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Veröffentlichungsversion / Published Version

Zeitschriftenartikel / journal article

Empfohlene Zitierung / Suggested Citation:

Rošková, I., Prochádzková, M., Klasová, S., & Kováč, V. (2020). Dimensions and Evaluation of Social Capital and Its Regional Distribution in the Slovak Republic. *Italian Sociological Review*, 10(2), 173-200. <https://doi.org/10.13136/isr.v10i2.336>

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How to cite

Rošková, I., Prochádzková, M., Klasová, S., Kováč, V. (2020). Dimensions and Evaluation of Social Capital and Its Regional Distribution in the Slovak Republic. [Italian Sociological Review, 10 (2), 173-200]

Retrieved from <http://dx.doi.org/10.13136/isr.v10i2.336>

[DOI: 10.13136/isr.v10i2.336]

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3. Article accepted for publication

Date: March 2020

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Italian Sociological Review**

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Dimensions and Evaluation of Social Capital and Its Regional Distribution in the Slovak Republic

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Abstract

The paper deals with the dimensions of social capital in the Slovak Republic. The aim is to assess how social capital is distributed socially among the citizens of the Slovak Republic and geographically among the regions of the country. Social capital is evaluated on a basis of the three dimensions, where networks, trust and civism belong. The paper analyses the data from the European Values Study survey, especially the 2008 wave. The results of this study show that social capital has kept a decreasing tendency in the Slovak Republic throughout the period from the year 1991 to the year 2008. The reasons behind this may lie in the historical development of the country – the transformation of the economy and the dissolution of the Czech and Slovak Federative Republic. With respect to a social distribution, social capital is generally higher among more educated, right-wing Slovaks with higher earnings. In the terms of a geographical distribution, the Trnava Region and the Trenčín Region appear to have less developed social capital compared to the other regions in Slovak Republic.

Keywords: social capital, region, regression analysis.

1. Introduction

Social capital, an attractive concept for many scientists, has been given great attention in the recent decade. However, many ambiguous interpretations and uncritical applications of this term have occurred. Many scientists agree that

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social capital is a multidimensional concept and that several indicators are needed for measuring its dimensions (Putnam, 1995; van Oorschot, Arts, Gelissen, 2006; Parts, 2013). In this paper, this multidimensional approach is applied to assess social capital at the individual level. Furthermore, the aim of the analysis is to examine the social and regional distribution of social capital in Slovak Republic. By this activity, a spread of the social capital distribution in the country can be charted, as many previously published studies focus on the distribution of social capital in Europe or compare the results between the countries (Knack, Keefer, 1997; van Oorschot, Arts, 2005; Halman, Luijkx, 2006; Fidrmuc, Gerxhani, 2008).

First of all, the deconstruction of the concept of social capital with its theory is done. Then, an attention is paid on a focus on the issues of its measurement and description of its dimensions. The measurement model of social capital based on the data from the European Values Study survey is provided (Gesis – Leibniz Institute for the Social Sciences, 2010). Successively, the statistical analysis explores the relationships between the social capital dimensions. Moreover, the social and regional distribution of social capital in Slovak Republic is described with the conclusions provided in the last section of the paper.

2. Literature Review

There is a lot of definitions of social capital in the scientific sources. However, this vast amount of definitions creates problems by determination what really social capital is and how to measure it efficiently. If the term is separated into the two words, then capital would imply that it is dealt with some sort of asset, while when looking at the word social, it is dealt with some sort of interaction between people (Maskell, 2000).

2.1 Definition of Social Capital

The theory of social capital can be applied in many spheres including sociology, economics, politics or anthropology. Thus, social capital is interpreted differently depending on the sphere of interest. For instance, social capital is described by trust, norms of reciprocity and networks of civic engagement in the sociological literature. In the economic literature, the main assumption is that people would like to maximise their personal utility by interaction with others and by use of social capital resources to get to be involved in the different group activities. On the other hand, the emphasis is on the role of institutions, political and social norms that shape human behaviour in the political science literature. Finally, the anthropological literature focuses

on the fact that people have natural instincts for association (Organisation for Economic Co-operation and Development, 2001).

The three main leaders in the theory of social capital are Bourdieu, Coleman and Putnam. Bourdieu's definition of social capital focuses on the benefits individuals can acquire through participation in groups. He defines social capital as the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalised relationships of mutual acquaintance or recognition (Bourdieu, 1986). In Bourdieu's definition, social capital can be divided into the two components – firstly, the social relationship itself that allows individuals to claim access to resources possessed by their associates and secondly, the amount and quality of those resources (Ferri, Deakins, Whittam, 2009).

Coleman states that social capital is defined by its function, whilst it is not a single entity, but a variety of different entities with the two mutual characteristics – some aspect of social structure and facilitation of certain actions of individuals who are within the structure (1990). In contrast, when defining social capital Putnam (1995) emphasises the importance of trust, network structures and norms because they promote cooperation among subjects in a society that leads to mutual benefits. He also states that in the regions, where relationships are based on trust, common values, solidarity and mutual support, there is a higher membership in social organisations and social capital has a higher level. Putnam (1995) has aggregated the social capital of individuals to give a description of the collective social capital of the population of the particular area (Ferri, Deakins, Whittam, 2009). Network mechanisms are very influential part of the social capital itself, as its effects are spread through this channel generally (Burt, 2000).

According to Fukuyama, social capital can be defined as the existence of a certain set of informal values or norms shared among members of a group that permit cooperation among them (2001). Both Putnam (1995) and Fukuyama (2001) state that countries or regions with high level of aggregate social capital are associated with higher levels of political and economic performance (van Oorschot, Arts, Gelissen, 2006).

Bourdieu's and Coleman's definitions of social capital are based on a microeconomic approach to sociological theory of social networks and human actions, whereas Putnam's and Fukuyama's definition of social capital performs as a macroeconomic approach to sociological theory of societal structure and culture and collective action (van Oorschot, Arts, Gelissen, 2006). Social network is one of the key elements of the functioning social capital system. It can be understood in several forms. Perhaps, the most influential network from a personal view of the network participant is personal network represented through relations of every individual person (Di Nicola, 2011). Putnam (1995)

makes a very strong concept of social capital in his studies. There are not many authors who try to compose a synthetic indicator according to this definition. Carradore (2018) demonstrates it is possible also from a geographical point of view.

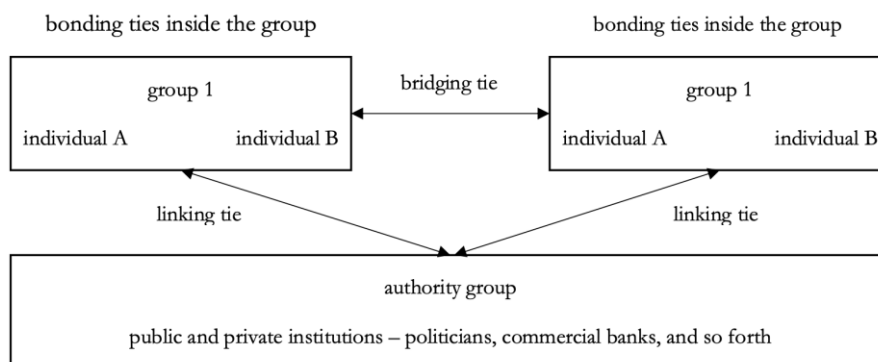
Furthermore, social capital can be analysed at several levels, not only at the microeconomic level of individuals and small groups as Bourdieu and Coleman state, and the macroeconomic level of multinational regions and nations as Putnam (1995) and Fukuyama (2001) mention, but also at the mesoeconomic level of communities and associations (Paxton, 2002), where social capital is understood as the value to the community or organisation in the form of the created relationships between its members with the intention to engage in a collective action (Dakhli and De Clercq, 2004). Besides all the mentioned approaches to the social capital theory, it is very required to realise that social capital as itself is quite vague in a field of its concept. This makes an understanding process of the techniques related to it more difficult. As this is not enough, it will make a messy structure with the quantitative methods that could be applied in its analysis (Sabatini, 2009). Also, a considerable attention should be paid to interpretation of the data obtained through the various sources in a field of social capital research (Burt, 1997).

The broadening of the concept of social capital to its aggregate level makes social capital the cement of society that makes it possible for people to cooperate in the collective interests (van Oorschot, Arts, Gelissen, 2006). A collective action needs to be accompanied by the generalised mutual trust. Trust generating effect can be found in social networks and voluntary associations since frequent interactions among different people have a tendency to produce a norm of generalised reciprocity that is defined by Putnam (2000) as trustworthiness among members of a large group. Societies, where generalised reciprocity is present, are more efficient than those societies, which distrust prevails in, because reciprocity contributes to a collective action that leads to the mutual benefit (van Oorschot, Arts, Gelissen, 2006). A conceptual widening of the social capital theory is largely visible in the sources by Son and Lin (2008; 2012). Importance of an individual participant is stressed by network that this particular person is involved in (Lai et al., 1998; Lin, 1999; Lin, 2001).

However, the effects of social capital do not always have to be positive. On the one hand, the positive effects of social capital are mutual support, cooperation, trust, institutional effectiveness. But on the other hand, the negative effects include sectarianism, ethnocentrism and corruption (Putnam, 2000). Social capital needs to be balanced in order to bring benefits to the individual, organisation or society. This is due to the fact, that social capital has different forms, that is, bonding, bridging and linking social capital as seen on

Errore. L'origine riferimento non è stata trovata.. These forms need to be in a balance (Zhang and Fung, 2006).

FIGURE 1. *Bridging, bonding, and linking social capital.*



Source: own elaboration by the authors.

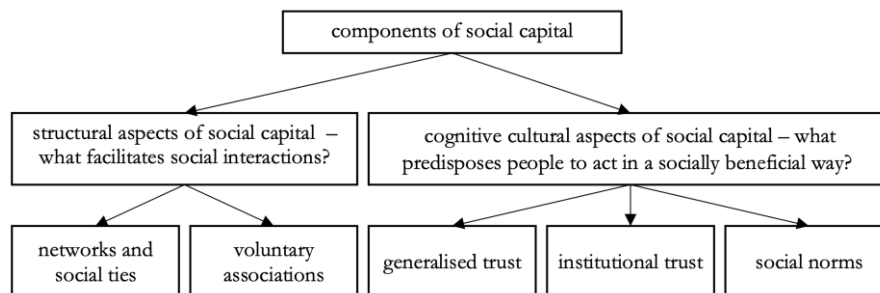
Bonding social capital represents the relationships between homogeneous groups and also inside them, such as family, close friends and neighbours, who probably hold same values. On the other hand, bridging social capital represents relationships between distant friends, associates and colleagues, who have different experience, values and backgrounds. According to Granovetter (1973), these relationships are referred to as strong ties and weak ties respectively. Putnam (2000) states that bonding social capital is important for getting by, whereas bridging social capital is important for getting ahead. Linking social capital characterises relationships between people in the different social classes. Woolcock (2000) relates linking social capital to the ability of individuals and communities to access resources, ideas and information from the formal institutions which are beyond the imminent community. Thus, linking social capital is more vertical because it connects people at the different authority levels, while bridging and bonding social capital is a more horizontal kind. This type is also referred to as networks of trust, whereas linking social capital is called network of power (Parts, 2013).

2.2 Measurement of Social Capital

It is clear from the theory that social capital is an umbrella concept, which encompasses several social phenomena under one term (van Oorschot, Arts, Gelissen, 2006). However, due to such grouping of phenomena, problems occur by its measurement. Therefore, measurements of social capital are made in rather ad hoc, pragmatic and unsystematic ways (Flap and Völker, 2004). A

reliable way to measure social capital is still lacking, probably, due to the multidimensionality of the concept. However, there is a growing agreement that social capital cannot be measured just by one variable, but also it cannot be measured by excessively grouped heterogeneous indexes (Parts, 2013). Hence, many authors analyse social capital through its dimensions.

FIGURE 2. *Components of social capital.*



Source: own elaboration by the authors.

According to the definition (Putnam et al., 1993), social capital has three dimensions or components, where trust, norms and networks belong among. As a result, several authors followed these dimensions when measuring social capital (Narayan and Cassidy, 2001; van Oorschot and Arts, 2005). Parts (2013) propose the five components of social capital as it is visualised on **Errore. L'origine riferimento non è stata trovata.**, while making a specification that these components are either structural or cognitive, meaning cultural, they either facilitate social interaction or they predispose people to act in socially beneficial way. Structural social capital includes formal and informal structures in the society which mediate the flow of information and other resources, while cognitive social capital comprises norms and values as regulators of human behaviour. Taking a closer look, Putnam's dimensions of social capital actually encompasses the components of social capital proposed by Parts.

2.3 Networks

A distinction can be made between formal and informal networks. Informal networks are created between friends, family, colleagues or neighbours. Formal networks are usually associated with participation or membership in voluntary organisations. Both networks enable information exchange (Kaasa, 2009).

Participation in voluntary organisations helps to build social networks and develop and enforce social norms. Putnam, who emphasises the importance of

networks and membership in organisations, has been criticized because membership in these organisations can take different forms. Passive participation is not as helpful for building networks of social support or for reinforcing social norms, as active participation is (Wallace and Pichler, 2007). Furthermore, different effects of formal networks result from Olson's and Putnam's definition of organisations. The first one includes professional associations, political parties and labour unions, whereas the latter one covers sport, youth, education and cultural organisations (Parts, 2013). Knack and Keefer (1997) state that Putnam's understanding of organisation entails more social interactions with people of various backgrounds and thus, it fosters building of trust and cooperative norms without bringing along negative externalities on the rest of the society. On the other hand, Olson's definition of organisations is more rent-seeking, however, at the expense of the rest of the society. Therefore, the effect of Olson's type of organisation may be negative.

2.4 Trust

In the empirical literature on social capital, many cases can be found, which a single survey measure of interpersonal trust is applied in. Interpersonal trust is understood as generalised or social trust. It belongs to the basic values of social exchange and communication (Doh et al., 2010) and it has been popularised by Fukuyama (2001) widely. In addition to generalised trust, also institutional trust is often studied. It relates to the trust that people have in different institutions, such as police, government, church, media and the other ones (Kaasa, 2009).

According to Dakhli and De Clercq (2004), trust is a cultural variable with a concentration on society propensity to trust. They state an instance of a trusting society like Japan, and on the contrary, the United States of America that formalises most of its economic exchange with contracts and other monitoring instruments. Therefore, trust is closely related to common norms and values.

2.5 Norms

According to Kaasa (2009), norms refer to a social contract or unwritten rules, cooperation and subordination of self-interest to that of the society. Civic norms guide and human behaviour can be regarded as trustworthiness that increases interpersonal trust (Knack, Keefer, 1997). Reciprocity, as an important norm described by Kaasa (2009), is personal willingness to help others while expecting to get back this favour when needed. Therefore, if there is high trust, people expect high reciprocity and as a consequence, follow the civic norms.

Parts (2013) sees norms of reciprocity as civic cooperation or trustworthiness. She describes civic cooperation as willingness to put the groups or someone else's interest ahead of pure individual interests, meaning that people do their share in collective endeavours and consequently, free-riding is disapproved. This is commonly measured by peoples' attitude towards certain behaviours, which does not have to correspond to the actual behaviour.

3. Data and Methodology

The purpose of this paper is to assess how social capital is distributed socially among the citizens of the Slovak Republic and geographically among the regions of the country. The data for measuring social capital is obtained from the European Values Study survey, especially from its 2008 wave (Gesis – Leibniz Institute for the Social Sciences, 2016). Also, the two previous waves from the years 1991 and 1999 are analysed. This survey provides international insights in different societal domains all over Europe. There have been realised several waves of the European Social Study survey. For the purpose of this analysis, mainly the 2008 wave data is applied, however, the previous waves serve as a basement in order to select the appropriate variables. This wave is selected in order to get as a broad view as it is possible. Also, the Slovak Republic has participated in this survey not in the same manner during its each wave. The regression analysis is carried out on the data set coming from the 2008 wave.

The sample consists of the 1,509 respondents in the Slovak Republic. It is produced applying a stratified multistage probability sampling scheme. All the data was collected in the 300 territorial representative units during the first sample stage. Subsequently, the nine particular addresses were selected from every one unit during the second sample stage. The interviewers visited the selected households. Only the member of the household who is older than 18 years of age served as the contact person (Kusá et al., 2008). Only to supply additional information, the 1999 wave of the survey consists of the 1,331 respondents (Kusá, 1999).

3.1 Dependent Variables

Building on previous research on social capital (Knack, Keefer, 1997; van Oorschot, Arts, Gelissen, 2006), this analysis measures social capital through assessment of the three dimensions, which trust, networks and civism belong among. The term civism is given by van Oorschot, Arts and Gelissen (2006) to social norms and political engagement. The two aspects are analysed per each

dimension, while each aspect is measured through the indicators established on the questions from the European Social Study survey.

Trust is distinguished as trust in general and institutional trust.

General trust is also known as interpersonal trust and is assessed through the following questions with a Likert answer scale ranging from low to high trust:

- question 1: ‘Generally speaking, would you say that most people can be trusted or that you cannot be too careful in dealing with people?’;
- question 2: ‘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?’.

Institutional trust is measured by question of confidence in the different institutions – church, armed forces, education system, press, trade unions, police, parliament, civil service, social security system, the European Union, the North Atlantic Treaty Organization, the United Nations with its organisations, healthcare system, justice system, major companies, environmental organisations, political parties, government, and so forth. The scale is reversed, so a higher value would reflect greater institutional trust.

TABLE 1. *Dimensions of social capital and their characteristics.*

Dimension	Indicator	Aspect
trust	general trust	a majority of people can be trusted a majority of people would try to take advantage of another person
	institutional trust	confidence in different institutions
networks	formal networks	belonging into voluntary organisation unpaid work for voluntary organisation
		socialising with friends – spending time with them
	informal networks	socialising with family – concerned with immediate family socialising with family – importance of family
civism	social norms	not justifiable behaviour
	political engagement	discussing and following politics

Source: own elaboration by the authors.

In a case of networks, formal and informal networks are classified. Formal networks are measured by the replies to the two survey questions – whether people belong to voluntary organisations and whether they currently do unpaid voluntary work for these voluntary organisations. There are listed the fifteen voluntary organisations and participation is measured as the number of

organisations cited per respondent. Although Putnam (1995) states that membership is not as important as active participation, the data on active participation is not available for the Slovak Republic in the European Social Study 2008 wave and therefore, only membership and voluntary work are assessed.

Regarding informal networks, a distinction between socialising with friends and socialising with family is made. There is a question about the time period the respondents spend with their friends. The scale for this question is reversed and it is turned into a three-point scale.

In a case of family, the asked questions are:

- question 1 – a higher value would indicate the highest concern and vice versa: ‘To what extent do you feel concerned about the living conditions of your immediate family?’;
- question 2 – the scale is reversed and turned into a three-point scale, where 1 stands for not at all important, 2 for all other cases, and 3 for very important: ‘How important is family in your life?’.

The third dimension of social capital, referred to as civism according to van Oorschot, Arts, and Gelissen (2006), represents the particular characteristics of people’s attitudes and behaviours. It is divided into social norms and political engagement. Social norms, which include people’s civic commitment and morality, are measured by the question regarding justifiable or not justifiable behaviour of the respondents when it comes to cheating on tax for instance claiming state benefits respondents who are not entitled to. Altogether, it is represented by the 22 questions. The respondents are able to choose from a Likert scale from a 1 option meaning never justifiable up to a 10 option meaning always justifiable. The scale is reversed and values are summed over the 22 items with a 220-point maximum.

Political engagement is assessed by the questions whether the respondents follow politics in the media and discuss political matters with friends. The two questions are added up and they form a scale that runs from low to high political engagement.

3.2 Independent Variables

The independent variables involved in the analysis of social capital concern the following structural characteristics which sex, age, education, monthly income, religion, political orientation, social status and region belong among.

Sex is a dummy variable. Age is calculated by subtracting the year of birth from the year of the survey. Education is measured by the highest level of completed education with the 12 categories possible from a 1 option meaning unfinished primary education up to a 12 option meaning postgraduate study.

Monthly income is measured by a self-rating scale from a 1 option meaning up to 150 EUR up to a 12 option expressing 10,000 EUR or more. Religion is assessed by question 'Do you belong to a religious denomination? Which one?'. Political orientation is measured by question 'In political matters, people talk of "the left" and "the right". How would you place your views on this scale, generally speaking?' on a 10-point scale, where 1 means the left-wing politics and 10 means the right-wing politics. Employment status is measured through a question which provides the different categories of employment status – 30 hours a week or more, self-employed, retired, student, unemployed and other. The question regarding region divides the respondents among the eight regions of the Slovak Republic. The regions are marked by the abbreviations of the third level of the Nomenclature of Territorial Units for Statistics: SK010 – the Bratislava Region; SK021 – the Trnava Region; SK022 – the Trenčín Region; SK023 – the Nitra Region; SK031 – the Žilina Region; SK032 – the Banská Bystrica Region; SK041 – the Prešov Region; SK042 – the Košice Region (European Commission, 2003). The whole Slovak Republic is represented by the code SK0. There is to note that if the answer expresses respondent does not know option, it is replaced by a mode value and no answers are replaced by it too.

3.3 Measurement Model

Social capital dimensions are found applying factor analysis. It is a multidimensional statistical method that describes the relations between observable variables using certain number of factors expressing the unobservable variables. The observable variables are modelled as a linear combination of factors with random error. On the other hand, the number of factors should not be too small, because it could result in loss of information included in the original dataset (Um et al., 2011).

The model of factor analysis can be expressed using the following equation:

$$IMV = MV + SM CIF + e$$

where the involved variables mean:

- IMV – a vector of the input measurable variables;
- MV – a vector of mean values of the variables;
- SM – a vector assigned to a saturation matrix;
- CIF – a vector of the common immeasurable factors;
- e – a vector of random error values.

The ability to identify a saturation matrix SM is secured in the fact that the matrix resulting from an expression $SM^T \cdot E(e e^T) \cdot SM$ is in a form of a diagonal matrix (Jung, et al., 1997).

Precondition of a factor analysis is mutual correlation between the input variables, which can be expressed by a correlation matrix. Subsequently, the factors, which are related to correlation coefficients, are extracted from the correlation matrix. These factors are rotated so as to maximise the relationship between the measurable variables and some of the factors. Finally, an estimation of the factor score is done. It means the values of immeasurable variables are quantified (Um et al., 2011). For a certain number n of the observations, the result of the factor score is a matrix of the factor scores with dimension n times q . The obtained values of the factor scores for individual observations are further applied as the input data in regression analysis.

A specific problem of a factor analysis is rotation of the factors that is an operation, which new matrix of factor loadings can be obtained from the existing matrix of factor saturations through. Nevertheless, it can be achieved from correlation or covariance matrix several factor solutions. In this analysis, a varimax method is employed for factor rotation. This method works with a small number of large loadings and with a large number of small loadings that result in a situation where each input variable is assigned one factor or small number of the factors and each factor represents only a small number of the input variables (Um et al., 2011).

The mentioned relationship can be expressed as follows:

$$IV = \sum_v^m \sum_f^n (l_{v,f}^2 + l_{v,f}^{-2})$$

where the involved variables mean:

- IV – an input variable;
- v – a variable;
- m – a number of the variables;
- f – a factor;
- n – a number of the factors;
- $l_{v,f}$ – loading of the v -th variable by f -th factor.

The factor saturation is estimated by an application of a maximum likelihood estimation. A role of this method is to calculate factor loadings so that they would be in the greatest compliance with the original correlation matrix. The basic algorithm can be expressed through the equation determinant, when this determinant is equal to zero – $\det(R^2 - EIM) = 0$, whilst R^2 is a coefficient of determination, E is an eigenvalue, and IM is an identity matrix.

The presence of correlation between the input variables is tested through the Bartlett's test. Based on the p -value, the null hypothesis is rejected, correlation is present in the data set and the condition for a factor analysis is fulfilled.

As it is stated above, the factor scores obtained from the factor analysis process for the individual observations can be applied in further estimation. A linear regression is employed to estimate the regression coefficients of the independent variables representing the individual characteristics of the respondents, while the explained variables are the individual dimensions of social capital. Applying this approach, the analysis consists of the seven regression models.

The reference region is the Žilina Region. Therefore, it is missing in the list of the regression coefficients. Not to lose interpretation power of the data set, differences are calculated from the original values of the independent variables.

The fundamental equation of the regression models is as follows:

$$SCD = A + E + ES + I + PO + R + S + SGR$$

where the individual regressors express:

- SCD – a social capital dimension;
- A – an age;
- E – an education;
- ES – an employment status;
- I – an income quantified for a monthly period;
- PO – a political orientation;
- R – a religion;
- S – a sex;
- SGR – a region.

4. Results

The Results section is devoted not only to the 1998 wave and the 2008 wave, but it investigates briefly also the 1991 wave that is not such comprehensive, but it offers a good comparing overview. From the factor analysis, the seven factors are extracted that explain more than 80 % of total variability of the data set altogether. The dimensions of social capital include formal networks, general trust, socialising with friends mentioned as friends, socialising with family mentioned as family, social norms, political engagement and institutional trust.

There is to note that the previous table depicts correlation between the individual dimensions of social capital that is visualised in the upper right triangle with the main diagonal. Their p-values are pictured in the lower left triangle. As it is unnecessary to depict an exact level of the p-value for interpretation in a case under a statistical significance threshold, a value of 0 is assigned to each cell where its value is lower than 0.001.

A positive relationship can be observed especially between formal networks and general trust of the respondents, so it can be stated that if formal networks are strengthened, general trust increases as well and this is kept also reciprocally. Other significant correlation is between general trust and socialising with friends and between socialising with friends and socialising with family. If socialising with friends is strengthened, general trust increases. Although, socialising with family is decreased in this way. An interesting aspect of civism is political engagement that bears a negative correlation with almost all the remaining dimensions of social capital. Between formal networks and socialising with family does not appear any relationship.

TABLE 2. *Correlation matrix of social capital dimensions.*

dimension	formal networks	family	friends	social norms	political engagement	general trust	institutional trust
formal networks	1	0	0.084	0.004	0.004	0.269	0.038
family	0.994	1	-0.103	-0.030	-0.006	-0.033	0.074
friends	0.001	0	1	0.011	-0.007	0.111	0.030
social norms	0.866	0.242	0.664	1	-0.027	0.005	0.023
political engagement	0.880	0.801	0.790	0.297	1	-0.086	0.045
general trust	0	0.201	0	0.836	0.001	1	-0.040
institutional trust	0.136	0.004	0.238	0.364	0.083	0.121	1

Source: own elaboration by the authors.

4.1 Geographical distribution of social capital

The successive tables summarise the outcome in a form of a row percentage values for the trust dimension in the regions of the Slovak Republic and also in the country as a whole. When it comes to trust as an important part of social capital, the Slovak Republic inhabitants are sceptical. The results of the survey demonstrate that while in the year 1991 21.6% of the respondents believed that people can be trusted, by the year 2008 it value has decreased to 12.6%. In the terms of general trust among the different regions, the most trusting people lived in the Bratislava Region with a value of 18.40%, while only a 5.80% share of trusting people lived in the Trenčín Region in the year 2008. Over the nine-year period from the year 1999 to the year 2008, only in a case of the two regions the percentage of people who trust others increased – in the Bratislava Region and the Prešov Region. In all the other regions, general trust decreased. The most significant decrease of interpersonal trust occurred in the

Trenčín Region. When looking at the second question regarding general trust, only a few respondents, exactly 2.60%, think that others would not take advantage of them and try to be fair. In the Bratislava Region, a share of 6.0% of the respondents think most people try to be fair to them, whereas only a 0.50% portion of the respondents living in the Trenčín Region think the same.

A low level of trust appears also in relation to the different institutions. Over the years, institutional trust decreased in the Slovak Republic from a 9.42% level in the year 1991 to a 7.12% level in the year 2008. The highest institutional trust appears in the Žilina Region with peaking at 10.44%, followed by Bratislava Region with a value of 10.40%, while the lowest trust towards institutions is found in the Trenčín Region again as low as 3.38%.

TABLE 3. *European Values Study figures for the trust section.*

Area	General trust			Institutional trust	
	Question 1		Question 2	Question 3	
	1999	2008	2008	1999	2008
SK010	12.3%	18.4%	6.0%	5.46%	10.40%
SK021	15.7%	8.9%	1.7%	7.19%	7.48%
SK022	17.5%	5.8%	0.5%	6.09%	3.38%
SK023	21.3%	16.2%	1.3%	10.19%	5.78%
SK031	10.2%	7.2%	4.7%	7.68%	10.44%
SK032	15.1%	14.5%	1.1%	6.98%	7.00%
SK041	16.0%	17.9%	4.7%	9.65%	6.61%
SK042	18.5%	10.9%	2.3%	10.28%	8.34%
SK0	15.9%	12.0%	2.6%	8.11%	7.12%

Legend for Table 3:

- question 1: a majority of people can be trusted;
- question 2: a majority of people try to be fair;
- question 3: a great deal of confidence is kept.

Source: own elaboration by the authors.

Errore. L'origine riferimento non è stata trovata. shows the results for regional distribution of the civism dimension. Additionally to **Errore. L'origine riferimento non è stata trovata.** data mentioned here, a level of the respondents for question 1 is 21.6% and for question 2 9.42% for the 1991 wave. In the terms of social norms, in the year 2008, a 36.54% share of the respondents did not justify certain behaviours. Since the year 1991, this percentage has decreased meaning that morality and civic commitment has become lower. However, looking at individual regions, the significant differences can be seen. For instance, almost a 51% share of the respondents living in the Žilina Region would never justify certain behaviours in the year

2008, while it was only a 23.39% portion of the respondents from the Trenčín Region and a 23.46% portion of the respondents from the Trnava Region. In the year 1999, such big differences in respondents' attitudes to social norms are not visible.

Regarding political engagement, it can be seen that many Slovaks prefer to follow politics in the media, rather than discuss them with friends. The two indicators of political engagement have evolved in an opposite direction. Following politics in the media has risen over the nine-year period, while discussing politics with friends has sharply fallen. The highest percentage of respondents frequently following politics in the media come from the Trenčín Region peaking at 69.10%, while the least interested are respondents located in the Trnava Region and the Bratislava Region dropping to 33.60% and 34.70% respectively. On the other hand, a 15.90% share of the respondents from the Košice Region and only a 2.50% share of the respondents from the Trnava Region discuss politics with friends every day.

TABLE 4. *European Values Study figures for the civism section.*

Area	Social norms		Political engagement			
	Question 4		Question 5		Question 6	
	1999	2008	1999	2008	1999	2008
SK010	31.31%	39.55%	46.2%	34.9%	18.9%	6.9%
SK021	35.44%	23.46%	43.4%	33.6%	19.7%	2.5%
SK022	39.97%	23.39%	39.1%	69.1%	19.0%	6.4%
SK023	36.16%	33.21%	41.5%	46.7%	21.8%	8.7%
SK031	32.53%	50.94%	34.9%	46.8%	23.7%	6.4%
SK032	29.86%	38.37%	42.6%	51.3%	18.1%	12.8%
SK041	39.41%	38.79%	41.5%	36.9%	22.3%	9.7%
SK042	37.37%	45.28%	44.7%	43.8%	20.1%	15.9%
SK0	35.33%	36.54%	41.8%	46.5%	20.5%	9.0%

Legend for **Errore. L'origine riferimento non è stata trovata.**:

- question 4: justifying never;
- question 5: following politics in media frequently;
- question 6: discussing politics with friends every day.

Source: own elaboration by the authors.

In **Errore. L'origine riferimento non è stata trovata.**, the regional distribution of the networks dimension is stated. As regards formal networks not many Slovaks participate in voluntary organisations. The percentage of those who belong to or work unpaid for voluntary organisations has decreased over the examined period. Even though, there is a slight increase within these indicators in the year 1999. Only a 1.95% share of the respondents living in the

Trnava Region belongs to voluntary organisations in the year 2008, while it was at a level of 6.60% living in Trenčín Region. In the terms of unpaid work for voluntary organisations, the percentages of the respondents are very low for all the regions – dropping to only 1.00% in the Trenčín Region and reaching a maximum of 2.45% in the Nitra Region in the year 2008.

TABLE 5. *European Values Study figures for the networks section – formal networks.*

Area	Question 7		Question 8	
	1999	2008	1999	2008
SK010	5.91%	4.53%	3.72%	1.63%
SK021	7.19%	1.95%	5.13%	1.11%
SK022	6.80%	6.60%	4.91%	1.00%
SK023	9.30%	4.54%	6.29%	2.45%
SK031	6.67%	2.87%	4.77%	1.63%
SK032	7.53%	2.70%	5.89%	1.38%
SK041	7.25%	3.98%	5.51%	2.07%
SK042	9.21%	2.75%	6.81%	1.28%
SK0	7.55%	3.83%	5.43%	1.62%

Legend for **Errore. L'origine riferimento non è stata trovata.:**

- question 7: belonging to voluntary organisations;
- question 8: working unpaid for voluntary organisations.

Source: own elaboration by the authors.

TABLE 6. *European Values Study figures for the networks section – informal networks.*

Area	Socialising with friends		Socialising with family			
	Question 9		Question 10		Question 11	
	1999	2008	1999	2008	1999	2008
SK010	49.7%	42.2%	85.5%	90.2%	63.1%	26.7%
SK021	43.4%	29.3%	92.9%	91.9%	67.6%	32.2%
SK022	47.1%	66.5%	85.0%	87.9%	59.0%	54.6%
SK023	40.9%	36.3%	86.0%	88.1%	65.9%	50.6%
SK031	39.6%	47.7%	84.6%	93.1%	63.3%	60.9%
SK032	50.6%	40.6%	86.4%	84.0%	65.2%	40.2%
SK041	45.1%	46.8%	89.2%	91.9%	63.2%	50.6%
SK042	43.5%	45.2%	91.1%	93.3%	68.4%	61.7%
SK0	44.9%	45.2%	87.7%	89.9%	64.6%	49.2%

Legend for **Errore. L'origine riferimento non è stata trovata.:**

- question 9: spending time with friends every week;
- question 10: importance of family in life;
- question 11: concerning with immediate family.

Source: own elaboration by the authors.

Regarding informal networks, the respondents prefer to socialise with family rather than with friends. As it is illustrated by **Errore. L'origine riferimento non è stata trovata.**, the lowest consent of the waves is assigned to the first wave of the year 1991, when a 6.18% level is related to question 9, a 2.55% level to question 10 and finally, an 88.20% level to question 11. Family is very important for an 89.90% portion of the whole data set of the respondents. Family is very important for 93.30% of the respondents living in the Košice Region, while in the Banská Bystrica Region it is only a share of 84.00% in the year 2008. On the other hand, in the terms of being concerned with the living conditions of the closest family members, only 49.20% of all the respondents responded they are very much concerned, which means a 15.40% decrease since the year 1999. The most concerned respondents come from the Košice Region, while the least concerned ones come from the Bratislava Region. Regarding socialising with friends, there is a slight increase in the percentage of the respondents who spend time with friends every week between the years 1999 and 2008. The highest portion of the respondents is assigned to the Trenčín Region with a level of 66.50%, while the lowest position is held by the Trnava Region with a value of 29.30%.

The following table depicts the standard estimated regression coefficients of the individual regions of the Slovak Republic by the three dimensions of social capital. The Žilina Region is selected as the reference region and therefore, it is not included in the table.

There is to note that the empty cells embody the statistically insignificant relationships. Besides this, the Žilina Region is absent because of no significant variable assigned. The other regions are represented by their codes.

The first dimension of social capital represented by formal networks is positively influenced by the two regions of the Slovak Republic – namely, the Nitra Region and the Košice Region. A negative influence can of trust networks can be observed in a case of almost all the regions by institutional trust with an exception for the just right mentioned two regions Nitra Region and the Košice Region. On the other hand, general trust and socialising with family are supported due to effects of the regions.

From an angle of view of the different regions, then the Bratislava Region, which is in the western part of the country, has in relation to the individual characteristics positive influence only on general trust and socialising with family. On the other hand, the Košice Region that is located in the eastern part positively influence almost all the dimensions of social capital. Such output might point to the economic and social differences between the east and the west – for instance, in a field of income and employment. People living in the eastern regions have to rely more on their family and friends when they are in

need. Such circumstances may therefore influence the dimensions of social capital.

TABLE 7. *The regression models.*

Regressor	Value	Networks			Civism		Trust	
		Formal networks	Family	Friends	Social norms	Political engagement	General trust	Institutional trust
age	coefficient				2.08 . 10 ⁻²			
	p-value				3.15 . 10 ⁻³			
education	coefficient	3.03 . 10 ⁻²	2.38 . 10 ⁻²		-2.04 . 10 ⁻²	1.88 . 10 ⁻²		
	p-value	2.20 . 10 ⁻³	1.18 . 10 ⁻²		2.49 . 10 ⁻²	5.36 . 10 ⁻²		
employment status	coefficient							
	p-value							
income	coefficient	7.73 . 10 ⁻²	1.41 . 10 ⁻¹	6.17 . 10 ⁻²			7.29 . 10 ⁻²	
	p-value	7.99 . 10 ⁻³	4.45 . 10 ⁻⁷	3.39 . 10 ⁻²			1.15 . 10 ⁻²	
political orientation	coefficient	6.23 . 10 ⁻²	4.93 . 10 ⁻²		2.33 . 10 ⁻²	2.57 . 10 ⁻²		3.42 . 10 ⁻²
	p-value	4.58 . 10 ⁻⁵	7.58 . 10 ⁻⁴		9.78 . 10 ⁻²	8.98 . 10 ⁻²		1.88 . 10 ⁻²
religion	coefficient				2.71 . 10 ⁻²		1.29 . 10 ⁻²	2.10 . 10 ⁻²
	p-value				1.79 . 10 ⁻⁵		5.82 . 10 ⁻²	1.27 . 10 ⁻³
sex	coefficient							
	p-value							
SK010	coefficient		7.39 . 10 ⁻¹		-1.03		2.32 . 10 ⁻⁴	-7.03 . 10 ⁻¹
	p-value		7.48 . 10 ⁻⁷		9.69 . 10 ⁻¹³		5.70 . 10 ⁻¹	2.15 . 10 ⁻⁶
SK021	coefficient		2.89 . 10 ⁻¹		-9.02 . 10 ⁻¹			-5.58 . 10 ⁻¹
	p-value		3.56 . 10 ⁻²		1.32 . 10 ⁻¹¹			4.72 . 10 ⁻⁵
SK022	coefficient		3.03 . 10 ⁻¹		-8.15 . 10 ⁻¹	4.43 . 10 ⁻¹		
	p-value		9.66 . 10 ⁻³		1.07 . 10 ⁻¹²	2.83 . 10 ⁻⁴		
SK023	coefficient	3.77 . 10 ⁻¹			-6.49 . 10 ⁻¹		3.29 . 10 ⁻¹	3.25 . 10 ⁻¹
	p-value	1.12 . 10 ⁻³			1.64 . 10 ⁻⁹		4.50 . 10 ⁻³	3.35 . 10 ⁻³
SK032	coefficient				-7.94 . 10 ⁻¹	2.05 . 10 ⁻¹	2.04 . 10 ⁻¹	-4.54 . 10 ⁻¹
	p-value				1.66 . 10 ⁻¹²	8.78 . 10 ⁻²	9.00 . 10 ⁻²	8.44 . 10 ⁻⁵
SK041	coefficient				-4.13 . 10 ⁻¹		2.63 . 10 ⁻¹	-4.66 . 10 ⁻¹
	p-value				9.02 . 10 ⁻⁵		2.06 . 10 ⁻²	1.95 . 10 ⁻⁵
SK042	coefficient	2.32 . 10 ⁻¹			4.58 . 10 ⁻¹			5.67 . 10 ⁻¹
	p-value	6.02 . 10 ⁻²			6.58 . 10 ⁻⁵			1.78 . 10 ⁻⁶

Source: own elaboration by the authors.

4.2 Social distribution of social capital

Social distribution of social capital is represented by the regression model analytically. As the mentioned relationships demonstrate, the particular characteristics and the individual regions influencing the three dimensions of social capital are located in. Formal networks are influenced by their educational level, political orientation and monthly income. Other individual characteristics do not have statistically significant influence on formal networks. The

implications of the mentioned variables are visible mainly in the Košice Region and in the Nitra Region. Statistically significant individual characteristics occur in a case of socialising with family, political orientation, education, and monthly income. Socialising with family is influenced by the Bratislava Region, the Trnava Region, and the Trenčín Region. Socialising with friends is dependent only on one variable, that is, monthly income. In a case of social norms, it is the other way around, as monthly income is not significant, but political orientation, age, and education are statistically significant throughout all the regions of the Slovak Republic. Whilst almost all the relationships are positive, education keeps a negative sign. Political engagement is related to political orientation and a level of education. From a geographical viewpoint, the Banská Bystrica Region and the Trenčín Region influence the political orientation of the individual. General trust of the respondents is related to their religion and the amount of their monthly income, although there is to note that religion possess a statistically insignificant relationship. Significant cases occur for the Bratislava Region, the Banská Bystrica Region, the Nitra Region, and the Prešov Region. Institutional trust is associated with political orientation of the individuals and it is statistically significant throughout all the regions of the Slovak Republic except for the Trenčín Region, where the Bratislava Region, the Trnava Region, the Banská Bystrica Region, and the Prešov Region possess a negative influence, whilst the Nitra Region and the Košice Region bear the positive signs.

5. Discussion

Previous research on social capital concentrates on its distribution in the European countries and on comparison of the results between the countries. In the terms of social distribution of social capital, van Oorschot, Arts and Gelissen (2006) investigate that a higher level of social capital is among older, more educated, working and better earning Europeans. In a case of the Slovak Republic, social capital is generally higher among politically right oriented, more educated and better earning people.

Left-wing oriented Europeans are likely to have higher general trust and more network capital (van Oorschot, Arts, Gelissen, 2006), while such inhabitants have higher institutional trust in the Slovak Republic and they are rather right-wing oriented people, have higher civism and more network capital. Halman and Luijkx (2006) mention that people of the male sex, who are left-wing oriented, religious, and have a high moral sense, more likely consider formal engagement more important than their opposites. In the Slovak Republic, formal networks are important for right-wing oriented, more

educated and better earning people. The same state is observable for informal networks.

According to van Oorschot, Arts and Gelissen (2006), European women incline to socialise more with family, to be less politically engaged and to participate less in voluntary organisations than men. Women have higher social norms but less interpersonal trust. The results do not confirm nor reject these findings, as none of the dimensions is statistically significant in a case of the respondent sex. They also express that young people consider informal networks, where socialising with friends and family belong, to be more important than older people. In the analysis outcome, age is not statistically significant in a case of formal or informal networks. However, older people both in Europe and the Slovak Republic have higher social norms.

Van Oorschot, Arts and Gelissen (2006) also state that more educated Europeans are more politically engaged, have higher general trust and more network capital. Halman and Luijkx (2006) remark that more educated Europeans have higher general as well as institutional trust and consider both formal and informal networks important. In the Slovak Republic, the outcome is similar – more educated people are more politically engaged and have more network capital. For instance, in the Czech Republic, higher educated respondents have also higher participation in networks (Matějů and Vitásková, 2006).

Thus, the results regarding social distribution of social capital are in a majority of the cases similar to those one of the previous research in the Slovak Republic (Inštitút pre ekonomické a sociálne reformy, 2002; Kuzmišinová, 2010; Lubelcová, 2010; Želinský, 2010; Lubelcová, 2013; Pavelek, 2013; Ruman, 2013). In the terms of geographical distribution, there is carried out a research in the year 2004 on the level of social capital in the regions of the Slovak Republic by Institute for Economic and Social Reforms (Inštitút pre ekonomické a sociálne reformy). The regions are not categorised as the administrative regions, but they are classified naturally – namely Juh, Kysuce, Liptov, Východosever, and Záhorie. Social capital is measured through the questions on cooperation, trust, ethical norms, and so forth. The highest average index of social capital is kept by the natural region Kysuce, while the lowest level of social capital is held by the region Východosever (Inštitút pre ekonomické a sociálne reformy, 2004). The analysis of this paper does not measure social capital through an index and thus, it cannot be concluded which region has the highest social capital in the Slovak Republic. The results only suggest which region influences the particular dimension of social capital.

Besides this, the analysis outcome cannot be compared with the other studies (Beugelsdijk Beugelsdijk and Van Schaik, 2005; Wallace and Pichler, 2007; Fidrmuc and Gerxhani, 2008) as they focus on the differences between

the particular parts of Europe – especially, the eastern part, the central part, and the western part. Based on these studies, countries of the central part and the eastern part, as well as the developing countries, have a low level of social capital when compared to the developed countries. Fidrmuc and Gerxhani (2008) think that the former communist countries have a lower level of social capital due to a lower level of economic development and poorer institutions, not necessarily due to communism. The authors point to the problem of pervasive corruption in these countries.

6. Conclusion

This paper offers new and previously untouched analysis of social capital in the Slovak Republic with a respect to its social and geographical distribution applying the data of the European Values Study survey. The analysis did not focus on a single measure of social capital as a combination of the several dimensions of social capital into one index. Such an approach would eliminate the substance of the concept and its explanatory power may be lost for interpretation. As a replacement for it, focusing on networks, trust and civism as the three dimensions of social capital, the analysis of the individual determinants meaning structural characteristics of social capital and its geographical distribution in the country is carried out.

In the terms of social distribution, the results suggest that social capital is generally higher among more educated, politically right-wing and better earning Slovak Republic citizens. Monthly income is one of the structural characteristics that is important for the development of social capital. In a case of socialising with friends, it is the only significant structural characteristic. Thus, formal networks, relations with family and friends and general trust are strengthened along increasing monthly income. An interesting fact is that monthly income does not influence social norms and with a higher level of education. Regarding geographical distribution, the Trnava Region and the Trenčín Region have less developed social capital compared with the other regions of the Slovak Republic because of the lowest shares in a majority of the dimensions of social capital.

Generally, a level of social capital has decreased in the Slovak Republic over the period from the year 1991 to the year 2008. A low level of trust may be related to the historical development of the country. The past events like the Velvet Revolution (Nežná revolúcia) in the year 1989, the dissolution of the Czech and Slovak Federative Republic, political development and economic transformation to capitalism may have caused the decrease in general trust among the citizens, which looks like interesting because the Velvet Revolution supposed to promise better times.

As Lubelcová (2010) suggests, the inhabitants of the Slovak Republic belong to the least trusting and the most cautious people in Europe in whatever contact with other people. Hence, a low level of trust at the interpersonal and institutional level is the highest risk for creation an integrated and cooperative society.

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