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Measuring Bridging Social Capital: the BSC battery for ascertaining diversity in the circle of friends

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Abstract: This study introduces a simple tool for measuring called Bridging Social Capital (hereinafter referred to as BSC) by means of a battery of questions regarding the differences in the circle of friends, which has been adapted for the conditions of the adult population of the Czech Republic. This battery has been used in the research of the public opinion poll "Our Society 2007-04" (CVVM). First, we verify convergent and discriminant validity of this tool using explorative and confirmative factor analysis, in which we observe whether the concept is multidimensional. The results show that BSC must be considered in three different dimensions: Different life-style, marginal/peripheral groups and diverse interests. Furthermore, we verify this using structural equation modelling to construct validity. The starting point is the theoretical model of positive effects of the structural dimension of social capital (diversity in friendly binding) on its cultural dimension (tolerance, trust). Attention is also paid to the reliability of the items of the BSC scale. In conclusion, we suggest taking advantage of the BSC battery in subsequent research.

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Introduction

This study aims to introduce a simple tool which can be used in standardized questionnaire research for measuring the social capital concept. We verify the validity of the series of questions, which ask for differences in the circle of friends, originally suggested by K. Pajak [2006] and adopted for the circumstances of the Czech adult population. This battery was used for the first time in the research of public opinion carried out by CVVM within the framework of the ongoing investigation of Our Society 2007-04.

A continual discussion has led to the question, 'What is social capital and what are its different positive influences?' Social capital can be distinguished in structural and cultural aspects (van Deth 2003). It can be understood either as social contacts and bindings (structural dimension) or as norms of reciprocity and trust (cultural dimension). It should be pointed out that the relationship between the structural and cultural dimension of social capital is not clear (Gabriel et al. 2002).

Bonding and Bridging Social Capital – Theoretical Basis

Different functioning of social bonding 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 groups. It also represents a sort of social "super-glue", which preserves the homogeneity, reinforces identity, creates reciprocity, in-group loyalty and mobilizes mutual solidarity.

Bridging Social Capital, by contrast, embraces more remote contacts which are characterized by weak bonds with the capability of going beyond the limitations of social

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

³ More on social capital concepts, paradigms and definitions can be found in [Sedláčková, Šafr 2005; Šafr, Sedláčková 2006].

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. 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 2007: 25-28).

Putnam's typology of social capital in theoretical perspective implies how social capital comes into being, and how it functions in different surroundings. It either encourages the cohesion of the whole society (bridging) or it conversely escalates in inclusion, i.e. exclusion of groups unequal in the status of its members (bonding).

David Halpern [2005: 21] connects Bridging and Linking Social Capital with the quality of life and the organization of bonds in society. Both forms are on a low level when isolated individuals follow only their own interest, for example tribes in Uganda (immoral individualism). High BSC working simultaneously with low BSC can typically be found in regions with ongoing modernization and urbanization, e.g. in central Europe (anomie).

High binding but low BSC can be found in closed communities, for instance in southern Italy in urban ghettos (immoral familialism). By contrast, in the areas where both forms of social capital are developed--such as in advanced industrialized countries like Sweden or the US--people's life prospects reach a very high level.

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" assist a person to obtain information and reach success in life, most often in the context of a job search. Mark Granovetter highlighted its importance on the cohesion of neighbouring communities and on its capability to bring about collective action of local residents.

If this is so, these feeble ties must function as linking "bridges" of some kind. For this reason, it is vitally important that within the given society a plentiful, organized social life exists; clubs, interest associations and informal activities such as petition protests are also evident, or at least that most of the inhabitants work within the midst of their residence.

When considering the individual benefits of diversity of social networks, the concept of BSC is close to the theory of structural holes, 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 toward similar people and therefore to the same information or resources. If an 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 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.

The differentiation of two forms of social capital refers to their different effects on society. BSC 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 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.

Nevertheless, to indicate Putman's critics, the problem lies in the fact that even the BSC model can, but does not necessarily, have to link people from different social classes since they do not have the same volume of it at their disposal.

Approaches to Measuring Bridging Social Capital

Despite the extensive emphasis laid on BSC in theory [Putnam 2000], the approaches to measuring it are suspiciously random. The easiest way to conceptualize it is as the extent to which individuals are connected to other participants with different characteristics. Operations of the concept of the BSC model request of 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 operation 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 generators of names or positions [see Šafr, Sedláčková 2006: 44-46]: 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, what is the extent of the status of his or her friends' homogeneity or heterogeneity. Thus, we determine individual mobilization capital--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 the individual. The certain disadvantage of this approach – which is, however, not the topic of this study – is that it favours of mainly strong ties (the closest friends).

One of the possible means of conducting BSC, which is serviceable in secondary analysis, offers data on membership in specific types of voluntary organizations [Beugelsdijk, Smulders 2003]. Authors use EVS 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. Because the questionnaire is aimed at the measurement of social capital in small localities, it surveys diversity of friendship bonds by using the question, "Do you have, in your broad circle of friends, someone who is...": a

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⁴ More information can be found on http://www.ksg.harvard.edu/saguaro/communitysurvey.

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, etc. [SCCBS short form 2002]. The more of these friends whom 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 municipality. 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 Pajak [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 and lifestyle. The author composed a series of twelve entries of answers to the question, "In the circle of my close acquaintances are people", : a) much older than me, b) with a different lifestyle than is mine, c) of a different nationality than is mine, d) with a different sexual orientation than is mine, e) who watch completely different TV programs than I do, f) are from a different circle than were the classmates at my high school, g) of the opposite sex, h) who listen to completely different music than I do, i) who read books written by different authors than I do, j) who read different newspapers and magazines than I do, k) who are of different race, l) are far more impoverished than me. The respondents could choose from the following answers: 1) very rarely or never; 2. Rarely; 3. Sometimes; 4. often, or 5. very often. It is necessary to observe 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 items a) and f) in the stated form for the common adult population.

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: Personal trust and sympathies towards foreign nationalities (Czechs, Jews, Ukrainians, Germans, Russians) and perceived affinity towards these nationalities. For the verification of the validity of the BSC scale, an experiment measuring the ascription of guilt has been included into the survey. Respondents had to evaluate the guilt in a hypothetical case of a doctor who caused a death of a female patient. In the first half of the questionnaire, it was

stated that the doctor is of Polish nationality (a member of their own group), in the second half that he is of Russian nationality (a member of a foreign group). 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.

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

The stated method of K. Pajak inspired our team with respect to the *Social and Cultural Cohesion* project in the creation of the part dedicated to cohesion and social networks within the framework of continual opinion survey CVVM *Our Society* 2007-04. We modified the BSC item battery for the conditions of the Czech adult population. Entry f) "not classmates" from the high school was removed and items h) listening to different music and i) reading of books by different authors were replaced by more general questions regarding ways of spending leisure time and with respect to different cultural taste. After discussions within the team, the battery was enhanced by the conflicts perceived in the Czech Republic: Differences in political attitudes and conflicts between the countryside and towns. Besides the perspective of wealth and poverty, we newly included, within the framework of the stratification aspect of social networks, a factor of "different occupation than the one of the respondent or that is common in his or her family". The item battery 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.

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 question has been formulated relatively simply as inquiring for "friends". Essential to this, is that the BSC battery has been preceded directly by a question concerning the quantity of contacts with friends who were explicitly specified as work colleagues, people from the neighbourhood and other surroundings. It can therefore be assumed that the respondents did not only indicate their closest friends as they did in the Polish study; that would in effect refer rather to the binding example of social capital.

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).⁵

The results of this research are shown in Table 1, indicating the frequency of the answers.⁶ In general, it can be stated that our friends are rather of similar characteristics, they do not differ from our own lifestyle. Most Czech friends spend their leisure time in a different way than they do, join different cultural activities and have different preferences (viewing different TV programmes, reading different newspapers). Among our friends there are often also people with completely different occupations and different political opinions, from the countryside or conversely from a more urban area, and are more wealthy. But only 6-10 % of respondents report at least a few friends with very dissimilar characteristics – with different nationality, from other ethnic groups or with other sexual orientation.

We should add that in the case of TV programmes, newspapers, 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. Missing values are not affected by the aspects of gender and education. Concerning only different occupations and cultural taste, "I do not know" answers came more — often from people with a primary education. In the case of age it is neither surprising that there is a higher number of "I do not know" answers (in the age category of 21-29 years) concerning political opinions and religious beliefs, nor that the respondents in the age category of sixty years and above are more often unaware of characteristics of friends, with respect to different occupations and various ways of spending leisure time.

Owing to the high quantity of missing answers regarding entries f) – different TV programmes and k) – reading of different newspapers, we decided to eliminate these items from further analysis (they have more than 15 % of the "I do not know" answers). The high amount of respondents that are unaware of such information regarding their friends is not that surprising, taking into account the fact that the lifestyle is not initially apparent, and perhaps that the knowledge of this is not relevant to the study group. It is also possible to assume that in the case of the two areas stated above people are not able to discriminate fine divergences with their friends. This is a difference that has not been defined in greater detail. Statement k)

⁶ CVVM *Our Society* research asks population of fifteen years old and older using quota selection. 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.

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.

did not distinguish, for example, factual and tabloid papers from others, as was the case with the item, countryside or town. Moreover, both entries associate greatly with the general category j) different cultural taste (see Appendix 2). In contrast, we decided to hold information on whether the individual has, as a friend, someone who is less fortunate, or more wealthy (g, h), has a different political opinion (l) or is not a believer, or believer (n) in further analyses, although they also have a high number of missing values (11-13 %). As well, it is because we consider them as substantive from the perspective of the functioning of BSC-unlike entries f) and l). By removing the entries f) and k), the size of analyzed cases increased in number to 604 cases involving only the valid answers for all the entries in the series.

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

		2.				
	1. none at all	sporadica lly	3. a few	4. lot of	5. almost everyone	do not know
a) from other generation	18,1	32,1	35,6	12,4	1,3	,4
b) other nationalities	65,6	21,8	9,9	1,6	,3	,8
c) other ethnic groups	80,1	13,2	5,0	,7	,1	1,0
d) other sexual orientation	80,6	7,9	5,3	,7	,1	5,4
e) other occupation	15,3	19,3	25,4	31,2	6,0	2,7
f) watching other TV programmes	10,0	16,5	26,3	28,4	1,5	17,2
g) poorer people	20,8	26,3	30,2	9,1	,5	13,1
h) more wealthy people	15,3	25,3	32,3	14,1	2,0	11,1
i) with different ways of spending leisure time	9,7	24,6	35,3	21,9	3,1	5,5
j) other cultural taste	13,3	23,3	38,6	14,5	1,4	8,9
k) reading different newspapers	9,2	17,7	28,6	20,5	2,0	22,0
l) with different political opinion	11,0	24,0	34,5	16,9	1,5	12,0
m) from countryside / town	19,7	24,9	33,5	16,2	3,2	2,5
n) believer / non-believer	23,1	26,2	26,5	9,8	1,5	13,0

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

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 we create an additive index. Such a summary index, without entries f) and k), would reach a high item reliability (Cronbach's Alpha = 0,851). 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. In the following part of the text we will verify the one or multi-dimensionality of the BSC scale using confirmatory factor analysis.

The exploratory factor analysis⁷ including all entries of the battery divided the items into three different dimensions, or factors⁸ (see Table 2, correlative matrix of all entries of the battery in table A2 in Appendix 2). The first dominant factor, which explains one third of a variance, we called *different interests* and it includes diversity in the cultural taste, spending of free time, political opinions and more wealthy people among friends. The second factor includes the qualities which are among our friends more or less sporadic; these are distinctly remote *outgroups*; that is ethnicity, nationality and sexual orientation. The last factor, which explains only 3,5 % of the variance, we labelled as different life style, which is fulfilled with religious diversity, the difference of countryside or town, different generations and the answer to "poorer people". The structure and interpretation of these factors is similar to the results of Polish research [Pajak 2006]. The results of the factor analysis of the Polish data are shown in table A3 in Appendix, nevertheless the direct comparison with the Czech surroundings is not possible regarding the specificity of the students' population and the different setting of the factor analysis. The method we have chosen, the method of Varimax rotation⁹ (which enables mutual correlation), indicates the interconnectedness of the first factor, different interests and the third factor, different life style (R = 0.68). The entries of different occupation and less fortunate (poorer) people are also connected to both of these dimensions.

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⁷ 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].

⁸ Considering that fact that the initial eigenvalue at the third factor is closely under the limit of the Kaisers criterion with value 1, despite the results of scree test (see figure F1 in Appendix) we decided to consider a three-factor solution, i.e. to use a critical value of 0,978 for extraction of factors. In the case of inexplicitness of both of the criterions it is recommended to randomly divide a data file and analyze each of the sub-files separately [StatSoft 2007]. We randomly divided the data file into two parts and the factor analysis has been carried out on each of them separately. We repeated this procedure ten times, each time one result contained a three-factor solution.

⁹ We obtained a similar result while using default settings of factor analysis with Principal component as extraction method with Varimax rotation. The factors explain the following percentage of the variance: *different interests* 28 %, *outgroups* 16 % and *different life style* 16 %.

Table 2. Factor analysis of BSC. Matrix of factor structure. Oblimin rotation.

		Factor	
	1	2	3
j) different taste among friends	,826	,242	,515
i) different spending of the leisure time among friends	,825	,229	,562
1) different political opinion among friends	,695	,278	,585
h) more wealthy people among friends	,633	,254	,501
e) different occupation among friends	,563	,119	,501
c) different ethnicity among friends	,177	,860	,256
b) different nationality among friends	,199	,687	,346
d) different sexual orientation among friends	,251	,459	,209
m) countryside/ town among friends	,488	,286	,722
n) believers/non-believers among friends	,425	,231	,588
g) poorer people among friends	,569	,340	,570
a) different generation among friends	,435	,237	,567
variance explained total 47,6 %	34,1 %	9,9 %	3,5 %

Source: Our Society, CVVM, April 2007; age 21+; N = 604.

Note: Method of extraction Maximum Likelihood with Oblimin rotation

Goodness-of-fit Test: $\chi^2 = 70,392$; df = 33; Sig. 0,000 Mutual correlation of factors after the rotation: F1 and F2 = 0,29; F2 and F3 = 0,36; F1 and F3 = 0.68

The Dimensions of the BSC Index - Convergent and Discriminant **Validity**

To test the convergent and discriminant validity¹⁰ of the BSC battery we will use confirmatory factor analysis. 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 fact that both the original concept [Pajak 2006] and the performed exploratory factor analysis--of which the

¹⁰ Neither the question of the so called face and content validity is negligible. Eight sociologists from the research department of Social Structure Studies (Sociological Institute, Academy of Sciences of the Czech Republic) co-operated with authors on the preparation of the BSC battery of questions in mutual exhausting discussions.

disadvantage is that it is impossible to explicitly determine the belonging of constituent manifest variables to concrete factors [Urbánek 2000: 157]--discovered three factors of BSC. Furthermore, we will test the hypothesis about the existence of three dimensions of diversity within friendship networks and mutual relationships.

Firstly, we verify in Model 1 whether the whole battery of BSC can be reduced into one general latent variable. As the statistics of quality of the model in the Table 3 show, the solution with only one factor must be rejected ($\chi^2 = 835.9$; df = 54; GFI = 0.853).

In Model 2, depicted in Figure 2, we test our hypothesis regarding the existence of three dimensions in the battery of BSC, which was documented by the previous findings. The value of χ^2 is statistically significant even in this model (p = 0,000), which should lead to its rejection, nonetheless the mutual rate of χ^2 and the degree of freedom has a value of 3,4 ($\chi^2 = 174,98 \text{ df} = 51$). The goodness of fit GFI (0,96) also indicates a good model-to-data fit. 12

Table 3. Statistics of the model fit. Confirmatory factor analysis.

	Model 1	Model 2	Model 3
	one factor	three factors	two factors
Chi ²	835,894	174,982	321,193
Df	54	51	53
P	0,000	0,000	0,000
GFI	0,853	0,968	0,936
AGFI	0,778	0,952	0,906
RMSEA	0,126	0,052	0,075

Source: Our Society, CVVM, April 2007; age 21+, N = 604.

The question, whether it would be possible to simplify this model to a two factor solution, still exists. The high correlation between the factor of different interests and different lifestyle (0,78) refers to its mutual interconnection, which is why we merged these two factors in Model 3. This model is shown in Figure 2. The two-factor structure shows a better fit of the model with the data than the one-factor solution in Model 1; nevertheless, it does not reach all the criterions for a suitable model, particularly the relative chi-square,

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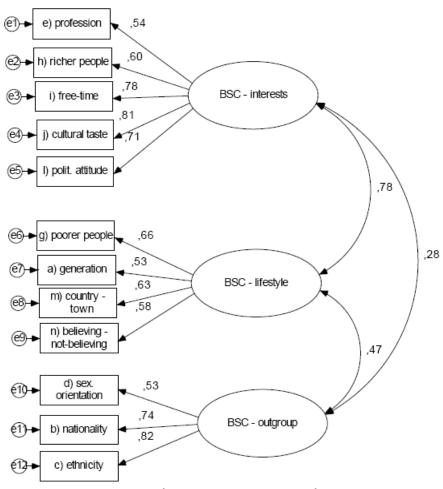
¹¹ The logic of the application of the chi-square in structural modelling is reversed than in testing frequency distribution. If the value of χ^2 is significant (p < 0.05), optimal (relatively good) model can be in spite of that indicated provided that the share (of) χ^2 and the number of degrees of freedom, so called. relative chi-square (normed chi-square), does not exceed 5. Value for the robustly valid models should come near to 1 from above [Urbánek 2000].

¹² The index of goodness of fit GFI acquires the value of 0–1, where the maximum represents a complete convergence of the model with the data. Values higher than 0,90 are recommended. The adjusted version AGFI takes the degrees of freedom into the consideration [Urbánek 2000].

which reaches the level of 6,1 (χ^2 =321,2; df = 53; GFI = 0,936). Another indicator of the model fit – RMSEA index (0,075) also shows that we should prefer Model 2 with three factors (RMSEA = 0,052).¹³ However, the statistical differences between the two- and three-factor model are not distinct; moreover, the mutual correlation between the first and the second dimension is considerably high (0,78). It can happen that when the battery of BSC is further empirically used, only a two dimensional structure of differences in friendship bonds will indicate an optimal solution to the latent variable.

Figure 1. Model of Measuring Bridging Social Capital. Confirmatory Factor Analysis.

3-factor solution, standardized estimates



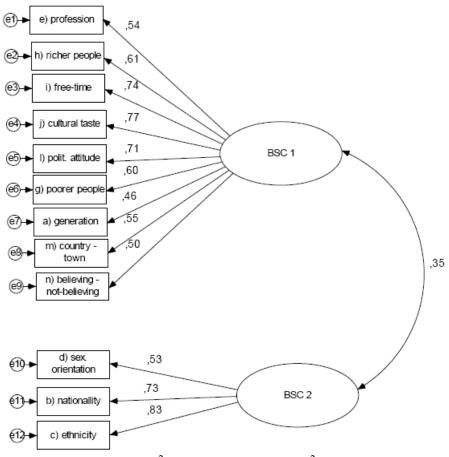
Standardised estimates: $\chi^2 = 174,982$; DF = 51; χ^2 /DF = 3,431

Source: Our Society, CVVM, April 2007; age 21+, N = 604.

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¹³ RMSEA index (root mean square of approximation) refers to plausibility of the model in case its value does not exceed 0,08 or 0,06 [Urbánek 2000; Hadjar 2004].

Figure 2. Model of Measuring of Bridging Social Capital. Confirmatory Factor Analysis. 2-factors solution, standardized estimates



Standardised estimates: $\chi^2 = 321,193$; DF = 53; χ^2 /DF = 6,060 Source: Our Society, CVVM, April 2007; age 21+, N = 604.

We can draw the conclusion that the model with three factors in Figure 1 is a suitable model for the description of data from the BSC battery. Thus, it can be calculated that 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 different interests, different lifestyles and outgroups. In the next section of this paper we will pursue whether all of these dimensions of differences within social networks have effects expected on the basis of theory. In other words, from now on we will pay attention to the question of construct validity of the item battery of BSC.

Model of the BSC effects - construct validity

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. The level of individual benefit stemming from the diversity within the social network (the theory of structural holes, instrumental action with the use of social resources) is not considered in this paper. As well, the object of this paper is not to verify the proposition about irregular distribution of BSC among different groups in society, namely social classes; more precisely it is to propose the possibility of access to this type of social capital [see Šafr, Sedláčková 2006: 27-28]. We propose a key question – whether social differences in the circle of friends really act, in accordance with the Putman thesis, as a mediator of 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 three revealed dimensions have positive effects on social life?

Construct validity is achieved "if the data discovers such a relationship between the given indicator and other variables that we would *a priori* expect on the basis of the theory" [Kriedl, 2004: 92]. As we mentioned before, the theory assumes that experience with the strange actors increases tolerance to different people, lowers prejudice, and strengthens reciprocal understanding. To verify this, we used structural models performed separately for the three BSC dimensions: different interests, lifestyle and outgroups. These dimensions are represented by corresponding items from the battery of questions as latent constructs that have been revealed by factor analysis in the previous portion. 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) [van Deth 2003], which we test against the empirical data.

In the model, we will monitor the influence of directly observed variables, partly of the structural socio-demographic factors, by which we mean the status of the individual in society (age, sex, education), as well as his psychological predispositions for establishing new social contacts (extroversion),¹⁴ or the amount of formal participation in voluntary associations on the bridging social capital factor.¹⁵

We assume the influence of all of these factors in the first part of the regression model on the latent dimensions of BSC since the volume of BSC is diverse between individuals and various social groups. At the same time we control for their influence, which enables us to monitor direct effect of the three BSC's latent dimensions, which represent the impact of the structural dimension of social capital on its cultural component.

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 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.¹⁶ 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, Romanies, Jews etc.).¹⁷ The more groups the respondent has mentioned, the higher intolerance towards social differences that he or she has shown (more detailed information about this index can be found in [Katrňák, Rabušic 2002]).

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¹⁴ The dimension of personal traits extroversion (E) – introversion (I) (H. J. Eysenck) we measure simply by the means of agreement with three statements (scale 1-4) by which the respondent evaluates himself: a. "active, vigorous"(E+), b."he likes to meet new people"(E+), c. "in the conversation with unknown people more reserved" (I+). The extroversion index was created as total of a+b+c.

¹⁵ We measure participation by a simplified method using one question: "in their free time people sometimes participate in activities of organisations such as sport clubs, leisure associations, charities, political parties etc. How often do you participate in the activities of such organisations?" the answer is on the following scale: 1 very often, 2. quite often, 3.rarely, 4. never

¹⁶ We measure the *Index of generalized trust in others* by summarizing the degree of agreement with the following statements "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". You can find more detailed information about measuring the social trust in [Šafr, Sedláčková, 2006:46-48]. The three questions on trust (see table A4 in apendix) were combined (A + B - C) into a scale of Generalised Social Trust (Cronbach's alpha = 0,73).

 $^{^{17}}$ See also table A5 for descriptives in the appendix. The intolerance index has Cronbach's alpha = 0.85.

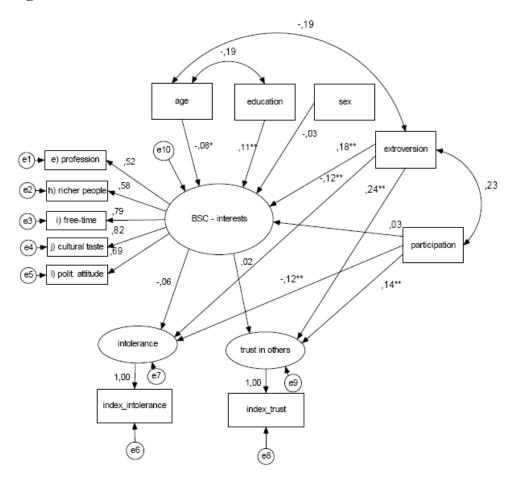


Figure 3. Measurement model for BSC – different interests

Standardised estimates: χ^2 = 244,822; DF = 47; GFI = ,955; AGFI = ,926; RMSEA = ,069 Source: Our Society, CVVM, April 2007; age 21+, N = 604.

Note: \rightarrow standardized regression coefficients, \leftrightarrow correlation coefficients statistical significance of regression coefficients * p < 0.05 ** p < 0.01

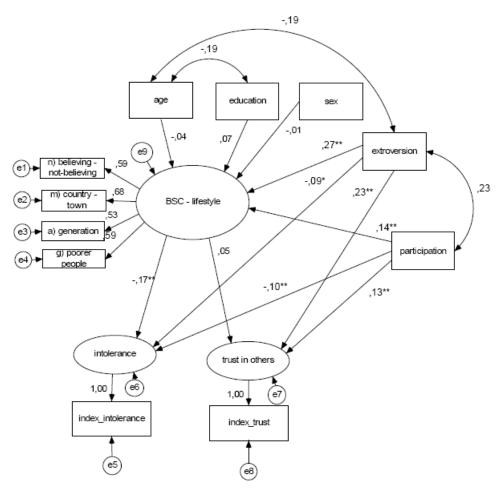


Figure 4. Measurement model for BSC – lifestyle

Standardised estimates: $\chi^2 = 186,044$; DF = 37; GFI = ,964; AGFI = ,936; RMSEA = ,067 Source: Our Society, CVVM, April 2007; age 21+, N = 604.

Note: \rightarrow standardized regression coefficients, \leftrightarrow correlation coefficients statistical significance of regression coefficients * p < 0.05 ** p < 0.01

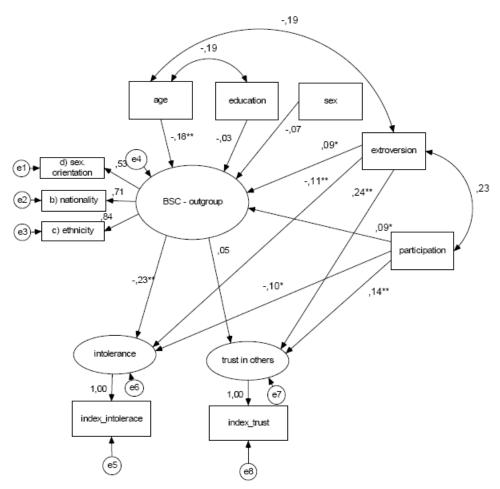


Figure 5. Measurement model for BSC – outgroups

Standardised estimates: $\chi^2 = 161,766$; DF = 28; GFI = ,965; AGFI = ,932; RMSEA = ,073 Source: Our Society, CVVM, April 2007; age 21+, N = 604.

Note: \rightarrow standardized regression coefficients, \leftrightarrow correlation coefficients statistical significance of regression coefficients * p < 0.05 ** p < 0.01

The model estimated for each of the three dimensions of BSC are displayed in figures 3-5.¹⁸ The indices of the goodness of fit for GFI and RMSEA point out that all three dimensions demonstrate satisfactory fit of the model to the data. However, the rigorous statistic of relative chi-square in all models slightly exceeds the value 5. First, let us compare the influence of structural socio-demographic factors, psychological predispositions and civic participation on individual latent dimensions of BSC.¹⁹ In the case of gender the insignificant regression coefficient points out that men and women have the same degree of diversity in their friendship bonds. The volume of BSC is influenced by age, particularly in the case of outgroup dimensions. Experiences of elderly people with distinctively atypical social groups in their surroundings (homosexuals, ethnic groups) shows that BSC decreases with age. The influence of education is visible only in the dimension of distinct interest; with education the level of BSC increases (0,11). This relationship demonstrates the partial validity of the thesis concerning uneven distribution of social capital among social strata, however only in the case of cultural differences in social networks such as taste, free time, or political opinions. This points to the fact that socially privileged persons gain more from the strength of weak ties.

It is not surprising that extroversion as a central psychological predisposition for creating new social contacts has a positive influence on all three BSC dimensions. Extroverts are characterized by sociability and an assertive nature. On the other hand, introverts are reserved, thoughtful and self-sufficient. They do not need to necessarily be asocial, simply they tend to have smaller groups of friends and do not usually feel comfortable in establishing new social contacts. We used extroversion in our model since it monitors the effects of diversity in friendship bonds of intolerance and social trust, independently on the ability to establish new contacts.

The thesis dealing with the influence of weak bonds on the cohesion of a neighbouring community supposes that public involvement increases the range of vertical bonds [Granovetter 1973]. In the case of different lifestyle and outgroup dimensions, the value of latent variables significantly increases with the participation in activities of voluntary organizations such as sports clubs, charities or political parties. Nevertheless, it is questionable to interpret the influence of participation on the diversity of friendship networks

 18 The models were tested in the AMOS 6.0 software. The entries were covariant coefficients.

¹⁹ All the mentioned relationships in the text that are measured with the help of standardized regression coefficients, respectively correlative coefficients are significant at lest on 5% of the significance level.

unidirectionally. We meet friends in clubs and associations; as well, it is our friends who bring us to those clubs and associations.

The aim of this work is not to find the most suitable model of BSC which takes into account its irregular distribution in the society, but it is the verification of validity of the proposed BSC battery in Czech conditions. The influence of social structure, individual predispositions together with formal civic participation is considered to have the only controlling purpose. To assess the construct validity alone--the second portion of models that pursues whether BSC, as a structural aspect, is in accordance with the theory of expected influence on the cultural dimension of the social capital--is crucial. This influence can be observed only in the area of intolerance, and in the dimensions of lifestyle (-0,17) and outgroups (-0,23). The standardized regression coefficients point to the relatively strong effect of social diversity in friendship bonds in preventing xenophobia. It should be noted that the items of the outgroup dimension have a skewed distribution. However, a positive effect of diversity in friendship on tolerance is substantially proved in the dimension of different lifestyle in which the items have a normal distribution. At the latent dimension of BSC, different interests, there can be found no statistically significant positive effect on intolerance.

The value of the group intolerance index decreases when the value of the BSC factors--different lifestyle and outgroups—increases, even when we control the influence of social standing, psychological predisposition of extroversion and civic participation. It seems that the friendship bonds in those two areas work as a mediation with the atypical and positive in accord with the initial assumption – they increase inter-group tolerance or more precisely, they decrease xenophobia. R. Putnam found this positive relationship among his social capital index (volunteerism, social trust, and sociability) and indexes of tolerance for gender/racial equality and civil liberties. It has to be mentioned that he used aggregated data on American states [Putnam 2000: 356]. This in fact assumes that all people in a community feature it at large.

On the other hand, in the case of the second component of the social capital's cultural dimension which is social trust, we do not find significant correlations in any latent dimension of BSC. The expected influence of diversity in a friends' circle measured by the BSC battery on generalized social trust was not confirmed. The same result was found by K. Pajak [2006] when she analyzed the Polish version of the question series on the population of university students. This finding refers to two issues: Either the measuring instrument is not valid or the initial theoretical hypothesis of the influence on social trust itself is not valid. In

support of the second proposition, we can argue that due to higher mobility and plurality in contemporary societies, trust originates primarily inside closed groups. Campbell's studies proved that trust only exists in "face-to-face groups", i.e. consisting of friends or relatives [Campbell 2000]. However, we can not verify this thesis because intergroup trust (e.g. to neighbours or to members of the voluntary association wherein the respondent is a member) is not available in the data set.

The absence of the relationship between trust and diversity of friendship bonds is not so surprising, if we consider that the R. Putnam proposed relationship of different structural dimension of social capital--formal participation in civic organizations and social trust as its cultural components--is considered ambiguous [Evers 2002], and was not proven in many of the countries noted [e.g. Newton 2001; in CR see Sedláčková, Šafr 2007].²⁰

Generally, the results indicate that we can think about the construct validity of the BSC scale only in the dimensions of *different lifestyle* (generation, country / city, religion, poverty) and *outgroups* (nationality, ethnicity, sexual orientation), while the dimension of *different interests* (taste, free time, political opinion) is not in accord with the theoretical hypothesis that deals with the reciprocal relationships of cultural and structural dimension of the social capital.

Conclusion, discussion and recommendation for further usage of the BSC battery

The aim of this paper was to introduce a new instrument that was developed directly for the measuring of BSC. This instrument is a battery of questions adapted for the conditions of adult population of the Czech Republic, which by means of 14 items surveys diversity within a circle of friends in terms of socio-demographic standing, lifestyle and preferences. The results of the factor analysis of the BSC question series demonstrated that we need to consider the bridging social capital in three different dimensions: different lifestyle, outgroups and different interests. Nevertheless, the high correlation of the first and third factor point out that even the two-factor solution can be regarded as acceptable. It will depend on the modifications of the BSC battery in further research as to whether these two dimensions will

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²⁰ In all of the three models of BSC dimensions, on the data from the research CVVM this positive connection between social trust and civic participation is statistically significant, which is most likely connected to the different methods of measuring the civic participation in individual studies.

create only one. The existence of different types of bridging social capital and their different effects adverts 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.

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). When controlling for the influence of status in social structure--personal predispositions in forming contacts as well as civic participation--the results in the individual dimensions of BSC point out that it is possible to think about the construct validity--i.e. about eufunctional influence of BSC--only in the first two latent dimensions--Different lifestyle, and outgroups--which lower the intolerance of different groups. The theoretically assumed relationship of social trust with the diversity in the circle of friends was not proved in any of the dimensions. It is therefore characteristic for the factor of different interests that only its distribution is in the society related to social status, in the model represented by education. 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, which is in fact not opposed to the theory of individual social capital in the terms of socially embedded sources [Lin 2001].

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 its reduction to the sociologists that are interested in using the BSC item battery. Primarily, it is the exclusion of items f)--different TV programmes and k)--different newspapers, which are noted for a great occurrence of the TV.

don't know" response.²¹ In any case, sub-indexes of BSC which can be constructed in individual dimensions as an additive scale, reach sufficient item reliability.²² If a future study uses a more elaborated social network approach (egocentric network) then we recommend asking for the number of friends, acquaintances and so on. However, it is suitable to do it only in outgroup (e.g. number of friends of different ethnic origin) and lifestyle dimension (e.g. number of friends from different generation).

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.

In terms of examined theoretical basis of the positive influence of the structural components of social capital on cultural dimension, we can recommend use; also, eventually the development of items related to latent dimension of *different lifestyle* and *outgroups*. Social capital is a strongly contextual concept, therefore its measuring should also take into consideration specific conditions to which the research task relate.

²¹ We have attempted to modify BSC item battery in the Czech version of the international survey ISSP 2007 Leisure Time and Sports (see Appendix 2). In this set of questions, there is a stratification aspect of diversity among friendship bonds emphasized (new items j, k, l). Thus the latent dimensions are not fully identical with the solution from CVVM 2007-04 data.

²² Reliability coefficients Cronbach's alphas: different lifestyle (a, g, m, n) = 0,70; outgroups (b, c, d) = 0,71 and different interests = 0,82.

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Appendix

Appendix 1. 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	SKC VŠIC	_		Ν	ΙΕV	′Í	
1	2	3	4	5	5			9		
a) z jiné gener	ace než jste Vy,			1	2	3	4	5	9	
b) jiné národ Slovenska),	nosti než jste Vy	(nezahrnujte	e sem přátele		2	3	4	5	9	
c) jiného etnik	a nebo rasy než jst	te Vy,		1	2	3	4	5	9	
d) s odlišnou s	exuální orientací n	ež je Vaše,		1	2	3	4	5	9	
e) se zcela odl ve Vaší rodině	išným povoláním n ?	ež je Vaše ne	ebo než je běžn		2	3	4	5	9	
f) Do okruhu Vašich přátel patří lidé, kteří sledují zcela odlišné TV pořady než sledujete Vy,					2	3	4	5	9	
g) kteří jsou podstatně chudší než jste Vy,					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	
	Vašich přátel patří naopak lidé nevěř			1	2	3	4	5	9	

Table A2. Correlations of items in BSC battery

	a)	b)	c)	d)	e)	f)	g)	h)	i)	j)	k)	1)	m)
a) from other generation	1												
b) other nationalities	.260**	1											
c) other ethnic groups		.595**	1										
d) other sexual orientation	.163**	.357**	.421**	1									
e) other occupation	.308**	.133**	.075*	.172**	1								
f) watching other TV programmes		.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		.237**	.182**	.110**	.247**	.328**	.343**	.291**	.310**	.313**	.297**	.335**	.433**

Pearson correlation coefficients statistically significant * p < 0.05 ** p < 0.01 (2-tailed)

Figure A1. Differences among friends. Factor analysis. Scree plot

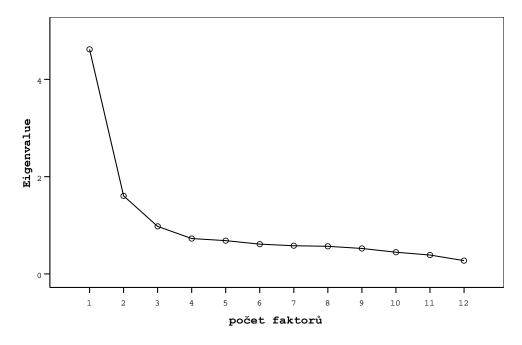


Table A3. Differences among friends among university students in Poland. Factor analysis. Factor loadings from rotated solution Varimax

		Factor	
	outgroups	lifestyle	Different interests
different race	0,87	0,07	-0,05
different nationality	0,81	-0,15	0,15
different sexual orientation	0,61	0,16	0,32
different music	-0,06	0,79	0,11
different newspapers and magazines	0,01	0,76	-0,03
books by different authors	-0,15	0,73	0,23
different TV programmes	0,20	0,51	0,04
far poorer people	0,22	0,36	0,08
other gender	0,35	0,26	0,31
different lifestyle	0,01	0,21	0,80
different circle than the classmates at high school	0,25	0,14	0,61
older people	0,08	-0,06	0,66
variance explained total 51 %	17 %	19 %	15 %

Source: [Pajak 2006]; the sample from students at Warsaw school of economics, age 19 - 37 let; N = 118; method of rotation Varimax

Table A4. Questions on Social Trust, percents

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

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

Table A5. Intolerance for out-groups: "do not want these people as their neighbors" percents

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

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

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²³ 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?"

Appendix 2. 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 žiiící 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 iste 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