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Abstract

Trust in public institutions and public policies are generally perceived as a precondition for economic recovery in times of recession. Recent empirical evidence tends to find a positive link between decentralization and trust. But our knowledge about whether decentralization – through increased trust – improves the perception of the delivery and effectiveness of public policies is still limited. In this paper we estimate the impact of fiscal and political decentralization on the perception of the state of the education system and of health services, by using the 2002, 2004, 2006 and 2008 waves of the European social survey. The analysis of the views of 160,000 individuals in 31 European countries indicates that while the effect of fiscal decentralization on the perception of the state of the health and education system is unambiguously positive, political decentralization affects citizen's satisfaction with education and health delivery in different ways. The influence of political decentralization, however, is highly contingent on whether we consider the capacity of the local or regional government to exercise authority over its citizens (self-rule) or to influence policy at the national level (shared-rule).

1. INTRODUCTION

The global drive towards decentralization and the greater emphasis on a supposed 'economic dividend' (Morgan, 2002) linked to the transfer of powers and resources to subnational tiers of government has put the economic returns of local and regional autonomy under the microscope. In recent years a greater number of empirical analyses have delved into the economic implications of decentralisation processes all over the world. The majority of these analyses have been concerned with the link between decentralisation and economic growth (e.g. Davoodi and Zou, 1998; Thießen, 2003; Rodríguez-Pose and Bwire, 2004; Iimi, 2005; Rodríguez-Pose and Ezcurra, 2011) and between decentralization and regional inequalities (e.g. Gil Canaleta et al., 2004; Ezcurra and Pascual, 2008; Lessmann, 2009; Rodríguez-Pose and Ezcurra, 2010). The emphasis on cross-country macroanalyses has been complemented by a spate of recent studies using microdata aimed at untangling the complex relationship between decentralization, on the one hand, and poverty (Sepúlveda and Martínez-Vázquez, 2011), interpersonal inequality (Morelli and Seaman, 2007; Tselios et al., 2012), or social capital (De Mello, 2011), on the other, respectively.

However, despite the increasing tendency to justify decentralization on economic grounds (Rodríguez-Pose and Sandall, 2008), the primary aim of transferring powers and resources to subnational tiers of government has never really been about delivering greater growth, lowering within country regional inequalities, increasing social capital, tackling poverty, and/or reducing interpersonal inequality. While these factors may certainly be an indirect consequence of decentralization, the original and still the fundamental objective of the transfer of powers and resources to subnational tiers of government is to improve the delivery of public goods and services to individuals by the

creation of more legitimate tiers of government, closer to the people and, therefore, more responsive to their needs and wants. Hence, most research on the economic implications of decentralisation skips an important step. Rather than concentrating on the changes in the quality of the provision of public goods and services, they go directly to the economic consequences derived from the change in the scale of the delivery of policies. This represents a significant leap of faith as local and regional governments are, in principle, designing and implementing policies in response to the needs and wants of local citizens, which may not necessarily lead to a maximization of growth prospects or to a reduction of territorial disparities. Another relevant aspect of political and fiscal decentralization processes is their potential impact on accountability. Studies dealing with this issue are scarce. Using cross-country data, Fisman and Gatti (2002) found that decentralization in government expenditure is strongly and significantly associated with lower corruption. Lago-Peñas and Lago-Peñas (2010) observed that, in the case of Spain, the duration of regional autonomy positively affects the capacity of citizens to correctly assign responsibility.

Ideally, given that the main aim of fiscal and political decentralization is to improve the provision of public services to citizens, a more suitable approach would be to evaluate the impact of decentralization using objective measures picking up objective outcomes. Unfortunately, such objective measures are rarely available. One exception is Diaz-Serrano and Meix-Llop (2012), who use information on students' outcomes (PISA data) in order to evaluate the impact of fiscal and political decentralization on school outcomes. In the absence of a wider range of objective measures, satisfaction with public institutions and services seems a suitable approach. The absence of comparable objective measures makes the analysis of whether decentralization yields more or less satisfaction with government and public policies the most viable option. This is also a

topic which, despite its importance, has been virtually ignored by the scholarly literature. In spite of the recent boom in research on subjective well-being (SWB) and happiness, only a limited number of papers have concentrated on the implications of decentralization for happiness (e.g. Frey and Stutzer, 2000, 2002; Bjørnskov et al., 2008a; Voigt and Blume, 2009; Diaz-Serrano and Rodríguez-Pose, 2012). To the extent of our knowledge, there are no papers which have delved into how the implementation of policies and the provision of public services by subnational tiers of government affect the level of citizens' satisfaction with the very policies, such as education and health, which are increasingly delivered at the regional or local level. In other words, we seem to know more about how policies and services by subnational governments impinge on aggregate growth and territorial disparities, on poverty and interpersonal inequality, than about whether having public policies designed and implemented closer to the people lead to greater satisfaction with public services.

Economic crisis generally lead to a fall in the confidence and trust in public institutions. Although this is a consistent empirical finding, our understanding of the links between economic performance and trust is still partial, at best (Lawrence, 1997). The state of economy and the efficiency of public policies is a fundamental precondition for recovery. But lack of trust in public institutions is an important constraint for policymakers when considering and implementing expansionary policies aimed at overcoming the economic crisis. Where the link of trust between government and citizens has been broken, the scope for all segments of society to work together is limited and may jeopardise a sustainable recovery. However, generating this sort of trust is often difficult. Recent literature tends to find a positive link between trust and decentralization (Dincer 2010; Lightart and Oudheusden 2011).

Given the mediating effect of decentralization on the link between economic progress and trust, we find that in time of economic crisis decentralization may contribute to produce the necessary amounts of trust in public institutions needed to overcome economic crises. Hence, satisfaction with public institutions may be a precondition for trust. In this paper, we analyse whether decentralization – the granting of greater powers and resources to subnational tiers of government – has an impact on citizen's satisfaction in public services, such as education and health, and whether these can become a driver of this trust in institutions and public policies. We find health and education crucial elements in the generation of public trust.

In order to do this, we resort to micro data, consisting of more than 160,000 observations, coming for the four available waves of the European social survey (2002, 2004, 2006 and 2008) for 31 countries in Europe. After controlling for a series of personal and national characteristics which may affect individual levels of satisfaction with public services, the results of analysis reveal that the perception of the state of education and health services is affected by the degree of decentralization, but is also sensible to the balance between political and fiscal decentralization in any given country.

The remainder of the paper is structured as follows. Section 2 first looks at the potential link between decentralization and the provision of education and health. In section 3, we describe the dataset and present the empirical framework. The results of the analysis, focusing both on the effect of individual factors and of decentralisation and country

level variables, are introduced in section 4. Finally, section 5 concludes and discusses some preliminary policy implications.

2. DECENTRALIZATION, EDUCATION AND HEALTH

2.1. Assessment of education and health and its determinants

Although there is a growing literature trying to analyse the determinants of subjective well-being, little has been done yet regarding the determinants of citizens' perceptions of the welfare state. The few studies examining perceptions of the state of the education system and of the delivery of health services tend either to be cross-country descriptive overviews, comparing the variation of citizens' health care system preferences across different countries (e.g. Blendon et al., 1990; Mossialos, 1997) or analyses focusing on the determinants of satisfaction with the health system, using health care outputs (e.g. Kotzian 2009), as well as health care inputs (e.g. Wendt et al. 2010). Other studies link subjective well-being (i.e. life satisfaction) with expenditures in health care and a number of individual characteristics (e.g. Kotakorpi and Laamanen 2010). As far as we are aware, the literature on the citizens' perception of the public education system is non-existent.

Following Frey and Stutzer (2000), we expect the individuals' perception of the education and health systems to be determined by three groups of factors. The first set of factors is related to the demographic characteristics and personality of individuals. Factors such as the age, gender, marital status, health, education, religiosity and political orientation of an individual are likely to influence his/her perception of the state of the education and health system. Similarly, micro- and macroeconomic factors, such as income, unemployment and inflation, would have a non-negligible influence on the

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collective perception of the delivery of public goods and services. Finally, a third set of factors – which can be included into an institutional and constitutional category – relate to our key variables of interest, and include the levels of fiscal and political decentralisation in given country.

Among the three categories mentioned above, institutional and constitutional factors remain the most elusive. The main problem that scholars and policy-makers face in this sort of institutional analyses concerns the valuation of the effectiveness of public policies, in general, and of education and health, in particular.[1] According to the traditional revealed preference approach, any valuation of education and health should be based on individual choices. However, as Frey and Stutzer (2005) underline, attempting to value public goods with this method can be problematic. They propose subjective variables in economic analysis as an alternative. Subjective variables eliciting information about individuals' satisfaction in different domains are aimed at capturing individuals' assessments of public policies and of the delivery of public goods. Another interesting feature of these indicators is that they are independent of the expected goal decided by experts and policy-makers when implementing public policies, as individuals themselves state how satisfied they are with a particular public policy or service delivery. Considering these arguments, we resort to the citizens' subjective valuation of the education system and of health services in order to assess the welfare gains derived from political and fiscal decentralization.

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[1]Some exceptions are Barankay and Lockwood (2007) and Diaz-Serrano and Meix-Llop (2012). These studies analyse the impact of fiscal decentralization on school outcomes. Results report an unambiguous positive effect. Diaz-Serrano and Meix-Llop (2012) also test the impact of political decentralization and find the opposite effect.

Although subjective variables have proven to contain relevant information to predict individuals' economic behaviour and the utility derived from economic outcomes, the use of these variables for the evaluation of the impact of public policies is not well extended. The reasons for this are twofold. First, while the collection of information on happiness and subjective well-being has grown exponentially over the last few years, a certain dearth of information remains about the degree of satisfaction of individuals with specific policies. Relatively few surveys have dwelt on the level of satisfaction of individuals with, for example, the provision of health services. Perhaps more importantly, the theoretical explanations about how processes such as decentralisation may influence the level of satisfaction with the provision of public policies remain, as indicated by Bjørnskov et al. (2008a), relatively underdeveloped.

2.2 Welfare gains and losses of decentralization

As, as far as we are aware, there are no prior studies on the impact of decentralization on citizens' satisfaction with the provision of public services, we have to start with the literature linking decentralization and subjective well-being in order to develop our theoretical framework. This literature tends to find a positive link between the level of decentralization and individuals' life satisfaction (Frey and Stutzer, 2000; Bjørnskov et al., 2008a; Voigt and Blume, 2009; Diaz-Serrano and Rodríguez-Pose, 2012). These results are in accordance with the 'fiscal decentralization theorem' (Tiebout, 1956; Klugman, 1994): a better matching of public goods and services delivery to the needs of citizens leads, ceteris paribus, to greater satisfaction with policy and political institutions. Institutions, in turn, lead to improvements in individual well-being (Frey and Stutzer, 2012).

In a cross country analysis Diaz-Serrano and Rodríguez-Pose (2012) report that the impact of decentralization on satisfaction with government, democracy, and the economic situation of a country is ambiguous. More specifically, they indicate that fiscal decentralization, measured by the expenditure capacity of subnational governments, exerts a positive influence on satisfaction with political institutions. By contrast, if fiscal decentralization is proxied by revenue, the observed impact is negative. Similar results are observed when determining the impact of political decentralization on satisfaction with institutions. The level of authority of regional government over those who live in the region leaves a negative impression on the satisfaction with the economy, government, and democracy. However, the authority exercised by a regional government or its representatives in the country as a whole leads to the opposite effect. Hence, according to this evidence, the expected positive effect of decentralization on subjective well-being stated by the decentralization theorem is far from guaranteed when, rather than focusing on the life satisfaction of individuals, their perceptions of institutions and policies are gauged. Therefore, the effect of decentralization on the citizens' perception of the delivery of education and health services may vary significantly according to the type and level of decentralization.

As a consequence, in order to build sound theoretical arguments about the relationship between decentralisation and satisfaction with public policies, we have to start by looking at the theoretical stances in favour and against the transfer of power and resources to subnational tiers of government (Bjørnskov et al., 2008a: 147). On the one hand, decentralisation is often viewed as a means to deliver more efficient public policies. In centralised governments policy-makers cater for the whole country with their decisions, but centralised decisions may benefit certain individuals and regions at

the expense of others, especially in the case of large and heterogeneous countries. Therefore, the chance of covering diverse needs and wants is somewhat limited by the requirement to deliver overall efficiency and is likely to leave a large percentage of the population dissatisfied with public policies and government. The shift in scale of decision-making, which is the essence of decentralization, implies that governments have a greater potential to tailor their specific policies to the needs of citizens. As already mentioned above, this is what is known as the 'fiscal decentralization theorem' (Tiebout, 1956; Klugman, 1994).

The shift in the scale of policy delivery may also bring about other positive consequences. The provision of public goods and services at a local level is considered to pitch localities and regions against one another, generating competition and pushing local governments to provide more efficient policies (Hayek, 1939; Tiebout, 1956). Competition may lead to an improvement in the provision of public goods and services – and, consequently, to increased citizen satisfaction – as a consequence of the fear of citizens 'voting with their feet'.

Territorial competition for the provision of policies is also intrinsically linked to greater policy innovation (Rodríguez-Pose and Gill, 2005). Competition and the need to provide better services often creates the conditions for policy innovation, which can then be relatively easily diffused to neighbouring territories (Oates, 1972; Donohue, 1997).

A final positive aspect linked to decentralisation which may enhance citizens' satisfaction with public policies is the greater transparency and accountability and the

improvements in governance that having governments closer to the citizens may bring about (Putnam 1993; Azfar et al. 1999). Regional and local governments have, almost by definition, a greater proximity to citizens, possibly enhancing the level of individual satisfaction with political organizations and public policies. They also tend to be associated with improvements in governance, although, as highlighted by Bjørnskov et al. (2008b: 152), good governance may not be associated with greater levels of happiness and may, in some cases, be detrimental for it.

However, decentralisation does not always bring about positive outcomes and may, under specific circumstances, unleash mechanisms that could also undermine the level of satisfaction of citizens with specific policies. The decentralisation theorem assumes that the needs and wants of citizens vary from one territory to another. However, it may be the case that the demands of individuals are basically the same across territories. Regardless where they live, individuals will demand good access to education, health care, or basic services (Prud'homme, 1995). The transfer of power and resources to subnational governments may imply that, first, not all subnational governments have got the same capacity to deliver those policies to high standards, and second, that differences in the provision of these services may lead to lower levels of satisfaction. In particular, in those cases where local governments suffer from lack of economies of scale or capacity constraints, the potential for an efficient delivery of specific public goods and services would be severely jeopardised. The capacity of individuals to compare policies across local and regional borders may be an additional source of dissatisfaction, especially in those cases where the perception is that the local government is delivering less developed and/or efficient policies in specific public sector realms. As a consequence, decentralisation may contribute to trigger

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dissatisfaction with the provision of essential public services, especially in those regions and localities which either lack the capacity for an adequate delivery of these policies, or where the population perceives that the quality of the provision of public goods and services by the local government is lower than in neighbouring areas.

Finally, the level of satisfaction with the provision of public services is likely to be affected by whether subnational governments have access to the right amount of funds to implement the policies they are supposed to implement. It is frequently the case – especially when subnational governments are funded by transfers rather than by direct taxation – that local governments have to cope with 'unfunded mandates', whereby subnational governments have the powers to implement specific policies, but lack the resources to do so either adequately or, at least, at the same level as the central or federal government (Rodríguez-Pose and Gill, 2003). This mismatch between the powers and resources at the disposal of local governments may lead to permanent dissatisfaction with the provision of education and health by subnational governments and, hence, distinguishing between the powers (political decentralisation) and the resources (fiscal decentralisation) at the disposal of subnational governments is essential in order to understand what drives the satisfaction with the goods and services provided by subnational governments.

3. EMPIRICAL FRAMEWORK AND DATA

3.1. The data

Taking the previous theoretical discussion into account, we assess whether in more decentralized countries there is a better or worse assessment of the education system and health services by citizens by examining the link between differences in political

and fiscal decentralisation, on the one hand, and the perception by individuals of the education and health systems, on the other, across 31 European countries.

The source of the indicators of satisfaction with the education and health systems is the European Social Survey (ESS). The ESS is a biannual cross national survey assessing the attitudes and values of individuals in a wide range of areas. It covers a large number of adults in every European country, with samples which typically range between 1,500 and 3,000 individuals per country and year. We rely on the four survey years (2002, 2004, 2006 and 2008) made available by the ESS at the time of writing. Unfortunately not all countries included in the analysis are sampled in every wave of the survey. Hence, in order to maximize the number of observations by country and introduce also a temporal dimension to the data, we pool the four available waves of the ESS. Table 1 depicts the sample, including the number of individuals sampled per country in each specific wave.

Table 1 [around here]

One of the most important features of the ESS questionnaire is that it contains both fixed and rotating elements. In the rotating part of the questionnaire, every wave includes two specific topics that change from wave to wave. The fixed part consists of questions that are included in every ESS-wave. This module contains general demographic and socioeconomic information on each individual sampled, as well as information concerning his/her level of satisfaction with different aspects of government and policy. We resort to these variables as a means to assess the relationship between decentralisation and the level of satisfaction with the education and health systems. The

perception of the provision of education and health by individuals is measured on an eleven-point Likert scale, with 0 being the lowest level of satisfaction and 10 the highest. In Table 2 we show the summary statistics of these two variables.

Table 2 [around here]

Finland, Denmark, Iceland, Ireland, and Belgium are the countries where citizens exhibit a better opinion of the education system, with scores of 6.47 or above. At the bottom of the ranking, we find Germany, Israel, Ukraine, Portugal, and Bulgaria, with scores below 4.5. With respect to health services, the top five scores correspond to Belgium, Luxembourg, Finland, Austria, and Iceland. Poland, Hungary, Russia, Bulgaria, and the Ukraine are at the opposite end of the spectrum.

Our key explanatory variables consist of a set of decentralization indicators. Hooghe et al.'s (2008) Regional Authority Index (RAI) is used as our political decentralization index. Two main variables and seven subcomponents make up the RAI. The two key variables of the RAI are what Hooghe et al. (2008) define as *self-rule* and *shared-rule*. The former depicts the authority exercised by local and regional governments over those who live in the region. The latter measures their influence on national politics and policy as a whole. These two variables are built by aggregating a set of more specific decentralization indicators in some governance domains. *Self-rule* is constructed as the combination of the following four indexes: i) the extent to which a regional government is autonomous rather than deconcentrated (institutional depth); ii) the range of policies for which a regional government is responsible; iii) the extent to which a regional government can independently tax its population, and iv) the extent to which a region is

endowed with an independent legislature and executive. *Shared-rule* comprises the following three indexes: i) the extent to which a regional government co-determines national policy in intergovernmental meetings (executive control); ii) the extent to which regional representatives co-determine the distribution of national tax revenues, and; iii) the extent to which regional representatives co-determine constitutional change (constitutional reform). In our econometric analysis, we use both the aggregated and the disaggregated indicators of decentralization. The RAI covers a total of 42 countries for the period between 1950 and 2006.

Our fiscal decentralisation data stem from the International Monetary Fund's Government Finance Statistics. These are consolidated expenditure yearly indicators consisting of the ratio between subnational and national magnitudes for the period 1972-2005. In our analysis we resort to five indicators of fiscal decentralization: total expenditure, current expenditure, capital expenditure, total revenues, and tax revenues. The specific decentralization variables are defined in greater detail in Table 3.

Table 3 [around here]

According to the *self-rule* index, the top five politically decentralized countries are Germany, Spain, Switzerland, Belgium, and Italy. At the bottom of the ranking we find relatively small countries, such as Iceland, Luxembourg, Estonia, Cyprus, and Slovenia. Germany, Belgium, the Netherlands, Russia, and Austria are the countries with a greater degree of *shared-rule*. The top five fiscally decentralized countries include Switzerland, Germany, Denmark, Sweden, and Spain. Israel, Luxembourg, Portugal, Iceland and Bulgaria are at the bottom of this ranking. The fiscal decentralization index reported in

Table 4 is the average of the five fiscal decentralization indexes used in the analysis (see Table 1).

Table 4 [around here]

In order to test the impact of decentralization on an individual's perception of the delivery of public services, we match the ESS with the decentralization variables. All individuals surveyed in the ESS and residing in the same country are assigned the same value of the corresponding decentralization index. Since the individual data used here pool the four waves of the ESS, the decentralization variables vary not only by country, but also by wave. For any country, we assign the time-average of the last four years prior to the survey of a given decentralization measure. For the 2008 wave, we resort to the decentralization indicators in 2006. We proceed in this way because the latest available years for our decentralization measures are 2005 and 2006 for the fiscal decentralization and the RAI dataset, respectively. In Table 4, we rank the countries included in our sample according to their level of decentralization.

3.2. Empirical framework

In order to establish whether the aspects linked to decentralization lead to a better or worse assessment of the education system and health services by citizens, our analysis examines how cross-country differences in political and fiscal decentralization (key independent variables) affect the level of satisfaction of individuals with the education and health systems (dependent variables). Our outcome variables are the individuals' subjective assessment of the health and education system. This implies that the effect of the country level covariates on the outcome is more sensible to vary, in some cases in a

non-negligible way, in different periods of time. In order to take this temporal dimension into account, we pool the four available waves of the ESS. This allows us to capture potential economic or institutional shocks in a country in a given period of time that may result in changes in the self-perception of health and education.

The satisfaction equation adopts the following form:

$$S_{ict}^{*} = \beta' X_{ict} + \gamma' Z_{ct} + u_{cr} + d_{t} + \varepsilon_{ict} \tag{1}$$

where S_{ict}^{*} is a latent outcome reflecting the propensity of individual i in period t residing in country c to report a specific self-perceived assessment of the state of the education or health services. X_{ict} depicts some basic characteristics of the individual, Z_{ct} are the country-specific variables, u_{cr} are country-region specific effects, and d_{t} are time controls. ε_{ict} represents the random error term. β and γ are the parameters to be estimated. Country-region specific effects are preferred to simple country specific effects in order to calculate the coefficient of not only of the specific-country variables Z_{ct}, but also to take into account unobservable country factors. The use country-region specific effects also permits to control for intra-country variation.

In equation (1), we do not observe S_{i}^{*} but instead an indicator variable of the type $S_{ict}=j$ if $\mu_{j-1} < S_{ict}^{*} \leq \mu_{j}$ ($j=1, \ldots, J$). Given the ordinal nature of the outcome variable, one option to estimate model (1) is a pooled ordinal probit model. An alternative is the use of a fixed-effect model, which has the advantage of taking into account country-region specific effects (u_{cr}) One important shortcoming, however, is that fixed-effects models are not feasible in an ordinal framework. This can be addressed by moving to a linear

framework.[2] The use of an 11-point Likert scale for the outcome variables implies the estimation of ten marginal effects per variable. Moving to a linear framework also facilitates the interpretation of the estimated effects, as it provides only one marginal effect per variable. Van Praag and Ferrer-i-Carbonell (2006) suggest the use of probit ordinary least squares (POLS).[3] This approach enables using simple linear OLS, instead of ordinal probit methods, without any loss of efficiency.

In addition to the country decentralization measures, we also consider a set of country-specific variables (Z_{ct}) reflecting the economic and political environment, i.e. GDP per capita, inflation rate, aggregated unemployment rate, and total government spending as a percentage of the GDP. Government spending is considered as a proxy of public sector size. We also consider specific covariates in each equation. For the assessment of education, we include public spending in education as percentage of GDP. For health services, we consider public spending in health care, as well as the private spending as a percentage of GDP. Using country variables, in conjunction with country-region specific effects permits a more adequate estimation of the effect of the decentralization variables. In order to avoid multicollinearity, the decentralization variables enter equation (1) separately one by one, i.e. for each decentralization variable we estimate a separate equation. In equation (1), the covariates regarding individual characteristics X_{ict}, are: a squared polynomial of age, gender, education, citizenship, self-reported health status, religiosity, left-right political orientation, marital status, feeling about household income, employment situation and household size.

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[2] We use the 'within' estimator, which subtracts group averages from the dependent variable and explanatory variables.

[3] This framework involves the transformation of the observed ordinal outcome $S_{ict}=j$ as $\ln(Z_{ict}) = \left[\phi(\mu_{j-1,t}) - \phi(\mu_{j,t})\right]/\left[\Phi(\mu_{j,t}) - \Phi(\mu_{j-1,t})\right]$, where $\phi(\bullet)$ and $\Phi(\bullet)$ are the normal density function and the cumulative normal distribution, respectively.

In order to estimate equation (1), we resort to multilevel modelling. This methodology is suitable when we combine both individual-level determinants and contextual determinants, such as at a region or country level. Multilevel models allow to measure country-level or regional-level variation in relation to individual-level variation, while controlling for country-level or regional-level influences. We utilise the simplest form of multilevel models, which only consider a random constant term for each country-region.

The individual level variables considered in equation (1) are described in Table 5 and summarized by country in Table 6.

Table 5 [around here]

Table 6 [around here]

4. RESULTS OF THE ANALYSIS

4.1. The effect of individual factors

Table 7 displays the results of estimating model (1) for the assessment of the education system and of public health services. The top half of Table 7 reports the coefficients for the individual variables likely to affect satisfaction with these services. These results tend to reproduce those of previous empirical studies analysing the determinants of subjective well-being, underlining the robustness of the exercise.

Age matters for satisfaction with education and health services, but the relationship is U-shaped, as satisfaction increases after middle-age. Women tend to be less satisfied

than men with the health system. Higher levels of education yield more critical citizens with the delivery of public services. Health is also an important determinant of satisfaction with public policies. The lower the level of self-reported health, the lower the satisfaction with the education and the health system. Larger households tend to be more satisfied with health services, while the effect of household size on the assessment of the education system is not statistically significant. Right-leaning and more religious individuals are also more satisfied with the state of public services than left-leaning ones. Foreigners are less satisfied with public services than natives. And, as could be expected, those who report that they live comfortably are more satisfied than those who consider that they are in a very difficult or difficult position or simply coping. Finally, trusting individuals also reveal themselves as less critical with public services.

4.2. The effect of decentralization and country level variables

Having controlled that our results conform to previous analyses of the personality and socio-demographic traits behind satisfaction with public services, in the bottom half of Table 7 we now turn to how macroeconomic factors and political and fiscal decentralization outcomes affect these factors. We first comment on the results of the country-level macroeconomic indicators. Our estimations indicate that government expenditure has a statistically significant effect on both the citizens' assessment of the education and health services. This effect is positive. The overall national unemployment rate has a positive and statistically significant impact on the satisfaction of individuals with the education system, while the effect is negative in their assessment of the health system. This result is interesting, since it indicates that in Europe the unemployed may blame their educational system, whereas they appreciate the possibility of having access to a public health system. National GDP per capita is

significant in both equations, i.e. satisfaction with the health system (positive). By contrast, inflation only exerts a significant impact (negative) on the assessment of the health system. Expenditure variables also turn out to be statistically significant. Public spending in education and in health exerts a positive influence in their respective equations, whereas in those countries where the private expenditure in health is higher the assessment of the state of health services is more damning.

Table 7 [around here]

For fiscal and political decentralization, our results stress that decentralization matters for the assessment of the delivery of public services. However, the results are heterogeneous across the board, depending on whether we consider fiscal or political decentralization. Regarding fiscal decentralization, with the exception of capital expenditure, all the fiscal decentralization variables have a positive and significant impact on the assessment of both state of the education system and the state of health services.

The use of political decentralization indicators also delivers interesting results. The impact effect is positive or negative depending on whether we consider the capacity of subnational governments to rule their own citizens (*self-rule*), or their capacity to influence national politics and policy (*shared-rule*), respectively. *Shared —rule* has a negative influence on the individuals' assessment of the education and health systems, although the effect seems to be weaker for the latter. This result implies that local citizens tend to be less satisfied with specific policies – in this case health and education – when local or regional governments have a greater say and/or influence on national

politics. This result stands when shared-rule is disaggregated into its components. Executive control, fiscal control, and constitutional reform are all strongly and negatively associated with satisfaction with the provision of education and, to a somewhat lesser extent, with the health system. Only fiscal control is not statistically significant in the assessment of the health services. This means that the greater the capacity of autonomous governments to affect and/or shape national politics and policy, the smaller the satisfaction of local citizens with the delivery of education and health systems. The current capacity of regional or local governments to rule their own citizens (shared-rule) also tends to have a significant negative impact on the assessment of the educational system. By contrast, one of the components of the *self-rule* indicator, fiscal autonomy, has turned out to be statistically significant and positive on the assessment of the health services equation.

All these results taken together seem to suggest that citizens, when it comes to the concrete delivery of services, seem to prefer that their local governments have the fiscal, rather than the political, capacity to deliver them. Power without adequate resources is perceived as a suboptimal outcome for the provision of services. They also prefer that their governments provide these services directly to them rather than they wield a greater influence on the provision of health and education services at a national level. However, they do not seem very satisfied with the idea that other regions may influence public policies regarding education and health that may have an impact on their wellbeing. Analogously, greater political autonomy for local governments in the design of public policies causes a more negative assessment of the educational system.

5. CONCLUSIONS

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This paper goes beyond the traditional economic growth and territorial disparity analyses which have been at the heart of most studies of fiscal – and to a lesser extent political – decentralization until recently. It has ventured into the black box of how institutions affect the assessment of the provision of basic public services linked to the welfare state by individuals. The paper also uses a dynamic approach in order to limit the role of any potential shocks that may affect the individuals' perception of the state of health and education services. One of our key tenets is that changes in the degree of satisfaction with public policies and services ultimately affect the perception of institutions.

The results of the analysis underscore the crucial role that both political and fiscal decentralization have on the perception of the state of education and health services. This in contrast with the majority of traditional analyses which have tended to cast aside decentralization as a minor player – if at all – for productivity, economic growth, or government effectiveness (e.g. Voigt and Blume, 2009; Rodríguez-Pose and Ezcurra, 2011; Feld and Schnellenbach, 2011). The results also point to the need to focus more on the key objective of the decentralization of power and resources: that of delivering policies better tailored to the needs and wants of the individuals living in any given territory, rather than on macroeconomic outcomes.

In this respect, our results reveal that decentralization makes a difference for the perception of the delivery of public services. Regardless of whether we consider the education system or the health service, or whether we look at fiscal or political decentralization, the degree of decentralization of any given country influences the satisfaction of individuals with the provision of these essential services. From a political

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decentralization perspective, citizens are generally less satisfied with decisions on education taken by governments closer to them (*self-rule*), as indicated by the lower levels of satisfaction with the capacity to effectively provide concrete policies in the areas of education. Similarly, individuals also value negatively the capacity of local governments to influence national politics and the national provision of health and education (*shared-rule*). Fiscal decentralization also has a significant and positive effect on satisfaction with public services, even though factors such as the level of subnational capital expenditure do not influence the level of satisfaction with both education and health. These results are in line with those obtained in Diaz-Serrano and Meix-Llop (2012).

These results highlight that the impact of decentralisation on the perception of public services is not unambiguous. By and large, and with some caveats, decentralized parts of Europe tend to have a greater trust in institutions such as democracy, government and the state of economy (Diaz-Serrano and Rodriguez-Pose, 2012). However its impact on basic pillars of the welfare state as the public provision of education and health is not unequivocal, especially when political decentralization is taken in to account. This situation is particularly evident in countries where a higher level of political decentralization is not endowed with an equivalent higher level of fiscal decentralization, i.e. in conditions of unfunded mandates, when subnational governments are endowed with the capacity to decide but not with the capacity to deliver. Still the results indicate that decentralization may contribute to the generation of the necessary trust at the root of the consensus and support for policies needed in times of crisis. Whether this trust and support materialises into a sustainable recovery will, however, very much depend on how efficient regional local governments are at delivering their policies. That is, subnational governments should have a more equitable

mix of political and fiscal decentralization. We think our results represent a first step in what should be a wider approach to a better understanding of the implications of different forms and levels of government on the perception of the delivery of basic public welfare services.

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Table 1. Number of observations by country and wave

	2002	2004	2006	2008
Austria	2,257	2,256		
Belgium	1,899	1,778	1,798	1,760
Bulgaria			1,400	2,230
Switzerland	2,040	2,141	1,804	1,819
Cyprus			995	1,215
Czech Republic	1,360	3,026		
Germany	2,919	2,870	2,916	2,751
Denmark	1,506	1,487	1,505	1,610
Estonia		1,989	1,517	1,661
Spain	1,729	1,663	1,876	2,576
Finland	2,000	2,022	1,896	2,195
France	1,503	1,806	1,986	2,073
United Kingdom	2,052	1,897	2,394	2,352
Greece	2,566	2,406		
Hungary	1,685	1,498	1,518	1,544
Ireland	2,046	2,286		
Israel	2,499			2,490
Iceland		579		
Italy	1,207			
Luxembourg	1,552	1,635		
Netherlands	2,364	1,881		1,778
Norway	2,036	1,760	1,750	1,549
Poland	2,110	1,716	1,721	1,619
Portugal	1,511	2,052	2,222	2,367
Russia			2,437	2,512
Sweden	1,999	1,948	1,927	1,830
Slovenia	1,519	1,442	1,476	1,286
Slovakia		1,512	1,766	1,810
Turkey		1,856		
Ukraine		2,031		

Source: Own elaboration based on the European Social Survey

Table 2. Summary statistics of the satisfaction variables, values are estimated from individual responses and averaged by country.

	Education system			Health services	
	mean	*s.d.*		*mean*	*s.d.*
Finland	7.85	1.41	Belgium	7.23	1.72
Denmark	7.42	1.79	Luxembourg	7.07	2.3
Iceland	6.85	1.9	Finland	6.77	1.94
Ireland	6.68	2.3	Austria	6.61	2.29
Belgium	6.47	2.08	Iceland	6.57	2.1
Norway	6.31	1.82	Switzerland	6.47	2.15
Switzerland	6.27	2.03	Israel	6.22	2.43
Czech Republic	6.15	2.09	Denmark	6.18	2.11
Austria	5.96	2.37	Cyprus	5.96	2.22
Cyprus	5.96	2.09	France	5.93	2.22
Netherlands	5.74	1.76	Spain	5.84	2.16
Estonia	5.6	2.19	Norway	5.75	2.08
Sweden	5.53	2.09	Netherlands	5.74	1.95
United Kingdom	5.51	2.14	Turkey	5.63	3.3
Slovakia	5.47	2.28	Sweden	5.55	2.23
Luxembourg	5.37	2.5	United Kingdom	5.41	2.37
Slovenia	5.33	2.28	Czech Republic	5.2	2.38
Poland	5.2	2.28	Slovenia	4.91	2.44
Spain	5.16	2.08	Italy	4.67	2.19
Turkey	5.16	3.31	Germany	4.63	2.38
Italy	5.01	2	Estonia	4.5	2.32
France	4.99	2.12	Slovakia	4.4	2.58
Greece	4.77	2.41	Greece	4.36	2.64
Hungary	4.71	2.36	Ireland	4.04	2.64
Russia	4.38	2.4	Portugal	3.72	2.18
Germany	4.37	2.2	Poland	3.65	2.43
Israel	4.35	2.62	Hungary	3.56	2.4
Ukraine	4.02	2.25	Russia	3.43	2.34
Portugal	3.95	1.98	Bulgaria	2.92	2.37
Bulgaria	3.71	2.44	Ukraine	2.68	2.07

Source: European Social Survey 2002, 2004, 2006 and 2008. The column labelled as rank provides the position occupied by a country in the ranking according to the mean value of the specific satisfaction domain.

Table 3. Description of the decentralization variables

Self-Rule (SR) =ID+PS+FA+RP The authority exercised by a regional government over those who live in the region	Institutional depth (ID) Extent to which a regional government is autonomous rather than deconcentrated.	0: no functioning general-purpose administration at the regional level 1: deconcentrated, general-purpose, administration 2: non-deconcentrated, general–purpose, administration subject to central government veto 3: non-deconcentrated, general–purpose, administration not subject to central government veto
	Policy Scope (PS) Range of policies for which a regional government is responsible	0: no authoritative competencies over economic policy, cultural-educational policy, welfare state policy 1: authoritative competencies in one area: economic policy, cultural-educational policy, welfare state policy 2: authoritative competencies in at least two areas: economic policy, cultural-educational policy, welfare state policy 3: authoritative competencies in at least two areas above, and in at least two of the following: residual powers, police, authority over own institutional set-up, local government 4: regional government meets the criteria for 3, and has authority over immigration or citizenship
	Fiscal Autonomy (FA) Extent to which a regional government can independently tax its population	0: the central government sets base and rate of all regional taxes 1: the regional government sets the rate of minor taxes 2: the regional government sets base and rate of minor taxes 3: the regional government sets the rate of at least one major tax: personal income, corporate, value added or sales tax 4: the regional government sets base and rate of at least one major tax: personal income, corporate, value added or sales tax
	Representation (RP) Extent to which a region is endowed with an independent legislature and executive:	0: no regional assembly 1: an indirectly elected regional assembly 2: a directly elected assembly 3: the regional executive is appointed by central government 4: dual executives appointed by central government and the regional assembly 5: the regional executive is appointed by a regional assembly or directly elected

Table 3 (continuation)

Shared-Rule (SHR) **=LM+EC+FC+CR** The authority exercised by a regional government or its representatives in the country as a whole.	**Executive Control (EC)** Extent to which a regional government co-determines national policy in intergovernmental meetings	0: no routine meetings between central and regional governments to negotiate policy 1: routine meetings between central and regional governments without legally binding authority 2: routine meetings between central and regional governments with authority to reach legally binding decisions
	Fiscal Control (FC) Extent to which regional representatives co-determine the distribution of national tax revenues	0: regional governments or their representatives in the legislature are not consulted over the distribution of tax revenues 1: regional governments or their representatives in the legislature negotiate over the distribution of tax revenues, but do not have a veto 2: regional governments or their representatives in the legislature have a veto over the distribution of tax revenues
	Constitutional Reform (CR) Extent to which regional representatives co-determine constitutional change:	0: the central government and/or national electorate can unilaterally change the constitution 1: a legislature based on the principle of regional representation must approve constitutional change; or constitutional change requires a referendum based on the principle of equal regional representation 2: regional governments are a directly represented majority in a legislature which can do one or more of the following: postpone constitutional reform, introduce amendments, raise the decision hurdle in the other chamber, require a second vote in the other chamber, require a popular referendum 3: a majority of regional governments can veto constitutional change
Fiscal decentralization	**Subnational Government Expenditure (SNGE)**	Indicator: Subcentral Expenditure/General Expenditure Definition Total Expenditure: (State Government + Local Government)/(Central Government-Social Security + State Government + Local Government)
	Subnational Current Expenditure (SNCE)	Indicator: Subcentral Current Expenditure/General Current Expenditure Definition Current Expenditure: (State Government + Local Government)/(Central Government- Social Security + State Government + Local Government)
	Subnational Capital Expenditure (SNCAE)	Indicator: Subcentral Capital Expenditure/General Capital Expenditure Definition Capital Expenditure: (State Government + Local Government)/(Central Government-Social Security + State Government + Local Government)
	Subnational Revenue (SNR)	Indicator: Subcentral Revenue & Grants/General Revenue & Grants Definition Revenue & Grants: (State Government + Local Government)/(Central Government - Social Security + State Government + Local Government)
	Subnational Tax Revenue (SNTR)	Indicator: Subcentral Tax Revenue/General Tax Revenue Definition Tax Revenue: (State Government + Local Government)/(Central Government - Social Security + State Government + Local Government)]

Source: Own elaboration based on IMF and RAI definitions.

Table 4. Time averaged decentralization indexes by country

| | Fiscal decentralization (Subnational Expenditures and Revenues) | | | | | | | | | | Political decentralization | | | |
| | Total Exp. | | Current Exp. | | Capital Exp. | | Total Rev. | | Tax Rev. | | Self-rule | | Shared-rule | |
	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank
Austria	30.49	8	51.47	12	59.69	10	32.29	7	27.93	7	12.00	8	6.00	5
Belgium	32.22	7	73.46	3	86.54	1	32.55	6	12.94	14	23.70	1	7.84	2
Bulgaria	13.90	18	30.48	17		20	13.53	18	6.94	18	1.31	23	0.00	13
Cyprus											0.00	24	0.00	13
Czech Republic											5.91	20	0.00	13
Denmark	48.17	2	69.28	6	60.14	8	47.07	2	35.56	5	11.41	9	0.13	11
Estonia											0.00	24	0.00	13
Finland	33.99	6	67.69	7	55.76	12	31.74	8	29.31	6	8.03	17	0.03	12
France	17.35	17	27.95	18	63.81	5	19.35	17	16.30	12	18.25	5	0.00	13
Germany	39.52	4	74.05	2	78.75	2	39.55	4	50.43	2	22.81	2	10.08	1
Greece											10.00	14	0.00	13
Hungary	21.69	16	50.93	13	52.71	15	24.48	14	16.10	13	11.17	11	0.00	13
Iceland	26.02	13	33.74	16	30.79	18	27.24	11	26.84	8	0.00	24	0.00	13
Ireland	26.77	11	56.53	11	64.85	3	28.81	9	2.29	21	6.00	19	0.00	13
Israel	11.51	20	14.49	21	54.22	13	12.63	21	7.93	17				
Italy	24.86	14	49.76	14	59.98	9	26.65	12	19.64	9	18.89	4	1.45	8
Luxemburg	11.54	19	26.83	19	43.96	17	12.64	20	8.04	16	0.00	24	0.00	13
Netherlands	28.21	10	63.01	8	64.64	4	28.41	10	6.04	19	9.18	15	7.46	4
Norway	29.55	9	56.60	10	53.22	14	23.39	16	18.22	10	11.09	12	0.00	13
Poland	26.29	12	58.25	9	27.21	19	25.90	13	16.40	11	8.46	16	0.00	13
Portugal	11.34	21	17.06	20	62.65	7	13.45	19	9.06	15	3.92	22	0.19	10
Russia											13.78	7	7.52	3
Slovakia											6.32	18	0.00	13
Slovenia											0.00	24	0.00	13
Spain	39.29	5	72.67	4	63.33	6	40.06	3	39.18	4	22.27	3	3.51	7
Sweden	40.25	3	70.10	5	57.78	11	39.12	5	43.69	3	11.19	10	0.00	13
Switzerland	53.02	1	78.55	1			54.76	1	54.82	1	16.75	6	5.02	6
Turkey											5.00	21	0.00	13
United Kingdom	22.98	15	42.06	15	45.17	16	24.42	15	5.42	20	10.06	13	0.53	9

Source: Own elaboration based on IMF and RAI data.

Table 5. Description of individual self-perceived indicators used as covariates in equation (1)

Variable	Description
Citizenship	Are you a citizen of [country]? 1. Yes / 2. No
Self-reported health	How is your health in general? Would you say it is ... 1. Very good / 2. Good / 3. Fair / 4. Bad / 5. Very bad
Religiosity	How religious are you. 0 Not at all religious / 1 / 2 / … / 10 Very religious
left-right political position	In politics people sometimes talk of "left" and "right". Using this card, where would you place yourself on this scale, where 0 means the left and 10 means the right? 0. Left / 1 /2 / … / 10 Right
Feeling about income	Which of the descriptions on this card comes closest to how you feel about your household's income nowadays? 1. Living comfortably on present income / 2. Coping on present income / 3. Finding it difficult on present income / 4. Finding it very difficult on present income
Trust	Individual average of the three following questions: Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people? 0. You can't be too careful / 1 / 2 / … / 10 Most people can be trusted Do you think that most people would try to take advantage of you if they got the chance, or would they try to be fair? 0. Most people would try to take advantage of me / 1 / 2 / … / 10. Most people would try to be fair Would you say that most of the time people try to be helpful or that they are mostly looking out for themselves? 0. People mostly look out for themselves / 1 /2 / … / 10. People mostly try to be helpful

Source: Own elaboration based on the European Social Survey

Table 6. Time-average (2002, 2004, 2006 and 2008) by country of the covariates in equation (1)

	Age	Self-reported Health	Religiosity	Left-right political	Trust	Feeling about income	Household size	Married	Never married	Primary and lower education	Post-secondary and tertiary education	Citizen	Unem-ployed	Women
Austria	45.12	1.96	5.10	4.61	5.32	1.86	2.75	0.49	0.33	0.27	0.13	0.96	0.04	0.46
Belgium	45.63	2.04	4.86	4.89	5.07	1.86	2.92	0.56	0.27	0.16	0.35	0.95	0.07	0.49
Bulgaria	51.12	2.48	4.28	4.67	3.64	3.08	2.86	0.61	0.17	0.09	0.21	1.00	0.11	0.42
Switzerland	48.48	1.89	5.31	4.96	5.85	1.65	2.36	0.52	0.27	0.05	0.28	0.87	0.03	0.46
Cyprus	45.60	1.82	6.79	5.14	4.48	2.10	3.05	0.65	0.23	0.19	0.32	0.97	0.03	0.49
Czech Republic	49.36	2.44	2.87	5.40	4.44	2.44	2.52	0.53	0.18	0.01	0.11	0.99	0.05	0.47
Germany	47.77	2.35	3.91	4.51	5.14	1.94	2.55	0.55	0.27	0.02	0.33	0.96	0.08	0.50
Denmark	48.07	1.90	4.27	5.43	6.78	1.41	2.56	0.57	0.28	0.02	0.38	0.98	0.04	0.49
Estonia	47.48	2.61	3.59	5.24	5.21	2.37	2.79	0.44	0.32	0.06	0.35	0.81	0.05	0.42
Spain	46.63	2.30	4.50	4.48	4.87	1.93	3.06	0.58	0.29	0.37	0.19	0.94	0.06	0.48
Finland	47.32	2.19	5.35	5.70	6.36	1.93	2.51	0.50	0.32	0.19	0.29	0.99	0.05	0.48
France	48.30	2.27	3.72	4.78	4.90	1.87	2.55	0.51	0.29	0.22	0.40	0.97	0.06	0.46
United Kingdom	48.82	2.08	4.22	5.06	5.49	1.81	2.38	0.48	0.26	0.01	0.39	0.97	0.05	0.46
Greece	49.84	1.96	7.50	5.67	3.53	2.57	2.75	0.62	0.22	0.40	0.16	0.95	0.05	0.44
Hungary	47.86	2.65	4.36	5.22	4.33	2.53	2.98	0.53	0.23	0.32	0.15	1.00	0.06	0.45
Ireland	46.90	1.78	5.91	5.34	5.96	1.73	3.36	0.56	0.32	0.23	0.30	0.97	0.04	0.45
Israel	43.60	2.02	4.77	5.69	5.00	2.29	3.75	0.59	0.24	0.12	0.43	0.99	0.09	0.46
Iceland	44.50	1.83	6.06	5.09	6.50	1.56	3.16	0.51	0.35	0.07	0.57	1.00	0.02	0.48
Italy	46.93	2.27	6.08	4.79	4.41	1.85	3.14	0.60	0.29	0.23	0.09	1.00	0.08	0.45
Luxembourg	43.38	2.16	4.29	5.08	5.14	1.60	3.16	0.55	0.32	0.31	0.20	0.69	0.02	0.50
Netherlands	48.86	2.17	5.02	5.21	5.79	1.65	2.49	0.54	0.26	0.11	0.31	0.98	0.03	0.44
Norway	45.68	1.98	3.93	5.24	6.55	1.55	2.67	0.52	0.32	0.01	0.41	0.96	0.03	0.52
Poland	43.32	2.43	6.49	5.49	3.97	2.36	3.59	0.57	0.29	0.22	0.18	1.00	0.10	0.48
Portugal	50.59	2.62	5.69	4.91	4.22	2.47	2.64	0.57	0.22	0.59	0.11	0.97	0.06	0.40
Russia	46.64	2.86	4.35	5.28	4.22	2.82	2.51	0.46	0.22	0.08	0.55	1.00	0.04	0.40
Sweden	46.92	1.99	3.56	5.11	6.27	1.54	2.58	0.45	0.38	0.21	0.32	0.97	0.04	0.50
Slovenia	45.67	2.44	4.78	4.78	4.47	1.76	3.42	0.57	0.28	0.29	0.18	1.00	0.07	0.46
Slovakia	45.51	2.40	5.93	4.87	4.22	2.46	3.32	0.57	0.24	0.02	0.15	1.00	0.08	0.45
Turkey	39.19	2.34	7.06	6.32	3.39	2.46	4.11	0.66	0.24	0.62	0.07	1.00	0.10	0.45
Ukraine	49.86	3.04	5.00	5.55	4.28	3.09	2.72	0.53	0.16	0.13	0.54	0.99	0.07	0.37

Table 7. Linear fixed-effects estimates of equation (1). Fixed-effects and clustered standard errors are at region level.

	State of the education system		State of the health services	
	Coefficient	*t-value*	*Coefficient*	*t-value*
Constant	3.056***	(0.172)	2.790***	(0.211)
Age	-0.0270***	(0.00222)	-0.0387***	(0.00222)
Age squared	0.000226***	(2.21e-05)	0.000419***	(2.19e-05)
Woman	-0.0740***	(0.0119)	-0.285***	(0.0120)
Primary (base: lower primary)	-0.0843**	(0.0379)	-0.127***	(0.0379)
Lower secondary	-0.262***	(0.0378)	-0.242***	(0.0379)
Upper Secondary	-0.312***	(0.0378)	-0.332***	(0.0379)
Post-secondary, non-tertiary	-0.418***	(0.0429)	-0.362***	(0.0432)
First stage of tertiary	-0.468***	(0.0390)	-0.286***	(0.0392)
Second stage of tertiary	-0.458***	(0.0481)	-0.233***	(0.0489)
Citizenship	0.446***	(0.0346)	0.549***	(0.0321)
Self-reported health	-0.107***	(0.00748)	-0.155***	(0.00746)
Religiosity	0.0361***	(0.00213)	0.0358***	(0.00214)
Left-right political scale	0.0129***	(0.00269)	0.0250***	(0.00271)
Trust	0.189***	(0.00335)	0.220***	(0.00334)
Separated (Base: married)	-0.0922**	(0.0468)	-0.0420	(0.0473)
Divorced	-0.0695***	(0.0220)	0.0380*	(0.0221)
Widowed	-0.0147	(0.0243)	0.0400*	(0.0238)
Never married	-0.0671***	(0.0180)	0.0340*	(0.0181)
Coping (Base: No problem)	-0.0578***	(0.0138)	-0.182***	(0.0138)
Difficult	-0.209***	(0.0194)	-0.357***	(0.0195)
Very difficult	-0.391***	(0.0301)	-0.623***	(0.0302)
Unemployed (Base: retired)	-0.0500*	(0.0282)	0.00157	(0.0281)
In paid work	-0.0457***	(0.0164)	-0.140***	(0.0164)
Student	-0.153***	(0.0246)	-0.0363	(0.0249)
Disabled	-0.000123	(0.0344)	0.00441	(0.0343)
Military service	0.159*	(0.0949)	-0.0745	(0.0977)
Homework	0.00971	(0.0152)	-0.0333**	(0.0151)
Household size	0.00186	(0.00472)	0.0398***	(0.00478)

Significant at *** 1 percent, ** 5 percent and * 10 percent level.

Table 7 (continuation)

	State of the education system		State of the health services	
	Coefficient	*t-value*	*Coefficient*	*t-value*
National Indicators				
Government size	0.0214***	(0.00390)	0.0108***	(0.00375)
Unemployment rate	-0.0198***	(0.00417)	0.0279***	(0.00437)
Inflation rate	0.0124*	(0.00711)	-0.0339***	(0.00737)
GDP per capita	0.0145***	(0.00227)	0.0121***	(0.00229)
Public exp. education (% GDP)	0.114***	(0.0275)		
Public exp. health (% GDP)			0.0690***	(0.0164)
Private exp. health (% GDP)			-0.105***	(0.0289)
Fiscal decentralization				
Subnational Total Expenditure	0.0176***	(0.00335)	0.0102***	(0.00341)
Subnational Current Expenditure	0.0109***	(0.00180)	0.00353*	(0.00197)
Subnational Capital Expenditure	0.00167	(0.00170)	0.00173	(0.00179)
Subnational Total Revenue	0.0275***	(0.00375)	0.0230***	(0.00375)
Subnational Tax Revenue	0.00682***	(0.00231)	0.0156***	(0.00244)
N	91,970		98,949	
Political decentralization				
Self-rule (ID+PS+FA+RP)	-0.0165***	(0.00387)	-0.000570	(0.00413)
Institutional depth (ID)	-0.105***	(0.0162)	-0.00445	(0.0180)
Policy Scope (PS)	-0.0512***	(0.0164)	0.0165	(0.0173)
Fiscal autonomy (FA)	-0.0282*	(0.0155)	0.0477***	(0.0158)
Representation (RP)	-0.0425***	(0.0105)	-0.0316***	(0.0112)
Shared-rule (EC+FC+CR)	-0.0358***	(0.00698)	-0.0150**	(0.00764)
Executive control (EC)	-0.0886***	(0.0200)	-0.0586***	(0.0211)
Fiscal control (FC)	-0.125***	(0.0272)	-0.0473	(0.0307)
Constitutional reform (CR)	-0.0941***	(0.0190)	-0.0607***	(0.0213)
N	105,637		113,818	

Significant at *** 1 percent, ** 5 percent and * 10 percent level.