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ITEM BATTERY FOR MEASUREMENT OF BRIDGING SOCIAL CAPITAL: THE COMPARISON OF ISSP 2007 AND CVVM 2007 DATASETS

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Item battery for measurement of Bridging Social Capital: the comparison of ISSP 2007 and CVVM 2007 datasets[1]

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Abstract: This study introduces a simple tool for measuring Bridging Social Capital (referred to as BSC) by means of a battery of questions regarding the differences in the circle of friends. It was first used in the public opinion poll "Our Society 2007-04" (CVVM) and the modified version was employed in the international survey ISSP 2007 "Leisure Time and Sports". The main purpose of this study is to compare results from both datasets to assess the reliability and validity. For that, we use the intersection of the same items included in both surveys. First, we verify convergent and discriminant validity of this tool using explorative and confirmative factor analysis. The results show that BSC in this case must be considered in two unlike dimensions: different interests/lifestyle and outgroups. Furthermore, we verify the construct validity using structural equation modelling. The starting point is the theoretical model of positive effects of the structural dimension of social capital (diversity in friendship bonding) on its cultural dimension (tolerance and trust). In conclusion, we suggest taking advantage of the BSC battery in subsequent research.

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Introduction

Social capital regards the advantage created by a person's location in a structure of relationships [Burt 2005]. It is constituted by connections among individuals and the norms of reciprocity and trustworthiness [Putnam 2000]. Structural and cultural aspects of social capital can be distinguished. It is understood either as social contacts and bindings (structural dimension) or as norms of reciprocity and trust (cultural dimension) [van Deth 2003]. It should be pointed out that the relationship between the structural and cultural dimension of social capital is not clear yet [Gabriel et al. 2002].

In this study, we focus on rather collective facet of social capital, i.e. characteristics of individuals' social networks on collective – society level of social capital.[2] We review a simple tool for measuring the concept of bridging social capital in standardized questionnaires (hereinafter referred to as BSC). The item battery, which asks for differences in the circle of friends, originally suggested by K. Pajak [2006] was adopted for the circumstances of the Czech adult population [Šafr, Häuberer 2007a;b]. This battery was used for the first time in the research of public opinion carried out by the CVVM within the framework of the ongoing investigation of "Our Society" 2007-04. A more elaborated version was used in the Czech version of international survey ISSP 2007 "Leisure Time and Sports". The main purpose of this study is to compare results from those datasets to assess the reliability of BSC measurement tool. After a brief review of the theory on bridging social capital and its measurement, different dimensions of the bridging social capital are detected using exploratory factor analysis of items included in both surveys, in which we observe whether the concept is multidimensional. The results of it are proofed using confirmatory factor analysis. In the last section, the construct validity of two different dimensions – *interests/lifestyle* and *outgroups* – of the bridging social capital are proofed by applying the same models using structural equation modelling at the data from both surveys.

[2] The Czech sociology has been focused mainly on the individual form of social capital so far. [cf. Šafr, Sedláčková 2006: 31-33]. The existence of both individual dimension (exchange networks) and collective dimension (social trust) of social capital is proofed in the article by P. Matějů and A. Vitásková [2006].

Bonding and Bridging Social Capital – Theoretical Basis

Different functioning of social ties and identities as well as their consequences for society has been distinguished by Robert Putnam [2000] using two kinds of social capital: Bonding Social Capital and Bridging Social Capital.

Bonding Social Capital originates in close contacts among people, meaning strong bonds; for example, among family members, friends or members of the same ethnic group: It connects people that are alike [Putnam, Goss 2001]. It is directed to the inside of the group and leads to exclusive identities, tending to reinforce homogeneous groupings. It also represents a sort of social "super-glue", which preserves homogeneity, reinforces identity, creates reciprocity, in-group loyalty and mobilizes mutual solidarity.[3]

Bridging Social Capital, by contrast, embraces more remote contacts which are characterized by weak bonds with the capability of going beyond the limitations of close social groups. These are, for instance, the bonds with acquaintances or friends of our friends, business partners or friends particularly from different ethnic groups. It is directed to the outside of a group and connects people across different social groups and status, supports flow of information and constitutes human solidarity as well as broader identities.

The differentiation of two forms of social capital refers to their different effects on society. It either encourages the cohesion of the whole society (namely bridging) or it conversely escalates in inclusion, i.e. exclusion of groups unequal in the status of its members (namely bonding). Putnam's typology of social capital in theoretical perspective implies how social capital comes into being, and how it functions in different surroundings. Nevertheless, to indicate Putman's critics, the problem lies in the fact that even the BSC can, but does not necessarily, have to link people from different social strata since they do not have the same volume of it at their disposal.

The above mentioned typology of social capital resembles the original distinction between weak and strong ties (family, close friends) [Granovetter 1973]. Social contacts in the form of weak ties in an implication of "friends of friends" assists a person to obtain information and reach success in life, for example in the context of a job search.

[3] A third category has also been mentioned in literature--*Linking Social Capital*--which supports accessibility to services of formal institutions, e.g. bonds among clients and workers of the organization providing social services (in greater detail, typology of social capital, see [Šafr, Sedláčková 2006: 25-28].

When considering the individual benefits of diversity of social networks, the concept of BSC is close to the theory of structural holes introduced by Ronald Burt [Burt 1992]. This theory in its simplified version states that the optimal position of an individual in the social network is among several different groups, while his or her contacts are non-redundant: They do not lead to similar people and therefore to the same information or resources. If a contact is non-redundant a structural hole is spanned. "A structural hole is a relationship of non-redundancy between two contacts" [Burt 1992: 18]. The actor spanning a structural hole is called a broker. This broker has early access to different information, perspectives, capabilities and resources and is able to control information flow. Summing up structural holes are weak ties providing two contacts with network benefits.

Bridging social capital arises in the experiences of unknown participants in repeated interactions with different, socially distant people. Contacts with foreign cultures build up tolerance to dissimilarities and mutual understanding, holding down prejudices and stereotypes. As a result, this supports cohesion of the entire social order in a modern multicultural society, wherein the traditional sources of the cohesion, such as collective (national) identity have, to a large extent, been exploited.

A key element of social capital represents then the topic of interracial/ethnic trust which is an important form of "bridging" in ethnically-mixed societies, such as the U.S. [Hudson, Chapman 2002]. Bonding forms in reverse often result in inclusion (and through that also exclusion) within groups which are, among each other, unequal in either status or ethnic background.

However, the latest study of differences among communities in the USA (data from SCCBS) by R. Putnam points out to the fact that trust, volunteerism and other civic values is lower in ethnically diverse neighbourhoods regardless races of their residents [Putnam 2007]. Other internationally comparative analyses revealed that diversity does not necessarily lower trust. The crucial starting point is the measurement and the kind of distribution of diversity in a community (fractionalization vs. segregation) [Uslaner forthcoming].

Approaches to Measuring Bridging Social Capital

Despite the emphasis laid on BSC in theory [Putnam 2000], the approaches to measure it are rather sporadic. The easiest way to conceptualize it is as the extent to which individuals are connected to other participants with different characteristics. Particular operationalization

of the concept of the BSC model requests us to pay attention to given specifics of the community or society which is under study [Hudson, Chapman 2002].

The basic, and simultaneously the most sophisticated approach to the operationalization of BSC can be regarded as the measuring of size and heterogeneity of the social network of an individual (egocentric network). This approach most frequently uses complicated name, position or resources generators [Lin 2001; van der Gaag, Snijders 2003]. This means that we survey the status of friends of respondents most frequently from the view of education, social status, gender and intensity of relationships [e.g. Warde et al. 2005]. Using this form of data, we calculate the social distance within the respondent's friendship bonds, which is to say, to what extent is his or her friends' status homogeneous or heterogeneous. Thus, individual mobilization capital can be determined --either as the extent of "bridging" (width of reach in the society both upwards and downwards) or the respondent's highest "status reach" (the most prestigious standing of the contact). The more distant is the so-called attainable status from the respondent's status, the bigger is the volume of BSC of him or her. The certain disadvantage of this approach – which is, however, not the topic of this study – is that it favours mainly strong ties (the closest friends).

One of the possible means of conducting BSC, which is serviceable in secondary analysis, is offered by data on membership in specific types of voluntary organizations. Beugelsdijk and Smulders [2003] use EVS (European Values Study) data to aggregate European regions regarding membership in associations or churches and organizations of religious types; education, arts and music; culture; youth (Scouts for example); sport and recreation, and women's groups. According to the authors, the selection of associations corresponds to the function of BSC since, in contrast to political parties or professional associations they are not oriented to rent seeking behaviour. Conversely, Bonding Social Capital in their view can be operationalized as friend and family bonds. However, we do not consider this method as the most suitable, since the membership in leisure time organizations and associations can lead to the inclusion of only socially close persons (and also to the exclusion of other groups) through the "club effect" [see Šafr, Sedláčková 2006: 16], which stands in contrast to the theoretical perspective of bridging social capital. Moreover, this approach concentrates only on the side of formal membership and neglects social differences in friendship networks.

The Social Capital Community Benchmark Survey (SCCBS),[4] a project associated with Robert Putnam, uses a simple method. It surveys diversity of friendship bonds by employing the question, "Do you have, in your broad circle of friends, someone who is…": a manual labourer; a recipient of social allowances; is in possession of a summer house; belongs to a different confession or religion; is Caucasian, of Latino origin, Asian origin, Afro-American origin or of a different sexual orientation; a community leader. [SCCBS short form 2002]. The more of these friends are stated by the respondent, the higher is the amount of his or her BSC which is, in addition for the purpose of comparison of the extent of social capital among different communities, capable of being aggregated on the level of municipalities. Besides this, the survey also studies inter-group trust to ethnically different groups of people (Caucasian, Afro-American, Hispanic) as a form of BSC.

A similarly innovative approach to the measuring of BSC, which is close to the above stated survey of SCCBS, has been introduced by the Polish sociologist Katarzyna Pająk [2006]. In principle, her method measures quantity of heterogeneous social bonds among friends. Respondents are asked in a standardised questionnaire to name the frequency of existence of socially distant persons in their surroundings in different dimensions, such as socio-economic characteristics, interests, attitudes and lifestyle. The author composed a series of twelve entries of answers to the question, "In the circle of my close acquaintances are people": much older than me, with a different lifestyle than is mine, of a different nationality than is mine, etc. It is necessary to mention that this battery has been tested on a sample of a population of university students in Warsaw, and therefore it is not possible to use all items in the stated form for the common adult population (e.g. a question on classmates from a high school).

The factor analysis indicated that social capital measured in this way is comprised of three dimensions: outgroups, different interests and different lifestyles. The author further verified the validity of this question series by means of connectedness with attitudes towards foreigners. The results indicated--although not very convincingly --that a higher extent of BSC lowers the inter-group prejudice in the sense of favouring members of their own group.

[4] More information can be found at <http://www.ksg.harvard.edu/saguaro/communitysurvey>.

The BSC Item Battery for Measuring the Differences in the Circle of Friends

A similar item battery on BSC like used by Pajak was adapted for the conditions of the Czech adult population. It was first used in the continual opinion survey CVVM *Our Society* 2007-04 [see Šafr, Häuberer 2007a,b] and a slightly modified version was also included in the Czech questionnaire of ISSP 2007 *Leisure Time and Sports* (Interatnional Social Survey Programme).

Some irrelevant entries from the Polish survey were excluded or replaced by more general questions regarding ways of spending leisure time and with respect to different cultural taste. The item battery was enhanced by the cleavages perceived in the Czech Republic: differences in political attitudes and divergence between the countryside and towns. It was also supplemented by a question inquiring about the existence of friends who are worshippers, in case the respondent is a believer himself or herself, and vice versa. Besides the perspective of wealth and poverty, we newly included, within the framework of the stratification aspect of social networks, the item "different occupation than the one of the respondent or that is common in his or her family". This facet was even enhanced in ISSP survey where we asked for friends among different groups of professions (high professional, entrepreneur, manual workers).

The items in the BSC series asked for the quantity of friends with different characteristics or from different surroundings. To the questions, "In the circle of your friends belong people:…", the respondents had to evaluate the number of friends answering on a scale ranging from "no one at all", to "almost everyone" (for precise format on this battery see Appendix 1 and 2).[5] The concept of BSC refers to weak ties, which are relationships to acquaintances or a wider circle of friends. In order to avoid an over evaluation of answers, the questions have been formulated relatively simply as inquiring for "friends".

In this paper, we focus only on the set of 9 items which are included in both, the CVVM and ISSP datasets. The complete versions of the question items are presented in the Table A1 and A2 in the Appendix.

[5] Unlike the Polish version, the scale of answers we used (1. never to 5.very often) consistently follows the frequency of existence of friends.

The distribution of the answers of comparable items in both surveys is shown in Table 1.[6] In general, it can be stated that our friends are rather of similar characteristics, they do not differ much from our own lifestyle and status. Respondents reported that among their friends there are only few people with different political opinions, from the countryside or conversely from a more urban area, and are more wealthy. Only 6-10 % report at least a few friends with very dissimilar characteristics – with different nationality (in ISSP data 25 %), from other ethnic groups or with other sexual orientation.

We should add that in the case of political opinions and religious beliefs, ergo those qualities which are not "visible" upon initial observation, the respondents often do not know whether their friends differ from their own preferences.[7]

We decided to include information on whether the individual has, as a friend, someone who is less fortunate; has a different political opinion; or is not a believer, or believer in subsequent ISSP survey and further analyses, although they also have a high number of missing values (11-13 %). It is because we consider them as substantive from the perspective of the functioning of BSC--unlike entries such as watching TV programmes and reading different newspapers which were in CVVM original 14 items version.

Our aim is to assess the reliability of the BSC item battery. One of the methods to probe the reliability is to carry out parallel measurements [Řehák 1998]. The CVVM survey was conducted in April and the ISSP in June 2007. We can definitely assume the number and quality of friendships to be a stabile phenomenon over this short period. Comparing the results of the CVVM and ISSP surveys, ISSP respondents reported more friends in case of other nationality, believers/non-believers and rural/urban place of living. We can claim that the results of both surveys are roughly the same even from strictly statistical point of view only items different political opinion and poorer people feature the same mean (T-tests significant at 0,05 level). However, from substantial point of view the mean differences are smaller than a half of a category of the scale which points to reasonable reliability of the BSC

[6] In the following analysis the data file was reduced to the population older than 21 years to include only respondents with finished cycle of primary and secondary education.

[7] In the initial CVVM survey, the results revealed entries with high quantity of missing answers (more than 15 % of the "I do not know"): different TV programmes and reading of different newspapers. These items were not included in ISSP survey afterward. The high amount of respondents that are unaware of such information regarding their friends is not that surprising, taking into account the fact that such expression of lifestyle is not initially apparent, and perhaps that the knowledge of this is not relevant to them in everyday life.

item battery. The differences can be perhaps attributed to different sampling methods (quota sample in CVVM and random sample in ISSP).[8]

In both surveys, missing values are not affected by the aspects of gender. Regarding the education "I do not know" answers came more often from people with primary education (mainly in sexual orientation and political opinion). In the case of age it is not surprising that the respondents in the age category of sixty years and above are more often unaware of characteristics of friends, with respect to different ways of spending leisure time.

Table 1. Answers to the question „In the circle of your friends belong the people from/with …", percents

		1. none at all	2. sporadically	3. a few	4. lot of	5. almost everyone	do not know	Mean	Std. Dev.
other generation	CVVM	18,1	32,1	35,6	12,4	1,3	,4	2,46	,971
	ISSP	11,7	25,0	42,3	15,6	4,3	1,1	2,76	1,000
other nationalities	CVVM	65,6	21,8	9,9	1,6	,3	,8	1,48	,768
	ISSP	41,0	32,9	18,5	4,7	1,1	1,8	1,90	,946
other ethnic groups	CVVM	80,1	13,2	5,0	,7	,1	1,0	1,26	,587
	ISSP	58,0	28,3	8,6	2,9	1,0	1,2	1,59	,843
other sexual orientation	CVVM	80,6	7,9	5,3	,7	,1	5,4	1,22	,583
	ISSP	63,4	19,9	6,7	1,9	1,1	6,9	1,47	,815
poorer people	CVVM	20,8	26,3	30,2	9,1	,5	13,1	2,34	,975
	ISSP	24,8	30,6	29,5	10,0	2,2	2,9	2,32	1,035
different ways of spending leisure time	CVVM	9,7	24,6	35,3	21,9	3,1	5,5	2,83	1,002
	ISSP	16,3	32,4	35,9	11,2	1,9	2,3	2,49	,966
different political opinion	CVVM	11,0	24,0	34,5	16,9	1,5	12,0	2,71	,974
	ISSP	11,5	20,1	40,5	14,7	2,5	10,7	2,74	,973
countryside / town	CVVM	19,7	24,9	33,5	16,2	3,2	2,5	2,57	1,085
	ISSP	11,0	18,5	42,6	20,0	6,5	1,3	2,92	1,046
believer / non-believer	CVVM	23,1	26,2	26,5	9,8	1,5	13,0	2,32	1,039
	ISSP	15,3	19,1	38,3	15,5	4,0	7,8	2,72	1,065

Source: Our Society, CVVM, April 2007; age 21+; N = 911.
ISSP 2007; age 21+; N = 1138.

[8] In this study, we use unweighed data in case of ISSP. When dataset was weighted the results were the same.

Dimensionality of the BSC Index – Convergent and Discriminant Validity

One of the ways to measure the amount of BSC of a person could be that we add all the entries from the battery of questions and create an additive index. Such a summary index would reach a high item reliability (Cronbach's Alpha for 9 items scale in CVVM = 0,791 and ISSP = 0,769). In this study we primarily verify the validity of the BSC concept; therefore, we are interested in the question of whether the structure of diversity of friendships is genuinely one-dimensional. This should be answered in the first step by the exploratory factor analysis. Further we will verify the multi-dimensionality of the BSC scale using confirmatory factor analysis.

Previous analysis of the whole CVVM item battery version with 12 items[9] revealed that the BSC is multidimensional. Including all entries of the battery the items were divided into three different dimensions which we called *different interests, different life style* and distinctly remote *outgroups* (see [Šafr, Häuberer 2007a;b]). The structure and interpretation of these factors is similar to the results of the Polish research [Pajak 2006]. This finding was confirmed by confirmatory factor analysis which pointed out to the relevance of a three latent dimensions solution. The fit of the models indicated that a two factor solution joining the first and second dimension together is still plausible. Thus, when measuring the diversity in the circle of respondents` friends using the suggested battery of questions, it is necessary to keep in mind that the structure of social heterogeneity has a format displaying outgroups on one hand and different interests and lifestyles on the other.

Indeed the factor analysis run on the limited intersection of nine items in CVVM and ISSP[10] revealed only two latent dimensions (see table 2).[11] The first one is *different lifestyle/interest* saturated by political opinions, leisure time consumption, rural/urban place of living and believers/non-believers. The second one comprises *outgroups* loaded by the items ethnicity, nationality and sexual orientation. The latent structure solution is essentially the same for both datasets. Nevertheless, two items - poor people and different generation have

[9] Due to high number of missing values we excluded two entries different TV programs and newspapers from the analyses [see Šafr, Häuberer 2007a,b].

[10] The correlations matrixes of the items in the BSC battery for both surveys can be found in Table A3 and A4.

[11] The maximum likelihood method of extraction with Oblimin rotation was used which allows mutual correlation of factors. This method offers the results similar to the ones from confirmatory factor analysis used further in this text [Urbánek 2000: 159].

high loadings on both factors in the ISSP data set. This points out to somewhat equivocation of the meaning that is why we decided to leave them out from further analyses.

Table 2. Factor analysis of BSC of 9 items in CVVM and ISSP data sets. Matrix of factor structure. Oblimin rotation.

	CVVM		**ISSP**	
	Factor		Factor	
	1	2	1	2
different political opinion among friends	**,667**	,147	**,737**	,119
different spending of the leisure time among friends	**,661**	,078	**,687**	,070
Countryside/ town among friends	**,632**	,185	**,551**	,125
believers/non-believers among friends	**,544**	,141	**,510**	,141
poor people	**,591**	,228	**,371**	**,267**
different generation	**,534**	,152	**,327**	**,244**
different ethnicity among friends	,092	**,834**	,120	**,877**
different nationality among friends	,182	**,669**	,133	**,734**
different sexual orientation among friends	,185	**,425**	,203	**,576**
variance explained	30,5 %	11,37 %	27,64 %	13,73 %
	total 41,87 %		total 41,37 %	

Source: Our Society, CVVM, April 2007; age 21+; N = 830.
Leisure Time and Sports, ISSP 2007; age 21+; N = 1049.

Note: Method of extraction Maximum Likelihood with Oblimin rotation

CVVM
Goodness-of-fit Test: χ^2 = 58,489; df = 19; Sig. 0,000
Mutual correlation of factors after the rotation: F1 and F2 = 0,097 ($p < 0,05$)

ISSP
Goodness-of-fit Test: χ^2 = 209,728; df = 19; Sig. 0,000
Mutual correlation of factors after the rotation: F1 and F2 = 0,077 ($p < 0,05$)

Moreover, to test the convergent and discriminant validity of the BSC battery properly we will use confirmatory factor analysis of seven directly observed variables. This method enables us to verify the assumption that "entries which according to the theory measure one construct, build in reality only one factor" [Kreidl 2004: 92]; it enables a statistical

comparison of the model with a different number of factors. In this analysis we test the hypothesis of the model fit. Because of the performed exploratory factor analysis--of which the disadvantage is that it is impossible to explicitly determine the belonging of constituent manifest variables to concrete factors [Urbánek 2000: 157]--discovered two factors of BSC, we will test the hypothesis about the existence of two dimensions of diversity within friendship networks and mutual relationships.

Firstly, we verify whether the whole battery of BSC can be reduced into one general latent variable or in two using the CVVM and ISSP data. As the statistics of quality of the model in Table 3 show, the solution with only one factor must be rejected (CVVM: χ^2 = 487,373; df = 14; GFI = 0,833, ISSP: χ^2 = 874,030; df = 14; GFI = 0,783). Table 3 shows further that a two factor solution fits the data better than the one factor solution. That applies to both datasets (CVVM: χ^2 = 65,200; df = 13; GFI = 0,976, ISSP: χ^2 = 195,329; df = 13; GFI = 0,946). Although the χ^2 value is still significant the goodness of fit measures GFI and AGFI indicate a good fit. That's why we prefer the two-factor solution and the two subscales Outgroups and Different interests/ lifestyle will be used in the following analysis.

Table 3. Statistics of the model fit. Confirmatory factor analysis of 7 items in CVVM and ISSP data sets

	Model CVVM one factor	**Model CVVM two factors**	**Model ISSP one factor**	**Model ISSP two factors**
Chi²	487,373	65,200	874,030	195,329
Df	14	13	14	13
P	0,000	0,000	0,000	0,000
GFI	0,833	0,976	0,783	0,946
AGFI	0,666	0,949	0,566	0,884
RMSEA	0,202	0,070	0,242	0,116

Source: Model CVVM: Our Society, CVVM, April 2007; age 21+, N = 830.
Model ISSP: Leisure Time and Sports, ISSP 2007; age 21+, N = 1049.

Construct validity – two models of the BSC effects – two data sets

In this part, we compare the validity of the theoretical model on different data sets. We use rather a simplified version of the model. Elsewhere we focused on a rather more elaborated model of the structural and cultural dimension of social capital controlling for a personality trait and civic participation [Šafr, Häuberer 2007a;b]. The influence of social structure, individual predispositions together with formal civic participation were considered

to have only controlling purpose. These two concepts were however measured differently in both surveys therefore for the purpose of the comparable study presented here we decided to estimate only analogous models which do not include them.

To verify the construct validity of our BSC measuring method, we will monitor whether the effects of BSC work within Czech conditions in accordance with the theory mentioned in the introduction, which concerns the macro-society level. We address a key question – whether social differences in the circle of friends really act, in accordance with Putman's thesis, as a mediator of broader positive interpersonal relationships. Is it related to the generalized trust in other people and to tolerance: respectively, do they decrease xenophobia toward distinct groups? Also, do the two latent dimensions of BSC have the expected positive effects on social trust?

Construct validity is achieved "if the data discovers such a relationship among the given indicator and other variables that we would *a priori* expect on the basis of the theory" [Kreidl 2004: 92]. As we mentioned before, the mainstream theory assumes that experience with unknown actors increases tolerance to different people, lowers prejudice, and strengthens reciprocal understanding. To verify this, we used structural models performed separately for the two BSC dimensions that have been revealed by factor analysis: different interests/lifestyle and outgroups. These dimensions are represented by corresponding items from the battery of questions (only that were used in both surveys) as latent constructs. The items poor people and generation were omitted from the model because they did not fit any factor in the ISSP data.

Our approach to the analysis is confirmative: we start from the theoretical model of the effects of the structural dimension of social capital (diversity in friendship bindings) on its cultural dimension (tolerance, trust), which we test against the empirical data. The theoretical models of measurement are displayed in figure 1 for outgroups and in figure 2 for interests/lifestyle dimension.

In the model, we will monitor the influence of directly observed variables, the structural socio-demographic factors, by which we mean the status of the individual in the society (age, gender, education). We assume the influence of all of these factors in the first part of the regression model on the latent dimensions of BSC, because the volume of BSC is diverse among individuals and various social groups.

To assess the designed validity itself we use, in the second part of the model, two concepts related to the cultural dimension of social capital, in which the theory assumes

positive or negative influence of BSC. In the first case, we deal with generalized social trust; in the second we address intolerance towards various social groups. Both of these variables are included in the model as latent constructs measured by additive indices.

To measure social trust in the CVVM we use a shortened version of three standard questions from the Rosenberg's scale, which is commonly used as an indicator of trust in other people.[12] In the ISSP, we measured generalized trust with one single item.[13] In both surveys, we measure intolerance by means of the *group intolerance index*, which was created as a sum of answers evaluating fourteen different groups of people which the respondent would not want to have as neighbours (criminals, people of different races, alcoholics, Muslims, immigrants, homosexuals, Roma's, Jews etc.).[14] The more groups the respondent mentioned, the higher the intolerance towards social differences (more detailed information about this index can be found in [Katrňák, Rabušic 2002]). The descriptive statistics can be found in Tables A5 and A6 in the appendix.

The estimated models of BSC are displayed in figures 3 and 4 for the dimension outgroups and in figures 5 and 6 for the dimension different interests/lifestyle.[15] In all estimated models the χ^2 value is insignificant at the 1%-level. That means the particular models fit the data and are not significantly different from the data. Further very high GFI values and very small RMSEA values show a satisfactory fit of the models to the data. As can be seen in the figures 3-6 using the two different datasets CVVM and ISSP almost identical[16] models can be estimated for the outgroups and the different interests/lifestyle dimension.

[12] In the CVVM data set, we created the *Index of generalized trust in others* by summarizing the degree of agreement with the following statements "The majority of people can be trusted" and "People mostly try to help each other" and by subtracting answers "People don't hesitate to abuse others". The three questions on trust (see table A5 in apendix) were combined (a + b – c) into a scale of Generalised Social Trust (Cronbach's alpha = 0,73).

[13] In the ISSP, we used the question: Generally speaking, would you say that people can be trusted or that you can't be too careful in dealing with people? that could be answered with 1. people can almost always be trusted, 2. people can usually be trusted, 3. you usually can't be too careful in dealing with people, 4. you almost always can't be too careful in dealing with people (see also table A5 in the appendix).

[14] The intolerance index in the CVVM features Cronbach's alpha = 0,85; in the ISSP Cronbach's alpha = 0,87.

[15] The models were tested in the AMOS 6.0 software. The entries were covariant coefficients.

[16] There is just one difference in the models for outgroups. To improve the model fit we included correlations between the measurement errors e3 and e7 for the ISSP data; this cannot be done for the CVVM data. Further in the CVVM data a direct impact of age on intolerance improves the model fit that cannot be found in the ISSP data. This indicates that with increasing age also the intolerance is increasing. The difference in the results can be caused by the use of different measurement instruments for trust and the different procedures of data-gathering (CVVM used quota-sample whereas ISSP a random sample).

Figure 1: Measurement model for BSC Outgroups

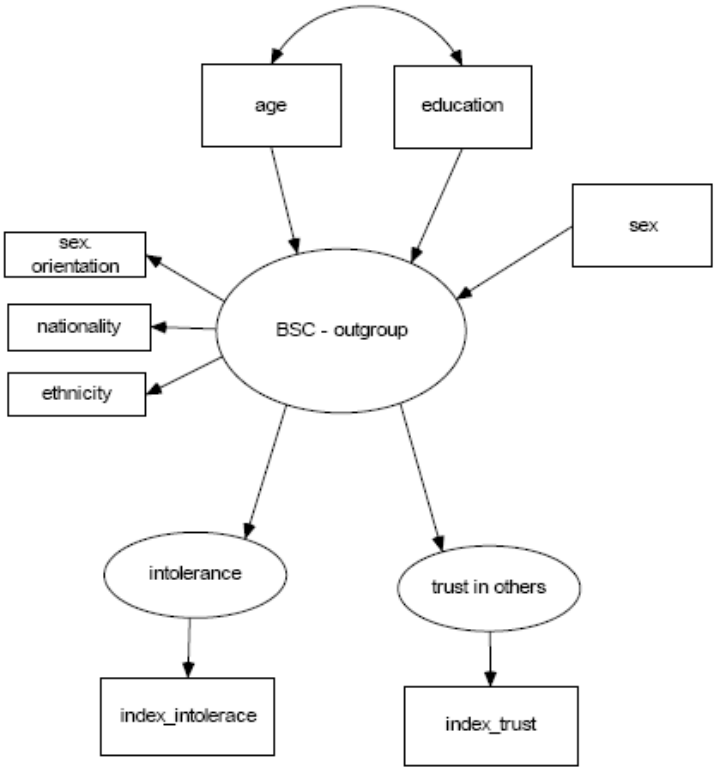


Figure 2: Measurement model for BSC Different interests / lifestyle

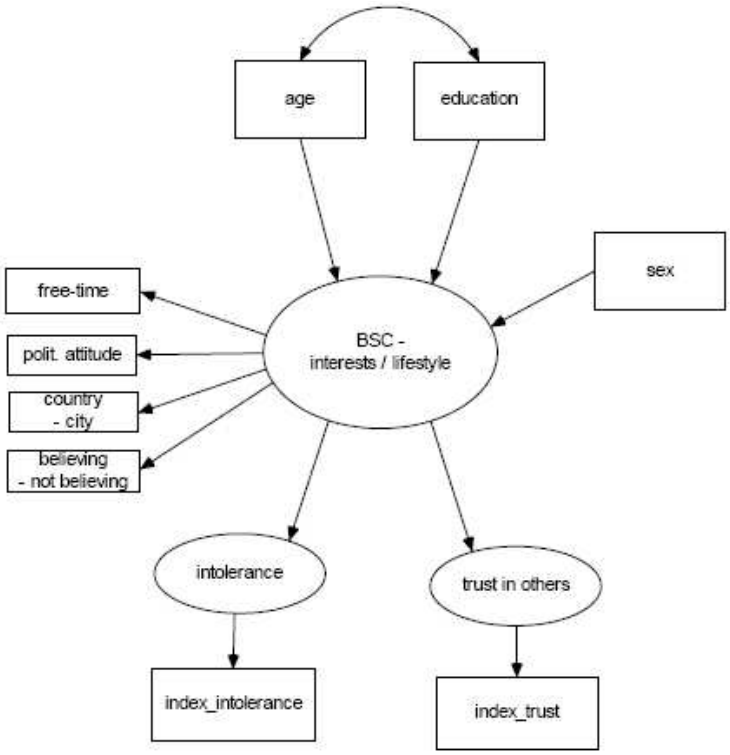
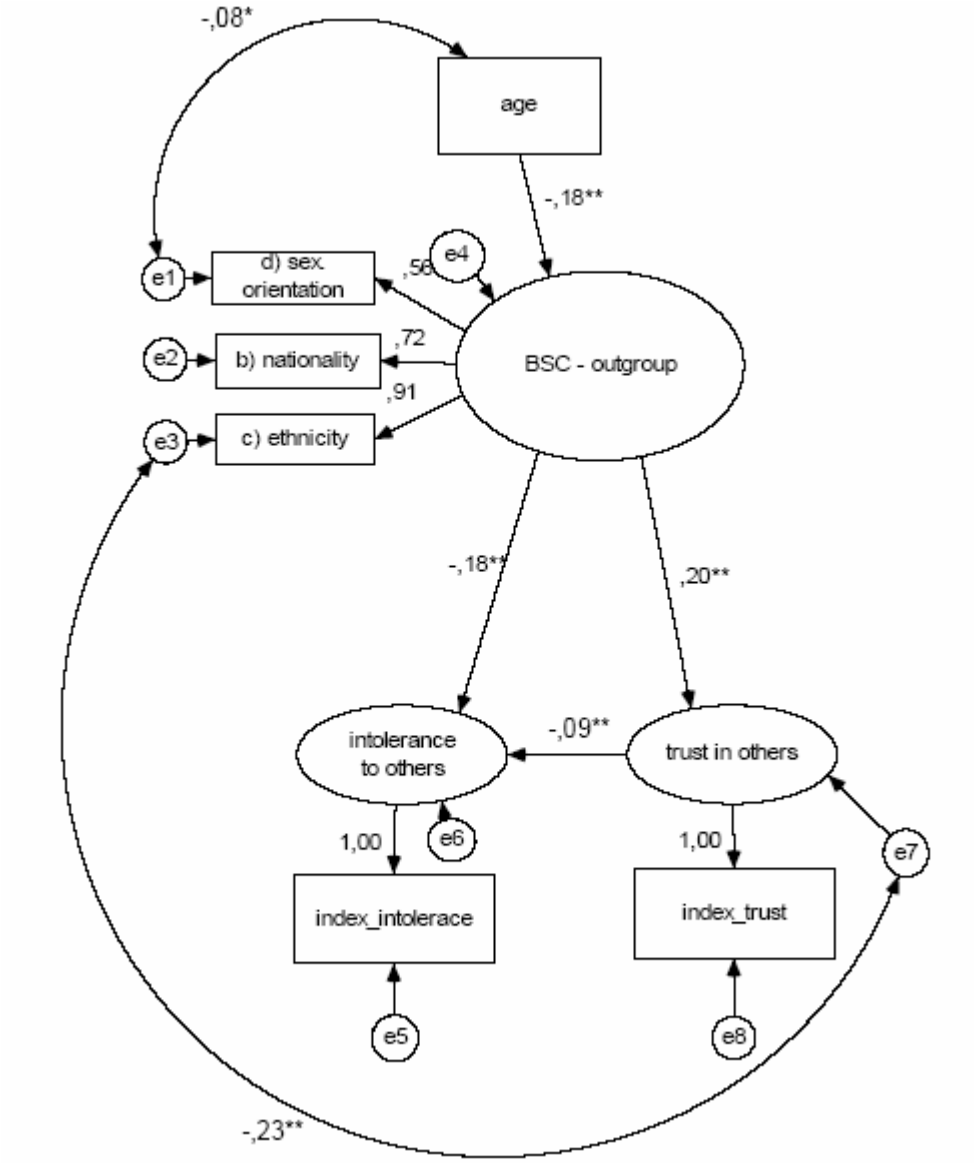
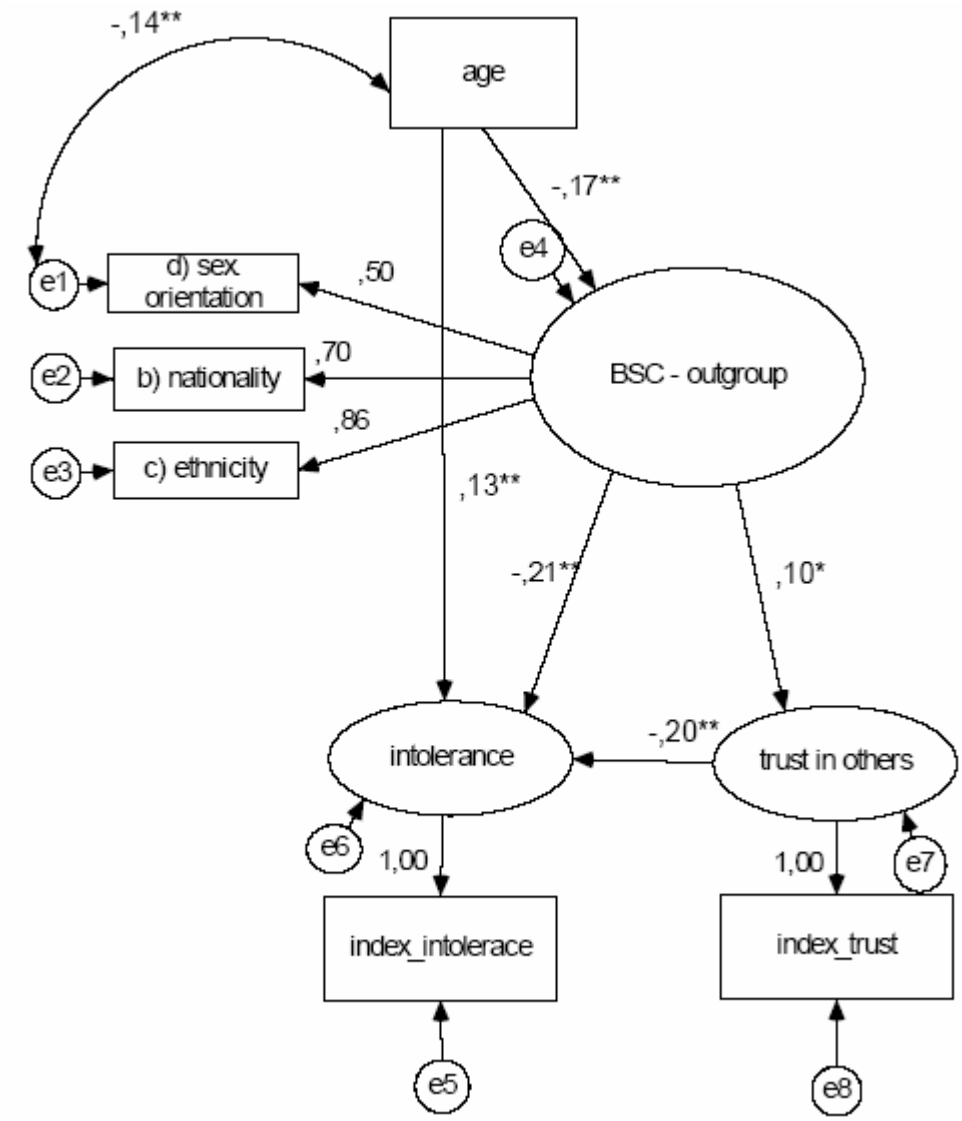


Figure 3: Measurement model for BSC Outgroups, using ISSP 2007



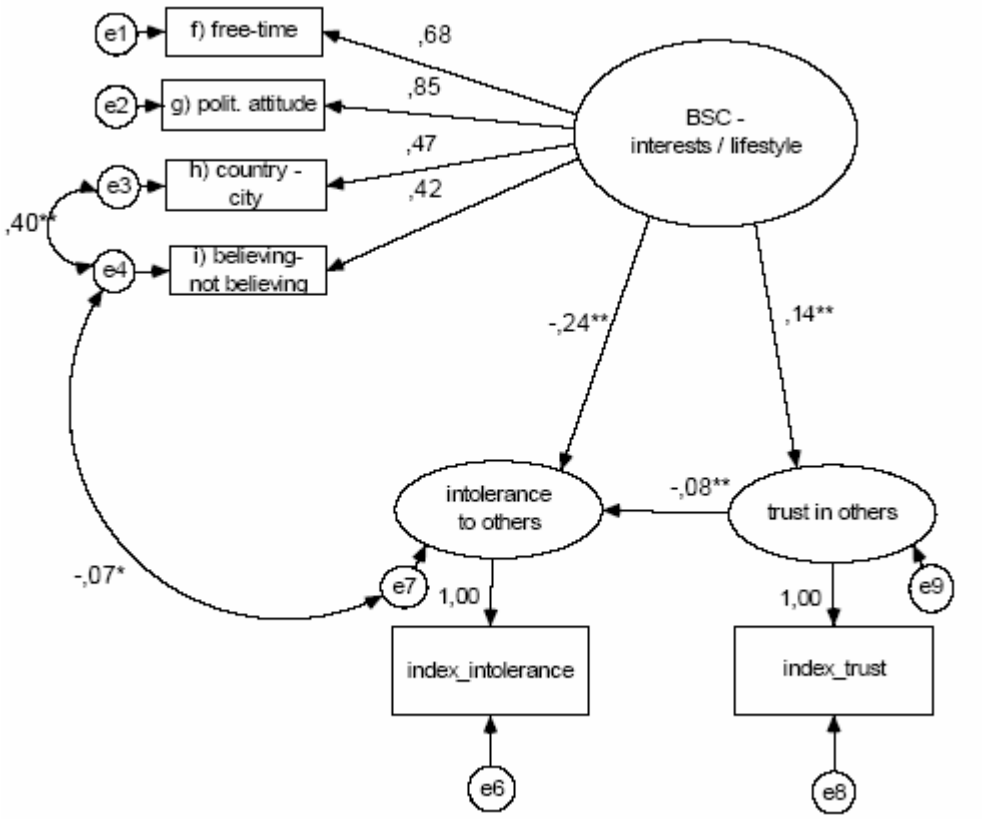
Standardised estimates: χ^2 = 8,081; DF = 6; p = 0,232 ; GFI: ,997; RMSEA: ,018
Source: Leisure Time and Sports; ISSP 2007; age 21+, N = 1049.

Figure 4: Measurement model for BSC Outgroups, using CVVM 2007



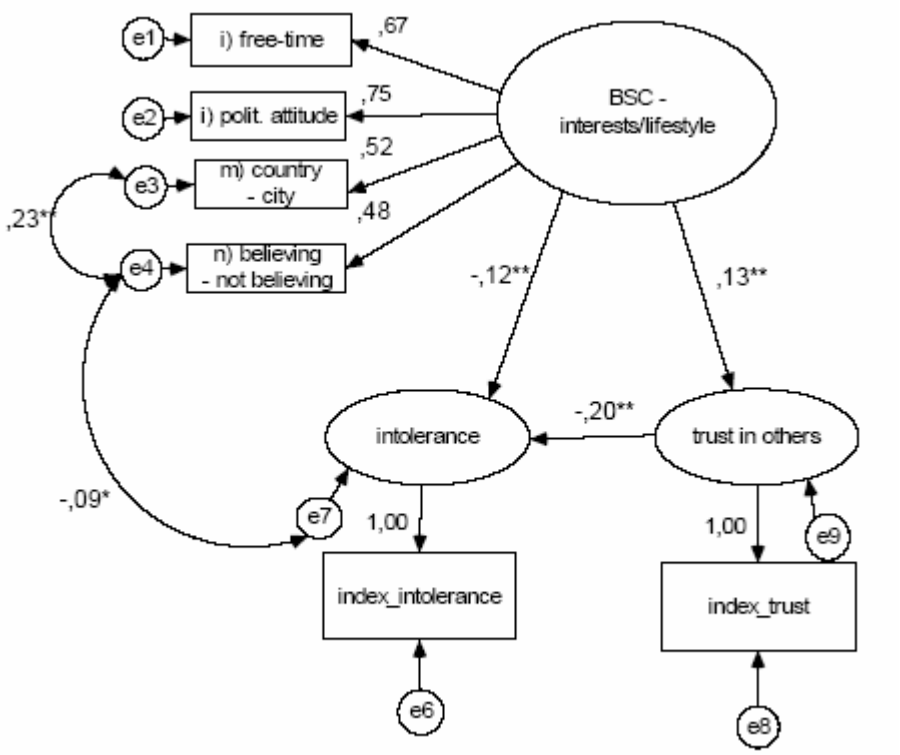
Standardised estimates: χ^2 = 4,867; DF = 6; p = 0,561 ; GFI: ,998; RMSEA: ,000
Source: Our Society, CVVM, April 2007; age 21+, N = 830.

Figure 5: Measurement model for BSC Different interests/lifestyle, using ISSP 2007



Standardised estimates: χ^2 = 10,513; DF = 6; p = ,105; GFI: ,997; RMSEA: ,027
Source: Leisure Time and Sports; ISSP 2007; age 21+, N = 1049.

Figure 6: Measurement model for BSC Different interests/lifestyle, using CVVM 2007



Standardised estimates: χ^2 = 13,747; DF = 6; p = 0,033; GFI: ,994; RMSEA: ,039
Source: Our Society, CVVM, April 2007; age 21+, N = 830.

For analysing the results, let us first compare the influence of structural socio-demographic factors.[17] Contrary to our hypotheses the socio-structural factors education and gender don't have any impact on the Bridging Social Capital. That means men and woman and people with different education[18] have the same degree of diversity in their friendship bonds. Because gender and education do not differentiate respondents according to the amount of BSC they possess these variables do not add any power of explanation to the models, that means they can be left out of the analysis without loosing model fit. The age has an impact only on the outgroups dimension of bridging social capital thereforeit was excluded from the models for interests/lifestyle. The older the respondents are the lower are their

[17] All the mentioned relationships in the text that are measured with the help of standardized regression coefficients, respectively correlation coefficients are significant at least on the 5% significance level.

[18] Nevertheless, the previous analysis of CVVM data with all items of BSC which used the separated different interest factor revealed the dependence of this latent dimension on education. This points out that the factor of *different interests* is in the society related to social status. We suppose that this dimension of friendship bonds, rather than its essential element of BSC (in the sense of overcoming distinct social differences) measures a modern form of cultural capital--the ability to become oriented and proceed in cultural diversity [Šafr, Häuberer 2007a;b].

contacts in the dimension of outgroups. Experience of elderly people with distinctively atypical social groups in their surroundings (homosexuals, ethnic groups) decreases with age. To improve the model fit of both models to the outgroups dimension of BSC a correlations between age and the measurement error e1 has to be imposed. The model fit for the models for different interests/ lifestyle were improved by imposing correlations between the measurement errors e3 and e4 and between e4 and e7 in both datasets.

To assess the construct validity alone the second part of the models pursue whether BSC, as a structural aspect, is in accordance with the theory of expected influence on the cultural dimension of the social capital. This influence can be observed in both dimensions – outgroups and interests/ lifestyle. The standardized regression coefficients point to the relatively strong effect of social diversity in friendship bonds in preventing xenophobia and in increasing general trust.

Originally R. Putnam found also a positive relationship among his social capital index (volunteerism, social trust, and sociability) and indexes of tolerance for gender/racial equality and civil liberties [Putnam 2000: 356; cf. Putnam 2007]. It has to be mentioned that he used aggregated data on American states. This in fact assumes that all people in a community feature it at large.[19]

In contrary to the results of K. Pająk [2006] when she analyzed the Polish version of the question series on the population of university students, that inspired us using the BSC-battery, we found a positive impact from both BSC-dimensions on general social trust. That means our result using the intersection of seven items from the BSC question battery in both surveys proofs the findings of R. Putnam.

Generally, the equivalent results of our analysis using two different surveys and the fact that they are in accordance with the mainstream theory point out to the construct validity of the reduced BSC scale in both dimensions.

[19] However, the issue of mutual relationship of diversity of a community and general social trust is not unambiguous [see e.g. Uslaner forthcoming].

Conclusion, discussion

We introduced a new instrument for the measurement of Bridging Social Capital and assessed the reliability and validity of it comparing the ISSP 2007 and the CVVM Our Society 2007-04 data sets. The question items survey diversity within a circle of friends in terms of socio-demographic standing, attitudes, lifestyle and preferences. The results of the factor analysis of nine entries which are comparable between the CVVM and the ISSP data sets demonstrated that we need to consider the bridging social capital at least in two different dimensions: *different lifestyle/ interests* and *outgroups.* Previous analysis of CVVM data of the whole item battery (including 12 items) revealed that the first dimension can be separated into two. It will depend on the modifications of the BSC battery in further research as to whether these two dimensions will create only one. However, the outgroups dimension will always consist of remote and in society rare characteristics.

To verify the construct validity of the BSC battery, we used the structural model derived from a theory, which suggests that heterogeneity in friendship binding (structural dimension of social capital) contributes to the tolerance of differences and supports the formation of social trust (cultural dimension of social capital). We also controlled for the influence of status in social structure. Socio-demographic variables have no impact on the bridging social capital except age influences the number of friends in the outgroups dimension negatively. We can consider bridging social capital (measured by the BSC item battery) to be equally distributed between men and women and among educational groups. Our main result is that we could proof the positive influence of bridging social capital on trust and tolerance according to the mainstream theory. It lowers intolerance and at the same time it increases the social trust.

The existence of different types of bridging social capital and their different effects advert not only to the need for further empirical research, but also to a deeper theoretical embedment. Further studies should also address the question, “To what extent this form of social capital is generated by the social heterogeneity in the weak ties (i.e. friends of our friends), and to what extent is it generated in the immediate strong ties such as family members and best friends?” So far, the theoretical framework has been connecting the bridging social capital only with the effect of weak ties. The issue of social diversity or homogeneity of a neighbourhood where an individual lives should be elaborated further as well.

Let us make a few more references and recommendations for the use of the BSC battery in further research. The line of questioning is difficult, not only for the interviewer but also for the respondent; therefore when preparing the research we should initially ascertain that the questionnaire is not overloaded with unnecessary questions, which either do not measure what we need, or measure items that were previously indicated. From this point of view we have no other recourse than to recommend the reduced battery version we used in the ISSP survey.[20] In any case, sub-indexes of BSC which can be constructed in particular dimensions as an additive scale, reach sufficient item reliability. If a future study uses a more elaborated social network approach (egocentric network) then we recommend inquiring the real number of friends, acquaintances and so on (e.g. number of friends of different ethnic origin).

In preparation for this research on bridging social capital we must consider two more important questions: 1) What dimension of social diversity in friendship binding do we want to examine, and 2) What degree of closeness of the bonds we choose (the closest friends vs. acquaintances**)**. If we examine weak ties in accordance with the current theory, we can use the question formulation asking for a "broader circle of friends", and when examining the structural dimension of social capital in more detail, we can also distinguish between neighbour's and work relationships, for example. So far less attention has been paid to the strong ties effects. An extended design of the item battery would be to combine both strong and weak ties asking for diversity of acquaintances, close friends and relatives separately. Social capital is a strongly contextual concept, therefore its measuring should also take specific conditions to which the research task relate into consideration.

[20] In the analysis presented here we did not use the three items on stratification (j, k, l in Appendix 2). Some preliminary analysis point out that they create its own dimension of bridging social capital.

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Appendix

Table A1. BSC item battery in the survey Our society, CVVM 2007-04, section on cohesion and social networks

POKYN: PODEJTE DOTÁZANÉMU KARTU OV.160.

OV.160 „Do jaké míry pro Vás a Vaše přátele platí následující výroky. Do okruhu Vašich přátel patří lidé:

VŮBEC ŽÁDNÍ	OJEDINĚLE	MÁLO	MNOHO	SKORO VŠICHNI	NEVÍ	
1	2	3	4	5	9	
a) z jiné generace než jste Vy,				1 2 3 4 5 9		
b) jiné národnosti než jste Vy (nezahrnujte sem přátele ze Slovenska),				1 2 3 4 5 9		
c) jiného etnika nebo rasy než jste Vy,				1 2 3 4 5 9		
d) s odlišnou sexuální orientací než je Vaše,				1 2 3 4 5 9		
e) se zcela odlišným povoláním než je Vaše nebo než je běžné ve Vaší rodině?				1 2 3 4 5 9		
f) Do okruhu Vašich přátel patří lidé, kteří sledují zcela odlišné TV pořady než sledujete Vy,				1 2 3 4 5 9		
g) kteří jsou podstatně chudší než jste Vy,				1 2 3 4 5 9		
h) kteří jsou podstatně bohatší než jste Vy,				1 2 3 4 5 9		
i) kteří tráví svůj volný čas úplně jinak než ho trávíte Vy,				1 2 3 4 5 9		
j) kteří mají úplně jiný kulturní vkus než máte Vy,				1 2 3 4 5 9		
k) kteří čtou jiné noviny nebo časopisy než čtete Vy,				1 2 3 4 5 9		
l) kteří mají zcela odlišný politický názor než máte Vy?				1 2 3 4 5 9		
m) Do okruhu Vašich přátel patří lidé žijící na venkově, žijete-li ve městě. Nebo naopak lidé žijící ve městě, žijete-li na venkově?				1 2 3 4 5 9		
n) Do okruhu Vašich přátel patří lidé věřící, pokud Vy jste nevěřící. Nebo naopak lidé nevěřící, pokud Vy jste věřící?“				1 2 3 4 5 9		

Table A2. BSC item battery in the Czech module of ISSP 2007 Leisure Time and Sports

Do jaké míry pro Vás a Vaše přátele platí následující výroky. Do okruhu Vašich přátel patří lidé: **TAZ: OTÁZKA „DO OKRUHU VAŠICH PŘÁTEL" BY SE MĚLA OPAKOVAT KAŽDÝCH PĚT POLOŽEK (TAZ: PŘEDLOŽTE KARTU)**	Rozhodně nepatří /vůbec žádní	Spíše nepatří /ojediněle	Částečně patří/ málo	Spíše patří / mnoho	Rozhodně patří / skoro všichni	Neví
a) z jiné generace než jste Vy	1	2	3	4	5	6
b) jiné národnosti než jste Vy (nezahrnujte sem přátele ze Slovenska)	1	2	3	4	5	6
c) jiného etnika nebo rasy než jste Vy	1	2	3	4	5	6
d) s odlišnou sexuální orientací než je Vaše	1	2	3	4	5	6
e) kteří jsou chudí, žijí ze sociálních dávek	1	2	3	4	5	6
f) kteří tráví svůj volný čas úplně jinak než ho trávíte	1	2	3	4	5	6
g) kteří mají zcela odlišný politický názor než máte	1	2	3	4	5	6
h) lidé žijící na venkově, žijete-li ve městě. Nebo naopak lidé žijící ve městě, žijete-li na venkově	1	2	3	4	5	6
i) lidé věřící, pokud Vy jste nevěřící. Nebo naopak lidé nevěřící, pokud Vy jste věřící	1	2	3	4	5	6
j) kteří podnikají, mají vlastní firmu	1	2	3	4	5	6
k) kteří pracují manuálně jako dělníci (např.: pracuje v továrně, profesionální řidič, pomocná síla, atd.)	1	2	3	4	5	6
l) kteří pracují jako kvalifikovaní odborníci (např. manažeři, lékaři, právníci, vědci)	1	2	3	4	5	6

Note: items which are not included in BSC item battery used in CVVM 2007-04 are highlighted

Table A3. Correlations of items in BSC battery for the CVVM data

	a)	b)	c)	d)	e)	f)	g)	h)	i)	j)	k)	l)	m)
a) from other generation	1												
b) other nationalities	.260**	1											
c) other ethnic groups	.170**	.595**	1										
d) other sexual orientation	.163**	.357**	.421**	1									
e) other occupation	.308**	.133**	.075*	.172**	1								
f) watching other TV programmes	.305**	.125**	.098**	.180**	.559**	1							
g) poorer people	.315**	.256**	.238**	.238**	.310**	.451**	1						
h) more wealthy people	.256**	.169**	.154**	.178**	.368**	.441**	.398**	1					
i) with different ways of spending leisure time	.317**	.112**	.108**	.117**	.407**	.547**	.387**	.490**	1				
j) other cultural taste	.280**	.161**	.132**	.173**	.398**	.557**	.423**	.434**	.662**	1			
k) reading different newspapers	.280**	.198**	.138**	.177**	.445**	.610**	.416**	.425**	.606**	.720**	1		
l) with different political opinion	.295**	.185**	.182**	.198**	.389**	.517**	.416**	.410**	.495**	.591**	.632**	1	
m) from countryside / town	.366**	.208**	.172**	.144**	.296**	.359**	.378**	.324**	.338**	.342**	.334**	.386**	1
n) believer / non-believer	.302**	.237**	.182**	.110**	.247**	.328**	.343**	.291**	.310**	.313**	.297**	.335**	.433**

Note. Pearson correlation coefficients statistically significant * p <0,05 ** p <0,01 (2-tailed)
Source: Our Society, CVVM, April 2007; age 21+

Table A4: **Correlations of items in BSC battery for the ISSP data**

	a)	b)	c)	d)	e)	f)	g)	h)	i)	j)	k)	l)
a) from other generation	1											
b) other nationality	0,278**	1										
c) other ethnic group	0,241**	0,658**	1									
d) other sexual orientation	0,176**	0,415**	0,520**	1								
e) poor people	0,141**	0,210**	0,274**	0,267**	1							
f) with different way of spending leisure time	0,205**	0,109**	0,133**	0,183**	0,314**	1						
g) with other political opinion	0,215**	0,174**	0,190**	0,259**	0,246**	0,575**	1					
h) from countryside / town	0,286**	0,164**	0,158**	0,142**	0,201**	0,314**	0,399**	1				
i) believer/non-believer	0,231**	0,174**	0,190**	0,158**	0,270**	0,255**	0,363**	0,516**	1			
j) owner of a firm	0,311**	0,241**	0,222**	0,242**	0,071*	0,194**	0,242**	0,388**	0,312**	1		
k) manual worker	0,175**	0,000	0,049	0,027	0,256**	0,184**	0,182**	0,375**	0,259**	0,243**	1	
l) qualified worker	0,262**	0,274**	0,215**	0,269**	-0,011	0,127**	0,227**	0,251**	0,201**	0,574**	0,081**	1

Note: Pearson correlation coefficients statistically significant * p <0,05 ** p <0,01 (2-tailed)
Source: ISSP 2007; age 21+

Table A5. Questions on Social Trust in CVVM and ISSP, percents

CVVM	1 definitely agree	2 rather agree	3 rather disagree	4 definitely disagree	Total
a) Most people can be trusted.	2,5	32,0	48,1	17,4	100
b) People usually try to help each other.	2,3	41,3	47,3	9,1	100
c) People don't hesitate to take advantage of others.	21,3	58,8	19,2	0,7	100

Source: Our Society, CVVM, April 2007; age 21+, N = 830.

Generally speaking, would you say that people can be trusted or that you can't be too careful in dealing with people?

ISSP	
1 People can almost always be trusted	2.4
2 People can usually be trusted	46.4
3 You usually can't be too careful in dealing with people	41.5
4 You almost always can't be too careful in dealing with people	9.7
Total	100

Source: ISSP 2007; age 21+, N = 1111.

Table A6. Intolerance for out-groups: "do not want these people as their neighbors",[21] percents – CVVM and ISSP -data

	CVVM	ISSP
i) drug addicts	93,0	91,9
c) serious alcoholics	89,5	88,0
a) people with criminal past	85,2	83,2
l) Romanies	84,6	78,5
m) members of a sect	63,8	69,9
n) Arabs	59,7	55,5
h) people having HIV-AIDS	58,2	64,0
e) Muslims	55,4	53,2
b) people with different race	43,9	37,9
f) people emotionally unbalanced	40,9	39,7
g) immigrants	38,6	38,6
d) large families	37,5	31,1
j) homosexuals	36,0	45,8
k) Jews	19,2	23,1

Source: Our Society, CVVM, April 2007; age 21+, N = 648.
ISSP 2007; age 21+, N = 755.

[21] The question was: „The following question asks about human coexistence. There are different groups of people on the list. Please, can you choose those which you would not like to have as neighbours?"