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## **Reproduction of Social Capital: How Much and What Type of Social Capital Is Transmitted from Parents to Children?**

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### **Abstract**

The article analyzes the extent of the transmission of social capital from parents to their children. Three measures of social capital are used: social trust, participation in social activities and useful social connections. The data from the longitudinal extension of the PISA collected in the Czech Republic in 2003 are used. First, bivariate correlations of three types of social capital are analyzed. Second, using logistic regression, four theoretical models (the social capital model, the family background model, the personality model and the contextual model) are tested. As dependent variables we use the social trust of fifteen-year-olds and their participation in four types of extra-curricular activities. The analysis reveals only a weak intergenerational transmission of the same social capital types (“intergenerational line-up”) and almost no intergenerational transmission of different social capital types (“intergenerational cross-over”). No theoretical model is particularly strong in explaining the social trust of children. The social trust of youths remains largely unexplained and is created irrespectively of family cultural and financial capital. Conversely, participation in extra-curricular activities is highly socially stratified. It is substantially better predicted by all theoretical models, though their effect is dependent upon the activity at stake. The author concludes that social capital is comprised of several different forms of capital, which are only distantly related. The finding that family background has a relatively weak impact on children’s social trust but a strong effect on their participation of extra-curricular activities has profound implications for public policy.

### **Keywords**

Social capital; social trust; political socialization; generations; the Czech Republic; youths.

**JEL-Codes:** A12, Z00, Z13.

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## 1. Introduction

There is wide agreement that social capital evaporates unless it is ceaselessly recreated. Social capital is often described as the fragile set of relationships between and among people (including trust), which is highly and immediately influenced by changes in its context. The researchers revealed many contextual factors that can create or destroy social capital (e.g. Rothstein and Stolle 2002). However, it is also clear that communities exhibit a rather stable stock of social capital over time: “networks and trust are strongly embedded in social structures, which continue over time and are concentrated in particular cities, regions and states” (John and Morris 2003: 2). For instance, there are clear geographical patterns of distribution of generalized trust (Delhey and Newton 2004).

There is also ample of evidence that despite the fundamental institutional changes, the quality and quantity of social capital in post-communist countries is still to a large extent affected by the communist past (e.g. Raiser et al. 2002). For instance, compared to long-standing democracies, the level of trust in post-communist countries remains substantially lower, while social networks for mutually beneficial exchanges seems to be almost as important as they were during communism. Are the still imperfect state institutions, corruption and ineffective legal system to be blamed? Or is the creation of social capital to at least some degree an autonomous process?

Though it is difficult empirically to separate social capital from the context in which it is created, it is likely that social networks and trust have at least partially a life of their own. Despite objective changes in institutions (e.g. freedom of speech, introduction of the merit principle etc.), people tend to retain habits, values, beliefs and the ways of life they were socialized in. For instance, if a person spent most of his life in a society full of denunciations and betrayals and has strong personal experience with that situation, it is unreasonable to expect him to say “most people can be trusted”.

The key question here is: to what extent is social capital reproduced from one generation to another? If social capital (including distrust or a reluctance toward social engagement, etc.) is transmitted through generations, relatively irrespective of the changes in institutions, the legacy of communism could last for a very long time. The elements of “bad social capital” can be transmitted from one generation to another relatively independently from the positive institutional changes in society. In this respect Ralf Dahrendorf warned early in the 1990s that the emergence of civil society is a lengthy process and includes the replacement of generations (Dahrendorf 1991: 100):

*“The third condition of the road to freedom is to provide the social foundations which transform the constitution and the economy from fair-weather into all-weather institutions capable of withstanding the storms generated within and without, and sixty years are barely enough to lay these foundations.”*

However, knowledge about the reproduction of social capital is also important for explaining other research and policy questions. Since the publication of Putnam’s *Bowling Alone* (2000) there has been a hot debate about the decline of social capital over time, especially in the United States (for a review of this debate, see Stolle and Hooghe 2004a). Putnam (2000) argued that the decline in the stock of social capital (e.g. signing fewer petitions, belonging to fewer organizations that meet, meeting with friends less frequently etc.) is caused by generational replacement. According to Putnam, younger age cohorts, socialized in the prosperous economic conditions of the 1960s and after, are less inclined to engage in community life and in politics and also less likely to trust others. The decline of “good social capital” was usually attributed to the failure of conventional socialization mechanisms within families and schools, and it was argued that in contrast to previous assumptions, “it is not so clear that social capital replicates itself over time” (John and Morris 2003: 3). Unlike analysts in post-communist countries, authors from the United States and

most other developed countries fear that social capital is *not* adequately transmitted between generations and therefore that a positive historical legacy can be broken.

The degree of intergenerational transmission of social capital, whether good or bad, has important theoretical and policy ramifications. Unfortunately, despite the huge amount of literature on social capital, we still know very little about the actual processes through which it is created and even less about the extent to which it is reproduced from one generation to another. This is mostly due to drawbacks in research designs and measurement instruments.

First, literature on this topic has tended to lack research designs capable of sharply delineating the nature of intergenerational differences in social trust and civic engagement, their origins and long-term development, and their interconnections over time (Jennings and Stoker 2004: 344). In addition to other problems, ordinary cross-sectional surveys always blur causality. For instance: Do people become more trusting as a result of close and pleasant interactions in voluntary associations or is it quite the opposite – people who are already more trusting are those who join voluntary associations? Or, similarly, do people feel successful, satisfied, and happy because they trust, or is it the other way round? Do people engage in associational activities because their parents did? Given that longitudinal research is very expensive and demanding, some of the problems could have been substituted with a more complex research design. One possible solution would be cross-national analysis of younger generations compared to their older counterparts (multi-generational designs), in combination with studies that surveyed young generations decades ago (Stolle and Hooghe 2004a: 165). However, social capital studies have focused almost exclusively on the study of adults and thus have overlooked an important aspect for explaining how social capital is actually generated (Stolle and Hooghe 2004b: 426).

Second major limitation of many social capital studies is the implicit assumption of the mutual interchangeability of social capital measures. Most empirical research on social capital utilizes two key indicators (Jennings and Stoker 2004: 343). One is trust in one's fellow human beings, usually termed 'social trust' or 'generalized trust.' A second major indicator is civic engagement (involvement in voluntary organizations and the performance of volunteer work). However, some authors have argued and empirically demonstrated that there also exist other types of social capital, with different origins and effects (Mateju and Vitaskova 2006). For instance, in the post-communist context a very important type of social capital seems to be the individual capacity to participate in informal networks based on mutually beneficial exchanges (ibid.). This type of social capital is usually operationalized as useful social connections that one can mobilize when necessary and the ability to help others by applying their influence and social contacts. In this sense, social capital very much resembles clientelism and "*pratekcija*"<sup>1</sup>.

Third, the number of social capital predictors has usually been somewhat limited. Because analyses have worked mostly with comparative survey data (World Values Study, Eurobarometer etc.), theoretically important variables (such as self-esteem, world mastery, etc.) have usually been unavailable.

The aim of this article is to overcome some of the drawbacks mentioned above and thereby contribute to the understanding of how social capital is created and reproduced. The rich datasets from the Czech PISA-L are used to try to understand the determinants of the social capital of fifteen-year-olds and analyze the effectiveness of various theories that seek to explain the creation and reproduction of social capital. Consideration is given to three types of social capital and they are compared in order to determine the extent to which they correlate with each other within a single generation and between generations. Also examined are a

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<sup>1</sup> "Pratekcija" or "proteksia" is a Russian, respectively Israeli, slang term for connections that involve special benefits or favors.

number of possible determinants of social capital, including family background, personality factors and contextual variables.

## 2. Theory

### 2.1 Investigating different types of social capital

It was mentioned above that there are many different concepts, and many empirical operationalizations, of social capital. Social capital is often used to encompass not only generalized trust and civic participation but also informal social networks, in terms of the social support a person receives, trust in institutions, in-group trust, etc. In this study interrelationships between three types of social capital are analyzed: social trust, participation in social activities and access to informal networks based on mutually beneficial exchanges.

Because we are examining social capital relations not only within but also between generations, it would be useful to systemize our investigation and introduce some new terms. The study of interrelationships between various types of social capital is one dimension of our investigation. The second dimension is the investigation either within or between generations. When we are analyzing social capital within a single generation it is possible to speak of intragenerational social capital; when we are analyzing social capital between two or more generations we should speak of intergenerational social capital relations.

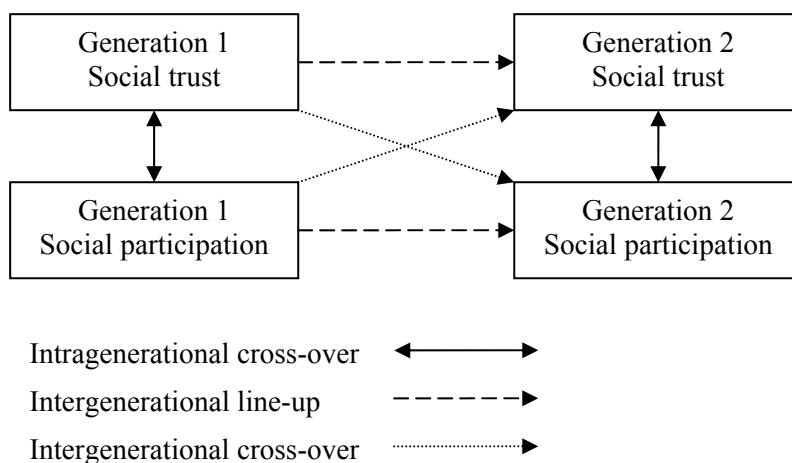
Combining these two dimensions, we get three types of investigation between different parts of social capital. We will label these types: intragenerational cross-over, intergenerational line-up, and intergenerational cross-over (see Table 1). For the sake of convenience, we can depict these terms in a simplified figure that contains only two types of social capital and two generations (see Figure 1).

**Table 1. Different types of investigation of social capital interrelationships**

Examination of social capital between generation	Examination of different types of social capital	
	No	Yes
No	---	Intragenerational cross-over
Yes	Intergenerational line-up	Intergenerational cross-over

Source: Author

**Figure 1. Investigation of social capital interrelationships**



Source: Author

In this article we are focusing on intergenerational relations of social capital (both “line-up” and “cross-over”). We are primarily interested in learning whether parents pass their social capital on their children, if so to what extent, and what type of social capital. In so doing, we can draw upon two independent traditional strands of research. First, there is a huge amount of research on social capital in general and on trust in particular. Second, there is a

good deal of literature on youths and adolescents relevant to our topic. In the remainder of this theoretical sub-chapter, we will first briefly review these two strands of research and then combine them into four theoretical models of social capital development.

2.2 Basic types of social capital theories

The theories of social capital can be classified according to various aspects. For the purpose at hand, the most important dimensions are: (a) the presumed stability of social capital over time, and (b) the level (individual or societal) the social capital indicators refer to. These two basic dimensions help us to create four-class typology (Table 2).

Table 2. Typology of social capital theories

		Proneness to change	
		Relatively low	Relatively high
Level	Individual	Socialization theories	Success and well-being theories
	Societal	Society-centered model	Institutional theories

Source: Author

“Individual level theories” take social capital indicators (trust, participation in social networks) as individual characteristics of concrete persons. The presumed predictors of social capital subject to analysis are, for instance, socio-economic status, education, gender, age, family background, personality, etc. By contrast, “societal level theories” take social capital as a collective characteristic of social relationships that is sustained by cultures, communities and social institutions. Social capital indicators are thus seen as a property of society rather than individuals. For instance, survey’s trust is interpreted as the citizen’s estimation of the trustworthiness of the society around them (Putnam 2000: 138; Newton 2001: 203-4). These theories focus on the systemic or emergent properties of societies and their central institutions such as corruption and the legal and political system, and not individuals but societies are compared. These two perspectives – individual and societal – are not necessarily incompatible. On the contrary, social capital as probably a multi-level concept works both on the individual and the societal level. Both individual and societal theories can be further broken down into other theoretical sub-types.

As for societal theories, we can distinguish between society-centered theories and institutional theories (Rothstein and Stolle 2002)<sup>2</sup>. According to *society-centered theories* (Banfield 1958; Fukuyama 1995; Putnam 2000), the capacity of a society to produce social capital among its citizens is determined by its long-term experience of social organization anchored in historical and cultural experiences that can be traced back over centuries (Rothstein and Stolle 2002: 4). By contrast, according to *institutional theories* (Hall 1999; Levi 1998) social capital does not exist independently of politics or government in the realm of civil society, but is heavily influenced by (the effects of) government institutions and policies (Rothstein and Stolle 2002: 7). Among other things, by assuming the constant modification of personal feelings in response to changing circumstances, these theories also implicitly anticipate a much higher variation of social capital over time.

As for individual level theories, there are two major types of theories that can be distinguished. According to *socialization theories*, the social experiences in the family, youth associations, peer groups and other social interactions, including school experiences, have a more significant impact on social capital than experiences later in life (Stolle and Hooghe 2004b: 425). This view suggests that the core values of social capital are acquired early in life (Piaget 1932; Kohlberg 1981), and that they remain present throughout the life cycle (Sapiro 2004). The body of research indeed supports the view that trust, reciprocity, etc., are created

<sup>2</sup> It is certainly possible to distinguish many more theoretical sub-types. For instance, Newton and Delhey (ibid 7) name four societal theories: the voluntary organizations theory, the networks theory, the community theory and the societal conditions theory. Because in this article we are focusing on individual level theories, we will not explore the societal theories in detail.

early in life, through socialization within families, schools, peer groups, participation in community projects and youth associations (Kohlberg 1981, Jennings and Niemi 1981; Flanagan and Sherrod 1998). This approach admits that changes also occur during adulthood (partly as a result of job experiences, family transitions, or period effects), but in general these changes do not tend to interfere with the basic pattern established early in the life cycle (Stolle and Hooghe 2004b: 423).

However, current political socialization research also shows that the years between 14 and 25 are a period of great flexibility and openness (Flanagan and Sherrod 1998), and thus there is a considerable room left for adult influences. Unlike socialization theories, the *success and well-being theory* stresses adult life experience: those who have been treated kindly and generously by life are more likely to trust than those who suffer from poverty, unemployment, discrimination, exploitation, social exclusion or divorce (Newton and Delhey 2002: 5). This theory can be tested by analyzing the relationship between social trust and a set of individual variables, like education, income and socio-economic status.

### 2.3 Social capital and youths

Though we have already mentioned the findings from political socialization in connection with social capital, until very recently research on youths (including political socialization) was almost completely disconnected from the discussion on social capital:

*“While most of the current social capital literature departs from a socialization logic (at least implicitly), it is rather striking to observe that the insights gained from the research tradition on political socialization are hardly integrated into this new field of inquiry. There is indeed a potential conflict between the assumptions of social capital research and the findings of the political socialization literature.” (Stolle and Hooghe 2004b: 423)*

Even now are only a few articles that successfully combine these two strands of research (Stolle and Hooghe 2004b, John and Morris 2003, Jennings and Stoker 2004). Besides political socialization literature, however, there are other lines of youth research valuable to social capital studies, most importantly research on youths’ extra-curricular and leisure activities (McNeal 1999, Bartko and Eccles 2003, Rose-Krasnor et al. 2006). To the best of our knowledge, they have never been directly linked to social capital formation.

There are several reasons why it is important integrate youths and social capital research. First of all, to study children and young people is the only way in which to analyze the stability of social capital over time and thus to help resolve the question of the “plasticity” of social capital. Life course changes in social capital (social trust, participation in associational activities) can only be detected if we begin measuring social capital early in a person’s life.

Second, though the actual level of social capital stability is under hot debate, there seems to be enough empirical evidence that at least some aspects of social capital are relatively stable over time and their rudiments are formed early in life. There also appears to be enough empirical evidence to claim that youth experience is relevant for future social engagement (Johnson et al.1998). For instance, Stolle and Hooghe (2004: 431) found that those people who were already socially active when they were young are more likely to be engaged in associations as adults and are much more likely to be targeted by mobilization efforts in their later life (ibid.: 428). Similarly, the adult level of generalized trust is strongly related to the level of generalized trust during adolescence (ibid 434). Jennings and Stoker (2004: 354) found that involvement in a number of extra-curricular activities while at high school significantly influences subsequent civic involvement. If social capital is at least partially stable over time, knowledge of a youth’s social capital could be “a window into the future”.

Third, an analysis of a youth’s social capital can shed some light on the means of the intergenerational transmission of social capital. Social capital measurement early in life is not

influenced by attained education, socio-economic status, etc., so it is possible to see to what extent the parents' social capital is transmitted directly or indirectly.

Fourth, the social capital of youths is usually found to be associated with many positive educational, social and developmental outcomes. For instance, it was discovered that student involvement in extra-curricular activities is associated with higher educational aspirations and expectations (McNeal 1999, Otto & Alwin, 1977; Spady, 1970), higher levels of academic achievement (Camp, 1990), higher levels of educational attainment (Hanks & Eckland, 1976; Otto, 1975; Spady, 1970), and higher levels of self-esteem (Yarworth & Gauthier 1978). Therefore, even though the social capital of youths may not be very stable over time, it is still very important and can be "consumed" even at a young age.

#### *2.4 Theoretical models of social capital creation*

In this article we will examine the individual level theories and try to test several mechanisms through which social capital could be created at the individual level. Drawing on two lines of research reviewed above, we distinguish four types of theoretically interesting models of how the social capital of youths is created. We will label these models as follows:

- Social capital model
- Family background model
- Personality model
- Contextual model

We will briefly describe these models and discuss the available empirical evidence of their validity. In the first model, it is assumed that social capital is transmitted directly from parents to children. If parents are involved in social networks and take part in voluntary associations, it is likely that children will gradually grow into these or similar networks. Religious communities are probably the most persuasive example. However, the same argument holds for the transmission of general trust. If parents distrust others, they are likely to rear their children in a similar way. Moreover, if it is true that in civic organizations there is more trust than elsewhere, children are directly socialized into "the world of trust". Surprisingly, this theory of direct social capital reproduction has only rarely been stated and empirically tested. A few of the longitudinal and intergenerational studies that have been carried out suggest that there is indeed a certain level of intergenerational line-up. However, the amount of transfer of social trust and membership of associations across generations seems to leave relatively little room for other influences (John and Morris 2003: 6).

To the best of our knowledge, there is no empirical study of the intergenerational line-up and the cross-over of parents' participation in informal social networks. However, related research can provide us with at least some hints. Important research has been conducted on the impact of a parent's social capital on children's academic achievement (Coleman and Hoffer 1987, Teachman, Paasch and Carver 1997, Hofferth, Boisjoly and Duncan 1998). It has been shown that extra-familial social ties have a significant effect on students' achievement. If participation in extra-curricular activities is indeed associated with academic achievement (McNeal 1998) then we can expect at least an indirect association between parents' and children's social ties.

The second model is based upon the hypothesis that social capital is determined more by personality characteristics than by experience. Eric Uslaner (2000) argues that we learn trust early in life from our parents and that social trust is not dependent on the experience of reciprocity but mostly on two other core personality characteristics: optimism and the capacity to control the world, or at least one's own life. Trust is a value that "reflects an optimistic view of the world" (Uslaner 2000: 572). Scheufele and Shah (2000) found that self-confidence and opinion have a strong direct impact on social trust and civic participation. It has also been documented that children with special personal characteristics select extra-curricular activities more than others do (McNeal 1998).



It has been found that the basic level of happiness is biologically given – heritability of happiness is more than 40 (Lykken 2003)<sup>3</sup>. Similarly, the study of monozygote twins revealed a surprisingly high level of determinism of the inclination for particular hobbies and leisure activities. It is just possible that we do inherit from our parents important genetic “social capital makeup”. Though we know very little about these factors and it is impossible to separate genetic and socialization factors, at least in a standard social science research design, we should include as many individual or personal variables as we can. These “personality factors” should include the tendency to cooperate or compete with others, the perceived capacity to control the world, self-esteem, intelligence, and other variables. Since some of these variables may be blurred by actual success, it is useful to control for socio-economic variables. For instance, according to Newton and Delhey (2002: 19) the real underlying factors are success and well-being and not personality factors themselves:

*“Contrary to the social-psychological theories, optimism and being in control of ones own life is rarely associated with social trust. ... Our results show that optimism and control are associated with success and well-being, but the latter are more generally and more strongly associated with trust. This, in turn, suggests that it is not early socialisation, but adult experiences that are important for trust”*

The third model suggests that children’s social capital is created mostly by family structure and the family’s socio-economic background. It has been shown that socio-economic status (SES) and education are important determinants of the political participation of both adults and youths (Milbraith and Goel 1977, Verba et al. 1995, John and Morris 2002). Nie et al. (1996) found that political socialization, levels of trust, and voluntary activities transferred across generations are strongly linked to measures of parental socio-economic status. The positive association between education and SES on the one hand and social trust on the other was explained in the suggestion that social trust is most likely to be expressed by winners in society. The socio-economic effect on social trust, however, is not as clear as the effect on civic participation. Education seems to have a strong effect on social trust in the United States (Putnam 2000) and in some other, but by no means all, western countries. Matějů and Vitásková (forthcoming) and Sedláčková (2006) found that SES is almost irrelevant in explaining social trust in the Czech Republic.

It has been observed that students with a higher socio-economic standing have a distinct advantage in involvement in extra-curricular activities (McNeal 1998). Hanks and Eckland (1976) even stated that children’s participation in extra-curricular activities may represent an avenue through which parents with higher SES transmit various types of social and cultural capital to their children. Because SES is relatively stable across generations (Blau and Duncan 1967), social capital could be recreated in every new generation with the help of SES rather than transmitted directly. Not only the socio-economic status of family, but also its internal structure could have effect on children’s social capital. As Coleman (1988) noted, nuclear families can provide children with more social capital than single-parent families. He also noted that the number of children in a family spreads out the parents’ attention and thus decreases the children’s social capital: “The number of children represents, in this interpretation, a dilution of adult attention to the child” (Coleman 1988: S111).

The fourth model is based upon the hypothesis that the creation of social capital is supported (or blocked) by the immediate environment youths are in, and in particular by their school and peers. Education has repeatedly been shown to be associated with higher levels of social capital. Nevertheless, though there is long-established tradition of interrelation between school and social capital, social capital has been almost exclusively taken as an independent variable. Researchers analyzed the effect of children’s social capital on academic achievement

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<sup>3</sup> Heritability is the fraction of the variability in a trait that is caused by genetic differences.

and on the rate of dropouts, etc., but they omitted the question of to what extent school and peers are active agents in creating or destroying social trust and social networks.

Luckily, there are notable exceptions to this omission. McNeal (1999) found that school structure and context are significant determinants of students' participation in extra-curricular activities. John and Morris (2003) found the school climate to be a significant predictor of social trust. Torney-Purta et al. (2004: 394) detected a significant correlation between generalized trust and trust in schools and open class discussion. They then concluded that schools "may have special niche as trusted site in which preparation for citizenship can take place even when national institutions are unstable (ibid. 393)."

A very interesting but to the best of our knowledge un-researched topic is the role of peers in creating or destroying social trust. Two opposite hypotheses can be formulated in this regard. According to the first one, in-group trust (such as between friends and peers) does not spill over into generalized trust, but it is instead even negatively correlated (John and Morris 2003). In other words, we do not learn to trust people we do not know by observing people we do know. Stolle (1998) finds that longer membership in voluntary associations is associated with more particularized trust (faith in other group members), not with more generalized trust (faith in strangers). The opposing hypothesis is that "trust in persons results from past experience with concrete persons" (Offe 1999:56). In this sense, trust is the result of individual experiences of social interactions with peers. Consequently, positive relationships with peers can foster generalized trust.

### **3. Methodology**

#### *3.1 Research questions and the plan of analysis*

In this study we pose three interrelated questions:

1. To what extent is social capital transmitted from one generation to another?
2. Is the extent of social capital transmission different for different types of social capital?
3. Do the mechanisms of this transmission differ for different types of social capital?

Our most general hypothesis is that the three forms of social capital we are analyzing – social trust, social networks and useful social connections – differ both theoretically and empirically. In other words, we hypothesize that they are created and reproduced by different mechanisms and have different roots. We can verify this hypothesis in two steps. First, we analyze the correlations between all types of social capital measures (those of parents and their children). We compare the level of social capital between and within generations. Second, we analyze four theoretical models of the determinants of social capital to see to what extent they "work" in explaining the particular type of social capital. If the first step is aimed at detecting the congruence and discrepancies between social capital types, the second step is aimed at explaining them.

In a series of logistic regressions we test the four models described in the theoretical part (2.4) above. According to Model 1, social capital is directly transmitted from parents to children. According to Model 2, social capital is realized through family background characteristics. According to Model 3, social capital is generated by the personal traits of children that are not directly determined by family socio-economic status. According to Model 4, social capital is generated mainly by the extra-familial social milieu of children – the school and peers. In model 5, all theoretically relevant variables are included in the model. In models 3 and 4 we control for the socio-economic status of the family. In all models we control for gender and the size of the town.

### 3.2 Data

The data we use come from the PISA-L. This is a longitudinal extension of the OECD's Program for International Student Assessment (PISA),<sup>4</sup> which started in the Czech Republic in 2003. The original PISA questionnaires for students and schools were supplemented by another questionnaire for parents and one more for students. These four datasets were merged to form a unique source of data. A total of 6320 Czech fifteen-year-old students from 251 schools participated in the first wave. The parents' questionnaire was filled out and returned in 4185 cases.

Though our intention is to analyze the intergenerational transmission of social capital, some aspects of social capital cannot be approached as those of adults. If it makes sense to measure general trust in the same way for both youths and adults, participation in voluntary associations and access to informal networks based on mutually beneficial exchanges makes little sense in the case of young people at the age of fifteen. Fifteen-year-olds are still too young to participate in voluntary associations in the same way adults do, at least in the context of the Czech Republic.

However, involvement in various extra-curricular activities and out-of-school activities (like sport, Scouts, music clubs, etc.) is a good indicator that can be taken as more or less a direct precursor to involvement in adult associational activities<sup>5</sup>. Beck and Jennings (1982: 102), for instance, found that extra-curricular activities are better predictors of adult political participation than parental socio-economic status, parental civic orientation, parental participation, and than the experience of civics classes. Torney-Purta et al. (2001), in a massive comparative study of 14-year-olds in 1998, also showed that extra-curricular participation had a significant impact on political knowledge and the future likelihood of voting.

It is more difficult to determine the youth indicator of access to informal networks based on mutually beneficial exchanges. Though many youths surely have their own contacts that they can use in case of need, their peers are not usually in a position of power: peers cannot help them get into university, gain access to privileged doctors, etc. Though it would be very interesting to study whether youths have their own strategies for creating their own useful contacts, to the best of our knowledge nothing like this has been done and there is no measure of this in our data set either. However, we have instead a similar set of questions, in which both parents and their children are asked about the parents' useful social contacts. We can then compare the children's and the parents' assessments of the parents' participation in informal networks based on mutually beneficial exchanges.

In sum, the following social capital measures are used:

- generalized trust of children,
- generalized trust of parents,
- extra-curricular activities of children,
  - sports,
  - language courses,
  - art and music clubs,
  - scout, tourist clubs,
  - composite index of extra-curricular activities

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<sup>4</sup> The PISA project collects extensive information on the background, educational achievement, and schooling context of national samples of 15 year-old students in many countries. See <http://www.pisa.oecd.org>

<sup>5</sup> Henceforth we will use the term "extra-curricular activities" for all structured activities that are not part of the school curriculum. In the Czech Republic, most such activities actually take place outside the school setting. The analysis of our data revealed that all correlations of involvement in extra-curricular activities are statistically significant. In further analysis we use both the overall index of involvement in extra-curricular activities and particular types of activity independently.

- parents' associational activities,
- social networks of parents - children's view (composite index),
- social networks of parents - parents' view (composite index).

The indicators we use, the wording of the social capital questions, and the construction of indices are summarized and described in Appendix<sup>6</sup>.

#### 4. Results

##### 4.1 Univariate and bivariate analysis of social capital measures

Let us begin with a description of basic social capital indicators (see Table 3). The level of social trust of both children and their parents is rather low in the Czech Republic compared to other OECD countries. However, it corresponds to previous research on adults' social trust in the Czech Republic. In these studies the level of trust in the past ten years varied between 18% and 23 %, and at 20% in 2002<sup>7</sup> (Kalous 2002).

The level of trust among youths is somewhat higher than their parents. Nevertheless, it is still well below the level of trust found in similarly aged American youths (Jennings and Stoker 2004: 351) and British youths (John and Morris 2003). In these surveys, more than 45% of youths responded that people can be trusted. That is more than twenty percentage points higher than the Czech youths. Jennings and Stoker (2004: 351) also found that social trust follows a U-curve during the life cycle, with the age around sixteen being one of the peaks of trust in others<sup>8</sup>. If this is really so, then young Czechs do not trust any more than their parents – or may actually trust even less once they reach adulthood.

**Table 3. Social capital measures.**

	Female	Male	Total
Social trust of children *	23.5	26.0	24.8
Social trust of parents *	19.6	21.9	20.7
Extra-curricular activities of children – Sport **	30.5	44.9	37.8
Extra-curricular activities of children – Language courses **	12.9	8.4	10.6
Extra-curricular activities of children – Music and art groups **	30.1	16.7	23.4
Extra-curricular activities of children – Scout, tourism, church **	13.0	13.7	13.4
Parents associational activities ***	36.5	36.2	36.3

Notes:

\* % who think most people can be trusted

\*\* % who attend at least once a week

\*\*\* % who participate at least sometimes

Other social capital measures are difficult to compare with similar data. Among extra-curricular activities, it is clear that sporting activities are the most common and that boys participate in such activities significantly more than girls. On average, more than one-third of children attend a sports group at least once a week. Almost one-quarter of fifteen-year-olds attend music or art clubs. Significantly more girls take part in these activities. Attending language courses is much less common and again it is more typical for girls than boys. The last group of activities includes Scouts, outdoor adventure groups and church groups. Given the fact that Czech society is not religiously oriented and participation in a youth church group is somewhat rare, we can hypothesize that of the 13% of youths who responded

<sup>6</sup> For technical information on the international PISA (including the construction of some indices we use) see OECD (2005).

<sup>7</sup> The survey that is closest to PISA-L (2003).

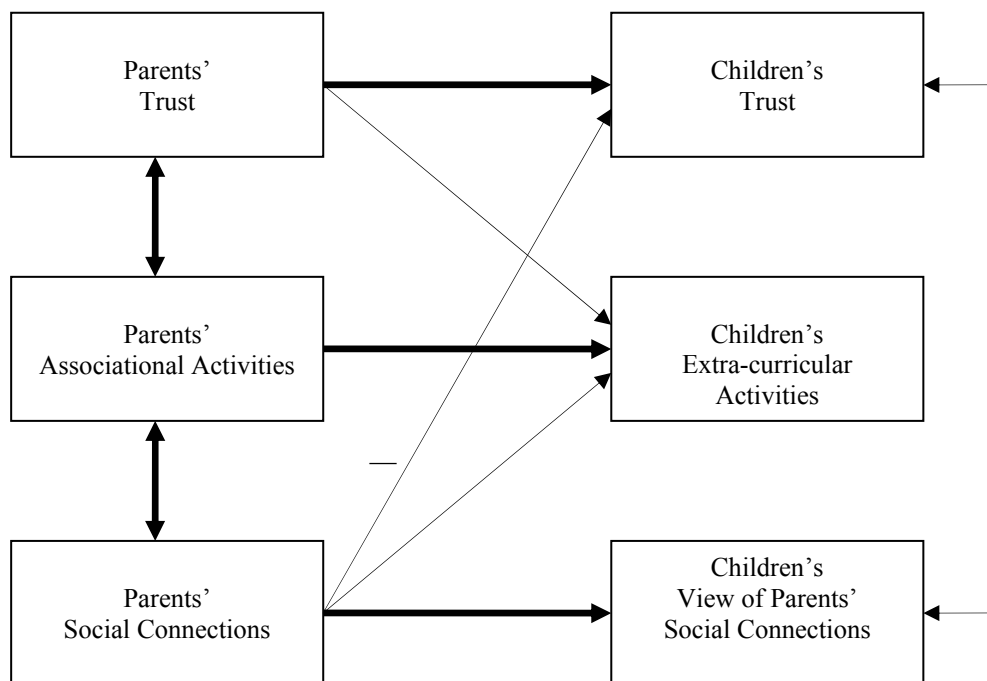
<sup>8</sup> However, according to Newton and Delhey (ibid 9), it is possible that social trust has quite the opposite pattern, with the young and the old having the lowest levels of trust.

positively to this question, most are involved in Scouts and outdoor adventure groups groups, which are very popular (Ripka and Turek 2005).

The question concerning the parents’ associational activities was somewhat vague. Nevertheless, the wording of the question in the Czech language strongly connotes civil society<sup>9</sup>. For example, the question did not explicitly asked about participation in sport groups, which could also be understood as a kind of civic activity. Thus the actual participation in civic organizations may be underestimated. In our sample about 36% of respondents said they took part in associational activities, while in other Czech surveys it was about 47% (Vajdová 2004: 14). For the sake of interpretation, in this analysis we include only the answers of the actual parent who filled out the questionnaire<sup>10</sup>.

Let us now turn to the correlation between social capital indicators. Figure 2 shows significant bivariate correlations between three major types of social capital of children and their parents. For the sake of clarity, in the figure we use the index of extra-curricular activities instead of four more specific variables. It must be kept in mind, however, that the correlation of these specific measures sometimes differs from the correlations of the overall index. The correlation coefficients and the significance level are shown in Table A2 in the Appendix.

**Figure 2. Correlation between social capital measures**



Notes:

Thick lines = Correlation is significant at the 0.01 level (2-tailed).

Thin lines = Correlation is significant at the 0.05 level (2-tailed).

Except for the correlation between “Parents’ Social Connections” and “Children’s Trust” all correlations are positive.

From Figure 2 and Table A2 we can draw several general conclusions:

1. *Intergenerational line-up.* There are significant and always positive correlations between particular types of social capital of parents and their children. The trust of

<sup>9</sup> The Czech word *sdužení* (association) is directly related to the word *sdužovat se* (join together, often to fulfill a common goal).

<sup>10</sup> It was the mother in 87.2%, the father in 12%, and another person (sister, grandmother) in only 0.8%.

parents correlates with the trust of their children, the parents' associational activities with the extra-curricular activities of their children, and the parents' view of their social connections with the view of their children. The correlation coefficients are, however, modest at best (0.11; 0.09 and 0.14, respectively). Thus there is a lot of space for other influences such as school or peers.

2. *Intragenerational cross-over.* Of three correlations of parents' social capital measures, two are relatively highly significant and one is not significant. Of three correlations of children's social capital measures, only one is slightly significant. Thus the links between adults' social capital seem to be more established than in the case of youths.
3. *Intergenerational cross-over.* There is not much cross-over of different types of social capital both between and within generations. If there is any correlation between the two different types of social capital of parents and their children, this correlation is rather weak and in one case negative (the correlation between parents' social connections and children's trust).

The finding that the social trust of children is moderately correlated with the social trust of their parents is not surprising. The social trust of children is not correlated with the overall index of children's extra-curricular activities, but is positively correlated with attending art and music clubs, and Scouts clubs (not with attending sport clubs or language courses). Thus, as could be expected, different types of children's activities have a different impact on their level of social trust. However, if there is any impact, it is likely to be positive. It is worth mentioning that social trust is not in any way associated with the parents' associational activities.

More puzzling is the (modest) correlation between the children's social trust and the parents' social connections. The views of parents and children differ on the effect of the parents' social connections. While for parents it is negative (the more connections they believe they have, the less their children trust), it is positive for children (the more connections they believe their parents have, the more they trust). Thus the parents' actual useful connections can diminish the level of their children's general trust. Though children relatively agree with their parents on the level of social connections the family adults have, it has a different impact. We would suggest that for at least some parents a wide network of connections may lead to suspicions about other people "outside the circle".

As stated above, the social trust of parents is positively correlated with the social trust of children and also with the parents' associational activities. In conformity with the general argument, social trust and civic engagement exist in a reciprocal, mutually beneficial relationship, and empirical studies have confirmed this assumption (Brehm and Rahn 1997). As for the correlation between the parents' social trust and their social connections, it is not statistically significant. This finding corresponds to the study by Mateju and Vitaskova (2006), who, using confirmatory factor analysis, found trust and mutually beneficial exchange networks to be two independent variables representing two dimensions of social capital. The authors also suggested that, at least in the post-communist context, social connections are independent of – or even negatively correlated with – trust.

As for social connections, we could speculate that the parents' view is more valid than the children's (as parents know what useful connections they really have), while the children's view is more a subjective estimation and projection. Nevertheless, the correlation between the parents' and the children's views of social connections is significant and is greater than in the case of social trust between the two (0.14 and 0.11 respectively). Interestingly, however, as indicated above, these two views sometimes have a different effect.

The social connections of parents as viewed by the parents (but not as viewed by the children) are positively correlated with the activities of children, which is probably owing to the high correlation with the children attending language courses. Here SES seems to be an

underlying factor for both connections and language courses. The social connections of parents as viewed by the parents are also positively correlated with their associational activities, but, as stated above, negatively with their children's trust and in no significant way with their trust.

The social connections of parents as viewed by the children are correlated – negatively! - only with attending art and music clubs and slightly positively correlated with children's trust. The students attending music and art groups simply trust more than others, but at the same time feel their parents have less useful connections. This is difficult to explain. It could be that these youths form a rather distinct sub-culture, or it could be an effect of gender (girls are over-represented).

All correlations between children's extra-curricular activities are significant. This means that one activity (such as sports) goes hand in hand with another (e.g. attending art, music or scout group). While almost 45% of youths do not attend any extra-curricular activity, about 14% attend at least two of them. Involvement in all types of extra-curricular activities is significantly correlated with the parents' associational activities. This could be because the social activities of both children and their parents may stem from the same factors (mainly the parents' socio-economic status).

#### 4.2 *Logistic models of children's social trust*

Five logistic models of children's trust are presented in Table A3 in the Appendix. Although all the models are statistically significant, none of them has much predictive power. In other words, the trust of children is difficult to predict, at least from the predictors available in our dataset. The social capital model and the contextual model fare slightly better than the other two. Family background (including SES) seems to be almost irrelevant (with the exception of social communication within the family and the highest level of education in the family). Though trust of parents is strongest single predictor, other social capital measures are statistically insignificant (with the exception of children's attendance at music and art clubs). While it is somewhat surprising that there is no effect of parents' associational activities, no effect of parents' social networks is in accordance with previous empirical findings. In general, it supports our preliminary conclusion stated above that there is only very little "cross-over" of different types of social capital both between and within generations.

In the contextual model, three variables were found to be statistically significant predictors. It is not a surprise that "bad friends" decrease the level of trust, or that the positive perception of student-teacher relations at school increases it. Surprisingly, the type of school attended (the prestigious multi-year *gymnázium* at one end of the continuum and the much devalued vocational schools at the other) does not have any effect on children's trust. Thus though the micro-context (close friends, student-teachers relations and to a certain extent also the sense of belonging at school) does have an effect on the level of trust, the macro-context (the type of school, which to a high degree mirrors social stratification) does not.

It is also a surprise that when "bad friends" are controlled for the misconduct of children themselves actually *increases* the level of trust. Given the fact, that there is no bivariate correlation between children's trust and their misconduct, this only means that misconduct itself does not diminish the level of trust. In other words, children do not seem to project their own behavior into their evaluation of others. However, we should be cautious about how we interpret this finding.

From the personality model only two variables are significant. Trust is positively predicted by the level of self-esteem and negatively by the index of competitive learning. It is not predicted by numerical literacy, average marks and the sense of world mastery. Thus the "success and well-being theory" does not seem to hold, at least for these adolescents.

The overall model, where all possible predictors are included, does not much change the results discussed above. The most notable change is that when other variables are controlled

for parents' associational activities become significant. Additional analysis (not shown here) revealed that this is owing mainly to the socio-economic family background. There is a positive correlation between the parents' associational activities and their socio-economic status and thus they share the same variance. The same holds true for the social networks of parents, which become a significant *negative* predictor of children's trust when family background is controlled for. While personality variables all become insignificant in the overall model, micro-contextual variables remain significant.

We can conclude that although to a certain degree social trust is indeed transmitted from one generation to another, it is not transmitted in any particular or strong way. It seems to be independent of the social standing of both children and parents. Social trust, at least in the case of Czech adolescents, cuts across social strata and standing in the social hierarchy. It is not dependent on success in life, but neither is it explained by most personality factors. It remains largely unexplained, though some micro-contextual factors (such as relations with peer and teachers) are found to be important. The next wave of longitudinal research will help us to determine to what extent children's trust is a stochastic or highly changeable phenomenon, and to what extent we are just not able to detect effective predictors.

#### 4.3 *Logistic models of children's extra-curricular activities*

Logistic models of children's participation in four extra-curricular activities are presented in Tables A4 – A7 in the Appendix. In comparison with logistic models of trust, all corresponding models are more successful in explaining a particular extra-curricular activity. In other words, it is much easier to predict children's extra-curricular activity than to predict social trust.

All models of every activity are statistically significant. Their overall predictive power, however, is different. The contextual model works best in explaining participation in sports group and music and art groups. The family background model is the most successful model in predicting children's participation in language courses, while social capital model is the best fit for children's participation in Scouts or outdoor adventure groups. Though the personality model is never one with the best fit, it is a model with substantial power.

The full models including all available variables do not lead to the elimination of other possible models. In general we may therefore conclude that children's participation in extra-curricular activities is a result of a complex set of variables and could justifiably be looked at from very different theoretical angles: as a result of family background, personality traits or contextual factors. However, these factors can have differing impacts depending on the particular activity in question. For instance, the number of siblings *reduces* the chance of attending language courses (probably because parents just cannot afford it) but *increases* the likelihood of attending Scouts or outdoor adventure groups<sup>11</sup>. So it is useful to analyze the predictors of particular extra-curricular activities separately. Given the number of models we will focus on the full models.

Participation in sports activities is positively predicted by numerical literacy and self-esteem and negatively with attending less prestigious vocational and technical schools. More successful students and students in academic tracks thus participate more in sports activities. The likelihood of participating in sports activities rises with the parents' higher education, the possession of cultural objects in the family, the parents' participation in associational activities, communication about the future profession in the family, and the positive sense of belonging at school. Because attending sports clubs is not usually as expensive as for example attending language courses, the wealth and socio-economic status of family does not seem to

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<sup>11</sup> We must be cautious here. This category includes not only Scouts or outdoor adventure groups, but also religious groups. So it could be an effect of large religious families. We do not have a control for religion in our data set.



play any role here. The family does play a role – but it seems that what cultural capital matters more than economic capital.

As could be expected, participation in language courses is most importantly determined by the family's socio-economic status, wealth and the parents' education. The parents' social connections and attendance at a prestigious multi-year *gymnázium* are also significant predictors. Personality factors and other contextual factors seem to play a rather minor role by comparison.

Participation in music and art groups is predicted mainly by attending more prestigious and academic schools and by cultural capital in family – the parents' education and cultural communication within the family. Literacy and success in school are also marginally significant. The structure of significant predictors is thus somewhat similar to the predictors of attending sports groups. The correlation between sports activities and music and art group attendance is significant but not very high. It leads us to speculate that though the stimulating conditions in both cases are similar (the academic track and high cultural capital within the family), the child turns either to sports or to music and art groups according to his/her talent. Gender also play a highly important role here: while almost 45% of all boys take part in sports activities (compared to 31% of girls), only less than 17% of them take part in music and art activities (compared to 30% of girls).

Explaining participation in Scouts, outdoor adventure groups or church groups is the most difficult of all the all four types of activities. This may be because it is an internally heterogeneous category<sup>12</sup>. Though the cultural capital of the family again seems to play an important role, socio-economic status does not play any – or even a slightly negative – role. Students attending these activities are more likely to be from smaller residential locations. The effect of the type of school is not important, or at least not as important as it is in the case of other activities. Personality variables – with a somewhat surprising positive association with competitive learning – are not statistically significant.

## 5. Discussion

Before discussing our findings it is fair to mention several limitations to the study. First, the data we have are for Czech students only. The creation of social capital is likely to be considerably dependent on a broader context. Therefore, we should be very careful about generalizing the conclusion to apply to other contexts. Second, the research instrument can always be questioned. Even the most common question on social trust, which we also used, “can have very limited relevance ... for the concept of social capital” (Dekker 2003: 1). Several variables we use (for example, parents' civic participation) are simply a proxy rather than elaborated and complex measures of particular concepts. Third, despite the uniqueness and richness of the PISA-L dataset, there are certainly factors that we are not able to control for. For instance, we are not able to compare in-group and out-group trust. Fourth, more sophisticated statistical analysis (such as structural equation modeling) is needed for a more precise estimation of our theoretical models. Fifth, this is only the first wave of a longitudinal study and thus we do not know the actual “plasticity” of social capital measures (that is, individual stability over time). Remedies for some of these limitations are planned in the future, when we will also be able to analyze data for the second wave of this longitudinal panel (scheduled for September 2006).

Nevertheless, with these limitations in mind we believe that the study enables some new insights not found in social capital literature and confirmed published findings in a not yet researched context and with new research instruments. First, we can conclude that the social trust of fifteen-year-olds is very difficult to predict at the individual level, even if we use a

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<sup>12</sup> In future research, it will be useful to disentangle this variable into two variables.

wide range of possible predictors, including the parents' trust. Our finding is in accordance with that of Jennings and Stoker (2004: 374):

*“Our results suggest that social trust is a disposition that is quite malleable among young adults. It is at best weakly transmitted from parent to child, leaving the young adult quite open to other influences, good or bad. It is also quite unstable across the early years of adulthood, or at least it was in our analysis of the high school class of 1965. At the same time, the tendency to trust or distrust others appears to crystallize with age.”*

Since the data we use are only from the first phase of longitudinal research, we cannot say how stable social trust will turn out to be in our sample. However, it seems that the social trust of fifteen-year-olds is quite stable. Moreover, it transcends the borders of social class and group divisions, and, as Mateju and Vitaskova (2006) also found, it is distributed (and reproduced) regardless of socio-economic status. Family background does not have a substantial impact on children's social trust, either directly or indirectly. Parents do play a role in shaping the level of children's trust, but not as much as had usually been assumed. Jennings and Stoker (2004: 355) concluded their longitudinal analysis with the theory that the fall-off in social capital cannot be attributed to the declining ability of parents to pass on their level of social trust and associational involvement. Our analysis concurs with this finding. This is good news for countries with a low level of general trust, such as the Czech Republic and other post-communist countries. We can hypothesize that the low level of adults' generalized trust found in post-communist countries is only partially transmitted to younger generations. Thus it is not inevitable that a low level of trust will endure for the next few generations.

Though the overall impact of our predictors on youths' social trust is weak, social trust is not a completely stochastic phenomenon. The low family effect leaves room for other influences. In our data, there is a clear indication that micro-contextual factors (such as relations with peers and teachers) are important in creating or destroying social trust. This corresponds to the current acknowledgement that SES and the intergenerational mechanisms that transfer behavior and values are not as strong as previously assumed and that there are many “pathways” to social capital, most importantly school, the media and peers (John and Morris 2003). In future research it is important to include more precise measures of these factors and operationalize them with care.

In contrast to youths' social trust, their participation in extra-curricular activities – that we take as “proto” social networks – is much easier to predict on the basis of available predictors. It is highly dependent on the cultural, human and financial capital of their parents as well as on the school attended. In this sense, at the age of fifteen social networks are already – in sharp contrast to social trust – highly stratified.

Even though there is a high correlation between different extra-curricular activities, they have different sets of predictors. In other words, there are different patterns of attendance of a particular type of activity. While attendance of language courses is determined mostly by family financial capital, participation in sports and art and music is dependent on cultural capital.

To sum up, we found that different indicators of social capital are only slightly correlated among themselves and have different roots. In other words, the channels through which social capital is transmitted depend on the type of social capital in question. The basic conclusion of this study is that social capital, at least in the context of the Czech Republic, is developed in at least two relatively independent ways. We can hypothesize that while social trust is much better explained by societal theories, social activities and other aspects are better predicted at the individual level.

We agree with some of the criticism surrounding the use of the term of social capital to encompass too much for it to be useful in empirical investigation (Durlauf 2002). Social capital is an umbrella metaphor that includes quite different, and at times even contradictory,

things. If social capital is to be a clearly defined concept, then theories explaining its different aspects should be the same or at least not in a conflict. This is not the case. If the mechanisms through which social capital is generated are evidently quite distinct, how much sense does it make to retain a single general “kitchen sink” term? Nevertheless, there is one important justification for retaining social capital as a broader term: Its heterogeneity could stimulate interesting findings in the future. However, it is essential to carefully distinguish between the various forms that social capital can yield (Mateju 2002).

The further confirmation and refinement of our findings have important implications not only for the development of social capital theory but also for public policy, and especially for education, media and youth policy. When there is so much room for social trust to be affected, then public policy should pay attention to this. Similarly, if participation is so dependent on family background, then public policy should formulate and implement strategy to ensure more equal access to extra-curricular activities.

## 6. References

- Banfield, E. C. (1958). *The Moral Basis of a Backward Society*. New York: The Free Press.
- Bartko, W. T., & Eccles, J. (2003). Adolescent Participation in Structured and Unstructured Activities: A Person-Oriented Analysis. *Journal of Youth and Adolescence*, 32(4), 233–241.
- Beck, P., & Jennings, M. (1982). Pathways to participation. *American Political Science Review*, 76(1), 94-108.
- Brehm, J., & Rahn, W. (1997). Individual-level evidence for the causes and consequences of social capital. *American Journal of Political Science*, 41(3), 999-1023.
- Camp, W. (1990). Participation in student activities and achievement: A covariance structural analysis. *The Journal of Educational Research*, 83, 272-278.
- Coleman, J., & Hoffer, T. (1987). *Public and private schools: The impact of communities*. New York: Basic Books.
- Coleman, J. S. (1988). Social Capital in the Creation of Human-Capital. *American Journal of Sociology*, 94, S95-S120.
- Dahrendorf, R. (1990). *Reflection in the Revolutions in Europe*. London: Chatto and Windus.
- Dekker, P. (2003). 'Generalised social trust': Meanings and political correlates. Paper presented at the 19th IPSA World Congress, Durban, South Africa.
- Delhey, J., & Newton, K. (2002). *Who Trusts? The Origins of Social Trust in Seven Nations*. Berlin: Social Science Research Center (WZB).
- Delhey, J., & Newton, L. (2004). *Social Trust: Global Pattern or Nordic Exceptionalism?* Berlin: WZB.
- Durlauf, S. N. (2002). *The Empirics of Social Capital: Some Skeptical Thoughts*: World Bank: Social Development Strategy.
- Flanagan, C., & Sherrod, L. (1998). Youth political development: an introduction. *Journal of Social Issues*, 54(3), 447-456.
- Fukuyama, F. (1995). *Trust: the social virtues and the creation of prosperity*. New York: Free Press.
- Hall, P. A. (1999). Social capital in Britain. *British Journal of Political Science*, 29(3), 417-461.
- Hanks, M., & Eckland, B. (1976). Athletics and social participation in the educational attainment process. *Sociology of Education*, 49, 271-294.
- Hofferth, S. L., Boisjoly, J., & Duncan, G. J. (1998). Parents' Extrafamilial Resources and Children's School Attainment. *Sociology of Education*, 71(3), 246-268.
- Hooghe, M., & Stolle, D. (2003). Age matters: life-cycle and cohort differences in the socialisation effect of voluntary participation? *European Political Science*, 2(3), 49-56.
- Jennings, M. K., & Niemi, R. (1981). *Generations and Politics*. Princeton: Princeton University Press.
- Jennings, M. K., & Stoker, L. (2004). Social Trust and Civic Engagement across Time and Generations. *Acta Politica*, 39, 342–379.
- John, P., & Morris, Z. (2003). *What are the Origins of Social Capital? Results from a Panel Survey of Young People*. Paper presented at the PSA EPOP Conference, Cardiff.
- Johnson, M., Beebe, T., Mortimer, J., & Snyder, M. (1998). Volunteerism in adolescence. *Journal of Research on Adolescence*, 8(3), 309–332.
- Kalous, J. (2003). Důvěra ve společnosti [Trust in Society]. In P. Frič (Ed.), *Češi na cestě za svojí budoucností* (pp. 152-174). Praha: G plus G.
- Kohlberg, L. (1981). *The Philosophy of Moral Development*. San Francisco: Joss-Bassey.
- Levi, M. (1998). A State of Trust. In V. Braithwaite & M. Levi (Eds.), *Trust & Governance*. New York: Russell Sage Foundation.

- Lykken, D. (2000). *Happiness: The Nature and Nurture of Joy and Contentment*. New York: St. Martin's Press.
- Marschall, M. J., & Stolle, D. (2004). Race and the City: Neighborhood Context and the Development of Generalized Trust. *Political Behavior*, 26(2), 125-154.
- Mateju, P. (2002). *Social capital. Problems of its conceptualization and measurement in transforming societies. Paper presented at the conference on social capital: The challenge of international measurement. London 2002.*, London.
- Mateju, P., & Vitaskova, A. (2006). Interpersonal Trust and Mutually Beneficial Exchanges: Measuring Social Capital for Comparative Analyses. *Czech Sociological Review*, 42(3), 493-516.
- McNeal, R. B. (1998). High School Extra-curricular Activities: Closed Structures and Stratifying Patterns of Participation. *Journal of Educational Research*, 91(3), 183-191.
- McNeal, R. B. (1999). Participation in High School Extra-curricular Activities: Investigating School Effects. *Social Science Quarterly*, 80(2), 291-309.
- Milbraith, L., & Goel, M. L. (1977). *Political Participation*. Chicago: Rand McNally.
- Newton, K. (2001). *Social trust and political disaffection: Social capital and democracy*. Paper presented at the EURESCO Conference on Social capital, Exeter.
- Nie, N., Junn, J., & Stehlik-Barry, K. (1996). *Education and Democratic Citizenship in America*. Chicago: University of Chicago Press.
- Niemi, R., & Junn, J. (1998). *What Makes Students Learn*. New Haven, CT: Yale University Press.
- OECD. (2003). *PISA 2003 technical report*. Paris: OECD.
- Otto, L. (1975). Extra-curricular activities in the educational attainment process. *Rural Sociology*, 40, 162-176.
- Otto, L., & Alwin, D. (1977). Athletics, aspirations, and attainments. *Sociology of Education*, 42(102-113).
- Putnam, R. D. (2000). *Bowling Alone. The Collaps and Revival of American Community*. New York: Simon and Schuster.
- Raiser, M., Haerper, C., Nowotny, T., & Wallace, C. (2002). Social Capital in Transition: A First Look at the Evidence. *Czech Sociological Review*, 38(6), 693-720.
- Ripka, V., Turek, M. (2005). *A Report on Contemporary Czech Youth Policy in the Czech Republic*. Praha: ISEA.
- Rose-Krasnor, L., Busseri, M. A., Willoughby, T., & Chalmers, H. (2006). Breadth and Intensity of Youth Activity Involvement as Contexts for Positive Development. *Journal of Youth and Adolescence*, 35(3), 385-499.
- Rothstein, B., & Stolle, D. (2003). *How Political Institutions Create and Destroy Social Capital: An Institutional Theory of Generalized Trust*. Paper presented at the 98th Meeting of the American Political Science Association, Boston.
- Scheufele, D. A., & Shah, D. V. (2000). Personality Strength and Social Capital. The Role of Dispositional and Informational Variables in the Production of Civic Participation. *Communication Research*, 27(2), 107-131.
- Sedláčková, M. (2006). *Determinanty sociální důvěry v české společnosti. [Determinants of Social Trust in Czech Society]*.
- Spady, W. (1970). Lament for the letterman: Effects of peer status and extra-curricular activities on goals and achievement. *American Journal of Sociology*, 75, 680-701.
- Stolle, D. (1998). Bowling Together, Bowling Alone: The Development of Generalized Trust in Voluntary Associations. *Political Psychology*, 19(3), 497-525.
- Stolle, D., & Hooghe, M. (2004a). Review Article: Inaccurate, Exceptional, One-Sided or rrelevant? The Debate about the Alleged Decline of Social Capital and Civic Engagement in Western Societies. *British Journal of Political Science*, 35, 149-167.

- Stolle, D., & Hooghe, M. (2004b). The Roots of Social Capital: Attitudinal and Network Mechanisms in the Relation between Youth and Adult Indicators of Social Capital. *Acta Politica*, 39(4), 422-441.
- Stone, W. (2001). *Measuring social capital. Towards a theoretically informed measurement framework for researching social capital in family and community life*. Melbourne: Australian Institute of Family Studies.
- Teachman, J. D., Paasch, K., & Carver, K. (1997). Social Capital and the Generation of Human Capital. *Social Forces*, 75(4), 1343-1359.
- Torney-Purta, J., Lehmann, R., Oswald, H., & Schultz, W. (2001). *Citizenship and Education in Twenty-Eight Countries: Civic Knowledge and Engagement at Age Fourteen*. Amsterdam: IEA.
- Uslaner, E. M. (2002). *The moral foundations of trust*. New York: Cambridge University Press.
- Vajdová, T. (2003). *Zpráva o neziskovém sektoru v České republice [Report on the NGOs in the Czech Republic]*. Prague: Governmental Council for Non-State Non-Profit Organizations.
- Verba, S., Schlozman, K., & Brady, H. (1995). *Voice and Equality*. Cambridge, Mass: Harvard University Press.
- Yarworth, J., & Gauthier, W. (1978). Relationship of student self-concept and selected personal variables to participation in school activities. *Journal of Educational Psychology*, 70, 335-344.

## 7. Appendix

### 7.1 Description of variables in the analysis

**Table A1. Description of variables in the analysis**

Variable	Abbreviation	Questionnaire	Coding	N	Min	Max	Mean	SD
<b>Social capital</b>								
Social trust – children	Trust_Ch	PISA-L	0 = people can not be trusted, 1 = people can be trusted	5952	0	1	,25	,4
Social trust - parents	Trust_P	P	0 = people can not be trusted, 1 = people can be trusted	4124	0	1	,21	,4
Sport group – children	CH_Sport	PISA-L	0 = do not attend, 1 = attend at least once a week	5814	0	1	,38	,5
Language course – children	CH_Langu	PISA-L	0 = do not attend, 1 = attend at least once a week	5590	0	1	,11	,3
Music or art group – children	CH_Music	PISA-L	0 = do not attend, 1 = attend at least once a week	5654	0	1	,23	,4
Scout or church group – children	CH_Scout	PISA-L	0 = do not attend, 1 = attend at least once a week	5575	0	1	,13	,3
Social activities of children – index	ActivCh	PISA-L	0 = no activities, 1 = one activity in a week, 2 = two activities in a week, 3 = more than two activities	5451	0	3	1,09	1,1
Associational activities – parents	P_Assoc	P	0 = no, 1 = yes	4120	0	1	,36	,5
Social connections of parents index - children's view	Socnetcr	PISA-L	3 = no connections, 12 = most possible social connections	5914	3	12	8,22	1,9
Social connections of parents index - parent's view	Socnetp	P	3 = no connections, 15 = most possible social connections	4130	3	15	7,54	2,1
<b>Family background</b>								
Siblings	Sibling	PISA-L	Number of siblings	5327	0	9	1,32	,9
Family structure – recoded	rodina	PISA	0 = nuclear, 1 = single parent and mixed family	5986	0	1	,25	,4
Highest education in family (PISA index)	HISCED	PISA	0 = none education, 6 = ISCED 5A,6	5994	0	6	4,23	1,1
Highest ISEI in family (PISA index)	HISEI	PISA	16 = lowest ISEI, 90 = highest ISEI	5963	16	90	50,05	14,4
Economic capital of family	WEALTH	PISA	5 = no possession of material objects, 20 = most possible number of material objects	5668	6	20	13,02	2,1
Possession of cultural objects (PISA index)	CULTPOSS	PISA	positive scores indicate higher levels of cultural possessions	6063	-1,28	1,35	,26	,9

Cultural communication within family	CULTCOM2	PISA-L	3 = no cultural communication with parents	5979	3	18	9,01	3,6
Professional communication within family	PROFCOM2	PISA-L	3 = no professional communication with parents	5974	3	18	13,07	3,1
Social communication within family	SOCCOM2	PISA-L	4 = no social communication with parents	5974	4	24	16,16	3,9
<b>Personal traits and abilities</b>								
Numerical literacy – children (PISA index)	wlemath	PISA	Warm estimate of numerical literacy	6306	141,2	857,9	513,82	96,3
Success in school – average mark at school	Average_Mark	PISA, PISA-L	1 = best marks from all subjects	5975	1	4,8	2,40	,8
Self-esteem index – children	Self_est	PISA-L	6 = lowest self-esteem	5938	6	24	17,63	2,5
World mastery index – children	Worl_mas	PISA-L	9 = lowest world mastery	5912	9	28	19,53	2,7
Competitive strategy when learning math (PISA index)	COMPLRN	PISA	positive scores on this index indicate preferences for competitive learning situations	6027	-2,84	2,45	-,10	,8
Cooperative strategy when learning math (PISA index)	COOPLRN	PISA	positive scores on this index indicate preferences for cooperative learning situations	6015	-3,13	2,74	-,04	,8
<b>School and peers</b>								
Bad friends	Bad_fri	PISA-L	10 = no bad behavior of friends	5741	10	40	19,39	4,1
Misconduct of children	Miscond	PISA-L	10 = no misconduct of children	5769	10	40	17,99	4,9
Student-teacher relations at school (PISA index)	STUREL	PISA	positive scores indicate positive perceptions of student-teacher relations at school	6030	-3,09	2,85	-,18	,9
Attitudes towards school (PISA index)	ATSCHL	PISA	positive scores indicate positive attitudes towards school	6040	-3,14	2,53	-,01	,9
Sense of belonging at school (PISA index)	BELONG	PISA	positive scores indicate positive feelings about the students' school	6053	-3,38	2,22	-,27	,8
Disciplinary climate in math lessons (PISA index)	DISCLIM	PISA	positive scores on the index indicate perceptions of a positive disciplinary climate	6008	-2,74	2,35	-,01	1,0
Type of school (dummy variable),	GV, G4, sos_mat	PISA-L	GV: 0 = other school, 1 = multi-year gymnasium G4: 0 = other school, 1 = four-year gymnasium	6087	0 0	1 1	,08 ,06	,3 ,2



basic school as a baseline	sou_nema		sos_mat: 0 = other school, 1 = technical school with maturita	0	1	,29	,5	
			sou_nema: 0 = other school, 1 = vocational school without maturita	0	1	,13	,3	
<b>Controls</b>								
Sex	Sex	PISA	0=Female, 1=Male	6320	0	1	,51	,5
Location	TOWN	PISA-L	0=less then 25 000 inhabitants, 1= more then 25 000 inhabitants	5998	0	1	,33	,5

PISA = international survey, students' questionnaire

PISA-L = the Czech longitudinal extension, students' questionnaire

P = the Czech longitudinal extension, students' questionnaire

## 7.2 Correlation between social capital measures

**Table A2. Correlations of social capital indicators**

	Trust_Ch	Trust_P	CH_Sport	CH_Langu	CH_Music	CH_Scout	ActivCh	P_Assoc	Socnetcr	Socnetp
Trust_Ch	1,00	,11**	,00	,02	,04**	,03*	,02	,03	,03*	-,03*
		,00	,84	,23	,00	,02	,12	,07	,05	,04
Trust_P		1,00	,03	,00	,02	,02	,03*	,07**	-,02	-,01
			,09	,86	,14	,16	,04	,00	,19	,68
CH_Sport			1,00	,08**	,04**	,08**	,72**	,06**	,02	,02
				,00	,01	,00	,00	,00	,08	,15
CH_Langu				1,00	,18**	,13**	,38**	,03*	-,02	,06**
					,00	,00	,00	,03	,23	,00
CH_Music					1,00	,21**	,50**	,05**	-,05**	,01
						,00	,00	,00	,00	,37
CH_Scout						1,00	,41**	,06**	,00	,01
							,00	,00	,72	,51
ActivCh							1,00	,09**	-,02	,04*
									,14	,02
P_Assoc								1,00	,01	,14**
									,35	,00
Socnetcr									1,00	,14**
										,00
Socnetp										1,00

Notes: The first row of entries are Pearson correlation coefficients, the second row shows two-tailed significance.

### 7.3 Logistic models of youths' social capital<sup>13</sup>

**Table A3. Determinants of children's trust**

	Model 1		Model 2		Model 3		Model 4		Model 5	
	B	p	B	p	B	p	B	p	B	p
Trust_P	,606	,000							,636	,000
CH_Sport	,081	,641							-,019	,926
CH_Langu	,132	,400							-,023	,899
CH_Music	,289	,040							,131	,422
CH_Scout	,167	,270							,272	,121
ActivCh	-,102	,298							,011	,926
P_Assoc	,153	,065							,315	,001
Socnetcr	,004	,850							-,013	,637
Socnetp	-,030	,128							-,058	,015
Sibling			,031	,443					,047	,384
rodina			-,092	,274					,004	,970
HISCED			,079	,046	,071	,060	,057	,145	,104	,067
HISEI			,003	,363	,003	,360	,003	,397	-,003	,452
WEALTH			-,032	,069	-,021	,201	-,011	,527	-,007	,786
CULTPOSS			-,049	,222					-,117	,036
CULTCOM2			-,005	,685					-,009	,579
PROFCOM2			-,014	,321					-,014	,488
SOCCOM2			,026	,026					,032	,054
wlemath					,000	,971			-,001	,186
Average_Mark					,091	,071			,115	,148
Self_est					,055	,001			,033	,176
Worl_mas					,013	,375			,014	,534
COMPLRN					-,131	,001			-,019	,752
COOPLRN					,052	,215			,086	,174
Bad_fri							-,028	,008	-,043	,004
Miscond							,023	,005	,032	,007
STUREL							,293	,000	,230	,000
ATSCHL							-,054	,207	-,051	,419
BELONG							,086	,051	,060	,360
DISCLIM							,016	,660	-,040	,421
GV							,056	,653	,065	,713
G4							,009	,947	,217	,230
sos_mat							-,032	,688	-,001	,991
sou_nema							-,127	,279	,000	,999
Sex	,180	,028	,077	,270	,072	,290	,099	,152	,021	,844
TOWN	,036	,672	,043	,568	-,014	,840	-,061	,404	,154	,129
Constant	-1,221	,000	-1,474	,000	-2,788	,000	-1,216	,000	-1,846	,021
N	3719		4888		5385		5167		2935	
df	11		11		11		15		36	
P	0,000		0,02		0,000		0,000		0,000	
R <sup>2</sup> Nagelkerke	,026		,007		,013		,026		,064	

<sup>13</sup> B - estimated coefficient in logistic regression, p – significance of Wald statistic

*Table A4. Determinants of children's participation in sports group activities*

	Model 1		Model 2		Model 3		Model 4		Model 5	
	B	p	B	p	B	p	B	p	B	p
Trust_Ch	-,077	,355							,000	,997
Trust_P	,125	,154							,083	,425
CH_Langu	,422	,000							,012	,932
CH_Music	,151	,089							-,048	,648
CH_Scout	,224	,040							,157	,227
P_Assoc	,256	,001							,268	,003
Socnetcr	,019	,334							,020	,441
Socnetp	,009	,602							,001	,978
Sibling			,024	,519					,054	,285
rodina			,012	,874					-,013	,906
HISCED			,159	,000	,161	,000	,148	,000	,128	,014
HISEI			,006	,052	,003	,208	,004	,185	-,001	,900
WEALTH			,037	,023	,036	,017	,044	,005	,013	,579
CULTPOSS			,164	,000					,157	,002
CULTCOM2			,002	,845					,003	,837
PROFCOM2			,053	,000					,047	,015
SOCCOM2			,016	,140					,001	,957
wlemath					,001	,005			,002	,007
Average_Mark					-,113	,015			-,018	,808
Self_est					,072	,000			,059	,008
Worl_mas					,004	,745			-,035	,093
COMPLRN					,009	,812			-,026	,631
COOPLRN					,157	,000			,118	,040
Bad_fri							,012	,195	-,004	,776
Miscond							-,008	,308	-,009	,419
STUREL							-,006	,889	-,075	,198
ATSCHL							,031	,424	,028	,625
BELONG							,249	,000	,264	,000
DISCLIM							,011	,729	-,039	,389
GV							,228	,043	,063	,693
G4							,157	,209	,006	,969
sos_mat							-,235	,001	-,406	,000
sou_nema							-,786	,000	-,752	,000
Sex	,691	,000	,623	,000	,565	,000	,689	,000	,760	,000
TOWN	,296	,000	,114	,095	,109	,092	,111	,094	,083	,369
Constant	-1,458	,000	-3,317	,000	-3,794	,000	-2,181	,000	-3,476	,000
<b>N</b>	3719		4780		5257		5049		2935	
<b>df</b>	11		11		11		15		35	
<b>P</b>	,000		,000		,000		,000		,000	
<b>R<sup>2</sup> Nagelkerke</b>	,057		,083		,084		,099		,145	

*Table A5. Determinants of children's participation in language course*

	Model 1		Model 2		Model 3		Model 4		Model 5	
	B	p	B	p	B	p	B	p	B	p
Trust_Ch	,032	,814							-,066	,677
Trust_P	-,197	,190							-,308	,076
CH_Sport	,421	,000							,007	,961
CH_Music	,964	,000							,669	,000
CH_Scout	,766	,000							,622	,000
P_Assoc	,175	,152							,078	,584
Socnetcr	-,002	,955							-,017	,674
Socnetp	,089	,002							,092	,008
Sibling			-,271	,000					-,198	,030
rodina			,121	,314					,353	,036
HISCED			,285	,000	,266	,000	,228	,000	,196	,020
HISEI			,013	,004	,012	,004	,014	,002	,015	,023
WEALTH			,017	,511	,032	,178	,054	,027	,079	,028
CULTPOSS			,195	,002					,135	,123
CULTCOM2			,067	,000					,043	,078
PROFCOM2			-,011	,640					,005	,868
SOCCOM2			,013	,461					,005	,825
wlemath					,000	,758			-,001	,432
Average_Mark					-,261	,001			-,228	,069
Self_est					,013	,588			,012	,735
Worl_mas					,030	,167			,032	,333
COMPLRN					,122	,033			,148	,084
COOPLRN					-,002	,969			,021	,820
Bad_fri							-,005	,756	,008	,733
Miscond							-,026	,040	-,019	,299
STUREL							,063	,333	,117	,219
ATSCHL							-,058	,362	-,090	,338
BELONG							,094	,136	,063	,508
DISCLIM							,056	,286	-,033	,650
GV							,347	,019	,490	,026
G4							,169	,318	,274	,250
sos_mat							-,351	,005	-,056	,773
sou_nema							-,264	,202	,302	,341
Sex	-,638	,000	-,573	,000	-,640	,000	-,640	,000	-,647	,000
TOWN	,505	,000	,212	,045	,342	,001	,275	,007	,187	,200
Constant	-3,464	,000	-4,673	,000	-4,363	,000	-3,798	,000	-5,841	,000
<b>N</b>	3719		4634		5083		4887		2935	
<b>df</b>	11		11		11		15		35	
<b>P</b>	0,000		0,000		0,000		,000		,000	
<b>R<sup>2</sup> Nagelkerke</b>	,107		,112		,093		,098		,183	

**Table A6. Determinants of children's participation in music or art groups, art school, modelers' clubs**

	Model 1		Model 2		Model 3		Model 4		Model 5	
	B	p	B	p	B	p	B	p	B	p
Trust_Ch	,182	,058							,139	,217
Trust_P	,089	,390							,021	,861
CH_Sport	,151	,091							-,067	,528
CH_Langu	,956	,000							,633	,000
CH_Scout	1,085	,000							,998	,000
P_Assoc	,153	,083							,133	,197
Socnetcr	-,060	,011							-,024	,414
Socnetp	,004	,847							-,013	,605
Sibling			,013	,771					,015	,804
rodina			-,168	,060					-,165	,194
HISCED			,200	,000	,165	,000	,160	,000	,150	,014
HISEI			,012	,000	,011	,000	,012	,000	,002	,648
WEALTH			-,034	,069	-,023	,190	-,018	,311	-,041	,123
CULTPOSS			,184	,000					,210	,001
CULTCOM2			,033	,008					,023	,187
PROFCOM2			-,007	,673					-,033	,142
SOCCOM2			,027	,028					,026	,142
wlemath					,002	,001			,001	,052
Average_Mark					-,278	,000			-,164	,059
Self_est					,021	,216			,008	,746
Worl_mas					,001	,929			-,003	,890
COMPLRN					,018	,676			,013	,837
COOPLRN					,072	,113			-,030	,659
Bad_fri							-,001	,911	-,012	,471
Miscond							-,013	,152	,008	,541
STUREL							,084	,078	,073	,286
ATSCHL							,052	,260	,033	,629
BELONG							,041	,377	-,060	,392
DISCLIM							,011	,779	-,032	,537
GV							,576	,000	,173	,307
G4							,259	,047	-,219	,222
sos_mat							-,474	,000	-,684	,000
sou_nema							-,618	,000	-,663	,003
Sex	-,827	,000	-,764	,000	-,820	,000	-,793	,000	-,747	,000
TOWN	,103	,254	-,069	,383	-,040	,591	-,057	,460	-,083	,443
Constant	-,913	,000	-2,544	,000	-2,347	,000	-1,482	,000	-1,499	,077
<b>N</b>	3719		4693		5151		4945		2935	
<b>df</b>	11		11		11		15		35	
<b>P</b>	0,000		0,000		,000		,000		,000	
<b>R<sup>2</sup> Nagelkerke</b>	,119		,098		,104		,123		,193	

*Table A7. Determinants of children's participation in Scouts, outdoor adventure groups or church groups*

	Model 1		Model 2		Model 3		Model 4		Model 5	
	B	p	B	p	B	p	B	p	B	p
Trust_Ch	,071	,553							,298	,031
Trust_P	,143	,253							,085	,558
CH_Sport	,227	,036							,142	,274
CH_Langu	,714	,000							,571	,001
CH_Music	1,079	,000							,990	,000
P_Assoc	,234	,032							,185	,150
Socnetcr	,017	,564							,012	,739
Socnetp	-,020	,449							-,034	,288
Sibling			,129	,010					,152	,026
rodina			-,064	,562					-,247	,130
HISCED			,205	,000	,233	,000	,240	,000	,151	,045
HISEI			,005	,236	,002	,575	,002	,633	-,002	,778
WEALTH			-,038	,089	-,027	,197	-,021	,326	-,079	,015
CULTPOSS			,231	,000					,255	,001
CULTCOM2			,044	,003					,041	,060
PROFCOM2			-,004	,832					,017	,534
SOCCOM2			-,014	,356					-,020	,370
wlemath					,002	,001			,001	,111
Average_Mark					,023	,725			,065	,554
Self_est					,028	,184			-,009	,778
Worl_mas					-,044	,023			,013	,650
COMPLRN					,085	,100			,161	,038
COOPLRN					-,014	,797			-,097	,238
Bad_fri							,008	,530	,042	,027
Miscond							,010	,366	-,012	,461
STUREL							,220	,000	,006	,944
ATSCHL							-,145	,010	-,060	,477
BELONG							-,077	,188	-,122	,162
DISCLIM							-,056	,239	-,028	,663
GV							,136	,383	-,097	,662
G4							,373	,024	,038	,874
sos_mat							,018	,866	-,104	,543
sou_nema							-,099	,521	,423	,062
Sex	,379	,001	,110	,224	,010	,910	,088	,327	,376	,010
TOWN	-,152	,183	-,503	,000	-,450	,000	-,401	,000	-,344	,013
Constant	-2,744	,000	-2,792	,000	-3,122	,000	-3,021	,000	-4,321	,000
<b>N</b>	3719		4609		5059		4860		2935	
<b>df</b>	11		11		11		15		35	
<b>P</b>	,000		,000		,000		,000		,000	
<b>R<sup>2</sup> Nagelkerke</b>	,080		,041		,030		,033		,124	

#### 7.4 Wording of social capital questions

##### **Social Trust of Parents and Children** (*Trust\_Ch, Trust\_P*):

Generally speaking, would you say that most people can be trusted, or that one needs to be very careful in dealing with people?

- a) Most people can be trusted
- b) One needs to be very careful in dealing with people

##### **Extra-curricular activities of children:**

This school year, do you attend:

- sport group? (*CH\_Sport*)
- language course? (*CH\_Langu*)
- other hobby group (music or art circle, art school, modelers' club etc.) ? (*CH\_Music*)
- other club or group (Scout, tourist group, church group etc.) ? (*CH\_Scout*)

1 = I do not attend

2 = Attend once a week

3 = Attend more than once a week

Recoded to binary variables: 0 = do not attend, 1 = attend

Index of children's extra-curricular activities (*ActivCh*) created from so that 0 means "no activities at all", 1 "one activity once a week", 2 "two activities in a week or one activity twice a week", 3 = "more than two activities a week".

##### **Social Networks of Parents - children's view** (*Socnetcr*):

Composite index of three variables (summary of answers):

1) When other people need to arrange or get anything more easily and quickly (e.g. faster processing of administrative requests, help in gaining entrance to school etc.), do they often turn to your parents for help?

- a) Definitely yes
- b) Probably yes
- c) Probably no
- d) Definitely no

2) When your parents need to arrange or get anything (e.g. faster processing of administrative requests, help in gaining entrance to school etc.), do they usually find somebody who help to solve it more easily and quickly?

- a) Definitely yes
- b) Probably yes
- c) Probably no
- d) Definitely no

3) When you fail to get or achieve something very important to you, are your parents able to help you succeed at last?

- a) Definitely yes
- b) Probably yes
- c) Probably no
- d) Definitely no

##### **Social Networks of Parents - parents' view** (*Socnetp*):

Composite index of three variables (summary of answers):

1) How often do other people (relatives, friends) turn to you or to other family member to help them solve some problems or to arrange anything by applying your influence for their benefit?

- 1 – Never
- 2 – Seldom



3 – Occasionally

4 – Quite often

5 – Very often

2) When you are in a difficult situation or you need to arrange anything, do you think there are people you can ask to intervene on your behalf and to help you?

1 – No, nobody,

2 – Only a few

3 – Quite a lot

4 – Many

5 – Very many

3) How important role do these useful contacts play in your life?

1 – Essential

2 – Very important

3 – Fairly important

4 – Not very important

5 – Not important at all

### **Associational activities of parents (*P\_Assoc*):**

How often do you engage in following activities: Associational activities, attending meetings of various clubs, political parties etc.?

1. Daily

2. Several times a week

3. At least once per a week

4. Several times a month

5. Less often

6. Never

Recoded: 1 through 5 = 1 (yes), 6 = (no activities)

### *7.5 Construction of indices<sup>14</sup>*

#### **Rodina - Family structure (PISA index, recoded)**

The student's statements on who is living with them at home were recoded into an index of family structure (FAMSTRUC) with four categories: (1) is a single-parent family (students living with only one of the following: mother, female guardian, father, male guardian); (2) is a nuclear family (students living with a father and a mother); (3) is a mixed family (a father and a guardian, a mother and a guardian, or two guardians); and (4) groups the other responses, except the non-responses which were coded as missing or not applicable. Binary variable "rodina" is created to mean 0 = nuclear family, 1 = single parent and mixed family.

#### **HISCED - Highest education in the family (PISA index)**

In PISA, parental education is classified using ISCED (OECD, 1999). Indices on parental education are constructed by recoding educational qualifications in the following categories: (0) None; (1) ISCED 1 (primary education); (2) ISCED 2 (lower secondary); (3) ISCED Level 3B or 3C (vocational/pre-vocational upper secondary); (4) ISCED 3A (upper secondary) and/or ISCED 4 (non-tertiary post-secondary); (5) ISCED 5B (vocational tertiary); and (6) ISCED 5A, 6 (theoretically oriented tertiary and post-graduate). Indices with these categories were provided for the student's mother (MISCED) and the student's father (FISCED) of the student. In addition, the index on the highest educational level of parents (HISCED) corresponds to the higher ISCED level of either parent.

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<sup>14</sup> For precise description of PISA indices creation see OECD (2003).

### **HISEI - Highest ISEI in the family (PISA index)**

Occupational data for both the student's father and the student's mother were obtained by asking open-ended questions. The responses were coded to four-digit ISCO codes (ILO, 1990) and then mapped to the international socio-economic index of occupational status (ISEI) (Ganzeboom et al., 1992). Three indices were obtained from these scores: father's occupational status (BFMJ); mother's occupational status (BMMJ); and the highest occupational status of parents (HISEI) which corresponds to the higher ISEI score of either parent or to the only available parent's ISEI score. For all three indices, higher ISEI scores indicate higher levels of occupational status.

### **WEALTH - Economic capital of the family**

Additive index of five items: st18q01 (number of mobile phones) + st18q02 (number of TV sets) + st18q03 (number of computers) + st18q04 (number of cars) + st18q05 (number of bathrooms)

Cronbach's Alpha = .56

### **CULTPOSS - Possession of cultural objects (PISA index)**

PISA index of three binary variables:

In your home, do you have:

ST17Q08 h) Classic literature (e.g., <Shakespeare>)?

ST17Q09 i) Books of poetry?

ST17Q10 j) Works of art (e.g., paintings)?

The scale construction is done through IRT scaling with positive WLE scores indicating WLE higher levels of Cultural Possessions.

### **CULTCOM2 - Cultural communication within the family**

Additive index of three items: dzd23o01 (discussion about political or social issues) + dzd23o02 (discussion about books, movies or TV programs) + dzd23o03 (listening to music)

Cronbach's Alpha = ,62

### **PROFCOM2 - Professional communication within the family**

Additive index of three items: dzd23o04 (discussion about school) + dzd23o05 (discussion about your future – your education or profession) + dzd23o07 (discussion about your hobbies and interests)

Cronbach's Alpha = ,65

### **SOCOM2 - Social communication within the family**

dzd23o06 (common family dinner) + dzd23o08 (just talking with parents) + dzd23o09 (visiting friends or relatives) + dzd23o10 (active leisure time with parents – sports, going to movies, theaters, trekking)

Cronbach's Alpha = ,68

### **AVERAGE\_MARK – Success in school**

Average mark from seven subjects: math, Czech language, foreign language, physics, science, geography and chemistry. The index is computed only when at least three marks are available.

### **SELF\_EST – Self-esteem**

Additive composite index of six items (q24) based upon theory of Rosenberg (1965) and used in a Canadian Longitudinal Youth in Transition Survey, Cycle 1, 2000 (with more items).

How do you feel about the following?

a) I feel I am a person of worth, at least on an equal basis with others.

- b) I feel that I have a number of good qualities.
- c) All in all, I tend to feel that I am a failure.
- d) I am able to do things as well as most other people.
- e) I feel I do not have much to be proud of.
- f) At times I think I am no good at all.

1 - Strongly agree

2 - Agree

3 - Disagree

4 - Strongly disagree

Items a, b and d reversed. The higher score of index, the higher self-esteem.

Cronbach's Alpha = 0,65

### **WORL\_MAS – World mastery**

Additive composite index of six items (q25) based upon theory of Pearlin and Schooler (1978) and used in Canadian Longitudinal Youth in Transition Survey, Cycle 1, 2000.

How do you feel about the following?

- a) Sometimes I feel I'm being pushed around in life.
- b) What happens to me in the future mostly depends on me.
- c) There is really no way I can solve some of the problems I have.
- d) There is little I can do to change many of the important things in my life.
- e) I often feel helpless in dealing with the problems of life.
- f) I have little control over the things that happen to me.
- g) I can do just about anything I really set my mind to.

1 - Strongly agree

2 - Agree

3 - Disagree

4 - Strongly disagree

### **COMPLRN – Competitive strategy when learning math (PISA index)**

Thinking about your <mathematics> classes: To what extent do you agree with the following statements?

ST37Q01 a) I would like to be the best in my class in mathematics.

ST37Q03 c) I try very hard in mathematics because I want to do better in the exams than the others.

ST37Q05 e) I make a real effort in mathematics because I want to be one of the best.

ST37Q07 g) In mathematics I always try to do better than the other students in my class.

ST37Q10 j) I do my best work in mathematics when I try to do better than others.

### **COOPLRN – Cooperative strategy when learning math (PISA index)**

Thinking about your <mathematics> classes: To what extent do you agree with the following statements?

ST37Q02 b) In mathematics I enjoy working with other students in groups.

ST37Q04 d) When we work on a project in mathematics, I think that it is a good idea to combine the ideas of all the students in a group.

ST37Q06 f) I do my best work in mathematics when I work with other students.

ST37Q08 h) In mathematics, I enjoy helping others to work well in a group.

ST37Q09 i) In mathematics I learn most when I work with other students in my class.

### **BAD\_FRI – “Bad” friends**

Additive composite index of bad behavior of friends from Question 30 set. Items a,b,e,f dropped.

Alpha = 0,80

How many of your friends:

- a) want to attain “maturita”?
- b) want to attend college or university?
- c) play truant at least once a week?
- d) have poor notoriety?
- e) prepare regularly for school?
- f) both study and work?
- g) make you do things you do not want to do?
- h) smoke?
- i) drink alcohol?
- j) smoke marijuana?
- k) take drugs?
- l) sometimes cause harm to others who are weaker?
- m) crib tests?
- n) sometimes lie to parents?

### **MISCOND – “Bad” behavior of children**

Additive composite index of bad behavior of children themselves from Question 31 set.

Alpha = 0,80

How many times in this school year did you:

- a) stay out later than your parents or guardians said you could?
- b) stay out all night without permission?
- c) run away from home?
- d) cause trouble at school and had to talk with the school principal or other administrator?
- e) drink alcohol?
- f) smoke cigarettes?
- g) smoke marijuana?
- h) took other drugs?
- i) lied to your parents?
- j) crib tests?

### **STUREL - Student-teacher relations at school (PISA index)**

Thinking about the teachers at your school: To what extent do you agree with the following statements?

ST26Q01 a) Students get along well with most teachers.

ST26Q02 b) Most teachers are interested in students’ well-being.

ST26Q03 c) Most of my teachers really listen to what I have to say.

ST26Q04 d) If I need extra help, I will receive it from my teachers.

ST26Q05 e) Most of my teachers treat me fairly.

### **ATSCHL - Attitudes towards school (PISA index)**

Thinking about what you have learned in school: To what extent do you agree with the following statements?

ST24Q01 a) School has done little to prepare me for adult life when I leave school.

ST24Q02 b) School has been a waste of time.

ST24Q03 c) School helped give me confidence to make decisions.

ST24Q04 d) School has taught me things which could be useful in a job.

**BELONG - Sense of belonging at school (PISA index)**

My school is a place where:

ST27Q01 a) I feel like an outsider (or left out of things).

ST27Q02 b) I make friends easily.

ST27Q03 c) I feel like I belong.

ST27Q04 d) I feel awkward and out of place.

ST27Q05 e) Other students seem to like me.

ST27Q06 f) I feel lonely.

**DISCLIM – Disciplinary climate in maths lessons (PISA index)**

How often do these things happen in your <mathematics> lessons?

ST38Q02 b) Students don't listen to what the teacher says.

ST38Q06 f) There is noise and disorder.

ST38Q08 h) The teacher has to wait a long time for students to <quieten down>.

ST38Q09 i) Students cannot work well.

ST38Q11 k) Students don't start working for a long time after the lesson begins.