*1.01 Original scientific article*

# The Factor Model of Decentralization and Quality of Governance in European Union

UDK: 005.591.46:303.722.2:061.1EU

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ABSTRACT

**This paper presents a selection of 43 variables collected from various sources, which are used to describe the concepts of decentralization and quality of governance in the EU countries. Decentralization is analyzed from two aspects, fiscal and political, while the quality of governance is, along with certain real indicators, measured in particular with the opinions of citizens. The aim of the research was to determine the factor structure of selected variables and provide guidelines for using best practices in exploratory factor analysis. The exploratory factor analysis classified the selected variables into three factors of fiscal decentralization (Fiscal decentralization, Fiscal centralization and Government expenditure), three factors of political decentralization (Centripetalism, Regional governance, Federalism) and three factors of quality of governance (Quality of European institutions, Quality of national institutions and Enforcement of EU law). Despite the small population observed, the factors showed quite good characteristics and provided a good starting point for further research. In this manner, it was shown that despite a small population, it is possible to develop factor models of suitable quality by using exploratory factor analysis in the sense of best practices.**

*Key words: fiscal decentralization, political decentralization, quality of governance, exploratory factor analysis, EU countries*

*JEL: C38, H00, H11, H50, H70*

## 1 Introduction

Institutions direct, shape and limit relationships between people, thus influencing the political, economic and social outcomes in communities. In the traditional sense, the state is an institution with relative sovereignty and own

political, legal, administrative and economic system (Aristovnik & Pungartnik, 2009). With development, the concept of its sovereignty is changing – the sovereignty of the state in the traditional sense no longer exists (Cooper, 2003). In the post-modern global order, in a network of transnational institutions, the sovereignty of the state is only "a seat at the table" (Cooper 2003, p. 44). Because of interdependence, states join integrations, which typically have centralized governance, while at the same time, members decentralize their governance.

In simplified terms, decentralization means the transfer of competence and resources from the centre to the lower levels of governance of a political formation (Aristovnik, 2012). Political formations comprising a large area are difficult to manage. Power and political influence diminishes from the centre towards the periphery, the capacity to implement central politics is limited, while the heterogeneity of preferences is greater with larger spatial extent. The transfer of competence facilitates the coordination of the formation and at the same time addresses the heterogeneity of preferences. In order to solve the aforementioned issues, indirect and decentralized governance was introduced as early as in the Roman Empire – the so-called 'divide et impera' system. The level of (de)centralization may be defined as the structure of organization of administrative institutions in a given country (or other political formation).

The quality of governance is the result of activities of the institutions and is conditioned by the structure of their organization. Gerring et al. (2005, p. 567) cite Montesquieu's statement that quality governance arises from the diffusion of power among multiple independent institutions (the concept of decentralization). They control each other's activities, which ensures a more responsible and better operation (Gerring et al., 2005, p. 568). The latter statements links the areas discussed in our research: the quality of governance and decentralization in the EU countries.

The substantive objective of the research was to develop factor model, making it possible to simplify the data structure of decentralization and the quality of governance. From a methodological perspective, the objective was to design a methodological framework that enables a more detailed treatment of smaller statistical populations.

In the selection of a relevant range of variables defining fiscal and political decentralization and quality of governance, a deductive research approach was applied, using a combination of data sources and relevant theoretical bases. The factor structure of given concepts was determined by means of the exploratory factor analysis. In this manner, the starting hypothesis was verified:

> The application of the relevant range of variables for measuring the level of decentralization and quality of governance in the EU countries enables the formulation of a factor model of three

concepts: fiscal decentralization, political decentralization and quality of governance.

For the extraction of factors in the exploratory factor analysis the maximum likelihood method was applied, while the factors were rotated by applying the direct oblimin rotation, what was done in IBM SPSS Statistics 21 software.

This article is structured in six chapters. The introduction is followed by the theoretical definitions of the areas considered, while the rest of the theoretical part of the article presents a review of the methods and approaches (chapter 3) and the methodology of the second part of the article (chapter 4). The empirical study report in chapter 5 comprises the exploratory factor analysis, which was applied to obtain the factor model of the phenomenon from a range of variables. The results of the research are discussed in the last chapter.

The limitation of the research is primarily in the size of the statistical population, since it is substantially too small for a substantiated statistical inference. The selection of variables was based on a relevant study of sources; however, no previous models were available, on the basis of which the final range of variables could be determined. Considering that the objective of the research was exploratory formulation of basic elements for the definition of the model serving as the starting point for further research, this limitation may be considered as acceptable.

## 2 Decentralization and Quality of Governance

This chapter presents and substantiates the theoretical bases and range of variables, which can be applied to measure the quality of governance and the political and fiscal aspects of decentralization.

The World Bank defines the quality of governance as "the process by which governments are selected, monitored and replaced; the capacity of the government to effectively formulate and implement sound policies, and the respect of citizens and the state for the institutions that govern economic and social interactions among them." (Dijkstra, 2011, p. 1). Quality is defined by the expectations of the population of a given country on the outcomes that the governing bodies should achieve (Draghici, 2004, p. 2). The quality of governance means the capacity of the state to implement its activities efficiently and free of corruption (Bäck and Hadenius, 2008). Impartial governance enhances the trust of citizens in institutions (Teorell, 2009, p. 21).

Low level of corruption, high bureaucratic efficiency and participation of citizens in the operation of democratic institutions are some of the characteristics of the quality of governance in a given country (Charron, 2009, p. 9). Corruption is the cause and/or effect of the operation of weak national institutions (Judge et al., 2011, p. 102). It is commonly the element of estimates of the quality of institutional activities.

The quality of governance arises from the diffusion of power among multiple independent institutions – they control each other's activities, which ensures a more responsible and better operation. Hooghe at el. (2009, p. 3) also state that structure of government, i.e. the allocation of authority to lower levels, determines the outcomes of its operation. One of the proposed solutions of the issued of corruption (the variable in the Quality of government group) is "to implement inter-regional competition through decentralization" (Fisman & Gatti, 2002). Multi-level governance means greater responsibility as a result of competition, while the system of 'checks and balances' operates on 'two levels' (horizontally and vertically). On the other hand, Gerring et al. (2005. p. 567) believe that democratic institutions achieve better outcomes in unitary, parliamentary and proportional electoral systems, when the goals of centralized authority and broad inclusion are met.

There are certain findings on the positive impact of fiscal decentralization (Kyriacou & Roca-Sagales, 2011) and negative impact of political decentralization (Gerring et al., 2005; Fan et al., 2009) on the quality of governance in a country. Fiscal decentralization has a positive impact on institution; however, this impact is mitigated in the presence of multi-level state structures (Kyriacou & Roca-Sagales, 2011). Liu (2007) identifies a connection between the level of fiscal decentralization and good economic and governance performance, while Ivanyna and Shah (2011, p. 24) establish a negative effect of the decentralization criteria on corruption variables (the Quality of government group of variables in our research).

Our research includes the fiscal and political dimensions of decentralization on the basis of the typology given by Schneider (2003). The meta-analysis of definitions and typologies of decentralization by Dubois and Fattore (2009) was used to facilitate the selection of indicators of decentralization. Dubois and Fattore point out (2009, p. 706) that contradictory findings and partial results on the impact of decentralization on the quality of governance arise from incomplete definitions of multi-dimensional variables and the resulting methodological limitations of the selected criteria (Ketchen & Shook, 1996; Dubois & Fattore, 2009). Liu (Ebel & Yilmaz, 2002) also lists the limitations of the application of standard criteria of fiscal decentralization and mentions the indicators of the OECD and World Bank as more appropriate, since they include qualitative components. Ivanyna and Shah (2011, p. 2) point out that it is necessary to include fiscal, administrative and political component in the structure of decentralization index. In their research, they use their own decentralization indexes, which are unfortunately not published (not accessible).

## 3 A Review of Methods and Approaches

On the basis of the assessment of previous research in the light of the use of statistical methods, we note that the most commonly used statistical

method in similar research is regression analysis. Gerring et al. (2005) examine the impact of centripetalism on certain indicators of good governance by means of regression analysis. Their statistically significant results confirm the assumption on positive impact of centripetalism on governance. Centripetalism is associated with higher bureaucratic quality, higher tax revenues, improved investment ratings, greater openness and economic prosperity of a country and human development. Depending on the indicator, the author uses data collected by La Porta (et al., 1999), Alesina (et al., 2002), World Bank (economic indicators, indicators of human development) and Marshall and Jaggers (2005).

The regression analysis is used also by Kyriacou and Roca-Sagales (2011) for testing the impact of fiscal indicators on (own) good governance index. They obtain data on fiscal shares of individual levels of government from the OECD data source, and construct the good governance index from four indicators of good governance issued by the World Bank (control of corruption, rule of law, regulatory quality and government effectiveness). The results confirm the assumption on positive impact of fiscal decentralization on the quality of governance (due to competition), which, however, may be limited in the presence of political decentralization.

By using the regression analysis on a sample of 95 countries, Enikolopov and Zuhravskaya (2003, p. 16) determine that the impact of decentralization on economic growth, quality of governance and provision of public goods depends on political centralization – strength of parties and the manner of selection of officials at lower levels of government. They use the following data: IMF's (International Monetary Fund) statistical data for fiscal shares by the administrative tiers, data on political institutions provided by Beck et al. (2001) for the quality of governance, the Corruption Perception Index (Transparency International), individual indicators of good governance issued by the World Bank and certain World Development Indicators (the source of which is the World Bank).

Ivanyna and Shah (2011) determine the negative impact of fiscal and political decentralization on corruption indicators by using the regression analysis. For the indicator of fiscal decentralization, they use the data issued by the World Bank, which are based on the International Monetary Fund and upgraded in the light of estimates of missing values. For the corruption indicator, they use various sources – Transparency International (Global corruption barometer), World Bank Enterprises Survey and Corruption perception index issued by the World Bank.

Altunbas and Thornton (2011) use a sample of 64 countries to confirm the assumption on the negative impact of fiscal decentralization on the degree of corruption, which can be mitigated by the presence of vertical administrative decentralization. As the corruption indicator they use the data from the International Country Risk Guide and from the publication by Knack and

Keefer (1995), while they obtain the data on fiscal decentralization from the publication by Dziobek et al. (2011), which is based on the IMF's statistics, and the data on vertical administrative decentralization from the publications issued by the CIA (2009) and Treisman (2000).

Ahrens and Meurers (2002) use the factor analysis to formulate factors of governance dimensions (transparency, participation, responsibility, predictability) and apply them in a regression analysis, which demonstrates the impact of governance on economic reforms and outcomes in countries in transition. They confirm an indirect impact of governance on the efficiency of reforms, stability of institutional framework, investment rating and economic growth.

Dreher et al. (2007) establish a structural model on the basis of which they derive the corruption index, which comprises approximately 100 countries in the period from 1976 to 1997. They construct a group of potential political factors of corruption, which includes democracy, rule of law, political system, decentralization, political stability, freedom of the press; a group of social factors, which includes religious, language and ethnic fragmentation; and a group of economic factors, which includes the share of trade as a percentage of GDP, the share of natural resources in exports and the size of the public sector.

Suggestions for further research refer to the use of factor analysis and method of main components in the selection of variables of the research (Liu, 2007, p. 103), the inclusion of spatial criteria in the research of institutions and economic development (Shepotylo, 2003, p. 132; Arzaghi & Henderson, 2005, p. 1184; Olsson & Hansson, 2011) the study of determinants of political institutions and determinants of fiscal decentralization (Enikolopov & Zhuravskaya, 2003, p. 36), the increase in the sample (Liu, 2007) and general inclusion of more suitable criteria (Ketchen & Shook, 1996; Dubois & Fattore, 2009; Ebel & Yilmaz, 2002).

The analysis of countries as statistical units is limited to smaller statistical populations; therefore, the power of inference is often weak in this type of research. The problem is even more exposed if we want to study only the selected subgroup of countries. On the other hand, the rising number of different publicly accessible variables measuring the different aspects of quality of governance enables the development of new research approaches. Many researchers define aggregated indicators by considering only the theoretical models. However, contemporary statistical approaches make it possible to reduce data dimensionality and also define indicators as statistically derived latent variables for statistically disadvantageous proportion between the sample size and the number of variables. Our study contributes a case of systematic approach to the research of quality of governance based on the exploratory factor analysis approach which enables the presentation of the characteristics of a group of countries in an intelligible manner.

## 4 Methods

As mentioned above, exploratory factor analysis was employed in the research. Factor analysis is a multivariate statistical method for data reduction. It is used to analyze the correlation in a specific group of variables (Kujundžić & Ivanković, 2011, p. 81) and simplify the complexity of connections with common dimensions – factors (Bastič, 2006). In principle, there are two types of factor analysis – confirmatory and exploratory. Confirmatory factor analysis is used for testing hypotheses on the basis of previous (theoretical) assumption on dependence between the observed variables and latent concept. Exploratory factor analysis is conducted without previous assumptions on the latent concept. It is assumed that any variable may be related to any factor. Its main goal is to simplify the interdependent variables and identify any possible latent concepts (Suhr, 2012, p. 1). The research, the results of which are presented here, is of inductive type; therefore, exploratory factor analysis was used in the analysis.

The objectives of factors analysis (Rummel, 2011) include: definition of structure and relationships, classification and reduction of data, data transformation, hypothesis testing etc. Exploratory factor analysis reduces the multidimensionality of variables on the basis of common, latent characteristics, which are expressed in factors. The main argument for its use is in the consideration of latent variables that can have an effect on covariance of manifest variables (Costello & Osborne 2005, p. 2).

The adequacy of variables in the model is compared by means of the Cronbach's coefficient of reliability, the Kaiser-Meyer-Olkin statistics, where high values on the interval [0,1] show the relationship between variables and appropriateness of their use in factor analysis, and Bartlett's test of sphericity, which shows the probability of distortion of the data value with the p-value. When the statistical significance of the Bartlett's test is lower than 0.05, the null hypothesis that the correlation matrix is equal to the unit matrix may be rejected.

In the analysis of the factor model, the maximum likelihood method was used for assessing the model. If data are relatively normally distributed, the method is the best choice (Fabrigar et al., 1999). In order to adjust the hypothetical data to real data as much as possible, results are rotated. Rotation simplifies the factor structure, making its interpretation easier and more reliable (Thurstone, 1947; Cattell, 1978). In principle, there are two types of rotations – orthogonal and oblique. The main difference between them is that the former keeps factors uncorrelated, while the latter allows the factor correlation (Rummel, 2011). In our research, the direct oblimin oblique rotation was used, which allows the dependence of rotated factors.

As arguments on the number of factors to be retained – (in)dependent samples of relationship between variables, the following was considered:

- the eigenvalue of the factor is larger than 1 - Guttman-Kaiser criterion (Kootstra, 2004, p. 6, Hair et al., 2010, p. 109);
- retained factors account for at least 60 percent of total variance (Hair et al., 2010, p. 109); and
- the value of variable pattern loading on the factor is greater than 0.4 (Fallon and Schofield, 2004, p. 206).

Benčina (2012, p. 8) states that stable factors are constructed from at least five highly weighted variables (with weights greater than 0.5), whereby the lowest acceptable weight value for the inclusion of variable into the factor is 0.32.

## 5 Results

The initial dataset consists of three groups of variables chosen by the criteria of relevance and availability, depending on the addressed topics. In accordance with the main objective of the study the selection of analyzed units was limited to 27 EU member countries

On the basis of the findings of several authors, the basic model of 43 variables for the quality of governance and both types of decentralization (Table 1) was constructed from three data sources, The QoG Social Policy Dataset, version 11Nov2010 (Samanni et al., 2010), EUROSTAT (2011) and World Development Indicators (Samanni et al., 2010).

The group of variables for the analysis of the quality of governance (Table 1) includes the variables of trust of citizens in institutions (1–15), the variable Functioning of government (16), Index of objective indicators of good governance (17) and a set of six variables of 'Good governance' issued by the Statistical Office of the European Communities EUROSTAT, which are part of the European Sustainable Development Strategy (19–24). As the indicator of non-quality, the variable of corruption Corruption perception index (18) was also included in the group. It is the most commonly used variable of corruption and is one of the two variables that provide the best outcomes (Judge et al., 2011, p. 96–97).

The selection of variables of the second (Fiscal decentralization) and third group (Political decentralization) in Table 1 was based on various sources. Normally, fiscal variables (variables 25–32) are used as the indicator of fiscal decentralization in research, probably due to their availability (most commonly, the share of the budget by the 'administrative tiers of government' is used) (Panizza, 1999; Enikolopov & Zhuravskaya, 2003; Lessmann & Markwardt, 2010; Kyriacou & Roca-Sagales, 2011; Ivanyna & Shah, 2011). As variables of Political decentralization, our research also includes the following: Public sector employment (33), Measure of unitarism or federalism (34–41) (Gerring et al., 2005), Fractionalization of government parties (42) and Electoral system (43) (Enikolopov & Zhuravskaya, 2003).

**Table 1: List of included variables**

| No. | Var. name | Variable label | Year | Source | |
|---|---|---|---|---|---|
| Quality of government | | | | | |
| 1 | eb_tcj | Trust in the European Court of Justice | 1996-2004 | Sammani et al., 2010 | |
| 2 | eb_tcm | Trust in the EU Council of Ministers | | | |
| 3 | eb_tec | Trust in the European Commission | | | |
| 4 | eb_tecb | Trust in the European Central Bank | | | |
| 5 | eb_teca | Trust in the European Court of Auditors | | | |
| 6 | eb_teo | Trust in the European Ombudsman | | | |
| 7 | eb_tep | Trust in the European Parliament | | | |
| 8 | eb_tsec | Trust in the EU Social and Economic Committee | | | |
| 9 | eb_tls | Trust in the legal system | | | |
| 10 | eb_tp | Trust in the police | | | |
| 11 | eb_ta | Trust in the army | | | |
| 12 | eb_tpp | Trust in political parties | | | |
| 13 | eb_tcs | Trust in the civil service | | | |
| 14 | eb_tng | Trust in the national government | | | |
| 15 | eb_tnp | Trust in national parliament | | | |
| 16 | eiu_fog | Functioning of Government | 2006 | | |
| 17 | kk_gg | Index of Objective Indicators of Good Governance | 2002 | | |
| 18 | ti_cpi | Corruption Perceptions Index | 2000–2007 | | |
| 19 | GGI_ic | New infringement cases, number | 2009 | EUROSTAT | tsdgo210 |
| 20 | GGI_cl | Transposition of community law, % | 2009 | | tsdgo220 |
| 21 | GGI_vt | Voter turnout in national and EU parliamentary elections, % | 2009 | | tsdgo310 |
| 22 | GGI_egov | E-government on-line availability, % | 2009 | | tsdgo320 |
| 23 | GGI_egov1 | E-government usage by individuals, % | 2009 | | tsdgo330 |
| 24 | GGI_cc | Level of citizens' confidence in EU institutions, % | 2009 | | tsdgo510 |
| Fiscal decentralization | | | | | |
| 25 | wdi_tr | Tax Revenue (% of GDP) | 2011 | Sammani et al., 2010 | |
| 26 | wdi_hmtri | Highest Marginal Tax Rate, Individual (%) | 1999–2006 | | |
| 27 | WDI_exps | Expense (% GDP) | 2011 | WDI2001 | |
| 28 | tggex | Total general government expenditure (% of GDP) | 2009 | EUROSTAT | gov_a_main |
| 29 | cgex | Central government expenditure (% of GDP) | 2009 | | gov_a_main |
| 30 | lgex | Local government expenditure (% of GDP) | 2009 | | gov_a_main |
| 31 | cgttr | Central government, total receipts from taxes and social contributions (% of GDP) | 2009 | | gov_a_tax_ag |
| 32 | lgttr | Local government Total receipts from taxes and social conributions (% of GDP) | 2009 | | gov_a_tax_ag |
| Political decentralization | | | | | |
| 33 | pa_emp | Public sector employment (as % of total employment) | 2009 | EUROSTAT | gov_dd_edpt1 |
| 34 | gol_adm | Average District Magnitude | 1995–2000 | Sammani et al., 2010 | |
| 35 | gol_dist | Districts, number | | | |
| 36 | gtm_centrip | Centripetalism | 1996–2000 | | |
| 37 | gtm_unit | Unitarism | 1995–2001 | | |
| 38 | iaep_ufs | Unitary or federal state | 1996–2005 | | |
| 39 | iaep_arr | Appointment of regional representatives | 1972–2005 | | |
| 40 | no_ufs | Unitary or federal state | 2002 | | |
| 41 | RAI | Regional authority index | 1950–2006 | | |
| 42 | dpi_tf | Total fractionalization | 1996–2009 | | |
| 43 | gol_est | Electoral system | 1995–2000 | | |

The analysis of the meaning of variables indicated that the scales of variables from the Quality of government group, measuring the trust of citizens in the EU and national institutions, were inverted. Therefore, the values for variables 1–15 were reversed. The variables included values 1 (tend to trust) and 2 (tend not to trust), which were converted by the formula 3 – y. In addition, inverted orientation was discovered also with the variable gtm_unit (37) from

the group Political decentralization. Since it included values 0, 1 and 2, it was converted by the formula 2 – y.

Most of the variables have quite appropriate characteristics:

- Relative Standard Error of Mean – $se_{My} / m_y < 0.10$, and
- Skewness and Kurtosis < Abs(1).

Some of the variables express a slightly higher relative Standard Error of Mean ($se_{My} / m_y < 0,20$), with

- Skewness and Kurtosis < Abs(2): kk_gg, GGI_ic, iaep_arr, iaep_ufs, RAI and
- Skewness and/or Kurtosis < Abs(4): GGI_cc, lgex, gtm_unit.

The relative Standard Error of Mean of the remnant variables is higher than 0.20 with the highest value at variable gol_adm (0.40; the variable was generated from the end model). Three variables (lgttr, gol_dist and no ufs) express relative Standard Error of Mean lower than 0.35, with Skewness and Kurtosis < Abs(4).

The characteristic of some variables are indeed slightly unpleasant; however, the fact is that those are the values of the characteristics of EU countries' policies. For this reason, only the variable with the worst characteristics (gol_adm) was excluded from further analysis.

The results of the research are factor models of three concepts in consideration, defining dimensions of quality of governance, fiscal and political decentralization. In this way, an idea about the dimensions of concepts under consideration is given.

Characteristics of the models represented by the value of the Cronbach's coefficient of reliability (Cα), as the measure of internal consistency of data, Kaiser-Maier-Olkin measure of sampling adequacy (KMO) and significance of Bartlett's test of sphericity ($p_B$), are given in Table 2.

**Table 2: Characteristics of factor model**

| Concept | Cα | KMO | $p_B$ |
|---|---|---|---|
| Quality of governance | 0.435 | 0.222 | 0.000 |
| Fiscal decentralization | 0.786 | 0.664 | 0.000 |
| Political decentralization | 0.049 | 0.464 | 0.000 |

Characteristics of the model (Table 2) represented for the concept Quality of governance showed lower values of Cα and KMO than requested. Nevertheless, the result was a rather good starting point for further exploration. The concept Fiscal decentralization showed a suitable consistency and adequacy of the model, which indicated a good starting point for factor analysis. Only the value of the Cronbach's coefficient of reliability for Political

decentralization was low. The value of the KMO test was also slightly lower than recommended, while no problems were detected with the significance of the Bartlett's test of sphericity ($p_B$). The analysis showed some weaknesses of the models; however, the results indicated that we were on the right track.

In the factor analysis, we took into account the following methods and limitations: extraction: maximum likelihood; rotation: Direct Oblimin; communalities > 0.400; total variance explained > 0.600; and factor retainment criteria: eigenvalue > 1; variable pattern loading > 0.400; and consideration of cross loadings.

The first step of the factor analysis of the concept quality of government (variables 1 to 24) revealed one variable with lower communality GGI_vt (21) (0.315). After eliminating it, we had to determine to extract four factors only due to the non-convergence of the model. Next we eliminated the variable eb_ta (11) (0.299). Non-convergence of four factors model forced us to narrow down the model to three factors. After eliminating the variable GGI_cc (24) (0.340), a three factor model with the characteristics ($C\alpha = 0.460$; KMO = 0.557 and $p_B < 0.001$) was formulated. The extracted three factors of Quality of governance account for 77.1% of total variance. The model (Table 3) expresses quite acceptable characteristics and pattern loadings.

**Table 3: Factor structure of the concept of Quality of Government**

| ID | PL | Variable | Factor | TVA |
|---|---|---|---|---|
| | | I | Quality of European Institutions | 36.5% |
| 1 | 0.887 | eb_tcj | The first factor includes variables of the measure of trust in particular European institutions. | |
| 2 | 0.952 | eb_tcm | | |
| 3 | 0.887 | eb_tec | | |
| 4 | 0.930 | eb_tecb | | |
| 5 | 0.893 | eb_teca | | |
| 6 | 0.719 | eb_teo | | |
| 7 | 0.876 | eb_tep | | |
| 8 | 0.899 | eb_tsec | | |
| | | II | Quality of National Institutions | 32.7% |
| 9 | 0.846 | eb_tls | The second factor consists of variables of the measure of trust in national institutions, measure of functioning of government, index of objective indicators of good governance, corruption perception index and e-government development and usage indicators. | |
| 10 | 0.790 | eb_tp | | |
| 12 | 0.908 | eb_tpp | | |
| 13 | 0.813 | eb_tcs | | |
| 14 | 0.880 | eb_tng | | |
| 15 | 0.944 | eb_tnp | | |
| 16 | 0.806 | eiu_fog | | |
| 17 | 0.715 | kk_gg | | |
| 18 | 0.842 | ti_cpi | | |
| 23 | 0.721 | GGI_egov1 | | |
| | | III | Enforcement of EU law | 7.9% |
| 19 | –0.745 | GGI_ic | The third factor is defined by the number of infringements of obligations of EU members and the extent of transposition of community law. | |
| 20 | 0.718 | GGI_cl | | |

Legend: ID – identification number of variable defined in Table 1; PL – pattern loadings of variables; Variable – short name of variable; TVA – total variance explained by the factor model.

The last factor with two variables is relatively weak, therefore, it might be reasonable to eliminate it from the model, which would further strengthen the characteristics of the model. Since it accounts for the additional aspect of quality of institutions, it was retained in the result of this research in order to suggest the need to find additional variables that indicate the enforcement of (EU and national) law.

The concept of quality of governance is expressed by three latent variables (Table 3). The quality of European institutions is measured by the variables of trust in EU institutions. The quality of national institutions is measured by the variables of trust, which are well-aligned with three indexes of quality of governance: Functioning of Government (16), Index of Objective Indicators of Good Governance (17), and Corruption Perceptions Index (18). The latent variable Enforcement of EU law measures the quality of governance in the light of compliance with EU law (19, 20).

Variables from the group Fiscal decentralization (under numbers 25–32, Table 1) were merged into three factors, accounting for 80.8% of total variance. The characteristics of the model were: $C\alpha = 0.786$; KMO = 0.664 and $p_B < 0.001$. Pattern loadings were acceptable except for the cross-loaded variable (PL1[1] = –0.533, PL3 = 0.589). Further analysis showed that two variables (WDI_exps (27) and tggex (28)) should be excluded from the model. However, for the sake of expressiveness, in the enter model we retained the basic three factor model (Table 4).

**Table 4: Factor structure of the concept of Fiscal decentralization**

| ID | PL | Variable | Factor | TVA |
|---|---|---|---|---|
| | | IV | Fiscal decentralization | 36.0% |
| 30 | 0.789 | lgex | The factor comprises local government expenditure, total receipts from taxes, and social contributions as share of GDP. | |
| 32 | 0.934 | lgttr | | |
| | | V | Fiscal centralization | 33.8% |
| 25 | 0.693 | wdi_tr | The factor includes tax revenues, central government expenditure, and total receipts form taxes and social contributions as share of GDP | |
| 29 | 0.937 | cgex | | |
| 31 | 1.009 | cgttr | | |
| | | VI | Government expenditure | 11.0% |
| 26 | 0.628 | wdi_hmtri | The factor is built of highest marginal tax rate, and expense and total general government expenditure as share of GDP. | |
| 27 | 0.589 | WDI_exps | | |
| 28 | 0.898 | tggex | | |

The model of variables from the group Political decentralization (under numbers 33–43 in Table 1) displayed the following characteristics: $C\alpha = 0.046$; KMO = 0.464 and $p_B < 0.001$. The model was classified into three factors. Two variables (pa_emp (33) and gol_est (43) demonstrated extremely low communalities in the model, therefore, they were eliminated. This provided a model, where all variables exceed the minimal measure of communalities with KMO = 0.584. The model (Table 5) accounts for 68.7% of total variance.

1 PL – pattern loading; 1 – factor 1.

**Table 5: Factor structure of the concept of Political decentralization**

| ID | PL | Variable | Factor | TVA |
|---|---|---|---|---|
| | | VII | Centripetalism | 31.1% |
| 35 | 1.001 | gol_dist | The factor is measured by the number of electoral unites, the measures of centripetalism and political fractionalization. | |
| 36 | –0.516 | gtm_centrip | | |
| 42 | –0.407 | dpi_tf | | |
| | | VIII | Regional governance | 13.3 % |
| 39 | 0.990 | iaep_arr | The manner of appointment of regional representatives. | |
| | | IX | Federalism | 24.3% |
| 37 | –0.899 | gtm_unit | The variables of Federalism which refer to the measure of the mode of operation of the state (unitary state, two measures of the level between unitarism and federalism, and regional authority index). | |
| 38 | 0.536 | iaep_ufs | | |
| 40 | 0.680 | no_ufs | | |
| 41 | 0.993 | RAI | | |

Despite the fact that the model includes an extremely weak factor, determined by a single variable, the analysis was finished at this stage. In terms of content, it is important to retain a highly informative aspect of regional governance, which may be used in future research to further highlight the concept under consideration.

The factor analysis provided substantively meaningful results, while the structure of concepts is consistent with the expectations. To show the usefulness of the factor model we calculated the regression values for nine latent variables for EU 27 countries. The rank values are given in Table 6.

Ranking of EU countries by regression values of the quality of national governance (II) put Denmark, Luxembourg and Sweden at the top, and Lithuania, Bulgaria, Slovakia and Romania at the bottom of the list. The upper half of the list is populated more or less with old member countries and the lower half with new member countries. Exceptions in the upper part are Cyprus and Hungary, while exceptions in the lower part are Italy, France and Greece. In relation to the trust in EU institutions (I), the EU countries form three groups: the group with high-ranked quality of national institutions and low-ranked EU institutions with the largest difference for Austria, Sweden and UK, the group with similar ranking in both categories with the lowest difference for Malta, Greece, Spain and Slovenia, and the group with low-ranked quality of national institutions and high-ranked EU institutions with the highest difference for Romania, Slovakia, Lithuania and Latvia. The third dimension Enforcement of EU law (III) shows no important distinction between old and new EU member countries. New member countries presumably have not had enough opportunities for infringement yet.

**Table 6: Rank values of EU 27 countries for 9 latent variables of the factor model**

| ID | Country | Rankings for 9 latent variables | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | I | II | III | IV | V | VI | VII | VIII | IX |
| AUT | Austria | 26 | 6 | 15 | 9 | 16 | 8 | 15 | 16 | 5 |
| BEL | Belgium | 21 | 14 | 21 | 18 | 9 | 5 | 24 | 13 | 2 |
| BGR | Bulgaria | 14 | 26 | 6 | 19 | 19 | 27 | 13 | 12 | 25 |
| CYP | Cyprus | 10 | 7 | 20 | 25 | 4 | 16 | 10 | 22 | 23 |
| CZE | Check Republic | 13 | 22 | 16 | 7 | 15 | 23 | 14 | 18 | 15 |
| DEU | Germany | 22 | 10 | 9 | 11 | 26 | 15 | 4 | 14 | 1 |
| DNK | Denmark | 16 | 1 | 7 | 2 | 3 | 2 | 27 | 1 | 12 |
| ESP | Spain | 17 | 15 | 22 | 13 | 27 | 17 | 16 | 15 | 3 |
| EST | Estonia | 24 | 16 | 8 | 6 | 14 | 21 | 21 | 8 | 26 |
| FIN | Finland | 19 | 5 | 12 | 3 | 17 | 4 | 12 | 20 | 16 |
| FRA | France | 25 | 19 | 23 | 10 | 21 | 1 | 2 | 6 | 7 |
| GRC | Greece | 18 | 17 | 26 | 27 | 7 | 3 | 6 | 25 | 8 |
| HUN | Hungary | 1 | 12 | 17 | 16 | 8 | 10 | 5 | 21 | 9 |
| IRL | Ireland | 3 | 9 | 18 | 24 | 5 | 13 | 20 | 4 | 18 |
| ITA | Italy | 4 | 20 | 27 | 4 | 13 | 9 | 3 | 17 | 4 |
| LTU | Lithuania | 11 | 27 | 4 | 12 | 23 | 20 | 17 | 5 | 20 |
| LUX | Luxembourg | 5 | 2 | 19 | 20 | 6 | 18 | 8 | 26 | 21 |
| LVA | Latvia | 12 | 23 | 2 | 5 | 25 | 24 | 11 | 23 | 24 |
| MLT | Malta | 7 | 8 | 1 | 26 | 2 | 22 | 7 | 27 | 22 |
| NLD | Netherlands | 9 | 4 | 11 | 21 | 11 | 6 | 26 | 9 | 6 |
| POL | Poland | 15 | 21 | 24 | 8 | 22 | 19 | 9 | 19 | 11 |
| PRT | Portugal | 6 | 13 | 25 | 17 | 10 | 12 | 18 | 11 | 19 |
| ROU | Romania | 2 | 24 | 14 | 23 | 20 | 26 | 22 | 3 | 14 |
| SVK | Slovakia | 8 | 25 | 5 | 14 | 24 | 25 | 19 | 10 | 17 |
| SVN | Slovenia | 20 | 18 | 10 | 15 | 18 | 14 | 23 | 7 | 27 |
| SWE | Sweden | 23 | 3 | 3 | 1 | 12 | 7 | 25 | 2 | 13 |
| UK | United Kingdom | 27 | 11 | 15 | 22 | 1 | 11 | 1 | 24 | 10 |

Legend: ID - abbreviations for the names of countries; I – Quality of European Institutions; II - Quality of National Institutions; III - Enforcement of EU law; IV - Fiscal decentralization; V - Fiscal centralization; VI - Government expenditure; VII – Centripetalism; VIII - Regional governance; IX – Federalism.

Fiscal decentralization consists of three slightly correlated latent variables. They are based on the data of the share of government expenditure at the central and local government level and data of total government expenditure. Ranking list of EU countries, defined by the first dimension (Fiscal decentralization – IV), indicates the top ranks for three Nordic countries (Sweden, Denmark, Finland), followed by Italy, Latvia and Estonia. The lowest degree of fiscal decentralization is observed for Greece, Malta, Cyprus, Ireland, Romania, UK and the Netherlands. The result shows that the degree of fiscal decentralization is most likely the result of a specific national policy. The latent variable of Fiscal centralization (V) was expected to be the opposite to the fiscal decentralization. However, the comparison between the ranks of EU countries in relation to two variables forms three groups of countries:

- higher rank with respect to decentralization and lower rank with respect to centralization for Latvia, Germany, Spain, Finland, Poland, Sweden, France and Lithuania,
- similar ranks with respect to both characteristics for Bulgaria, Denmark, Slovenia and Romania,
- lower rank with respect to decentralization and higher rank with respect to centralization for Malta, Cyprus, UK, Greece and Ireland.

The third dimension of the concept of decentralization is the third pillar of government spending (Government expenditure – VI). The top rankings of government spending belong to France, Denmark, Greece and Finland, while the bottom rankings are occupied by Bulgaria, Rumania, Slovakia, Latvia, Czech Republic and Malta. The results show that EU countries follow different policies of distribution of budget. Since Quality of national governance indicates no correlation with Fiscal decentralization and significant correlation with Fiscal centralization and Government expenditure we could conclude, that Fiscal decentralization has no influence on quality of governance and that countries with more centralized fiscal policy demonstrate better quality of national institutions.

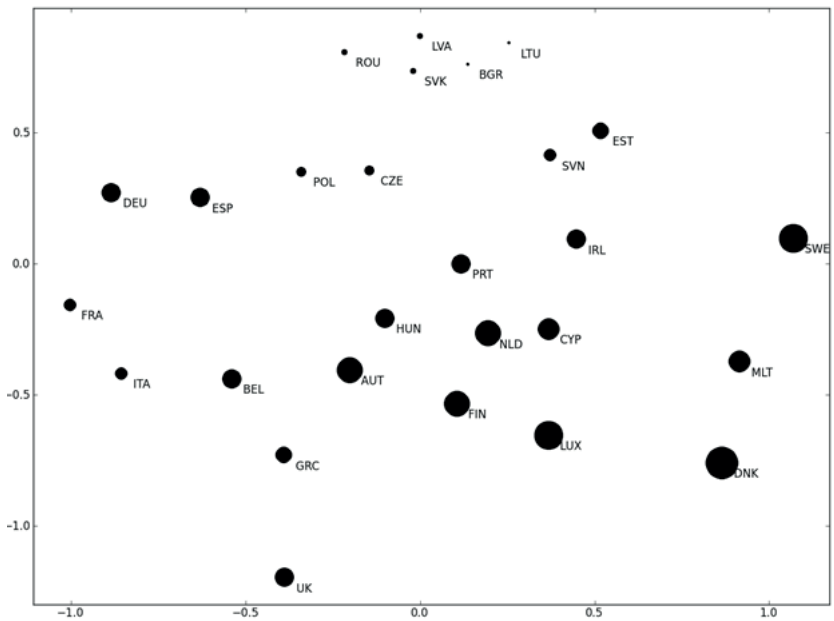
The concept of political decentralism consists of two dimensions (Centripetalism (VII) and Regional governance (VIII)) which express the level of decentralization for all countries under consideration, while the third dimension (Federalism IX) provides reasonable information only for larger countries. The top rankings of centripetalism are held by UK, France, Italy and Germany, while the bottom is occupied by Denmark, Nederland, Sweden and Belgium. The measure of regional governance is the highest for Denmark, Belgium, Romania and Ireland, while the lowest values of the measure are recorded for Malta, Luxembourg, Greece and UK. Federal countries are Germany, Belgium, Spain, Italy and Austria, while non-federal countries are Slovenia, Estonia, Bulgaria, Latvia and Cyprus. As expected, the political picture of EU countries is quite variegated. According to the results of the study, it could be concluded that the existent measures of political decentralization do not enable the comparison of all EU countries, since other characteristics of countries (size, tradition etc.) have significant influence on the value of the indicators.

In consideration of results of the study we present the results of multivariate regression analysis with the variable Quality of national institutions as dependent variable and six latent variables of fiscal and Political decentralization (IV – Fiscal decentralization; V – Fiscal centralization; VI – Government expenditure; VII – Centripetalism; VIII – Regional governance; IX – Federalism) as independent variables.

The graphical presentation in Figure 1 is the result of the projection of the multivariate model to three dimensions. The positions of countries in the two dimensional plain indicates differences/similarities amongst the countries

regarding the six independent variables. The value of independent variables (Quality of national institutions) is expressed by the size of the bullets (larger bullet means better quality). The meanings of the abbreviations of EU countries names are given in Table 6.

**Figure 1: Projection of the multivariate model**




The figure shows that the new EU member countries are in a similar position with respect to financial and political decentralization, whereas Romania, Latvia, Lithuania and Slovakia are far away from the centre with the lowest level of quality of institutions (the smallest bullets). At the same time, Hungary and Cyprus are placed in the surrounding of old EU member countries with significantly higher level of quality of national institutions (the lager bullets). It is also evident that countries with the highest quality of national institutions are positioned in different regions of the plane. On the basis of this, it may be concluded that there are possible different approaches for reaching higher quality of national institutions.

The multivariate linear regression model indicates only two significant independent variables at the level of 0.1, fiscal centralization ($p_1 = 0.015$) with positive influence and centripetalism ($p_2 = 0.058$) with negative influence. Huber test of robustness of the model indicates that the model is robust with minimal changes in significance of both independent variables ($p_1 = 0.028$; $p_2 = 0.063$). Despite the fact that three countries with the best score in fiscal decentralization received a high score in the quality of national institutions (Sweden, Denmark and Finland), the influence of fiscal decentralization on the quality of national institutions is not significant. This is caused by some

countries with high fiscal decentralization but relatively low quality of governance (Latvia, Czech Republic, Poland and Italy). Therefore, it may be concluded that neither financial nor political decentralization can explain the quality of institution in EU countries. Both centralized and decentralized countries could be found at the top and at the bottom of ranking of the quality of national institutions. In looking for better quality of national institutions, EU countries could follow different approaches; however, they have to consider some quality standard characteristics for successful countries.

## 6 Conclusions

The main objective of the research plan was to formulate the factor model of decentralization and quality of governance and to formulate a framework for using best practices in exploratory factor analysis over small samples. A short review of the research results is given below.

The developed model represents the logical nature of data. The results of the analysis may be used in several ways. The factor model enables the construction of the structural model of the impact of decentralization on the quality of government. It opens up other possible uses as well, one important task in the future will include the consideration of indicators, in particular with factors that combine a small number of variables (III – Enforcement of EU law, VII – Centripetalism and VIII – Regional governance) and with the model of political decentralization as a whole, where the Cronbach' alpha coefficient does not demonstrate a good reliability of the models. The review of variables of political decentralization indicates that they are not sufficiently drafted, since they do not provide certainty of reliability.

In summary, it may be established that the formulated models of two concepts, i.e. the Quality of governance and Fiscal decentralization, are of sufficient quality. With the available variables, the quality of the formulated model of Political decentralization was insufficient, which was in principle expected, since the measurements of political decentralization are rather partial and inconsistent and make it difficult to assess the state of the concept (political decentralization). However, despite the rather poor result of the consistency test, the model is logical in terms of content and can be used as a basis for further consideration on the definition of the concept.

The analysis of the regression model indicated different models of governance in EU countries, where the level of decentralization cannot explain the level of quality of governance. There are other characteristics which influence the quality of governance. The presented model exposed that fiscal centralization has a significant impact on the quality of institutions. Strong government implies good governance. On the other hand, the quality of institutions in new EU member countries is lower than in old member countries. The level of quality of institutions for Italy, France, Greece and Spain is not significantly higher than for new member countries.

Studies of dimensionality of the basic concept of decentralization and quality of governance are not very common despite the need for comprehensive models of concepts in consideration. In this research, the dimensions of the three aforementioned concepts for the EU countries were defined. In this manner, a logical structure was developed, which can be used for modeling the impact of decentralization on the quality of governance in the framework of the concepts observed, while the analyzed range of variables can also be extended with variables showing the results of the operation of institutions.

The research designed the model of exploratory analysis, which functions over a small number of units, following the outlines and recommendation of authors concerning the procedure of the assessment of models and selection of variables and factors.

The limitation of the research was primarily in the non-availability of studies of databases that would provide a consolidated data model at the initial stage of the research; therefore, certain areas remained unresolved. Furthermore, a tool for factor analysis, called regularized exploratory factor analysis, which was introduced recently in the psychometric literature for analysis of small samples, was not available for this research (Jung, 2011).

The path for further research is clear. The analysis of the states as units is limited by their number, therefore, suitable statistical methods that will provide reliable models and results need to be tested and implemented in this area. On the other hand, several variables, which are used to asses numerous constructs and concepts, are used for the analysis of states. Therefore, it is necessary to highlight those indicators and concepts that will meaningfully describe the conditions of public governance.

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POVZETEK

# FAKTORSKI MODEL DECENTRALIZACIJE IN KAKOVOSTI UPRAVLJANJA V EU

*Ključne besede: fiskalna decentralizacija, politična decentralizacija, kakovost upravljanja, preiskovalni faktorski model, države EU*

Institucije usmerjajo, krojijo in omejujejo odnose med ljudmi in na ta način vplivajo na politične ekonomske in družbe rezultate skupnosti. Politične formacije pokrivajo velike površine, zato jih je težko upravljati. Moč in politični vpliv se zmanjšujeta od centra proti obrobju. Da bi omenjeno težavo rešili, so že v zgodnjih državah uvedli posredno in decentralizirano vladanje. Poenostavljeno povedano pomeni decentralizacija transfer kompetenc in virov od centra k nižjim ravnem upravljanja politične formacije (Aristovnik, 2012). Raven decentralizacije lahko opredelimo kot strukturo organizacije vladnih institucij v izbrani državi ali drugi politični formaciji.

Kakovost upravljanja je rezultat aktivnosti institucij. Gerring et al. (2005. p. 567) navajajo Montesquieujevo trditev, da kakovost upravljanja izhaja iz razpršene moči med številne neodvisne institucije. Te se medsebojno nadzirajo in s tem zagotavljajo bolj odgovorno in boljše delovanje. To je tudi izhodišče naše raziskave o kakovosti upravljanja in decentralizaciji v državah EU.

Osrednji cilj raziskave je bil razviti faktorski model, ki bo omogočil poenostavitev podatkovne strukture kakovosti upravljanja in decentralizacije ter prikaz nekaterih značilnosti pojava v populaciji držav EU. Z metodološkega vidika pa je bil cilj oblikovati metodološki okvir, ki omogoča kakovostno statistično obravnavo manjših statističnih populacij oziroma vzorcev. Zato smo v tem smislu oblikovali tudi hipotezo kot trditev, da je faktorski model mogoče realizirati.

Raziskovalci posvečajo študiju decentralizacije in kakovosti institucij kar precej truda. Svetovna banka definira kakovost upravljanja kot »postopke izbire, nadzora in zamenjave vlad; zmožnost vlade da učinkovito oblikuje in uvaja dobro premišljene politike in spoštovanje državljanov in razmer za institucije, ki obvladujejo ekonomske in družbene interakcije med njimi (Dijkstra, 2011, str. 1). Različni avtorji v zvezi s tem izpostavljajo različne vidike, kot so pričakovanja populacije države v zvezi z rezultati vladanja (Draghici, 2004, str. 2), zmožnost države, da svoje aktivnosti uvaja učinkovito in brez korupcije (Bäck & Hadenius, 2008) in zmožnost države, da zagotavljana nepristransko delovanje institucij (Teorell, 2009, str. 21).

Ugotovitve raziskovalcev glede vpliva decentralizacije na kakovost institucij so različne. Tako lahko zasledimo ugotovitve o pozitivnem vplivu fiskalne decentralizacije (Kyriacou & Roca-Sagales, 2011) in negativnem vplivu politične decentralizacije (Gerring et al., 2005; Fan et al., 2009) na kakovost

institucij v državi. Zanimiva je tudi ugotovitev o slabem vplivu decentralizacije na korupcijo (Ivanyna & Shah, 2011, str. 24).

V naši raziskavi smo v model vključili tako fiskalno kot politično decentralizacijo. Avtorja Ivanyna in Shah (2011, str. 2) sta razvila indeks decentralizacije, ki bi bil morda lahko primeren za primerjanje z rezultati naše raziskave, žal pa ta indeks v času izvedbe naše raziskave še ni bil javno dostopen.

Pri raziskovanju tematike se večina avtorjev naslanja na regresijsko analizo, pri tem skoraj vedno uporabljajo agregirane kazalnike, ki jih razvijejo na osnovi teoretičnih predpostavk. Razvoj latentnih spremenljivk s pomočjo ustreznih statističnih metod (faktorska analiza, strukturno modeliranje) je manj pogosta praksa, zato nekateri avtorji priporočajo bolj pogosto uporabo tovrstnih pristopov (Liu, 2007, str. 103).

Za študijo smo na osnovi priporočil predhodnih raziskav iz nabora številnih spremenljivk izbrali 43 spremenljivk, s katerimi lahko opredelimo pojme kakovosti upravljanja in fiskalne ter politične decentralizacije (tabela 1). Podatke smo obdelali s preiskovalno faktorsko analizo z naslednjima nastavitvama: ekstrakcija – *maximum likelihood* in rotacija – *direct oblimin*. Zanesljivost in ustreznost modela smo preverjali s Cronbach α koeficientom in Barttletovim testom sferičnosti. Pri odločitvah o obdržanju spremenljivk v modelu in o številu faktorjev smo uporabili standardne vrednosti.

Rezultat študije so trije faktorski modeli s po tremi faktorji. Kakovost upravljanja sestavljajo (tabela 3): »kakovost EU institucij« z 8 spremenljivkami, »kakovost nacionalnih institucij« z 10 spremenljivkami in »uveljavljanje evropske zakonodaje« z 2 spremenljivkama. Fiskalna decentralizacija vsebuje tri latentne spremenljivke (tabela 4): »fiskalno decentralizacijo« z dvema spremenljivkama, »fiskalno centralizacijo« s tremi spremenljivkami in »vladno porabo« s tremi spremenljivkami. Politična decentralizacija obsega (tabela 5): »cetripetalizem« s tremi spremenljivkami, »regionalno upravljanje« z eno samo spremenljivko in »federalizem« s štirimi spremenljivkami.

Študija je pokazala, da bi bilo treba za trden model poiskati dodatne spremenljivke, ki bi opisovale fiskalno decentralizacijo in regionalno upravljanje. Kljub temu nam model omogoča lep vpogled v rezultate po državah (tabela 6), kjer smo države EU rangirali glede na regresijske vrednosti faktorjev. »Zaupanje v EU institucije« in »zaupanje v nacionalne institucije« sta si bolj ali manj nasprotni spremenljivki, zato prva ni uporabna za analizo vpliva decentraliziranosti na kakovost institucij po državah. Spremenljivka »uveljavljanje pravnega reda EU« se prav tako nikakor ne vklaplja v razmislek o kakovosti nacionalnih institucij, zato smo za predstavitev rezultatov oblikovali regresijski model z odzivno spremenljivko »kakovost nacionalnih institucij« in s 6 napovednimi spremenljivkami obeh decentralizacij.

Slika 1 prikazuje projekcijo regresijskega modela na dvodimenzionalno polje napovednih spremenljivk, pri čemer je vrednost kakovosti nacionalnih

institucij predstavljena z velikostjo kroga. Iz slike je razvidno, da 9 novih članic nekoliko odstopa od drugih (novih in starih) članic po vrednosti napovednih spremenljivk (5 držav na sredini slike zgoraj in 4 države nekoliko pod njimi). Tri nove članice so se uvrstile v polje načina delovanja starih članic (Madžarska, Ciper in Malta) z večjo kakovostjo nacionalnih institucij od drugih novih članic. Sicer pa je iz grafa očitno, da h kakovostnim institucijam vodijo različni pristopi, saj najdemo države, ki izkazujejo dobro kakovost na dokaj različnih mestih ravnine. Po drugi strani pa imamo na sredini polja več držav z zelo dobro kakovostjo nacionalnih institucij (Avstrija, Nizozemska, Finska, Luxemburg), in le Dansko ter Švedsko ob desnem robu polju. Če iščemo dobre prakse za posnemanje, so to prav gotovo države v sredini polja. Da bi ocenili morebitno primernost skandinavskega modela za druge države, pa bi morali realizirati bolj poglobljeno študijo problematike.

Sam multivariatni regresijski model je pokazal, da statistično značilno vplivata na kakovost nacionalnih institucij le fiskalna centralizacija (pozitivno) in centripetalizem (negativno). Rezultat je posledica dejstva, da so med zelo decentraliziranimi državami take z dobro kakovostjo nacionalnih institucij (Švedska, Danska in Finska) in take z relativno slabo kakovostjo nacionalnih institucij (Latvija, Češka, Poljska, Italija).

Z izvedeno študijo smo torej potrdili izvedljivost modela, ki pa je pokazal, da so poti do kakovostnih nacionalnih institucij v različnih državah različne. S študijo smo prispevali nov vidik obravnave problematike razvoja držav EU in pokazali enega od mogočih načinov statistične obravnave problema. Prihodnje raziskave bi lahko dopolnjevale nabor spremenljivk, primerjavo med indikatorji in upoštevale uporabo nekaterih drugih metod, primernih za obravnavo manjših populacij. Vsekakor pa mora biti iskanje dobrih praks, ki naj usmerjajo politike držav, usmerjeno v iskanje rezultatov homogenih skupin podobnih držav.