0.891	-0.040	0.085	0.148	0.073
PT16	Centro	0.072	-0.014	0.307	-0.092	-0.131	-0.153
PT17	Lisboa	0.108	0.123	0.091	0.099	-0.231	0.005
PT18	Alentejo	0.247	0.056	0.292	0.365	0.777	0.535
PT20	Açores	0.008	0.200	-0.112	-0.062	0.406	0.337
PT30	Madeira	0.166	0.745	-0.192	-0.063	-0.066	0.124
RO	Romania	-1.555				-1.658	-1.588

RO11	Nord-Vest	-1.851	-1.811	-2.015	-1.523	-1.907	-1.197
RO12	Centru	-1.434	-1.591	-1.430	-1.127	-1.369	-1.596
RO21	Nord-Est	-1.577	-1.803	-1.237	-1.531	-1.940	-1.986
RO22	Sud-Est	-1.975	-1.896	-2.141	-1.669	-2.186	-2.001
RO31	Sud-Muntenia	-1.104	-1.538	-1.079	-0.577	-1.758	-1.768
RO32	Bucuresti-Ilfov	-1.576	-2.422	-1.237	-0.908	-2.465	-2.838
RO41	Sud-Vest Oltenia	-1.614	-2.046	-1.524	-1.100	-1.932	-1.504
RO42	Vest	-1.337	-1.910	-0.909	-1.059	-1.869	-2.191
SE	Sweden	1.402				0.887	0.795
SE1	Östra Sverige	1.415	1.260	1.253	1.584	1.468	1.289
SE2	Södra Sverige	1.439	1.238	1.366	1.560	1.443	1.361
SE3	Norra Sverige	1.281	1.083	1.128	1.497	1.323	1.186
SI	Slovenia	-0.294	-0.297	-0.292	-0.260	-0.200	-0.196
SK	Slovakia	-0.813				-0.706	-0.673
SK01	Bratislavský kraj	-0.956	-0.605	-1.121	-1.034	-0.920	-0.632
SK02	Západné Slovensko	-1.014	-0.531	-1.106	-1.293	-0.721	-0.889
SK03	Stredné Slovensko	-0.628	-0.202	-0.765	-0.845	-0.728	-0.802
SK04	Východné Slovensko	-0.684	-0.379	-0.949	-0.644	-0.981	-0.808
UK	United Kingdom	0.986				0.678	0.680
ukc	Northeast England	1.129	1.167	1.068	1.033	0.625	0.751
ukd	Northwest England	0.751	0.829	0.545	0.803	0.766	0.858
uke	Yorkshire-Humber	0.924	0.859	0.763	1.056	0.841	0.520
ukf	East Midland England	0.892	0.706	0.713	1.167	0.609	1.045
ukg	West Midland England	1.134	0.920	1.241	1.116	0.577	0.647
ukh	East of England	1.074	0.836	0.994	1.277	0.813	0.617
uki	London	1.002	0.972	0.823	1.109	0.903	0.368
ukj	South East England	1.033	0.895	0.930	1.166	0.963	0.903
ukk	South West England	1.125	0.738	1.210	1.303	0.451	0.908
ukl	Wales	1.049	0.541	1.320	1.165	0.331	0.656
ukm	Scotland	0.978	0.772	1.073	0.981	0.543	1.071
ukn	N. Ireland	0.561	-0.331	0.787	1.162	0.651	0.768

Note: for the 21 countries with regional data, a country's score calculated as the population weighted mean of its regions

TABLE 5A, (POSITIVE CHANGES IN INDIVIDUAL EQI PILLARS)

	Nuts code	Region name	β_r	t-score	p value
QUALITY					
	BG32	Severen tsentralen	0.816	3.69	0.000
	DE2	Bayern	0.594	2.69	0.008
	ITC4	Lombardia	0.514	2.32	0.021
	ES30	Madrid	0.499	2.26	0.025
	ES23	La Rioja	0.471	2.13	0.034
	BG34	Yugoiztochen	0.452	2.04	0.042
	UKI	London	0.122	2.32	0.022
	LT	Lithuania	0.388	1.76	0.080
	CZ01	Prague	0.388	1.75	0.081
	PL34	Podlaskie	0.381	1.72	0.086
	ITF4	Puglia	0.381	1.72	0.087
	RO31	Sud-Muntenia	0.379	1.71	0.088
IMPARTIALITY					
	RO42	Vest	0.793	3.34	0.001
	RO32	Bucharesti	0.762	3.21	0.002
	PL63	Pomorskie	0.684	2.88	0.004
	PL61	Kujawsko-Pomorskie	0.631	2.66	0.008
	CZ07	Střední Morava	0.603	2.54	0.012
	BG32	Severen tsentralen	0.566	2.39	0.018
	CZ06	Jihovýchod	0.527	2.22	0.027
	ITF2	Molise	0.489	2.06	0.040
	CZ01	Prague	0.479	2.02	0.045
	DE7	Hessen	0.478	2.02	0.045
	PL51	Dolnoslaskie	0.476	2.01	0.046
	PL22	Slaskie	0.462	1.95	0.053
	PL43	Lubuskie	0.459	1.93	0.055
	CZ05	Severovýchod	0.450	1.90	0.059
	UK22	Wales	0.437	1.84	0.067
	ES13	Cantabria	0.431	1.82	0.071
	PL22	Slaskie	0.431	1.82	0.071
	PL62	Warmińsko-mazurskie	0.428	1.80	0.073
	BG41	Yugozapaden	0.427	1.80	0.073
	DE2	Bayern	0.400	1.69	0.093
	BE1	Brussels	0.394	1.66	0.098
CORRUPTION					
	RO32	Bucharesti	0.989	4.79	0.000
	BG32	Severen tsentralen	0.496	2.40	0.017
	CZ01	Prague	0.494	2.39	0.018
	PL42	Zachodniopomorskie	0.448	2.17	0.031
	LT	Lithuania	0.430	2.08	0.038
	PL41	Wielkopolskie	0.420	2.03	0.043
	PL22	Slaskie	0.415	2.01	0.046
	ITF6	Calabria	0.410	1.98	0.049
	RO42	Vest	0.387	1.87	0.063
	BE3	Wallonie	0.385	1.86	0.064
	RO31	Sud-Muntenia	0.365	1.77	0.078
	UKI	London	0.362	1.75	0.081

BE1	Brussels	0.358	1.74	0.084
CZ06	Jihovýchod	0.350	1.69	0.092
PL43	Lubuskie	0.344	1.67	0.097

TABLE 6A, (NEGATIVE CHANGES IN INDIVIDUAL EQI PILLARS)

	Nuts code	Region name	β_r	t-score	p value
QUALITY					
	FR93	Guyane	-1.210	-5.47	0.000
	ITC2	Valle d'Aosta	-1.139	-5.15	0.000
	ITF1	Abruzzo	-0.803	-3.63	0.000
	HU31	Észak-Magyarország	-0.542	-2.45	0.015
	AT11	Burgenland	-0.533	-2.41	0.017
	UKN	N. Ireland	-0.506	-2.29	0.023
	DE3	Berlin	-0.531	-2.40	0.017
	FR91	Martinique	-0.486	-2.20	0.029
	FR92	Guyane	-0.479	-2.17	0.031
	HU21	Közép-Dunántúl	-0.406	-1.84	0.068
	ES70	Canarias	-0.432	-1.96	0.052
	BG33	Severoiztochen	-0.387	-1.75	0.081
	FR22	Picardie	-0.379	-1.71	0.088
	FR43	Franche-Comté	-0.376	-1.70	0.091
IMPARTIALITY					
	FR93	Guyane	-0.639	-2.70	0.008
	HU32	Észak-Alföld	-0.468	-1.97	0.050
	ITC1	Piemonte	-0.452	-1.91	0.058
	ES11	Galacia	-0.410	-1.73	0.085
CORRUPTION					
	ITF1	Abruzzo	-0.756	-3.66	0.000
	ES11	Galacia	-0.580	-2.81	0.005
	ITC3	Liguria	-0.493	-2.39	0.018
	ES30	Madrid	-0.484	-2.34	0.020
	ITF5	Basilicata	-0.460	-2.23	0.027
	ES70	Canarias	-0.437	-2.11	0.036
	BG34	Yugoiztochen	-0.425	-2.06	0.041
	ITG2	Sardegna	-0.417	-2.02	0.045
	ITC2	Valle d'Aosta	-0.416	-2.02	0.045
	RO11	Nord Vest	-0.408	-1.97	0.050
	AT21	Kärnten	-0.354	-1.72	0.088

ES53	Illes Balears	-0.351	-1.70	0.091
ITF2	Molise	-0.344	-1.67	0.097