Quality of government
and subjective poverty in Europe

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Abstract

We study the effect of quality of government on subjective poverty across European countries and regions, taking advantage of recently released data on the quality of public institutions at the regional level, and of information on household subjective poverty. In the analysis we try to separate the effects of quantity and quality of public services on perceived well-being, controlling for the size of the local government and for the receipt of in-kind services by each household of the sample. Results suggest that good governance significantly reduces the probability of being subjectively poor, both over the whole population and also among households that are poor in terms of monetary income. We then estimate the greater cost that a family has to bear in order to achieve a given level of welfare, if it lives in a region with inefficient public institutions. Our measure of this inefficiency cost is around 6% of disposable income.

Jel Codes: I32, H1, H7

Keywords: Quality of government, subjective poverty, minimum income, European regions, poverty line.

1 Introduction[4]

Empirical research on poverty and inequality is typically based on an income definition that includes all forms of cash incomes plus, often, imputed rents on owner-occupied dwellings. Economies of scale within the household are taken into account with an equivalence scale. Implicit in this traditional approach is the hypothesis that a unit of income has the same effect on well-being irrespectively of the quantity and quality of public services that are available in the area of

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[1] University of Modena and Reggio Emilia, massimo.baldini@unimore.it.
[2] University of Bari, vito.peragine@uniba.it.
[3] University of Modena and Reggio Emilia, luca.silvestri@unimore.it.
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residence. To address this deficiency, the value of transfers in kind received from the government for free or at prices lower than their costs is sometimes added to cash income (Aaberge et al., 2013). This is an important correction, since households living in a country where public authorities provide good and abundant health and/or education services at low cost can reach substantially greater levels of well-being with respect to households that have the same composition and cash income but must buy these services, totally or in part, in the market. Studies providing estimates of the distribution of "extended" income are, however, based on the implicit assumption that the quality of public services and the efficiency of governments are the same throughout the country or area where the surveyed households live. However, households resident in a region with efficient institutions may reach greater levels of well-being than those residing in regions or countries where public services are of inferior quality, for various reasons. First, an efficient government can convert a given amount of public expenditure into a greater amount of services provided to households. Second, people living in areas with good quality public institutions may perceive a higher living standard because they know that they can rely on public services when needed. Even households with significant incomes may feel deprived and insecure in areas with low quality government - for example, if they have to buy some goods or services from the market because those produced by the state are deemed to be of too poor quality or are difficult or impossible to attain, being subject to too much bureaucracy or excessive waiting lists or distribution criteria based on cronyism. These differences, which might be substantial, are neglected by the traditional approach based on the comparison of equivalent disposable incomes. We therefore expect that the quality of government may have an impact on poverty: people with low incomes but living in areas with highly efficient governments are likely to feel less poor than others with the same monetary income, but inhabiting regions or countries characterized by inefficient or corrupt institutions.

To verify these hypotheses, we take advantage of the recent availability of data providing information on the quality of government at subnational level in Europe. In particular, we study whether subjective monetary poverty is lower in areas with good quality of government. Our study uses microdata on households' incomes and conditions from the Eu-Silc survey, attaching to each household a measure of the quality of government in the area of residence. The analysis covers most of the European Union countries and finds that living in regions with high-quality services actually reduces subjective poverty. The results are robust to the inclusion in the regressions of the quantity of public services present in the area and received by each household, allowing us to separate the effects on subjective poverty caused by the quantity of public services from those depending on the quality of the institutions. This kind of analysis has direct implications for poverty measurement: if quality of government has an impact on living standards then, ceteris paribus, the subjective poverty line should be lower in well administered areas, since less money is sufficient to reach any given level of well-being. Comparisons in the incidence of subjective poverty across countries may therefore provide a different picture after taking into account quality of government differentials.

Section 2 of the paper briefly reviews the literature concerned with the relationship between subjective well-being and quality of government; the empirical strategy and the data used for our

analysis are described in section 3; section 4 presents the basic results. Section 5 applies a correction for government efficiency to the derivation of subjective poverty lines, and section 6 concludes.

2 Quality of government, well-being and subjective poverty

A given expenditure on in-kind services - for example education or health care - may hide profound geographical differences in the way these resources are actually managed and allocated. The assumption of equal efficiency of public services may perhaps be justified in relatively homogeneous contexts like some North-European countries, but is clearly unfounded for other nations where significant differences in the actual quality of public services across regions are well documented. In Italy, for example, the divide between the Centre-North and the Southern regions is apparent (Afonso and Scaglioni 2006, Agasisti and Sibiano 2011) and may even be widening following the cuts in expenditure resulting from the recent crisis and the austerity policies of the last few years. The provision of public services may therefore have a different impact on the living standards of citizens according to their effective quality. One of the implications of this is that a correct measure of equivalent income should encompass also the quality of in-kind transfers received, plus that of public institutions in general.

Quality of government can be seen as an important instrument in the process of converting economic resources in factual well-being. In the capabilities approach, for example, the presence of institutions that can be relied on may be considered a fundamental condition to achieve an ample set of functionings. The ability to circulate in a town to reach places of study or work may be severely hampered by lack of safety in the streets or by an inefficient public transport system. Similarly, the presence of health care services is not a sufficient condition to guarantee good health levels to the population, if these services are difficult to access for a part of the population, or too costly, or subject to favoritism or corrupt practices. Many studies have indeed shown the presence of a positive correlation between quality of government and good population health (Gupta et al. 2000, Hall and Lamont 2009, Rothstein 2011). The large and important institutionalist strand of literature focuses on the role of institutions in the development pattern of a country. Differences in poverty and inequality among countries are seen as the result of extractive Institutions (Acemoglu, Johnson and Robinson 2001) or of an unequal distribution of the initial factor endowments (Engerman and Sokoloff 2002). Easterly and Levine (2002) find that institutions are the primary and almost exclusive cause of the economic development of a nation.

Turning to the relationship between poverty and quality of government, Gupta et al. (2002) find that corruption increases inequality and reduces the growth rate of the poorest income quintile. In this international comparison, the results are robust using both OLS and IV. Holmberg and Rothstein (2010) investigate, instead, the correlation between the level of development of democracy and absolute poverty. They show that it is very important to correctly define the quality of government, and figure out what can be explained by that definition. They also show that a society with a higher level of democracy is not necessarily a society with less poverty.

Closer to the object of the present analysis, some papers have studied the relationship between quality of government and subjective well-being (which can be broadly defined as a measure of

how an individual evaluates her quality of life). Chong and Calderòn (2000) for example perform a cross-country analysis from 1960 to 1990 and find a strongly negative correlation between institutional quality and poverty. They also conclude that quality of government has a positive impact on income and equality only for richer countries.

Ott (2010) uses a dataset including 130 countries and finds that the impact on subjective well-being of the quality of government is greater than that of measures of democracy and of the size of government, and also of the quantity of public goods produced. Helliwell and Huang (2008), too, find a strong effect of quality of government on subjective well-being, particularly in the poorest countries, where "delivery quality" seems to matter more than the presence of formal democratic rules. Also Frey and Stutzer (2000) test if direct democracy and federalism improve people's happiness: they find that federalism improves happiness, but even greater is the effect of direct democracy. In this area of research it is often difficult to distinguish between correlation and causality, owing not only to problems in the data, but also because the pattern of causality is intrinsically difficult to establish with precision. The existence of a clear positive correlation between subjective well-being and quality of government, in any case, seems well-founded. Our research is the first that, by using microdata on households, focuses on a specific aspect of subjective well-being, namely subjective poverty, making use of data about differences in the quality of government across European regions.

3 Data and empirical strategy

The data that we use to measure the quality of public services at the sub-national level come from the "Quality of Government Institute" of the University of Gothenburg. In particular, the Quality of Government EU Regional Data are the result of a survey carried out at the sub-national level across Europe in 2010 and then repeated in 2013 (Charron et al. 2014). The survey was conducted over the 28 European Union member countries and involved around 34,000 people in 2010 and 85,000 in 2013. It collected information about quality of government not from national experts, as is usual for this kind of surveys, but from citizens. Since the aim of this survey was to gather opinions about the quality of government at the regional level, at least 400 persons were interviewed in 2013 for each of the regions surveyed in the 28 European countries. The questions tried to elicit citizens' opinions about three concepts that constitute important dimensions of the general concept of the quality of government: the *quality* of the services, whether they are delivered with *impartiality*, and the possible presence of *corruption* in their area of residence. For each of these three pillars, the questions considered three areas of policy where variation can legitimately be expected in the quality of provision at the local level, being typically administered at sub-national level: health care, education and law enforcement. Finally, the survey asked two specific questions regarding the ability of the media to identify corruption in the public sector and the perceived freedom of elections. Data from this survey were then used to create the "EQI" index (European Quality of Government Index) which connects these results with the World Bank's well-known World Governance Indicators (WGI), obtaining an index that can summarize the quality of government at sub-national level while continuing to consider its multidimensionality. The WGI index in this context is computed for each country by taking the country average of four

of the World Bank indicators: control of corruption, government effectiveness, rule of law, voice and accountability. Then its values are standardized across all EU countries. The resulting number is indicated as WGI_c in equation (1).

The EQI index for each region has been calculated as

$$(1) \quad EQI_{ac} = WGI_c + (Rqog_{ac} - CRqog_c)$$

i.e. the EQI index for region a in country c is the difference between the regional and national results of the answers to the questions, added to the WGI index value for country c as a whole. $Rqog_{ac}$ measures the average of the 16 questions for region a, which is standardized across the sample. In the remainder of this paper we denote this index also with QoG, i.e. quality of government. In some particular states (especially, but not for all, those in which there is only one NUTS1 level) it was not possible to differentiate among sub-national levels: in these cases the EQI value is simply the score of the WGI. In some countries there is significant variation in the regional QoG indicators - for example in Italy, France, Bulgaria and Spain - while in others the regional variation is much lower (Sweden, Denmark, Finland). We study the relationship between this index and subjective poverty using as much as possible data at the sub-national level, to increase data variability, but for some small countries (CY, EE, LT, LU, LV, MT, SI) the QoG survey provides information only at the national level, while for others (DK, DE, IE, NL, PT, RS, SK) the Eu-Silc dataset available to researchers does not allow to go beyond the national level. We therefore use assign to the households living in these countries only a single value for EQI for each country, while for the other countries in the EU-Silc sample (AT, BE, BG, CZ, EL, ES, FI, FR, HU, IT, PL, RO, UK) we use information at the sub-national level (see Tab. A3 in the Appendix).

In addition to quality, we also control for the amount of public services provided at the regional level, to reduce the legitimate doubt of omitted variables. The controls we use are four, all referring to the same territorial division present in EU-Silc: the number of physicians per 100,000 inhabitants, the school participation rate of 4 year-old children, the number of public employees per capita and the gross value added of the public sector in thousands of Euros per capita. These variables come from the European regional Statistics Database provided by Eurostat and (to compensate the lack of data regarding the number of physicians for some countries) by the World Bank. The Appendix provides more details about these variables. With the introduction of these controls, we can differentiate the effect of the quality of services from that of their quantity. In addition to these four measures of public service quantity, which are common to all households living in the same region, we add two measures of in-kind services specifically received by each family, using the information provided in the paper by Aaberge et al. (2013), which estimates the distribution of some in-kind services across households for the 28 EU countries.

As already discussed, a household living in an area characterized by institutions of good quality should find it easier to "make ends meet" with respect to a similar household with the same cash income, but living in an area with public services of lower quality. This poor quality may force a household to buy, in the private market, goods or services that are substitutes for the public ones, in sectors such as health care, transport or education. Therefore, this household actually has a

lower standard of living, despite having similar income levels. Further, the presence of corruption or too much bureaucracy may produce a sense of insecurity that hampers the perspectives of improvement in personal economic conditions.

To test this hypothesis, we first check if subjective poverty is negatively correlated with the quality of government. The basic regression to be estimated is

$$(2) \qquad SP_{ia} = P(subjective\ poor) = \alpha + \beta EQI_a + \gamma lnY_{ia} + \theta X_{ia} + \zeta G_{ia} + \varphi Z_a$$

The dependent variable, SP_{ia}, is 1 if household i lives in area a and declares itself poor, i.e. it is subjectively poor, and 0 otherwise. This indicator of subjective poverty is taken from the answer to the following question, present in the Eu-Silc survey: "Thinking of your household's total income, is your household able to make ends meet, namely, to pay for its usual necessary expenses?". The six possible answers are "with great difficulty", "with difficulty", "with some difficulty", "fairly easily", "easily", "very easily". We denote as subjectively poor those households responding "with great difficulty" or "with difficulty". The answer to this question is the same for each member of the household, so the unit of analysis is the household, not the individual. The variable EQI_a is the indicator of quality of government in area a, already described, Y_{ia} is the monetary income of the household, X_{ia} a vector of its demographic characteristics which are deemed to influence subjective poverty, G_{ia} is a vector with the quantity of public goods and services in kind received by the household (health and education) and Z_a is a vector of quantitative indicators of the size of the public sector in the region. Notice that in this expression two terms for the quantity of public services are present: a measure (G_{ia}) that captures some public goods and services that can be attributed to each specific family on the basis of its demographic structure – for example - health care or education, and a term (Z_a) that tries to measure the size of public intervention in each area, whose value therefore is the same for all households living in the same region. Examples of this second term are the per capita value added produced by the public sector, or the number of workers employed in it. The introduction of measures of the quantity of public sector provision is necessary since we might otherwise run the risk of exaggerating the effect of quality of government on subjective poverty, if quantity and quality are, at least for some areas or for some spheres of public activity, positively correlated. All monetary values are expressed at 2013 prices with the Eurostat inflation rate for each country and are converted at purchasing power parities using the Eurostat price level index.

We study the impact of quality of government also considering the interrelationship between monetary and subjective poverty: if the hypothesis that government efficiency matters for living standards is correct, then the probability that a monetarily poor household does not feel itself to be poor should be higher in areas with high-quality government.

The concept of monetary poverty is measured by the standard indicator of relative poverty, whereby a person is poor (more precisely, at risk of poverty) if the disposable equivalent income

(without the imputed value of public services) of the household is lower than 60% of the median disposable equivalent income of the whole nation.[5] Therefore, in the expression

$$(3) \quad P(Not\ subjective\ poor\ |\ relatively\ poor) = \alpha + \beta EQI_a + \gamma lnY_{ia} + \theta X_{ia} + \zeta G_{ia} + \varphi Z_a,$$

the dependent variable is 1 if the household is relatively poor in terms of monetary income, but does not feel poor (i.e., does not think itself able to make basic ends meet "with great difficulty" or "with difficulty"). In this case we expect for the estimated coefficient β a positive sign.

Conversely, for the same reason, among households which are not poor in terms of relative income one should find a greater share of subjectively poor respondents in areas with low-quality public services. In this case, for the estimated equation

$$(4) \quad P(Subjective\ poor\ |\ not\ relatively\ poor) = \alpha + \beta Q_a + \gamma lnY_{ia} + \theta X_{ia} + \zeta G_{ia} + \varphi Z_a,$$

the sign of β should be negative.

In general, the estimated relationship between subjective poverty and the quality of government of the region of residence can be distorted for different reasons. First, the causal relationship could go in both directions: in a rich area there are few poor persons and also only a few families that think themselves poor, but this average high income level can also produce efficient institutions, inter alia through high fiscal revenues. To take account of this possibility, in the regressions we control for the average income level of the area of residence, computed on the Eu-Silc data. Second, people can choose to move if they want to live in areas with high QoG; for these households, the QoG level is not exogenous, but a choice made by them. We propose a simple correction for this case below. Further, there could be a problem of omitted variables, if both subjective poverty and QoG partly depend on some variable that we do not consider. For example, the level of social capital of the region is likely to be correlated with both subjective poverty and QoG. Further, the opinion about personal resources may be influenced not only by characteristics of the environment (among which QoG is undoubtedly important) and of the household, but also by personal traits like a more or less optimistic attitude towards life in general. Fortunately, the Eu-Silc survey for 2013 contains a special section on wellbeing, with a lot of questions also regarding these personal appraisals, that can be introduced in the estimation. In the next section we present the results obtained with probit regressions and some robustness analyses.

4 Subjective poverty and the quality of government: regression results

4.1 Results from regressions on pooled data

We start by using the pooling of the two Eu-Silc surveys for the years 2010 and 2013, which correspond to the two years when the surveys concerning the opinion of European citizens on the quality of government were conducted. The first regression that we run concerns the effect of the

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[5] In this text, for brevity we use equivalently "relative poverty" and "at risk of relative poverty".

quality of government on the probability of feeling subjectively poor. All regressions are at household level. We exclude households with yearly equivalent disposable income lower than 500 and greater than 300,000 euros, with head aged less than 18 years and with more than 13 members. Equivalent income is computed using the OECD modified scale. Tab. 1 shows the marginal effects on the probability of subjective poverty, estimated after probit regressions. Each of these marginal effects is computed as the average of the marginal effects associated with each observation of the sample. The coefficient of quality of government is always negative: people living in regions where public institutions are on average considered of good quality evaluate themselves to be less poor than those with similar income and characteristics but living in areas with low-quality government. The increase in the quality measure by one standard deviation reduces the probability of subjective poverty by 4%-5%. The first column provides the results of the basic specification, which controls only for personal characteristics of the household and of the head. As with the other columns, all the demographic and income variables have the expected signs. Subjective poverty increases with age but at a decreasing rate. The presence of a chronic illness for the head increases its probability, as well as being separated. Education provides a shelter against the risk of subjective poverty, and men tend to feel more sure of their incomes than women. Equivalent income of the household is negatively correlated with the probability of feeling poor, as expected, and also the average income of the area of residence has a negative impact on the dependent variable. The year 2013 marks a worsening of the feeling of economic wellbeing due to the persistence of the economic crisis.

The second column adds to the set of explanatory variables those regarding the quantity of public services, some of them concerning the macro dimension (equal in value for all households living in the same area) and two others that are specific for each household (the value of in-kind health and education transfers received). These latter variables have the expected sign, even if only the coefficient of health is significant: a family receiving a substantial amount of transfers from health or education services feels itself less poor than one with lower in-kind services of this type. The effects of these two variables are, however, lower than that of the quality of government. The macro variables have a more differentiated impact on the probability of feeling poor. The number of public employees per inhabitant in the region of residence does not seem to have any effect, while the per capita regional value added of the public sector has an unexpected positive impact on feeling poor. Therefore, it seems that the quantity of public sector activity has a negative effect on the sensation of being poor only when it takes the form of specific transfers to households, while the presence of a big public sector may even increase the diffusion of subjective poverty. The quality of government, therefore, seems overall more important for subjective poverty than the total dimension of the government.

One of the main concerns of this type of estimation is the presence of omitted variables that are specific to each household and can be correlated with the dependent variable and the regressor of interest. A person may, for example, feel in bad economic conditions even in the presence of good income if he/she is pessimistic about life in general. Omitting this attitude can distort the coefficient of interest, if the distribution of personality traits is correlated with the different levels of perceived local quality of government. The Eu-Silc survey for 2013 contains a special module on

wellbeing with a lot of questions capturing personality traits - for example, how much time in the past four weeks one has been very nervous , or calm and peaceful, or downhearted or depressed. These variables in the 2013 sample turn out to be slightly negatively correlated with our measure of regional QoG: ceteris paribus, people living in areas with high QoG are - controlling for the usual covariates including household and average regional income - less depressed or nervous than similar persons who reside in areas with lower QoG. To control for this interaction, we have introduced some of these "emotional" variables in column 3. All of them have the expected sign on subjective poverty: those who are nervous, depressed or not happy about their life are significantly more likely to be in subjective poverty than persons who are more optimistic. Even with these variables, the impact of the quality of government on subjective poverty remains the same as before. Another possible form of endogeneity can arise from the omission of a variable that may reasonably explain at least part of the relationship between QoG and subjective poverty. A variable that is surely correlated with the quality of institutions is the level of social capital in the area (Camussi and Mancini, 2016). The relationship between social capital and QoG is complex and with great probability causality goes in both directions, but some recent papers (Rothstein 2011) suggest that it is the quality of institutions that can produce changes in the level of trust that people have towards institutions or people in general: if a person has had recent negative experiences in her relationship with public services, or has heard of similar negative events occurring to friends or relatives, then she may be less willing to be trustful towards not only public institutions, but also in everyday interactions with the others. We include in the regression of the fourth column two measures of social capital computed on the same Eu-Silc dataset for 2013: the regional means of the indexes for trust in the police and trust in others. In the sample, both are strongly correlated with QoG (correlation coefficient between QoG and trust in the police 0.63, between QoG and trust in others 0.37) and, although less, with subjective poverty (correlation coefficient between subjective poverty and trust in the police –0.24, between subjective poverty and trust in others -0.11). When inserted in the regression, however, the two measures of average regional social capital lose their significance in explaining subjective poverty. It seems therefore that social capital has not an autonomous impact on subjective poverty, but operates only through the effect of QoG. Indeed, this latter variable retains its significant negative effect on the dependent variable. Thus the attempt to introduce in the regression all the available variables that may possibly produce endogeneity does not therefore change the basic result. Finally, another possible form of endogeneity arises if people select where to live also on the basis of considerations about the quality of government. The last column of the table removes the households of immigrants and of foreigners from the estimation sample, but the effect of quality of government does not change, becoming even more significant. The dataset contains information only about the year of immigration in the country, not in the region.

Tab. 1 Probability of feeling poor – marginal effects from probit estimation

	1 Basic regression	2 + quantity of public services	3 + emotional variables (2013 only)	4 + social capital (2013 only)	5 Without foreigners and immigrants (2013 only)
EQI	-0.0513*** (0.0099)	-0.0394*** (0.0099)	-0.0501*** (0.0105)	-0.0417*** (0.0119)	-0.0470*** (0.0120)
Age	0.0067*** (0.0008)	0.0064*** (0.0007)	0.0058*** (0.0007)	0.0058*** (0.0007)	0.0057*** (0.0008)
Age squared	-0.0001*** (0.0000)	-0.0001*** (0.0000)	-0.0001*** (0.0000)	-0.0001*** (0.0000)	-0.0001*** (0.0000)
Chronic illness	0.0772*** (0.0026)	0.0773*** (0.0025)	0.0580*** (0.0027)	0.0580*** (0.0027)	0.0561*** (0.0027)
Married	-0.0537*** (0.0045)	-0.0461*** (0.0042)	-0.0362*** (0.0045)	-0.0362*** (0.0045)	-0.0374*** (0.0047)
Separated	0.0552*** (0.0040)	0.0570*** (0.0043)	0.0518*** (0.0050)	0.0518*** (0.0050)	0.0501*** (0.0053)
Widow(er)	0.0030 (0.0043)	0.0027 (0.0046)	0.0025 (0.0057)	0.0025 (0.0057)	-0.0011 (0.0057)
Foreigner	0.0766*** (0.0104)	0.0742*** (0.0104)	0.0659*** (0.0092)	0.0660*** (0.0092)	
Male	-0.0241*** (0.0027)	-0.0246*** (0.0028)	-0.0169*** (0.0029)	-0.0169*** (0.0029)	-0.0190*** (0.0031)
Secondary ed.	-0.0513*** (0.0040)	-0.0529*** (0.0041)	-0.0473*** (0.0043)	-0.0474*** (0.0043)	-0.0469*** (0.0043)
Degree	-0.1187*** (0.0054)	-0.1223*** (0.0058)	-0.1112*** (0.0061)	-0.1112*** (0.0061)	-0.1131*** (0.0057)
# family members	0.0167*** (0.0019)	0.0233*** (0.0023)	0.0249*** (0.0022)	0.0249*** (0.0022)	0.0235*** (0.0021)
Ln household eq. disp. income	-0.2002*** (0.0054)	-0.1994*** (0.0054)	-0.1918*** (0.0054)	-0.1918*** (0.0054)	-0.1914*** (0.0056)
Ln average reg. eq. disp. income	-0.0425 (0.0306)	-0.0897** (0.0351)	-0.0732* (0.0442)	-0.0785* (0.0464)	-0.0834* (0.0476)
Nervous			0.0476*** (0.0039)	0.0476*** (0.0039)	0.0478*** (0.0041)
Feels in the dumps			0.0445*** (0.0049)	0.0445*** (0.0049)	0.0412*** (0.0051)
Not calm and peaceful			0.0277*** (0.0034)	0.0277*** (0.0034)	0.0272*** (0.0033)
Depressed			0.0441*** (0.0042)	0.0440*** (0.0042)	0.0429*** (0.0046)
Not happy			0.0681*** (0.0051)	0.0680*** (0.0051)	0.0660*** (0.0052)
Doctors		0.0001 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)
Pre-school		0.0033 (0.0388)	0.0554* (0.0313)	0.0606** (0.0278)	0.0446 (0.0282)
Public employees		-0.2753 (0.3412)	-0.0746 (0.3369)	-0.0736 (0.3368)	0.1204 (0.3674)
Public value added		0.0103*** (0.0030)	0.0110*** (0.0030)	0.0119*** (0.0030)	0.0089** (0.0044)
Ln education transfer		-0.0077*** 	-0.0071*** 	-0.0071*** 	-0.0062**

	1	2	3	4	5
		(0.0020)	(0.0024)	(0.0024)	(0.0025)
Ln health transfer		-0.0319***	-0.0328***	-0.0327***	-0.0318***
		(0.0046)	(0.0045)	(0.0045)	(0.0049)
Average reg. trust in the police				-0.0173	-0.0189
				(0.0119)	(0.0127)
Average reg. trust in others				0.0012	0.0077
				(0.0190)	(0.0190)
Year 2013	0.0161***	0.0117***			
	(0.0042)	(0.0045)			
Pseudo R^2	0.2474	0.2458	0.2684	0.2685	0.2712
Observations	435,062	420,894	214,322	214,322	194,449

Note: the marginal effects are the averages of the marginal effects computed for each observation. Each regression contains country dummy variables. All individual characteristics refer to the head of the household. Reference variables: single, female, elementary education, year 2010. Standard errors are clustered at the regional level. Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

The second set of estimates is restricted to the sub-sample of households which are relatively poor on the basis of cash income, i.e. with equivalent income lower than 60% of the median value for their country. We seek to test whether living in an area with good quality of government produces a reduction in their probability of feeling poor. In other words, the poor may think themselves not so poor if they can rely on the presence of an efficient public administration. From Tab. 2, good government quality produces an increase in the probability that a household may not feel poor, even if it is actually poor on the basis of disposable income. This result does not depend on the possible receipt of a greater quantity of in-kind services, because the regressions control for their presence. As expected, psychological traits associated with negative feelings tend to have a depressing impact on the dependent variable, but also when controlling for these factors the quality of government retains its significance.

Tab. 2 Probability of not feeling poor among the relatively poor households – marginal effects from probit estimation

	1 Basic regression	2 + quantity of public services	3 + emotional variables (2013 only)	4 + social capital (2013 only)	5 Without foreigners and immigrants (2013 only)
EQI	0.0610***	0.0453***	0.0579***	0.0624***	0.0626***
	(0.0137)	(0.0130)	(0.0158)	(0.0171)	(0.0187)
Age	-0.0139***	-0.0137***	-0.0112***	-0.0112***	-0.0107***
	(0.0014)	(0.0015)	(0.0013)	(0.0013)	(0.0013)
Age squared	0.0002***	0.0001***	0.0001***	0.0001***	0.0001***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Chronic illness	-0.1079***	-0.1087***	-0.0792***	-0.0792***	-0.0774***
	(0.0039)	(0.0041)	(0.0053)	(0.0053)	(0.0057)
Married	0.0825***	0.0734***	0.0477***	0.0477***	0.0497***
	(0.0073)	(0.0081)	(0.0109)	(0.0109)	(0.0104)
Separated	-0.0555***	-0.0586***	-0.0549***	-0.0549***	-0.0570***
	(0.0072)	(0.0073)	(0.0096)	(0.0096)	(0.0095)
Widow(er)	0.0178**	0.0186**	0.0232**	0.0232**	0.0301***
	(0.0077)	(0.0080)	(0.0101)	(0.0101)	(0.0099)

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Foreigner	-0.0775***	-0.0746***	-0.0664***	-0.0664***	
	(0.0110)	(0.0111)	(0.0125)	(0.0125)	
Male	0.0221***	0.0224***	0.0114*	0.0114*	0.0168**
	(0.0064)	(0.0065)	(0.0067)	(0.0067)	(0.0074)
Secondary ed.	0.0754***	0.0758***	0.0684***	0.0684***	0.0706***
	(0.0054)	(0.0056)	(0.0067)	(0.0067)	(0.0074)
Degree	0.1416***	0.1445***	0.1262***	0.1262***	0.1416***
	(0.0109)	(0.0115)	(0.0111)	(0.0110)	(0.0127)
# family members	-0.0189***	-0.0267***	-0.0320***	-0.0321***	-0.0288***
	(0.0028)	(0.0033)	(0.0039)	(0.0039)	(0.0038)
Ln household eq. disp. income	0.0256***	0.0254***	0.0180**	0.0180**	0.0195*
	(0.0085)	(0.0089)	(0.0087)	(0.0087)	(0.0102)
Ln average reg. eq. disp. income	0.1068***	0.1659***	0.1514**	0.1509**	0.1860**
	(0.0414)	(0.0472)	(0.0760)	(0.0748)	(0.0791)
Nervous			-0.0638***	-0.0638***	-0.0648***
			(0.0089)	(0.0089)	(0.0090)
Feels in the dumps			-0.0447***	-0.0447***	-0.0394***
			(0.0115)	(0.0115)	(0.0134)
Not calm and peaceful			-0.0359***	-0.0359***	-0.0353***
			(0.0072)	(0.0072)	(0.0081)
Depressed			-0.0601***	-0.0601***	-0.0597***
			(0.0097)	(0.0097)	(0.0107)
Not happy			-0.0959***	-0.0959***	-0.0924***
			(0.0072)	(0.0072)	(0.0086)
Doctors		-0.0001	-0.0001	-0.0001	-0.0001
		(0.0001)	(0.0001)	(0.0001)	(0.0001)
Pre-school		-0.0161	-0.0806**	-0.0792**	-0.0575
		(0.0414)	(0.0332)	(0.0339)	(0.0385)
Public employees		0.1071	0.3988	0.3773	0.2038
		(0.4850)	(0.4852)	(0.5010)	(0.7109)
Public value added		-0.0156***	-0.0140***	-0.0137***	-0.0116
		(0.0039)	(0.0039)	(0.0042)	(0.0096)
Ln education transfer		0.0060*	0.0056	0.0056	0.0055
		(0.0036)	(0.0069)	(0.0069)	(0.0074)
Ln health transfer		0.0361***	0.0496***	0.0496***	0.0496***
		(0.0108)	(0.0122)	(0.0122)	(0.0118)
Average reg. trust in the police				-0.0063	-0.0073
				(0.0248)	(0.0270)
Average reg. trust in others				-0.0040	-0.0064
				(0.0302)	(0.0353)
Year 2013	-0.0236***	-0.0152**			
	(0.0060)	(0.0067)			
Pseudo R^2	0.1877	0.1835	0.2176	0.2177	0.2261
Observations	67,857	65,212	33,150	33,150	28,568

Note: the marginal effects are the averages of the marginal effects computed for each observation. Each regression contains country dummy variables. All individual characteristics refer to the head of the household. Reference variables: single, female, elementary education, year 2010. Standard errors are clustered at the regional level. Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

In parallel with the findings so far, living in a region with bad institutions should reduce the perception of personal well-being. Thus we expect in this case an increase in the probability of subjective poverty among the non-poor. In other words, households which are not poor in terms

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of income are more likely to feel poor if they have to deal with low-quality local governments. From Tab. 3, the probability of being subjectively poor actually decreases with the quality of government, while negative personality traits or a low level of education act in the opposite direction.

Tab. 3 Probability of feeling poor among the not relatively poor households – marginal effects from probit estimation

	1 Basic regression	2 + quantity of public services	3 + emotional variables (2013 only)	4 + social capital (2013 only)	5 Without foreigners and immigrants (2013 only)
EQI	-0.0504***	-0.0393***	-0.0506***	-0.0405***	-0.0464***
	(0.0101)	(0.0101)	(0.0103)	(0.0118)	(0.0117)
Age	0.0058***	0.0055***	0.0054***	0.0054***	0.0054***
	(0.0007)	(0.0006)	(0.0007)	(0.0007)	(0.0007)
Age squared	-0.0001***	-0.0001***	-0.0001***	-0.0001***	-0.0001***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Chronic illness	0.0671***	0.0672***	0.0504***	0.0505***	0.0494***
	(0.0026)	(0.0026)	(0.0028)	(0.0028)	(0.0029)
Married	-0.0450***	-0.0379***	-0.0312***	-0.0312***	-0.0326***
	(0.0041)	(0.0039)	(0.0045)	(0.0045)	(0.0048)
Separated	0.0492***	0.0506***	0.0451***	0.0452***	0.0432***
	(0.0042)	(0.0046)	(0.0049)	(0.0049)	(0.0053)
Widow(er)	0.0066	0.0063	0.0069	0.0069	0.0042
	(0.0043)	(0.0047)	(0.0058)	(0.0058)	(0.0058)
Foreigner	0.0729***	0.0711***	0.0625***	0.0626***	
	(0.0106)	(0.0105)	(0.0094)	(0.0094)	
Male	-0.0216***	-0.0222***	-0.0148***	-0.0148***	-0.0162***
	(0.0024)	(0.0025)	(0.0028)	(0.0028)	(0.0030)
Secondary ed.	-0.0388***	-0.0405***	-0.0359***	-0.0360***	-0.0359***
	(0.0037)	(0.0038)	(0.0041)	(0.0041)	(0.0041)
Degree	-0.0914***	-0.0952***	-0.0861***	-0.0862***	-0.0883***
	(0.0048)	(0.0052)	(0.0056)	(0.0057)	(0.0054)
# family members	0.0143***	0.0204***	0.0214***	0.0213***	0.0207***
	(0.0017)	(0.0021)	(0.0021)	(0.0021)	(0.0019)
Ln household eq. disp. income	-0.2487***	-0.2474***	-0.2446***	-0.2447***	-0.2406***
	(0.0063)	(0.0063)	(0.0064)	(0.0063)	(0.0065)
Ln average reg. eq. disp. income	-0.0127	-0.0579	-0.0361	-0.0452	-0.0485
	(0.0315)	(0.0361)	(0.0425)	(0.0438)	(0.0449)
Nervous			0.0472***	0.0472***	0.0471***
			(0.0036)	(0.0036)	(0.0040)
Feels in the dumps			0.0580***	0.0580***	0.0558***
			(0.0052)	(0.0052)	(0.0051)
Not calm and peaceful			0.0278***	0.0278***	0.0275***
			(0.0037)	(0.0037)	(0.0037)
Depressed			0.0361***	0.0361***	0.0344***
			(0.0074)	(0.0074)	(0.0076)
Not happy			0.0623***	0.0623***	0.0609***
			(0.0051)	(0.0051)	(0.0052)
Doctors		0.0001	0.0000	0.0000	-0.0000
		(0.0001)	(0.0001)	(0.0001)	(0.0001)
Pre-school		-0.0014	0.0494	0.0564*	0.0407
		(0.0420)	(0.0350)	(0.0299)	(0.0299)
Public employees		-0.3843	-0.0331	-0.0120	0.1188

	(1)	(2)	(3)	(4)	(5)
		(0.3447)	(0.3311)	(0.3298)	(0.3494)
Public value added		0.0088***	0.0104***	0.0116***	0.0096**
		(0.0034)	(0.0034)	(0.0034)	(0.0042)
Ln education transfer		-0.0040**	-0.0041**	-0.0041**	-0.0034*
		(0.0019)	(0.0019)	(0.0019)	(0.0020)
Ln health transfer		-0.0298***	-0.0296***	-0.0295***	-0.0286***
		(0.0043)	(0.0045)	(0.0045)	(0.0049)
Average reg. trust in the police				-0.0224*	-0.0236*
				(0.0116)	(0.0122)
Average reg. trust in others				0.0052	0.0117
				(0.0180)	(0.0176)
Year 2013	0.0139***	0.0103**			
	(0.0044)	(0.0047)			
Pseudo R^2	0.2326	0.2307	0.2527	0.2528	0.2543
Observations	367,205	355,682	181,172	181,172	165,881

Note: the marginal effects are the averages of the marginal effects computed for each observation. Each regression contains country dummy variables. All individual characteristics refer to the head of the household. Reference variables: single, female, elementary education, year 2010. Standard errors are clustered at the regional level. Standard errors in parentheses, *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

4.2 Results from pseudo-panel regression

A pooling of cross-sections runs the risk of hiding part of the relationship between subjective poverty and QoG since it neglects the time dimension and does not allow us to check whether changes over time in QoG are correlated with changes in the dependent variable. Since we have two years of data, we try to use also this time dimension with a first-difference regression. The results should become less precise, not only because of the availability of only two annual datasets, but especially because measures of the quality of government change very slowly over time, and the two available surveys are only three years apart.

From the original dataset, we have extracted a pseudo-panel on the basis of the region of residence, the year of the survey and four cohorts defined by using the year of birth of the head (before 1940, from 1941 to 1955, from 1956 to 1970, after 1970). The result is a dataset of 880 observations (2 years x 110 regions with QoG measure available in both surveys x 4 cohorts). Tab. 4 reports the results of OLS first difference regressions. The first couple of columns shows the results of a very simple regression of the change in the share of households feeling subjectively poor on the change in the measure of QoG. The coefficient is strongly significant, and remains significant at 10% level after adding to the regression the changes in the main demographic variables. Notice in particular the expected strong significance of the changes in both household income and average regional household income. Turning to the results for the two other cases discussed above, the coefficient of the change in QoG is significant only for the last relationship (next-to-last column), but in all cases the coefficients have the expected sign. We interpret these results as a confirmation, with only two points in time, of the basic relationship between QoG and subjective poverty also over time, which would require a much more extended time span for a more precise measure.

Tab. 4 First-difference regressions on the pseudo-panel

Dep. Var.:	% Subjectively poor		% Relatively poor but not subjectively poor		% Not relatively poor but subj. poor	
Change in:						
EQI	-0.037***	-0.016*	0.026	0.016	-0.038***	-0.014
	(0.011)	(0.009)	(0.023)	(0.023)	(0.012)	(0.010)
Ln household disp. income		-0.075***		0.024		-0.075
		(0.028)		(0.017)		(0.059)
Ln average reg. disp. inc.		-0.229***		0.184***		-0.274***
		(0.034)		(0.059)		(0.055)
Age		0.006		-0.024**		0.003
		(0.006)		(0.010)		(0.007)
Age squared		-0.000*		0.000***		-0.000
		(0.000)		(0.000)		(0.000)
Chronic illness		0.033		-0.064		-0.073
		(0.046)		(0.047)		(0.047)
Married		-0.162**		0.205**		-0.084
		(0.078)		(0.080)		(0.076)
Separated		0.184*		0.040		0.189*
		(0.111)		(0.085)		(0.104)
Widow(er)		-0.187*		0.410***		-0.049
		(0.101)		(0.093)		(0.089)
Foreigner		-0.012		0.186*		-0.271*
		(0.125)		(0.096)		(0.140)
Male		0.059		0.058		0.077
		(0.054)		(0.061)		(0.049)
Secondary ed.		-0.013		0.086		-0.070
		(0.056)		(0.059)		(0.054)
Degree		-0.168**		0.212***		-0.065
		(0.069)		(0.078)		(0.062)
# family members		0.029		0.003		0.045**
		(0.019)		(0.021)		(0.021)
Constant	0.030***	0.037***	-0.036***	-0.046***	0.030***	0.028***
	(0.003)	(0.009)	(0.007)	(0.013)	(0.003)	(0.010)
Observations	440	440	440	440	440	440
R^2	0.026	0.384	0.003	0.136	0.023	0.368

Standard errors in parentheses, * p<.10, ** p<.05, *** p<.01

5 The cost of living with a low-quality government

If households that reside in an area with good governance feel better off than their income would suggest, the next question is to try to evaluate the 'premium' of efficient government, i.e. what is the difference in cash income needed to reach a given level of well-being for people residing in areas with different degrees of government efficiency. To this end, we can use another question present in the Eu-Silc survey, namely the minimum income question:

"In your opinion, what is the very lowest net monthly income that your household would have to have in order to make ends meet, that is to pay its usual necessary expenses?".

This question has been used several times to estimate the subjective poverty line for various household types (Goedhart et al. 1977, Ravallion 2016). We can extend the usual framework with this expression

$$(5) \quad lnYmin_{ia} = \alpha + \beta EQI_a + \gamma lnY_{ia} + \theta X_{ia}$$

Where *Ymin* is the answer to the question for household *i* in region *a*, *EQI$_a$* is the EQI index for region *a*, *Y* is disposable monetary income, *X* is a vector of characteristics that are deemed to influence the opinion on the necessary minimum income, among which the number of family members should be the most important variable. The poverty line can be obtained by finding the income level that realizes equality between *Ymin* and *Y*, thereby

$$(6) \quad Subjective\ poverty\ line = \exp\left(\frac{\alpha + \beta EQI_a + \theta X_{ia}}{1-\gamma}\right).$$

Since we expect for the estimated coefficient β a negative sign, the subjective poverty line should be lower, the higher is government quality. The first regression of eq. (5) shown in Tab. 6 controls only for the number of family members, while the second also allows for other demographic characteristics. The coefficient of government quality is substantially unchanged: considering that the mean of the EQI variable in our sample is slightly greater than 0 and its variance is nearly 1 (since the original EQI is standardized across countries), good governance translates into a nearly 6% reduction in the income necessary to make ends meet, *ceteris paribus*.

Tab. 6 Minimum income and quality of government

	Without demographic controls	With demographic controls
EQI	-0.0579***	-0.0581***
	(0.0022)	(0.0022)
Ln household disp. Income	0.3328***	0.2897***
	(0.0011)	(0.0012)
Ln n. of household members	0.2853***	0.2443***
	(0.0014)	(0.0018)
Age		0.0109***
		(0.0003)
Age squared		-0.0001***
		(0.0000)
Chronic illness		-0.0060***
		(0.0014)
Married		0.0564***
		(0.0024)
Separated		0.0338***
		(0.0027)
Widow(er)		0.0185***
		(0.0028)
Foreigner		0.0177***
		(0.0033)
Male		0.0093***
		(0.0015)
Secondary ed.		0.0712***
		(0.0017)

Degree			0.1517***
			(0.0020)
Constant		6.0866***	5.7951***
		(0.0127)	(0.0135)
Observations		418,491	418,444
R^2		0.5501	0.5659

Note: estimates include country dummies.

From these estimates, it is possible to compute the subjective poverty lines for the whole sample, which are always lower in regions with efficient governments. Table 7 shows the values of these lines, for each family dimension. Those for the low (high) QoG areas are obtained using the average EQI value for all regions with EQI lower (greater) than its median. The difference between the two sets indicate the cost of government inefficiency, i.e. the greater amount of income necessary to make ends meet in inefficient areas with respect to a similar household which resides in a region with high quality institutions. Taking the results from the last column, for a household with 4 members, for example, the minimum income to make ends meet is 1,464 euros higher in low-QoG areas, i.e. 122 euros per month.

Tab. 7 Estimated annual subjective poverty lines

# household members	From regression without dem. controls			From regression with dem. controls		
	low QoG areas	hig QoG areas	difference	low QoG areas	hig QoG areas	difference
1	10178	9007	-1171	8056	7165	-892
2	13793	12206	-1587	10324	9182	-1143
3	16476	14580	-1896	11937	10616	-1321
4	18691	16540	-2151	13231	11767	-1464
5	20612	18241	-2372	14331	12745	-1586
6	22327	19759	-2569	15298	13605	-1693
7	23889	21140	-2749	16165	14377	-1789

Instead of general subjective poverty lines valid for all the countries present in the sample, one could compute specific poverty lines for each country, carrying out the regression above only on the national sub-samples. An example of this kind of application is provided here for Italy. This country is suitable for this kind of application since there are great differences in the quality of government at the sub-national level. For other countries with more homogeneous distribution of QoG, it would be problematic to obtain - with a single country regression - a significant coefficient for the EQI variable. After estimating equation (5), we computed a specific "EQI-corrected" subjective poverty line for each of the five macro-areas present in the sample (North-West, North-East, Centre, South, Islands), using the respective EQI values. When using this correction, the lines will be higher, the lower the quality of government in that area. Then we compute also the traditional subjective poverty line, without the EQI correction. Comparing the disposable income of each household with the corresponding subjective poverty line, we obtain the incidence rates of

subjective poverty for the two cases. Fig. 1 compares for the five Italian macro-regions the incidence rates for both "objective" relative income poverty (disposable equivalent income lower than 60% of the national median) and for subjective poverty, with and without the EQI correction. The consideration of the different efficiency levels for government produces an increase in the share of individuals that are subjectively poor in the Southern part of the country, and a reduction in the North, particularly in the North-East. The difference in the share of subjectively poor individuals between North-East and South, for example, rises from 22% to 27% after the consideration of QoG among the determinants of subjective poverty. The divide between Centre-North and South, already substantial on the basis of cash income, is therefore expanded when we consider the cost of living in areas with low QoG.

Fig. 1 Incidence rates of relative and subjective poverty for individuals in Italy
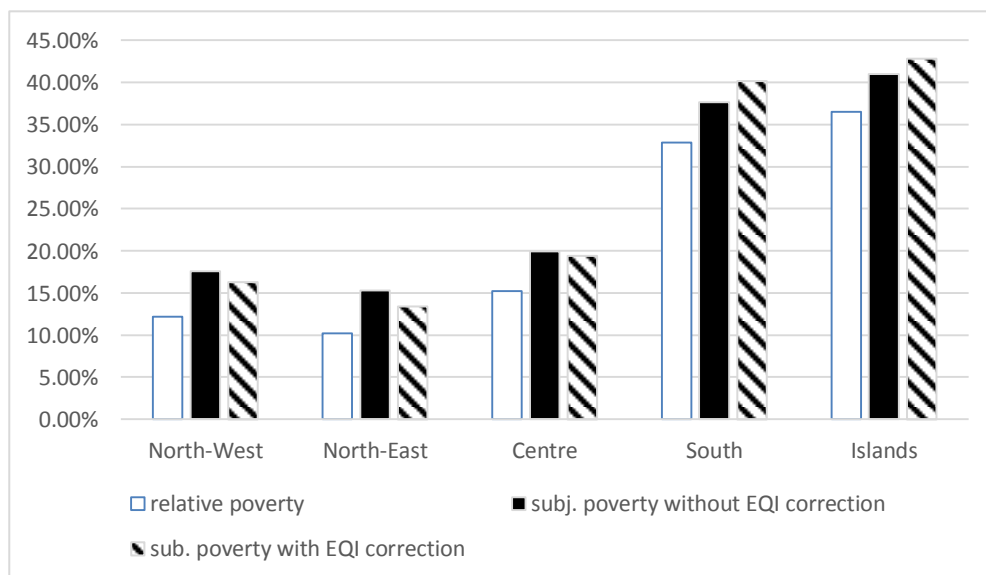
6 Conclusions

It is well known, at least since Aristotle, that the measurement of income is not sufficient to evaluate the well-being of a person, because the standard of living is a multidimensional concept that depends on many possible factors, both personal and social. Going from theory to practice, however, it becomes difficult actually to consider all the wealth of dimensions that influence well-being. So, the practice of poverty and inequality estimation often concentrates only on income or consumption measurement, and even the attempts to go beyond the simple utilitarian approach, considering various spheres of living - e.g. health conditions, or the social conditions in which one lives - usually neglect the fact that one of the major determinants of the ability to convert income into well-being is the quality of the public institutions of the area of residence. Further, the differences in government efficiency within a single country are often so great that using a single indicator for a whole country, especially for the greater ones, may be misleading. In this paper we

have tried to check what is the effect of the quality of government on how households feel about the adequacy of their incomes. The results confirm that the effect of living in an environment characterized by good governance makes a significant impact on subjective poverty, and that quality of government seems to matter more than its quantity. We have also tried to measure this effect in terms of the diffusion of subjective poverty, once the poverty lines are corrected for government efficiency. Since poor areas within countries often go hand-in-hand with local institutions of bad quality, the consideration of governance efficiency produces a widening effect in the differences in poverty and living standards between different parts of the country. Official measures therefore tend to understate the differences in poverty levels across regions and countries.

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Appendix

Tab. A1 Descriptive statistics of the variables used in the analysis

Relative poverty	A household is relatively poor if its disposable equivalent income is lower than 60% of the median of disposable equivalent income of the country of residence
Subjective poverty	Two different definitions of subjective poverty are used in this paper: - the first definition (sections 3 and 4) is taken from the following question in the Eu-Silc survey: "Thinking of your household's total income, is your household able to make ends meet, namely, to pay for its usual necessary expenses?". We denote as subjectively poor those households responding "with great difficulty" of "with difficulty"; - the second one (section 5) derives from the minimum income question in Eu-Silc: "In your opinion, what is the very lowest net monthly income that your household would have to have in order to make ends meet, that is to pay its usual necessary expenses?". The subjective poverty line is obtained by finding the income level that realizes equality between minimum income and disposable household income.
EQI index	European Quality of Government Index (equation 1 in the text), constant for each household in the same region. Source: Charron et al. (2014) and http://qog.pol.gu.se/
Age	Age of reference person
Age squared	Age of reference person squared
Chronic illness	The reference person suffers from a chronic illness (dummy)
Married	The reference person is married (dummy)
Separated	The reference person is divorced/ separated (dummy)
Widow(er)	The reference person is widow(er) (dummy)
Foreigner	The reference person is a foreign citizen (dummy)
Male	The reference person is male (dummy)
Secondary education	The highest education level of the reference person is secondary education (dummy)
Degree	The highest education level of the reference person is degree (dummy)
# family members	Number of family members
Ln household eq. disp. income	Logarithm of equivalent disposable household monetary income (OECD equivalence scale), at ppp and 2013 prices. (In Tab. 6 we use the ln of non

	equivalent disposable income).
Ln average reg. eq. disp. income	Regional average of logarithm of equivalent disposable household monetary income (OECD equivalence scale), at ppp and 2013 prices.
Nervous	The reference person answers "all of the time" or "most of the time" to the question "How much of the time over the past four weeks have you been very nervous?" (dummy)
Feels in the dumps	The reference person answers "all of the time" or "most of the time" to the question "How much of the time over the past four weeks have you felt so down in the dumps that nothing could cheer you up?" (dummy)
Not calm and peaceful	The reference person answers "a little of the time" or "none of the time" to the question "How much of the time over the past four weeks have you felt calm and peaceful?" (dummy)
Depressed	The reference person answers "all of the time" or "most of the time" to the question "How much of the time over the past four weeks have you felt down-hearted and depressed?" (dummy)
Not happy	The reference person answers "a little of the time" or "none of the time" to the question "How much of the time over the past four weeks have you been happy?" (dummy)
Doctors	Number of physicians per 100,000 inhabitants. Source: Eurostat (variable healt personnel by Nuts 2 regions, *hlth_rs_prsrg*), for some countries World Bank (http://data.worldbank.org/indicator/SH.MED.PHYS.ZS).
Pre-school	Participation rate of 4-years-olds children in education at regional level. Source: Eurostat (variable name *educ_regind*).
Public employees	Number of public employees per capita (variable *nama_10r_2emhrw* Public administration, defence, education, human health and social work activities*)*
Public value added	Gross value added of the public sector in thousands of euros per capita. Source: Eurostat (variable *nama_10r_3gva* Public administration, defence, education, human health and social work activities*)*
Ln education transfer	Log of total in-kind education transfer received by each household, obtained using the coefficients from Aaberge et al. (2013): public spending on education per person by age and country, in % of gdp per capita, distinguishing between primary, lower secondary, upper secondary education level.
Ln health transfer	Log of total in-kind health transfer received by each household, obtained using the coefficients from Aaberge et al. (2013): health care per person by age and country, in % of gdp per capita (7 age classes).
Average reg. trust in the police	Regional average value of the answer to the question about trust in the police (from 0 (no trust at all) to 10 (complete trust)).
Average reg. trust in others	Regional average value of the answer to the question about trust in other (from 0 (do not trust any other person) to 10 (most people can be trusted)).
Year 2013	Dummy 1 if the observation is from Eu-Silc 2013

If not specified, the source of the variable is the Eu-Silc dataset.

Tab. A2 Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Subjective poverty (first dif.)	435,115	0.305	0.460	0.000	1.000
Relative poverty	435,115	0.156	0.363	0.000	1.000
Relatively poor but not subj. poor	435,115	0.069	0.254	0.000	1.000
Subj. poor but not rel. poor	435,115	0.219	0.413	0.000	1.000
EQI	435,110	0.118	0.965	-1.981	1.955
Age	435,067	54.420	16.035	18.000	80.000
Age squared	435,067	3218.679	1730.976	324.000	6400.000
Chronic illness	435,115	0.375	0.484	0.000	1.000

Married	435,115	0.616	0.486	0.000	1.000
Separated	435,115	0.099	0.299	0.000	1.000
Widow(er)	435,115	0.144	0.351	0.000	1.000
Foreigner	435,115	0.057	0.231	0.000	1.000
Male	435,115	0.592	0.492	0.000	1.000
Secondary ed.	435,115	0.435	0.496	0.000	1.000
Degree	435,115	0.238	0.426	0.000	1.000
# household members	435,115	2.515	1.353	1.000	12.000
ln # household members	435,115	0.777	0.548	0.000	2.485
ln household disp. Income	435,115	9.802	0.989	5.508	13.764
ln minimum income	418,496	9.727	0.609	7.090	19.245
ln household disp. Eq. Income	435,115	9.338	0.927	5.397	12.841
ln average regional household disp. Eq. Income	435,115	9.490	0.738	7.649	10.581
Doctors	420,942	351.911	95.311	169.300	924.400
Pre-school	428,987	0.875	0.145	0.308	1.127
Public employees	428,987	0.103	0.026	0.048	0.166
Public value added	428,987	4.157	1.717	1.111	12.293
ln education transfer	435,115	0.018	0.399	0.000	9.347
ln health transfer	435,115	6.849	3.081	0.000	10.751
Nervous	220,466	0.131	0.338	0.000	1.000
Feel in the dumps	220,466	0.078	0.267	0.000	1.000
Not calm and peaceful	220,466	0.139	0.346	0.000	1.000
Depressed	220,466	0.079	0.270	0.000	1.000
Not happy	220,466	0.137	0.344	0.000	1.000
Average reg. trust in the police	220,466	5.949	0.984	3.523	8.271
Average reg. trust in others	220,466	5.863	0.858	4.020	8.361
Year 2013	435,115	0.507	0.500	0.000	1.000

Tab. A3 Regions and average EQI

AT1	0.994	ES22	0.335	FR43	0.652	PL3	-0.554
AT2	1.075	ES23	0.430	FR51	0.624	PL4	-0.546
AT3	1.071	ES24	0.330	FR52	1.181	PL5	-0.650
BE1	-0.097	ES30	0.193	FR53	0.910	PL6	-0.383
BE2	1.148	ES41	0.205	FR61	0.960	PT	0.060
BE3	0.069	ES42	0.090	FR62	0.702	RO1	-1.193
BG3	-1.528	ES43	0.399	FR63	0.792	RO2	-1.755
BG4	-1.648	ES51	-0.235	FR71	0.873	RO3	-1.900
CY0	0.307	ES52	0.033	FR72	0.785	RO4	-1.582
CZ01	-0.591	ES53	0.144	FR81	0.600	RS	-1.822
CZ02	-0.214	ES61	-0.063	FR82	0.270	SE1	1.459
CZ03	-0.026	ES62	0.426	FR83	0.269	SE2	1.483
CZ04	-0.840	ES63	0.432	HU1	-0.835	SE3	1.314
CZ05	-0.102	ES64	0.426	HU2	-0.271	SI	-0.006
CZ06	-0.214	ES70	0.062	HU3	-0.436	SK0	-0.549
CZ07	-0.358	FI18	1.727	IE0	0.872	UKC	0.705
CZ08	-0.377	FI19	1.531	ITC	-0.465	UKD	0.853
DE	0.871	FI1A	1.545	ITF	-1.850	UKE	0.936

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DK0	1.651	FR10	0.621	ITG	-1.521	UKF	0.689
EE0	0.112	FR21	0.357	ITH	-0.063	UKG	0.655
EL1	-1.054	FR22	0.520	ITI	-0.869	UKH	0.907
EL2	-0.917	FR23	0.359	LT0	-0.690	UKI	1.003
EL3	-0.528	FR24	0.856	LU0	1.234	UKJ	1.062
EL4	-0.667	FR25	0.755	LV0	-0.695	UKK	0.522
ES11	0.125	FR26	0.533	MT0	0.309	UKL	0.389
ES12	0.599	FR30	0.484	NL	1.266	UKM	0.615
ES13	0.396	FR41	0.445	PL1	-0.664	UKN	0.731
ES21	0.601	FR42	0.671	PL2	-0.680		

Note: the values of EQI are the averages over 2010 and 2013, except for the UK where they are the values for 2013.