

Julia Häuberer

# Social Capital Theory

Towards a Methodological  
Foundation

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Foundation

With a foreword by  
Prof. Dr. Hynek Jeřábek

**VS** RESEARCH

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# Foreword

This monograph by Julia Häuberer focuses on the issue of how social capital is measured and the theoretical principles the methods used to measure social capital are based on. The author has embarked on a difficult task. At least two generations of theorists have been examining the theoretical justifications and bases for different ways of looking at this complex and ever changing social phenomenon.

The difficulty that has plagued every empirical study on social capital measurement is that the authors always tend to adopt, sometimes too uncritically, a particular theoretical concept to create their measurement scales and batteries of questions, construct their questions on the basis of that concept, and then found their perspective on social capital from those questions. In my view, there has been a shortage of thorough critical analysis of the theoretical postulates that measurement concepts are based on. Comparative analyses of the assumptions and principles behind different theories have also been lacking.

An important asset of Julia Häuberer's monograph is that it contrasts the basic concepts of social capital and subjects them to a thorough and systematic critical analysis. In doing so she is able to uncover the set of reasons (the rational) that lead to the decision about which theoretical principles future measurements of such a complex phenomenon as 'social capital' should be based on.

Using clear, comprehensible, and well-established argumentation, Julia Häuberer sets the theoretical foundations of her concept of social capital measurement on an elaborated version of Nan Lin's concept and calls it the 'refined social capital model'. Her concept consciously negates the civic perspective of Robert D. Putnam's social capital but holds great value of his introduction of formal networks in the social capital discussion, and adds some aspects of Ronald S. Burt's theory to Nan Lin's resource perspective. She takes Pierre Bourdieu's very general theory of economic, cultural, and social capital and James Coleman's concept of social capital only as her sources of inspiration. In the introductory chapter she discusses both of these theories, and, seeing that neither one of these authors tried to formalise his theory, she takes their work as just the theoretical framework for her model constructs.

Julia Häuberer's measurement model is based on making a distinction between access to social capital provided by networks and accessed social capital

or social resources. To measure the former, she further distinguishes between 'formal networks' and 'informal networks' and measures these with 'network size' and 'network density'. She measures 'openness' and searches for 'structural holes'. To measure the latter, she applies the so called 'resource generator'. The next main task Julia addresses is an analysis of the validity and reliability of the batteries of questions used. She uncovers those elements and aspects of social capital that the proposed measurement model identifies well in the Czech Republic and, conversely, those areas where the proposed scales do not attain the necessary degree of reliability. To this end she uses a panel study that she designed herself and for which she obtained a grant from the Grant Agency of Charles University. By operationalizing the social capital model especially with the 'bridging social capital item battery' and the 'resource generator', Julia Häuberer is able to describe very differentiated reality and to analyse in detail the varying degrees of success achieved in the effort to find, construct, and verify measurement scales for the different dimensions of social capital. I find especially valuable the way the entire study is boldly founded on a relatively general and flexible model of several dimensions of social capital and their gradual, differentiated verification.

Although Julia Häuberer was unable to arrive at a definitive and satisfactory solution for every aspect, the batteries of questions she proposes and the scales they are based on for measuring 'strong ties and relationships among family members' and the resource generator measures can be recommended for further application in the conditions of the Czech Republic and, with some caution, in other post-communist countries. Of no less significance is her identification of problem areas and the limited reliability of the proposed scales for other dimensions.

The cultural context always complicates the conditions for developing standardised measurement scales. In the case of social capital measurement, this applies generally and twofold. Julia Häuberer's study examines how the cultural dimension complicates the construction and verification of measurement scales and makes it difficult to determine the degree of universality of their future use. The added difficulty and limitations associated with the cultural dimension of social capital stem in part from theory, as the biggest differences between the various theoretical approaches to social capital are their cultural perspective, and in part from the construction of measurement scales, as the various indicators of social capital applied in proposed measurement instruments occupy very different positions in different cultural contexts and are viewed and interpreted in very distinct ways. As a consequence, the scales proposed to measure social capital may record and measure something slightly different in different cultural environments. This general problem added to the difficulty of Julia's work. In my



opinion, however, she has addressed this problem very well in this monograph. Especially considering all these difficulties, it must be said that Julia Häuberer's monograph is a methodologically sensitive and theoretically well-grounded study of the complications involved in measuring social capital.

I wish Julia Häuberer's book much success and am sure it will serve all its readers as a source of inspiration.

Professor Dr. Hynek Jeřábek

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# Preface

This book is the result of a doctoral thesis defended in April 2010 in Prague. I would like to take this opportunity to thank all the people and institutions I am indebted to for their support that made the successful completion of this book possible.

The initial study was supported by the Grant Agency of the Charles University in Prague (GAUK) with the project “Measurement of Social Capital – The Czech Case” (no. 126507). Without this grant the whole project would have been impossible.

Furthermore the monograph was written and edited with the support of the Research Agenda of the Faculty of Social Sciences of the Charles University sponsored by the Czech Ministry of Education, Youth, and Sports, Grant No. MSM 0021620841: “The Development of Czech Society in the EU: Challenges and Risks” under the sub-project of the Institute of Sociological Studies “Social Justice and Social Capital”. Additionally, Chapters 11 and 12 were prepared with aid of research funding from the Czech Ministry of Education, Youth, and Sports for a project entitled “Shared values and behavior norms as a source of reinforcement of social cohesion and overcoming of the negative impacts of the social differentiation in the Czech Republic” (Grant No. 2D06014) of the Department of Social Structure Studies of the Institute of Sociology of the Academy of Sciences of the Czech Republic.

Among the persons I am indebted to for their help, I thank Hynek Jeřábek for his liberal and accommodating supervision of my Ph.D. project as well as for his advises in scientific and financial questions. As regards conducting the survey “Social Relationships among Czech Citizens 2007/2008”, I thank the SC&C spol. s.r.o. for the good service and assistance provided by Jana Hamanová.

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Dr. Julia Häuberer

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# 1 Introduction

As old as science is the human cogitation about how scientific knowledge is approached by man. An answer to this question is not yet in sight. Up to today the philosophy of science as developed from epistemology is not able to solve the problem of scientific knowledge generation completely, but its advancements provide guidelines on how knowledge about the world is accessible to us. This is especially important for the social sciences, because the researchers are part of the studied phenomena.

In early modernity, positivism (Comte 1830/1842, Mill 1862) was the prevailing paradigm for pursuing (social) science. It is only accepted as knowledge, which is empirically verifiable. Following the logic of induction, observations and experiments are the basis for general conclusions on positivism. Social reality is thought to follow the same rules as natural reality. This point of view is criticized as inappropriate for several reasons: social sciences are different from natural sciences and cannot be explained in a similar fashion, because they try to understand their own reality (Dilthey 1974); positivism is ideologically biased as is all human thinking (Marx 1969, Horkheimer 1968); and all human thinking is structured by language and, thus, can't reproduce reality perfectly (Wittgenstein 1963). Wittgenstein's idea was enhanced to logical positivism at the "Wiener Kreis" (Viennese Circle) that aimed to generate a logical language for social theory (Schülein, Reitze 2002). From this emerged the famous and often applied Hempel-Oppenheim scheme of deductive-nomological explanation (Hempel, Oppenheim 1948). Among the positivism critics, Popper is one of the most influential in the development of the philosophy of science (Schülein, Reitze 2002). Popper (1959) distinguishes his view from logical positivism rejecting the logical verification of theories. In his view, verification is possible only indirectly; theories have to be tested methodologically using the criteria of falsification. A theory is valid only as long as it is not proved false; and future falsification cannot be ruled out. This further implies the absence of induction - theories can only be tested using deduced hypotheses. His so called critical rationalism claims that our knowledge can never be true; it is only a collection of hypotheses that have not been proven false for a (long) period of time. This point of view was strongly criticized in the scope of the positivist dispute. On the one hand, the Critical Theorists Adorno, Habermas and others claimed that science is not neu-

tral and knowledge generation is not limited to quantitative methods. On the other hand, Popper and his colleagues blamed the Critical Theorists for speculation and unproven theories (Adorno 1959). Other critics of Popper's thinking argue that knowledge generation always depends on either the prevailing paradigm (Kuhn 1967) or the necessity to use methods ("Methodenzwang") which constrains the development of knowledge (Feyerabend 1975).

Although we find strong critiques of positivism, no consistent counter position emerged. Some prefer practical relevance as a starting point to develop a theory (Peirce 1976); others aim at the construction of reality and the understanding of social phenomena from the perspective of the individual (Schütz 1932, Hitzler 1993). As a result of this controversy, neo-constructivism emerged presuming social reality to be symbolically constructed as Kant did formerly. This implies the complete absence of objectivity (von Glasersfeld 1991, see also radical constructivism) or that all theories are their own realities and have no connection to true reality; they work like autopoietic systems (Maturana, Varela 1980, see also systems theory of Luhmann 1984). Nobody – especially not the social scientist – is able to transcend their cultural bias (or their habitus (Bourdieu 1984)) determined by the individuals' position in the social structure (Johnson 2008).

The discussion about knowledge production in science is not finished yet, however it shows that both the objective as well as the subjective views are of great relevance. Scientific knowledge needs empirical verification on the one hand, but also critical reflection and mutual criticism on the other to help visualize and correct biases caused by the scientists' habitus (Johnson 2008). We are going to take both into account in the present monograph in order to progress towards constructing a social capital theory.

We can order scientific knowledge using theories. As the discussion about knowledge generation implies, scientists have not yet come to agreement on consistent methods and a consistent form of a theory (Schülein, Reitze 2002). However, theory construction in terms of formalization was focused on heavily in the 1960s and 1970s. "The goal for theory construction or formalization is to develop a set of systematically stated, logically interrelated propositions from which specific research hypotheses can be derived and tested" (Johnson 2008: 87). The introduction of clear methods for constructing theories is very important, because, although we find critical reflections and animadversion on concepts as well as wide applications of empirical research in the social sciences, theories are seldom constructed according to necessary standards. Often they are merely empirical generalizations or de facto theories (Liao 1990). One problem in theory construction in the social sciences is the diversification and instability of social phenomena that make the development of general laws difficult. Ac-

cordingly, the possibility of predictions is very limited (Blalock 1970). However, several social phenomena persist, like for example friendship circles.

A very famous example of the problems in forming and applying theories is the lively discussion about the phenomenon of social capital. Because social capital is an entity of social relationships, it is a relatively stable phenomenon and allows for the construction of a theory. However, the opposite seems to happen. Since the early 1990s the concept develops into an overarching term; thousands of articles and books have been written on it. In the past, handbooks of sociology were published; recently the first “Handbooks of Social Capital” (Castiglione et al. 2008; Svendsen, Svendsen 2009) were released displaying its importance. Reviewing the literature makes it obvious that its catchall character is caused by a lack of theoretical foundation. Almost everything ranging from social relationships via norms up to tolerance is termed social capital. A substantive definition seems to be missing. Consequently social capital is measured with dubious variables. The present monograph represents a first step to resolve the drawbacks of social capital concepts. It aims to generate a preliminary, but general social capital theory comprising empirical results as well as critiques of the currently existing concepts. To provide useful measurement tools to test this model in the future, appropriate operationalizations will be collected from existing research, refined and tested for their quality in the Czech Republic. Accordingly, this monograph is of a methodological nature. The study will be based on guidelines for constructing a formal theory developed mainly in the late 1980s.

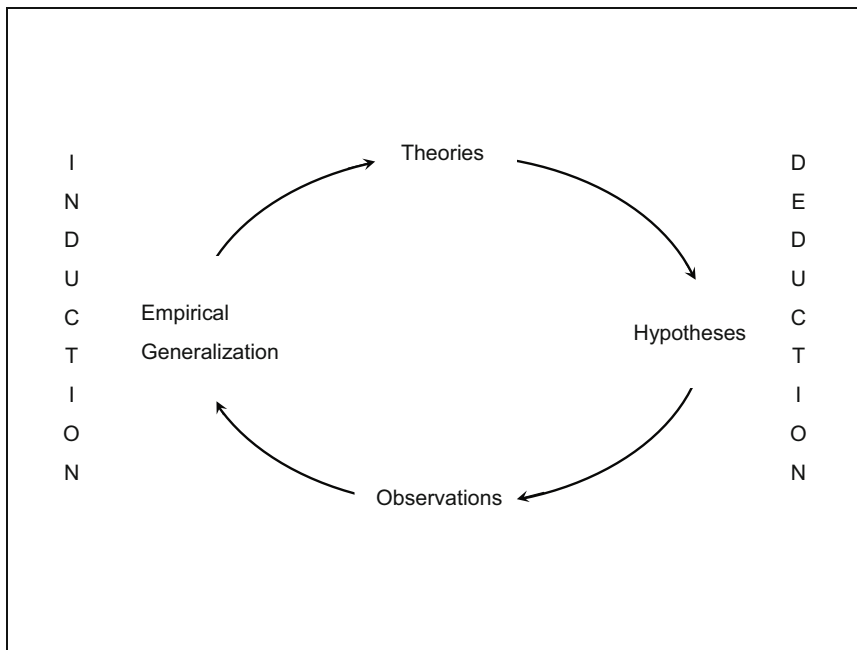
## **1.1 How to Construct a Theory?**

We can define a theory as “a set of interrelated universal statements, some of which are definitions and some of which are relationships assumed to be true, together with a syntax, a set of rules for manipulating the statements to arrive at new statements” (Cohen 1980: 171). Theories should not be confused with concepts. Concepts or so called variables classify similar phenomena that are connected to the field of study. Concepts are considered the “basic building blocks” (Turner 1989: 5) of theories.

There are two common ways to construct a theory – induction and deduction (Babbie 2004: 25; Stark, Roberts 2002). The former known as the “summative-inductive concept” (Tzeng, Jackson 1991), “concatenated type” (Heinen 1985), “set-of-laws form” (Reynolds 1971), or “metatheory” (Swanson 1988) uses particular observations to identify general patterns or rules. The latter known as the “functional-deductive concept” (Tzeng, Jackson 1991), “instrumentalist” (Heinen 1985), or “causal process form” (Reynolds 1971) starts with a

logical or theoretical pattern and uses observations to test whether these patterns exist. Accordingly, induction reveals the general from the specific in an “upward” direction. It follows that deduction reveals the specific from the general in a “downward” direction (Johnson 2008: 87). Generally we find both approaches in the same research. The whole process is called the “wheel of science” (Wallace 1971) displayed in figure 1. In the frame of a deductive approach for example, one starts with a concept or theory and constructs and tests hypotheses derived from the theory. The results of the analyses are used to refine the theories (Heinen 1985).

Figure 1: The Wheel of Science of Wallace (1971)



Note: adapted from Babbie (2004).

A deductive theory must consist of axioms and theorems. Axioms or postulates are statements about the societal world that are assumed to be true and cannot be deduced from the theory. They are the basis or fundamental assertions of the theory. The axioms are logically interrelated and constitute the basis from

which theorems or hypotheses are derived. Axioms are not empirically testable, but theorems are. Theorems or hypotheses are used to test the correspondence between theory and data (Babbie 2004; Blalock 1969; Cohen 1980).

To construct a testable theory, Blalock (1969: 18) recommends first, “select(ing) as axioms those propositions that involve variables that are taken to be directly linked causally; axioms should therefore be statements that imply direct causal links among variables” and secondly, to “state theorems in terms of covariation and temporal sequences, thereby making them testable provided adequate measures of all variables can be obtained”. Variables are concrete objects or concept events (Johnson 2008). Additionally, it is important to set up scope conditions defining the phenomena to which the theory applies (Cohen 1980; Stark, Roberts 2002).

As a result of the empirical test of the propositions, taxonomies or classifications systems can be developed or refined (Johnson 2008).

Scientists agree on several criteria a theory should meet. First, a theory needs to be explicit and should display its value. In addition, the links between the arguments have to be clear and internally consistent. Also, it should be simple and explain as much of a phenomenon as possible in the simplest manner possible<sup>1</sup>. Finally, a theory needs to be empirically testable or falsifiable<sup>2</sup>. For this reason it needs to allow for the derivation of theorems and should contain empirical terms that are operationalizable<sup>3</sup> (Asendorpf 2007; Cohen 1980; Stark, Roberts 2002; Tzeng, Jackson 1991). Additionally, a theory should explain and predict social phenomena as well as inspire future research (Johnson 2008; Liao 1990; Stark, Roberts 2002; Tzeng, Jackson 1991; Wottawa 1993).

Generally, a theory is of greater hypothetical value the more often it is confirmed or not proven false by strict tests (Liao 1990). These strong theories can be considered as scientific laws (Johnson 2008).

## 1.2 Outline of the Monograph

Concerning the scope of the present monograph we use predominantly a deductive approach and aim to formalize the social capital concept. In the first part we define social capital from its roots. Especially Bourdieu (1983), Coleman (1988, 1990) and Putnam (1993, 1995, 2000) leveraged the concept of social

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<sup>1</sup> This principle is also known under the term “Ockham’s razor”.

<sup>2</sup> Popper (1959) speaks of testability, Dodd (1968) of verifiability and Clark (1969) of confirmability.

<sup>3</sup> It is necessary to avoid nonoperating definitions or clusters of variables that are difficult to operationalize (Liao 1990)

capital in the 1990s (Kriesi 2007: 24; Freitag 2004: 11). However, Putnam's concept is strongly based on Coleman's concept. Therefore, we consider Bourdieu and Coleman the founding fathers of social capital. In Chapter 2, we introduce both concepts and discuss them critically considering especially the above outlined criteria of a formal theory. We draw conclusions about what features a social capital theory has to contain and test current social capital concepts with regards to their fulfillment of these features. We are not going to assess the prediction character of the concepts, because the ambiguity of the currently existing social capital concepts doesn't allow this.

After discussing the basics of social capital, we introduce three important developments of the concept. Robert D. Putnam's concept gained the most attention in the social capital controversy; therefore we will discuss it in Chapter 3 and we will call this the civic perspective on social capital because networks of civic engagement and their impact on norms of reciprocity and generalized trust are at its center. In Chapter 4, we introduce the network perspective of social capital or Ronald S. Burt's concept. According to Burt, social capital exists mainly in the possibility to span structural holes, that is, he highlights the importance of the location of an individual in the network. Presented in Chapter 5, Nan Lin's concept focuses on resources embedded in the hierarchical structure of a society. We discuss the three concepts critically and confront the basic ideas which should be contained in a social capital theory. Furthermore, we derive propositions about the relations between social capital aspects and their outcomes. We will test the empirical content of these propositions in recent studies and use the results to refine the requirements for a general theory. The whole discussion concludes with a more general concept of social capital including recommendations for future research and possible measures of its theoretical parts (Chapter 6).

Based on the concept of social capital elaborated in the first part, the second part of the monograph focuses on the quality of measurements of the theoretical elements of social capital. Generally, a make-or-break condition for testing a model is the quality of the used empirical data. Surveys are commonly used, but scientists seldom pay much attention to the development of measurement tools. Although there are several promising approaches to methodological problems in sociology, broad methods research dealing with problems of surveys and their praxis is not available (Reuband 2001: 44). Only little knowledge is available about the influences of item formulation and the questioning process on response behavior (Turner, Martin 1984: 279; Reuband 2001: 43; Sudman et al. 1996: 1). Concerning international research, methodological issues are well documented (e.g. PISA, ISSP, WVS). Especially in the frame of the ESS, broad method research takes place including Multitrait-Multimethod experiments in all question-



naires that makes it possible to assess the reliability and validity of the measures in all participating countries (c.f. [www.europeansocialsurvey.org](http://www.europeansocialsurvey.org)). However, contrary examples are also available. In the nationwide surveys of the ISSP the study coordinators are given a lot of freedom in organizing the surveys. For example, in the ISSP 2001, less than half of the participating countries got their questionnaires translated by a specially trained translator. Mostly, the translations were done by the members of the research team which may have been inappropriate. Additionally, the translated questionnaires were not pretested by all countries equally; reliability checks were only performed on derived variables (see Klein, Harkness 2003). These differences are strongly connected to different ways of financing the surveys. While the ESS is co-financed by the European Commission and national science foundations, the ISSP is financed by grants of the teams in the participating states. However, the international studies provide the researcher with the information about the drawbacks of their data collection. This is not the case in single country studies; here the researchers do not have to provide detailed information about their studies. But the teams have to find financial resources for conducting the research as is the case in the ISSP. Because of constrained resources, researchers neglect tests of the data quality. This fact makes quality a particular concern.

Two main reasons speak for the necessity to test currently existing measurement tools of social capital in the Czech Republic: first, the Czech Republic belongs among the countries that did not conduct all quality tests in the ISSP (Klein, Harkness 2003) thus, the available financial resources seem not high enough to cover standard quality research. Second, the newly developed measurement tools of social capital like the name generator, resource generator and position generator had not been applied previously (Matějů, Vitásková 2006: 501). Developed in different contexts than the Czech one, it is not clear if these measurement tools are applicable. Part 2 of the monograph aims to attack this problem and give a clear statement which measures can be used and which ones have to be revised before being applied.

A precondition to this objective is to clarify what is understood by the quality of a survey and its measures. Chapter 7 generally introduces the quality factors that should be satisfied in empirical research to get valuable results. We mainly focus on reliability and validity because we will assess both in the following chapters. Chapter 8 introduces the used studies. We conducted the test-retest survey “Social Relationships among Czech Citizens” which will be used to assess reliability and validity. For purposes of cross-validation, we will also analyze the survey “Our Society”. The Chapters 9 to 12 are ordered according to the improved social capital model revealed in the first part of the monograph. In a first step, we will discuss the preconditions of access to social capital in the

Czech context highlighting the influences of the Socialist past and the transition to Capitalism with respect to the proportion of formal to informal networks. The main purpose of Chapter 9 is to acquaint the reader with the Czech context. Measurement issues are not pursued in this part; they are open for future research. Switching over to the next block of the social capital model containing access to social capital, Chapters 10 and 11 deal with the measurements of informal and formal networks. Applying well-known measures for network size and density, previously used in the ISSP 2001, we will assess their reliability and validity (Chapter 10). For the measurement of network diversity, we will test a new measurement tool for the Czech context: the bridging social capital item battery. It measures diversity according to socio-demographic characteristics in the friendship circle of the respondent (Chapter 11). Finally, we will discuss measures of accessed social capital in form of resources in Chapter 12. We applied the Resource Generator for the first time in the Czech Republic. We advanced both item batteries – the bridging social capital item battery and the Resource Generator –, first, dividing the questioning according to strong (family), informal weak (friends) and formal weak ties (acquaintances from an association the respondent is a member of), and second, asking for a concrete number of family members, friends and acquaintances that have a specific characteristic or will provide a specific resource (where the will question also depicts an advancement). In addition to reliability, we will also analyze the validity of both item batteries.

Although the composition of the monograph might imply that we are going to test hypotheses that we formulate in Part 1, we have to forgo testing them because both the theory as well as currently existing measurement tools exhibit considerable qualitative lacks that will be outlined in course of the monograph and have to be eliminated. Thus, we have to leave the hypothesis testing open for future research.

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## **Part 1: Social Capital Concepts**

Without a clear conceptualization, social capital may soon become a catch-all term broadly used in reference to anything that is “social”.

Lin, Fu, Hsung (2001: 57)

## 2 The Founding Concepts of Social Capital - Bourdieu's Theory of Capital and Coleman's Rational-Choice Approach to Social Capital<sup>4</sup>

Bourdieu and Coleman are the founding theorists of social capital because they introduced the term social capital systematically for the first time. Although they did so nearly simultaneously, they introduced the term independently of each other. In the present monograph, we aim to discuss the term social capital from its roots, and thus this chapter introduces first Bourdieu's concept and then Coleman's. We discuss both concepts critically and draw a conclusion about which features are important for a social capital theory.

### 2.1 Bourdieu's Concept of Social Capital

#### 2.1.1 *General*

Embedded in his theory of praxis, Bourdieu developed the concept of social capital. This type of capital is strongly connected to different societal fields which in turn are places for the social praxis of actors (Schwingel 1995). Accordingly, social capital cannot be seen as freestanding. This is why Bourdieu's complete concept of capitals is presented in the following section.

In defining capital, Bourdieu (1983) refers to the economic term of capital (see Marx 1969). Capital is accumulated labor existing in the material or incorporated form. The accumulation labor itself is very time consuming but it is worth the effort because capital produces profits and even grows while it is being reproduced.

The three basic kinds of capital occurring in a society are economic, cultural, and social. These capitals can be converted into one another using transformation labor (e.g. money/ economic capital is exchanged for pictures/ objectified cultural capital). Specific goods and services can be gained directly with

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<sup>4</sup> Previous versions of Chapters 2-4 can be found in Häuberer (2006).

economic capital, others only with the capital of social relations or of social commitment (social capital). These types of capital are very important because societies consist of different groups that have varying amounts of economic, cultural and social capital at their disposal (for example, in the upper class academics have a high amount of cultural capital and a small amount of economic capital at their disposal, while businessmen dispose of much economic and little cultural capital). The distribution structure of the different kinds of capital corresponds to the inherent structure of the societal world or social fields. In social fields, the different kinds of capital appear in various amounts and have different values. Which capital develops the highest effectiveness in a specific field depends on the respective area of application and on the costs of transformation that arise in the conversion process of one capital into another (Bourdieu 1983: 183-185, 195-197). For example, in the economic sphere money as a form of economic capital has the highest effectiveness – it can be exchanged for any good - while education/cultural capital cannot be exchanged for any goods in the economic sphere easily.

The societal groups in social fields aim to reproduce themselves (e.g., businessmen want to reproduce their wealth and academics want to assure their domination of the legitimate culture). This is a difficult task, because the amount of capital is rather limited and the societal groups have to compete for them. The chances of one group acquiring rare goods depend on their capacities or their economic, cultural, and social capital. This is why the groups develop strategies to acquire specific goods materially and symbolically. The substance of these tactics depends on the amount of capital a group possesses, on the volume and structure of the capital that should be produced, on the relative importance of every kind of capital in the frame of the structure of means, and on the institutionalized and non-institutionalized instruments for reproduction a given group has at its disposal (Bourdieu 1984: 207, 210). But reproduction is just one possible tendency of societal development. Individual actors can also oppose this tendency by radical separation from their own societal group. However, the likelihood of this happening is very small (Burchardt 2003: 508; Sobel 2002: 139).

### 2.1.2 *Economic Capital*

Economic capital can be converted into money immediately and directly. But it also exists in the institutionalized form of property rights (Bourdieu 1983: 185).

### 2.1.3 *Cultural Capital*

Cultural capital exists in three different states. It can be internalized/incorporated, objectified or institutionalized. Cultural capital is incorporated as durable qualities of an individual such as knowledge or skills. Cultural goods, like paintings, books, etc. are an objectification of cultural capital and institutionalized cultural capital appears as scholastic sanctioned titles, like a diploma (Bourdieu 1983: 185).

The incorporation and accumulation of cultural capital requires socialization or learning time. Incorporated cultural capital is the property of one person and, therefore, is part of his/her habitus (Bourdieu 1983: 186-187). The time necessary for its acquisition represents the link between economic and cultural capital, because education raises economic costs directly (for school fees or learning materials like books) and indirectly (a longer education period is associated with a later entry into the labor market and thus, with a later starting point of earning money (see also Becker 1964)). Disparities in the amount of cultural and economic capital of families lead to different starting points and durations of the transfer of capital to children and as a result to different capital accumulation amounts by children. Cultural capital rich parents invest in the cultural capital of their children years before (e.g. sending the children to preschool) and after the compulsory education (e.g. sending the children to university). In contrast, parent's poor in cultural capital do not have the awareness of the necessity of early learning and mostly don't have economic capital for financing a child's extended education.

The material carriers of cultural capital (e.g. pictures, books) are transferable legal property. In contrast, the incorporated cultural skills (e.g. ability to enjoy paintings or use specific machines) are not transferable; they are acquired by an individual during socialization. Accordingly, incorporated cultural capital reveals one weakness: it is bound to the biological limits of the person that features it. But there is one way to objectify the incorporated cultural capital. The skills can be institutionalized and legally guaranteed via titles. These titles are academically sanctioned and formally independent of the persons holding them (Bourdieu 1983: 188-190). The educational system assigns to all holders of the same title the same value. That makes the titles exchangeable and guarantees the convertibility of cultural capital into money (Bourdieu 1987: 242; 1983: 190; 1976: 363). While the title is a product of the transformation of economic capital into cultural one, as discussed above, it is the certificate that makes it possible to retransform it into economic capital. The title indicates the amount of incorporated cultural capital of a person and, therefore, allows this person to find a position in the labor market. Additionally, the title ensures that the person is paid

according to his/her skills. But this is not always the case, because a higher access to education, for example, leads to a greater number of persons that acquire a specific title than is needed in the labor market. As a result, not all persons possessing this title can find a job. People that have social capital in addition to cultural capital are able to create a relationship with a potential employer which increases their chances of being hired.

#### 2.1.4 *Social Capital*

Social capital is “the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition - or in other words, to membership in a group - which provides each of its members with the backing of the collectivity-owned capital, a 'credential' which entitles them to credit, in the various senses of the word” (Bourdieu 1986: 248-249; 1983: 190-191).

Accordingly, social capital is a relationship immanent capital that provides useful support when it is needed. Stable relationships create honor and reputation among its members and are, thus, most effective for building and maintaining trust (Bourdieu 1984: 204). The members in a group provide safety and status credit for each other. The relationships among the group members are sustained by material and/or symbolic exchanges (e.g. gifts or greeting each other when meeting on the street). These exchanges reinforce the existing relationships and can be used to socially guarantee or institutionalize them. In this case, the exchanges serve as institution acts (Bourdieu 1983: 191). One possible institutionalization of social capital is the adoption of a common name to display the membership in a special group (as is done during a wedding by one of the bridal couple to display the belonging to the family he/she enters). The institution acts (e.g. wedding ceremony) are used to form the group (e.g. to expand the family) and to inform the members participating in them about the composition of the group (e.g. the family and the bridal couple) (Bourdieu 1986: 249). Exchange relations link the material and symbolic aspects of the social world. They need to stay visible to start and maintain relationships (Bourdieu 1983: 191).

Durable and useful relationships are produced and reproduced applying investment strategies. As a result, durable obligations are established that are felt by every subject (like friendship) or are institutionally guaranteed by laws (e.g. marriage) (Bourdieu 1986: 249-250). Endless exchanges or relation labor are necessary to transform exchanged things into signs of mutual recognition. Because this process requires time and money it represents the transformation of economic to social capital (e.g. a wedding ceremony and party is very expen-



sive). Benefits from these investments can only be gained if the individual understands the genealogical connections and real relations in the group and learns how to use them or retransform the social capital into cultural or economic capital (e.g. the individual needs to know when is the right time and who is the right person to ask for borrowing a machine or money). The profitability of the labor of social capital accumulation rises proportionally to the amount of social capital (Bourdieu 1986: 150; 1983: 193). The profits are only possible, although not consciously aspired, because membership in a group sets the foundation for solidarity (Bourdieu 1983: 192). The profits cannot be gained by an outsider of the group (e.g. nobody in the group senses solidarity with an outsider and wouldn't lend him/her something).

“The volume of social capital possessed by a given agent (...) depends on the size of the network of connections he can effectively mobilize and on the volume of the capital (economic, cultural or symbolic) possessed in his own right by each of those to whom he is connected” (Bourdieu 1986: 249).

The volume of social capital of a given person is assessed not only by the amount of relationships he/she builds, but also by the capital resources of the partners (e.g. the number of family members plus their capital resources). Thus, social capital implies a multiplication on the real existing concentration of an individual's capital indicating that it cannot be reduced to economic or cultural capital completely (Bourdieu 1986: 249).

Furthermore, in all groups an institutionalized form of delegation exists allowing to concentrate the complete amount of social capital of one group in the hands of one individual (e.g. head of the family or president of an association) or a small group (e.g. executive committee of an association). A representative is assigned to speak or act on behalf of the group (Bourdieu 1983: 193).

## **2.2 Coleman's Concept of Social Capital**

### *2.2.1 General*

Coleman embeds his concept of social capital in the context of the rational choice theory. Social interdependencies arise among actors, because they are interested in events and resources controlled by other actors to maximize their utility by rationally choosing the best solution for them. If permanent social relations like authority relations or trust relations are established, acts of exchange and transfer of control result.

Coleman integrates the ideas of Loury (1977, 1987) and Granovetter (1985) in his concept of social capital. Loury (1977, 1987) designates social relationships that result from using resources for maximizing utility as social capital, because these relationships represent resources of an individual. According to this, social capital is a resource existing in kinship relations and in appropriable social organizations. It supports, for example, the cognitive and social development of a child and is most useful for the constitution of human capital (Coleman 1995: 389). Granovetter (1985) points out that the embeddedness of economic transactions in social relationships is very important for generating trust, in establishing expectations, and in creating and enforcing norms (Coleman 1995: 391; 1988: S97). In summary, these social structure resources are for Coleman a wealth of capital for individuals (Coleman 1995: 392; 1988: S98).

“Social capital is defined by its function. It is not a single entity, but a variety of different entities having two characteristics in common: They all consist of some aspect of social structure, and they facilitate certain actions of individuals who are within the structure” (Coleman 1990: 302).

This means social capital is always an element in the social structure favoring actions of actors that are members in this structure. Thus, it is a special resource (Kriesi 2007: 24).

Social capital, like other forms of capital, is productive and facilitates the achievement of certain ends that would be impossible in its absence. It is fungible with certain activities. That means a special form of social capital is valuable in facilitating certain actions, but may be harmful for others (Coleman 1995: 392; 1988: S98).

A special feature of social capital is that “unlike other forms of capital, social capital inheres in the structure of relations between persons and among persons” (Coleman 1990: 302). Accordingly, social capital has the characteristic of being inalienable (Loury 1987). Social capital is for none of the embedded actors a private good; it has the character of a public good (Coleman 1995: 409).

Unlike the way physical capital is created by changing materials to form tools that facilitate production, and the way human capital is created by modifying and enhancing people’s skills and capabilities, social capital comes about through changes in relations among persons that facilitate action. That means social capital is less tangible than physical or human capital. It exists in relations. All three types of capital have the fact that they facilitate productive activities in common (Coleman 1995: 394; 1988: S100-S101). Physical capital and human capital are private goods. Those who invest in them reap the resulting benefits. But social capital does not have this characteristic; it is a public good. Thus, not only the investing actors gain benefits from social capital, but also other actors being part of the social structure benefit (Coleman 1995: 410; 1988: S116).

The social structure allows for the establishment of social norms. The norms specify which actions are seen as appropriate and correct by a set of actors. Actors that deliberately establish or support a norm anticipate benefits from common compliance with the norm in the social structure (Coleman 1995: 313). Returns can result from a decrease of negative external costs of the actions of an actor, for example (Coleman 1995: 322). According to Coleman, a norm regulating a specific action exists, if the socially defined right for control of this action is not the property of the actor that performs the action, but the property of another actor. Typically, norms are enforced with sanctions in terms of rewards or punishment (Coleman 1995: 313). If a group of actors establishes the norm of not smoking in restaurants situated in the group's living area, the negative externality of harming others' health is reduced. In this case not only the group that established the norm benefits from it, but also the other actors belonging to the social structure. Here the public good character of social capital is at work.

Because social capital has this public good characteristic, we find underinvestment in its creation. Actors build social capital (e.g. request for the help of other actors) as a by-product while aspiring towards the maximization of their utility. The interactions with other actors in the process of goal attainment incur obligations of mutual help (e.g. announcing future help). To maintain social capital it is necessary to fulfill incurred obligations. But if the opposite behavior is of higher advantage to the actor, he/she ignores his/her obligations. Thus, the actor uses the advantage of social capital, but does not invest enough to maintain it. Because a major part of social capital is established as a by-product of utility maximizing actions, thus, without deliberate contribution on the part of the actor, there is no incentive for the actor to invest in social capital additionally. He/she invests only the amount that is necessary for the maximization of utility (Coleman 1995: 412; 1988: S118).

People are connected in different contexts wherein they are able to establish social capital. The advantage of such multiplex relations is that the resources from one relationship can also be used in another (Coleman 1988: S109). Friends from a sports club may help the actor to find a job, for example.

There are different factors that influence social capital as a whole: closure, stability and ideology. Social structures realize different levels of closure. A social structure is closed, if relations exist between all embedded actors. That means actors with dense networks have a higher amount of social capital at their disposal than actors with sparse networks.

Every kind of social capital depends on the stability of the social structure or the relations. Disruptions in social organization or social relations destroy social capital. Organizations that found their structure on positions can preserve stability, because the positions can be staffed by different people.

Ideology can evoke social capital. It awakens in an individual the need to act in the interest of someone or something else. A religious doctrine can lead a person to act in the interests of other actors.

Furthermore, social capital is influenced by factors like welfare. In societies with a high level of welfare the state provides assistance (e.g. social security payments) in the event of (social) problems. That decreases the mutual dependence of persons and has, thus, a negative impact on social capital.

Social capital loses value over time like physical or human capital. Concretely, social relations fragment, expectations and obligations lose importance and norms expire (Coleman 1995: 414-417).

### 2.2.2 *Kinds of Social Capital*

Coleman differentiates between the kinds of social capital outlined in the following section. Social capital remains in relations that are based on mutual trust or authority. Both create familial networks and appropriable social organizations. Relations are characterized by information potentials and effective norms.

#### *Relations of Mutual Trust*

A relation of mutual trust exists, if actor A does something for actor B and trusts B to reciprocate in the future. This action establishes an expectation in A and the obligation in B to justify the trust. This obligation corresponds to a “credit slip” that is possessed by A and can be redeemed by some performance of B. Many “credit slips” constitute a large body of credit an actor can draw on, if necessary.

For this kind of social capital the trustworthiness of the social surroundings (the probability that obligations are redeemed) and the amount of outstanding obligations are of special importance. The amount of outstanding obligations depends on different factors like the particular need for help, the existence of other sources of help and the level of prosperity of the society. If an individual does not need help or can gain help via other channels than personal (e.g. state financed social support), he/she won’t create relationships.

If an individual has the ability to refer to a high number of obligations, he/she has a big amount of social capital at his/her disposal. The density of outstanding obligations leads to multiplied utility of concrete resources. In the event of an emergency, our actor A has the resources of actor B at his/her disposal because B has to reciprocate the former favor A did for B. Thus, actor A possesses the rights of control of B’s resources (Coleman 1995: 396-399; 1988:

S102-S103). In conclusion, an actor able to activate many credit slips has access to various resources that are not possessed by him/her.

The exchange of help is only profitable if the receiver of the favor does not repay it until the donor itself needs help. The obligations create a kind of insurance policy that premiums are paid in a weak currency and that rewards are paid in a strong one (Coleman 1995: 402; 1988: S104). That means that in return for providing help at a relatively small expenditure, the giving actor receives a favor with a very high value at a later point in time (e.g. lending a car to someone when one does not particularly need it raises small costs, while having this person help with a move as repayment is of great value).

Trustworthiness develops when social structures are closed or relationships exist among all actors. In this case, obligations and expectations can be raised and sanctioned effectively. If actor B fails to meet the expectations of actor A, he/she forces negative external costs on actor A. In an open structure, the action can just be sanctioned effectively by the person that holds the obligation (Coleman 1988: S107). In such a structure, reputation and collective sanctions that secure trustworthiness cannot be applied or established. But if the structure is closed, trustworthiness can be established (Coleman 1995: 415; 1988: S107-108). Closure can be replaced by intermediaries. Intermediaries are advisors, guarantees and entrepreneurs. Trust is assigned to a stranger, if a known (and trusted) person has a relationship with the stranger. The familiar person is in this case the intermediary. However, closed systems can lead to inflationary and deflationary spirals of allocation of trust (Coleman 1995: 413). An inflationary spiral occurs, when the closed structure leads to the allocation of an amount of trust that is too high (e.g. everybody trusts everyone). This results in a drop in the value of trust. In contrast, when the allocation of trust is restricted by an increasing number of conditions in a deflationary spiral (e.g. hardly anyone trusts anyone else), relationships of trust gain more and more value.

The profits of trust do not emerge solely for the investor, but also for other members of the social structure. Accordingly, trust is also a public good featuring underinvestments in its constitution and maintenance. An actor decides to trust (or not to trust) on the basis of costs and benefits for him-/herself and invests in a trust relationship only to the degree necessary for the maximization of his/her utility (Coleman 1988: S117). As a result, less is invested in the preservation of social capital in the form of trust (the acquaintance one previously lent one's car to, might not help moving the house because it raises higher costs than anticipated in the maximization calculation conducted prior to borrowing the car).

### *Authority Relations*

If actor A transfers the rights of control of a specific action to actor B, an authority relationship comes into being. Actor B possesses in this case social capital in the form of rights of control (Coleman 1995: 404). Actor B might be the boss of a working division, for example. Actor A, an employee, transferred his/her right of controlling his/her actions (work) during working hours by contract to the boss that decides what tasks are to be fulfilled.

### *Information Potential*

Social relationships contain an information potential or the capability to provide its members with information helpful in the utility maximization process. The information potential constitutes another kind of social capital. Information provides the basis for action, but the acquisition of information incurs costs. Information can be gathered relatively easily through relationships that are maintained for other reasons (Coleman 1995: 402; 1988: S104).

Underinvestments can also be found in this kind of social capital. An actor functions as a source of information for other actors, because he/she is well informed. But because the information possessing actor only tries to maximize his/her own utility, the information is just used for his/her own advantage and is not distributed (Coleman 1988: S117). But to preserve the relationships and their information potentials it is indispensable to share information with other actors in the social structure. Otherwise, the other actors will also refuse to provide information in the future that results in the break-up of relations. But because information is not provided in the first place, the investment in social capital is too small to preserve it.

### *Effective Norms*

Effective or prescriptive norms are a powerful, but also fragile kind of social capital. They facilitate certain actions; however they limit others (Coleman 1995: 403; 1988: S104-105). A prescriptive norm is very important in a collective. It enjoins an actor to espouse a certain behavior in the interest of the collective and prevents this actor from behaving in his/her own interests (Coleman 1988: S104). Such norms can be internalized in the actor or enforced by external sanctions. With effective norms the problem of the public good (especially underinvestments or free-riding) can be solved (Coleman 1988: S105), because the actor is internally or externally forced to invest (enough) in its provision.

Necessary conditions for the development of effective norms are actions that have externalities on other actors also belonging to the social structure. The terms externality or external cost are used, if an action has an impact on a third actor that is not directly involved in the action. The spillover is negative, if the externality harms the third actor (e.g. secondary smoking causes health problems), and it is positive, if the action has an advantage for the third actor (e.g. planting a tree improves the air respired by the planter him-/herself as well as by other people living in the surrounding area). Norms decrease the negative external costs (e.g. forbid smoking in public places) and enhance the positive external benefits (e.g. many trees are planted because it is common practice to have some in one's garden) (Coleman 1988: S106). Preconditions for the emergence of norms are closed social networks or relationships among all actors in a network (e.g. publicly smoking actors are punished by exclusion) (Coleman 1995: 413). Norms are not implemented in the absence of closure, because actors without mutual relationships are not able to support each other to establish sanctions that contribute to compliance with the norm (e.g. smokers are not punished).

If the parents of children that are friends know each other, we speak of intergenerational closure of relational structures (Coleman 1988: S106). In this network, effective sanctions can be established monitoring and guiding the behavior of the children. The parents are able to discuss the activities of the children and to come to a consensus about standards and sanctions. Further, the parents can observe the behavior of the children mutually (Coleman 1995a: 352; 1988: S105-S107).

Also in the case of effective norms we find underinvestments. Although the possibility of the establishment and maintainance of effective norms depends on the social structure influenced by every action of its members, the actors do not include this structure in their utility calculation (Coleman 1988: S117). Norms are only defended as long as they are useful to maximize the utility (an actor won't impose sanctions on a smoker, if maintaining his/her health is unimportant for reaching his/her goal). Again, this means that social capital is insufficiently invested in for its preservation.

### *Appropriable Social Organizations*

Organizations established to achieve certain goals can also be useful to obtain other aims. In this case, they represent social capital (Coleman 1995: 405; 1988: S108). But organizations can also be established with the object to provide social capital. Such purposeful organizations are voluntary associations that produce public goods. Thus, the profits of organization are not only at the disposal of its initiators, but also for nonparticipating actors (Coleman 1995: 406-407). For

example, a neighborhood association that collects money and builds a playground may make it accessible to all children of the neighborhood regardless of whether or not their parents are members of the association.

Organizations that produce a private good are a kind of social capital whose profits flow directly to the investor. Because the investing actors benefit from the profits directly, they invest the right amount necessary for the preservation of the social capital. Here no underinvestments can be found (Coleman 1995: 412; 1988: S117).

### 2.3 Discussion of the Concepts

All knowledge generation is inherently subjective (see Chapter 1 of the monograph), thus, it is necessary to confront all concepts with the critiques of scientists other than the founder of the concept. This is the purpose of the present section. After presenting the main ideas of Bourdieu and Coleman's concepts, we will outline the critical points of their concepts and check their potential as a formal theory.

Both discussed concepts commonly define social capital as a property of relationships. It is a resource actors can use and benefit from (see also Kriesi 2007: 24). Bourdieu points out that social capital, if needed, can provide helpful support and it can be used to produce and preserve trust. According to Coleman, social capital is some aspect of social structure that favors the actions of actors. He highlights that a high level of social capital especially benefits the development of children.

Both, Bourdieu and Coleman's concepts explore the micro- and the meso-level of the society<sup>5</sup>, however they focus on different aspects. Bourdieu's concept aims at the benefits an individual obtains through relationships. That means social capital is seen as individual resource (Haunschild 2004: 82; Panther 2002: 159; Braun 2001: 341). The positions of individuals in society are determined by the amount of (economic, cultural and social) capital they possess (Krätke 2001: 160). The individuals constitute groups through acts of institutionalization. And these groups benefit from the amount of capital of their members allowing them to constitute and apply specific strategies to reproduce themselves. In Coleman's concept both, the individuals and the collective, realize benefits from different kinds of social capital. Trust relations, for example, make reciprocal actions at different time points possible for an individual and are of value to the collective, because they are the basis for establishing norms guiding the action of actors

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<sup>5</sup> On the micro-level the way of using social capital of individual actors is analyzed. On the meso-level social capital as resource of a group is analyzed (Krätke 2001: 162).



and, therefore, give rise to cooperation. According to Coleman, social capital as a characteristic of the social structure is a public good (Haunschild 2004: 82; Panther 2002: 158; Herrmann-Pilath, Lies 2001: 362; Krätke 2001: 160).

Haunschild criticizes Boudieu's concept because the transformation of social capital into economic capital and reverse is not explicitly discussed (Haunschild 2004: 76). Bourdieu states that social capital consists of the membership in a group and that it can be converted into other kinds of capital. He doesn't generalize relationship qualities important for the transformation. To the contrary, the concept of Coleman contains such a generalization: a closed social structure provides social capital the most effectively. The level of closure of a network has a great influence on the amount of social capital; it is an advantage, because it facilitates the access to information and the establishment of sanctions that minimize the risk of failure in cooperation. This position is called closure-argument (Lippert, Jürgens 2005: 290; Burt 2001b: 38-40; Sobel 2002: 150-151; Burt 2001: 205-207).

Also in Bourdieu's concept, closure and group density play a distinct role. Membership in the group is based on a clear demarcation from others using institutionalizations like nobility, title or family. As a result, outsiders are strictly excluded. The importance of closure is further highlighted imposing the assumption that social capital has a multiplication effect. This effect is only valid, if all members of the group maintain strong and reciprocal relations. Accordingly, the various strengths of relations are not taken into account, only close relationships are included (Lin 2001: 25-28; 2001a: 8-11). Portes criticizes the overemphasis of close and dense relationships (especially referring to Coleman's concept). In doing so, the ability of weak ties to generate new knowledge and to provide access to resources is overlooked (Portes 1998: 5; Schuller et al. 2000: 7). A closed structure prevents the entry of information and innovations into groups (Glückler 2001: 219). Applied to Coleman's concept this means that the information potential (as a kind of social capital) cannot be maximized in a closed structure, because only old information is diffused in the circle; news is excluded, because no weak ties are maintained. Lin (2001a: 9) equates the preference of closed groups and entities with a vision of a class society without mobility. Also empirical results speak in favor of the importance of weak ties. Stanton-Salazar and Dornbusch, for example, revealed that the school assessment of students with Mexican origin was lower than that of American students even though the former disposed of more closed familial networks than the latter. Although the closure in their networks leads to a good information transfer, it also has the effect of making the essential information necessary to improve the assessment of the students absent in the network. This information could only be provided

by weak ties (e.g. acquaintances familiar with the American school system) (Field et al. 2000: 246; Stanton-Salazar, Dornbusch 1995: 116-118).

Kolankiewicz showed that closure and dense relationships can be an effective, defensive or strong resource, but closed networks also tend to be connected to immoral nepotism and clientelism (Kolankiewicz 1996; Schuller et al. 2000: 8). The closure among generations leads to conservatism the actors experience as more suppressive than relieving (Field et al. 2000: 246).

Several studies displaying the importance of bridges in networks to find better jobs speak also against the closure argument (Granovetter 1973; Burt 1992; Lin 1999; 2001; Marsden, Hurlbert 1988; De Graaf, Flap 1988). On the one hand a closed structure leads to a high level of integration of individuals, but on the other this structure can have negative external costs. Outsiders are excluded and members of the network can be faced with the free-riding of others claiming resources without giving any in return (Glückler 2001: 218-219; Portes 1998; Portes, Sensenbrenner 1993).

As result of this discussion, we can conclude that social capital, as resource in a network, exists not only among close relationships, but also among weak ones. Accordingly, a social capital theory needs to include both kinds of relationships. This points out to the fact that neither of these social capital concepts can claim to explain the phenomenon social capital completely.

Also other points reveal the narrowness of the concepts. While social relationships exist in many contexts (e.g. working place, friendship circle), the theorists only focus on groups that are institutionalized – like nobility or titles (Bourdieu) and families<sup>6</sup> or primary relations (Bourdieu and Coleman). Coleman differentiates between social organizations established by birth (including the whole family) and constructed social organizations established for a specific purpose. Social capital generally belongs to the former type. Because the extended family lost its importance in the last century, Coleman sees social capital as decreasing. But feminist critics do not maintain this opinion and argue that Coleman presents an oversimplified view of the family (Schuller et al. 2000: 8). Nowadays we can find pluralized living forms (Geißler 2000; Hradil 1999). It's true, the family lost its importance, but alternative networks form substituting the traditional family; individuals stay connected.

In short, both concepts neglect non-institutionalized relationships like friendship. But these relationships have to be included in a concept of social capital, because first of all, most of the institutions (e.g. family, marriage) are substituted by other forms of living (e.g. unmarried couple, flat-sharing commu-

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<sup>6</sup> It has to be noted that the family is a multidimensional construct including different institutions like marriage or parenthood. Therefore, in current sociology the family is not termed as institution itself (Esser 2000).

nity) and secondly, these non-institutionalized relationships are mostly provided by weak ties that also contain resources useful for reaching a specific goal. Accordingly, all kinds of relationships have to be included in a concept of social capital, regardless of whether or not they are institutionalized.

Regarding their content, Coleman and Bourdieu's concepts have been criticized for neglecting the question how social capital can be used to decrease inequality. Although Coleman discusses social capital as source of inequality for highschool student's success, he holds that equality prevails in a closed social structure. He doesn't consider social capital to be helpful to consolidate social hierarchies and, thus, creates new sources of inequality. The topic of inequality is also discussed in Bourdieu's concept outlining existing power relations or assuming that the dominant class has more capital at its disposal. However, the question of how social capital can be developed or used to increase equality is not considered (Field et al. 2000: 245).

Finally both authors neglect the negative effects of social capital. Coleman does not point out that the closure of networks can have negative externalities, in the first place for the outsiders that cannot benefit from the resources of the network and secondly, for the members of the network itself that cannot gather new information from outside the network (Glückler 2001: 218-219; Portes 1998; Portes, Sensenbrenner 1993). Embeddedness in social relationships may discourage agents to seek new (and better) opportunities. Closed networks may tend to promote conservative behavior, because conspicuous behavior may be looked down upon by one's peers. Consequently, innovative and risky behavior will be rare and safety nets won't push individuals to do their best.

Also Bourdieu fails to point out that social capital has negative external costs for outsiders of the group, although, the institutionalization of membership in a group implements exclusion. Social capital seen as investment of members in a dominant class to maintain and reproduce group solidarity highlights that membership in a group is based on a clear demarcation excluding outsiders (Lin 2001a: 10). Exclusion can not only have negative externalities on the excluded actors that are not able to access the social capital of the group, but it may also impose negative costs on the group itself, because outsiders may be able to bring valuable skills to the group. For these reasons the negative effects of social capital should be included in a theory of social capital.

Besides content related issues we find problems in the concepts that make formalization (as discussed in the introduction of the monograph) difficult or even impossible. First of all, Coleman considers social capital in a functionalist light. Lin argues that this functionalist view of social capital may be a tautology, because social capital is identified only when it works. A potential causal explanation of social capital is captured by its effects only. Thus, we would have to

include both, causal and effectual factors in a single equation to build a theory. That would mean, if social capital fulfills its function, it is seen as social capital and if it does not fulfill its function it is simply not seen as social capital. Lin explains this with the example of a kin group: Kin ties are social capital for actor A, because they helped him/her to get a better job. In contrast, the kin-group of actor B didn't help him/her to find a job, and thus, doesn't represent social capital. To build a theory the concepts in a functional relationship (here resources in kin-network assist in getting a better job) have to be dealt with as separate entities with independent measurements. The outcome variable should not prescribe the specification of the causal variable (Lin 2001: 25-28; 2001a: 8-11). Similarly, Diekmann (1993: 23) criticizes that Coleman's concept doesn't contain an operationalization of social capital itself<sup>7</sup> and that the term social capital isn't part of a deductive theory with empirically provable theorems. The vague definition of social capital leads to the fact that the term can be used in various situations (Portes 1998: 5; Schuller et al. 2000: 7). Although not discussed by the presented critics, the same accounts for Bourdieu's concept; his studies neither operationalize social capital nor formulate a deductive theory with provable theorems. This shows that we cannot speak of a (formal) social capital theory in either case. However, both concepts represent the starting point for constructing such a formal social capital theory after combining and refining them according to the discussed critiques.

## 2.4 Conclusions – The Basics of Social Capital Theory

The discussed social capital concepts of Bourdieu and Coleman agree in the definition of social capital *as resources embedded in relationships among actors*, although they were constructed in different contexts. This is the definition of social capital we will refer to subsequently. It contains two main dimensions: *social networks and resources*. However neither concept provides a formalized and provable theory as discussed in the introduction. Both presented concepts cannot be tested, and therefore falsified or refuted, because firstly, the term social capital is unclearly defined and, thus, ambiguously operationalized and secondly, the concepts do not contain empirically testable theorems. We conclude that both concepts do not represent all-encompassing theories of social capital and can only be taken as a starting point to construct such a theory.

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<sup>7</sup> Coleman operationalized social capital of children only indirectly (Coleman 1988, 1990 and see Chapter 4 in the present monograph).

The discussion showed gaps of both concepts that have to be filled to construct a theory of social capital. A social capital theory should have the following characteristics:

1. Social capital can be an individual or public good; therefore, social capital has to be theorized at the micro and macro level of the society.
2. Social capital is produced in open and closed structures and institutionalized and non-institutionalized relationships equally. Furthermore, the relationships feature different characteristics: they can be based on trust, authority, norms or formal organization and contain information potentials that are together the basis for access to embedded resources. The resources embedded in these different structures may benefit different actions.
3. Neglected negative effects of social capital via exclusion have to be considered.
4. The topic how social capital can be used to fight inequality should be included.

After defining social capital and pointing out its important aspects, the next chapters deal with further developments of the social capital concept, namely the concepts of Putnam, Burt and Lin. The concepts are introduced and discussed according to their capability to serve as a theory of social capital.

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## 3 Introducing the Civic Perspective on Social Capital – Robert D. Putnam’s Concept of Social Capital

In the present chapter, we introduce Putnam’s theoretical social capital concept, we discuss it critically and point out testable theorems contained in the concept. We find a broad operationalization of social capital in Putnam’s writings. However, it isn’t useful to test the conveyed theorems. Therefore, after introducing Putnam’s research, the second part reviews empirical studies in his tradition concentrating on problems of measurement and answering the question, if the theorems hold up to empirical testing. We use the results of the discussion to refine our requirements for a social capital theory.

### 3.1 The Theoretical Concept of Social Capital

#### 3.1.1 *General*

Putnam developed his concept of social capital following Coleman’s. His main idea is that social networks contain value for individuals. Like physical and human capital, social contacts influence the productivity of individuals and groups. Physical capital remains in physical objects, human capital is a property of individuals and social capital inheres in relations among individuals (Putnam 2000: 18; see also: Coleman 1995: 392, 394; 1988: S98, S100-101). The relations between individuals form social networks, norms of reciprocity and trustworthiness (Putnam 2000: 18-19). These characteristics of social life are social capital. They allow the participants to act together more effectively to reach collective goals (Putnam 1996: 66; 1995: 664-665).

Social capital is similar to “civic virtue” (Putnam 2000: 18-19) and has a close relationship to political participation. But political participation depends on relations with political institutions and social capital depends on relationships between people (Putnam 1995: 665).

According to Putnam, societal quality is highest if a tightly-knit network of reciprocal social relationships exists (Putnam 2000: 18-19).

Social capital contains an individual and collective aspect. Individuals generate relations that support their own interests. For example, many people do not find a job because of their human capital, but because of networking (Putnam, Goss 2001: 20; Putnam 2000: 20). On the other hand social capital is advantageous for the work of state and market (Putnam, Goss 2001: 19; Putnam 1993: 181). Putnam's research shows that social capital is more important for stability, effectiveness of governments and the economic development than physical and human capital (Putnam 1993: 183).

### *3.1.2 Elements of Social Capital*

According to Putnam, social capital persists if trust prevails in relations. Trust itself is generated in networks of civic engagement and via norms of reciprocity constituting two additional kinds of social capital.

#### *Trust*

Trust is the lubricant of civic life (Putnam, Goss 2001: 21-22; Putnam 2000: 20-21; 1993a: 13). The higher the level of mutual trust in a community, the higher the probability of cooperation will be. Cooperation itself fosters trust. The trust necessary to back cooperation is not blind; it contains a prediction about the behavior of an independent actor.

Social trust in a complex modern environment can grow from two closely tied sources: norms of reciprocity and networks of civic engagement (Putnam 1993: 171).

#### *Networks of Civic Engagement*

We can trace the idea of networks of civic engagement back to Alexis de Tocqueville (1835/40). He introduced a concept of civil society (in Putnam's terms networks of civic engagement) constituted of associations. That is to say, the civil society is located at the intermediary level of the society. The most important expectation about civil society is that it strengthens the democratic performance of the state. Associations are schools of democracy; they develop virtues like solidarity and participation among citizens and socialize active individuals into community members. Essential for majority democracy is that associations strive for common goods (Karolewski 2006: 169).

The societal networks are either formal or informal networks. The former consist of official membership (e.g. in an association) and the latter are built on



mutual sympathy (e.g. friendship). Besides this aspect, the networks can be structured horizontally or vertically. Horizontal networks bring together people of the same status and power, and vertical networks join individuals that are different and are located in asymmetric relations of hierarchy and dependency (Putnam 1993: 173). Horizontal networks facilitate communication and improve the distribution of information about the trustworthiness of individuals. They allow the mediation and improvement of reputation (Putnam 1993: 174). Reputation itself is essential for trust in a complex society (Putnam 2000: 21; 1993a: 13). Vertical networks are not able to sustain social trust and cooperation. Vertical information flows are generally less reliable than horizontal ones, because subordinates hold information back as protection from exploitation. Sanctions that support norms of reciprocity against selfish behavior are rarely imposed on persons at higher positions in the hierarchy, and if imposed, they are hardly ever adopted. Patron-client-relations, for example, contain interpersonal exchange and reciprocal obligations, but the exchange is vertically and the obligations are asymmetrical (Putnam 1993: 174). Horizontal and vertical networks represent ideal types of networks. Real networks are a composition of both types. Networks of civic engagement, like neighborhood associations or sport clubs, are mostly horizontal. They exist only, because former cooperation was successful. The cooperation success works as a culturally defined pattern for future cooperation. The higher the density of such networks in the community, the more likely citizens are to cooperate and reach a common advantage. Networks imply this strong effect, because they increase the potential costs of misbehavior in every individual transaction. Thus, selfish behavior against collective advantages ventures benefits that could arise from future transactions (Putnam 1993: 173-174). The embeddedness of political and economic exchanges in closed networks of social interaction reduces the incentives of opportunism and poor behavior (Putnam, Goss 2001: 21-22; Putnam 2000: 20-21; 1993: 172; 1993a: 13). Thus, networks of civic engagement support robust norms of reciprocity (Putnam 1993: 173).

### *Norms of Reciprocity*

Putnam refers to Coleman's norm concept which equates social norms to the transfer of action controlling rights from one actor to another, in case an action has externalities. Sometimes, external costs are captured by the market, but this is only seldom the case. Norms arise, if an action has similar external costs for several actors, if control rights markets cannot be established easily, and if an individual actor cannot engage successfully in the exchange of control rights.

Norms are coined and supported by socialization and sanctions (Putnam 1993: 171; see also Coleman 1995: 359-361).

Norms creating social trust decrease the costs for transactions and ease co-operation. The most important characteristic of these norms is reciprocity. Reciprocity itself can be balanced/specific or generalized/diffuse. Balanced reciprocity indicates the exchange of goods of the same value. In the case of generalized reciprocity, an imbalance of sustainable exchange relations prevails in every moment (Putnam 1993: 172). Generalized reciprocity means that people will help each other without expecting an immediate service in return. So to speak, social interactions help to solve the dilemma of collective action. The norms of generalized reciprocity lead to a trusting behavior in situations people wouldn't normally adopt (Putnam, Goss 2001: 21; Putnam 2000: 20-21).

### 3.1.3 *Characteristics of Social Capital*

Social capital may have external benefits for the whole community. A person with few relations can profit from a closely connected community. Accordingly, social capital is both a private and a public good. Positive externalities arise, because mutual obligations prevail in dense social networks helping to generate strict norms of reciprocity (Putnam, Goss 2001: 21; Putnam 2000: 20-21). For example, a community's crime rate is lower, if a high density of social relations dominates. In this structure, criminal behavior can be sanctioned effectively, because everybody knows everyone personally. But we must also consider the fact that the externalities of social capital are not always positive (e.g. dense networks may exclude people outside the network) (Putnam, Goss 2001: 23-24; Putnam 2000: 21).

Putnam remarks that the public good character of social capital leads to underinvestments in its production and maintenance. Social capital is very often a by-product of other social activities that are performed by actors to reach individual aims. That is, actors invest only as much in the social capital production as is necessary for achieving their individual goals. But this is mostly less than would be necessary for the perfect preservation of it. Social capital consists typically of relations, norms and trust brought from one social situation to another (Putnam 1993: 170; 1993a: 14; see also: Coleman 1995: 410-411; 1988: S116-117).

Because most forms of social capital, like trust, are moral entities, their supply increases through use and decreases if not used; such is the case of underinvestments. The more people trust each other, the more mutual trust increases (Putnam 1993: 169-170; 1993a: 13-14). The stock of social capital is self-

enhancing and cumulative. Where a high level of social capital prevails, new social equilibria with high levels of cooperation, trust, reciprocity, civic engagement and collective health emerge. These characteristics define a civic community. Their absence leads to a decrease of social capital (Putnam 1993: 177).

Social capital can be organized formally or informally. The former are, for example, parents associations and an example of the latter is regular meetings in a pub. In both cases, networks emerge in which mutual relations form. Private and public benefits can arise from these relations (Putnam, Goss 2001: 25; Putnam 2000: 22).

Social capital relations can be densely interweaved, repeated, intensive and multistranded, like for example relations to colleagues at work or family members, or they can be thinly laced, nearly invisible, episodic, single stranded, anonymous, like relations to casual acquaintances (Putnam, Goss 2001: 26; Putnam 2000: 22). Strong relationships feature high contact frequencies and exclusiveness. Strong bonds prevail, if the friends of one person are also friends. Weak bonds remain in casual acquaintanceships where people do not have mutual friends.

Social capital can be inward or outward looking. Groups featuring the former characteristic aim to pursue the material, social and political interests of the group members and groups featuring the latter provide public goods. Inward looking social capital remains in groups organized on the basis of class membership, gender or ethnic relations. The purpose of such a group is the preservation and strengthening of the bonds among its members. Inward looking associations are, for example, chambers of commerce and outward looking organizations are charitable fraternal organizations (Putnam, Goss 2001: 27-28).

### *3.1.4 Bridging vs. Bonding Social Capital*

Developing the idea of inward and outward looking social capital, Putnam distinguishes between bridging and bonding social capital. Bridging social capital brings together very different people and bonding social capital connects people that are alike (Putnam, Goss 2001: 28-29).

Bonding social capital can be found, for example, in ethnic/religious fraternal organizations and church based women's reading groups. It is directed to the inside of the group and it leads to exclusive identities and tends to reinforce homogeneous groups. Bridging social capital is directed to the outside of a group and bridges people of different social classes. Bridging social capital exists, for example, in civic movements and ecumenical religious groups.

Bonding social capital can help to mobilize reciprocity and solidarity and bridging social capital can be used to connect to external advantages and to guarantee the flow of information (Putnam 2000: 22). Bonding social capital is good for getting through and bridging social capital helps to get ahead (Souza Briggs 1998: 1-13; Putnam 2000: 23). Bridging social capital creates multifaceted identities and reciprocity, whereas bonding social capital strengthens itself. It leads to strong loyalty inside the group, but also to strong antagonisms beyond the group. Bonding social capital seems to cause negative externalities. But under specific circumstances both forms of social capital have strong positive effects (Putnam 2000: 23). Putnam did not explicate what effects he was referring to.

Many groups exclude people of specific societal spheres and include those of others. That is to say, most groups feature bonding and bridging characteristics at the same time and can be classified as rather bridging or bonding and not as one of both extremes. The African American church, for example, bonds persons of the same race and religion, but bridges over class boundaries (Putnam, Goss 2001: 29; Putnam 2000: 23).

### 3.1.5 *Critiques to Putnam's Concept*

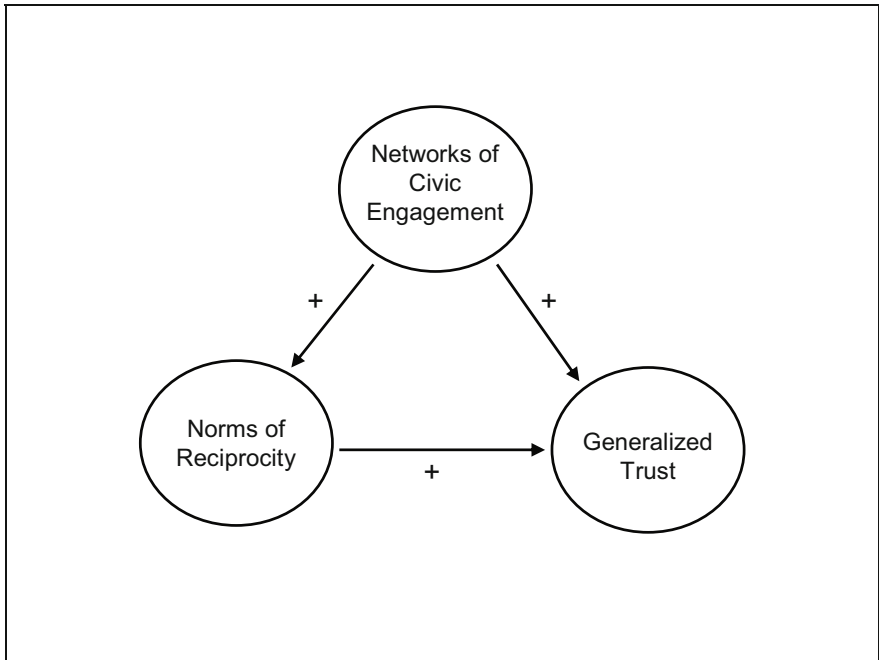
Referring to the purpose of the present thesis, to find a preliminary theory of social capital, we discuss the use of Putnam's concept in the following section. In accordance with the main definition of social capital, concluded in Chapter 2, Putnam defines social capital as social networks that make collaboration among individuals more effective. Social capital is a resource for individuals as well as for societies. Trust and norms of reciprocity, two aspects of social capital, arise from networks. In summary, Putnam's concept states that the existence of social capital permits actors to act in a more effective way to reach collective goals. Social capital is important for political stability, effectiveness and economic development. Putnam discusses the impact of social capital at the macro-level of countries and regions (Krätke 2001: 162). He deals with the impact of social capital on politics and on the entire society.

In Chapter 2, we derived requisite characteristics a theory of social capital should fulfill. Testing Putnam's concept with these shows that it fulfills them only partly:

*First*, apparent from the previous part, we cannot concern Putnam's concept a formalized social capital theory; we do not find any axioms or theorems, but the concept is explicit, internal consistent and also simple. A scope condition of his concept is missing, but he applies the concept to collectives, like countries or communities, only, representing its scope.

Although not explicitly outlined, Putnam’s concept offers testable theorems assuming cohesive networks of civic engagement increase the level of generalized trust as well as the acceptance of norms of reciprocity. Furthermore, norms of reciprocity are supposed to increase the level of generalized trust. The causal relationships, as assumed by Putnam, are displayed in figure 2.

Figure 2: Causal Relationships of Elements of Putnam’s Social Capital Concept



However, his statement that social capital is “features of social organization, such as trust, norms and networks that can improve the efficiency of society by facilitating coordinated actions” (Rössel 2002: 322; Putnam 1993: 167) is sharply criticized. This definition is problematic, because it combines different aspects of social life that do not form a common dimension, but are connected causally (Rössel 2002: 322-323; Haug 1997: 12-23; see also Lin 2001). To shed more light on this problem, we need a review of the operationalizations of Putnam’s term of social capital and empirical results pointing to the interconnection

of the social capital indicators. We devote the next part to an empirical review and assess if his concept holds up to empirical testing.

*Second*, discussing social capital as a public good with outcomes at the macro level fulfills our requirement only partly. Putnam fails to theorize the connection at the individual level. Putnam sees social capital as a public good, because it is produced as by-product of other social activities (Evers 2002: 60; Panther 2002: 158; Braun 2001: 341; Herrmann-Pilath, Lies 2001: 362). Working in Coleman's tradition and, therefore, assuming social capital to be defined by its function, Putnam mixes the causes and effects of social capital. After naming the effects he starts to analyze them retroactively using different indicators and ascribing all of them to social capital. That is to say, alternative explanations are omitted and the causes are stated as results as well (Braun 2001: 349). "If our town is 'civic', it does civic things; if it is 'uncivic', it does not" (Portes, Landolt 1996: 21). This tautology shows that the transition of social capital from an individual resource to a collective property is connected with considerable empirical weaknesses (Braun 2001: 349). It allows indicators and outcomes, causes and effects to be the same (Farrell 2007: 37). Accompanied is this weakness of the concept by a vague definition of the term social capital itself. Putnam uses the term social capital as synonym for "community", "fraternity" and many other entities (Braun 2001: 348). This makes the operationalization of the term very difficult. Campbell (2000) calls Putnam's idea of a cohesive civil society characterized by high levels of generalized trust into question. Contemporary communities feature mobility, instability and plurality resulting in low cohesion.

*Third*, besides conceptualizing social capital as a resource embedded in networks, Putnam fulfills our requirement of including open and closed structures speaking of bridging and bonding social capital. However, his scope of associations building networks of civic engagement is very limited. Putnam upholds that new organizations (e.g. Internet communities, fitness centers etc.) do not produce social capital, because they don't support direct personal interactions (Evers 2002: 70; Sobel 2002: 141). He also overlooks the fact that his research took place in countries where membership in associations is a key component of social capital (USA and Italy) which is not valid for other countries (e.g. Post-communist nations like the Czech Republic, Poland etc. where informal networks play the most significant role). In Great Britain, Campbell (2000: 192-193) found that civic networks exist in small exclusive informal networks formed by friends and neighbors. Putnam excluded these networks from his concept. The same appears with social groups arising at the workplace (Sobel 2002: 141). Before speaking of a loss of community (as Putnam claims), we have to examine, if the forms of community haven't simply changed (Evers 2002: 70).

In conclusion, we need to include all kinds of relationships into the social capital concept not only relations in traditional associations.

Contrary to this argument, other scholars criticize that Putnam assumes social capital to exist in associations of different quality; ranging from sports clubs up to trade unions (Evers 2002: 64; Rössel 2002: 321). The inclusion of different associations is useful only if the particular units show similarities with respect to specific aspects. Putnam sees the uniform aspect in their positive influence on the government and prosperity. This argument is for Evers too abstract. He suggests discriminating between the terms social capital and civic capital. Civic capital should subsume everything resulting from the operation of organizations that accomplish an active contribution to public life and that deal with social and political questions referring to one's identity as a citizen (Evers 2002: 64-65). We cannot approve this critique, because (resource embedding) relationships emerge in all kinds of associations. A division is only necessary according to the purposes the acquired resources can serve. What resource is most important to reach specific goals is context dependent. For example, membership in an association dealing with public life may provide resources that allow an individual to improve his/her status in society or to find a better job, while this association does not provide help with personal problems in the family or give social support.

The entire discussion shows one more critical point in Putnam's concept: membership in associations is based on formal relationships. The concept excludes relationships outside the associations or informal relations (e.g. friends). Nevertheless, Putnam's concept contributes to the construction of a theory of social capital via highlighting the importance of formal networks that were not explicitly discussed in Bourdieu's and Coleman's concepts. Accordingly, we can extend the former concept by including both formal and informal networks into a theory of social capital.

*Fourth*, concerning the negative effects, Putnam highlights a negative side of social capital, but in his point of view it normally leads to higher tolerance and inclusion (Braun 2001: 349; Farrell 2007: 30; Field et al. 2000: 11, 247; Mowbray 2004). Leonard speaks of a 'misplaced optimism' assuming that social capital can compensate for other forms of capital (economic or cultural) or that it can facilitate their acquisition (Leonard 2004: 930, see also: Farrell 2007: 30). Also socially rebuffed groups can engage in associations (Rössel 2002: 323; Levi 1996) or social capital can be used to protect groups from exterior challenges and to monopolize advantages (Rössel 2002: 323; Haug 1997: 23).

*Fifth*, Putnam is criticized for omitting problems of power and conflicts. Putnam rejects this critique and assumes social capital to be complementary to egalitarian politics (Schuller et al. 2000: 10). However, he doesn't offer concrete

statements elucidating neither how social capital is connected to inequality (Evers 2002: 66) nor how it can be used to decrease inequality.

*In conclusion*, Putnam's concept fulfills our requirements for a social capital theory formulated in Chapter 2 only partly. The discussion revealed the necessity to empirically test Putnam's concept by examining the accuracy of two crucial points: 1. Does social capital influence political stability and effectiveness, and economic development positively? 2. Do Putnam's propositions concerning the interconnectedness of the kinds of social capital – networks of civic engagement, trust and norms of reciprocity – hold up to empirical testing?

### **3.2 Empirics of Social Capital in Putnam's Tradition**

#### *3.2.1 Putnam's Study*

In the following section we present empirical results to social capital in Putnam's perspective in respect to the question raised in the former section. Our starting points are the studies of Putnam.

Putnam measures social capital via networks of civic engagement. For its measurement in the United States of America, Putnam created the so-called Social Capital Index (Putnam 2000: 291) displayed in box 1. The index contains on the one hand measures of networks of civic engagement like community organizational life, engagement in public affairs, community voluntarism and informal sociability and on the other measures of social trust. Putnam's analyses revealed a high level of social capital in North America and a low level in the South. He explains this result firstly, with the predominantly Scandinavian origin of the inhabitants and secondly, with the former absence of slavery in the Northern States. Until today, we find a high level of civic engagement in the Scandinavian states which is a tradition Scandinavian immigrants continue in America (Putnam 2000: 292-294). Social capital declined since the 1960s in the United States. Because TV consumption increased since that time Putnam holds it responsible for the decline (Putnam 2000, 1996 and 1995).

To reflect on the social capital index itself, the index measures social networks mainly at the associational/formal level. Informal networks that are a crucial part of social capital are regarded only marginally by measuring informal sociability. As second element of social capital, Putnam measures social trust. However, norms of reciprocity are excluded completely. As result, his measurements cannot be used to test the theorems proposed in section 3.1 assuming a relationship between networks of civic engagement, trust and norms of reciprocity.



ity. Furthermore, Putnam uses two different kinds of data: community organizational life, engagement in public affairs and community volunteerism are measured at the macro level using public statistics. However, the measures of informal sociability and social trust are taken from a survey and are aggregated for the US state level. Here the problem is that the measurements are separated from social and historical circumstances (Sabatini 2005a). This might be the reason, why Putnam's research leads to different outcomes than other studies.

*Box 1:* Social Capital Index

Measures of community organizational life:

- Served on committee of local organization in last year (percent).
- Served as officer of some club or organization in last year (percent).
- Civic and social organizations per 1000 population.
- Mean number of club meetings attended in last year.
- Mean number of group memberships.

Measures of engagement in public affairs:

- Turnout in presidential elections, 1988 and 1992.
- Attended public meeting on town or school affairs in last year (percent).

Measures of community volunteerism:

- Number of nonprofit organizations per 1000 population.
- Mean number of times worked on community project in last year.
- Mean number of times did volunteer work in last year.

Measures of informal sociability:

- Agree that "I spend a lot of time visiting friends".
- Mean number of times entertained at home in last year.

Measures of social trust:

- Agree that "Most people can be trusted".
- Agree that "Most people are honest".

Note: see Putnam 2000: 291

Regarding his interpretation of the results, Putnam is sharply criticized for blaming the "wrong culprit", because other factors are more influential than watching television (Lin 2001; Schudson 1996; Skocpol 1996). Schudson (1996) criticized the types of organizations Putnam included. "Middling commitment organizations" like PTAs are diminishing, but churches add various groups ranging from singles clubs up to job training. Asking only for church membership excludes these different groups and underestimates involvement in volunteer groups. Additionally, people choose new organizations like local fitness centers and prefer to engage in political and civic activity only episodically. Putnam (2005) admits to neglecting several groups, but he still maintains that there is a

decline of civic engagement almost 10 years after the start of the debate. But according to Greeley (1997: 590), Americans are more apt to volunteer compared to other countries as displayed by the World Values Study (WVS). Especially religious structures encourage people to volunteer and thus, generate social capital. Other scientist even show that the number of members of associations increased in the US between 1981 and 2001 also using data from the WVS. They do not find any decrease, not even in traditional organizations like church organizations, trade unions or parties (Adam 2008; Braer et al. 2001; Dekker, van den Broek 2005). Other studies display similar results. Using data from the General Social Survey (GSS) from 1975 to 1994, Paxton (1999) depicted that the values of her indicators of social capital did not change over time and their distribution did not become more unequal<sup>8</sup>. Only the level of trust of the citizens decreases over time (but that is not proof of a general decline in social capital (Sobel 2002: 140)). The trust decline is strongly connected to affairs and scandals. For the future, Lin even assumes an increase of social capital in the form of networks in cyberspace (Lin 1999a, 2001: 211).

In summary, the presented studies disproved Putnam's results using different data and also different social capital indicators than he did. These results also raise the question, of whether or not the proposed influence of social capital on political stability and effectiveness, and economic development can be verified empirically. We discuss this matter in the following section.

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<sup>8</sup> Measuring social capital, Paxton concentrated on the aggregated level of social trust, because this is important at the nation-state level. Paxton excluded political participation and volunteer work from her model of social capital, because she classifies these factors as results/outcomes of social capital. She measured two dimensions of social capital: firstly, social and institutional trust and secondly, the objective level of the connection between the individual and the community. Paxton changed the composition of Putnam's indicators according to her theoretical assumptions. *Social trust* was measured using the items: "Would you say that most of the time people try to be helpful, or that they are mostly just looking out for themselves?", "Do you think most people would try to take advantage of you if they got a chance, or would they try to be fair?" and "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?" *Trust in institutions* (organized religion, educational system, executive of the government and of the congress (legislative) of the government) was measured the following way: "I am going to name some institutions in this country. As far as the people running those institutions are concerned, would you say you have a great deal of confidence, only some confidence, or hardly any confidence at all in them?" The *connection in the community* was measured with: frequency of spending a social afternoon with somebody of the neighborhood, frequency of spending evenings with friends that are living outside the neighborhood and the number of memberships of an individual in voluntary organizations.

### 3.2.2 *Does Social Capital Positively Influence Political Stability and Effectiveness, and Economic Development?*

In the literature we find two main approaches to social capital. On the one hand, social capital is discussed at the macro level and on the other, at the micro level. Both are introduced starting with the “macro-approaches”. For reasons of transparency, we will emphasize not only the results of the studies but also the applied measurement tools.

Casey and Christ (2005) used the possibility to analyze Putnam’s data with an extended time frame (until 2000<sup>9</sup>). They recalculated the impact of social capital on economic factors. Using the new data they showed that social capital is neither an economic nor a statistical force of output and employment growth in the federal state. Putnam (2000) postulated this relation, but did not verify it on the basis of empirical data. Although Casey and Christ could not find support for Putnam’s postulate, they demonstrated that social capital is strongly connected to a homogeneous and solid form of economic performance.

Bjørnskov (2003) measured social capital of a country using data on generalized trust<sup>10</sup> and societal participation<sup>11</sup> from the WVS 1993 and the index of experienced corruption of Transparency International 2002. He constructed a social capital index from these three variables and showed that a high level of social capital leads to growth in income and to stability in low-income countries. In high-income countries, a high level of social capital leads to higher experienced happiness of the citizens. Bornschieer and Leicht (2000) constructed a social capital index including data on generalized trust from the WVS and items about tolerance from the World Competitiveness Report. The authors showed that a high level of generalized trust and high tolerance are good preconditions for economic growth. The social capital index itself has not only a high predictability, but its individual components do as well.

Furthermore, Bjørnskov and Svendsen (2003) aimed at constructing a general measure of social capital from four measurements – generalized trust, the number of organizations in which the average citizen participates (Putnam’s

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<sup>9</sup> Putnam used data till 1996.

<sup>10</sup> Using the question: “Generally speaking, would you say that most people can be trusted or that you can’t be too careful in dealing with people?” In the following this item will be referred to as generalized trust.

<sup>11</sup> The question wording in the WVS is as follows: “Now I am going to read off a list of voluntary organizations; for each one, could you tell me whether you are an active member, an inactive member or not a member of that type of organization?: Church or religious organization; sport or recreation organization; art, music or educational organization; labor union; political party; environmental organization; professional association; charitable organization; any other voluntary organization.”

measure), the corruption index<sup>12</sup> and the assessment of economic freedom by the Freedom House (2000)<sup>13</sup>. The authors chose these indicators, because several studies revealed that they are significantly related to economic growth. The analyses showed relatively high correlations among the chosen variables. However, after controlling for economic development, Putnam's instrument is uncorrelated to the other variables (Bjørnskov, Svendsen 2003: 23)<sup>14</sup>. This result implies the absence of influence of membership in associations on economic development.

Analyzing the mutual influence of social capital and democracy, Paxton (2002) used data of the WVS measuring social capital by the aggregated mean number of voluntary association memberships and unpaid voluntary work and the percentage of individuals in each country who believe that others can be trusted (generalized trust). She showed that democracy increases associational memberships and trust, but not the reverse (that is a high amount of social capital improves democracy). However taking international NGO's into consideration<sup>15</sup>, the existence of a reverse effect is supported. The quality of associations plays an important role. Connected associations have a strong positive influence on democracy, while isolated associations have a strong negative influence on it. Moreover, in societies with low generalized trust levels we find a negative impact of high rates of associational membership on democracy.

Tavits (2006) showed that communities with higher levels of social capital realize more policy activism in terms of allocation of public goods and services. Verifying this in two different national settings (Germany and the USA), Tavits concludes that a greater number of civic communities tend to be more effective in persuading their governments to provide more public goods and services. However, these results are highly questionable, because different measurements of the same constructs were used to compare the two cases. He adjusted the social capital indicators according to the available data. To analyze the American context he used the DDN Needham Life Style sample (including data from 1977 to 1998) that included measures of trust<sup>16</sup>, informal sociability<sup>17</sup> and cooperation

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<sup>12</sup> The authors used the Corruption Perception Index of Transparency International.

<sup>13</sup> The Freedom House assigned to each country and territory the status free, partly free, or not free (for this reason the overall ratings on political rights and civil liberties were averaged).

<sup>14</sup> Therefore the authors suggest dividing the social capital concept into two dimensions: 1. honesty and trust in fellow citizens and institutions, and 2. civic participation .

<sup>15</sup> The data on international NGO's was taken from the International Yearbook of Organizations.

<sup>16</sup> Trust was recorded if the respondent gave an affirmative answer to the statement: Most people are honest.

<sup>17</sup> Informal sociability was measured via the frequency average of attending a club meeting, entertaining people at home, or giving or attending a dinner party.

in the community<sup>18</sup>. In contrast, for the German case, he used the trust in the local government as a proxy for generalized trust and membership in organizations<sup>19</sup>, because the German General Social Survey (data ranging from 1980 through 1996) did not include other social capital measures.

Kunioka and Woller (1999) measure social capital in Central and Eastern Europe using data from the New Democracies Barometer Survey 1993/1994. Their measures for social capital include trust in institutions<sup>20</sup>, non-anomic attitudes of the respondent<sup>21</sup>, political patience<sup>22</sup> (as an important social norm) and small town-size<sup>23</sup> and they found that they positively influence the preference for a parliamentary government. Church attendance and the preference for personal freedom in contrast to peace and order<sup>24</sup> had no significant impact on the preference.

Kawachi et al. (1999) evaluated data of the GSS's from 1986 to 1990 and of the "Behavioral Risk Factor Surveillance System" (BRFSS). Measuring the level of generalized trust, the level of sensed reciprocity<sup>25</sup> and per capita memberships in voluntary organizations, they showed that the individual states of the US with low levels of social capital have a higher number of people reporting bad health. In a previous study they revealed that this relationship is mediated by income. A small amount of social capital leads to a lower level of income and has a negative impact on the health of the citizens (Kawachi et al. 1997).

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<sup>18</sup> Cooperation in the community was assessed by the average frequency score of volunteering or participation in a community project.

<sup>19</sup> It was asked if people were members in a choir, a sports club, a hobby club, a youth or student organization, a welfare society, or any other association.

<sup>20</sup> Trust in institutions was measured at a 7-point Likert scale asking, if the respondent has no trust (1) up to great trust (7) in political parties, the courts, the police, civil servants, the current government, the media, the parliament, churches, the president, patriotic societies, private enterprises, farmers' organizations, and foreign organizations and experts advising the government. These items were subsumed in a trust index.

<sup>21</sup> It was asked whether the respondent perceived ethnic groups or minorities as threats to the peace and security to the country. Further it was asked, if they perceived immigrants and refugees the same way. The extent of anomic sentiments is an indicator of a low level of social capital, according to the authors.

<sup>22</sup> Political patience was measured with questions eliciting whether the respondent believed it will take years for the current government to deal with the problems inherited by the Communists, and whether the respondent believed they should try some other form of government, if the existing system cannot produce results soon. A high level of patience exists, if the government is given more time.

<sup>23</sup> The size of town is negatively connected to the amount of social capital.

<sup>24</sup> It was asked, if the respondents rate personal freedom as more important than peace and order. If yes, a higher level of civility exists indicating a higher level of social capital.

<sup>25</sup> Sensed reciprocity was assessed with the following item: "Would you say that most of the time people try to be helpful, or that they are mostly just looking out for themselves?"

*In short*, the studies show contradictory results. Some indicate a positive relationship between social capital and political/economic performance (Bjørnskov 2003; Bornschier, Leicht 2000; Kawachi et al. 1997, 1999; Tavits 2006), some find support only partly (Bjørnskov, Svendsen 2003; Kunioka, Woller 1999; Paxton 2002) while others don't at all (Casey, Christ 2005).

Reviewing studies at the individual level, we find a more consistent picture of social capital and its impacts. For example, Lüdemann (2001) measured social capital using memberships in different organizations, unions and associations analyzing the German ALLBUS 1998 dataset. The network resources connected to the memberships positively affect the belief that one has the means to influence decisions of the political system. Social capital is the smaller the higher the TV-consumption, the lower the income and the farther left a person categorizes him-/herself politically. Women have a smaller amount of social capital at their disposal than men do.

Uhlendorff (2004) demonstrated that the amount of social capital (honorary work in associations, societies and social services; and political engagement of a person, measured with the German SOEP 1994-2000) does not increase the re-employment chances of unemployed individuals in West Germany, but does slightly in East Germany.

Cigler and Joslyn (2002) analyzed data from the GSS 1972-1994 (cumulative file) and the 1990 Citizen Participation Study (CPS). They were able to show that social capital measured via memberships in associations<sup>26</sup> increases political tolerance<sup>27</sup>. The members in four types of organizations – namely un-

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<sup>26</sup> In the *CPS* the respondents were asked whether they are members in voluntary associations belonging to the following categories: Service/fraternal, veterans, religious, nationality/ethnic, senior citizens, women rights, union, business/professional, political issue, civic non-partisan, liberal or conservative, candidate party, youth, literary/art/study, hobby/sports/leisure, neighborhood/ homeowners, charitable/social service, educational, cultural, other. The question wording of the *GSS* was: Here is a list of various organizations. Could you tell me whether or not you are a member of each type? Fraternal, service, veterans, political, union, sports, youth, school, hobby, Greek, national, farm, literature, professional, church, other.

<sup>27</sup> Political tolerance was measured with an index including the following questions: *CPS*: "There are always some people whose ideas are considered bad or dangerous by other people. Consider someone who is openly homosexual. If some people in your community suggested that a book he or she wrote in favor of homosexuality should be taken out of your public library, would you favor removing this book or not? (1 = do not remove book, 0 = remove book). What about someone who believes that Blacks are genetically inferior? If some people in your community suggested that a book he or she wrote arguing that Blacks are genetically inferior should be taken out of your public library, would you favor removing this book or not? (1 = do not remove book, 0 = remove book). Or consider someone who advocates doing away with election and letting the military run the country: should he or she be allowed to or not? (1 = allowed to, 0 = not allowed). And what about someone who is against all churches and religion? If such a person wanted to make a speech in your community, should he or she be allowed to or not? (1 = yes, 0 = no)." *GSS*: "There are always some people whose

ions, farm associations, Greek organizations, and church groups – are more tolerant than non-members. In contrast, members in veterans and ethnic organizations are less tolerant in comparison to non-members. Furthermore, the higher the number of memberships, the higher tolerance is. At this point, we want to highlight that in this study tolerance was used as result/outcome of social capital. Previously presented studies used tolerance as an indicator of social capital.

Cusack (1999) measured social capital with generalized trust and showed that the confidence with the local government in Germany depends on institutional differences of the governments and the level of social capital simultaneously.

The studies at the micro level reveal more consistent results than the studies at the macro-level. They show a positive influence of social capital on political confidence, tolerance and reemployment. However the presented studies often use only one-item measures of social capital (except for Uhendorff (2004)). Among them, trust is used very often as a proxy for social capital. Social capital exists in the form of trust especially for Fukuyama (1995). The ability of a nation to successfully compete with other nations depends on the level of trust prevailing in its society. Also the OECD assumes that trust is synonymous with social capital “(...) trust may be an acceptable proxy for social capital in the absence of a wider and more comprehensive set of indicators” (OECD 2001: 45). However, this one-item measure is connected to large problems that we will discuss later (see section 3.2.5).

### *3.2.3 Excursus: What Effects do Bridging and Bonding Social Capital Have on Political Stability and Effectiveness, and Economic Development?*

As mentioned earlier, the topic of bridging and bonding social capital is largely neglected in the analysis of social capital and its impact on political and economic entities. However, according to Putnam, both kinds of social capital are

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ideas are considered bad or dangerous by other people. For instance, somebody who is against all churches and religion . . . (Atheist). 1. If such a person wanted to make a speech in your (city/town/community) against churches and religion, should he be allowed to speak, or not? 2. Should such a person be allowed to teach in a college or university, or not? 3. If some people in your community suggested that a book he wrote against churches and religion should be taken out of your public library, would you favor removing this book, or not? Or consider a person who believes that Blacks are genetically inferior (Racists). Now, I would like to ask you some questions about a man who admits he is a Communist. Consider a person who advocates doing away with elections and letting the military run the country (Militarists). And what about a man who admits that he is a homosexual?” The answers were summated for each group yielding an additive index of political tolerance.

very important in this context. While bonding social capital is assumed to increase reciprocity, bridging social capital guarantees flows of information that can be used to improve economic performance. Therefore, this excursus deals with empirical results concerning bridging and bonding social capital. Putnam himself did not offer a measurement of both kinds of social capital, because he did not find “reliable, comprehensive, nationwide measures of social capital that neatly distinguish ‘bridgingness’ and ‘bondingness’” (Putnam 2000: 23-24, cited in McKenzie 2008: 28). However, in the scientific literature, we find many studies analyzing bridging and bonding social capital at the macro-level as well as at the micro-level.

Sabatini (2005) included both kinds of social capital in his macro-level analysis of Italy. Using macro data gathered by the Italian National Institute of Statistics, he showed that developmental social capital (low levels of bonding social capital, good family relationships, and high levels of bridging and linking social capital as well as civic awareness) and the quality of economic development influence each other positively and mutually (Sabatini 2005: 23). He operationalized developmental social capital with five indicators: bonding social capital measured via strong ties (family)<sup>28</sup>; bridging social capital measured with weak ties among friends and neighbors<sup>29</sup>; linking social capital<sup>30</sup> measured with

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<sup>28</sup> The family social capital measure included family composition, spatial distance between family members, the relevance of other relatives and relationship quality with close family members and other relatives. The measures: People aged 14 and older particularly caring for relatives other than parents, children, grandparents and grandchildren, or counting on them in case of need; declaring themselves satisfied of relationships with their relatives; couples with children; couples without children; families with 5 components and more; singles-families; people aged 15 and older: with children living 16 kilometers away or more (in Italy or abroad); with children living within 1 kilometer (cohabitants or not); people meeting their brothers and/or sisters everyday; people aged 6 and older: playing with children once a week or more; meeting family members or other relatives everyday; never playing with children; never meeting their family members and other non cohabitant relatives; having neither a family nor other non cohabitant relatives; people up to 69: having their mother living 16 kilometers away or more (in Italy or abroad); having their mother living within 1 kilometer (cohabitant or not); people meeting their children everyday; people meeting their mother everyday. All measures were for every 100 members of the respective group (e.g. people, families, non-cohabitant family members) of the same area.

<sup>29</sup> The following indicators were used: Non profit sport clubs for every 10.000 people of the same area. All other measures were for every 100 people of the same area aged 6 and older: attending bars, pubs, and circles at least once a week; having dinner outside more than once a week; meeting friends more than once a week; never attending bars, pubs and circles; never having dinner outside; never talking with others; never talking with neighbors; talking with others once a week or more; talking with neighbors once a week or more; and people aged 14 and older attending pubs and bars to listen to music concerts.

<sup>30</sup> Woolcock (1998) added the term linking social capital. This kind of social capital links people from different social strata, that is, people from different power positions.



formal ties linking people from different social backgrounds<sup>31</sup>; active political participation<sup>32</sup>; and civic awareness<sup>33</sup>. Using an extended data base<sup>34</sup>, Sabatini (2007) further showed that bonding social capital and active political participation are negatively correlated with the indicators of social well-being and social quality whereas bridging and linking social capital share a positive relation with them. Bonding and bridging social capital impede human development and linking social capital fosters human development. Although, bonding social capital improves social quality, human development exerts a much stronger positive influence on it. Italy's southern regions have the highest levels of bonding social capital and the lowest levels of both bridging and linking. However, bonding social capital seems to protect individuals from labor precariousness; strong family ties may help workers in their job searches.

The main advantage of Sabatini's studies is that he does not aggregate data gathered at the micro level, as done in the WVS. He uses data surveyed directly at the macro level, on people's effective behavior. Therefore, he avoids the problem of disconnecting data from the context in which it was gathered.

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<sup>31</sup> Its indicators were: Voluntary organizations for every 10.000 people. All other measures were for every 100 people of the same area aged 14 and older who did the following action at least once a year: helped strangers in the context of a voluntary organization's activity; joined meetings in cultural circles and similar ones; joined meetings in ecological associations and similar ones; have given money to an association; and people aged 6 and older who, when meeting friends, carry out voluntary activities.

<sup>32</sup> Measured with the following indicators: People aged 14 and older: who have carried out unpaid work for a political party, who have joined a political meeting; who have joined a march; who have given money to a political party. All measures were for every 100 people of the same area active in the 12 months before the interview.

<sup>33</sup> The following indicators were used: People aged 6 and older who, when meeting friends, talk about current affairs and share their opinion; People aged 11 and older: not reading newspapers, reading newspapers everyday, reading newspapers; People aged 14 and older: having listened to a political debate in the 12 months before the interview, keeping themselves informed on politics everyday, never informing themselves on politics, never talking about politics, talking about politics everyday. All measures were for every 100 people of the respective group in the same area.

<sup>34</sup> To measure *family social capital*, Sabatini used the indicators from 2005 plus: People aged 14 and older who have given unpaid help to strangers; couples with one child; couples with three children; people having their brothers and/or sisters living 16 kilometers away or more (in Italy or abroad); people having brothers and/or sisters living within 1 kilometer (cohabitants or not); people up to 69 having their father living 16 kilometers away or more (in Italy or abroad); people up to 69 having their father living within 1 kilometer (cohabitant or not); families with at least 2 components used to have dinner with other relatives at least once a week; people meeting their father everyday. The following indicators were excluded: People aged 6 and older: playing with children once a week or more often, never playing with children. The measures were for every 100 people of the respective group, families or couples of the same area. *Informal networks* were measured using the indicators of 2005 plus: People aged 14 and older attending social centers to listen to music concerts for every 100 people of the same area. *Voluntary organizations* and *active political participation* were measured like in 2005.

Another study assessed the linkage between bridging and bonding social capital using statistical indicators and interviews with local leaders. Bonding social capital was measured via social homogeneity<sup>35</sup>, trust, loyalty and reciprocity<sup>36</sup>, cooperation<sup>37</sup>, conservatism<sup>38</sup> and density of local links<sup>39</sup>. Bridging social capital was operationalized with emigration and immigration indicators<sup>40</sup>, business links, electoral turnout and the number of subsidies granted<sup>41</sup> (Callois, Aubert 2007: 813). The authors showed that all social capital variables had a positive and significant influence on employment growth between 1990 and 1999 in France. The absence of intercorrelation between bonding and bridging social capital indicates the importance of both kinds of social capital (Callois, Aubert 2007: 819).

Bridging and bonding social capital are not only analyzed in national contexts, but also in international perspectives. Beugelsdijk and Smulders (2003), for example, analyzed the effects of bridging and bonding social capital in 54 regions using data from the European Values Study (EVS) 1999 on bridging social capital (membership in bridging groups<sup>42</sup>), bonding social capital and

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<sup>35</sup> Social homogeneity was measured with the Gini index on income.

<sup>36</sup> Reciprocity was measured with the following indicators: statistical indicators: rate of telephone users not in the directory, charity gifts; survey questions: refusal rate; trust indicator: percentage of people agreeing that: 'most people can be trusted'; charity gifts indicator: percentage of people who gave money to charity in past twelve months; lend question indicator: average number of people to whom the interviewees would lend 'an important sum of money'.

<sup>37</sup> The following statistical indicators were used: average farm size, fiscal integration coefficient.

<sup>38</sup> Measured with the statistical indicator "vote for conservative parties".

<sup>39</sup> Formal sociability was assessed with: statistical indicator: associations per 1000 inhabitants; survey questions: association membership: average number of associations each person is a member of; informal sociability: statistical indicators: average household size, density of bars and sport facilities, share of commuters; survey questions: individual network size: average number of people the interviewees have a weekly conversation with; frequenting bars: percentage of people going to bars at least monthly; sport or cultural events: percentage of people going to matches or cultural events at least monthly; average distance to workplace (km).

<sup>40</sup> Measured with the following indicators: statistical indicators: natives (1999), share of immigrants (1982–90), recent immigrants (1990–99); survey questions: share of natives of the pays; individual outer links: average number of people outside the pays interviewees have a weekly conversation with; seasonal migration: average number of days in the year spent outside the pays; moves: percentage of people who moved from elsewhere in the last 10 years.

<sup>41</sup> Measured with the following indicators: statistical indicators: head office indicator (1999), back office indicator (1999); political networks: turnout at local elections (2001), subsidies received/DGF (2002); survey question: (stated) turnout at latest local elections.

<sup>42</sup> The questionnaire asked about membership in: Religious or church organizations; education, arts, music, cultural activities; youth groups (e.g. scouts, guides, and youth clubs); sports or recreation clubs; and women's groups.

family ties<sup>43</sup>, materialism<sup>44</sup> and data on economic growth (in the period from 1950 to 1998). They showed that bridging social capital positively influences growth, while bonding social capital doesn't. Individuals with materialist attitudes participate less in voluntary organizations than individuals with immaterialist attitudes. They lack bridging social capital that decreases the economic growth.

Van Oorschot et al. (2006) used a multi-item measurement of social capital analyzing data of the EVS 1999/2000. In this study, participation in voluntary organizations<sup>45</sup> (bridging social capital) and socializing with family and friends<sup>46</sup> (bonding social capital) represented network measures. Further the authors measured generalized trust; trust in institutions<sup>47</sup>, and civic behavior including trustworthiness<sup>48</sup> and political engagement<sup>49</sup> as attitudinal and behavioral characteristics of people themselves. They clustered the analyzed regions into Northern (Sweden, Finland, and Denmark), Western (Austria, Belgium, France, Germany, Ireland, Netherlands and United Kingdom), Southern (Greece, Italy, Portugal and Spain) and Eastern (Bulgaria, Croatia, Czech Republic, Estonia, Latvia, Lithuania, Poland, Hungary, Slovakia and Slovenia) countries. Analyzing the macro level, the authors showed that the three mentioned dimensions of social capital construct a single general social capital indicator. Using the indicators created by Van Oorschot et al., Jankaukas and Seputiene (2007) found a significantly positive mutual influence between the social capital indicators trust and networks (bridging and bonding social capital) and the GDP per capita. The same applies to their relationship to labor productivity and governance indicators<sup>50</sup>. To the contrary, civism does not advance or impair economic performance

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<sup>43</sup> On a scale of 1-4 (very important – not at all important), the respondents were asked to indicate the importance of their family, friends and acquaintances in their lives. The authors used factor analysis to rescale the two items into the factor bonding social capital.

<sup>44</sup> Measured with materialistic attitudes: Importance of: maintaining order in the nation; giving people more say in important government decisions; fighting rising prices; protecting freedom of speech; and immaterialist attitudes: pleasant people to work with; a useful job for society; meeting people.

<sup>45</sup> The authors totaled the number of organizations people say they are active or passive member in. Corrections were made for passive participation in trade unions and religious organizations, because in some countries people have to be members in trade unions and in others the church is still a state church and thus participation in the church is very likely.

<sup>46</sup> It was asked about the time they spend with family and friends, the importance of primary relations, and the degree to which they are concerned about the living conditions of close relations.

<sup>47</sup> It was asked about the confidence in police, the social security system, the health care system, parliament, civic service and the justice system.

<sup>48</sup> The respondents were asked, if people justify different behaviors/activities.

<sup>49</sup> Respondents were asked if they discuss politics with friends and if they follow politics in the media.

<sup>50</sup> The authors included the following governance indicators: 1. Voice and accountability (extent to which a country's citizens are able to participate in selecting their government, as well as freedom of

and governmental effectiveness. The results support the idea that social capital is a multifaceted phenomenon and cannot be reduced to a single indicator.

Among micro-level measurements, we find two examples. In a longitudinal study in Iowa, USA, Beaudoin measured bridging social capital through youth involvement asking for the likelihood of making contacts with new children or teens and the number of children the respondent knows from the neighborhood<sup>51</sup> (Beaudoin 2007: 955). A second social capital measure was the perception of place<sup>52</sup> indicating sentiments of reciprocity and trust (Beaudoin 2007: 950). The author showed that the youth's use of media (in terms of exposure to news on TV and local news in newspapers and attention to them) is positively and reciprocally connected to social capital. Furthermore, social capital positively predicts youth well-being (low levels of youth pregnancy and arrests) and mediates the influence of youth's use of media on their well-being (Beaudoin 2007: 957-959). This connection shows that news exposure and attention to it may encourage adults to be more aware of youth problems and to get more involved. This builds bridges between adults and youth (Beaudoin 2007: 960).

In the USA, bonding social capital can be very advantageous for African-American people as McKenzie (2008) showed using the 1993–1994 NBPS survey. Measuring bonding social capital with affiliation to seven major black religious denominations<sup>53</sup> and via individuals' involvement in black social and po-

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expression, association and free media); 2. political stability and absence of violence (likelihood that the government will be destabilized or overthrown by unconstitutional or violent means); 3. government effectiveness (quality of public services, civil service and the degree of its independence from political pressures, quality of policy formulation and implementation, and credibility of government's commitment to such policies); 4. regulatory quality (ability of government to formulate and implement policies and regulations that permit and promote private sector development); 5. rule of law (extent to which agents have confidence in and abide by the rules of society, the police, and the courts, as well as the likelihood of crime and violence); 6. control of corruption (extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests) (see Jankauskas, Seputiene 2007: 134).

<sup>51</sup> The following items revealed the contact making behavior: "In the past year, how many times have you made an extra effort to get to know a child or teen you didn't know already?" Responses: none, one time, two times, three times, four times, five or more times; "How many names of children and adolescents in your neighborhood do you know?" Responses: none, some, most, or all.

<sup>52</sup> The perception of place was measured as follows: "How would you rate your community as a place to raise children?"; "How would you rate your community as a place to raise teenagers?"; "How would you rate your neighborhood as a place to raise children?"; "How would you rate your neighborhood as a place to raise teenagers?" Responses: poor, fair, good, or excellent.

<sup>53</sup> The denominations are: African Methodist Episcopal Church, the African Methodist Episcopal Zion Church, the Christian Methodist Episcopal Church, the National Baptist Convention (USA, Incorporated), the National Baptist Convention of America (Unincorporated), the Progressive National Baptist Convention, and the Church of God in Christ.

litical organizations<sup>54</sup>, his analyses revealed that members of black political organizations engage more often in mainstream political activities<sup>55</sup> than non-members. Therefore McKenzie concludes that, black voluntary associations serve as bridging groups connecting individuals to the public sphere of social and governmental affairs.

Also Van Staveren and Knorringa (2007) argue that bridging and bonding social capitals are not mutually exclusive, both are necessary in an economy. Bonding social capital was measured with trust among strongly related people (ascribed trust) while bridging social capital was measured with trust among loosely connected people (earned trust) or generalized trust. Comparing the footwear industry in Vietnam and Ethiopia, the authors confirmed that bonding ties can inhibit the development of bridging relations. However, bridging ties were the key challenge for the enterprises.

*In short*, the different approaches analyzing bridging and bonding social capital show ambiguous results. Some studies show that both kinds exert positive influence on political and economic performance (Callois, Aubert 2007; Jankaukas, Seputiene 2007) while others show a negative influence of bonding and a positive influence of bridging social capital (Sabatini 2005, 2007; Beugelsdijk, Smulders 2003). Furthermore, the studies reveal a positive influence of bonding social capital of African Americans on their participation (McKenzie 2008) while in another contexts bonding social capital inhibits the creation of bridging social capital (Van Staveren, Knorringa 2007).

### 3.2.4 *Does Putnam's Social Capital Concept Hold up to Empirical Testing?*

After having displayed the rather contradictory results to social capital research outcomes in general and the effects of bridging and bonding social capital in particular, we will now examine whether or not the theorems derived from Putnam's concept hold up to empirical testing. Although there are different measures for the social capital indicators, they should show similar tendencies, if Putnam's theorems are accurate.

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<sup>54</sup> It was asked: Are you a member of any organization working to improve the status of black Americans? Responses: yes/no.

<sup>55</sup> The following political activities were asked for: helping with voter registration, giving money to political candidates, giving people rides to the polls on election days, attending fundraisers, passing out campaign materials, and signing petitions; all questions had to be answered with yes/no.

*Networks of Civic Engagement and Norms of Reciprocity; Norms of Reciprocity and Trust*

Dakhli and De Clercq (2004) proved the assumption false that associational activity<sup>56</sup> and norms of civic behavior<sup>57</sup> are interrelated using data of the WVS 1995. This result indicates that both variables build different constructs and no single social capital indicator. Letki (2006) concludes the same analyzing the 1999-2002 WVS. Not the networks of civic engagement, but the quality of a country's government<sup>58</sup> and its economic performance strongly influence citizens' civic morality (or norms of reciprocity). Citizens of countries with low unemployment rates strongly disapprove of dishonesty and cheating. Also using data from the WVS 1990, Gabriel et al. (2002) showed that especially norms of reciprocity are disconnected from the other components of social capital: membership in associations<sup>59</sup> does not foster norms of reciprocity in people<sup>60</sup> and the approval of norms of reciprocity does not increase generalized trust<sup>61</sup> in the surveyed countries (see also Letki 2006). The indicators are interrelated most closely in Norway and the Netherlands, only, and are the least related in East Germany, Poland and Hungary. Also Putnam's argument that freetime associations are the best schools of norms of reciprocity was disproved, because socio-cultural organizations best provide norms of reciprocity and trust. The comparison of Germany, Great Britain, Spain and Finland revealed similar results using data from the EVS 1999 (Häuberer 2006).

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<sup>56</sup> It was asked, if the respondent is active or passive member of an association or not a member at all.

<sup>57</sup> Question concerning the respondents' behavior: accepting a bribe in the course of your duties or cheating on taxes if you have the chance. To be answered with: 1 (never justifiable) up to 10 (always justifiable).

<sup>58</sup> Defined as institutional effectiveness, regulatory quality, rule of law and control of corruption.

<sup>59</sup> Measured with the following items: "Could you tell me whether you are an active member, an inactive member or not a member of: Church or religious organization; sport or recreation organization; art, music or educational organization; labor union; political party; environmental organization; professional organization; charitable organization; any other voluntary organization."

<sup>60</sup> It was asked: "Please tell me for each of the following statements whether you think it can always be justified, never be justified, or something between: claiming government benefits to which you are not entitled; avoiding a fare on public transport; cheating on taxes if you have a chance; buying something you knew was stolen; someone accepting a bribe in the course of their duties". The indicators show a rejection of free-rider attitudes, if never justified.

<sup>61</sup> Measured by generalized trust: "Generally speaking would you say that most people can be trusted, or that you can't be too careful in dealing with people?" and with trust in different groups like fellow compatriots or family members; to be answered with: trust them completely, trust them a little, neither trust nor distrust them, do not trust them very much, do not trust them at all.

## *Networks of Civic Engagement and Social Trust*

The empirical results concerning the influence of networks of civic engagement on generalized trust aren't as clear as the results concerning the connection of norms of reciprocity with the other social capital indicators.

Analyzing data from the GSS 1972-1994, Brehm and Rahn (1997) showed that civic participation<sup>62</sup> and generalized trust<sup>63</sup> form a tight reciprocal relationship. However, this relationship is asymmetric; civic engagement influences interpersonal trust much stronger than the other way round<sup>64</sup>. Using the DDB Needham Lifestyle Survey, Shah (1998) showed that civic engagement leads to trust but not vice versa. Claibourn and Martin (2000) drew the same conclusion analyzing the Michigan Socialization Survey. In contrast, Glanville (2001) found a reciprocal relationship among generalized trust and associations in analyzing the Social Capital Community Benchmark Survey, but it was very small. Paxton (2007) distinguishes among connected and isolated associations. Connected associations have members that are also members of other associations. Using data of the WVS 1990, she showed that trade unions, sports clubs and religious associations are mostly isolated. At the individual level, she showed that the membership in any association increases trust, while memberships in connected associations lead to higher levels of trust than do memberships in isolated ones. At the aggregate level, memberships in many connected associations increase the average levels of trust; on the other hand many isolated association memberships decrease the average level of trust. Also several other studies find a positive connection between networks of civic engagement and generalized trust (Dekker, van den Broek 2005; Knack, Keefer 1997: 1281-2; Stolle, Rochon 2001).

To the contrary, we find various studies that do not prove the assumed relationship. Smith and Polanyi (2003), for example, found a relationship among generalized trust and membership in organizations<sup>65</sup> in the USA, only. Newton (2001: 202; 1999a: 173 and 1999b: 16) and Torcal and Montero (1996: 181) showed in several studies that a relationship between memberships and trust

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<sup>62</sup> It was asked if people were members in the following types of organizations: fraternal; service; veterans; political; union; sports; youth; school; hobby; Greek; national; farm; literature; professional; church; other.

<sup>63</sup> Generalized trust was measured using the items "Would you say that most of the time people try to be helpful, or that they are mostly just looking out for themselves?"; "Do you think most people would try to take advantage of you, if they got a chance, or would they try to be fair?" and "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?"

<sup>64</sup> The authors further analyzed its influence on trust in institutions. For this they did not find a strong pattern.

<sup>65</sup> Memberships were inquired about by use of a list of nine different organizations; people were asked whether or not they were active or passive members in at least one of the organizations.

exists only in a few western countries, and even where it does it is very weak. Also, comparing 55 countries using WVS data Delhey and Newton (2005) revealed that membership in associations has no influence on generalized trust. We can fill this list with other studies (see for example Booth, Richard 2001: 50; Delhey, Newton 2003; Häuberer 2006; Paxton 2002; Uslaner 2002). Also Hooghe (2003: 91) agrees with the idea that civic associations do not produce trust.

### 3.2.5 *Why Are the Results Confusing?*

#### *Outcomes of Social Capital*

The review of empirical results showed generally contradictory results. We did not find clear support that social capital (and its bridging and bonding types) positively influences political stability and effectiveness, and economic development; some studies even refute these relationships.

The main reason for these results is the inadequate definition of social capital that allows the researchers to use an excessive amount of indicators for it (Lin et al. 2001; Paxton 1999). There is a big gap between the concept of social capital and its measurement. In many studies, the researchers discuss only a few reasons explaining how the measures are connected to the theoretical definition of social capital. The lack of consensus about the definition of social capital leads to the use of questionable indicators for it (Paxton 1999: 89-90). Analyzing social capital both at the micro and macro level of the society, researchers either combine indicators variously or use individual indicators. In table 1 we display the measurements of social capital as used by the studies reviewed in the present chapter.

Some authors use variables as social capital indicators that others use as dependent variables as was the case with tolerance (see section 3.2.2). Other studies use only one item, mostly generalized trust, as a social capital indicator. But using just one observed variable creates several problems. First of all, we cannot account for the multidimensional context-dependent character of social capital (Sabatini 2005a: 167) and secondly, we cannot find measurement errors (Paxton 1999: 90). Finally, one variable cannot provide a valid measure for a construct. Content validity is only given, if the collection of items highly represents the characteristic that should be measured (Diekmann 2000: 224). Similarly, we cannot prove the reliability of a single-item measurement, if the theoretical construct to be measured consists of several dimensions. One measured variable can explain only one dimension of the construct. A second reason pleads for the



necessity of using multi-item measures: the relationship between the measured variables and the level of unmeasured social capital can change over time and one variable does not contain any statement about this change in social capital (Paxton 1999: 90). Additionally, people tend to answer inconsistently over time (Spector 1992: 4); the responses can vary over time. We can account for this variation using multiple indicators. If we use continuous measurement scales, we are able to increase the measurement precision (see also Reeskens, Hooghe 2008: 519).

Another reason for inadequate operationalizations of social capital is that researchers often use secondary data. This also prevents the researcher from measuring all dimensions of the constructs (Dakhli, De Clercq 2004:125; van Deth 2003: 86). Not even Putnam (2000) measured all proposed dimensions with his social capital index. Additionally, the measurement of social capital through indirect indicators like crime rates, teenage pregnancy, blood donation etc. is very common. Their use leads to confusion about what social capital actually is. Here again, the problem of tautology appears (see also the critiques of Putnam's concept in section 3.1.5). Social capital is seen as "everything that can make agents cooperate or markets work better" (Sabatini 2005: 166). In this case, any empirical analysis can support that social capital causes cooperation among agents and improves the efficiency of markets diminishing the explanatory power of the social capital concept to nothing.

Another problem, connected to the use of secondary data, is the following: scientists analyze either individual data (Beaudoin 2007; Cigler, Joslyn 2002; Cusack 1999; McKenzie 2008; Lüdemann 2001; Uhlendorff 2004; Van Staveren, Knorringa 2007), macro-level data (Sabatini 2005, 2007; Casey, Christ 2005 (partly); Callois, Aubert 2007 (partly)) or individual data that has been aggregated (Beugelsdijk, Smulders 2003; Bjørnskov 2003; Bjørnskov, Svendsen 2003; Bornschie, Leicht 2000; Casey, Christ 2005; Jankaukas, Seputiene 2007; Kawachi et al. 1997, 1999; Kunioka, Woller 1999; Tavits 2006; Paxton 2002; Van Oorschot et al. 2006). Using individual and macro data in a given context can be justified, however using aggregated data measured at the individual level is not useful, because, in this case, the measures are separated from the circumstances they were collected in (cf. Sabatini 2005a). This leads to a bias in the data and thus in the results. To minimize the bias of our measurements, we need a concrete definition of social capital representing a good guide for its operationalization.

*Table 1: Overview of Used Social Capital Indicator*

Community organizational life / Membership in associations	Adam (2008), Beugelsdijk, Smulders (2003), Bjørnskov (2003), Bjørnskov/Svendsen (2003), Bornschie/Leicht (2000), Braer et al. (2001), Brehm/Rahn (1997), Callois/Aubert (2007), Casey/Christ (2005), Cigler/Joslyn (2002), Claibourn/Martin (2000), Dakhli/De Clercq (2004), Dekker, van den Broek (2005), Field et al. (2000), Gabriel et al. (2002), Glanville (2001), Greeley (1997), Kack/Keefer (1997), Kawachi et al. (1997, 1999), Letki (2006), Lüdemann (2001), McKenzie (2008), Newton (1999a, b, 2001), Paxton (1999, 2002, 2007), Putnam (2000), Sabatini (2005, 2007), Smith/Polanyi (2003), Stolle/Rochon (2001), Torcal/Montero (1996), Van Oorschot et al. (2006)
Engagement in public affairs	Casey/Christ (2005), Jankaukas/Seputiene (2007), McKenzie (2008), Putnam (2000), Sabatini (2005, 2007), Tavits (2006), Uhlendorff (2004), Van Oorschot et al. (2006)
Community volunteerism	Bjørnskov (2003), Casey/Christ (2005), Putnam (2000), Uhlendorff (2004)
Informal sociability	Beaudoin (2007) (contact to children from neighborhood), Callois/Aubert (2007), Casey/Christ (2005), Jankaukas/Seputiene (2007), Paxton (1999), Putnam (2000), Sabatini (2005, 2007), Tavits (2006), Van Oorschot et al. (2006)
Family ties	Beugelsdijk, Smulders (2003), Sabatini (2005, 2007)
Social trust (including generalized trust)	Beaudoin (2007) (perception of place), Bjørnskov/Svendsen (2003), Brehm/Rahn (1997), Casey/Christ (2005), Claibourn/Martin (2000), Fukuyama (1995), Jankaukas/Seputiene (2007), OECD (2001), Paxton (1999, 2002, 2007), Putnam (2000), Shah (1998), Van Oorschot et al. (2006), Van Staveren/Knorringa (2007) (ascribed vs. earned trust)
Generalized trust	Bjørnskov (2003), Bjørnskov/Svendsen (2003), Brehm/Rahn (1997), Callois/Aubert (2007), Cusack (1999), Field et al. (2000), Gabriel et al. (2002), Jankaukas/Seputiene (2007), Kack/Keefer (1997), Kawachi et al. (1997, 1999), Letki (2006), Newton (1999a, b, 2001), Paxton (2002), Shah (1998), Smith/Polanyi (2003), Stolle/Rochon (2001), Tavits (2006), Torcal/Montero (1996), Van Oorschot et al. (2006)
Trust in institutions	Jankaukas/Seputiene (2007), Kunioka/Woller (1999), Paxton (1999), Tavits (2006), Van Oorschot et al. (2006)
Norms of Reciprocity	Beaudoin (2007) (perception of place), Callois/Aubert (2007), Dakhli/De Clercq (2004) (norms of civil behavior), Gabriel et al. (2002), Jankaukas/Seputiene (2007), Kawachi et al. (1999), Letki (2006), Van Oorschot et al. (2006) (trustworthiness)
Corruption	Bjørnskov (2003), Bjørnskov/Svendsen (2003)
Church attendance	Kunioka/Woller (1999), McKenzie (2008) (church involvement)
Freedom vs. order	Bjørnskov/Svendsen (2003) (economic freedom), Kunioka/Woller (1999)
Tolerance	Bornschie/Leicht (2000)
Civic awareness	Sabatini (2005, 2007)
Anomie; political patience; town size	Kunioka/Woller (1999)
Cooperation, conservatism, migration, subsidies	Callois/Aubert (2007)
Materialism	Beugelsdijk, Smulders (2003)

## *Interrelations of Social Capital Indicators*

We are faced with a different situation reviewing the empirical content of the theorems. Here similar indicators are used to assess the mutual influences of networks of civic engagement, generalized trust and norms of reciprocity. The empirical evidence clearly shows that norms of reciprocity are neither a result of networks of civic engagement nor do they improve generalized trust. Accordingly, the results prove the first two theorems derived from Putnam's concept false

In contrast, the assumed influence of networks of civic engagement on generalized trust is not clearly refuted; some studies show an interrelation, others do not. However, several arguments and study results speak against the generation of generalized trust in civil networks.

According to Uslaner (1999: 145-6), we do not learn trust in civic associations, the direction is rather the opposite. He distinguishes generalized trusters as those believing that most people share common values and are, thus, willing to trust strangers (Fukuyama 1995: 153; Rothstein, Uslaner 2005: 45; Uslaner 2002; Uslaner, Conley 2003: 335), from particularized trusters, who trust others only if they belong to the same group (Rothstein, Uslaner 2005: 45; Uslaner 2002; Uslaner, Conley 2003: 335; Yamigishi, Yamigishi 1994). Generalized trusters are more likely to volunteer (Uslaner 1998). Particularized trusters engage in this type of activity less often than generalized trusters, and when they do, it is in groups that focus upon people belonging to their community only (Uslaner, Conley 2003: 335). This idea is supported by studies showing a genetic predisposition to trust (Sturgis et al. 2009). Analyzing ethnic Chinese in America, Uslaner and Conley showed that generalized trusters participate in American politics, while particularized trusters withdraw from civic life or participate only in their ethnic organizations. Contrarily, Campbell (2000: 192) demonstrated that trust only exists in "face-to-face groups" consisting of friends or relatives; she did not find evidence of generalized trust.

Various empirical studies show that generalized trust depends on different macro-social factors. Income inequality decreases generalized trust (Alesina, La Ferrara 2002; Delhey, Newton 2005). Corruption increases inequality and, thus, decreases generalized trust (Delhey, Newton 2005; Rothstein, Uslaner 2005; Uslaner 2005; You 2005). Wealth, modernization (except for agricultural societies), political performance (except for former/ current Communist countries) and public spending on public services increase it (Delhey; Newton 2005). Kumlin and Rothstein (2005) showed that generalized trust<sup>66</sup> is influenced by the percep-

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<sup>66</sup> Responses on a 11 point Likert-scale ranging from 0 "you cannot trust people in general" up to 10 "you can trust people in general". The data included the years 1996 to 2002.

tion of being treated correctly by welfare state organizations<sup>67</sup>. They have the capacity to “break” or “make” trust. On the one hand, personal experience with selective, needs-tested welfare-state institutions reduces interpersonal trust and on the other hand, experiences with universal institutions tend to increase it (Kumlin, Rothstein 2005: 360). This is mediated by the trust in order and implementation institutions (Rothstein, Stolle 2008). Among the influential macro-social factors, we find Protestantism to be the strongest (Delhey, Newton 2005: 318, see also Rothstein, Uslander 2005).

Also the living situation of individuals influences trust. Generalized interpersonal trust is lower in racially more heterogeneous communities (Alesina, La Ferrara 2002; Putnam 2007). In contrast, Uslander (forthcoming) showed that not only the diversity in neighborhood networks is important, but also the level of segregation in these neighborhoods. Regions with a low level of segregation realize higher levels of generalized trust.

*We conclude* that generalized trust seems to be preconditioned by the genes of the respondent and shaped by societal factors (like protestantism, inequality, societal wealth, political performance and social security system) and the surroundings a person lives in (e.g. racial segregation). In contrast to Putnam’s assumption, networks of civic engagement seem to have no influence on trust, and if so then only minimally. This also disproves the last theorem we derived from Putnam’s social capital concept.

In summary, the empirical results clearly indicate the inadequateness of Putnam’s concept and call for its revision.

### 3.2.6 *How to Revise Putnam’s Concept?*

To deal with the revealed problems, we find two strategies in the literature: firstly, defining social capital as a multidimensional entity and secondly, highlighting its capital character.

Theorists of the former tradition claim to further theorize social capital as a multidimensional construct distinguishing its structural and cultural dimensions (Gabriel et al. 2002; Newton 1999a, b; van Deth 2003, 2008; Paxton 1999, 2000). The structural dimension includes social networks, the cultural one con-

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<sup>67</sup> The perception of being treated fairly by welfare state organizations was measured with the following items: “If you think of your own contacts with the following agencies during the past 12 months, to what extent do you believe you have received the service and help to which you are entitled?” Respondents answered for agencies concerned with each of the following services: health care; child care; social assistance; public transportation; employment offices; and housing allowances. To be answered with 1 (did not receive the service and help to which I am entitled) to 5 (received the service and help to which I am entitled).

sists of a set of values and attitudes of individuals relating to trust, reciprocity and willingness to cooperate (van Oorschot et al. 2006: 151). Other terminology can be found in Esser's (2008) work referring to two meanings of social capital. He categorizes networks among relational capital situated at the micro level, and generalized trust and norms as system capital situated at the macro level of the society.

To assess social capital, the authors of this position call for the use of multi-item measurements (van Deth 2003). Stone (2001) claims we need to measure all dimensions of social capital to get reasonable results. For this, specific components should be included in an integrated model measuring all aspects of the construct. Examples for this approach are Anheier's (2001) Global Civil Society Index and the CIVICUS Index on Civil Society (van Deth 2003: 88).

The results of Owen and Videras (2006) analyzing the GSS (1975 to 1994) speak in favor of this multidimensionality argument. They focused on the distribution of social capital in the United States and applied a Latent Class Analysis measuring social capital with memberships in 16 different associations<sup>68</sup>, generalized trust and fairness of people<sup>69</sup>. They found 7 classes of social capital possession, ranging from class 1 (the largest one) connecting individuals with a very low probability of membership in any type of voluntary organization and a low probability of estimating people to be fair as well as low generalized trust, up to class 7 with individuals with a high probability of volunteering, trusting and fairness with common citizens (Owen, Videras 2006: 9-10). Their analysis showed that the three indicators are not strongly connected, but they help significantly to group people into different classes. Individuals that participate in similar amounts are grouped into different classes, if they differ in their levels of trust and fairness (Owen, Videras 2006:11). This also supports our conclusion, that networks of civic engagement are not involved in creating trust. Also, in Finland social capital consists of three factors - social support, social participation and networks and trust and reciprocity. This was revealed by the Finnish Health survey analysis which used 39 variables<sup>70</sup> (Nieminen et al. 2008).

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<sup>68</sup> It was asked if the respondents were members in the following types of organizations: Fraternal; service; veterans; political; union; sports; youth; school; hobby; Greek; national; farm; literature; professional; church and other.

<sup>69</sup> The fairness of people was assessed using the following items: "Do you think most people would try to take advantage of you if they got a chance, or would they try to be fair?"

<sup>70</sup> The following variables were included: 1. Club or society activities (including posts of trust in society); 2. theatre, movies, concerts, art exhibitions, sport competitions etc.; 3. studying; 4. church or other religious activities; 5. exercise, hunting, fishing, gardening or other outdoor activity; 6. handicrafts, playing music, singing, photographing, painting, collecting (e.g. stamps); 7. visiting family/friends/neighbors; 8. family/ friends/ neighbors visiting you; 9. talking on the phone; 10. watching TV/ listening to the radio; 11. reading newspapers/magazines; 12. going out to restaurant – to be answered with: 1 = less than once a year or never to 5 = every day or during most days. –; 13-

However, the simultaneous conceptualization of social capital at the individual and collective level is problematic. This contains the danger of the “ecological fallacy” or the assumption that conclusions drawn on one level are valid for other levels too (Lin 2001: 25-28; 2001a: 8-11). This is especially displayed by the absence of an empirical relationship among networks of civic engagement; norms of reciprocity and generalized trust at the individual level (see part 3.2.4; Franzen, Pointner 2007; Gabriel et al. 2002). We can avoid this fallacy, if we conceptualize social capital at one level only. Esser (2008) draws a similar conclusion, although conceptualizes social capital as relation-based capital and system capital. Because this definition is as broad as Hume’s (1967) definition of society, “social research is better placed to engage in the important task of explaining the specific mechanisms through which one or the other form of social capital is formed, and its consequences for the particular social processes under investigation” (Esser 2008: 47-48).

These arguments speak in favor of the second position dealing with the drawbacks of Putnam’s concept. The authors call for a reconsideration of social capital from its roots (Franzen, Pointner 2007; Lin 2001, 2001a). According to its name, it is a capital that can be invested and provides benefits from its investment. To connect social capital to investment and benefits we have to regard it as a structural entity only. It is a resource of individuals or collectives they can achieve through network contacts. Individuals have to invest time and economic resources to create and maintain these social resources. Motives of the individuals or collectives can be instrumental or expressive/intrinsic (Franzen, Pointner 2007; Lin 2001, 2008). This is also in accordance with the concept of social capital conveyed by Bourdieu and Coleman (see Chapter 2 of the present monograph): it is a relational resource based on interactions and networking. Both are possible only in networks; be it individuals that strive to reach their goals or collectives like associations or nation states.

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23. joining regularly in (health promotion) discussion group activities – sum of 11 items, three categories: 0 = never joined any group, 1 = joined at least one group but not during the past 12 months, 2 = joined at least one group during the past 12 months –; 24. feeling unsafe when walking in the neighborhood – to be answered with 1 = feel very often unsafe to 5 = feeling never unsafe –; 25. feeling safe to be alone outdoors in the evenings after 10 pm – to be answered with 1 = afraid (every now and then, or often, or doesn’t go out because is afraid) to 2 = not afraid (can’t tell or never) –; 26. having someone to count on when feeling exhausted; 27. having someone who really cares no matter what; 28. having someone who really makes you feel better when you feel down; 29. having someone to get practical help when needed – to be answered with 0 = no one, 1 = one person, 3 = two persons or more –; 30. being surprised by the behavior of the people you thought you knew well; 31. being disappointed by people whom you counted on – to be answered with 1 = always happened to 7 = never happened –; 32-39. cynical mistrust – contains eight items, variables summed, reversed scale 8 = most distrust– 1 = least mistrust –

The aspect of investment can easily be connected to networks, but not to generalized trust and norms of reciprocity. To create or maintain relationships, an individual can invite colleagues or acquaintances to a dinner party. Its preparation requires spending time and the allocation of refreshments requires spending money. Both can be seen as direct investments in the relationships. On the contrary, the investment in generalized trust and norms of reciprocity are not that easy. Both are created in long lasting and complex processes that cannot be immediately influenced by investing a resource (time) (Franzen, Pointner 2007: 86-87). While personal/individual trust can be developed in face-to-contacts, easily (see Game Theory or Trust Game; Buskens, Raub 2004; Diekmann 2009; Glaeser et al. 2000), the spill-over of individual trust into generalized trust is yet unproven. We can assume generalized trust (but also norms of reciprocity) emerges as the by-product of relationships (Coleman 1990, Esser 2008) or is shaped by macro-social factors like wealth, Protestantism etc. (see section 3.2.5).

Important in this discussion is that many scientists agree that generalized trust and norms of reciprocity facilitate transactions and are useful for economic and social development, but they haven't to be termed capital (Franzen, Pointner 2007: 87). This allows us to conclude that generalized trust and norms of reciprocity are cultural features of a society only, and they are preconditions for the operation and creation of social networks and, thus, for social capital. Although not empirically supported yet, the opposite direction also seems possible, because the cultural components may emerge as by-products of social capital (Esser 2008: 41). This is the result of the public good character of social capital.

*In summary*, conceptualizing social capital as a structural entity only, we can avoid the discussed drawbacks in Putnam's social capital concept and we can better connect it to its roots - relationships and its capital character. Thus, we will follow this conceptualization. Individuals (but also collectives) invest in relationships among each other to gather benefits in the form of resources. Because of its public good characteristic, social capital produces cultural entities like generalized trust and norms of reciprocity as by-products and inversely is shaped by them. However, a clear connection is currently unknown. We leave this point open for future research.

### **3.3 Conclusion – How Does Putnam's Social Capital Concept Contribute to Social Capital Theory?**

Putnam defines social capital as networks of civic engagement, generalized trust and norms of reciprocity and focuses on macro-social outcomes. Social capital is assumed to positively influence political performance and economic develop-

ment (as are bridging and bonding social capital). Reviewing several studies on the topic shows neither clear support of the assumed impact of social capital as well as its bridging and bonding features on political stability and economic development nor of the hypothesis that networks of civic engagement positively influence trust. Several studies even disprove other building blocks of his concept. In contrast to the assumptions, they show that networks of civic engagement don't improve the acceptance of norms of reciprocity and norms of reciprocity don't foster generalized trust. Dealing with these results, two strategies emerged. The first was to conceptualize social capital as a multidimensional construct having a structural as well as cultural dimension. This conceptualization divides the concept from its roots: the relations between individuals or collectives and the capital character of it. The second strategy seems more appropriate which is to sustain the capital character of social capital and see it as a structural asset only, constructed by individual or collective networks. Because individuals cannot easily invest in cultural societal aspects like generalized trust and norms of reciprocity, but they are very important for the formation of and operation in social networks, we don't exclude them from our concept but regard them as preconditions as well as the outcome of social capital.

Although Putnam's concept contains the discussed problems, it focuses on relationships that had been neglected in Bourdieu and Coleman's concepts: formal relationships. These have to be included in a theory of social capital.

Summing up, we refine the requirements for a theory of social capital as follows:

1. Social capital is a structural asset of networks with the character of a private and public good. It emerges through relations of individuals or collectives and spills-over into cultural societal aspects (generalized trust and norms of reciprocity) that function as both a precondition to and the output of social capital.
2. Social capital is produced in open (bridging) and closed (bonding) structures – however, the effect of bonding social capital has to be further analyzed because of the confusing results of its effects presented in the excursus –, as well as in formal, informal, institutionalized and non-institutionalized structures. It has to be pointed out that the resources embedded in these different structures may benefit different actions.
3. The neglected negative effects of social capital via exclusion have to be considered.
4. The topic how social capital can be used to fight inequality should be included.



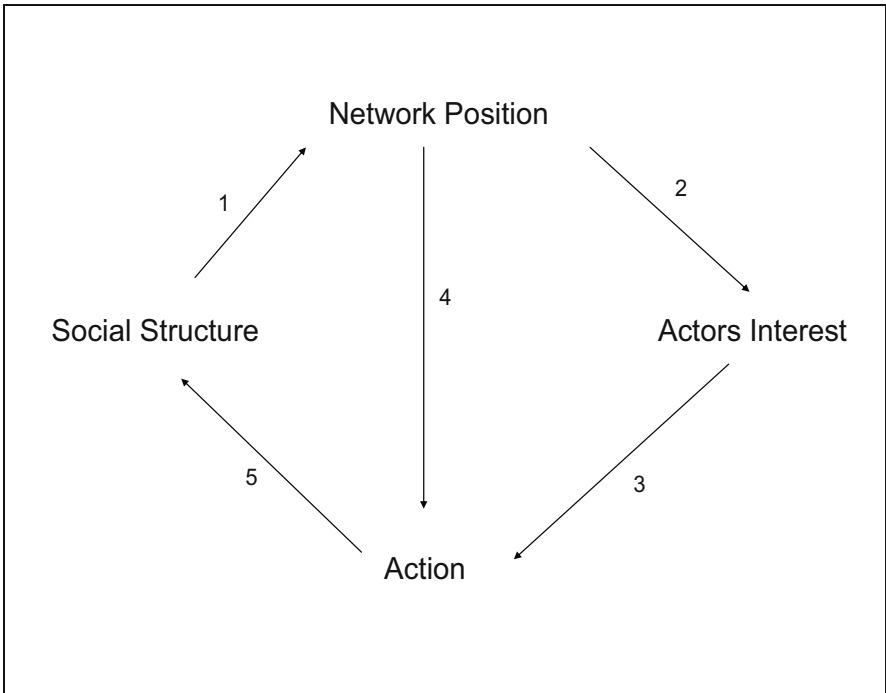
## 4 The Network Approach to Social Capital – The Concept of Ronald S. Burt

In the previous chapter we concluded that it is useful to concentrate on the structural aspect of social capital to derive a general theory about it. In the literature we find such models in Burt and Lin's conceptions. The present chapter deals with the former. To acquaint the reader with Burt's way of thinking, we will introduce the foundations of his concept: the structural theory of action and the general concept of networks. Then we will introduce the concept of structural holes representing social capital. As done in the previous chapters, we will outline the most critical points of the concept and derive a theorem for empirical testing. To ascertain this theorem's validity we will contest its empirical results starting with Burt's own studies and continuing with others at the business as well as the individual level. Finally, we will conclude how Burt's concept contributes to a general theory of social capital.

### 4.1 General

Working like Coleman in the rational-choice perspective, Burt embeds his concept of social capital in the structural theory of action. This theory makes assumptions about an actor performing a social action. The actor can be a single person or a group pursuing individual goals to maximize their utility. The actor has specific resources at his/her disposal that determine the frame in which the goals can be achieved. The interests of the actor are determined by the surrounding social structure that emerged from the division of labor. Accordingly, the social action involves several components – the actor is the source of action, the resources are the conditions of action, and the motivation of the actor is the reason for an action balancing the probability of success of alternative actions (Burt 1982: 3; Ruiz 1998: 17). Among these components, causal relations emerge that are displayed in figure 3. The position of an actor in the social structure determines his/her calculation of utility (1) and, therefore, models the actor's interest (2). Both, actors' interest (3) and position (4), determine the social action that itself modifies the social structure (5) (Ruiz 1998: 21).

Figure 3: Interaction of the Components of the Structural Theory of Social Action



Note: see Burt 1982: 3

Actors are characterized by their possession of financial, human and social capital generated from their position in the social structure. These types of capital are the resources actors have at their disposal to maximize their utility. Financial capital is owned by an actor in the form of money or reserves in the bank, human capital is a combination of natural qualities, like charm, health or intelligence and skills that have been acquired in formal education. In contrast to the other forms of capital, social capital is the content of relationships among at least two actors. No actors possess the property rights to social capital alone like in the case of financial and human capital; related actors possess social capital mutually (Burt 1992: 8-9). Because multiple relationships constitute networks, they contain social capital. According to Burt, networks can be viewed on different levels – networks of individuals (ego-networks), networks of subgroups, or different

subgroups as a structured system. These levels of aggregation are characterized by a relational dimension or the intensity of relations and a positional dimension. The different types of networks are presented in table 2.

Table 2: Concepts of Network Structure

	Actor	Multiple actors as a network subgroup	Multiple actors/ subgroups as a structured system
Relational	Ego-network as extensive, dense and/or multiplex	Primary group as a network clique: a set of actors connected by cohesive relations	System structure as dense and/or transitive
Positional	Occupant of a network position as central and/or prestigious	Status/role – set as a network position: a set of structural equivalent actors	System structure as a stratification of status/role-sets

Note: see Burt 1982: 30

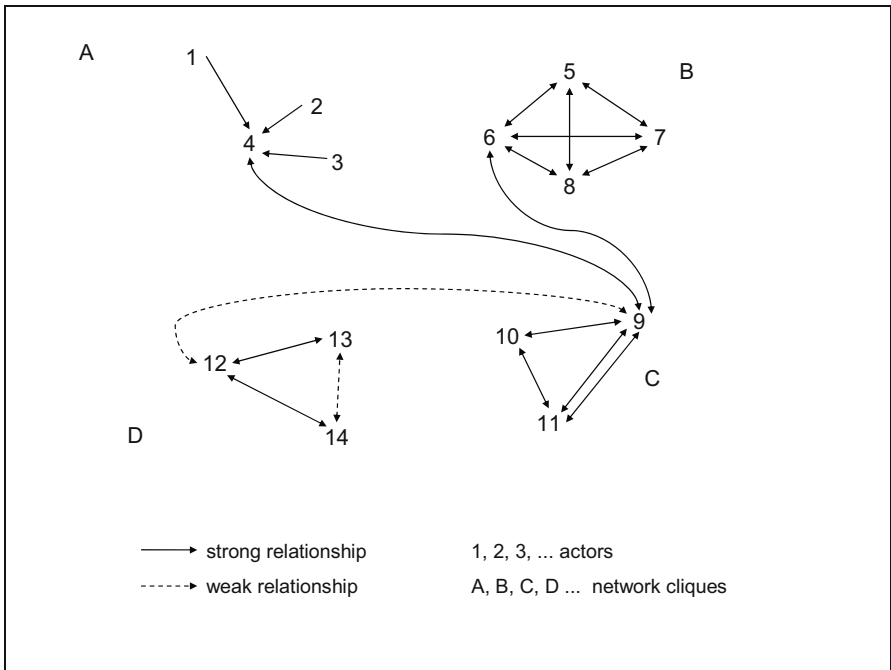
Regarding the relational dimension of networks, the ego-network consists of a set of individuals the actor (ego) has a direct relation to and the relations among these persons. Figure 4 displays a network. For example, the ego-network of actor 12 consists of the relations to actors 9, 13 and 14 and the relations among these actors. The relations within such an ego-network can be described by range, density and multiplexity (Burt 1982: 31-32).

The range measures the diversity of the actors' contacts (e.g. status differences of contacts, ethnicity, etc.). A network is dense, if all actors in it are connected by intense relations. Multiplexity measures the extent to which the actor has different types of relations to a given actor (Burt 1982: 30-32) (like having a colleague who is also a friend). In figure 4 the density of the relations is indicated by the thickness of the line. A continuous line indicates a strong relation; a dotted line indicates a weak one. Actors 12 and 13 realize a dense/strong relation, between actor 13 and 14 exists a weak relation. The range of the ego-network of actor 12 is bigger than the range of the ego-network of actor 13, because in addition to the relations in network part D, actor 12 also has a relation to actor 9 in part C, while actor 13 only realizes relations in part D. Exemplary; in network part C multiplexity is pictured. The multiplexity in the relation between actors 9 and 10 is lower than in the relation between actors 9 and 11. Actors 9 and 11 implement relations in two different contexts (e.g. family relation and

colleague relation) indicated by two arrows and actors 9 and 10 realize a relation in just one context.

The network position of an actor (ego) in the ego-network is determined by the entire amount of relations he/she is involved in. It is defined by centrality and prestige. If all relations in the network involve the actor, he/she is central. An actor has prestige, if he/she is the object of strong relations of actors that have strong relations also among themselves (Burt 1982: 34-35). In figure 4, actor 4 is central in network clique A, because he/she is aim of the strong relations of actors 1, 2 and 3. Because there are no relations among these three actors, actor 4 doesn't possess a prestigious position. For example, actor 8 has a central and prestigious position.

Figure 4: Network Example



Several actors in a network build subgroups or cliques. At the relational dimension, they consist of actors that realize very intense relations among each other. The relations feature intimate face-to-face contacts and good cooperation

(Burt 1982: 37-38). Such strong relations are termed cohesive (Burt 1992: 18). A clique is cohesive, if the relations between all clique members are of maximum strength (Burt 1982: 40-42). The network parts B, C and D in figure 4 for example, are network cliques. Because one can find in network clique D a weak relation between actors 13 and 14, while in network clique C there are only strong relationships, the cohesion in subgroup D is lower than in subgroup C.

The network position of several actors in a network subgroup is defined by status and role-sets. Role-sets are patterns of behaviors and relations with other actors. Status consists of rights and duties defined by these patterns (Burt 1982: 40-42). If other actors assess the status of an actor positively, a primary relational pattern emerges. The actor with the most valuable status is the starting point of the relations and he/she is able to choose other actors to be the aim of relationships. That is to say, this actor is able to determine the direction of the relationships. In figure 4, actor 4 has a high status, because he/she is the aim of the relationships of actor 1, 2 and 3. Actors that possess a high status are prominent and mostly cultivate relations with actors that are structurally equivalent to them (Burt 1982: 49-51; Ruiz 1998: 38). Actors are structural equivalent, if they have identical relations with all actors in a system and thus, reach the same sources of information. Therefore, they occupy the same network position (Ruiz 1998: 35; Burt 1992: 19, 1980: 193). Actors 1, 2 and 3 in figure 4 are structurally equivalent, as are the actors 10 and 11. No structural equivalent position is occupied by actors 5 and 6. To occupy a specific network position, direct contacts are unnecessary (Burt 1982: 45). Producers are, for example, structurally equivalent, if they use the same resources or buy raw material at the same supplier and if they sell their products in the same customer market (Burt 1992: 88, 209). Actors that are not prominent and do not initiate relationships to structurally equivalent actors, are located in a secondary relational pattern (Ruiz 1998: 38; Burt 1982: 49-51).

Several subgroups form an entire network. We describe the relational system structure of the network by transitivity and density. Transitivity is given, if there are disconnected cliques in the network, if the network is centralized (all cliques have contact to one clique), if the cliques are factionalized and if the network is competitive (Burt 1982: 55-60). Figure 4 displays a transitive network. The network consists of disconnected subgroups (A, B and D) and all subgroups realize a relationship to actor 9 of network clique C. Transitivity would be absent, if there was no relationship between actors 9 and 6. At the positional dimension, the stratification of status and role-sets characterizes the entire network (Burt 1982: 55-60).

## 4.2 Structural Holes

As the reader will see in the following part, it is necessary to introduce network terminology, because the position of an actor in the network determines his/her access to social capital. Regarding society as a market mediating the exchange of all kinds of goods and ideas, it seems obvious that every actor needs information to be able to realize optimal exchanges. If the information on the market is incomplete, actors use their network structure to gather appropriate information (Burt 2001b: 31-33, 2001a: 202-204). Accordingly, the quality of a network determines success in the market. If an actor builds relations where useful parts of information arrive and provides their reliable flow, he/she can attain benefits from the access to information, from the early time point of the access to them and from forwarding them (Burt 1992: 13-15). Generally, networks can be closed or open. Closure is given, if relations remain among all actors of the network. A network is open, if some members of the network have relations to members of other networks.

Given stable circumstances, information benefits are the highest in big and diversified networks. Not only the size of the network is crucial, but also the number of non-redundant contacts (Burt 1992: 16). According to Burt, relationships are redundant, if they lead to the same people and, therefore, to the same information (Burt 1992: 17). If a contact is non-redundant, a structural hole exists.

“A structural hole is a relationship of nonredundancy between two contacts. (...) As a result of the hole between them, the two contacts provide network benefits that are in some degree additive rather than overlapping” (Burt 1992: 18).

That means structural holes are weak relations among groups (Burt 2001a: 208). We find two kinds of unconnected non-redundant contacts in networks. On the one hand, contacts can be directly disconnected or no direct relation may exist between two actors. On the other hand, actors can be indirectly disconnected. In this case an actor realizes contacts that exclude another actor completely (Burt 1992: 18). In the first case, the actor can reach the disconnected actor by his/her other contacts, in the second case the disconnected actor cannot be reached at all.

Indicators of structural holes are cohesion and structural equivalence (Burt 1992: 18). As defined previously, contacts are cohesive, if they are linked by strong relationships. They create redundancy and indicate the absence of structural holes. Accordingly, and in contrast to Coleman (see Chapter 2), valuable social capital exists for Burt not in closed social structures but in open networks that contain structural holes. For example, such a closed relation exists between fathers and sons or among siblings as well as among close friends. The strength

of relationships can be measured using two independent measurements: contact frequency and emotional closeness (Burt 1992: 18). The cohesion of contacts indicates the deepness of a structural hole or rather how easily the structural hole can be spanned. If the structural hole between two actors is very deep, a third actor is able to play one actor off against the other easily. Doing this the actor can obtain a wealth of information and control benefits (Burt 1992: 42-43). Structural equivalence is given, if two actors associate with the same contacts and their relations lead to the same sources of information (Burt 1992: 18-19). Also in this case, redundant information is gathered and structural holes are absent. For the measurement of structural holes, Burt developed the network constraint index (Burt 1992: 55). It measures the amount of non-redundant contacts in an actors' network indicated by big network size and low network density as well as by low hierarchy or a low level of network centralization (Burt et al. 1998).

The number of structural holes increases with the size of the network. A network is optimal, if it is efficient and effective. The efficiency is highest, if the number of non-redundant contacts is maximal. In this case, the return from the structural holes is the greatest. For example, this can be achieved, if an actor reaches another network through just one contact. A network is effective, if no redundant relations exist and every relationship reaches a whole network (not just one actor) (Burt 1992: 20-22).

If an actor spans structural holes, he/she is called a broker. For example, in figure 4, the actors 9 and 12 are brokers. A broker is comparable to the Tertius Gaudens "the third person who benefits" introduced by Simmel (1923: 154; 232). He/she is the third person that is able to obtain benefits from the conflict between two actors. For obtaining benefits the Tertius can pursue two strategies. He/she can be the third between two or more actors in equal relations or the third between players in several conflicting relationships. A good example is the exchange in economic transactions among suppliers and purchasers. If an actor occupies the position of a Tertius, he is called entrepreneur, because the actor gathers profits from the mediation between two other actors (Burt 1992: 34).

If structural holes are absent among actors, an applied Tertius strategy can lead to structural holes and bring competition into relationships. Essential for Tertius strategies is uncertainty demonstrated by distributed authority; that is to say, none of the actors possesses complete authority. Hence, the Tertius can play the relationships off against each other and gather the resulting control benefits (Burt 1992: 30-32). The best places of action for the Tertius are structural holes, because their substance is information that he/she can move (Burt 1992: 33).

If no structural holes remain, an actor has the possibility to create one to gather information and control benefits. The first possibility is the withdrawal

from a relationship. An example of this situation is a person that switches to another job to get a better relationship to the administrator. But this withdrawal is accompanied by losing the possible benefits from the canceled relationship and also by losing credibility among other contacts. A second possibility is the widening of the borders of the network. In this case, a new contact is included in the network that competes with the given boundary. Thus, the broker creates a new structural hole. The problem arises that the old and new contacts could notice that cooperation among them would be beneficial. As a result, this would lead to further restriction of the actor that created the new structural hole. A third possibility is embedding. Here the particular relationship remains, but it is neglected while the actor invests in a second relation he/she possesses more control over (Burt 1992: 231-233). An example of successful embedding is a friendship, because this kind of relation implies behavioral rules that prevent breaking up the relationship (Burt 1992: 236).

Burt further introduces secondary structural holes that play an important role in Tertius strategies. Secondary structural holes are possible redundant contacts besides the primary contact in a network. Their importance lies in the fact that they allow the actor to establish a new non-redundant contact in the network, if the primary contact breaks up (Burt 1992: 38).

To calculate the benefits an actor can gather from spanning a structural hole, we have to subtract the rate of return from the time and energy an actor invested to establish the contact. The rate of return itself depends on the amount of primary structural holes between the reached contact and other actors in the network, and on the number of secondary structural holes that are between the reached contact and other contacts outside the network that could replace the contact (Burt 1992: 44-45).

However, the spanning of structural holes is not always connected to benefits. The more relationships span the structural holes the lower is the use of an additional bridge (Burt 2001a: 230). The utility of a bridge stays invariable, if new information emerges constantly and new solutions for problems have to be found quickly. In this case, new structural holes emerge permanently whose spanning creates benefits again. If no new information emerges around the structural hole, it can develop into a passive one. Such a passive structural hole has been absorbed into the encompassing social structure already. If it is possible for the actors on one side of the structural hole to benefit from the actors on the other side, the hole is an active one. It can be kept active, if the attached actors develop a routine of help, influence or information accumulation (Burt 2001a: 231-233).

Actors can also prevent themselves from being played off against other actors. This is possible by building close relationships with the concerned actors or by creating oligopolies and by avoiding to forward redundant information to the



concerned actors. Burt calls this tactic differentiation strategy (Burt 1992: 45). We call the actors that foster relationships free of structural holes while having contacts rich in structural holes structurally autonomous. These actors are able to gather the best information and control benefits (Burt 1992: 45). The level of structural autonomy increases with the absence of structural holes around the particular actor and decreases with the absence of structural holes around the contacts of the actor (Burt 1992: 72). We find structural autonomy among companies that produce a broad spectrum of goods allowing them to absorb fluctuation in demand. These companies feature higher flexibility regarding customer prize and service wishes than others (Burt 1992: 203).

### 4.3 Critiques to Burt's Concept

Burt's concept meets several of our requirements for a theory of social capital that we derived in Chapter 2 and refined in Chapter 3, but not all.

In accordance with the current definition of social capital, Burt also defines social capital as an entity remaining in relationships or social networks an actor can use to gather the specific resource "information". Burt especially emphasizes the position of an actor in a network; he/she needs to span structural holes to gather benefits.

*First*, Burt doesn't offer a formalized social capital theory. We don't find concrete axioms or theorems. However, his accomplishments are explicit, internally consistent as well as simple. His scope condition is implicit; he applies the social capital topic at firms.

Although Burt doesn't formulate concrete theorems, we can derive one from his concept: Spanning structural holes provides the actor with the benefits of early access to information and the possibility to distribute and forward them. Spanning structural holes makes it possible to achieve certain goals. Thus, a broker will be more successful in comparison to his/her peers. We will test the validity of this theorem in the following section.

*Second*, according to our requirement, social capital is modeled as a structural asset. However, Burt theorizes that social capital benefits are available to actors (individuals or collectives that use the structural holes to their advantage) and neglects the public good character of social capital. Brokering structural holes benefits actors themselves but has no externalities.

*Third*, Burt's concept doesn't meet a second requirement. He perceives only open structures – spanning structural holes – as productive asset of social capital. This position is called the structural hole-argument (Lippert, Jürgens 2005: 290). The open networks do not only provide advantages; they also contain disadvan-

tages neglected by Burt. Actors cannot establish shared values and norms in these structures, because the broker exploits relations instead of implementing cooperation. But also closed structures aren't positive in any case. On the one hand effective norms with sanctions are established, but on the other, new information is excluded – new information only develops, if the network is open (Glückler 2001: 219). Lippert and Jürgens assume that both ideas do not have to be mutually exclusive (Lippert, Jürgens 2005: 290). The position of the broker is not necessarily at conflict with the closure argument introduced by Coleman (see Chapter 2). The closure argument focuses the average value of investment in the network and the argument of structural holes concentrates on marginal values (Sobel 2002: 151). We can conclude that social capital consists of a combination of both mechanisms. This was already assumed in Putnam's concept of social capital referring to bridging and bonding social capital. However, the results concerning both kinds of social capital on political and economic performance are ambiguous (see Chapter 3). We have to test the empirical content of the impact of open and closed relational structures further. Therefore, we will review empirical studies on the topic and their results in the tradition of network analysis in the next section.

Admittedly, Burt does not restrict the inclusion of formal and informal relationships, but he does not elaborate on them at length either.

*Fourth*, as a result of his preference for open structures, Burt does not refer to negative effects of social capital. As previously discussed, open structures may not only benefit the broker but lead to the exploitation of others in this structure due to a lack of mutual control. This effect is not taken into account.

*Fifth*, Burt doesn't discuss the possibilities of using social capital to decrease inequality. However, his studies deal with the unequal distribution of social capital as we will also focus on the next section.

#### **4.4 Empirical Results of Social Capital Research in Burt's Tradition**

In the previous section, we raised several questions that can be answered with empirical results concerning Burt's concept of structural holes. In the first section, we will assess the question of whether or not the derived theorem – structural holes benefit the action of the actors spanning them – is supported empirically. We are going to present Burt's studies followed by critiques concerning empirical correctness and neglecting closed relationships.

#### 4.4.1 *Burt's Studies*

Burt analyzes on the one hand the social capital of firms (as collective actors) and on the other the social capital of the managers in these firms using network analysis. We present both kinds of analyses in the following section with regards to our derived theorem.

Studying networks among US firms, Burt used structural equivalence as an indicator of the absence of structural holes. Similar rates of purchase from the same supply markets and similar values of sales in the same customer markets indicated the structural equivalence of two firms (Burt 1992: 85-87, 1980: 911). Indicators for structural holes were concentration rates<sup>71</sup> published by the US Department of Commerce. Further, the density<sup>72</sup> of the market where the studied firms are operating indicated the strength of the ties to a specific market. The transaction data and the concentration rates evaluated the commitment<sup>73</sup> of the markets in mutual transaction with other markets (Burt 1992: 89-90). In total, Burt showed that American markets are big and dense networks containing structural holes (Burt 1992: 91). Firms that realize the highest profits are the structurally autonomous ones (Burt 1980: 910). Enterprises operating in markets with various structural holes realize higher profit margins than enterprises active in markets where the majority of output is produced by the biggest firms, that is to say, where few structural holes exist (Burt 1992: 95). Regarding firms, Burt supported the derived theorem: firms spanning structural holes are more successful in gathering profits.

At the micro level, Burt analyzed managers. The starting point was the idea that managers with contact networks are network entrepreneurs or brokers. Otherwise stated, these managers span structural holes and profit from early access to information. They are informed about new possibilities earlier, they get involved in new projects and acquire better skills, because they control the content of their work and discern the possibility to define relations with their subordinates (Burt 2001a: 208, 2000: 30, and 1992: 116). Exploring one of the biggest High-Tech-Firms in the USA, Burt measured the networks of the managers using both a sociometric questionnaire and a self-developed name generator or roster method. The former lists all people available in a context and asks about the respondent's relationships to them. The sociometric questionnaire measured

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<sup>71</sup> Concentration rates can acquire values between 0 and 1. They show the percentage of output realized by the 4 biggest firms. If the value is near to 1, only few structural holes exist.

<sup>72</sup> The density was calculated from the relation of the marginal flow of money in the specific customer markets to the entire flow of money in all customer markets.

<sup>73</sup> The value of the commitment lies between 0 and 1. In the study an average value of 0.064 was measured.

contacts in and outside of the firm (Burt 1998: 14, 1992: 118-120). The core contacts of the respondents were ascertained using a name generator shown in box 2, the so called free-recall method. It asked the respondents to freely enumerate persons important to them in different contexts. The respondents characterized the named persons by means of a name interpreter asking for age, sex, authority relation to the person, duration of acquaintanceship, the frequency of mutual talking and emotional closeness (Burt 1997a: 359-361, 1992: 122-123). The spanning of structural holes was measured via the constraint index of the networks of the managers combining the density of the networks (interconnectedness of ego's contacts) and the strength of the relationships of the manager to every contact in the firm (ranging from especially close to total strangers) (Burt 1992: 125-126). If a weak tie exists in a sparse network, a structural hole is spanned. An actor can gather non-redundant information from transient relations, and thus, the actor can acquire benefits. Burt shows in his study that the spanning of various structural holes or the maintenance of transient relations improves the chances of early promotion in an enterprise. This supports our above generated theorem.

To test his hypothesis also in other contexts, Burt studied senior managers in an American firm and a French firm. In this context, promotion could not serve as indicator of success, because in France all managers are promoted after the same period of time. The relative wage was used instead which is conditioned by the performance of the manager (Burt et al. 2000: 130-133). The network data was gathered as described previously. The results are straight forward, managers with networks rich in spanning structural holes performed better in both contexts than managers poor in spanning structural holes (Burt et al. 2000: 133). Burt and his colleagues found differences only in the duration of contacts (in the US new colleagues are known before entry into the firm, in France not until entry into the firm) and the range of relationships (Americans have a greater range) (Burt et al. 2000: 141). A study among MBA students of the University of Chicago revealed similar results (Burt et al. 1998).

In summary, entrepreneurs that span many structural holes possess more social capital than actors that span just a few structural holes. They are more likely to save enterprises that are in difficulty, because they notice problems earlier, react with more flexibility concerning reorganization and control the evaluation of information by other actors (Burt 2000: 30). Further studies showed that managers that perform the same work and are isolated in their activities hold a virtual monopoly. Their success depends mostly on the access to information and control (Burt 1997b: 356-358). Generally, social capital is most valuable for persons that exercise a high amount of control (Burt et al. 1998: 83). All these studies support the derived theorem.

## Box 2: Burt's Name Generator

We will start with a general question. From time to time, most people discuss important matters with other people, people they trust. The range of important matters varies from person to person across work, leisure, family, politics, whatever. The range of relations varies across work, family, friends, and advisors. *If you look back over the last six months, who are the four or five people with whom you discussed matters important to you?* Remember, just list their first names or initials.

Consider the people with whom you like to spend your free time. Over the last six months, who are the three people you have been with most often for informal social activities such as going out to lunch, dinner, drinks, films, visiting one another's homes, and so on?

Do your job responsibilities include assigning work to direct report managers? If YES; In your opinion, who among them is the most likely to be successful at (THE FIRM)?

Who would be considered to be your immediate supervisor?

Of all the people working for (THE FIRM), who are the four or five people who have contributed most to your professional growth within (THE FIRM) - your most valued work contacts?

Making things happen at (THE FIRM), as in many high technology firms, requires buy-in from people working in other groups within the firm. Suppose you were moving to a new job and wanted to leave behind the best network advice you could for the person moving into your current job. Who are the three or four people you would name to your replacement as essential sources of buy-in for initiatives coming out of your office?

Of all the people you know at (THE FIRM), whom do you see as your single most important contact for your continued success within the firm?

At the other extreme, who among the people working for (THE FIRM) has made it the most difficult for you to carry out your job responsibilities? Again, just list the person's first name or initials (and remember that these data will not be released from the Research Program at Columbia except as aggregate statistics on groups of managers).

If you decided to find a job with another firm doing the kind of work you do at (THE FIRM), who are the two or three people with whom you would most likely discuss and evaluate your job options? These could be people who work at (THE FIRM), or people outside the firm such as friends, family, or people who work at other firms.

Note: In the booklet, (THE FIRM) is replaced by the firm's name.

Note: see Burt 1992: 123, 1997a: 359

However, studying inequality in the distribution and effects of social capital also revealed contrary results. The positive effect of spanning structural holes is absent for women or new co-workers. Both get promoted early, only if they have many redundant and close relationships in the enterprise (Burt 1998: 16-18, 1992: 132-134, 137-138). To be promoted, these people need to be embedded in hierarchical structured networks, that is to say, they require to reach many indirect contacts by reaching just one central contact. This central contact serves as strategic partner mediating to others (Burt 1992: 145, 1998: 21-23). The actors' boss can be this strategic partner in most cases (Burt 1998: 27). Accordingly, the

structural hole-argument is valid under certain circumstances only; network closure also plays an important role.

Though, the validity of Burt's results is questionable. Taking a closer look at Burt's name generator (see box 2) makes several problems apparent. The name generator only asks for first names or initials of people the respondent has contact with. This might cause biases, because the same first names occur several times in large firms. A person's social capital might be over- or underestimated, because several people bear his/her first name or initial too. In contrast, the name-generator technique reveals networks that are clearly delineated. However, of particular significance is Engle's statement claiming that studies not conducted by Burt show insignificant results regarding the effects of spanning structural holes (Engle 1999: 109). This assumption has to be pursued and its validity has to be assessed.

#### *4.4.2 Does Burt's Concept Hold up to Empirical Testing?*

Reviewing the literature dealing with the structural hole-argument, we find two main traditions: analyzing the effects of spanning structural holes first, at the firm-level and second, at the individual level.

##### *Firm Level*

Frankort (2008) analyzed the interfirm research and development (R&D) network in IT between 1975 and 1999. Innovative performance was measured by the number of successful patent applications per year. The firm networks were assessed via R&D alliances among them operationalizing structural holes with Burt's measure of constraint. Because the constraint index features high values, if non-redundant ties are absent, Frankort (2008) inverted this measure. This measure was used to assess the access to structural holes by both a firm and its partners. The author showed that a firm obtained innovative advantages by spanning structural holes and was able to increase these advantages with the technological resources<sup>74</sup> of the partner firms. The best innovative advantages are realized, if the partner firm doesn't dispose of structural holes itself. Generally, the study showed that spanning structural holes benefits innovation.

Ahuja (2000) researched the Chemical industry in West Europe, Japan and the USA. Data on relations among the firms in this industry were taken from the scientific journals Chemical Week and C&E News including patent counts, col-

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<sup>74</sup> The technological resources were measured with the average count of patent citations received by partners.

laboration data and firm attributes. The author measured the spanning of structural holes in the industry in the same fashion as Burt (1991) using the constraint index or the rate of non-redundant contacts of a firm. In contrast to the assumption and the previously shown positive outcomes of spanning structural holes, the study showed that spanning structural holes decreases the innovation output of a firm.

Similarly, other studies show mixed results regarding the influence of spanning structural holes. Analyzing the entry difficulties in the bank sector between 1991 and 1997, Jensen (2008) uses data from the US Securities Data Corporation's new issue database. While several commercial banks set up their own investment banking subsidiaries, particular investment banks used other investment or commercial banks as co-managers for corporate debts. Also Jensen used Burt's (1992: 55) network constraint index to measure the amount of structural holes in the co-manager networks. He showed that a lack of structural holes reduces the likelihood of incumbent investment banks to become co-managers while it increases the likelihood of entering commercial banks. Therefore, a closed structure is positive for newcomers and an open structure is advantageous for long-established banks.

Shipilov (2006) studied the bank sector of Canadian investment banks. He focused on syndicates formed by these banks for the purpose of underwriting public offerings between 1952 and 1990. The study grouped the banks according to specialization<sup>75</sup>. The amount of structural holes in the different fields of specialization was measured using Burt's constraint index. He showed that firms highly specialized (specialist) and firms with a minimum level of specialization (generalist firms) perform better or have greater market shares than firms with a moderate level of specialization, if they feature networks rich in structural holes. Furthermore, generalist firms perform even better than specialist ones. These results indicate the context dependency of the benefits of structural holes: high and low specialized firms profit while moderately specialized firms don't.

To research the United Kingdom investment banking industry, Shipilov and Li (2008) analyzed banks that acted as merger and acquisitions advisors between 1992 and 2001. They used archival data from the Securities Data Corporation (SDC) including international transaction with a minimum of 5% ownership of the company. The interbank networks were defined via snowball sampling. They

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<sup>75</sup> The following groups were constructed: manufacturing industrials (auto plants or oil refineries); non-manufacturing industrials (services, retail or wholesale trade); natural resources (mining, oil and gas extraction); utilities (communications, public services and transport); financial (banking and insurance); technology (computers and electronics); and government (federal or municipal).

showed that status accumulation<sup>76</sup> and market performance<sup>77</sup> affect each other mutually and positively. The influence of structural holes operationalized according to Burt is twofold. On the one hand, open networks have a positive influence on improving the status of a firm; on the other, it decreases its market performance. However, firms with market performance superior to other firms tend to build networks rich in structural holes.

*In summary*, we find partial support for the hypothesis that structural holes are connected with positive outcomes. Spanning structural holes provides advantages for innovation (Frankort 2008), but also decreases innovation output (Ahuja 2000). Furthermore, other studies show that the positive influence of structural holes is context dependent – while open structures increase the status of firms, especially established ones, they decrease the status of newcomers and reduce the market performance of firms (Jensen 2008; Shipilov, Li 2008). Additionally, structural holes seem to benefit only specific kinds of firms (Shipilov 2006).

### *Individual Networks*

Several analyses of individual networks support the derived theorem. Tortoriello et al. (2004) showed in a study of a hotel district in Italy that a higher rate of spanning structural holes increases the status rank of its managers. Hotels have a higher status, if they are classified as more progressive than others. In the course of the study, sociometric data were gathered to measure the status of a manager and the amount of structural holes he/she spans. Being presented a list of hotels and managers, the respondents had to indicate which hotels are always a step ahead and to which manager they go, if they need work related information. Structural holes were measured using the “network effect size measure” introduced by Burt (1992: 52).

Gargiulo and Benassi (2000) demonstrated by means of studying an Italian subsidiary of a leading multinational computer corporation that a lack of spanning structural holes in a communication network of a manager increases the number of coordination mistakes he/she makes. Coordination mistakes are indicated by a strong task dependency between a manager and his/her colleagues accompanied by a low level of communication among them. The communication network of a manager was measured using a list with the names of all the man-

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<sup>76</sup> Status accumulation was measured using the banks’ eigenvector centrality (see Podolny 2001; Benjamin, Podolny 1999).

<sup>77</sup> Market performance was assessed with the dollar value of each offering that was realized in one year allocated among the group of advisors on the deal.



agers asking the respondents to indicate their routine communication partners<sup>78</sup>. A lack in spanning structural holes (measured by Burt's index (1992: 52)) exists, if there are relations among the actors the respondent communicates with.

However, we also find contrary results. A survey of full-time MBA students in the United States was administered to reveal the influencing factors of job decisions. Using the name-generator complemented by a name interpreter<sup>79</sup>, it was assessed which alters were actively interested and concerted action to advance the respondents' career. With this study, Higgins (2001) showed that a greater range of an individuals' advice network (in terms of contacts from different backgrounds like family or university) increases the probability of career change<sup>80</sup>, while a low density or the existence of structural holes does not exert this influence. Furthermore, greater diversity in an individuals' instrumental advice network leads to a greater amount of career alternatives that increases the possibility of career change. Meanwhile, personal advice networks encourage the individuals to overcome career obstacles. This result disproves the assumption structural holes are connected to positive outcomes and shows the importance of other network entities (here range) for an individual's success.

Totterdell et al. (2004) used a name generator to gather data on the employees of a car producing firm. The respondents were asked to name up to 18 people they work with to fulfill their tasks in their department. The authors showed that the employees that are members in an interaction group develop similar feelings towards the firm. Further the authors proved that mutually related coworkers and structurally equivalent coworkers influence each other negatively concerning their feelings towards the firm. High network size, network density and network centrality of a coworker have only a partially positive influence on work sentiment. In a longitudinal study lasting ten weeks, the authors showed that the reduction of network density in an employee's working network decreases positive mutual working influence and increases negative mutual influences. If a person has several relations to employees in his/her own firm, and then that firm merges with another one, small changes in his/her emotions occur.

Furthermore, we also find studies revealing the positive and negative influences of structural holes depending on the context. In an international high-technology engineering and manufacturing corporation, the employees were

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<sup>78</sup> The respondent had to indicate if he/she and the colleague 1= never communicate up to 3=strongly communicate.

<sup>79</sup> The name interpreter included 18 questions about the extent to which each person provided the respondent with different types of assistance (social support, developmental relationships as well as instrumental help-giving). It had to be answered on a seven-point Likert-type scale (never, not at all to the maximum extent possible).

<sup>80</sup> Measured with a change of employers, job functions, and the perception that this was a 'career change' from what he/she was doing before business school.

asked to answer name-generating questions<sup>81</sup> (up to 5 names) complemented by name interpreters<sup>82</sup>. Like in Burt's study, Podolny and Baron (1997) found that upward mobility is promoted in large information networks that are full of structural holes. However, in buy-in networks, structural holes constrain mobility. To account for this effect, the authors distinguish between “white holes” that facilitate upward mobility and provide socio-emotional benefits and “black holes” that hold individuals at a particular rank and cause negative psychological consequences (Podolny, Baron 1997: 690).

Nicolaou and Birley (2003) conveyed the structural hole-idea to the topic of university spinouts of researchers, that is to say, the switching of inventors originally employed at universities to firms. The study asked the respondents to list five contacts outside the university that are most important for them to gather information and/or advice on business matters and contacts that provide social support in terms of discussing important matters with them and being sources of emotional aid. Structural holes were operationalized with the non-redundancy measure of Aldrich et al. (1987)<sup>83</sup> and the strength of ties (average of contact frequency and closeness scores). The authors revealed that high levels of non-redundancy in an inventor's network combined with strong ties facilitate the “academic exodus” while a combination of non-redundancy and weak ties results in staying at the university. Furthermore, academic teams in the latter environment mostly have a low number of non-redundant contacts in the team's business discussion network.

In summary, the analysis of networks of individuals reveals positive and negative outcomes of spanning structural holes. Some studies show that spanning

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<sup>81</sup> The authors divided different networks among: task advice network (“Over the last six months, are there any work-related contacts from whom you regularly sought information and advice to enhance your effectiveness on the job?”); buy-in (“Suppose you were moving to a new job and wanted to leave behind the best network advice that you could for the person moving into your current job. Are there any individuals whom you would name to your replacement whose “buy-in” is essential for initiatives coming out of your office or department?”); strategic information (“Thinking back over the past six months, are there any individuals on whom you have relied as sources for general information on the “goings-on” at (COMPANY NAME)-people who have given you special insight into the goals and strategies of important individuals, divisions, or perhaps even the firm as a whole?”); mentor (“Are there any individuals whom you regard as a mentor-that is, someone who has taken a strong interest in your professional development over the last six months by providing you with opportunities and/or access to facilitate your career advancement?”); social support (“Is there anyone in your work environment over the last six months whom you regard as a source of social support - that is, someone with whom you are comfortable discussing sensitive matters?”).

<sup>82</sup> The interpreters asked for gender, formal position, etc. and duration, closeness and contact frequency.

<sup>83</sup> Non-redundancy = (potential ties - actual ties)/number of advisors. Potential ties are the maximum possible indirect ties between the contacts; actual ties are real existing ties; and the number of advisors is the total number of contacts the respondent listed.

structural holes leads to a higher status rank and decreases coordination mistakes (Gargiulo, Benassi 2000; Tortoriello et al. 2004), others indicate the absence of any influence (Higgins 2001) and others reveal negative influences of an increasing number of structural holes on the positive feelings towards a firm (Totterdell et al. 2004). Also, context dependency of structural holes was found; structural holes combined with strong ties lead to success in economy while a combination with weak ones does not (Nicolaou, Birley 2003), interpreted by Podolny and Baron (1997) as “white” and “black” structural holes.

These results for firms as well as for individuals evoke the question: what are the reasons for these different results? We will examine this question in the following section.

#### *4.4.3 Critiques – Why Do We Find these Different Results?*

One reason explaining these different results lies in their different measurements. The authors use mostly secondary data for the analysis of structural holes’ influences among firms. This causes different qualities of the used data. For example, the direct data on successful patent applications as used by Frankort (2008) might be more exact than data gathered and composed by scientific journals (as used by Ahuja (2000)). The comparability of these results is therefore questionable. However, in the case of individual networks, all studies use similar measures: The data is gathered mostly with sociometric and egocentric questionnaires and almost all authors use Burt's constraint index to operationalize structural holes.

Here, the main problem may lie in the use of the name generator. Although this technique has several advantages – it allows for the analysis of big networks and the mapping of ego-network locations and characteristics and social resources embedded in these ego-networks (Lin 2001: 87-88; 2001a: 16-17) – it has also several problems. Firstly, under free recall, respondents tend to cite strong ties instead of weak ones. As a result, the sampled set of contacts could be skewed toward strong connections if a survey limits the number of contacts a respondent is allowed to name (Burt 1984; Lin et al. 2001; Lin 1982; Reagans et al. 2004: 114). Bernard et al. (1979) showed little overlap between the communication networks of individuals and their self-reported networks. However a re-analysis showed that there is a bias against the recall of infrequent and fleeting contacts (Romney, Faust 1982). In fact, individuals appear to be good at recalling networks of individuals with whom they have repeated interactions (Freeman et al. 1987, Hogan et al. 2007). A similar problem occurs in using a sociometric questionnaire. Possible weak ties can be excluded, because these contacts are

outside of the bounded network. For example, friends provide employees with useful information, but do not belong to the researched firm, thus, they are excluded from the sociometric questionnaire by the researcher. But the sociometric questionnaire uses an empirical framework for circumscribing the network in question. This isn't the case with the name generator. No theoretical or empirical framework is used to identify the universe population as a basis for drawing a sample. It is not clear what elements in a content population belong to the specific content area. As a consequence, scientists use different content areas and wordings that make comparative analysis and validation impossible. Furthermore, the idea of structural holes is strongly connected to an actor's position in a network; a brokerage position can be used to gather benefits. But the name-generator identifies individual actors rather than social positions (Lin 2001: 87-88, 2001a: 16-17, Lin et al. 2001: 63).

Engle (1999: 110) criticizes that Burt's name generator and interpreter ask for contacts the respondent has relations with and what relations are existing among these contacts. According to Krackhard (1995), using this method, Burt assumes that the respondent is able to make reliable statements about relationships the respondent is not part of. Granovetter's (1974) idea of the forbidden triad, that is, if one actor knows two other actors and realizes strong relations with them, speaks in contrast to this argument. We can expect that the two contacts also know each other, because the actor introduces them mutually. Assuming this, the name-generator question combined with an interpreter asking for the relations among the contacts can be used, because it is improbable that there will be a fourth person connecting the two contacts of one actor. If there was, the actor would know about this fourth person. However, Kalish and Robins (2006) revealed that the triads show all possible combinations of relations one can imagine. For example, we find strong relations between the actor and the two contacts, but no mutual relation among the contacts; or we find weak relations between the actor and his/her contacts, but a strong relation among the contacts themselves. Therefore, it seems inappropriate to measure the spanning of structural holes with the name-generator.

Another argument also speaks against the use of the name generator: documenting personal networks with its help is very expensive. Although they only require between 5 minutes for a quick listing of core ties (Burt 1984), they need hours for detailed discussions about scores of ties of the name interpreter (Wellman, Wortley 1990). Asking the same questions about each network member contains a great amount of repetition. This is further increased by asking about ties between alters (Hogan et al. 2007). Additionally, we are faced with an increase in diversity in the networks that cannot be measured using a name generator (Hsung et al. 2007). Too many aspects of the actual networks would be

neglected. We suggest using a different measure of bridging structural holes instead as introduced, for example, by Pająk (2006) revealing the diversity of the friendship network. The item battery measuring bridging social capital is displayed in box 3. Analyzing a survey conducted in Warsaw, she showed that bridging social capital forms three dimensions – bridges to outgroups, people with different interests and people with different lifestyles. We assess the appropriateness of this item battery in the Czech context in Chapter 11.

*Box 3:*      Item Battery Measuring Bridging Social Capital

<p>In the circle of my close acquaintances there are persons</p> <ul style="list-style-type: none"><li>a.    much older than me</li><li>b.    with different lifestyle than me</li><li>c.    of different nationality than me</li><li>d.    with different sexual orientation than me</li><li>e.    who watch different TV programs than I do</li><li>f.    out of my pack from secondary school</li><li>g.    of different sex than me</li><li>h.    who listen to different kinds of music than I do</li><li>i.    who value different writers than I do</li><li>j.    who read different newspapers and magazines than I do</li><li>k.    of different race than me</li><li>l.    much poorer than me</li></ul> <p>To be answered with 1 (very rarely or never), 2 (rarely), 3 (more often than rarely), 4 (often), 5 (very often).</p>
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Note: see Pająk 2006: 6-7

A second reason for the different results may lie in the inaccuracy of Burt's concept. Several authors do not focus on the brokers' potential to exploit relationships, but on his/her potential to connect actors. Obstfeld (2005) advances a different view to the *Tertius Gaudens* stance of the broker towards the structural hole by introducing the idea of a *Tertius Iungens*. The *Tertius Iungens* attitude is "a strategic, behavioral orientation toward connecting people in one's social network by either introducing disconnected individuals or facilitating new coordination between connected individuals" (Obstfeld 2005: 102). We can conclude that a *Tertius Iungens* is surrounded by a dense network. To analyze the existence of this strategy, Obstfeld studied a firm involved in the production of automotive designs. The *Tertius Iungens* orientation was measured with a 7-

point scale including 6 items<sup>84</sup> asking for one's predisposition to connect with others to generate benefits. The networks of the respondents were measured using an egocentric questionnaire<sup>85</sup> asking for different kinds of relations and a name interpreter assessing the tie strength and the relations among the named persons. The author used Burt's (1992) constraint index to gauge structural holes and density in the networks. The analyses showed that the Tertius Iungens orientation fosters an actor's innovation involvement<sup>86</sup> and is accompanied by high network density or the absence of structural holes as well as social knowledge<sup>87</sup>.

Kalish (2008: 59) strengthens this idea of different kinds of brokers seizing the suggestion of Gould and Fernandez (1989) to distinguish between different brokerage roles: coordinators, consultants, gatekeepers and representatives. Coordinators broker among three parties belonging to the same group and consultants broker two (unconnected) network partners belonging to two different groups than the consultant him-/herself. In the case of gatekeepers and representatives the broker and one contact belong to one group while the third contact belongs to another. While coordinators and representatives create a relation among their contacts, consultants and gatekeepers do not connect the contacts, but do not generate benefits from this disconnectedness either. Kalish analyzed a

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<sup>84</sup> The following items were included: (1) I introduce people to each other who might have a common strategic work interest; (2) I will try to describe an issue in a way that will appeal to a diverse set of interests; (3) I see opportunities for collaboration between people; (4) I point out the common ground shared by people who have different perspectives on an issue; (5) I introduce two people when I think they might benefit from becoming acquainted; and (6) I forge connections between different people dealing with a particular issue.

<sup>85</sup> The respondent was asked to name persons: he/she discusses important matters with, he/she communicates with to get work done, that are influential when getting new projects approved, he/she informally socializes with, and who are advisors.

<sup>86</sup> The innovation involvement was measured via the participation in developing 73 innovations using Ibarra's (1989, 1993) scale of innovation involvement: "Check 1 if you, along with or in conjunction with others, were the initiator of the innovation-that is, if its introduction and use was in large portion your idea. This is the number to check if the innovation would not have happened without you. Check 2 if you were not the initiator but played a major role in the development of the innovation as a whole. This is the number to check if you played an important role in shaping the innovation-it would not exist in its present form without your contribution. Check 3 if you were associated with the development of the innovation in a more limited capacity, for example, providing advice to the initiator on specific aspects of the innovation. This is the number to check if you played a minor role in bringing the innovation to the organization. Check 4 if you know about the innovation but had nothing to do with it. Check 5 if the innovation is not applicable to your work and is one you know nothing about."

<sup>87</sup> Measured with: general knowledge: "In general, how comfortable are you addressing the more advanced technical issues associated with the following areas?"; social knowledge: "In general, how easy would it be for you to get candid, 'behind-the-scenes' input regarding innovation issues concerning the following areas?" It was asked for each of ten technical areas (body; chassis; electric; interior; powertrain; vehicle development; program management; marketing; manufacturing; and purchasing), to be answered with: 1 not comfortable at all to 7 very comfortable.

class in Gordon College in Israel in terms of brokerage between different ethnic groups and showed that both types – entrepreneurs and relationship builders – exist and both show different psychological patterns. Coordinators and gatekeepers are more independent, neurotic and internally controlled than are representatives and consultants. They see themselves as individuals in opposition to members of social categories while relationship builders do not perceive themselves as independent of groups. Entrepreneurs value power more and universalism less than do relationship builders. The former spans structural holes among homophilous/similar contacts, while the latter links structural holes among heterophilous/dissimilar contacts.

Both, the theoretical concepts and the empirical results indicate the importance of connecting social relationships. Therefore, we analyze the connection between closure and spanning structural holes in more detail in the next section.

#### 4.4.4 *Excursus: Closure and Its Advantages in Coleman's Concept*

Before we analyze the question, if networks with structural holes or high closure facilitate the success of an actor best, we must introduce the basic study regarding closure: Coleman's study assessing the school success of children. He operationalized a family's social capital with the intensity of the parent-children relation (Coleman 1995: 354-356, 1988: S11-13). The items are displayed in box 4.

Coleman showed with this in the USA conducted research that children with a low level of social capital have a higher school drop-out rate than do children with a high level of social capital (Coleman 1995a: 356).

However, Coleman's study can neither make any conclusions about the influence of relationships besides the family in general nor about the effects of spanning structural holes. The study only measured the density of familial relationships.

We find a more general assessment of the social capital influence on student drop-out rates with Israel et al. (2001)<sup>88</sup>. The authors combined the measures of the intensity of the parent-child-relationship (activity of nurturing<sup>89</sup> and performance monitoring<sup>90</sup>) with the structural characteristics of the environment (socio-

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<sup>88</sup> We chose this specific study for illustration, because it uses exactly the same measures of social capital as Coleman did, but enlarges them with other variables able to explain a students' success at school.

<sup>89</sup> Measured with the following indicators: Expectation of the parents that the child should attend college; discussion of school matters of the children with their parents; speaking about the plan of the High School program with the parents.

<sup>90</sup> Measured with the following indicators: Parents check homework; amount of limiting TV watching by the parents; amount of time a child spends alone at home after school.

economic capacity<sup>91</sup>, isolation<sup>92</sup>, instability<sup>93</sup>) and process characteristics (social integration of the student<sup>94</sup>) of community social capital. They measured the number of parents and siblings in the household and the number of siblings that dropped out of high school.

*Box 4:* Measures of Intensity of the Parent-Child Relationship According to Coleman

- |   |
|---|
| <ol style="list-style-type: none"><li>1. Presence of both parents in the household. (If both parents are present a strong parent-child relation remains.)</li><li>2. Number of siblings. (The greater is the number of siblings in the household, the smaller the amount of social capital.)</li><li>3. Talking about personal matters. (Frequent talking about personal matters shows a stronger attention and higher interest of the parents in the child).</li><li>4. Working of mother outside the house before the child is required to attend school. (If the mother works the intensity of the relation of the child to the mother decreases.)</li><li>5. Parents' interest in child's college attendance. (Interested parents are more interested in the child's future.)</li></ol> |
|---|

Note: see Coleman 1990: 595, 1995: 355.

In contrast to Coleman's assumptions, the authors ascertained that children from households with one parent only and small income realized a better performance than children with both parents living in the household. Children living in middle and high income households realized similar performances. A higher drop out rate was caused by the number of siblings in the household, the number of siblings dropping out of school, free time spent alone, living in rural territories, living in territories with minorities, frequent change of school and the involvement in various organizations. Familial processes increased the performance of the students and, thus, decreased their drop-out rates. The mutual knowl-

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<sup>91</sup> Composite measure based on: diversity of county employment; percentage of unemployed householders; poverty rate; inequality in wealth; median of income and the average educational level.

<sup>92</sup> Measured with the county type (metro core; other metro; adjacent nonmetro, and nonadjacent nonmetro); geographical homogeneity of school's student population; percentage of employed persons who commute to work outside the county.

<sup>93</sup> Measured with percentage of county's residents living in the same county as they did five years before and the county's mean number of years a householder has lived in his or her current place of residence.

<sup>94</sup> Measured with the number of times a student changed school since first grade, the student's participation in a religious group; and the number of community organizations in which the student has been involved.



edge of the parents about the children and the involvement of the child in just one organization had similar effects.

The results demonstrate that not only the existing family social capital advances the performance of a child, but also children's relationships outside the family are very important. In conclusion, this study revealed a farther reaching picture of the influence of social capital on the performance of students than Coleman's study did. It clearly shows that closure and openness mutually enhance children's school performance; we cannot reduce social capital to one of the two network features.

#### *4.4.5 Closure or Structural Holes. Which Network Characteristic is Most Important for an Actor's Success?*

There is a vast body of research on the issue of closure and structural holes as well. To give a brief overview of current research, we focus on three different fields where the dichotomy of closure and openness is researched on – working teams, firms and scientists.

Researching on a Fortune-100 manufacturer of paper and wood-based building products, Balkundi et al. (2007) analyzed the influence of team characteristics on the building of structural holes and the impact of structural holes on team performance rated by the team supervisor. The authors measured friendship relations in the team using a sociometric questionnaire and operationalized structural holes as the number of intransitive triads and vacuously transitive triads divided by the number of triples of all kinds (cf. Holland, Leinhardt 1970: 496). They found no influence of the teams ethnic and gender diversity on the amount of structural holes in it, however, the greater the age diversity, the lower the number of structural holes. Structural aspects foster the emergence of structural holes: large teams and short durations of working together lead to greater network fragmentation and, thus, to more structural holes. The effects of structural holes on team performance follow a curvilinear pattern. A small as well as a large amount of structural holes are associated with a low team performance, while moderate levels of structural holes mediate high performance.

Reagans and McEvily (2003) revealed that mutual knowledge and the density of relations, as indicators of social capital, are positively connected to the simplicity of knowledge transfer. The authors developed a list of possible knowledge sharing contacts for every respondent on the basis of projects conducted in the year previous to the study and complemented this sociometric questionnaire

with two name generator questions<sup>95</sup>. The respondents were asked to indicate the persons closest to them and the persons they share knowledge with. Social cohesion was measured using the constraint index developed by Burt (1992: 54-56).

In the literature, we find support that the location of structural holes seems also important. Reagans et al. (2004) researched team performance focusing on internal and external structural holes. Internal or local structural holes hinder coordination inside the team while spanned external or global structural holes can create information benefits for the team. Studying a contract research and development (R&D) firm the authors collected network data of employees working on projects together for one year. For its collection they combined a fixed-roster (sociometric questionnaire<sup>96</sup>) with a free-recall method (egocentric questionnaire) asking the respondent to indicate which colleagues were significant sources of knowledge for them. Using density as an indicator of local structural holes and the inversed constraint index as a measure of global structural holes, the authors showed that both indicators are significantly correlated. That is to say that both forms of social capital exist simultaneously. Demographic diversity in the team decreases the density, but increases the external range. High density inside the team and many structural holes outside the team result in the best team performance. This combination decreases the time necessary for completing a project. Therefore, the authors conclude that the “optimal network structure for a team is characterized both by high internal density and high external range” (Reagans et al. 2004: 123). Burt also comes to this conclusion. The efficiency of a working team is highest, if network closure of the group is high and the members have many non-redundant contacts outside of the group or they span structural holes. The achievement of the studied groups was lowest, when low closure inside the group was given and redundant contacts beyond the group existed (Burt 2001b: 49-50).

Cornwell (2009) applies the structural hole-concept even to the context of health analysis in the frame of the National Social Life, Health, and Aging Project (NSHAP). The study measured networks with a name generator asking the respondents to name up to 5 persons they discuss important matters with. The respondent was also asked to indicate mutual contacts among the named persons. Structural holes exist, if the friends of the respondent have no mutual contact.

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<sup>95</sup> The following name generator questions were used: (1) “Think of the people who acted as a critical source of knowledge for your projects during the past year. These are people you contacted when you needed assistance with one of your projects.”; (2) “Now think of the people for whom you have been a critical source of knowledge for their projects during the past year. These are the people who contacted you when they needed assistance with one of their projects.” Every respondent could name up to five persons.

<sup>96</sup> The sociometric questionnaire included a random sample of 15 colleagues the respondent had worked with in the last year.

Referring to the “perceived brokerage potential”, the study asked the respondents, if they are the sole intermediary between the network members<sup>97</sup>. Cornwell’s analyses revealed that people with poor health dispose of personal networks consisting of strong ties with a lack of structural holes and only a few bridging opportunities.

Aside from the presented analyses focusing on individuals, we also find several studies assessing the influence of open and closed structures on the success of firms. Zaheer and Bell (2005) analyzed the performance of firms in the Canadian mutual fund industry. Interviewing experts, they assessed if the firms have a leading function in terms of introducing products and services to the market as well as adopting new technology. Interfirm management relationships (one company manages the funds of another) and interfirm ownerships indicated ties among the researched firms. The authors revealed that bridging structural holes<sup>98</sup> enhances a firms’ performance, while network closure does not.

In contrast, Walker et al. (1997) found support for the closure argument analyzing the connections of biotechnology startups. The authors showed that more constrained firms cooperate better than firms with many structural holes. The constraint increases over time and induces industry growth. Therefore, the authors conclude that the structural hole-argument does not apply to networks with relationships of cooperation. Here, dense relations are more important.

Analyzing the collaboration of scientists in information system research, Oh et al. (2005) studied several journals<sup>99</sup> to examine the coauthoring of articles. They showed that structural holes are the basis for knowledge capital accumulation among researchers (measured by the number of citations received); however, network closure is not. McFadyen and Canella (2004) got data on the relationships between researchers of biomedicine from the Community of Science. They measured social capital via the number of relationships among the researchers or co-authorship in the last 5 years and the strength<sup>100</sup> of these relations. They found a nonlinear relationship between the number of relations as

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<sup>97</sup> This measure was assumed valid, because both friends are strongly linked to the respondent. It is likely in that case that any third alter is also linked strongly to the respondent (Granovetter 1973). Accordingly, if there was a fourth person as intermediary, the respondent would be likely to know this person.

<sup>98</sup> Measured with Burt’s constraint index.

<sup>99</sup> The sample was taken from the journals *Information Systems Research*, *Journal of Management Information Systems*, *Management Science*, and *MIS Quarterly*.

<sup>100</sup> The strength of the relationships was measured with the amount of mutual publications in one year.

well as the strength of ties and the amount of generated knowledge<sup>101</sup>. This result speaks in favor of the closure-argument, but against the structural hole-argument.

*In conclusion*, we find a similar pattern in the three analyzed contexts. In the context of firms, structural holes influence performance positively, but only in contexts where cooperation is unnecessary. We find a similar result regarding teams. Inside the team, where cooperation is necessary, closure leads to the best performance, while outside the team, where competition is more important, structural holes increase performance. Scientists create more knowledge, if they span structural holes while having strong relations with the cooperating authors. These results allow us to conclude that Burt's concept is not disproven or falsified, but needs refinement: in contexts where cooperation is necessary, closed structures are the most useful, whereas in contexts of competition structural holes are.

#### **4.5 Conclusion – How Does Burt's Concept of Social Capital Contribute to General Theory of Social Capital?**

Burt conceptualizes social capital as a brokerage position in the network spanning structural holes or contacts that are mutually non-redundant. Using this definition he neglects closed relationships in his concept. Accordingly, Burt's concept does not entirely hold up to empirical testing; structural holes are only beneficial in structures where competition prevails. However, the entire discussion shows that not only close or weak relationships are important, but also the network size and range/diversity (see studies of Higgins 2001; Reagans et al. 2004; Totterdell et al 2004; see also Burt 1992: 16). Therefore, also this discussion can be used to refine our requirements for a theory of social capital from Chapters 2 and 3:

1. Social capital is a structural asset of networks with the character of a private and public good. It emerges through relations of individuals or collectives and spills-over into cultural societal aspects like generalized trust and norms of reciprocity that function as both precondition to and output of social capital.
2. Social capital is produced in both, open (bridging) and closed (bonding) structures – while closed structures are more useful in contexts where cooperation is necessary and open structures where competition prevails –, as well as in formal, informal, institutionalized and non-institutionalized struc-

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<sup>101</sup> Generated knowledge was measured using the “impact factor” of the Institute of Scientific Information measuring the publications in scientifically important journals.

tures. Furthermore, network size and range/diversity seem important to describe the social capital of an actor comprehensively. Also here we can find the distinction between structures where cooperation is necessary and where competition prevails. In the former case small network size and range are useful while in the latter large network size and great diversity are the most effective.

3. Neglected negative effects of social capital via exclusion and exploitation have to be considered.
4. The topic how social capital can be used to fight inequality should be included.

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## 5 The Resource Perspective – Nan Lin's Concept of Social Capital

As the final social capital concept, we introduce Nan Lin's ideas. Like Burt (see Chapter 4 in the present monograph), he also conceptualizes social capital as a structural entity. In contrast to the other authors, he developed his concept in agreement with the general idea of capital and he considers other current social capital concepts. Accordingly, we will start by introducing his general theory of capital and then outline critical points of the formerly presented social capital notions (Chapter 2-4). After introducing Lin's concept of social capital and its critical points, we will contest the concept empirically. As we did in the previous chapters, we will also use his concept to refine our requirements for a general social capital theory.

### 5.1 General Theory of Capital

The social capital concept is rooted in the classical theory of capital established by Marx (1933, 1995). The main idea of this theory is that capitalists (mostly the bourgeoisie) generate surplus value by exploiting laborers. They pay their laborers a wage in exchange for their labor (seen as commodity) that allows them to purchase only the commodities necessary to sustain their lives. That is to say, the exchange value of the wage is only enough to meet absolutely essential needs. Surplus value is generated, because the exchange value of the wage is smaller than the actual value produced by the laborer. According to Lin (2001: 4-8, 2001a: 4), capital represents in the capitalist society two elements: first, capital is part of the surplus value captured by the capitalists and secondly, it represents an investment in the production and circulation of commodities. Surplus value is reinvested to generate more surplus value. In general “capital is an investment of resources with expected returns in the marketplace” (Lin 2001: 3). If an actor invests and mobilizes these resources pursuing the goal to gain profit, then capital represents a resource. Capital exists in two processes: as a causal factor in a production process (resource that is exchanged) and as the outcome of a produc-

tion process (producing or adding value to a resource). Both are processes, because time and effort are necessary in investment and mobilization (Lin 2001: 3).

Based on this classical theory of capital, neo-capital theories have emerged. Among them figures the theory of human capital which can be traced to Adam Smith (1937; cf. Lin 2001: 8). He outlined that education determines a laborer's performance. Human capital is the property of an individual actor and consists of his/her skills and knowledge. Education is necessary to create human capital. The individual actor invests in his/her human capital with the aim of attaining a goal like getting a working position or obtaining a higher wage in the labor market, for example (Johnson 1960; Schultz 1961; Becker 1964). Human capital is an actor's added value that is useful for both the employer and the laborer. The former benefits, because the laborer is acquainted with the processes of production, and the latter can use the human capital as an argument in the negotiation for a better wage and benefits. As does the general capital theory, the human capital theory views capital as surplus value and an investment with expected returns. However, it features several differences to Marx's capital theory: the social structure is no longer seen as a rigid two-class system, but as a hierarchy with many grades of capitalists allowing extensive mobility between them. The laborers are no longer replaceable commodities; they are seen as investors. Capital is meaningful for both the capitalist and the laborer, because it can be gained by both parties. Potential rewards in wages and other profits motivate the laborer to acquire skills and knowledge. Further, capital is no longer tied to the processes of production and exchange only. Human capital development generates economic value and, thus, allows laborers to become capitalists (Lin 2001: 9-12).

A second neo-capital theory is the cultural capital concept (Bourdieu 1990; Bourdieu, Passeron 1977; see also Chapter 2 in the present monograph). It represents a distinct alternative to the theoretical explanation of human capital. The dominant class invests in the reproduction of a set of symbols and meanings (cultural capital). The masses (the dominated class) can invest and acquire these symbols and meanings and generate returns, even if they misrecognize them as their own. The process of acquiring occurs in family, informal groups and through education. It carries symbolic violence, because it implies misrecognition of the symbols and social reproduction over the labor market. The ideas of symbolic violence and social reproduction are consistent with Marx's theory. The dominant group imposes values on other groups to benefit from their appropriation in the labor market. The boundary between the exploiting and exploited classes is less rigid than in Marx's concept. The society is seen as a network of positions societal groups struggle over. Additionally, no perfect correspondence between the accumulation of economic and cultural capital is assumed (Lin 2001: 14-17, 2001a: 6).



Lin (2001a: 6) highlights that these neo-capital theories include the “potential investment and capture of surplus value by the laborers or masses”. He classifies the social capital theory also among these neo-capital theories.

## **5.2 Lin's Critical Discussion of Bourdieu, Coleman and Putnam's Concepts**

In accordance with the concepts of scholars that contributed to the social capital discussion (Bourdieu 1980, 1983, 1986; Burt 1992, 2005; Coleman 1988, 1990; Erickson 1995, 1996; Flap 1991, 1994; Lin 1982; Portes 1998; Putnam 1993a, 1995a), Lin (2001: 192) defines social capital as an “investment in social relations with expected returns in the marketplace”. To produce profits, individuals interact and network mutually. The emerging networks embed resources that are of special importance for the production of benefits. First, relationships facilitate the flow of information. In reality actors have to deal with imperfect market situations. Thus, it is necessary to acquire information about opportunities that can be provided by social ties to strategic locations or hierarchical positions (see also Burt 1992; Chapter 4 in the present monograph). Second, agents who play a critical role in decisions for the actor may be influenced by social ties. Some social ties carry more valued resources and, therefore, exercise greater power, because of their strategic location in the network. This could be positions near structural holes or positions including authority or supervisory capacities. Third, social ties can function as certificates of an individual's social credentials. They show the access to resources through social networks. The “standing behind” of the contacts in the actor's network assures that the individual can provide additional resources beyond his/her personal capital. And lastly, social relations are expected to reinforce identity and recognition. They display the worthiness of an individual and his/her membership in a social group with similar interests and resources. This provides emotional support and public acknowledgment of certain resources. Reinforcements by other actors or a group are essential for the maintenance of mental health and the entitlement to resources (Lin 2001: 19-20, 2001a: 6-7).

In contrast to the other social capital theorists, Lin dealt very intensively with the existing social capital concepts and outlined their problems. As the reader finds in the discussions of the concepts in the previous chapters, Lin criticizes *inter alia* the conceptualization of social capital as an individual and collective or even public good simultaneously like Bourdieu, Coleman and Putnam do. This leads to the confounding of the concept with cultural assets like norms and trust while social capital is only a relational asset. Therefore, he also concludes by conceptualizing social capital as a structural entity, only. It benefits the indi-

viduals or collectives<sup>102</sup> that gain profits from it; thus it is a private good. Additionally, the preference for closed networks is criticized, because closure inheres the problem of exclusion of non-members in the network and several studies showed the importance of weak ties (especially Granovetter 1973, see also Burt's concept in Chapter 4). Furthermore, the functionality of social capital proposed by Coleman and Putnam (cf. Chapters 2 and 3 of the present monograph) leads to its inseparability from its outcomes. We need to avoid these problems to generate an operationalizable and testable theory of social capital (Lin 2001a: 8-12).

### 5.3 Lin's Concept of Social Capital

After discussing the problems of the main social capital theories, Lin follows the ideal to construct a theory of social capital in close connection to empirical outcomes. In contrast to the other theorists, he formalizes his concept of social capital including 4 axioms or postulates derived from general (tested) theories, a social capital definition, and 7 theorems or propositions about the effect of social capital that allow for the testing of the concept.

#### 5.3.1 *The Axioms*

The starting point is the assumption that actors possess personal and social resources. The former are inherited by or ascribed to the individual by institutional rules of the community and individuals acquire them by education or direct exchange. Personal resources like education or wealth are fully owned by an individual actor; he/she can use and dispose of them freely. But they are usually owned by social contract. Therefore, we call them positional resources. Social resources are accessible through social connections and they are social capital. The actor can gain resources like wealth, power, and reputation from individuals he/she has a direct or indirect tie to. These resources have substantial symbolic utility, even if the ego does not use or mobilize them. Giving other actors information about one's social capital can be useful to promote one's social standing. This information displays the potential power of ego by association (Lin 2001: 42-44). Accordingly, Lin formulates at first

*“The structural postulate:* Valued resources are embedded in social structures in which positions, authority, rules, and occupants (agents) usually form pyramidal hi-

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<sup>102</sup> In former publications, Lin claimed to conceptualize social capital at the individual level only. However, he extended his concept to collective actors like organizations (cf. Lin 2008).

erarchies in terms of the distribution of valued resources, number of positions, level of authority, and number of occupants. The higher the level in the hierarchy, the greater the concentration of valued resources, the fewer the number of positions, the greater the command of authority, and the smaller the number of occupants” (Lin 2001: 75).

Resources are material or symbolic goods (Lin 1982). According to Sewell (1992: 9), we can distinguish two different types of resources: nonhuman (material resources) and human resources (further divided into physical resources like physical strength, dexterity and symbolic resources like knowledge or emotional commitment) (Lin 2001: 29). Groups assign values to resources by consensus or influence to signal their relative significance. This assignment is mediated by processes of influence like persuasion, petition, or coercion<sup>103</sup> (Lin 1973; Kelman 1961; Parsons 1963). Internal forces like a revolution or a civil war and external forces like trade, war or invasion can change the assigned value of resources. Some resources are more enduring or universal than others like money, ethnic or racial ranking in comparison to kilts for men (Lin 2001: 30).

Actors (individuals or groups) will take actions to promote their self-interests by maintaining and gaining valued resources, if such opportunities are available. If an actor holds more valued resources, he/she has a higher social standing. Because of this, the actor is assigned to decision-making positions allowing him/her to come to decisions on behalf or in the name of the collectivity. The decisions may concern ways of allocation or the distribution of valued resources, but also the rights of their use, transfer and disposition. This allows actors in higher positions in the collective to pursue their self-interest much easier than actors in lower positions. They can easily advance their social standing by gaining more valued resources or manipulating value consensus about the resources they possess. In contrast, actors in lower social standings are faced with great structural constraints, because they possess only few valued resources (Lin 2001: 31-32). This shows that the access to resources is closely connected to an actor’s standing in the social structure that is “1. a set of social units (positions) that possess differential amounts of one or more types of valued resources and that 2. are hierarchically related relative to authority (control of and access to resources), 3. share certain rules and procedures in the use of resources, and 4.

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<sup>103</sup> In the case of persuasion, the actors convince their peers of the merit of a resource via communication and interaction with them. This results in an internalization of the value of a resource among the actors. Petition uses normative pressure to achieve the acceptance of the value of a resource. The actors impose the pressure by offering incentives or lobbying as a closed group. The actors accept the value in the end, because they wish to remain members of the group or to further identify with the group. In the case of coercion, actors are forced to recognize the merit of a resource or to face certain sanctions or punishment (Lin 2001: 30).

are entrusted to occupants (agents) who act on these rules and procedures” (Lin 2001: 33).

We have to distinguish between the resources embedded in the social structure and resources possessed by individual actors, because the occupants of positions can change while the resources remain attached to this position. Actors in a higher position in the hierarchy can exercise authority over lower positions and can gather better information of the structure of resources (Lin 2001: 35).

Postulate two deals with assumptions about interactions:

*“The interaction postulate:* Interactions usually occur among actors with similar or contiguous characteristics of resources and lifestyles – following the homophily principle. The greater the similarity of resource characteristics, the less effort required in interaction” (Lin 2001: 75).

One can think of two types of interaction: homophilous interactions between actors that are similar (e.g. similar socioeconomic characteristics, lifestyle, or status) and heterophilous interactions between actors that are dissimilar. Heterophilous interactions are less likely to occur than homophilous interactions, because the partners have to take greater effort to find out about the intention to exchange of the other (Lin 2001: 47). However, the prestige hypothesis (Laumann 1966) explains its occurrence. Actors expect to enhance their prestige by interacting with actors of slightly higher statuses. But this effect disappears after termination of the interaction (Lin 2001: 48). Thus, interactions mostly follow the principle of homophily (Lazarsfeld, Merton 1954; Laumann 1966).

Transferring the interaction idea to the resource theory, the homophily principle implies the interaction of individuals with similar resources (Lin 2001: 39). This interaction principle causes inequality in social capital, when specific groups cluster at relatively disadvantaged socioeconomic positions (Lin 2000: 786). These structurally conditioned inequalities raise the cognitive awareness of restrictions in resources, but homophily and structural constraints prevent the disadvantaged from creating ties to improve their situation.

Social networks are embedded in a hierarchical social structure. Focusing on these, Lin formulates a third postulate:

*“The network postulate:* In social networks directly and indirectly interacting actors carry varying types of resources. Some of these resources are in their personal possession (personal resource or human capital), but most of the resources are embedded in others with whom each actor is in contact, directly or indirectly, or they are embedded in structural positions each actor occupies or is in contact with” (Lin 2001: 75).

All entities of social networks - occupants, positions, resources, rules and procedures – are characterized by fluidity. Here, the actors use persuasion rather

than authority or coercion to reach mutual agreement. The actors define the boundary and locations (positions) of participants (nodes) collectively. Networks evolve naturally or they are socially constructed for the purpose of gathering specific resources (e.g. protection of the environment, women's rights). Resources are embedded in the different nodes of the network. These are ego's social capital. An actor has access to other actors in the network or their resources only, if he/she is a member of the network or has contact to a member of the network.

Individual actors are embedded in hierarchical structures and other networks at the same time. That is to say, the actors bring resources embedded in the positions of the hierarchies also into the network (Lin 2001: 38).

After discussing these preconditions Lin defines social capital:

*“The definition:* These structurally embedded resources are social capital for the actors of the network” (Lin 2001: 75).

Otherwise stated, social capital is a capital captured by social relations. Social capital represents all “resources embedded in a social structure which are accessed and/or mobilized in purposive actions” (Lin 2001: 29). This definition includes three aspects of social capital: resources are embedded in a social structure (embeddedness); they are accessed by individuals (accessibility); and individuals use or mobilize them in purposive actions (use) (Lin 2001: 29, 2001a: 12). The use of social capital is formulated with the fourth postulate:

*“The action postulates:* Actors are motivated to either maintain or gain their resources in social actions – purposive actions. Action to maintain resources can be called expressive action, and action to gain resources can be called instrumental action. Maintaining resources is the primary motivation for action; therefore, expressive action is the primary form of action” (Lin 2001: 75).

Actors pursue two motives: they try to maintain valued resources, and they seek and gain additional resources or aim to make profit. The former promotes expressive action like acknowledging actors' property rights or sharing his/her sentiments; the latter promotes instrumental actions that are actions resulting in a greater allocation of resources to the actor. Instrumental action contains expressive elements, because the resource providing alters must have sentiments for the ego to take action on his/her behalf (Lin 2001: 45-46, 2001a: 13, 1990, 1986). An instrumental action results in economic (e.g. disposition of goods), political (e.g. hierarchical position in a collective) and social (e.g. reputation<sup>104</sup>) returns. Regarding expressive action, the actor has to access and mobilize contacts that

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<sup>104</sup> We can define reputation as favorable/unfavorable opinions about an individual in a social network (Lin 2001).

share the actors' interests and control similar resources. The actors can share and pool their existing resources to preserve and protect them. Returns of expressive action are physical health in terms of body functioning and medical condition; mental health like the capacity to deal with stress representing cognitive and emotional balance; and life satisfaction or optimism and satisfaction with life domains (family, marriage, work, and community and neighborhood environments) (Lin 2001a: 19-20). Both types of returns reinforce each other mutually. For example, physical health offers the actor the capacity to endure his/her work load which helps in gathering economic and political goods as well as a higher social status. To the contrary, economic and political resources or a specific social status enable the actor to maintain his/her physical health; they allow the individual to make contact with better physicians and to afford special treatment, for example.

Exogenous factors like community and institutional arrangements as well as prescriptive versus competitive incentives influence the density and openness of networks. Mediated by these network characteristics, the exogenous factors determine the success of instrumental or expressive actions (Lin 2001a: 20).

### 5.3.2 *The Theorems*

As discussed previously, Lin assumes that social capital facilitates purposive actions of individuals. To specify its influence, Lin formulated seven propositions:

*“The social-capital proposition:* The success of action is positively associated with social capital.

*The strength-of-position proposition:* The better the position of origin, the more likely the actor will access and use better social capital.

*The strength-of-strong-tie proposition:* The stronger the tie, the more likely the social capital accessed will positively affect the success of expressive action.

*The strength-of-weak-tie proposition:* The weaker the tie, the more likely ego will have access to better social capital for instrumental action.

*The strength-of-location proposition:* The closer individuals are to a bridge in a network, the better social capital they will access for instrumental action.

*The location-by-position proposition:* The strength of a location (in proximity to a bridge) for instrumental action is contingent on the resource differential across the bridge.

*The structural contingency proposition:* The networking (tie and location) effects are constrained by the hierarchical structure for actors located near or at the top and bottom of the hierarchy” (Lin 2001: 75-76).

We want to highlight here, that in contrast to Coleman (1990) who focuses on strong ties only and Burt (1992) focusing on weak ties, Lin argues that a social structure should feature both openness and closure. Open networks are more likely to enable actors to access and use bridges. Reaching a bridge allows the actor to access resources missing in his/her own social circle and, thus, enhances his/her chances of gaining instrumental returns. A dense network, on the other hand, includes intimate and reciprocal relations. It increases an actors' likelihood of mobilizing other actors with shared interests and resources to defend and protect existing resources and thus, benefit expressive returns (Lin 2001a: 20).

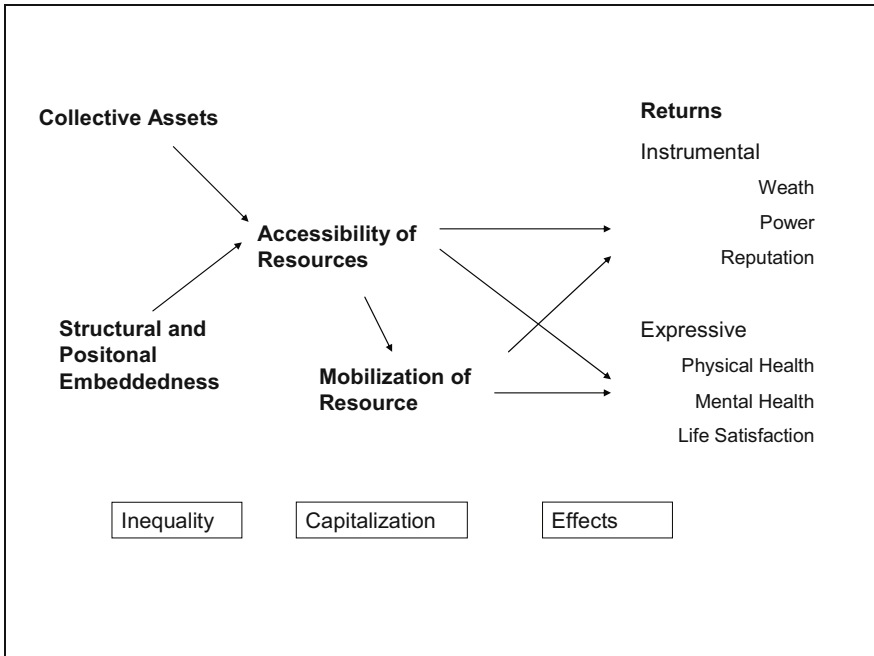
Lin further includes formal ties. Among other network characteristics, civic participation may increase the capacity of social capital (Lin, Ao 2008: 114). Thus, formal relations increase access to social capital.

We can visualize Lin's (2001, 2001a) social capital concept at the individual level as displayed in figure 5. The model consists of three blocks. The first block contains preconditions for social capital. These are the factors of social structure including collective assets like the economy, technology, social/political and cultural participation and each individual's position in the social structure. The preconditions facilitate or constrain investment in social capital or affect the opportunities to construct and maintain it (Lin 2001a: 20; Lin et al. 2001: 59). We find inequality in the form of unequal distribution of access to social capital depending on the position of an individual in the social structure. The second block represents social capital elements; it links access to social resources via network location and the mobilization of social resources using contacts and the contacts' resources. Here the process of capitalization takes place, because the actor reinvests resources to gain profits that convert social resources into capital, only. Thus, the better the access to social capital, the more embedded resources can and will be mobilized for purposive action. The concrete influences of the structure on the access and their outcomes are exemplified in Lin's propositions. The third block represents the returns of social capital divided into instrumental returns, like wealth, power and reputation and expressive returns like physical health, mental health and life satisfaction (Lin 2001a: 21-22; Lin et al. 2001: 59).

Lin (2008: 62-63) further provides an extension of the social capital concept for the collective level. Collectives like associations or nation-states are networks. Like individual actors, they also try to gain expressive and instrumental goals. The resources of the individuals embedded in these collectives represent the resources of the collectivities that can be invested to gain profits. We call these resources internal social capital. Depending on the goal of the collective, these internal resources can be judged according to whether or not they facilitate instrumental or expressive action. To reach expressive goals, the collectivity

should feature internal solidarity and cohesion among its members. To reach instrumental goals, external social capital may be more appropriate. The collectivity gains these kinds of resources via connections to other collectivities and social units. It may access external social capital, if it has an open structure (or has relations outside the collective), if the accessed resources are various and valuable, and if a minimum level of relationship strength prevails (bridges need to be strong enough to allow exchanges). Lin especially highlights that this extension of the network perspective of social capital to the macro-level is in preliminary stages and needs further elaboration.

Figure 5: Lin's Social Capital Model



Note: see Lin 2001a: 21

### 5.4 Discussion

Comparing Lin's theoretical concept of social capital to the requirements for a social capital theory formulated in Chapter 2 and refined in Chapters 3 and 4, we find almost all the requirements fulfilled.



Lin defines social capital as resources embedded in social relationships that are used in purposive actions. Here the capital character of social capital is given prominence.

*First*, in contrast to the other authors, Lin offers a formalized social capital concept. We find in his concept an explicit outline of internally consistent and simple axioms and provable theorems. We are going to test the empirical validity of the theorems in the next section. Furthermore, he formulates a clear condition regarding scope: The concept of social capital is only valid in a hierarchically structured society.

*Second*, in accordance with our requirement, Lin conceptualizes social capital as a relational or structural asset. Social capital emerges in the relationships among actors. Actors can be individuals or collectives. In contrast to our requirement, Lin consciously precludes externalities of social capital.

*Third*, as the strength-of-strong tie and strength-of-weak tie propositions claim, social capital is produced in both, open and closed structures. Similar to the results revealed in Chapter 4, Lin assumes closed structures to be more useful in actions aiming to maintain actors' resources or expressive actions (in which cooperation is useful). Open structures are more useful for actions that aim to increase resources or instrumental actions (where competition prevails). In more current elaborations, Lin includes also formal relationships into his concept. This point is especially important if we want to assess the social resources that can be gathered or are mobilized in networks of civic engagement. We will explore this topic in the following section. Furthermore, the concept includes network characteristics like network size and range assuming big and diversified networks generate higher access to resources.

*Fourth*, neglected negative effects of social capital are not conceptualized.

*Fifth*, Lin also doesn't discuss the potential of using social capital to decrease inequality. But he conceptualizes the access to social capital or social resources as unequal, depending on collective assets and the structural and positional embeddedness of the individual actor in the social structure. We will also devote the next section to the empirical facets of inequality in social capital.

## **5.5 Empirics of Lin's Social Capital Concept**

### *5.5.1 The Position Generator*

Lin developed his concept by close reciprocal integration of theorizing and empirical research. Therefore, the pitfalls of infinite abstract-to-abstract deductions

from assumed theories or mindless empiricism are avoided (Lin 2001: 76-77). To test his propositions, Lin uses a different measurement tool than was previously presented. Because the saturation sampling technique is only useful, if the social network can be mapped completely (see also Lin 2001a: 15), and the use of the name-generator is connected to several problems (see Chapter 4 in this monograph), Lin proposes an alternative method: The position-generator (Lin, Dumin 1986) displayed in box 5. The respondent is asked to indicate, if he/she knows somebody having a specific job or position in the society (Lin 2001: 88, 2001a: 17, Lin et al. 2001: 63). The collection of jobs represents the possession of collectively valued resources in the given hierarchical stratification system like occupational status, prestige or authority. The value of the included positions is represented by prestige scores (e.g. ISEI or SIOPS) assigned to every job. Using these scores, the occupations are ordered on the interval level. By means of the responses, Lin and his colleagues constructed three indicators: *extension* measuring the number of accessed positions; *range* or *heterogeneity* assessing the distance between the highest and lowest reached positions; and *upper reachability* measuring the highest position accessed (Lin 2001a: 17). The position generator reduces the limitations of the name generator, but we have to admit that it does not eliminate them completely. One of its greatest advantages is that it is content free (Lin et al. 2006: 14). That is to say, it can be used in different social and cultural contexts. The scientist is free to include a representative sample of positions in the generator that is meaningful to a given society and reflects the access to valued resources in the stratification system. The positions themselves can be chosen according to multiple criteria like occupation, authority, and industry. Another advantage is that the position generator identifies not only direct linkages, but also indirect ones. This decreases the overestimation of strong ties immanent in the name-generator (Lin 2001a: 17; Lin et al. 2006: 14).

In the following section, we will take a closer look at the empirical results gained by the position generator. According to the proposed model, the first section will review the results concerning the inequality of social capital and the second will outline the results regarding capitalization and the effects of social capital.

### Box 5: The Position Generator

Here is a list of jobs. Would you please tell me if you happen to know someone (on a first-name basis) having each job? If you know more than one person, think of the one person whom you have known the longest (or the person who comes to mind first).

- Highschool Teacher
- Electrician
- Owner of small factory/firm
- Nurse
- Assemblymen/ women at provincial, or city/county level
- Truck driver
- Physician
- Manager of large factory/firm
- Police
- Head of division, county/city government
- Housemaid or cleaning worker
- Reporter
- Owner of big factory/firm
- Lawyer
- Office workman or guard

1. Do you know anyone having this job? (If not, go to #7)
2. How long have you known this person (no. of years)
3. What is your relationship to this person? (relative, friend, acquaintance)
4. How close are you with this person? (very intimate, intimate, so so, not intimate, and not at all intimate)
5. His/her gender
6. His/her job
7. Do you think you may find such a person through someone you know? (Person M)
8. Repeat #2-6 for Person M

Note: see Lin 2001a: 18; Lin et al. 2001

#### 5.5.2 *Inequality in Access to Social Capital*

Inequality in access to social capital was researched from different perspectives. An actor's position in the labor market is an important factor that influences his/her access to social capital. Behtoui (2007) analyzed access to social capital and the rewards in the labor market using the position generator. The author used the social capital indicators extensity, upper reachability, heterogeneity and the average amount of resources at one's disposal. Behtoui (2007) showed that the access to social capital is greater the higher an actor's education and the higher his/her work experience. Active membership in a voluntary association provides access to social capital. The study took place in Sweden and revealed that individuals born outside the country have less access to social capital than individu-

als born in Sweden. The weakest ties provided access to the biggest number of positions (extensity) with a greater diversity (range), and they led to higher upper reachability and more typical resources. Therefore, the strength of weak tie propositions is also valid for Sweden. However, an actor's use of informal channels for a job search doesn't increase the probability of finding a better job. But social capital increases the probability of being in a high-wage group. Unemployment decreases access to social resources.

Using the spring festival in China as starting point, Zhao (2002) analyzed the differences in the core network capital of unemployed and employed Chinese. The study asked the respondents to indicate the number of relatives, friends and acquaintances they 'paid a new year's call' to in the spring festival of 2000. The respondents indicated the jobs of the named persons to reveal their position. Tie strength was measured asking for the relationship to the named persons (family member, relative, friend, schoolmate, neighbour, etc.), length and frequency of contact to the person and the degree of familiarity, intimacy and mutual trust<sup>105</sup>. In comparison to Chinese citizens in general, laid-off workers have smaller network sizes and rather low network source scores. To search for new jobs the groups with very low and very high social resource scores do not use informal channels or social capital, but respondents with medium resource scores use them. This is caused by the fact that workers with poor possession of social capital are very limited in using it and workers with good access to social capital are also likely to have high amounts of human capital and other forms of capital, and thus, they are successful in using formal ways of getting a job.

A second influencing factor concerning an actor's characteristics is his/her sex. Concerning social inequality among men and women, Lin et al. (2001) analyzed an island-wide survey of the adults in Taiwan. They showed that males have greater access to positions than females, but there is no difference in upper reachability and the range of accessed positions. Females access social capital mainly via strong ties and in the spheres of education, health and household activities better than males. This is why they can compensate for accessing few positions; they play central roles by caring for the household, education and health care. Women's access to social capital is smaller the greater the household, and if grandchildren are present in the household. Furthermore, higher education leads to better access to social capital for both males and females, while employment is relevant for males, only. Also the extension of weak social contacts<sup>106</sup> influences the access to social capital positively for both genders.

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<sup>105</sup> Measured on a five-point scale ranging from 'very familiar/ intimate/trustworthy' to 'not at all'.

<sup>106</sup> Measured with: "In an ordinary day, how many people are you roughly in contact with?" (0-4; 5-9; 10-19; 20-49; 50-99; 100 or more persons); "How well do you know these persons?" (know almost all of them; most of them; about half and half; don't know most of them; know almost none of them).

A study in urban China observed similar results (see Lin 2001). Also in this context, women accessed fewer positions than males and had a shorter upper reachability. Men accessed positions mainly via non-kin ties while females used kin ties. This result supports the strength-of-weak-ties argument for males, because non-kin ties represent weaker ties than kin ties (Lin 2001: 111). However, political positions in the stratification system of China are better accessed by kin ties. That's why women don't suffer a deficit in entering the state sector, gaining higher-ranked positions, or earning higher wages, although, they have less access to social capital.

Analyzing the Taiwan Social Change Survey 2001, Hsung et al. (2007) aimed the influence of the management of family expenditures on social capital access. The authors showed that families where the wives manage the day-to-day family expenditures possess the highest diversity of accessed positions<sup>107</sup> while families managed by husband's access the least positions. Families with a high status also access more diverse positions. The analysis of the overlap of the couple's networks<sup>108</sup> in terms of finding structural holes revealed interesting results. Male respondents with a high degree of cross-linkages through their spouses' networks depend more on their wives' social resources. In this case the females have the possibility to play a brokerage role and to bargain for the joint management of their family expenditures. The opposite is the case, if the male respondents have a low degree of cross-linkages with their wives' networks. The husband is less dependent on his wives' resources and thus, refuses to jointly manage the family expenditures. But if the female respondent disposes of a highly diversified network and a low degree of cross-linkages with her spouses' contacts, the probability of joint management is even higher, because women with such kinds of networks have access to more non-redundant structural opportunities.

Lai (2008) revealed similar results analyzing the marriage networks in Hong Kong. Women and long term married respondents gain greater social capital<sup>109</sup> if

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<sup>107</sup> The following position generator was used: "Do you know any relative, friend or other acquaintance that is in one of the following occupations: doctor, middle school teacher, manager or owner of a small business, police officer and janitor/maid?", "Do you know them through your spouse?", "Is this person related to your wife?" and "If yes, what is their relationship or if no, what is their relationship to you?"

<sup>108</sup> It was asked: "How many of your spouse's friends do you know?" and "How many of your own friends does your spouse know?" There were five possible responses: know almost all of them, know most of them, know half of them, don't know many of them and know almost none of them. The scores were ranked from 1 to 5.

<sup>109</sup> The access to social capital was measured with a position generator developed according to Chiu's occupational prestige scale (Chiu 1994) to make it appropriate for the context of Hong Kong.

they access their partners' networks<sup>110</sup>. Although men and women dispose of similar access to their partner's network, women benefit more from better-positioned partners than men do.

Thirdly, we find that ethnicity influences the access to social capital. Analyzing the Job Search survey 2002 in the USA, Moren Cross and Lin (2008) showed that African-Americans and Hispanic/Latinos attain generally lower statuses than whites. This is engendered by a lower access to social capital<sup>111</sup> of both groups.

Regarding the influence of collective assets, we find the distribution of the resources and thus the access to them to be determined by the state system also. Comparing China and Taiwan, Son (2003) showed that, although both countries have the same ethnicity, history, and culture, the patterns of social capital of the inhabitants exhibit clear differences. Taiwanese reach on average higher positions than Chinese. Additionally, Taiwanese networks contain higher prestigious positions than Chinese ones. The extensiveness of the networks is similar. While Chinese females show inferior scores in all social capital indicators compared to males, the Taiwanese females show no difference in comparison to Taiwanese males. Chinese people with high income retain more indirect ties in comparison to low income earners. We find the reverse in Taiwan. This might be caused by a stronger homophily in China's upper class than in Taiwan's. This result also indicates that the class structure of China is more rigid and coherent along the class demarcation line, which is contrary to its communist ideology.

Finally, we also find the influence of information and communication technologies on the access to social positions. Analyzing social networks of residents in neighborhoods in Boston, Hampton (2003) used a position generator containing 24 positions and asked the respondents to indicate, if they have a tie inside or outside their neighborhood to these positions. The author showed that different neighborhood types lead to different networks. Transitory apartment dwellers have a low sense of community and neighborhood attachment, but they have a strong desire for local contact. In contrast, gated community residents show a strong sense of community and are extremely active at the local level. Suburban residents, as a case in between these extremes, dispose of both a strong sense of community and a desire for local contact. The extensity of the residents' networks is negatively influenced by web use and watching television. Upper reach-

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<sup>110</sup> The overlaps of the spouse's networks were assessed with the following item: "How many of your partner's friends do you know?" (1) know almost none of them up to (5) know almost all of them.

<sup>111</sup> Access to social capital was measured with a position generator containing the following occupations: elementary school teacher; lawyer; salesperson; waiter/waitress or bartender; engineer; secretary; manager; small business owner; insurance agent; janitor; mechanic or repairman; laborer; foreman; and skilled worker.

ability is increased with the number of hours spent on the telephone per day, while hours spent on the web decreases the lower reachability. E-mail use itself encourages the formation of local social networks; it increases the neighborhood network extensiveness.

*In summary*, the discussed studies show that being an outsider in terms of ethnicity, being female, unemployed and low educated reduces access to social resources in contrast to their opposite categories (insiders, males, employed, highly educated). Also the prevailing social structure as well as information and communication technologies influence the structure of resources attained. However, this part in the social capital concept of Lin is rather underdeveloped. More systematic and international comparative studies are necessary to gain more comprehensive results about the influence of collective assets and structural embeddedness on access to social resources. In a similar fashion the question of the influence of participation in civic associations seems especially interesting, because Putnam (see Chapter 3) sees civic networks as a main factor of social capital. We will have a look at this connection in the following section.

### 5.5.3 *Excursus: The Relationship of Social Resources and Civic Engagement*

Lin and his colleagues also approach the connection between social resources and civic engagement (as proposed by Putnam to be part of social capital (see Chapter 3)). Formal organizations form social networks, because they consist of a set of social units possessing valued resources, and these social units are hierarchically interrelated concerning authority or they have access to resources at their disposal. In addition the actors share rules and procedures in the use of the resources, and they are entrusted to occupants (agents) who act on these rules and procedures (Son, Lin 2008: 332). Theoretically it is reasonable to assume a relationship between civic engagement and social resources. On the one hand, network resources contribute to the formation of civic networks because they facilitate the flow of information about them, they provide civic influence motivating actors to perform civic actions, they provide individuals with credentials that make them more attractive for voluntary organizations, and they reinforce identification with the group and recognition of the group members. From the opposite perspective, individuals involved in civic actions are more likely to maintain old social relationships and establish new ones. Additionally, they possess positions close to bridges in social networks and are able to obtain and accumulate network resources (Song 2008).

Also, empirical studies indicate a relation between civic engagement and resources. Analyzing the Cultural Capital and Social Exclusion survey 2003/2004,

Li et al. (2008) revealed a strong relationship between informal social capital or social resources measured by a position generator<sup>112</sup> and formal social capital measured with membership in 17 types of civic organizations. The authors further found a mutual influence among social resources, civic participation and generalized trust. In the frame of this analysis, the authors did not specify the direction of the mutual relationships. Both directions are reasonable and the aim of different studies.

Bekkers et al. (2008) analyzed the first two waves of the Social Survey of the Networks of the Dutch and distinguished instrumental and expressive participation. While the former is an instrumentally rational action the participant administers to reach a certain goal (e.g. implement a political position), the latter is done for the sake of participation itself (e.g. for doing sports). The authors showed that access to resources (measured with the position generator including 30 occupations) determines civic participation. The participation in organizations with mainly instrumental goals<sup>113</sup> is conditioned by an actor's access to high prestigious positions, while the likelihood of participation in organizations with mainly expressive goals<sup>114</sup> is even decreased by access to high prestigious positions. The range of accessed positions is not related to either kind of participation, but general access to social resource fosters instrumental participation more strongly than expressive participation does.

Several studies also indicate the reverse relationship. Civic participation fosters the access to social resources or social capital. Using the data for the USA from two waves of a longitudinal study conducted in 2005 and 2007 in China and USA, Song (2008) argued that network resources and civic engagement do not build the same latent variable "social capital", but they influence each other mutually. Although her analysis showed that the social network resources<sup>115</sup> and civic networks<sup>116</sup> do not build one latent construct, it also indicated that resources do not condition higher participation. But membership in civic organizations provides the actor with access to more social capital.

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<sup>112</sup> The used occupations were adapted for the British context by ensuring that they all have a significant number of people working in them, they are from different social class locations, and they have different gender profiles.

<sup>113</sup> Measured with participation in: interest and idealistic organizations; unions; professional organizations; and political parties.

<sup>114</sup> Measured with participation in: sports clubs; neighborhood organizations; caring groups; dancing clubs; and music clubs.

<sup>115</sup> Measured with the position generator.

<sup>116</sup> Indicated by the total number of voluntary associations the respondents participate in. Each respondent was asked: "Are you currently participating in this kind of organization?" Political parties; labor unions; religious groups; leisure, sports, or culture groups; professional organizations; charities; neighborhood organizations; school and PTA; ethnic or civil rights organizations; and other voluntary organizations.



Cormier et al. (2007) revealed similar results in a completely different context: they analyzed three formal environmental organizations that are part of the Wilderness Preservation movement in British Columbia, Canada. Using a self-administered mail questionnaire, they measured the resources of the organization members with a position generator and used the indicators of range, upper reachability and extensity. Additionally, they assessed the activism of the respondent or his/her participation in 17 different activities<sup>117</sup> and the membership duration in the particular environmental organization. The authors showed that the level of activism and the duration of membership are positively associated with the diversity of occupational ties to other environmentalists. Both are also valid, if the net diversity in the association is accounted for.

Studying communities in British Columbia, Enns et al. (2008) showed that civic participation<sup>118</sup> fosters access to social resources. The authors applied a position generator including 18 positions and asked additionally for the quality of ties, if it was a strong (close friends) or weak tie (acquaintances), and if the tie was inside or outside the community. The study showed that civic participation increases the respondents' access to prestigious positions inside as well as outside the community. The respondents reached the most prestigious positions via weak ties. In contrast to previous studies, females had higher access to resources provided by weak ties inside as well as outside the community.

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<sup>117</sup> It was asked for the following activities: 1. donate money to wilderness preservation or other environmental organization; 2. write a letter to a government official regarding a wilderness preservation issue; 3. write a letter to a newspaper regarding wilderness preservation (or forestry related issues); 4. write a letter to a logging company about a forestry (or wilderness) issue; 5. write a letter to another organization regarding a wilderness preservation issue; 6. sign a petition to preserve a wilderness area; 7. participate in trail building; 8. attend a community meeting about wilderness preservation and/or forestry; 9. attend a rally or protest demonstration on the lawns of the legislature to support wilderness preservation; 10. participate in an information campaign for the general public about wilderness preservation; 11. advertise in the media to promote wilderness preservation; 12. make a presentation to a public body about wilderness preservation and/or forestry related issues; 13. give a lecture on wilderness preservation and/or logging practices to a school group or voluntary organization; 14. participate in a press release/conference (regarding wilderness preservation and forestry-related issues); 15. serve as a representative on an advisory board formed around wilderness preservation or forestry related issues; 16. purchase a book, t-shirt, poster, mug or other merchandise from an environmental organization; and 17. other activities. All activities were aggregated to measure activism.

<sup>118</sup> The respondents were asked if they participated in the following types of social activities: Artistic or craft/hobby group; business; church-related activities; community service group; cultural or ethnic association; educational; environmental; health; neighborhood; political; self-help or support; service club; social club; spiritual/religious group; sports or recreation; work-relation; youth; any other activities not listed.

Lin and Ao (2008) revealed similar results analyzing a telephone survey conducted in 2004/2005 in the USA. The authors showed that social capacity, or access to social resources,<sup>119</sup> is enhanced by civic participation<sup>120</sup>.

*The discussed studies allow us to conclude* that participation in civic associations is an influencing factor concerning access to social resources and vice versa.

#### 5.5.4 Capitalization and Effects of Social Capital

##### *Instrumental Outcomes*

In considering the capitalization of resources and the effects of social capital, we first take a look at instrumental outcomes. Many studies operationalize instrumental outcomes as status attainment (mainly in job search). The job status combines the instrumental rewards wealth, power and reputation. Using the position generator, Lin and other authors found support for several propositions in different studies. Lin and Dumin (1986) analyzed data from Albany collected in 1975; a representative sample of males in the non-institutional civilian labor force that had used social contacts to find their first and current jobs. This study used the first position generator (including 20 occupations). The authors constructed only two measures – the highest status accessible and the range of statuses accessed and showed that both indicators are positively and significantly correlated. The original position of the respondent, measured in terms of his/her father's occupational prestige, was also positively and significantly related to the two measures – confirming the strength-of-position hypothesis. Friends as well as acquaintances (or weak ties) provided the best access to both the highest-status position and a great range of accessed statuses (Lin 2001: 90). In addition, weak ties enable greater access to better resources when the initial position of the individual is low.

Lin et al. (1981, 1981a) used the same data and researched the strength-of-strong-tie and strength-of-weak-tie propositions in the context of job-seeking. Because job-seeking is an entire instrumental action, the authors assumed to find the respondent to have better access to jobs via weak ties and found support for

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<sup>119</sup> The access to social capital was measured with the position generator including 22 occupations.

<sup>120</sup> Civic participation was assessed with membership in the following associations: Political parties; labor unions; religious groups; leisure, sports, or culture groups; professional organizations; charities; neighborhood organizations; school and PTA; ethnic or civil rights organizations; other voluntary organizations. The authors further asked for the duration of membership which indicates if the activity prevailed before entering the current job.

this assumption. However, also the original position of the job seeker in the hierarchy counts. If the actor has a high position, strong ties are more useful for him, because weak ties could reach down the hierarchy<sup>121</sup>, only. This finding is in accordance with the structural contingency proposition. On the contrary, for individuals at the bottom of the hierarchy only, the weak ties are useful which also supports the strength-of-weak tie proposition. In finding one's first job, a respondent's position mediated by his/her father's occupation and his/her own education are of importance in addition to the used contact in the job-search. The second job depends mainly on the previous job position of the respondent. Both findings support the strength-of-position proposition. Altogether, these results also confirm the social capital proposition; the access and use of social resources allows the actor to find a prestigious job.

Using also the data from the Albany study, Lai et al. (1998) showed that the network resources in terms of extension, range and upper reachability of a job searcher are positively related to the resources of the contact they used in the process of searching for a job. In the context of using a contact the strength-of-strong tie proposition is not valid, but the strength-of-weak-tie proposition is; the contacts are mainly weak ties. Furthermore, the close connection between the resources of the job seeker and his contact indicate that the contact serves as a bridge. Thus the job seeker is located close to a bridge and benefits from this. This result supports the strength-of-location proposition. Furthermore, Lai et al. (1998) found that the contact resources have a stronger impact on the attained status than the network resources. This points to the importance of activated resources. Although network resources enhance both contact and non-contact users, the contact users yield better outcomes. This supports the social capital proposition.

We have to admit that the presented results are restricted in their generalizability, because they all use the same study (including only male respondents). De Graaf and Flap (1988) analyzed the German Wohlfahrtssurvey 1980 and a Dutch survey from 1982 conducted by Sixma and Ultee (1984) and compared their findings to the results of the Albany study. They showed that in all analyzed countries a higher occupational prestige of the contact person reached in the process of job searching positively influences the status of the attained job. This indicates the validity of the social capital proposition. They also found support for the strength-of-weak-tie and strength-of-location propositions.

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<sup>121</sup> In our view, searching for a job is an expressive action for actors situated at the top of the hierarchy, because they try to maintain their social standing. This results in the fact that strong ties are more useful for them, like the strength-of-strong tie proposition assumes. For people at the lower level of the hierarchy, a job search is rather an instrumental action, because they try to improve their situation. Here weak ties are most useful.

Analyzing the status attainment in the former GDR, Völker and Flap (1999) used data collected in 1992 and 1993 in two East German cities (Leipzig and Dresden). Besides asking for the way the respondents found their jobs, the authors used the position generator to analyze the access to occupations through social ties. In the case of the GDR the results are different than the previously presented. A father's resources did not influence the attained job. In contrast, the child's education was most important. However, we can regard the strength-of-position hypotheses as validated, because the father's resources condition a child's educational achievement. Therefore, the influence of the position is given, but indirectly. Only few of the respondents used informal channels to find a job at the beginning of their career. But if such channels were used, they were mostly provided by relatives or strong ties. In the course of an individual's career, informal channels as well as relations to acquaintances or weak ties got more and more important for the status attainment. However, strong ties stayed the most important ones. That is to say, at the beginning of a career the strength-of-position proposition is valid in accordance with the previously discussed results from the USA, the Netherlands and West Germany. Furthermore, the weakest relationships provided the best access to occupations as well as to the highest and lowest status groups. Therefore, the strength-of-weak-ties proposition is also supported, although weak ties are not commonly used. Altogether, the social capital proposition is also valid in the case of the GDR.

Also more current studies support Lin's propositions. Lin and Ao (2008) showed that social resources in terms of range, extensity or upper reachability enhance an employees' access to job information in routine exchanges<sup>122</sup>. The actor acquires the information in searching for a new job and can use it to attain a better job, a supervising position or even better payment than his/her colleagues. This also supports the social capital proposition. The access to social capital was provided mainly by membership in associations and the human capital of the respondent.

Moren Cross and Lin (2008) revealed similar results analyzing the US American Job Search survey of 2002. The prior status, social capital access as well as the ethnicity of the respondent significantly influenced his/her status attainment. Their results, thus, also support the previously mentioned propositions.

Analyzing the Dutch Telepanel Survey of 1992 and 1993, Moerbeek and Flap (2008) showed that the position of the respondent indicated by his/her father's prestige is a great influencing factor for access to social capital measured

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<sup>122</sup> Routine exchange information was measured with the following item: "At the time, the year you started your current job, did someone mention job possibilities, openings, or opportunities to you, without your asking, in casual conversations?" To be answered with yes/no.

by a position generator and, thus, status attainment in terms of the first and current job. The best access to social capital is provided by family members and acquaintances, the least access is provided by friends. The results support the strength-of-position proposition, strength-of-weak-ties as well as strength-of-strong-ties propositions and the social-capital proposition, as other studies also did.

*Table 3:* Summary of Studies Supporting the Social Capital Propositions

Propositions	Supporting Studies
The social-capital proposition	Burt 1992, 2000, 2005; De Graaf, Flap 1998; Lai et al. 1998; Lin, Ao 2008; Lin et al. 1981, 1981a; Moerbeek, Flap 2008; Moren Cross, Lin 2008; Song 2005; Völker, Flap 1999
The strength-of-position proposition	Lin, Dumin 1986; Lin et al. 1981, 1981a; Moerbeek, Flap 2008; Moren Cross, Lin 2008; Völker, Flap 1999
The strength-of-strong-tie proposition	Coleman 1988, 1990, 1995a; Lin et al. 1981, 1981a; Moerbeek, Flap 2008
The strength-of-weak-tie proposition	De Graaf, Flap 1998; Granovetter 1973; Lai et al. 1998; Lin 2001; Lin et al. 1981, 1981a; Moerbeek, Flap 2008; Völker, Flap 1999
The strength-of-location proposition	Burt 1992, 2000, 2005; De Graaf, Flap 1998; Lai et al. 1998;
The location-by-position proposition	Burt 1992, 2000, 2005
The structural contingency proposition	Lin et al. 1981, 1981a

Social capital doesn't only influence objective status attainment, but also the perception of ones' social standing. Analyzing the survey of 2005 conducted in China, Taiwan and the USA, Song (2006) compared China and the United States concerning the impact of social capital on the respondent's self reported class<sup>123</sup>. All three social capital indicators (extensiveness, upper reachability and range) are substantially correlated with subjective class in China as well as in the USA. Controlling for socioeconomic variables, only upper reachability significantly influences the respondents' self-categorization into a higher class in China. The same was observed in the United States. We can conclude that the more social capital a respondent accesses in the stratification systems, the higher he/she perceives his/her own class. This relationship seems to be valid across

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<sup>123</sup> The following item was used to assess the self reported class: "If the society is divided into upper class, upper-middle class, middle class, middle-lower class, and lower class, which one do you think you belong to?"

countries. Accordingly, social capital contributes to subjective in addition to objective status attainment.

*Summing up*, we find support for all the propositions of Lin's concept in different contexts analyzing status attainment as instrumental action (for a summary of the studies supporting particular propositions see table 3). We find only one exception: the location-by-position proposition was not tested directly. However, this proposition was verified in the context of firms and employees in Burt's studies (see Chapter 4).

### *Expressive Outcomes*

Although we can find very extensive research on instrumental returns, expressive returns are seldom aimed in Lin's tradition. That is to say, we find a very small amount of studies solely analyzing the impact of social capital on expressive goal attainment.

Lin et al. (2006) analyze the influence of social capital on marital satisfaction in China using a survey that was completed in 2005 in China, Taiwan and the United States. Using the position generator asking for 21 different occupations the authors showed that social capital influences marital satisfaction<sup>124</sup> of males significantly, but not that of females. Females have more spousal and kin ties than males do. In contrast, males dispose of non-spousal and non-kin ties; their networks are bigger than the female networks and include more males. Accordingly, males benefit from ties beyond the marriage and can access more resources. Knowing the spouse's friends increases the satisfaction for males only. While males increase their marital satisfaction via bridging the ties in their networks (bringing friends and spouse together), females don't associate bridged networks with increased satisfaction. Furthermore, analyzing the same study, Song (2007) showed that in the United States the more prestigious the averagely reached occupations of an individual, the less likely he/she will experience depressions<sup>125</sup>.

This small amount of studies targeting the influence of social capital on expressive actions raises the question: Why aren't there more studies concerning expressive outcomes? This can be caused by two factors. The research on expressive outcomes using the position generator may be underdeveloped, because

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<sup>124</sup> It was asked for satisfaction with: marital life; economic conditions; interactions with neighbors; relations with children (only those who had children); relations with supervisor or coworkers (only those currently working); and current work (only those currently working). The response categories were: very satisfied, satisfied, not satisfied, and very unsatisfied.

<sup>125</sup> Depression was measured by 13 items drawn from the CES-D scale (Radloff 1977).

the main focus was on instrumental outcomes previously. Or it may be caused by the fact that the position generator method reveals problems in measuring expressive actions. We will display arguments for the second position in the following section.

#### *5.5.5 Problems of the Position Generator and Their Solution – The Resource Generator*

It is rather questionable, if network members in higher positions with more prestigious occupations are directly supportive in expressive actions (Van der Gaag 2005; Van der Gaag et al. 2004, 2008). The position generator excludes network members that have positions not connected to prestige like homemakers, unemployed, retired or young people still in education. They all can provide resources useful for expressive goals like care, love and attention. This is neglected by the position generator leading to an underestimation of specific parts of social capital. Also, the characteristic of being content free is questionable, because the position generator is designed for the general life domain of the modern western individual, without considering specific areas of goal attainment, life domains or subpopulations.

Furthermore, the authors highlight that the indexes upper reachability, extensiveness and range constructed using the positions generator are strongly intercorrelated and, thus, cause multicollinearity, if used in one analysis. This problem could be solved applying a principal component analysis or by deleting two of the tree measures (Van der Gaag et al. 2004: 16). Erickson (1996, 1998, 2004), for example, uses only the number of accessed positions. This realizes the most content-free measure of the position generator; however the use of one indicator alone leads to loss of information.

To solve these problems, Van der Gaag and Snijders (2005) developed a new measurement tool: the resource generator. Flap's (1994)<sup>126</sup> and Lin's (2001) definitions of social capital served as the basis for its development. Social capital is a "collection of resources owned by the members of an individual's personal social network, which may become available to the individual as a result of the history of these relationships" (Van der Gaag, Snijders 2002: 3). The authors argue for this conceptualization (highlighting the possibility of access), because only a very small amount of social capital is mobilized in purposive action; individuals are mostly able to reach their goals investing personal resources. Measuring mobilized or used resources only raises several problems. Mobilization de-

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<sup>126</sup> Flap argues that social capital exists in three dimensions – the number of alters in the social network, the resources of these alters and the availability of these to the individual.

depends on the presence of social capital but is also the result of an individual's decision making process influenced by social reality. Accordingly, asking for help depends on the individual's need for help (e.g. a bad health state) and his/her skills required for mobilization of the social capital connected to the creation of obligations for repayment in the future. Additionally, the decision making process is influenced by personal morals and ethical codes towards asking other people for favors. Therefore, if we measure the use of social capital, we assess mainly the behavior of people. Looking at the collective level Sandefur and Laumann (1998) support the consideration of a broader social capital definition, including the influence of the availability of institutional solutions for an individual's goal attainment. Accordingly, it is useful to measure the amount of social capital and its structure.

The resource generator (Van der Gaag 2005; Van der Gaag, Snijders 2005) itself is a combination of the position generator and name generators and interpreters. It asks about the access to resources that are on the one hand connected to positions or jobs and on the other to concrete functions. Basically, it has the same structure as the position generator and omits the identification of concrete names. The availability of resources depends on the strength of the tie it is accessed by. Accordingly, the resource generator controls for the tie-strength asking for the relationship that may provide a given resource, ranging from family members indicating the strongest ties up to acquaintances representing the weakest ties. We can assume that the access to a specific resource through a family member is easier than through an acquaintance.

The resource generator was first applied in a Dutch survey in 1999-2000. Because specific resources vary over populations, incomparability may occur, if we apply the same version of the resource generator in different countries. Accordingly, we have to take systematical and theoretical considerations into account in composing it. In the Dutch case, the authors distinguished different personal resources like human, cultural, financial, political, and physical resources an actor may borrow for his/her goal attainment (Van der Gaag, Snijders 2005: 4). To include a great range of resources necessary in everyday life, the authors further distinguished six cognitive domains of goal attainment: private productive activities, personal relationships, private discrete or recreational activities, public productive activities, public relationships and public non-institutionalized interaction involving everyday contacts with unknown individuals. Based on these activities, the Dutch survey included 33 different resources an actor can use to attain goals (see box 6).



Box 6: The Resource Generator

Do you know anyone who...

if yes, access through family, friend or acquaintance? And yourself?

1. can repair a car, bike, etc.
2. owns a car
3. is handy repairing household equipment
4. can speak and write a foreign language
5. can work with a personal computer
6. can play an instrument
7. has knowledge of literature
8. has senior high school (VWO) education
9. has higher vocational (HBO) education
10. reads a professional journal
11. is active in a political party
12. owns shares for at least Dfl.10,000
13. works at the town hall
14. earns more than Dfl.5,000 monthly
15. own a holiday home abroad
16. is sometimes in the opportunity to hire people
17. knows a lot about governmental regulations
18. has good contacts with a newspaper, radio- or TV station
19. knows about soccer
20. has knowledge about financial matters (taxes, subsidies)
21. can find a holiday job for a family member
22. can give advice concerning a conflict at work
23. can help when moving house (packing, lifting)
24. can help with small jobs around the house (carpentering, painting)
25. can do your shopping when you (and your household members) are ill
26. can give medical advice when you are dissatisfied with your doctor
27. can borrow you a large sum of money (Dfl.10,000)
28. can provide a place to stay for a week if you have to leave your house temporarily
29. can give advice concerning a conflict with family members
30. can discuss which political party you are going to vote for
31. can give advice on matters of law (problems with landlord, boss, or municipality)
32. can give a good reference when you are applying for a job
33. can baby-sit for your children

Note: see Van der Gaag et al. 2004: 33

The analysis<sup>127</sup> of the data revealed that four factors of individual social capital exist. These are resources that are bound to prestige and education, resources based on political and financial skills, resources connected to personal

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<sup>127</sup> The authors understand social capital as a collection of latent traits. Accordingly, Item Response Theory was used to analyze it.

skills and personal support resources (Van der Gaag, Snijders 2005; Van der Gaag et al. 2004).

The Dutch survey also included a position generator and name generator allowing the authors to compare their results to the findings revealed by the resource generator. The position generator revealed two kinds of social capital: high prestige social capital including access to scientists, policy makers, lawyers, medical persons and so on, and low prestige social capital including access to engine drivers, cleaners, unskilled laborers, hairdressers, sales persons, and construction workers. Comparing the position generator measures to the name generators, the authors found only a small overall correlation. Although upper reachability, range and extensiveness are positively connected to bigger and denser networks and the age and tie strength of the networks, they are not related to accessed prestige. Comparing the position generator measures to the resource generator shows higher agreement. Upper reachability, range and extensiveness are connected to more diverse social resources. The position generator measures are highly related to prestige and education related resources, but only slightly so to personal skills related resources (Van der Gaag et al. 2004, 2008). Harvey et al. (2007) revealed similar results by analyzing two different sport associations, one dealing with individual sports and one dealing with team sports, in two geographic locations in Canada. Applying both the position and resource generators showed that a long involvement of individuals as volunteers in sports diminishes access to a variety of social positions, but the accessed positions are of higher value, because they really provide access to social resources. These results show the broader applicability of the resource generator as compared with the position generator.

## **5.6 How Does Lin's Theoretical Concept Contribute to a General Theory of Social Capital?**

Lin's concept represents a formalized concept of social capital including axioms and derived theorems. The concept is explicit, internally consistent and simple, and its scope is a hierarchically structured society. Concerning our specific requirements for a social capital theory it misses three details. Social capital is conceptualized as private good only and not as public good. This has to be explored in future research. A conceptualization of the negative effects of social capital is missing. Van der Gaag et al. (2004) argue that negative interactions rarely occur, thus their detection is difficult. Additionally, these negative experiences are connected to intimate information and situations that are forgotten. Such information is very difficult to collect making the analysis of negative so-

cial capital more difficult. Therefore, another methodology is necessary to reveal these negative effects than has been developed to date (Van der Gaag et al. 2004: 18). Finally, we don't find a discussion how social capital can be used to decrease inequality. We have to leave these points open for future research.

Concluding, we can formulate a preliminary social capital theory including requirements for future research to complete a general theory of social capital: *Social capital can be defined as resources embedded in social relationships that benefit purposive action.*

1. Social capital is a structural asset of networks with the character of a private and public good. It emerges in the relations of individuals or collectives and spills over into cultural societal aspects like generalized trust and norms of reciprocity, which function as both precondition and output of social capital.
2. Social capital is produced in both open (bridging) and closed (bonding) structures, as well as in formal, informal, institutionalized and non-institutionalized ones. Bonding structures as well as structures with a small network size and small range/diversity are most useful for actions with an expressive and cooperative character, and bridging structures and structures with a high network size and high range/diversity are most useful for actions with an instrumental or competitive character.
3. Social Capital can also have negative effects. Their analysis still lacks an adequate methodology and is thus the task of future research.
4. The access to social capital or social resources is unequal. It depends on collective assets like economy and technology but also culture (including cultural social capital) and individual assets such as ethnicity, gender and social standing. Furthermore, the topic how social capital can be used to fight inequality has to be considered in future research.

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## 6 Formalizing and Visualizing the Current Social Capital Theory

Starting with the basic concepts of social capital by Bourdieu and Coleman (Chapter 2) we define social capital as a property of relationships. It is a resource actors can use and benefit from. This basic definition is also agreed on by Putnam (Chapter 3), Burt (Chapter 4) and Lin (Chapter 5).

However, the contents of the single concepts are rather different. While Bourdieu highlights the provision of support and the production and preservation of trust by social capital, Coleman sees it as an aspect of social structure. He also differentiates kinds of social capital – trust and authority relations, effective norms and sanctions, information potential and appropriable social organizations. Putnam deals with the strengthening of democracy and economic outputs of society via networks of civic engagement that facilitate the creation of trust and norms of reciprocity. A different view is provided by Burt and Lin; both underline the importance of the social structure the actor is embedded in. Burt highlights the brokering or spanning of structural holes and Lin stresses the access to resources connected to valued positions in the societal strata.

The discussions revealed that the mutual conceptualization of social capital at the micro- and macro-levels of the society done by Bourdieu and Coleman contains the danger to assume conclusions drawn on one level to be valid on the other. This is the case in Putnam's concept finding networks of civic engagement, generalized trust and norms of reciprocity related at the macro-level and assuming this relationship to be valid at the micro level as well. But this assumption could not be supported by empirical studies. His conceptualization includes a structural (networks) and a cultural (generalized trust, norms of reciprocity) aspect of social capital. Incorporating both arguments divides social capital from its roots, both from its capital character and from the relations it emerges from. Capital features the possibility to invest in it to gain profits. The cultural elements generalized trust and norms of reciprocity are not social capital, because one cannot invest in them easily. Thus, we exclude them from the social capital concept and define social capital as structural entity, only. Individual or collective actors can easily invest in relationships with other individuals or collectives. However, the cultural societal aspects (generalized trust and norms of reciprocity)

ity) seem to be connected to social capital. They ease the creation and maintenance of relationships and are facilitated by relationships. This is why many scholars agree that social capital is not just a private good, but that it has externalities (e.g. it spills over into generalized trust and norms of reciprocity) and is thus, also a public good. That is to say, actors that don't invest in social capital can generate profits from its existence. Although the concrete mechanisms are not discovered yet, the discussion allows us to conclude that cultural societal aspects are both preconditions as well as outcomes of social capital.

Additionally, we have to admit that Putnam's concept broadened the view of social capital, because it highlights formal relations generally neglected by the other theorists. Concerning other characteristics of relations that create social capital, Bourdieu, Coleman and Putnam highlight closed and dense social structures assuming that these generate the highest benefits in terms of facilitating access to information and the establishment of norms and sanctions (Coleman, see Chapter 2) as well as for reasons of demarcation from other groups (Bourdieu, see Chapter 2) or educating civic citizens (Putnam, see Chapter 3). This narrow view is highly criticized because various empirical studies show that weak ties are also important. Burt, on the other hand, overemphasizes these weak ties and neglects the strong ones. Contrarily, in Lin's concept both network features are included.

Critics further demand for the conceptualization of the contribution of social capital to raise equality. Although inequality is a central topic of the discussed concepts (except for Putnam's), none of them discusses how social capital can be used to fight inequality. Thus, we have to leave this point open for future research.

Finally, various authors highlight the existence of negative social capital (e.g. in terms of exclusion). However, this aspect is also not included in the presented concepts. This is caused by an underdevelopment of the current social capital theory and by the difficulty to measure negative relations (see van der Gaag, Snijders in Chapter 5).

*Summing up*, a general social capital theory is still under construction. We can formulate the following formalized concept of social capital<sup>128</sup> (displayed also in figure 6):

*Scope Condition:* The social capital concept applies to a hierarchically structured society.

*Definition:* Social capital is a resource embedded in social relationships.

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<sup>128</sup> It represents a refined model of Nan Lin's concept (Lin 2001, 2001a).

*Axiom 1:* Actors are individuals or collectives (e.g. organizations, nation-states) that pursue purposive action. Purposive actions follow either expressive or instrumental goals. We find social resources that rather facilitate expressive actions and other resources that facilitate instrumental actions.

*Axiom 2:* Social capital emerges in the structure of relations or networks among individuals or collectives.

*Axiom 3:* The structures or networks can be open (bridging) or closed (bonding). Generally, the networks consist of formal or informal and institutionalized or non-institutionalized relationships.

*Theorem 3.1:* Bonding structures provide access to resources that are most useful for actions with an expressive and cooperation character.

*Theorem 3.2:* Small networks provide access to resources that foster expressive actions or cooperation.

*Theorem 3.3:* Structures with small range/diversity provide access to resources that foster expressive actions or cooperation.

*Theorem 3.4:* Bridging structures provide access to resources that are the most useful for actions with an instrumental or competition character.

*Theorem 3.5:* Big networks provide access to resources that foster instrumental actions or competition.

*Theorem 3.6:* Structures with high range/diversity provide access to resources that foster instrumental actions or competition.

*Axiom 4:* Preconditions of network formation providing the access to social capital are cultural societal aspects (norms of reciprocity and generalized trust) and other collective assets of the society (e.g. economy, technology and historical background).

*Axiom 5:* The access to social networks and thus to social capital or social resources is unequal depending on an individual's characteristics.

*Theorem 5.1:* Being at the top of the hierarchy eases the access to social networks and thus to social capital; being at the bottom of the hierarchy hinders it.

*Theorem 5.2:* Being female decreases the access to social networks and thus social capital in comparison to men.

*Theorem 5.3:* Being of a minority ethnicity in a particular society hinders the access to social networks and thus to social capital.

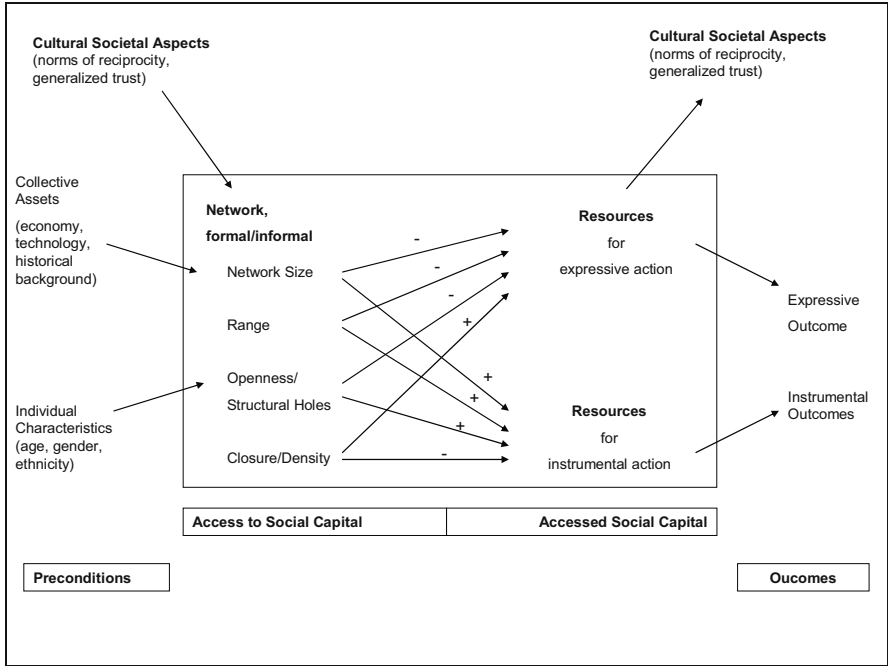
*Axiom 6:* Social capital spills over into the cultural societal aspects.

*Axiom 7:* Social capital may have negative outcomes or externalities.

*Axiom 8:* Social capital itself may be used to increase social equality.

We have to leave the formulation of testable theorems for axiom 4 and 6 to 8 open for future research. Additionally, the topic of inequality regarding access to social capital (axiom 5) requires further development in the future.

Figure 6: Refined Social Capital Model



Note: derived from Lin (2001)

To date, we do not know if the presently treated concept of social capital is also valid for the Czech case, because its components were developed in different contexts. But in the frame of the present monograph, we have to forgo testing the derived hypotheses because, first of all, we need to take one more step: we have to find appropriate measures for our social capital theory. Finding measures for the complete model lies beyond the possibilities of the present monograph. Thus, we focus on the development of appropriate social capital measures and aim to detect where future methods research is necessary. We don't need to develop new operationalizations because several were designed in other contexts (see Chapters 3-5), but we have to test their appropriateness for the Czech context. This is the purpose of the second part of the present monograph. Again, we want to highlight the importance of this step in theory development because without suitable measures we can't achieve results that are meaningful for refining our theory.



In the second part of the monograph we start with an introduction of the statistical methods we are going to use (Chapter 7) and the surveys (Chapter 8) we are going to analyze. Furthermore, we will use the revealed preliminary theory of social capital as a basis with which to collect the social capital measurement. We will test the measures' quality mainly with the test-retest survey "Social Relationships among Czech Citizens". We ordered the Chapters 9 to 12 according to our model in figure 6. First, we will introduce the preconditions of access to social capital in the Czech context (Chapter 9). In Chapters 10 and 11 we will analyze the quality of the measurements of access to social capital provided by informal and formal networks. Therefore, we apply measures of network characteristics connected to membership in an association (formal) and characteristics connected to the personal networks of the respondent (informal). Closure is easily accessible via participation frequency or intimacy and contact frequency (Chapters 4 and 5) and network size can be measured by the concrete number of contact persons (cf. Chapter 10). To assess the openness of a network, Burt's name generator turned out to be inappropriate. A better choice seems to be the bridging social capital item battery proposed by Pająk (see Chapter 4). It has the advantage that it measures openness in addition to the range/diversity of a network. This battery was used only rarely in the Czech Republic, hence, we will contest its appropriateness in Chapter 11. To measure the network size as well, we improve the battery by asking for the concrete number of strong (family), informal weak (friends) and formal weak ties (acquaintances from an association the respondent is a member in) in different contexts.

Finally, we discuss the measures of accessed social capital or resources in Chapter 12. As shown in Chapter 5, the resource generator seems most appropriate. We will introduce it to the Czech Republic. In accordance with our derived model, we will distinguish between resources facilitating expressive and instrumental actions. We also improve the resource generator by asking for the concrete number of strong, informal weak and formal weak ties.

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## **Part II: The Quality of Social Capital Measures in the Czech Republic**

Without a clear measurement, it will be impossible to verify propositions or to accumulate knowledge.

Lin, Fu, Hsung (2001: 57)

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## 7 How to Assess the Quality of Measurement Tools? - A General Introduction

After defining the social capital measurement model via stepwise discussion of the current social capital theories (see Chapters 2-6) and before introducing the analyzed studies (Chapter 8) and the collective assets of Czech society that influence the level and structure of social capital (Chapter 9) as well as before presenting the results of the analyses regarding the quality of the measurements of social capital in the Czech context (Chapters 10-12), we will introduce indicators of measurement quality. We start with the assets necessary to draw a high-quality sample followed by quality factors of the measurements. We define objectivity, different forms of reliability and validity and formalize their assessment via statistical procedures and structural equation modeling. Measurement quality is also influenced by respondents' characteristics, and therefore, we will discuss them.

### 7.1 The Quality of a Sample

Scientists carry out empirical studies to draw conclusions about the distribution of attributes in a defined population. The safest method for this would be a total population survey including all persons in a population. But this procedure is highly time and cost-intensive. On account of this, samples are drawn that have validity like a full survey. However, the collection of data is always influenced by many external factors. A test-retest study of the ZUMA showed that it is not even sure that the specified job of a respondent is true (Häder, Klein 2002; Porst, Zeifang 1987, Zeifang 1987a, 1987b). According to Häder and Klein (2002: 109), we have two possibilities in dealing with this problem – we can either refuse empirical research or can pay attention to possible sources of error and try to minimize them by stepwise refinement of available measurement instruments. In the course of research, we can be faced with two kinds of errors, random ones and those caused by the applied measurement tool.

The “random error is the unpredictable error that occurs in all research” (Litwin 1995: 5). Random errors are affected by many different factors, mostly by the sampling technique. To decrease the chance of random errors, we have to

meet different quality requirements by sampling. To get a valid sample, we have to define the population exactly (von der Heyde 1999: 23). Only on this basis should a sample be drawn. Next, to guarantee the possibility of making predictions about the population using a random sample of people it is important to meet the quality requirements of representativeness, accuracy and precision. Representativeness is warranted, if the choice of respondents depicts an adequate image of the overall population. Adequate in this case means that the survey depicts all essential details of the analyzed population correctly. A sample is representative, if unbiased population estimators can be calculated on its basis (von der Heyde 1999: 27-28). Accuracy of a sample is reached, if the parameter estimation is close to the true parameter. Because we use random samples in praxis, it is very difficult to create samples with complete exactness. The most important thing for the realization of a good sample is the achievement of unbiasedness and high precision. Precision refers to the reproducibility of the results revealed in various samples. However, usually we draw one sample only. In this case, a small confidence interval of a sample may serve as an indicator of good precision, because it implies that the estimate ranges only slightly, that is to say, the true parameter most likely lies within this range (von der Heyde 1999: 29).

But the sample quality does not determine the survey quality alone. Of special importance are also the measurements of particular variables. Measurement errors occur depending on the performance of an instrument in a given population. The lower it is, the closer the data are to the true values (Litwin 1995: 6). We can minimize this kind of error by meeting the measurement quality factors objectivity, reliability and validity (Diekmann 2000: 216).

## **7.2 The Quality of Measures**

### *7.2.1 Objectivity*

Objectivity is the extent to which the results are independent of the person that uses the measurement instrument. We can differentiate between the objectivity of implementation and that of analysis (Diekmann 2000: 216; Hendl 2004: 47).

### *7.2.2 Reliability*

The reliability of a measurement instrument indicates the reproducibility of results revealed with it (Diekmann 2000: 217; Litwin 1995: 6) or its trustworthi-

ness. A measurement instrument is reliable if it displays the same results in repeated measures. Generally, the reliability is higher the closer the measured parameter is to the actual one (Schnell et al. 1999: 155). “No survey instrument or test is perfectly reliable, but some are clearly more reliable than others.” (Litwin 1995: 7).

To define the concept of reliability formally, we have to make several preliminary assumptions (cf. Hendl 2004: 263-264; Traub 1994: 31-62). First, we assume that (in the frame of a survey) an observed score  $X$  is the sum of a true-score component  $T$ , with mean  $\mu_T$  and variance  $\sigma_T^2$  and an error score component  $E$ , with mean  $\mu_E$  and variance  $\sigma_E^2$ :

$$(7.1) \quad X = T + E \quad .$$

We assume that the expected value of the error random variable is zero (for discussion see Traub 1994: 31). This implies that the expected values of the observed-score  $X$  and true-score random variables  $T$  are equal:

$$(7.2) \quad \mu_X = \mu_T \quad .$$

Additionally, we have to assume that the covariance of the true-score and error-score random variables  $\sigma_{TE}^2$  is also zero (see Traub 1994: 32). The variance of the observed-score variable  $X$  is the sum of the variances of the true-score  $T$  and the error-score random variables  $E$  or

$$(7.3) \quad \sigma_X^2 = \sigma_T^2 + \sigma_E^2 \quad .$$

Accordingly, Traub (1994: 38-39) defines the reliability coefficient  $\rho_X^2$  as the ratio of the true-score variance  $\sigma_T^2$  to the observed-score variance  $\sigma_X^2$ :

$$(7.4) \quad \rho_X^2 = \frac{\sigma_T^2}{\sigma_X^2} \quad .$$

Using formula 7.3 this definition reads

$$(7.5) \quad \rho_X^2 = \frac{\sigma_T^2}{\sigma_T^2 + \sigma_E^2} \quad .$$

We assume the variances  $\sigma_T^2$  and  $\sigma_X^2$  to be greater than or equal to zero and further that at least one is greater than zero. Accordingly, the observed-score variance is greater than zero too. That is to say, the reliability coefficient  $\rho_X^2$  lies between zero and one. If the error-score variance generates almost all variance while the true scores stay nearly constant, the coefficient reaches values near zero. It reaches values near one, if the measurement is almost error free, that is, if the difference between true and observed-score random variables is almost zero.

This reliability theory contains one weakness: we do not know the true value and cannot measure it. A different but appropriate method to reveal the reliabilities lies in a parallel test. We have to repeat the measurement process at least once and construct two different measures for observed-score random variables both having the same expectation value, the same variance and standard error of measurement of the true score for an individual (Traub 1994: 46). Thus, we can use the correlation coefficient  $\rho_{X_1, X_2}$  among both measures  $X_1$  and  $X_2$

$$(7.6) \quad \rho_{X_1, X_2} = \frac{\sigma_{X_1, X_2}}{\sigma_{X_1} \sigma_{X_2}}$$

as a reliability coefficient (for a proof see Traub 1994: 46-62) where  $\sigma_{X_1, X_2}$  is the covariance and  $\sigma_{X_1}$  and  $\sigma_{X_2}$  are the standard deviations of  $X_1$  and  $X_2$ . If we make the assumptions concerning the parallel test that the standard deviations of  $X_1$  and  $X_2$  are equal and the covariance among  $X_1$  and  $X_2$  equals the variance of the true score

$$(7.7) \quad \sigma_{X_1} = \sigma_{X_2}, \quad \sigma_{X_1, X_2} = \sigma_T^2,$$

then the substitution of equation 7.6 leads to<sup>129</sup>

$$(7.8) \quad \rho_{X_1, X_2} = \frac{\sigma_T^2}{\sigma_X^2} = \rho_X^2 \quad .$$

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<sup>129</sup> As is the custom in the social sciences, we will denote estimated values with Latin letters in the following chapters.



We can construct a parallel test in several ways: as test-retest, alternate-form, split-halves or internal consistency tests. Additionally in the literature we also find interobserver (interrater) reliability (Litwin 1995: 8; Traub 1994: 62).

*Test-retest reliability* is tested by asking the same set of respondents the same questions at two different points in time (Hendl 2004: 48; Litwin 1995: 8). The stability of the responses or the reproducibility of the results can be assessed with the correlation coefficient  $\rho_{x_1, x_2}$  (see Equation 7.6) comparing both sets of responses (Litwin 1995: 8). As we discussed previously, for this reason the measurements have to be either parallel, or the true scores and standard errors of measurement have to be at least linearly related (Traub 1994: 73). The  $\rho_{x_1, x_2}$  values indicate good reliability if they equal or exceed 0.70 (Litwin 1995: 8). However, the acceptable size of the reliability coefficient depends on considerations, like for example what values are typically realized. While cognitive ability tests often accomplish reliability coefficients of 0.8 or larger, the coefficients for scores on subjectively scored tests of ability and achievement and for measures of typical performance (e.g. personality inventories) are often less than 0.8, sometimes substantially less (Traub 1994: 39). Another possibility to assess the reliability is to use a one-way analysis of variance (ANOVA), where the estimates of the variances of the true-score random variable and the error random variable can be derived from the mean-squares defining the respondents as independent variables. The mean-square residual,  $MS_{Res}$ , is an estimate of  $\sigma_E^2$ , while the difference between the mean square of the respondent,  $MS_p$ , and  $MS_{Res}$ , divided by the number of measurements  $n$  is an estimator of  $\sigma_T^2$  such that  $\hat{\rho}_X^2$  is given by

$$\begin{aligned}
 (7.9) \quad \hat{\rho}_X^2 &= \frac{\hat{\sigma}_T^2}{\hat{\sigma}_T^2 + \hat{\sigma}_E^2} \\
 &= \frac{\frac{1}{n}(MS_p - MS_{Res})}{\frac{1}{n}(MS_p - MS_{Res}) + MS_{Res}} \\
 &= \frac{MS_p - MS_{Res}}{MS_p + (n-1)MS_{Res}}
 \end{aligned}$$

where a hat denotes the estimated value (Traub 1994: 74).

For assessing the test-retest reliability, it is very important to only measure variables that are not likely to change over short periods of time. A fast change in the true variables results in the low test-retest reliability of the measurement instruments. In this case the low reliability does not indicate poor performance (Litwin 1995: 11). The reliability itself is influenced by several factors. First, an increasing time span between the tests decreases reliability because changes are more likely to occur. Accordingly, the test-interval should be reported (Traub 1994: 70-71). In addition, it is a problem to evaluate whether the parallel tests really satisfy their own assumptions (see formula 7.7). Unfortunately, several reasons speak against the satisfaction of the assumptions in the parallel test. A person's standing may fluctuate between the tests. It might be changed by the process of learning or deeper thinking about the items (reconsideration), or by real occurring change (Campbell, Stanley 1966; Carmines, Zeller 1979; Porst et al. 1987: 9; Traub 1994: 71-72). The processes vary from respondent to respondent. Additionally, the conditions of the test as well as the physical state of the respondent may cause changes (Traub 1994: 71-72).

*Alternate-form reliability* uses differently worded items to assess their reliability. The items must be equal in their content. We can assess alternate-form reliability by changing the order of the response sets. After applying the items and scales to the same population at different time points, we can calculate correlation coefficients  $\rho_{x,x_2}$  between the items as indicators of reliability (Litwin 1995: 13). According to Litwin (1995: 16-17), the procedure is most effective if the different time points are close together. That forces the respondent to think about the items and response sets very carefully and thus, decreases the practice effect. If we cannot conduct a retest, we have also the option of dividing the sample into two halves or even more parts and applying one of the alternate forms in one of the parts. The results of the two halves are compared using the split-halves method. We have to make sure that the selected halves are drawn randomly and we have to preclude biases regarding socio-demographic characteristics because either may cause low reliability (Hendl 2004: 48; Litwin 1995: 20-21). We can use the Spearman-Brown formula (Spearman 1910; Brown 1910) to assess the correlation between both halves. The reliability of the two-part test  $\rho_x^2$  is determined by

$$(7.10) \quad \rho_x^2 = 2 \frac{\rho_y^2}{1 + \rho_y^2}$$

where  $\rho_y^2$  is the reliability of either constituent part.

As another alternative, we can use the Cronbach's  $\alpha$  (Cronbach 1951)

$$(7.11) \quad \alpha = \frac{n}{n-1} \left[ 1 - \frac{1}{\sigma_x^2} \sum_{i=1}^n \sigma_{y_i}^2 \right]$$

to assess the quality of alternate measures of one variable. Here,  $n$  is the number of parts of the test,  $\sigma_x^2$  is the variance of the observed-score random variable for the complete test and  $\sigma_{y_i}^2$  is the variance of the observed-score random variable for the  $i$ -th part of the test. The procedure relates the variances of single items to the variance of the overall test. It has the advantage of allowing for the calculation of reliability with one and the same test (Güttler 2000: 196-197). This method is generally accepted as being as good as administering the different forms to the same sample at different time points. The critical value of  $\alpha$  depends on the number of items in the analyzed scale. As rule of thumb,  $\alpha$  should be greater than the number of items times 0.1 (Rippl, Seipel 2008: 159).

*Internal consistency reliability* is calculated for a group of items considered to measure different dimensions of one concept. It is an indicator of how well the different items measure the same issue. We should also use this measure after applying established survey instruments with long and successful track records, because measures appropriate for one population may be inappropriate for others (Litwin 1995: 21-27). For assessing internal consistency reliability, we can also use Cronbach's  $\alpha$ .<sup>130</sup> The coefficient  $\alpha$  measures how well the items fit together to form a single scale. It reflects how well the different items complement each other in their measurement of different aspects of the same variable or quality (Litwin 1995: 24). We can improve internal consistency reliability by adding more items or by reexamining the existing items for clarity.

A more recent approach for measuring internal consistency reliability is the application of Confirmatory Factor Analysis (CFA). According to theoretical assumptions, the factor models explain covariation of observed (manifest) variables with a smaller number of common unobserved factors (latent variables). Common factors affect several observed variables, while residual or unique factors affect one and only one observed variable directly (Long 1983: 15-23). In the event that variables do not measure the same latent variable, an error emerges

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<sup>130</sup> Other measurements of internal consistency reliability are the Kuder-Richardson Formula 20 (Kuder; Richardson 1937) and the reliability coefficients  $L_1$ ,  $L_2$  and  $L_3$  introduced by Guttman (1945). They are not introduced here, because in sociology mainly Cronbach's  $\alpha$  is used. However, for the interested reader an introduction can be found in Traub (1994: 86-87).

(Hair et al. 2006: 712). The residual factor measures this measurement error, and thus, indicates the reliability of a variable.

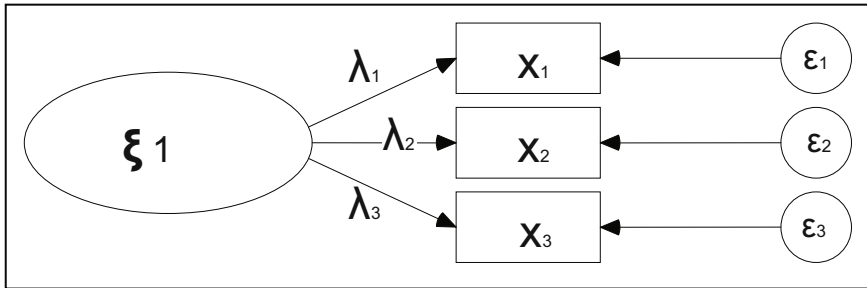
To describe the CFA formally, we need matrix algebra that can account for several indicators as well as several factors. The factor model has the following format<sup>131</sup>:

$$(7.12) \quad \mathbf{x} = \mathbf{\Lambda}\boldsymbol{\xi} + \boldsymbol{\varepsilon} \quad .$$

On the left side of the equation,  $\mathbf{x}$  is a  $(q \times 1)$  vector of observed variables or of the several items that can be explained by the factor. On the right side,  $\boldsymbol{\xi}$  is a  $(s \times 1)$  vector of the common factor that explains the variation in the items. Furthermore,  $\mathbf{\Lambda}$  is a  $(q \times s)$  matrix of factor loadings that relates observed  $\mathbf{x}$ 's to the latent  $\boldsymbol{\xi}$ 's, while  $\boldsymbol{\varepsilon}$  is a  $(q \times 1)$  vector of the residual or unique factors or the measurement error. Informally described, the factor model of one factor is displayed in figure 7. For example, variable  $X_1$  is explained by the factor  $\xi_1$  (that explains also  $X_2$  and  $X_3$ ) and the error score  $\varepsilon_1$ , where  $\lambda_1$  is the factor loading.

As stated before, we assume that the number of factors  $\boldsymbol{\xi}$  is smaller than the number of observed variables in  $\mathbf{x}$ ; that is,  $s < q$ .

Figure 7: Factor Model of One Factor



Standardizing the used variables and furthermore assuming that the observed and latent variables are measured as deviations from their means, the expected value of each vector is zero  $\mathbf{E}(\mathbf{x}) = \mathbf{0}$ ;  $\mathbf{E}(\boldsymbol{\xi}) = \mathbf{0}$  and  $\mathbf{E}(\boldsymbol{\varepsilon}) = \mathbf{0}$ . These assumptions allow us to define the covariance matrix of a vector of variables in terms of the expectation values of vector products. This results in the following population covariance matrix for the observed variables contained in  $\mathbf{x}$

<sup>131</sup> Bold variables indicate the complete matrix.

$$(7.13) \quad \Sigma = \Lambda\Phi\Lambda' + \Theta$$

with  $\Sigma = E(\mathbf{xx}')$  constructing a  $(q \times q)$  symmetric matrix<sup>132</sup>. A prime denotes a transposed matrix (or vector).  $\Phi$ , a  $(s \times s)$  symmetric matrix, contains the covariances among the common factors, and finally  $\Theta$ , a  $(q \times q)$  symmetric matrix, contains the covariances among the residual factors. Furthermore, we assume that the common factors and the unique factors (errors) are uncorrelated. That is to say, that the expectation value of the matrices of the factors  $\xi$  and the transposed vector of the unique factors  $\epsilon'$  are zero  $E(\xi\epsilon') = 0$ , as is the expectation value of the matrices of the unique factors  $\epsilon$  and the transposed vector of the factors  $\xi'$ :  $E(\epsilon\xi') = 0$  (Long 1983: 23-25).

Imposing these basic assumptions, the confirmatory factor analysis allows us to estimate the population parameters with sample data. We use a sample matrix of covariances  $S$  to estimate the parameters in  $\Lambda$ ,  $\Phi$  and  $\Theta$ <sup>133</sup> and to determine if the assumed model fits the data (indicating also validity, see part 7.2.3). To determine the reliability of a construct, we can pursue two strategies depending on the number of measurement time points. If the variables explained by a factor were tested at two times – in a test and retest - a correlation coefficient  $\rho_{x_1, x_2}$  among the factors of both time points serves as a reliability indicator. If the survey data were collected only once (i.e. no retest), we can use the construct reliability as an indicator (Bacon et al. 1995):

$$(7.14) \quad CR = \frac{\left(\sum_{i=1}^n \lambda_i\right)^2}{\left(\sum_{i=1}^n \lambda_i\right)^2 + \left(\sum_{i=1}^n \varepsilon_i\right)}$$

where  $\lambda_i$  is the factor loading of the  $i$ -th item and  $\varepsilon_i$  is the measurement error (or residual factor) of the  $i$ -th observed variable. We can also use this indicator to assess the reliability of factor constituting items measured in several tests separately. The CR has the advantage that it does not understate reliability as coefficient  $\alpha$  does. To indicate good reliability, its value should be over 0.7, although values between 0.6 and 0.7 may also be acceptable (Hair et al. 2006: 777-778).

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<sup>132</sup> The product of  $\mathbf{xx}'$ , or a vector times its transposed vector is also called dyadic product.

<sup>133</sup> For this purpose, several procedures have been established such as Unweighted Least Squares, Generalized Least Squares and Maximum Likelihood estimation. Before starting the estimation the problem of identification has to be solved by imposing constraints (for deeper discussion see Long 1983: 34-55).

*Interobserver (interrater) reliability* measures how well two or more evaluators agree in their assessment of a variable. We can evaluate it by the correlation coefficient of the data revealed by different data collectors (Litwin 1995: 27).

### 7.2.3 *Validity*

The third and most important criterion of measurement instrument quality is validity (Diekmann 2000: 233). Validity is the extent to which a measurement instrument really measures what it is supposed to (Schnell et al. 1999: 148), or more up to date, it displays that the measurement tool reveals true results (Hendl 2004: 48). We can classify four types of validity: face validity, content validity, criterion validity, and construct validity (Litwin 1995: 45).

*Face validity* can be assessed by untrained judges, such as family members or friends. It is a measure of comprehensibility of the items; untrained individuals should rate to what extent the items look okay to them. It is the least scientific measure of all the validity measures and it is often confused with content validity. However, many researchers do not consider face validity as a measure of validity at all (Litwin 1995: 35) as we will do as well in the present monograph.

*Content validity* reveals if the items represent the attribute that should be measured to a high degree (Diekmann 2000: 224). That means it is a subjective measure of how appropriate the items seem to a set of reviewers who have some knowledge of the subject matter. "The assessment of content validity typically involves an organized review of the survey's contents to ensure that it includes everything it should and does not include anything it shouldn't" (Litwin 1995: 35). These decisions are mostly made by asking experts or using pretests with multiple subpopulations (Hair et al. 2006: 136). Although it is no accurate scientific measure, it provides a good foundation on which to build a methodologically rigorous assessment of a survey's instrument validity (Litwin 1995: 35).

*Criterion validity* shows the degree to which the measurement results are associated with external criteria (Schnell et al. 1999: 149). We speak of nomological validity if we use summated scales (see Hair et al. 2006: 138). We can further divide it into concurrent and predictive validity. Concurrent validity is estimated by judging the survey instrument against some other method that is acknowledged as a "gold standard" for the same variable, like for example a published psychometric index (Hendl 2004: 49; Litwin 1995: 37). But we can also judge it against measured criteria that are theoretically connected to the evaluated item battery (Rippl, Seipel 2008: 163-164). The latter case is similar to the theoretical validity assessed in qualitative research (Johnson 1997). We de-

rive assumptions about the behavior of the measurement instrument in different subpopulations and test if it behaves accordingly.

In both cases, we calculate the correlation coefficient  $\rho_{x_1, x_2}$  (see formula 7.6) between the applied tests or between the test and criteria. We can also select an attribute or behavior that is opposite to the dimension of interest. Vice versa, low  $\rho_{x_1, x_2}$  values indicate good validity (Litwin 1995: 37). Predictive validity on the other hand is the ability of a survey instrument to forecast future events, behaviors, attitudes or outcomes. It is similar to concurrent validity but in a larger time-frame. We use the correlation coefficient between the initial test and the secondary outcome as a measure (Hendl 2004: 49; Litwin 1995: 40).

*Construct validity* measures the usability of the measurement instrument for the development of theories (Diekmann 2000: 224). In other words, it is a measure of the extent to which the items reflect the theoretical latent construct (Hair et al. 2006: 776). It measures how meaningful the scale or survey instrument is when practically used in different settings and populations. Thus, content validity is only determined after years of experience with the particular measurement instrument and it is often not calculated as a quantifiable statistic (Diekmann 2000: 224).

If we have concrete assumptions about the measurement of a specific latent construct, we can apply Confirmatory Factor Analysis to assess construct validity. According to Hair et al. (2006: 776) “one of the biggest advantages of CFA/SEM is its ability to assess the construct validity of a proposed measurement theory”. Testing the accordance between the theoretical assumptions about how the latent constructs are composed and the data is a second assessment of theoretical validity as used in qualitative research.

Construct validity itself is thought to comprise two forms of validity: convergent and divergent validity. Convergent validity implies that different methods obtaining the same information about a given trait or concept produce similar results (Hendl 2004: 49; Litwin 1995: 43-44). More concretely, it assesses the degree of correlation between two measures of the same concept. We speak of convergent validity if the items share a high proportion of variance (Hair et al. 2006: 137, 776). Divergent (discriminant) validity is indicated by the absence of a correlation of the tested construct with distinct concepts or traits (Hair et al. 2006: 137; Hendl 2004: 49; Litwin 1995: 43-44).

To assess the convergent validity, we can calculate a CFA as well. The loadings on a factor serve as validity indicators. To show good convergent validity, the standardized factor loadings should be above 0.5 or even higher (ideally 0.7). The loadings indicate the amount of variation explained by the particular

item. The percentage of variance extracted (VE) serves as a summary indicator of convergent validity

$$(7.15) \quad VE = \frac{\sum_{i=1}^n \lambda_i^2}{n} \quad ,$$

where  $\lambda_i$  is the standardized factor loading of the  $i$ -th item and  $n$  is the number of all items (Fornell, Larcker 1981). According to Hair et al. (2006: 777), the VE should also obtain values over 0.5. Lower values indicate that more error remains in the items than variance is explained by the latent factor. The overall model should have a good model fit if we are to speak of a good explanatory power of the model factors (Hair et al. 2006: 795).

The construct reliability CR (see formula 7.14) also serves as an indicator of convergent validity because it displays if items measure the same latent construct (Hair et al. 2006: 778).

We can assess discriminant validity by CFA in two different ways. First, if we fix the correlations between two constructs at one, insufficient discriminant validity is indicated by approximately the same model fit of a one-construct model and a two-construct model. However, this test very often shows a significant difference among the models and should therefore not be the first choice.

A better method is the comparison of the variance-extracted percentages for the two examined constructs with the squared correlation estimates between them. The VE should be much higher than the squared correlation coefficient to indicate good discriminant validity. Such a proportion shows that the respective latent constructs explain their item measures better than the single construct method. Accordingly, cross loadings on several factors indicate a discriminant validity problem (Hair et al. 2006: 778).

### 7.3 Other Methods for Assessing the Quality of Measures

For reasons of completeness, we devote the next section to the introduction of two further methods we are going to use for the analysis of the quality of the currently discussed social capital measures. Analyzing the data (cf. Chapters 10-12), we are faced with two problems. For one, several variables do not fulfill the data requirements necessary to conduct Pearson correlations. In detail, the variables are not measured at the interval level. To account for this, we can apply



non-parametric correlations, like the  $\tau_b$  introduced by Kendall (c.f. Gibbons 1993: 11-15):

$$(7.16) \quad \tau_b = \frac{(2(C - D))}{(\sqrt{n^2 - n - 2t'}\sqrt{n^2 - n - 2u'})} ,$$

where C is the number of concordant pairs and D is the number of discordant pairs<sup>134</sup>. t is the number of observations tied to X with  $t' = \frac{(\sum t^2 - \sum t)}{2}$ , and u is

the number of observations tied to Y, where  $u' = \frac{(\sum u^2 - \sum u)}{2}$ . Thus, “ $\tau_b$  is a

function of the geometric mean of the number of untied X pairs and the number of untied Y pairs” (Gibbons 1993: 15). We chose Kendall's  $\tau_b$  because it can be applied to very small samples (Burns, Grove 2005: 285).

Furthermore, other measures do not compose constructs, thus we cannot apply CFA to analyze their internal consistency reliability or construct validity. But to reveal the influencing variables on a reliable versus a non-reliable answer, we will use *binary logistic regressions*. This method models the effect of independent variables on the likelihood of the occurrence of specific events or the probability of the occurrence of the event in comparison to its non-occurrence (in our case the occurrence of unreliable answers). The probability of occurrence is given as

$$(7.17) \quad \pi(\underline{x}) = \frac{1}{(1 + \exp[-(\alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k)])} ,$$

where the odds ratio is  $\pi(\underline{x}) = \pi(Y = 1 | X_1, X_2, \dots, X_k)$ .  $\alpha$  represents the constant and  $\beta$  the regression coefficients of the k independent variables.

The advantage of the logistic regression is that the non-linear transformation of the data makes normal distribution of the error terms unnecessary and allows the use of categorical data (O'Connell 2006:13).

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<sup>134</sup> Concordant pairs fulfill the following condition:  $(Y_i - Y_j) < 0$  when  $(X_i - X_j) < 0$  for  $i < j$ . Discordant pairs fulfill the following condition  $(Y_i - Y_j) > 0$  when  $(X_i - X_j) > 0$  for  $i < j$ .

## 7.4 Influences on the Quality of Measurements

To allow the estimation of reasonable reliabilities, we have to consider several factors. First, the sample size should be as big as possible to allow precise reliability estimates. Second, the survey needs to draw the examinees from a well-defined population to make reasonable conclusions possible. Third, the measurements have to be independent of each other. This applies to different examinees as well as to the examinee him/herself in the case of repeated tests. This also requires satisfaction of a fourth point; we have to apply identical administrative procedures in the different experiments (Traub 1994: 67-69). Furthermore, we should avoid time limits to guarantee that the respondent has time to answer all items. The test should be short; the longer the test, the lower the reliability because the true-score variance increases resulting in bad reliability estimates (Traub 1994: 98-100). Although Traub discussed the mentioned aspects only concerning reliability, we also consider them significant for guaranteeing validity.

Personal characteristics of the respondents have a great influence on the quality of measures as well (Kogovšek, Ferligoj 2005). Different studies showed that the less-educated are faced with problems understanding questions; they hold fewer opinions than the average and have less crystallized attitudes (Converse 1964; Reuband 2001: 49). The less-educated and respondents with small cognitive competencies tend to acquiesce to statements regardless of the question and they answer in a socially desirable fashion (Martin 1983: 713-714; McClendon 1991; De Maio 1984: 273; Reuband 2001: 49, 2002: 83; Schräpler 1996: 56; Schuman, Presser 1981: 39; Zhou et al. 1999: 1003).

However, some researchers found contrary results. Reuband (2001: 49; 2002: 89) showed that better-educated respondents (with at least secondary school level education) answer dissimilarly on different specifications of items measuring the same thing. Other authors further claim that people with higher education and a higher level of involvement in public matters are more aware of socially correct answers (Hardmeier, Fontana 2006: 56; Silver et al. 1986: 623).

The elderly are cognitively less able to answer questions correctly in comparison to younger respondents. Reasons for this could be the decelerated processes of thinking or age-related cognitive limitations up to dementia (Reuband 2006: 101). In contrast to this finding, research on the elderly showed that scientists overestimated these cognitive restrictions in the past. Education level plays an important role and older people are more likely to have lower levels of education at their disposal than younger people (Lehr 1996; Reuband 2006: 101). Many studies revealed that elderly people (over 60) are able to answer adequately in face-to-face and telephone interviews (Bungard 1979; Költringer

1990; Herzog et al. 1981; Reuband 2006; Rodgers, Herzog 1992). Using a postal interview among inhabitants of Berlin that were born in 1928 or earlier, Reuband (2006) showed that older respondents did not differ in item-non-response, while sex and education were determining factors.

But the results concerning respondents' characteristics stay mixed. Analyzing the effects of method (CATI vs. CAPI) and personal characteristics on the reliability of items in egocentric networks, Kogovšek and Ferligoj (2005: 224) revealed that older people realized lower reliability and validity of their measurement values in comparison to younger people. Along with this result, the analyses showed that the items were more valid for males than for females. In contrast to Reuband's results, education showed no impact on reliability and validity. Although the results are rather contingent, they highlight the importance of the individual characteristics of the respondents on the quality of the measures.

Also the survey method influences this quality. Comparing a telephone survey to a face-to-face survey, the former reveals more reliable and valid results than the latter (Kogovšek et al. 2002). Additionally, using a telephone survey instead of a face-to-face survey reveals various advantages. First, its costs are smaller and it is easier to conduct (via CATI). Secondly, a telephone survey contains a smaller influence of the interviewer in comparison to face-to-face interviews. This is due to a greater spatial distance and the absence of visual contact between interviewer and respondents. The respondents get no information about the age or visual appearance of the interviewer that would otherwise influence their behavior (Häder, Klein 2002; Porst 2000). Although we can expect a participant in a telephone survey to answer relatively long questionnaires (up to 90 minutes) (Schnell et al. 1999), they need to be simple and the absence of the interviewer constitutes a completely different interview situation than the face-to-face interview. Accordingly, items that are appropriate in a face-to-face survey may be inappropriate for a telephone survey. The adaptation of these items makes a new quality test necessary.

## 7.5 Summary

The present chapter represents the theoretical and mathematical basis for the analyses that we will conduct in Chapters 10 to 12. It introduced the basic ideas of measurement quality especially concerning reliability and validity. We showed that the quality of measures differs depending on personal characteristics like age, sex and education and also on the interview method used.

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## 8 The Quality Study

One aim of the present monograph is the assessment of the quality of social capital measures in the Czech Republic. As we showed in part 1, many of the currently developed social capital measurement instruments that assess our model have not previously been used in the Czech Republic. Their quality and appropriateness is, thus, questionable and needs testing. This chapter introduces our main strategy and the studies we analyze to evaluate the quality of the different social capital measures.

### 8.1 The Approach of the Quality Study

Most of the social capital measurement tools have been used in the frame of face-to-face surveys only. Our aim is to utilize them in a telephone survey, because it is more economical, especially given the current financial crisis. For this purpose, we conducted the telephone survey “Social Relationships among Czech Citizens” containing a test and a retest. We administered the items in question at two time points without changing their wording (except for formal network measures, see Chapter 10). This guarantees the parallelism of our measures, because we are going to measure the same true value at different time points, thus we suppose our particular measures at time points 1 and 2 to have the same expectation value, the same variance and standard error of measurement of the true score per individual. This allows us to assess the test-retest reliability as well as the internal consistency reliability and the alternate form reliability (in the case of formal networks) of the specific items and scales. We won’t test interobserver reliability because no observation took place except for computer assisted interviews.

As discussed in Chapter 7, a direct test of content validity is not possible. To ensure content validity as accurately as possible, we pursued the following strategy: we selected measures on the basis of the social capital theory derived in part 1; next, we selected measures that were, although in different contexts, developed especially to measure social capital or network entities; finally, we dis-

cussed the measures intensively with experts<sup>135</sup> to judge their appropriateness and to adjust them for the Czech context. But we do not use this as overall proof of validity and thus, we test validity with a combination of criterion and construct validity that represent a broad test of theoretical validity. Regarding criterion validity, we cannot compare the measures applied here to a “gold standard” since various definitions of social capital have by now restrained the development of such a standard. But we can and will correlate the measures to external criteria. To see if the measures behave as theoretical considerations suggest, we correlate the measurement items with the socio-demographics of the respondent and theoretically connected criteria. We will put greater emphasis on the assessment of construct validity, because this formally evaluates if the constructs revealed in different contexts are valid for the Czech society, too. Because of its formal nature, this assessment is free from subjective influences (in choosing appropriate criteria for example). We will also use a cross-validation approach and analyze data revealed in different settings (see also Hair et al. 2006: 819). For this purpose, we will analyze one more study – the face-to-face survey “Our Society” – in addition to the test-retest study. In the following section the used surveys are quickly introduced.

## **8.2 Social Relationships among Czech Citizens 2007/2008**

We designed and analyzed the survey “Social Relationships among Czech Citizens 2007/2008”<sup>136</sup> to assess the quality of social capital measures in the Czech Republic. It is a telephone survey and contained two rounds of interviewing people 18 and older. The first part of the survey was conducted at the end of November and the beginning of December 2007 and contained 400 respondents. Half a year later (June 2008) the respondents of the first round were asked to participate a second time. The second wave realized a response rate of 32.25% questioning 129 of the respondents. Because quota samples are also appropriate for methods research (Reuband 2001: 44), but are less cost intensive than random samples, our sample was drawn randomly at the outset and then refined by quotas to represent Czech society according to sex, age, education and size and region of the respondents’ living place using CATI (the CATI chose telephone numbers randomly and the interviewer only interviewed respondents if they fit the quotas). The marketing and social research institute SC&C, spol. s.r.o. con-

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<sup>135</sup> We chose as experts the team of the Social Structure Studies Department at the IS AS CR, vvi. because they worked with social capital related topics since several years.

<sup>136</sup> In the following parts, we will refer to this survey as the “Social Relationships survey”.

ducted the interviews. The reader finds the questionnaires of the test and retest studies in appendix 15.1<sup>137</sup>.

Table 4: Frequencies of Test and Retest

	<i>Test</i>		<i>Retest</i>	
	Frequency	%	Frequency	%
<i>Sex</i>				
Male	196	49	69	53.5
Female	204	51	60	46.5
Total	400	100	129	100
<i>Age</i>				
18 – 29	100	25	39	30.2
30 – 44	116	29	31	24
45 – 59	109	27.3	33	25.6
60 and older	75	18.8	26	20.2
Total	400	100	129	100
<i>Education</i>				
Compulsory	64	16	20	15.5
Skilled Trade	161	40.3	46	35.7
Maturita (A-level)	124	31	46	35.7
University degree	51	12.8	17	13.2
Total	400	100	129	100

Data: Social Relationships among Czech Citizens

Table 5:  $\chi^2$  Test of Similar Distribution of Test and Retest

	Sex	Age	Education
$\chi^2$	1.040	2.779	1.628
Df	1	3	3
Asymp. Sig.	0.308	0.427	0.653

Data: Social Relationships among Czech Citizens

The frequencies of sex, age and education of the test and retest are displayed in table 4. While the test presents the distribution of these characteristics in the Czech society (see also Czech Statistical Office 2009), the retest includes the respondents willing to participate a second time, only. To preclude biases of self-selection, we compared the distributions of both surveys with a  $\chi^2$  test con-

<sup>137</sup> Because the author is a non-native Czech speaker, we developed the questionnaires in English and translated them into Czech. To assure their quality, we validated the Czech version via back-translation.

cerning sex, age and education as displayed in table 5<sup>138</sup>. The analysis shows that the distributions in the test and retest are similar (the tests show insignificant  $\chi^2$  values). That is, we don't find any systematic bias that would skew the analyses of Chapters 10 to 12. However, we are aware of the fact that our sample may contain unobserved heterogeneity caused by the selection of respondents by quota (Coakley et al. 2004).

### **8.3 The Survey “Our Society” (CVVM 2007-04) for Crossvalidation**

For purposes of cross-validation, we analyzed the face-to-face survey “Our Society” that contains 1011 respondents aged 15 and older selected by a quota sample. To assure the comparability with the “Social Relationships” survey, we include respondents of age 18 and older in our analyses, only. The survey was conducted shortly before the survey “Social Relationships” (in April 2007) and the population in both cases was the Czech society. Therefore, the samples were drawn from the same population and thus, fulfill the precondition for cross-validation (see Hair et al. 2006: 819). The survey “Our Society” includes measures of bridging social capital as well as the resource generator, allowing us a cross-validation of both item batteries. Unfortunately, we cannot cross-validate other item batteries of the social capital model proposed here (concerning size and density measures of formal and informal networks) because of a lack in data. In these cases, we assess reliability and criterion validity only.

### **8.4 Summary**

We introduced the test-retest survey “Social Relationships among Czech Citizens” that is the basis of the quality study discussed in this monograph. In a preliminary analysis, we showed that the data is not systematically biased comparing test and retest. Additionally, we introduced the main characteristics of the survey “Our Society” that we will use for the cross-validation of the applied social capital measures.

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<sup>138</sup> We had to forgo testing the similarity of the distributions according to size and region of the respondent's living place, because of the small number of cases in the respective categories.



## 9 Preconditions of Social Capital – The Czech Context

Before analyzing the quality of measures regarding access to and accessed social capital (see Chapters 10 to 12), the purpose of this chapter is to circumscribe the preconditions of access to social capital. As concluded in part 1 of the present monograph, access to social capital via networks is determined by cultural societal aspects, by collective assets like historical, technological and economic background, as well as by individual characteristics like sex, age and education. The latter varies according to socio-demographics of the respondent; the former two are valid for all respondents in a researched population.

In the present chapter we start with individual characteristics and proceed with important historical developments as well as technological advances that strongly influence the composition of formal and informal networks. Furthermore, we discuss the current development of formal networks and generalized trust as cultural societal aspect in the frame of civil society. Finally, we examine the international placement of the Czech Republic concerning the development of formal and informal networks.

### 9.1 Individual Characteristics

Regarding the individual characteristics of the respondent, studies show similar patterns in all countries. Generally, higher age, education and income as well as being male are connected to having bigger formal and informal networks (Fidrmuc, Gërxhani 2004; Kaasa, Parts 2008; Letki 2004, Van Oorschot et al. 2006, concerning material deprivation in the Czech Republic see Sirovátka, Mareš 2008).

### 9.2 Historical Background

Collective assets are formed by history. Their creation of formal and informal networks is their most important effect on the social capital issue (see figure 6 in

Chapter 6). While the state system influences the formation of formal networks directly via regulations and laws, informal networks form naturally, but are also indirectly influenced by the state as was the case with the Czech Republic.

Civic movements and associations as parts of formal networks have played a significant role in the Czech Republic since the 13<sup>th</sup> century, but especially during the national revival in the 19<sup>th</sup> century and the creation of the Czechoslovak Republic in 1918 (Vajdová 2005: 22; Dohnalová et al. 2003; Frič et al. 1998; Müller 2002). Civic activities were interrupted twice, first by the Nazi occupation between 1938 and 1945, and again by the Communist regime from 1948 until 1989 (Vajdová 2005: 22; Frič et al. 1998: 4).

Because of its close temporal proximity to the current system, the Communist state has a considerable impact on the contemporary distribution of formal and informal networks. Therefore, its specificities deserve a more detailed description: The Marxist society, as aimed to be realized by the Communist regimes, mainly followed two principles: for one, the state and the Leninist party controlled most life spheres politically, and in addition the party created a dependency for all goods and opportunities (Völker, Flap 2001; Walder 1986, 1994: 299).

The created shortage in commodities (Kornai (1980) on the ‘economics of shortage’) led people to create an informal economy to compensate for the lack of goods resulting in grey or black markets (Gabor 1979) as well as provision networks (Gutenberg, Neef 1991; Srubar 1991; Hölder 1992; Diewald 1995; Völker, Flap 2001: 401). Thus, people built strong ties in the family and to friends but they didn’t establish relations outside this circle (Raiser et al. 2001). This was accompanied by strong political control resulting in an “acute *problem of whom to trust* and how to decide whether someone else’s intentions were honest” (Völker, Flap 2001: 400 emphasizes in original).

According to the ideology, all public life followed the norm of collectivism (Völker, Flap 2001). Forced mass participation was common to all Communist systems especially in the Communist party. Because of the high degree of regime homogeneity, the civil society was barely present (Olson 1997: 154; Friedheim 1993). This topic is strongly discussed in the frame of the dictatorship theory (see Hjollund, Svendsen 2000; Paldam, Svendsen 2000, 2001; Raiser 1999; Kunioka, Woller 1999). Additionally, under communism underground activities, corruption and bribery developed (Fidrmuc, Gërkhani 2004). In such a system an autonomous civil society emerges from the bottom up only in the case of a serious crisis (Tong 1994: 334; Paxton 2002: 260). Such was the case in Czechoslovakia, among other Communist countries, because of the above discussed problems with the real application of Communism. That is to say, after the political opening awaking the interest of citizens in public affairs in the 1960s, the civil

initiatives culminated in their activity in the Velvet Revolution of 1989 (Frič et al. 1998). Afterwards the citizens understood civil society as defiance toward the unjust government and undemocratic conditions, and thus as protection from the state (Marada 1997: 9).

In the course of the transformation, public policy had a great impact on the development of nonprofit organizations (Kuti 1999: 52). The civil society was supported through “top-down” efforts by the state (Tong 1994: 334).

Aside from the strong impact of the state on the nonprofit sector, the transformation was accompanied by other factors that influenced it. According to Pospíšil and Rosenmayer (2006: 2), there were crises in identity, sustainability, fiscal and economic matters and effectiveness and legitimacy. Concretely, changes in the social structure took place: the middle class disappeared and the gap between the rich and poor widened. Along with the economic transformation a shrinking of disposable economic resources came. Further, unemployment started to rise and the main institutional regulators of social life as well as the relations between market, government and nonprofit sector changed (Potůček 2000: 3).

Although there were many problems, the non-profit sector itself developed dynamically between 1989 and 1997 (from 2,000 to over 66,000 NGOs) (Bayer et al. 2006: 2; Čepelka 2003). Also the civil society index documents an increase in political and civic participation between 2002-2004 and 2004-2006 (Rakušanová 2007: 16). Czech nonprofit organizations are mostly active in traditional areas like leisure activities, common interest and professional organizations and trade unions, but also in environmental protection and social service provision. Their presence in society is very small, although the sector is growing. Only a small number of citizens engage in organizations that provide social support or help, fight for human rights or engage in environmental problems. We also find weak participation in political and religious organizations (Rakušanová 2007, 2005; Vajdová 2005: 11; Potůček 2000: 6; Frič et al. 1998: 15-16; Frič, 1996). The local distribution of the civil society is dichotomous in the Czech Republic. We find regions with low participation rates on the one hand and regions with high participation rates on the other. In the former, the citizens rely upon the state if they are faced with hard times, while citizens in the latter rely less upon the state. The low participation levels led to an erosion of the traditional community and its replacement by passivity, but the non-governmental sector is still present and offers an alternative to passivity. On the other hand, in the active regions the civil society plays an important role. In Southern Moravia, for example, the church is prominent and supplements traditional relations (Rakušanová 2007: 16-17). Generally, we find an increase of formal networks themselves and the possibility to participate in them.

We not only find formal networks growing, but also informal networks profited from the transition. Under Communism, political capital in terms of one's position in the hierarchy was important, but under capitalism both cultural and economic capital are necessary. Accordingly, the citizens had to transform their capitals. "In a post-communist transition, for example, those who are well endowed with cultural capital may be able to convert their former political capital into informal social networks, which can then be usefully deployed to take advantage of new market opportunities" (Eyal et al. 1998: 7). In the transition from a socialist rank order system into capitalist class stratification (but also under Communism) mutually beneficial exchange networks have been especially important to help the citizens realize their goals. However they also work against the market mechanism and economic growth (Kolankiewicz 1996; Matějů 2002, Matějů, Vításková 2006; Pichler, Wallace 2007; Raiser et al. 2001; Sik 1994). The potential to mobilize social networks to reach one's goals in connection to the exploitation of networks in the transformation was discussed under the term "individual mobilizing social capital" (Sedláčková, Šafr 2005; Šafr, Sedláčková 2006). In comparison to Western countries it can be spoken of as an alternative way of managing social relationships (Sotiropoulos 2004). Individuals from Eastern Europe substitute their missing formal networks with informal networks including family and friends (Pichler, Wallace 2007: 425).

Accompanying this importance of the informal networks, the non-profit sector bears a negative image and stays small for several reasons. For one, many organizations of the current nonprofit sector existed also during socialist times. The negative experience of forced membership and participation in the past times is still present in peoples' minds. Thus, a significant part of the society still turns to informal social networks for assistance instead of to the civil society (Rakušanová 2007: 18). The Communist state led to passive behavior towards civil affairs. This passivity is augmented and intensified by individualism and consumerism brought along by the capitalist state system (Frič et al. 1998: 19). As a "heritage of the communist grey-zone mentality" (Rakušanová 2007: 19) a strong division between the public and private spheres is still prominent. Also, the nonprofit organizations are lacking in communication and transparency among each other making their work inefficient (Brhlíková 2004). Finally, this is accompanied by the circulation of a negative image of the nonprofit sector by the media (Frič et al. 1998: 18).

### 9.3 Technology

Additionally, the technological development of the Internet speaks in favor of constructing informal networks as well. All over the world, cyber-networks create new ways to access resources or social capital (Lin 2001). In 2005 49.6% of Czechs had access to the Internet, while the rate is 83.6% among 12 to 20-year-old citizens (Šmahel 2006). The internet is mainly used for communication with family, friends and colleagues from work. According to Šmahel and Lupač (2006, 2008), Czechs increased the number of contacts within their informal networks by using the Internet. Especially for teenagers the internet is a place to find new friends via participation in virtual communities and groups (Šmahel 2008). Accordingly, the internet makes it possible to maintain and create informal relationships more easily.

### 9.4 The Cultural Societal Aspect Generalized Trust

The Communist past not only conditioned the formation of networks, but also influenced the formation of generalized trust. As stated before, generalized trust was not existent under communism (Lukatela 2007). In extreme cases, it was even difficult to trust family members (Rothstein, Uslaner 2005). As a result, like in many post-communist societies (Raiser et al. 2001), we find low levels of generalized trust in the Czech Republic (Matějů, Vitásková 2006: 508). That represents somewhat of a barrier to the development of civil society and thus of formal networks. But Vajdová found higher trust among nonprofit organization members, so she concludes that a strengthening of the civil society can contribute to higher levels of generalized trust (Vajdová 2005: 12).

### 9.5 International Comparison

In international comparison the organized civil society of the Czech Republic is less developed than Western ones. But in Central Europe it is among the most developed (Bayer et al. 2006: 2; Rakušanová 2007: 19). Concerning the success of the transformation to democracy, the Czech Republic ranks among the “first flight” or leaders in the reform (Rose 2002: 110)<sup>139</sup>, also known as the “progres-

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<sup>139</sup> The “second flight” consists of Bulgaria, Latvia, Lithuania, Romania and Slovakia.

sive reformers” (Fish 2001: 56)<sup>140</sup> as do Slovenia, Poland and Hungary. According to Green (2002: 458), the Czech Republic has fulfilled all requirements for good civil society since 1993<sup>141</sup>. It met the criteria very early on as did Poland and Hungary. Several post-communist countries like Estonia, Armenia, Latvia and Lithuania developed it until 1998, while others didn’t (Azerbaijan, Belarus and Georgia) (Green 2002: 460).

Together with Slovenia and Slovakia, the Czech Republic shows a similar pattern of network composition and cultural societal aspects as do the Mediterranean countries Italy, France and Spain. All these countries show average levels of participation and low levels of generalized trust in comparison to other European countries (Adam 2008). Comparing the amount of formal and informal networks as well as trust, Kaasa and Parts (2008) come to the same conclusion. The Czech Republic and other Eastern European countries (Hungary, Poland, and Slovakia) are similar to Southern Europe (Spain, Italy, Greece, Malta, Slovenia, and Croatia), some countries of Western Europe (Austria, Belgium, France, and Luxembourg) and the southern part of Northern Europe (Estonia, Latvia, Lithuania, and Ireland). These countries form a cluster of eastern and western transition countries. While the northern European countries (Finland, Sweden, Iceland, Denmark plus Germany and the Netherlands) have bigger formal and smaller informal networks as well as higher generalized and institutional trust than the transition countries, the East European countries (Russian Federation, Belarus, Ukraine, Bulgaria) and the eastern part of Southern Europe (Albania, Bosnia and Herzegovina, Serbia and Montenegro) have smaller formal and informal networks and similar levels of generalized trust. The differences concerning norms of reciprocity (rejection of non-conformist behavior) are negligible.

The outlined discussions and comparisons show that the Czech Republic is similar to other post-communist countries. Informal networks prevail and low generalized trust constrains the growth of formal networks. The construction of networks in post-communist societies is mediated by three main factors: “the

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<sup>140</sup> Fish defines three categories, the second category “democratic backsliders”, describes states making progress but having continuous problems (Croatia and Romania). The third category consists of states that did not realize the democratization process yet (Serbia, Belarus and Azerbaijan).

<sup>141</sup> Green measures the development of civil society with organizational diversity, registration procedures, favorable tax treatment and political advocacy. Social interests are better served within a differentiated organization structure. Interesting here is whether or not nonprofit organizations have a legal definition. Registration procedures were evaluated in terms of simplicity, ease, expense, registrar discretion and opportunity to appeal. Favorable tax treatment helps to overcome economic obstacles for organizational groups. Of particular importance are the existence and regulation of income tax exemptions, duty and VAT concessions and deductions for charity contributions. Further, the status of economic activity is unrelated to the mission of the group. For a good civil society there should be no explicit or implicit bans on political advocacy (Green 2002: 457-460).

history of mistrust of communist organizations, the continued existence of friendship networks and close circles of trusted friends and family that were developed under communist times and even during the transition period, and a certain post-communist disappointment arising from the citizens' sense of having been let down or cheated by the new system” (Howard 2002, cited in Sirovátka, Mareš 2008: 536).

## 9.6 Summary

To introduce the preconditions of access to social capital in the Czech context, the present chapter circumscribed the main influencing factors – the Communist past with political control, collectivism, forced membership and constrained opportunities and goods; the transition to Capitalism with changes in the social structure, increasing unemployment, devaluation of the old form of political capital and consumerism and individualism. Because of these conditions, informal networks hold special importance – they already were strong under Communism but are even stronger in course of the transition to capitalism. Presently, the maintenance and creation of informal networks is facilitated by communication channels and online communities on the Internet. Generally, the development led to a low amount of generalized trust of the Czechs and a “passivity” concerning civic actions slowing down the development of formal networks. Besides this, older, male, higher-educated and well paid individuals dispose of bigger formal and informal networks

The historical, economical and technological background of the Czechs led and still leads to bigger informal networks that will therefore give more access to social capital than do formal networks. The present chapter revealed the proportion of formal and informal networks in the Czech Republic. However, it did not make conclusions about the composition of the networks. To assess this composition different measurement tools have been developed (see Chapters 3-5 in the present monograph). However, these have not been used in the Czech Republic yet. We will analyze their quality and appropriateness for the Czech context in the following three chapters.

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# 10 Access to Social Capital I – The Quality of Network Size and Density Measures of Informal and Formal Networks

Having discussed the specifics of the Czech situation in the previous chapter, we will now analyze the measurement tools appropriate for assessing the model of social capital generated in part 1 of the monograph regarding their suitability for the Czech context.

The discussion revealed two crucial aspects concerning social capital – the access to and the accessed social capital. The present chapter and Chapter 11 analyze the quality of measures of the former. The access to social capital is provided via formal and informal networks. The network size and density as well as the range and openness or bridging character of the contacts in the network are important. All four aspects determine the amount of access to resources and the diversity of those resources for both network types respectively. The telephone survey “Social Relationships” measured all these aspects at two time points. This chapter analyzes the reliability and validity of the items assessing network size and density. We start with the introduction of the operationalization of both measures for the informal and formal network and proceed with the analysis of test-retest reliabilities as well as the criterion validities of the item batteries<sup>142</sup>.

## 10.1 Operationalization of Informal Networks

### 10.1.1 *Network Size*

The measurement of network size originated from social network analysis. Two measurement strategies prevail: the sociometric and egocentric questionnaires (Jansen 2000). The roster method realized by the sociometric questionnaire is of restricted use in representative surveys, because an inclusion of all inhabitants of

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<sup>142</sup> Because the measures for network size and density cannot be assumed to measure a construct further assessments of internal consistency reliability as well as construct validity are not possible.

one city or state is not possible due to time and financial limitations. Among the egocentric questionnaires ranges Burt's (1998; 1992; see also Chapter 4 in this monograph) name generator, originally created by McCallister and Fischer (1978). This method was adapted for representative surveys asking for only 3 to 5 people and it was applied in the General Social Survey for the first time in 1985 (Burt 1984). Surveys often contain different name generator questions asking for the people the respondent discusses important matters with (see GSS) or asking for one's three best friends for example (cf. Laumann 1973). It is a widely adapted method (Cornwell 2009; Marsden 2003; Reagans, McEvily 2003; Reagans et al. 2004), but as we discussed in Chapter 4, these name generator questions are connected to several problems – the tendency to cite strong ties, questionable overlap with the real network and only a bounded number of contacts that can be named. Accordingly, different strategies to measure networks seem more appropriate. One attempt may be the abandonment of ratings limitations. We can realize this by asking for the concrete number of contacts with a specific characteristic instead. This makes it possible to describe the ego-network. An attempt for this kind of measurement of network size was made in the ISSP 2001 and we adapted it for the survey "Social Relationships". The ISSP was conducted as a face-to-face survey in the Czech Republic. However, one purpose of the present study is to test the appropriateness of the social capital measures for telephone surveys. Therefore, we analyze the quality of these measures.

We measured the network size by the number of adult brothers and sisters and the number of children that are 18 years and older (see appendix 15.1; items 1, 2, and 3-6). To assess also the occurrence of other relatives in the respondent's network, we used the indication of contact with other relatives or the answer "I do not have living relatives of this kind". If these relatives are living, they contribute to the informal network size of the respondent's ego network. However, the main purpose of these items is to measure the network density. We will describe them in part 10.1.2.

The informal network not only comprises family members, but also friends. To assess its size we asked for the number of friends in the workplace, in the neighborhood and other friends.

Table 6 displays the descriptive statistics of the items. The respondents have at maximum 13 adult siblings and 5 children. The range in the friendship network reaches up to 90. On average, the respondents have approximately 2 siblings and one child. The amount of friends is much larger at about 4 friends in the workplace and up to 11 other friends. All respondents indicated the number of adult children and siblings.

Regarding just friends, a completely different picture develops; all items contain missing values. We find the highest number of missing values (131) in the case of friends in the workplace. This is quite reasonable, because of non-working people that are still in the educational process, retired or unemployed. Furthermore, siblings and children are strong ties and their number is rather bounded. In comparison to the number of friends, it seems much easier for the respondent to indicate the concrete number of family members.

Table 6: Descriptive Statistics of Network Size Measures

Number of	N	Mean	Min.	Max
<i>Test</i>				
Adult siblings	400	1.64	0	13
Adult children	400	1.06	0	5
Friends from work	269	4.15	0	50
Friends from neighborhood	379	5.03	0	50
Other friends	384	11.2	0	90
<i>Retest</i>				
Adult siblings	129	1.69	0	8
Friends from work	100	3.62	0	45
Friends from neighborhood	127	1.77	0	20
Other friends	124	9.07	0	90

Data: Social Relationships among Czech Citizens

### 10.1.2 Network Density

Also network density is mostly measured in social network analysis. For this reason name interpreters are used (Burt 1992, 2000; McCallister, Fischer 1978). This is no problem analyzing a complete network, because the studies include the respective members of particular relationships allowing the assessment of reciprocity of the relations. However, name interpreters developed for the use in representative surveys (e.g. Burt 1984) contain the problem that the respondent is asked to make statements about relationships among his/her named contacts, that is, about relationships the respondent is no member of. In this respect, reliable statements of the respondent are highly questionable (for deeper discussion see Chapter 4). Therefore, it is only useful to measure objective characteristics of the relationship between the respondent and his/her contact, like for example the contact frequency. An attempt to this was also made in the ISSP 2001.

*Table 7:* Frequencies in Percent of Network Density Measures of the Family and Friendship Network

Contact with	N	three or more times	once or twice	not at all	I don't have	N	three or more times	once or twice	not at all	I don't have
<i>Family</i>										
Mother	397	57.2	7.3	4.0	31.5	129	58.9	6.2	2.3	32.6
Father	396	38.1	8.3	7.6	46.0	129	36.4	7.8	3.1	52.7
Children	400	42.8	4.3	2.3	50.8	120	54.2	5.0	1.7	39.2
Siblings	398	49.0	22.4	13.8	14.8	129	49.6	31.0	10.1	9.3
Uncles/aunts	397	14.4	31.7	35.0	18.9			n.a.		
Cousins	395	14.2	24.3	50.6	10.9			n.a.		
Father-in-law	393	28.0	10.2	12.5	49.4	126	24.6	14.3	11.1	50.0
Sister-in-law	393	30.3	27.5	21.6	20.6	126	27.0	31.0	23.8	18.3
Nephew/nieces	395	26.1	28.6	25.6	19.7	124	21.0	26.6	31.5	21.0
Godfather/-mother	388	3.6	7.2	21.1	68.0			n.a.		
<i>Friends</i>										
At work	397	53.7	3.5	4.0	38.8	128	55.5	7.8	1.6	35.2
Neighborhood	397	56.7	14.4	4.0	24.9	127	54.3	7.9	3.9	33.9
Other	397	49.1	29.5	11.6	9.8	129	58.9	30.2	5.4	5.4

Data: Social Relationships among Czech Citizens

We adapted these items for the survey “Social Relationships” and measured the network density by contact frequency to different relatives and groups of relatives (e.g. uncles or aunts) and the three kinds of friends (e.g. from work) in the past four weeks (see table 7). The respondent had to answer the items with (1) three or more times in the last month, (2) once or twice in the last month, (3) not at all in the last month and (4) I do not have living relatives/ friends of this

kind. In contrast to the items used in the ISSP we asked the respondent to identify personal contact as well as contact via telephone or e-mail. The retest excluded the contact frequency to uncles and aunts, cousins and godfathers and godmothers (for exact question wording see appendix 15.1, items 3a-j and 7a-c).

Table 7 displays the frequencies of the family and friendship network density measures divided by test and retest. We find that 68% of the respondents don't have a godfather or godmother. This is caused by a high amount of non-believers in the Czech Republic (67.9% of the population are non-denominational, see Czech Statistical Office (2003)). We find the highest visiting frequency among the strongest ties, with the nuclear family (mother, father, siblings and children). From 38.1% (contact to father) up to 57.2% (contact to mother) of the respondents meet their family members at least three times a month. We find similar contact frequencies in the case of friends; more than half of the respondents contact their friends at least three times a month.

## **10.2 Operationalization of Formal Network Measures**

### *10.2.1 Network Size*

To measure the network size of the formal network of which a respondent is a member, we can use the number of different memberships in associations as a proxy. We find many different operationalizations of associational memberships (see Chapter 3 in the present monograph). Several authors detected problems with these measures; biases occur if formulations are not specifically designed for the respondent (Adam 2008; Hadad 2006; Morales 2002). In addition, if we measure the concrete number of memberships in organizational types, we underestimate multiple memberships (Morales 2002: 500 and 505-506). Thus, we should include as many possible organizations in a questionnaire. This stimulates the respondent to think of all his/her memberships. However, the presented research focuses on the quality of social capital measures in the frame of a telephone survey that requires a short questionnaire. Accordingly, we have to find a compromise. Also in this case, we consider the item battery used in the ISSP 2001 to be appropriate. It asks for membership in 4 groups of associations accompanied by an open category summarizing all unnamed associations (see table 8 and for exact question wording see appendix 15.1, items 8.2a-e). We applied this item battery in the test only. As indicated by the review in Chapter 9, we find only a very small proportion of respondents that are members in associations (cf.

table 8). The highest amount of memberships is in sports, cultural or interest organizations (23.8%), and the lowest is in political associations (7.5%).

*Table 8:* Frequencies of Measures of Network Size and Density of Formal Network in Percent

	N	yes	no		N	three or more times	once or twice	not at all
<i>Test</i>								
Political, trade union or prof. association	400	7.5	92.5	P	376	2.4	3.2	94.4
Church, relig. or charity or public beneficial body	400	8.3	91.8	A	377	5.0	6.4	88.6
Sport, fitness, cul- tural/ interest org.	400	23.8	76.3	R	382	18.1	9.7	72.3
Neighbourhood civic association	400	3.8	96.3	T	378	1.9	4.2	93.9
Other association or group	400	4.3	95.8	I	376	1.9	2.4	95.7
<i>Retest</i>								
How often do you take part in any association?	n.a.			O	129	17.8	10.9	71.3

Data: Social Relationships among Czech Citizens

### 10.2.2 Network Density

Although Putnam (1993, 2000) claims that dense community networks have a positive influence on civic engagement, he did not explicitly measure their density. Besides the measurement of the number of memberships in associations, international surveys commonly measure the frequency of active participation (see e.g. EVS, WVS). As we discussed in part 10.1.2, it is useful to use objective characteristics of relationships to avoid the problem of false rating by the respondent. Similarly, the use of participation frequency seems to us a useful tool

for measuring the density of the formal networks. Also here, because of weak participation in associations as well as the time limit of a telephone survey, we consider the item battery used in the ISSP 2001 most appropriate and adapted it.

We measured the network density of the formal networks with the frequency of participation in the above mentioned 5 different kinds of associations ranging from three or more times in the last month; once or twice; to I have not taken part at all (for exact question wording see appendix 15.1, items 8.1a-e). The frequencies are displayed in table 8. Connected to the small amount of memberships, we also find a low frequency of regular participation. Only 1.9% of the respondents participated three or more times a month in neighborhood associations, while the highest amount of participation was in sports associations (27.8% participated one to three times or more in the last month). The latter percentage is higher than the percentage of memberships indicating that participation is more important to Czechs than pure membership. From theoretical point of view too, the participation frequency or formal network density is more important than network size to make sure that the respondent really gets access to resources. Passive membership comes along with formal network size, but paying the annual fee for the membership only does not necessarily translate to meeting people that might provide help or resources if needed. Accompanied by the small number of civically engaged Czechs, this was a reason for us to ask for the frequency of general participation as an alternative to the item membership in the retest. We summated the different types of associations into one item (for exact question wording see appendix 15.1, item 8.3). The retest shows a participation rate of 28.7%. This value is close to the frequency of participation in sports clubs. We will evaluate in the following part, if this alternate item is a reliable form of the item battery used in the test.

### **10.3 Test-Retest Reliability of Network Size and Density Measures**

To assess the test-retest reliability we pursued two strategies. We calculated correlation coefficients of the complete sample and we assessed the differences according to different educational level, age and sex. Because the time span between test and retest was relatively long (6 months), we further assessed the influence of changes occurring between the measurement points.

### 10.3.1 *Test-Retest Reliability of the Informal Network*

Analyzing the reliability of network size and network density measures, we are faced with two problems. The first is that the interval scaled network size measures follow no normal distribution<sup>143</sup> and the second is that the network density is measured at the ordinal level. In the first case we can use the Pearson correlation coefficient  $r$  (see formula 7.6 in Chapter 7), because we are not testing any hypotheses that would require a normal distribution (Rodgers, Nicewander 1988). But in the second case, we have to apply a non-parametric correlation. Accordingly, we will use the Pearson correlation to assess the reliability of the network size measures and Kendall's  $\tau$  (see formula 7.16 in Chapter 7) to assess the reliability of the density measures.

The long time span between test and retest might have caused changes for the respondent, thus, it is reasonable that the correlation coefficients will not always reach the proposed minimal value of 0.7. But they shouldn't depart too much from the critical value, thus, we will assume levels around 0.6 as an indicator of reasonable reliability.

To analyze the influence of sex, age and education, we calculated the correlations for the different groups separately. The small sample size of the retest forced us to create dichotomous variables indicating high education (A-level education plus university degree) or lower education (compulsory education plus skilled trade) and young respondents (18-44) or older respondents (older than 44).

As the reader can see in table 9, the test-retest reliability is very high in the case of the number of siblings ( $r = 0.747$ ). Comparing differences in educational level, age or sex shows no decreased influence on the reliability. All correlations are above or close to 0.7, except for higher education ( $r = 0.495$ ). We are faced a different picture in the case of number of friends at work, in the neighborhood and others. While the item concerning the number of other friends is generally reliable ( $r = 0.610$ ), it displays differences among the groups. Especially, higher-educated ( $r = 0.797$ ), younger respondents ( $r = 0.704$ ) and males ( $r = 0.608$ ) give the same answers at both time points. The item number of friends from work is reliable only for women ( $r = 0.913$ ). The items concerning the number of friends from the neighborhood were not reliably answered by any of the analyzed categories.

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<sup>143</sup> Although not reported here, the skewness and kurtosis of the variables indicate a non-normal distribution.



Table 9: Test-Retest Reliability of Measures of Informal and Formal Network Size and Density

		Education		Age		Sex		Changes		
General		Low	High	18-44	>44	male	fe-male	0 / 1	>1	
<i>Informal Network</i>										
<b>Number of family members</b>										
Number of siblings	r	<i>0.747</i>	<i>0.970</i>	0.495	<i>0.910</i>	<i>0.677</i>	<i>0.621</i>	<i>0.943</i>	<i>0.705</i>	<i>0.975</i>
	N	129	66	63	70	59	69	60	93	36
<b>Contact frequency with family members</b>										
Mother	t	<i>0.845</i>	<i>0.916</i>	<i>0.739</i>	0.543	<i>0.871</i>	<i>0.758</i>	<i>0.918</i>	<i>0.883</i>	<i>0.768</i>
	N	128	65	63	70	58	69	59	92	36
Father	t	<i>0.883</i>	<i>0.865</i>	<i>0.868</i>	<i>0.768</i>	<i>0.830</i>	<i>0.877</i>	<i>0.888</i>	<i>0.890</i>	<i>0.887</i>
	N	128	65	63	70	58	69	59	92	36
Children	t	<i>0.716</i>	<i>0.723</i>	<i>0.694</i>	0.488	<i>0.524</i>	<i>0.794</i>	<i>0.610</i>	<i>0.704</i>	<i>0.753</i>
	N	120	62	58	62	58	64	56	86	34
Siblings	t	<i>0.526</i>	<i>0.598</i>	<i>0.442</i>	<i>0.528</i>	<i>0.516</i>	<i>0.608</i>	<i>0.435</i>	<i>0.603</i>	<i>0.305</i>
	N	129	66	63	70	59	69	60	93	36
Father/mother-in-law	t	<i>0.697</i>	<i>0.719</i>	<i>0.685</i>	<i>0.653</i>	<i>0.694</i>	<i>0.644</i>	<i>0.721</i>	<i>0.727</i>	<i>0.631</i>
	N	125	64	61	66	59	66	59	92	33
Brother/sister-in-law	t	<i>0.533</i>	<i>0.510</i>	<i>0.561</i>	<i>0.552</i>	<i>0.489</i>	<i>0.535</i>	<i>0.535</i>	<i>0.556</i>	<i>0.516</i>
	N	125	64	61	66	59	66	59	91	34
Nephew/niece	t	<i>0.521</i>	<i>0.404</i>	<i>0.637</i>	<i>0.616</i>	<i>0.341</i>	<i>0.486</i>	<i>0.569</i>	<i>0.523</i>	<i>0.487</i>
	N	124	64	60	65	59	67	57	89	35
<b>Number of friends</b>										
At work	r	<i>0.540</i>	<i>0.554</i>	<i>0.518</i>	<i>0.534</i>	<i>0.262</i>	<i>0.525</i>	<i>0.913</i>	<i>0.606</i>	<i>0.760</i>
	N	76	31	45	53	23	51	25	54	22
Neighborhood	r	<i>0.229</i>	<i>0.352</i>	<i>0.215</i>	<i>0.213</i>	<i>0.269</i>	<i>0.087</i>	<i>0.464</i>	<i>0.370</i>	<i>0.084</i>
	N	121	61	60	67	54	66	55	88	33
Others	r	<i>0.610</i>	<i>0.365</i>	<i>0.797</i>	<i>0.704</i>	<i>0.358</i>	<i>0.608</i>	<i>0.574</i>	<i>0.491</i>	<i>0.875</i>
	N	117	57	60	65	52	63	54	87	30
<b>Contact frequency with friends</b>										
At work	t	<i>0.448</i>	<i>0.374</i>	<i>0.431</i>	<i>0.201</i>	<i>0.468</i>	<i>0.459</i>	<i>0.405</i>	<i>0.492</i>	<i>0.314</i>
	N	127	64	63	68	59	68	59	91	36
Neighborhood	t	<i>0.324</i>	<i>0.329</i>	<i>0.344</i>	<i>0.455</i>	<i>0.170</i>	<i>0.317</i>	<i>0.353</i>	<i>0.359</i>	<i>0.217</i>
	N	126	63	63	68	59	69	59	91	35
Other	t	<i>0.168</i>	<i>0.195</i>	<i>0.110</i>	<i>0.114</i>	<i>0.086</i>	<i>0.127</i>	<i>0.231</i>	<i>0.166</i>	<i>0.107</i>
	N	128	65	63	69	59	69	59	92	36
<i>Formal Network</i>										
Participation	t	<i>0.387</i>	<i>0.502</i>	<i>0.272</i>	<i>0.349</i>	<i>0.311</i>	<i>0.383</i>	<i>0.398</i>	<i>0.398</i>	<i>0.358</i>
	N	123	62	61	67	56	68	55	89	34

Notes: Pearson Correlation Coefficients r and Kendall's  $\tau$  correlations t, values in italics indicate acceptable test-retest reliabilities.

Data: Social Relationships among Czech Citizens

We find similar results for the items regarding the contact frequency to family members compared to the contact frequency with friends where none of the correlations reaches levels above 0.6 (see table 9). But also several family density measures are not reliable: the item about brothers/sisters-in-law is not reliable at all, and the item concerning siblings is only reliable for males ( $t = 0.608$ ) and the item concerning nephews/nieces is only reliable for higher-educated ( $t = 0.637$ ) and younger respondents ( $t = 0.616$ ). The latter two are very distant relatives individuals generally have little contact with. In all three cases, the pre-Christmas time of the first round might have caused higher contact frequencies, while the summertime (when the second round took place) is normally not intensively spent with (distant) relatives. This argument is also supported by a higher contact frequency in the test and a lower one in the retest (see table 7). The low reliabilities of the friendship network measures might be caused by the mobile character of friendship networks. They are shaped strongly by changes in the personal life of the respondent. Therefore, we will test the influence of changes on the friendship and family network too.

To control for the changes that could have occurred between both times of questioning, we asked: 1) if the respondent changed his/her working situation (changing working position, getting unemployed, finishing studies etc.); 2) if he or she moved; 3) if the social life changed (like births or deaths in the social circle of the respondent); 4) if the respondent got into regular interaction with new people or ended relationships and 5) if his/her living standard changed slightly (in terms of buying a new car or flat). The five items had to be answered with a yes or a no (see appendix 15.1, items 15-18). We summated the yes responses to control for the changes. To compare the test-retest correlations we constructed a dichotomous variable indicating no or one change and two and more changes. The correlations for the two respective groups display a similar picture as above. The changes have no big influence on the reliability of the measures concerning the size and the contact frequency in the family (except for the items “siblings” ( $t = 0.305$ ), “brothers/sisters-in-law” ( $t = 0.516$ ) and “nephew/niece” ( $t = 0.487$ )). However, dividing the analysis according to experienced changes, the number of friends from work are answered reliably in both groups ( $r = 0.606 - 0$  and 1 change;  $r = 0.760 -$  two and more changes) and respondents that experienced two or more changes in the time between the two interviews answer the number of other friends reliably ( $r = 0.875$ ). We cannot find reliable results concerning the number of friends from neighborhood and the contact frequency to all 3 categories of friends. But in the case of experienced changes, the correlations and thus reliability is considerably diminished. The results indicate modification in the composition of the friendship networks. A new working place, for example, brings the respondent in contact with new peo-

ple he or she can get acquainted with. This changes the number of friends at the workplace as well as the contact frequency to them. Another example concerns the moving of respondents to another place of living. This change may lead to a breakdown of the relationships with the neighbors at the old living place. The creation of friendships at the new living place takes time. Both examples result in different answers at time point two in comparison to time point one. That is to say, the low correlations are caused by changes in the true values of the measures variables, but not by low item reliability.

### *Which Effect is the Strongest?*

As we revealed in the previous part, the reliability of measures of family networks does not vary greatly according to the socio-demographic characteristics of the respondents and their experienced changes. This allows us to conclude that these variables show a satisfactory reliability making further analysis gratuitous. In contrast the measures of friendship networks show small reliabilities and we find influences of education, age, sex and changes on network size and density indicators. These findings raise the question, which indicators are most influential – are the low correlations only a result of the changes the respondents experienced and no indicator of low reliability? We cannot answer this question comparing the correlations alone. Therefore, we constructed variables indicating whether an answer is reliable or not by calculating the absolute value of the difference of the values for the test and the retest for each item individually. The constructed variables contain the values 0 (no difference) and positive values indicating non-reliable answers. We dichotomized the items according to the numbers of friends in order to control for outliers that show extremely different values at the time points and because we are interested in the fact, only, if the response is reliable or not. These reliability indicating variables now serve as dependent variables in binary logistic regressions analyzing the influences of the different sociodemographic characteristics of the respondents as well as the changes between the two time points of the interviews. We used education with two categories as was done before, because of the low sample size of the extreme categories. However, we applied age and changes as original variables in their interval scaled form. The logistic regressions were calculated in two blocks: first, we included the respondents' characteristics and changes as independent variables and then, we added the interactions between all independent variables<sup>144</sup>.

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<sup>144</sup> A logistic regression assumes that the impact of constituting factors of an interaction influence the dependent variable only in the absence of a second constituting factor. But all characteristics are present simultaneously (all respondents have a specific age, sex or education), all interactions have to be included (Brambor et al. 2006; Berry et al. 2009).

Table 10: Binary Logistic Regressions Assessing the Influence of Respondents' Characteristics and Experienced Changes on the Reliability of the Items Measuring Number of “Friends at work”, “Friends in the Neighborhood” and “Other Friends”

Number of Friends	At work		In neighborhood		Other	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Female	0.639 (0.518)	0.000* (6.054)	1.288 (0.374)	0.224 (0.832)	0.979 (0.002)	0.862 (0.004)
Age	0.955 (3.703)	0.787* (4.342)	1.022 (2.422)	0.990 (0.122)	0.986 (0.658)	1.042 (0.783)
Education (high)	1.024 (0.002)	0.000 (3.096)	0.737 (0.559)	0.109 (2.312)	0.461 (2.086)	0.265 (0.417)
Changes	2.316* (5.149)	1.128 (0.002)	1.346 (2.150)	1.059 (0.007)	0.943 (0.054)	3.718 (1.263)
Female by Age		1.297* (5.155)		1.040 (1.663)		0.966 (0.703)
Female by Education (high)		194.852 (3.539)		1.094 (0.010)		14.027 (3.350)
Female by Changes		5.388 (1.773)		1.135 (0.075)		0.771 (0.158)
Age by Education (high)		1.216 (3.122)		1.036 (1.400)		0.982 (0.185)
Age by Changes		1.017 (0.125)		0.998 (0.021)		0.970 (1.911)
Education (high) by Changes		1.114 (0.008)		1.743 (1.690)		0.727 (0.193)
Constant	9.52* (3.967)	52699.994* (4.445)	0.681 (0.279)	3.211 (0.760)	14.631** (7.015)	4.671 (0.534)
$\chi^2$	12.592	12.851	5.537	4.376	2.533	7.406
Df	4	6	4	6	4	6
Sig.	0.013	0.045	0.236	0.626	0.639	0.285
-2 Log likelihood	75.010	62.159	146.584	142.208	104.493	97.086
Cox & Snell R <sup>2</sup>	0.153	0.285	0.045	0.079	0.021	0.081
Nagelkerke R <sup>2</sup>	0.223	0.416	0.063	0.110	0.036	0.136

Notes: dependent variables: difference test-retest of number of friends at work (N=76), in the neighborhood (N=121), and other friends (N=117), odds ratio, Wald statistics in parentheses, \* p < 0.05, \*\* p < 0.01.

Data: Social Relationships among Czech Citizens

Table 11: Binary Logistic Regressions Assessing the Influence of Respondents' Characteristics and Experienced Changes on the Reliabilities of the Items Measuring Contact Frequency with Friends and the Items Measuring “Participation”

	Contact with Friends (a)			Participation	
	At work	In neighborhood	Other	Model 1	Model 2
Female	0.672 (0.068)	4.550 (1.077)	2.625 (0.390)	1.078 (0.030)	40.706 (3.740)
Age	0.997 (0.018)	1.034 (1.753)	1.051 (3.219)	0.979 (2.176)	1.041 (1.450)
Education (high)	0.227 (1.184)	1.486 (0.097)	0.375 (0.540)	2.057 (2.825)	35.132* (4.294)
Changes	1.326 (0.232)	1.315 (0.230)	0.865 (0.054)	0.923 (0.159)	1.091 (0.011)
Female by Age	1.006 (0.044)	0.954 (3.166)	0.972 (1.008)		0.917* (6.063)
Female by Education (high)	2.674 (1.434)	1.130 (0.024)	0.419 (1.082)		1.413 (0.122)
Female by Changes	0.822 (0.229)	1.109 (0.068)	0.816 (0.235)		0.757 (0.306)
Age by Education (high)	1.002 (0.008)	1.001 (0.003)	1.023 (0.692)		0.943 (3.125)
Age by Changes	0.992 (0.464)	0.998 (0.040)	0.998 (0.021)		1.004 (0.062)
Education (high) by Changes	1.226 (0.274)	0.626 (1.535)	1.496 (1.029)		0.542 (1.827)
Constant	0.978 (0.000)	0.216 (1.625)	0.224 (1.490)	0.618 (0.410)	0.039 (3.603)
$\chi^2$	6.612	7.152	20.375	5.840	13.932
df	10	10	10	4	6
Sig.	0.761	0.711	0.026	0.210	0.030
-2 Log likelihood	154.596	166.726	156.289	137.220	123.288
Cox & Snell R <sup>2</sup>	0.051	0.055	0.147	0.046	0.149
Nagelkerke R <sup>2</sup>	0.071	0.074	0.197	0.067	0.216

Notes: dependent variables: difference test-retest of contact frequency with friends at work (N=127), in the neighborhood (N=126), and other friends (N=126), and difference test-retest of the frequency of participation (N=123), odds ratio, Wald statistics in parentheses, \* p < 0.05, \*\* p < 0.01, (a) we display the complete models including interactions only, because none of the independent variables shows significant influences.

Data: Social Relationships among Czech Citizens

Table 10 displays the results concerning the reliabilities of the items measuring the number of friends. The reliability of the item “friends at work” is significantly influenced by the changes a respondent experienced between the interviews. With an increasing number of changes the probability of a different answer than at the first time point increases (odds ratio = 2.316,  $p < 0.05$ ). Including the interaction of the characteristics of the respondent and changes reveals an influence of all respondents’ qualities. Being female and higher-educated (odds ratio = 0.000,  $p < 0.05$ ) as well as older (odds ratio 0.787,  $p < 0.05$ ) decreases the probability of non-reliable answers. Controlling for the interactions demonstrates that the experienced changes have no influence. However, being both female and older increases the probability of an unreliable answer (odds ratio = 1.297,  $p < 0.05$ ). This substantiates the result of Kogovšek and Ferligoj (2005) discussed in Chapter 7. Being female as well as older increases the reliability, but the interaction of both characteristics decreases it. Concerning the model fit, the significant  $\chi^2$  values indicate that the introduced variables improve the model fit in comparison to the saturated model. Also the pseudo  $R^2$  values for this model (Cox& Snell = 0.285; Nagelkerke = 0.416) support the good explanatory character of it.

Concerning the items measuring the number of friends in the neighborhood and other friends, we do not find such straightforward results. Displayed in table 10 as well, the sociodemographic characteristics and the experienced changes between the interviews seem not to influence reliability. This is connected to a bad model fit. Regarding the number of friends from one’s neighborhood, this result was already suggested by the low correlations revealed by the previous analysis. Also the introduction of interactions among the characteristics of the respondents does not change the results. Although the correlations (see table 9) indicate an influence of the sociodemographic characteristics and changes in the reliability of the number of other friends, the binary logistic regressions do not confirm this. That is to say, all respondents equally have problems in assessing the number of friends from the neighborhood and other friends reliably. This points out to the inappropriateness of using the free recall method in both cases.

To analyze the influence of the sociodemographic characteristics of the respondents and the changes that occurred between test and retest in the case of contact to friends, we also constructed variables indicating the difference between the test and retest by taking the absolute value of the difference between the test and retest values and dichotomizing them. We calculated binary logistic regressions including all possible interactions again; their results are displayed in table 11. Once again, we find no prevailing influence of any characteristic or their interaction. This is accompanied by bad model fits. These results allow us to confirm the previous conclusion: the measures of contact frequency to friends

are not reliable and every respondent experiences similar difficulties in answering these items<sup>145</sup>.

### 10.3.2 *Alternate Form Reliability of the Formal Network*

As we discussed in the previous section, we measured the formal network differently in both interviews. In the first round, we asked for the membership and active participation in 5 different kinds of associations, and in the second round we asked for the frequency of active participation in any kind of association. To compare both measures we had to transform the variables. And we recoded the frequency items used in the test and retest (0 was used for no participation up to 2 three or more incidents of participation per month). Afterwards, we summated the frequencies of active participation in the five different kinds of associations used in the test into a single variable ranging from 0 (no activity) up to 10 (active three or more times in all associations in the last month). Comparing both, the summated variable used in the test indicates 63% non-participating respondents, while the variable applied in the retest reveals a non-participation rate of 71.3%. This indicates a difference between both items that might weaken reliability. This thought is supported by a small correlation between both variables (see table 9). Splitting the analyses into the subgroups by socio-demographic characteristics and any changes recorded does not increase the reliability.

As we did in part 10.3.1, we assess their influence using a binary logistic regression. Therefore, we dichotomized the variables used for the correlations and took the absolute value of the difference between the retest value and the test value. The results of the binary logistic regression are displayed in table 11. Only after introducing the interactions among the characteristics of the respondents and changes we reach a reasonable model fit (Cox & Snell = 0.149; Nagelkerke = 0.216). While the sociodemographic characteristics of the respondents have no influence on model 1, the interaction between age and being female decrease the probability of unreliable answers (odds ratio = 0.917;  $p < 0.05$ ). Controlling for the interactions reveals further that the items are not appropriate for the higher-educated (odds ratio = 35.1;  $p < 0.05$ ), also females seem to have difficulties answering questions about participation, although the influence is not significant (odds ratio = 40.7,  $p = 0.053$ ).

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<sup>145</sup> Similar results revealed a linear regression under the assumption that the density measures resemble interval scaled variables (cf. Häuberer 2009).

## 10.4 Criterion Validity

Generally, the effects of formal and informal networks seem additive. The bigger a respondents' network, the better is his/her access to social resources (cf. Chapter 5). However, a respondent cannot directly influence his/her number of family members, for example. Also in the case of membership in associations, it is not useful to assume the existence of a latent dimension (Stolle, Rochon 1998). Accordingly, the assessment of internal consistency reliability or construct validity is not reasonable, but the test of criterion validity is.

Regarding the single items we applied, no criteria are obvious in the current research. Concerning the size and density of networks we can derive assumptions from previous research as well as from theoretical concepts. While an individual cannot easily influence the size of the family network, he/she is able to form the friendship network and formal network. Accordingly, the criteria should be correlated with the measures of the latter two. Previous studies showed that males have bigger networks than females, as do the higher-educated in comparison to less-educated respondents (see Chapters 4 and 5 in this monograph). Concerning age, older people show an increase in close strong ties and decrease in the number of friends (van Tilburg 1998).

Furthermore, as we concluded in the first part of the monograph, generalized trust and norms of reciprocity or cultural societal aspects are preconditions of access to social capital. Accordingly, we should find a positive relationship between both network size as well as density (as Putnam's concept suggests as well, cf. Chapter 3). However, a multitude of research showed that this is not necessarily the case.

We measured generalized trust with three items of the Rosenberg (1956, 1957) scale<sup>146</sup> and norms of reciprocity with attitudes concerning people's living together<sup>147</sup>.

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<sup>146</sup> We included the following items: "There are only few people I can trust entirely"; "Generally you can be sure that others want the best for you"; and "Unless you take care, others will take advantage of you". All items had to be answered on a 4 point scale (1 = strongly agree, 2 = agree, 3 = disagree, 4 = strongly disagree). See items 12f to 12h in appendix 15.1. For the analyses the item "others want one's best" was recoded to assure that high values indicate high levels of generalized trust. We created the trust index by factoring the items using the regression method. Cronbach's  $\alpha = 0.399$ .

<sup>147</sup> We included the following items: "Adult Children are obliged to take care of their elderly parents", and "It is alright to associate with people just because you know they might be of benefit to you". See items 12d and 12e in appendix 15.1. Agreement with the first item indicates affirming, agreement with the second absence of norms of reciprocity. Therefore, we recoded the first item to realize that high values indicate acceptance of norms of reciprocity. The questions also had to be answered on a 4-point scale ranging from 1 = strongly agree to 4 = strongly disagree. The norms index was created by factoring the items using the regression method. Cronbach's  $\alpha = 0.179$ .



Also the personality of the respondent might influence his/her network compositions. Individuals with a psychological predisposition for establishing contacts (extraversion) should dispose of more diverse networks. We adopted the dimension of the personal traits extraversion (E) – introversion (I) from Eysenck (1973)<sup>148</sup>.

Table 12: Criterion Validity of Network Size and Density Measures

		Sex	Age	Education	Extraversion	Gen. trust	Norms of reciprocity
<i>Informal Network</i>							
<i>Family</i>							
Size	p	-0.039	0.278	-0.130	-0.059	-0.053	-0.001
	N	400	400	400	395	344	344
Density	t	-0.105	-0.390	0.153	0.077	-0.056	0.053
	N	399	399	399	394	344	344
<i>Friends</i>							
Size	p	-0.117	-0.124	-0.079	0.206	0.023	-0.077
	N	399	399	399	394	343	343
Density	t	-0.106	-0.139	0.058	0.070	0.047	-0.011
	N	387	387	387	382	332	332
<i>Formal network</i>							
Size	t	-0.132	-0.136	0.207	0.162	0.010	0.041
	N	400	400	400	395	344	344
Density (test)	t	-0.096	-0.135	0.206	0.178	0.006	-0.022
	N	386	386	386	382	344	344
Density (retest)	t	-0.067	-0.186	0.178	0.074	0.052	-0.058
	N	129	129	129	129	112	112

Notes: Pearson Correlations r, Kendall's  $\tau$  correlations t.

Data: Social Relationships among Czech Citizen

To analyze the criterion validity, we evaluated the particular items measuring the size and density of the informal and formal networks applied in the test<sup>149</sup>. Because the informal network represents strong (family) and weak (friend) ties, we constructed the indicators for the two groups separately. Additionally, we included the recoded alternate form measure of the density of a re-

<sup>148</sup> It was asked for the agreement (scale 1-4) with items by which the respondent evaluates himself as 1 "active, vigorous"(E+), 2 "he/she likes to meet new people"(E+), 3 "he/she is in the conversation with unknown people more reserved" (I+). See items 121 – 12m in appendix 15.1. The extroversion index was created by factoring the items using the regression method. Cronbach's  $\alpha = 0.504$ .

<sup>149</sup> We used the test, only, because the sample size was bigger in the test than in the retest. Thus the estimates are less biased.

spondent's formal network. The results of the correlations with the criteria are displayed in table 12. As was done previously, we apply Pearson correlations for the interval scaled measures of network size and Kendall's  $\tau$  for the other ordinal scaled measures.

Concerning the sociodemographics, the results indicate good criterion validity; the correlations behave as expected. The measures correlate little with sex, indicating only small differences among genders. Generally, males tend to have bigger and denser formal and informal networks as do younger respondents. Older people only have bigger family networks ( $r = 0.278$ ), otherwise the networks seem similar among older and younger respondents. Higher-educated respondents are more likely to participate in formal networks ( $t = 0.206$  (test);  $t = 0.178$  (retest)), and be members in associations ( $t = 0.207$ ).

The correlations between generalized trust and norms of reciprocity are extremely low. These results are reasonable; because previous studies showed similar results that are mainly influenced by inappropriate measures (see Chapter 3). However, the measurement tool of extraversion is generally seen as a good one. As can be expected, extraverts dispose of bigger friendship networks ( $r = 0.206$ ), and they tend to participate in formal networks (membership  $t = 0.162$ ; participation  $t = 0.178$ ). No other measures reasonably vary according to the psychological predisposition of the respondent.

In summary, the results allow us to consider all item batteries as criterion valid.

## 10.5 Summary

Applying the network size and density measures in the telephone survey "Social Relationships among Czech Citizens" revealed mixed results concerning their test-retest reliability. While the items measuring the number of and contact frequency to family members are highly reliable, the items assessing the number of and contact frequency to friends from different backgrounds are not. A more detailed analysis using binary logistic regressions revealed that the low reliability of the item number of friends at work can be explained by the changes the respondent experienced (decreasing the reliability) as well as the respondent's individual characteristics (being female or older increases the reliability, and the interaction of these two decreases it). However, the items regarding the number of friends in the neighborhood and other friends cannot be explained by any of the tested indicators – they are difficult to rate for all respondents equally. This indicates the complete inappropriateness of these items. The question of whether or not this is caused by the use in a telephone survey has to be assessed in future

research. However, the bounded time frame as well as the increased anonymity in a telephone survey seems to lead the respondents to freely rate the number of friends without thinking twice about it. A second explanation may also be reasonable: friendship networks are mostly much larger and not as strictly circumscribed as family networks defined by legal contracts. Accordingly, the number of family members is always present to the respondent; however the number of friends is not. Therefore, a process of reconsidering is likely – while the respondent rates the number of friends freely in the first round, this interview may encourage him/her to think more deeply about the number of friends (see Chapter 7). The thinking process results in a different answer in the retest. As a solution to this problem in future research, the respondent's attention should be called to this problem and he/she should be allowed more time for his/her answer. Furthermore, we revealed similar results in the case of contact frequency to friends; the items are not reliable for specific categories of respondents as all similarly have problems answering correctly. Here the same reasons for the low reliability in the number of friends may also apply to the contact frequency.

The analysis of the alternate measures of the formal network also revealed very poor reliability. The items seem more reliable for older females and less reliable for higher-educated respondents. A reason for their low reliability may lie in the use of different items for different true values.

In summary, the measures of the family network are qualitatively good; nothing speaks against their use in future research. In contrast, the low reliability of the other measures indicates the necessity to refine them.

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# 11 Access to Social Capital II - The Quality of Measures of Range and Openness/ Structural Holes of Informal and Formal Networks<sup>150</sup>

As we discussed in part one of this monograph, the access to social capital is not only mediated by network size and density of informal as well as formal networks (discussed in the previous chapter), but also by range and openness or spanning structural holes. In this chapter we will introduce the operationalization of these measures and we will test the test-retest reliabilities, internal consistency reliabilities as well as the construct and criterion validities.

## 11.1 Operationalization

Burt (1984, 1992) introduced network measures for structural holes for small as well as big samples known as the name generator. However, its application reveals several problems like the overestimation of strong ties and the inadequacy of measuring the diversity of the networks (see Chapter 4 for detailed discussion). Accordingly, it is useful to search for other measures for structural holes. A similar concept to the one of structural holes is Putnam's (2000) concept of bridging social capital (BSC). Its measurements may be a useful tool for measuring the openness of a network. The easiest way to conceptualize it is as the extent to which individuals are connected to other participants with different characteristics. This conceptualization has the advantage that it covers besides the measure of openness also the measurement of the range of the network.

The concept was operationalized first in the frame of the Social Capital Community Benchmark Survey (SCCBS)<sup>151</sup>. Because the questionnaire aims to measure social capital in small localities, it surveys diversity of friendship bonds by using the question, “Do you have, in your broad circle of friends, someone who is...”: a manual laborer; a recipient of social allowances; is in possession of a summer house; belongs to a different confession or religion; is Caucasian, of

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<sup>150</sup> This chapter was prepared with aid of research funding from the Czech Ministry of Education, Youth, and Sports for a project entitled “Shared values and behavior norms...” (Grant No. 2D06014).

<sup>151</sup> The reader finds more information online: [www.ksg.harvard.edu/saguaro/communitysurvey](http://www.ksg.harvard.edu/saguaro/communitysurvey).

Latino origin, Asian origin, Afro-American origin or of a different sexual orientation; a community leader, etc. The more of these friends the respondent states, the higher is his/her amount of bridging social capital.

A similarly innovative approach to measuring BSC, which is close to the above stated survey, has been introduced by the Polish sociologist Katarzyna Pająk (2006). In principle, her method measures the quantity of heterogeneous social bonds among friends. Respondents are asked in a standardized questionnaire to name the frequency of existence of socially distant persons in their surroundings in different dimensions, such as socio-demographic characteristics, interests and lifestyle (see Chapter 4, box 3 for concrete item wording). This battery has been tested on a sample of a population of university students in Warsaw, and thus, not all items are useful for the common adult population. The exploratory factor analysis indicated that social capital measured in this way is comprised of three dimensions: Outgroups, different Interests and different Lifestyles<sup>152</sup>.

At first, this item battery was adapted for the Czech context in the frame of the survey “Our Society”. The items in the BSC series asked for the number of friends with different characteristics or from different surroundings. Given the questions, “In the circle of your friends belong people:...”, the respondents had to evaluate the number of friends answering on a scale ranging from “no one at all”, to “almost everyone”<sup>153</sup>. The BSC item battery was adapted for the conditions of the Czech adult population. Pająk's item f) not classmates from high school was removed and the items h) listening to different music and i) reading of books by different authors were replaced by more general questions regarding ways of spending leisure time and with respect to different cultural taste. After discussions within the team, the battery was enhanced by the conflicts perceived in the Czech Republic: differences in political attitudes and conflicts between the countryside and towns. The item battery was also supplemented by a question inquiring about the existence of friends who are non-believers, if the respondent is a believer him/herself, and vice versa. In the case of nationality, Slovaks were

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<sup>152</sup> The author further verified the validity of this question series by means of connectedness with attitudes towards foreigners: Personal trust and sympathies towards foreign nationalities (Czechs, Jews, Ukrainians, Germans, and Russians) and perceived affinity towards these nationalities. For the verification of the validity of the BSC scale, the authors included an experiment measuring the ascription of guilt into the survey. Respondents had to assess the guilt in a hypothetical case of a doctor who causes the death of a female patient. In the first half of the questionnaire, it was stated that the doctor is of Polish nationality (a member of their own group); in the second half that he is of Russian nationality (a member of a foreign group). The results indicated - although not very convincingly - that a higher extent of BSC lowers the inter-group prejudice in the sense of favoring members of their own group.

<sup>153</sup> The answering categories were divided in: none at all, sporadically, a few, lot of, and almost everyone.

not counted as foreigners because of their former common history (for the precise format of this battery, see appendix 15.2). Including respondents of age 21 and older, the survey revealed the same factor structure – Outgroups, Lifestyle and Interests – as Pajač did (see Šafr, Häuberer 2007a, b).

We also adapted the bridging social capital item battery<sup>154</sup> to the survey “Social Relationships” including items measuring the three factors mentioned above. The formerly used 5-point scale for answering the items seems questionable to us. One problem is that the answers strongly dependent on the comprehension of the respondent regarding the meaning of the different categories. In addition, the size of the friendship network of the respondent determines the meaning of “few” and “a lot”. For example, a respondent with a big network will estimate the amount of 5 friends with the specific characteristic as “a few” while a respondent with a small network will interpret them as “a lot”. Additionally, the answering categories might evoke an overestimation of the amount of friends with the specific characteristic, because the four categories naming different amounts of friends in contrast to only one category “none” may imply that the having of these friend is socially desirable. As a result, we used a different approach in the “Social Relationships” survey asking for the concrete number of persons with different characteristics. Additionally, we asked not only for the amount of friends, but also for the number of family members and acquaintances from the association the respondent is a member in. Family members constitute strong ties; friends and acquaintances constitute weak ones. We asked for acquaintances from the association, to account for formal ties while friends represent informal ties. The survey included the following characteristics to measure Outgroups: “different nationality”, “different ethnicity” and “different sexual orientation”. Different Lifestyle was measured with the items “different age, generation”; “much poorer”; “who lives in town, if you live in the country or who lives in the country, if you live in a town”<sup>155</sup>; “believes, if you are non-believer or is non-believer, if you are believing”. All items concerning the two mentioned factors were measured in the test and the retest. The retest also contained items to measure the factor of different interests: “different free-time activities”; “different political attitude” and “different cultural taste”, while the additional item “much wealthier” was measured in both time points (See appendix 15.1, items 11.8-11.18).

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<sup>154</sup> Some items contained small changes in the question wording. For comparison see appendices 15.1 and 15.2.

<sup>155</sup> This item was split into two items. Depending on a former answer of living place, the respondent was asked how many family members, friends or acquaintances live in a town or country.

Table 13: Frequencies of the Bridging Social Capital Item Battery

	N	Mean	Min.	Max		N	Mean	Min.	Max	
<i>Family</i>										
Age, generation	387	4.82	0	60		128	4.59	0	28	
Nationality	398	0.26	0	10		129	0.29	0	9	
Ethnic group	399	0.08	0	5		129	0.05	0	3	
Sexual orientation	390	0.10	0	10		124	0.06	0	2	
Poorer	394	0.68	0	30	R E T E S T	126	0.71	0	20	
Wealthier	391	1.12	0	10		128	1.11	0	10	
Live in town/ country	399	2.47	0	40		129	1.97	0	25	
Believer/ non-believer	373	1.62	0	50		115	0.88	0	12	
Freetime activity						120	3.48	0	25	
Polit. attitude						110	1.50	0	15	
Cultural taste						115	1.67	0	20	
<i>Friends</i>										
Age, generation	391	2.54	0	30			129	2.89	0	20
Nationality	396	0.79	0	50			128	0.71	0	20
Ethnic group	398	0.48	0	50		129	0.31	0	10	
Sexual orientation	383	0.20	0	10		125	0.21	0	3	
Poorer	390	1.09	0	50	R E T E S T	126	1.31	0	20	
Wealthier	388	2.05	0	70		126	1.81	0	20	
Live in town/ country	393	3.09	0	50		129	2.57	0	30	
Believer/ non-believer	350	1.47	0	50		108	1.03	0	15	
Freetime activity						117	3.56	0	50	
Polit. attitude						105	2.00	0	12	
Cultural taste						114	1.64	0	25	
<i>Acquaintances</i>										
Age, generation	138	3.83	0	40			36	3.92	0	60
Nationality	139	0.50	0	20			37	0.35	0	10
Ethnic group	142	0.27	0	10		37	0.08	0	2	
Sexual orientation	134	0.43	0	45		34	0.00	0	0	
Poorer	129	0.64	0	12	R E T E S T	34	1.09	0	20	
Wealthier	127	2.41	0	40		34	1.50	0	13	
Live in town/ country	135	3.01	0	70		36	3.44	0	50	
Believer/ non-believer	122	2.69	0	60		30	0.80	0	12	
Freetime activity						33	2.88	0	30	
Polit. attitude						29	2.34	0	15	
Cultural taste						31	2.00	0	25	

Data: Social Relationships among Czech Citizens



The frequencies of the bridging social capital item batteries are displayed in table 13. The number of family members, friends and acquaintances with different characteristics than the respondent range from 0 to 70. Especially the categories “different nationality”, “ethnic group” and “sexual orientation” show small mean values (ranging from 0.05 up to 0.79) as well as a small range in all three networks. This is reasonable, because networks form mainly according to the homophily principle (McPherson et al. 2001; Šafr, Häuberer 2008a). Furthermore, we find only a small amount of foreigners living in the Czech Republic (according to the Czech Statistical Office (2008) only 4.2% of the population are foreigners with longterm or permanent stay in the Czech Republic) making contact with them difficult.

The respondents have on average the most family members (4.82) and acquaintances (3.92) of different age while the highest number of friends lives in town vs. in the country (3.09). Including the items in the retest reveals that even more friends, on average 3.56, have different “free-time activities”.

We find the most missing values with the items concerning the number of acquaintances. This is caused by the small number of memberships in associations of the Czech citizens and was suggested by the discussion in Chapter 9. Especially the retest realizes only a valid number of at most 37 cases (making multivariate analyses inapplicable). Putting this aside, the highest missing values occur concerning the number of family members (27) and friends (50) that “believe vs. do not believe”. This might be caused by the low importance of believing. As noted in the previous chapter, 67.9% of the Czechs are non-denominational. Accordingly, most of the respondents just don't know, if a contact believes or not. A similar reaction occurs concerning the item asking for a different “political attitude” revealing the most missing values among the items included in the retest (19 concerning family members, and 24 concerning friends).

## 11.2 Test-Retest Reliability

To analyze the test-retest reliability by item, we calculate Pearson correlations<sup>156</sup> (for calculation see formula 7.6 in Chapter 7). The results are displayed in table 14 and indicate extremely low test-retest reliabilities. Only few items show correlations above 0.7 - “different ethnic group” (in the case of friends  $r = 0.736$ ; in

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<sup>156</sup> As we noted in section 10.3.1, for the estimation of the correlation coefficient the assumption of a normal distribution mustn't be imposed (Rodgers, Nicewander 1988). Besides this, the free recall method used guarantees an interval level of the variables. Therefore, Pearson correlations can be applied to assess the reliability.

case of acquaintances  $r = 0.870$ ); “different sexual orientation” in the family ( $r = 0.829$ ); and “people poorer than me” in the case of acquaintances ( $r = 0.701$ ). Because of the long time between test and retest, the reliabilities may be lowered by occurring changes. Therefore, it is useful to assume lower correlations around 0.6, but this increases the number of reliable items only sporadically, namely by the item “lives in town vs. in the country” among acquaintances ( $r = 0.655$ ).

Table 14: Test-Retest Reliability of the Bridging Social Capital Items

		Family	Friends	Acquaintances
Age, generation	r	0.432	0.311	0.004
	N	124	126	28
Nationality	r	0.154	0.059	-0.028
	N	127	125	29
Ethnic group	r	0.241	0.736	0.870
	N	128	127	29
Sexual orientation	r	0.829	0.585	.(a)
	N	121	117	25
Poorer	r	0.027	0.332	0.701
	N	125	122	23
Wealthier	r	0.260	0.322	0.287
	N	125	121	23
Live in town/ country	r	0.418	0.417	0.655
	N	128	125	27
Believer/ nonbeliever	r	0.088	0.239	0.256
	N	120	102	20

Notes: Pearson Correlation Coefficient r; (a) cannot be computed because at least one of the variables is a constant; values in italics indicate reliable items.

Data: Social Relationships among Czech Citizens

One could argue that the applied free recall method causes this unreliability; however we find reasonable reliability concerning the resource generator items using free recall discussed in Chapter 12. Accordingly, the bridging social capital items seem to be especially difficult to answer for the respondents. This makes a more detailed analysis necessary, to find out which specific characteristics of the respondents cause these difficulties.

### 11.2.1 Sex, Age and Education Differences in the Reliability and the Impact of Changes on Answering Behavior

To also assess the reliability differences concerning socio-demographic characteristics of the respondents and their experienced changes, we calculated the correlations for the different groups (concerning sex, age, education and changes)<sup>157</sup> as we did in Chapter 10. Because of the small number of respondents that were members in an association in the retest, we had to exclude these items from the following analysis.

The reader finds the results in table 15. Concerning the number of family members with different characteristics, the items are generally reliable for females (except for the items “different nationality”  $r = -0.045$  and “poorer than me”  $r = 0.085$ ) while for males only the item “different sexual orientation” is reliable. Concerning education the results are mixed. While the items “different generation” ( $r = 0.642$ ) and “lives in town vs. in the country” ( $r = 0.657$ ) are reliable for the higher-educated, the items “different ethnic group” ( $r = 0.904$ ) and “believes vs. does not believe” ( $r = 0.611$ ) are reliable for the less-educated respondents only. The item “different sexual orientation” is reliable in both cases ( $r = 0.883$  - less-educated;  $r = 0.695$  – higher-educated). Comparing younger and older respondents reveals that the item “different ethnic group” ( $r = 0.701$ ) is reliable for the older age group, and the item “believes vs. does not believe” ( $r = 0.565$ ) can be considered reliable for the younger age group. Again the item “different sexual orientation” is reliable in both cases ( $r = 0.841$  – 18-44-year-old;  $r = 0.825$  – over-44-years-old). The same applies regardless of the changes the respondents experienced ( $r = 0.851$  – 0 and 1 change;  $r = 0.697$  more than 1 change). Furthermore, only respondents that experienced more than one change tend to give the same answers in the second round. This accounts for the items “different generation” ( $r = 0.603$ ); “lives in town vs. in the country” ( $r = 0.654$ ) and “believes vs. does not believe” ( $r = 0.785$ ).

*In summary*, only the item “different sexual orientation” is reliable in all analyzed categories and the items “different nationality” and “poorer” are not reliable in any of the categories. This indicates that the latter two items are not useful at all and should be revised.

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<sup>157</sup> As we did in Chapter 10, we collapsed the assessed 4 educational categories into two: lower education (compulsory education and skilled trade) and higher education (A-level and university degree); age was split into two groups too: respondents of age 18-44 and respondents older than 44 and the items concerning changes that occurred between the test and retest (1. change of working situation; 2. moving; 3. changes in social life; 4. interaction with new people or breaking of relationships; and 5. slight change of living standard) were summed up and recoded where 0 indicates no or one change and 1 indicates two or more changes.

Table 15: Test-Retest Reliability of BSC Item Battery Divided by Respondents' Characteristics

		Education		Age		Sex		Changes	
		low	high	18-44	>44	male	female	0 / 1	> 1
<i>Family</i>									
Age, generation	r	0.225	0.642	0.408	0.480	0.358	0.587	0.364	0.603
	N	61	63	67	57	67	57	89	35
Nationality	r	0.483	-0.048	0.100	0.155	0.283	-0.045	0.152	-0.038
	N	65	62	69	58	68	59	92	35
Ethn. group	r	0.904	-0.039	-0.042	0.701	-0.035	0.904	0.372	-0.039
	N	65	63	70	58	69	59	92	36
Sexual orientation	r	0.883	0.695	0.841	0.825	0.910	0.759	0.851	0.697
	N	60	61	66	55	64	57	86	35
Poorer	r	-0.026	0.142	0.161	-0.033	-0.003	0.085	0.038	-0.007
	N	65	60	69	56	67	58	90	35
Wealthier	r	0.136	0.515	0.392	0.340	0.119	0.600	0.224	0.539
	N	64	62	69	57	69	57	92	34
Live town/country	r	0.111	0.657	0.515	0.287	0.171	0.626	0.157	0.654
	N	66	63	70	59	69	60	93	36
Believer/nonbeliever	r	0.611	0.343	0.565	0.206	0.186	0.501	0.359	0.785
	N	53	54	62	45	59	48	77	30
<i>Friends</i>									
Age, generation	r	0.113	0.436	0.286	0.400	0.280	0.364	0.357	0.239
	N	63	63	69	57	67	59	91	35
Nationality	r	0.043	0.114	0.025	0.248	0.044	0.173	0.144	0.109
	N	63	62	69	56	67	58	90	35
Ethn. group	r	0.892	0.341	0.729	0.769	0.776	0.744	0.701	0.783
	N	64	63	70	57	68	59	91	36
Sexual orientation	r	0.803	0.451	0.592	(a)	0.590	0.567	0.545	0.592
	N	59	58	64	53	59	58	86	31
Poorer	r	0.243	0.633	0.443	-0.091	0.445	0.075	0.303	0.331
	N	63	59	67	55	66	56	87	35
Wealthier	r	0.152	0.554	0.297	0.490	0.149	0.708	0.238	0.358
	N	61	60	66	55	66	55	87	34
Live town/country	r	0.393	0.460	0.377	0.504	0.437	0.406	0.395	0.443
	N	62	63	68	57	66	59	90	35
Believer/nonbeliever	r	0.184	0.351	0.272	0.093	0.194	0.335	0.412	0.145
	N	47	55	60	42	53	49	71	31

Notes: Pearson Correlation Coefficient r, (a) cannot be computed because at least one of the variables is constant, values in italics indicate good test-retest reliabilities.

Data: Social Relationships among Czech Citizens

Concerning the number of friends with different characteristics, the items “different generation”, “different nationality”, “lives in town vs. in the country” and “believes vs. does not believe” are not reliable in any of the tested categories. In contrast the items “different ethnic group” and “different sexual orienta-

tion” reveal reliable answers in all categories, except for higher-educated ( $r = 0.341$  – “ethnic group”;  $r = 0.451$  - “sexual orientation”). While the item “poorer” is only reliable for the higher-educated ( $r = 0.633$ ). The item “wealthier” is only reliable for females ( $r = 0.708$ ) and “lives in town vs. in the country” seems reliable for older respondents ( $r = 0.504$ ), only. As is the case concerning the number of family members with different characteristics, the items concerning the number of friends show bad test-retest reliabilities as well.

Generally, we cannot reveal any pattern of influencing characteristics of the respondent on the test-retest reliability. These mixed results indicate that the tested items are of limited use. The only reliable items seem to be “sexual orientation” and “different ethnic group” (for friends). Therefore, we conclude that the bridging social capital item battery has to be revised for future research.

However, the long time between test and retest could have caused additional errors. Analyzing the reliability of a complete construct using Structural Equation Modeling, we can better account for these errors than using correlations, because the errors are directly included in the calculation (see Chapter 7). Accordingly, it is reasonable to analyze the internal consistency reliabilities of the constructs measured, as will be done in the following section.

### **11.3 Internal Consistency and Test-Retest Reliabilities of the Constructs Outgroup and Lifestyle**

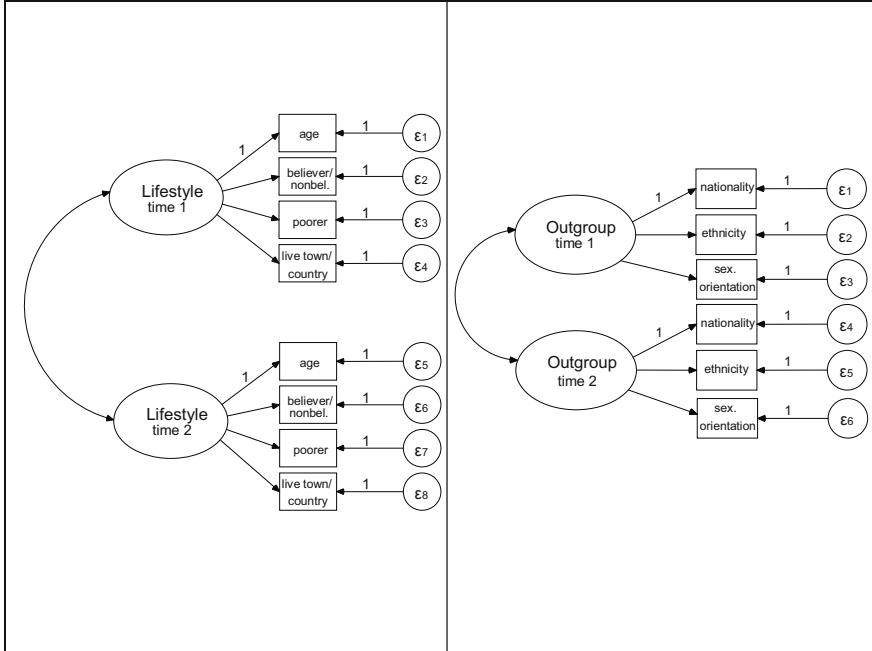
As discussed in the previous section the survey “Social Relationships” contained items to measure two dimensions of bridging social capital in the test and retest – contact to Outgroups and people with a different Lifestyle. Although the test-retest reliabilities are rather low, this might not influence the reliability of the construct strongly (as is the case in Chapter 12). Accordingly, we will test the internal constituency as well as the test-retest reliabilities of the constructs in the following section. Although previous studies asked only for the broader circle of friends and found the tested factor structure (see Pajak 2006; Šafr, Häuberer 2007a, b, 2008b), it is reasonable to assume to find the same factor structure among family members and acquaintances.

To analyze the internal consistency reliability, two possibilities of testing are available as discussed in Chapter 7. First, we can use the Cronbach's  $\alpha$  of the scale or secondly, a Confirmatory Factor Analysis (CFA). Additionally, the CFA allows us to assess the test-retest reliabilities of the constructs.

As the introduction of the empirics suggests, the data is interval scaled, but not normal distributed. This forces us to refrain from using Cronbach's  $\alpha$ , because it assumes a normal distribution (Zumbo 1999). However, in the frame of the

CFA, we find the procedure of bootstrapping to account for non-normal distribution. Thus, we will test the models displayed in figure 8 with its help.

Figure 8: CFA Models of the Constructs Lifestyle (left) and Outgroups (right) for Testing Internal Consistency and Test-Retest Reliabilities



To indicate good internal consistency reliability the factors should explain the variation of the variables well, that is, they should show high loadings (at minimum 0.5). Furthermore, if the test-retest reliability is high too, the correlations among the constructs revealed at both time points should be above 0.7 (see Chapter 7). The results of the present study are displayed in tables 16 and 17 and suggest that the models for neither Lifestyle nor Outgroups fulfill both criteria. A problem occurred with the identification of the models. While additional constraints (correlating the errors e4 and e8 in the model for Lifestyle and constraining the error variance of the item “ethnic group (test)” to 1 in the model for Outgroups) made it possible to identify both models of bridging social capital among friends, we could not identify the model concerning Outgroups at all. This shows

that the model is not valid in the context of family members supporting our conclusion in the previous part to revise the used items.

Targeting the correlations between the constructs of Lifestyle (for friends and family), neither of them reached the critical value of 0.7, but both reach 0.5 ( $r = 0.552$  – friends;  $r = 0.651$  – family). However, half of the factor loadings are below 0.5 indicating the factors do not explain the variation in the variables well. Also the  $\chi^2$  values (53.722 – friends; 138.532 – family members) are significant at the 1% level. This indicates a bad model fit as well as a bad internal consistency reliability of the items.

Although Anderson and Amemiya (1988) showed that the confirmatory factor analysis as calculated with conventional statistical software (like Lisrel) is applicable also to other distributions than the normal distribution, we want to investigate our results to be sure. One possibility to account for non-normal distributed data is the method of bootstrapping. In comparison to the traditional parametric approach where mostly a normal distribution of the sample is assumed, the bootstrapping procedure estimates the distribution of the sample itself, while assuming an analogy between sample and population. For this purpose, the method draws samples from the given data file (mostly using the Monte Carlo method) randomly, and examines the variation of the statistics within the samples several times. An estimate for the sampling distribution is, therefore, the relative frequency distribution of the values (Mooney, Duval 1993: 9). A further advantage of this approach is that the bias of the estimates can be easily assessed as the average of the expected value of the bootstrapped sampling distributions and their estimates (Efron 1982: 33; Mooney, Duval 1993: 31). The bootstrapping allows to calculate distribution free levels of significance as well as confidence intervals of the estimators, first using the Percentile Method (PM), and next overcoming the assumption of an unbiased estimator of the distribution using the Percentile Bias Corrected Method (BC) (Bollen, Curran 2006; Bollen, Stine 1990; Mooney, Duval 1993: 36-37). At this junction we would like to highlight that the bootstrapping does not calculate estimators, but significance levels. Thus, in addition to the factor loadings and correlation coefficients revealed by conventional ML estimation, tables 16 and 17 also show the significance levels estimated by bootstrapping using PM and BC methods of both models<sup>158</sup>.

Evaluating the estimated significance levels of the factor loadings as well as the correlations between the time points indicates that none of the estimates is significant at the 1% level, while most of them are significant at the 5% level, except for the item “believer vs. nonbeliever” of the retest of the items concerning friends (PM = 0.054, BC = 0.068). More important are the probability levels

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<sup>158</sup> The reader finds the by bootstrapping estimated confidence intervals as well as errors in appendix 15.3.

of the Bollen-Stine Bootstraps<sup>159</sup> that are significant for both models ( $p = 0.007$  – friends;  $p = 0.004$  – family members), indicating that the models are different than the data. Finally, this confirms the bad internal consistency and test-retest reliability of the constructs. We find the same bad model fit concerning the construct Outgroups for friends (Bollen-Stine  $p = 0.004$ ;  $\chi^2 = 168.543$ ,  $p = 0.000$ ).

*Table 16:* CFA Assessing Construct and Test-Retest Reliabilities of the Construct Lifestyle for Friends and Family Members

	Bridging Social Capital Among Friends (a)			Bridging Social Capital Among Family (b)		
	Estim.	P (PM)	P(BC)	Estim.	P (PM)	P(BC)
<i>Time 1</i>						
Age, generation	0.498	0.013	0.015	0.574	0.008	0.003
Believer/ nonbeliever	0.457	0.013	0.007	0.732	0.008	0.008
Poorer	0.494	0.013	0.016	0.349	0.008	0.008
Living town vs. country	0.613	0.013	0.009	0.855	0.008	0.016
<i>Time 2</i>						
R_Age, generation	0.775	0.013	0.025	0.465	0.008	0.018
R_Believer/ nonbeliever	0.306	0.054	0.068	0.591	0.008	0.007
R_Poorer	0.651	0.013	0.015	0.323	0.025	0.028
R_Living town vs. country	0.573	0.013	0.013	0.597	0.008	0.007
<i>Correlation</i>						
Time 1 $\diamond$ Time 2	0.552	0.013	0.025	0.651	0.008	0.005
e4 $\diamond$ e8	0.329	0.013	0.008			
N	114			115		
$\chi^2$	53.722			138.523		
df	18			19		
p	0.000			0.000		
Bollen-Stine Bootstrap p	0.007			0.004		

Notes: Estimates revealed by ML estimation, significance levels revealed by bootstrapping; Bootstrapping: (a) 150 samples,  $N=391$ ; (b) 250 samples,  $N=387$ ; R\_ indicates items used in retest. Data: Social Relationships among Czech Citizen

Although all factor loadings are significant at the 1% level using PM estimation and at minimum at the 5% level using BC estimation, the factor loadings

<sup>159</sup> The Bollen-Stine Bootstrap statistic is comparable to the  $\chi^2$  statistic. It also depends on the sample size and tends to be significant in the case of a high sample size (Bollen, Stine 1992). Because our sample is rather small, the Bollen-Stine Bootstrap is an appropriate fit-statistic.



of the items “sexual orientation” (1 time 1 = 0.314; 1 time 2 = 0.321) and “nationality” (1 time 2 = 0.364) are extremely low, indicating a bad explanatory power of the factor Outgroups. However the correlation between both time points is rather high ( $r = 0.785$ ).

*Table 17:* CFA Assessing Construct and Test-Retest Reliabilities of the Construct Outgroups for Friends, as well as Construct Reliability of the Item Battery Concerning Acquaintances

Bridging Social Capital Among Friends (a)				Bridging Social Capital Among Acquaintances (b)			
	Estim.	P (PM)	P(BC)		Estim.	P (PM)	P (BC)
<i>Outgroups Time 1</i>				<i>Outgroups</i>			
Nationality	0.606	0.008	0.017	Nationality	0.885	0.008	0.002
Ethn. group	0.933	0.008	0.004	Ethn. group	0.279	0.020	0.029
Sex. orient.	0.314	0.008	0.008	Sex. orient.	-0.007	0.847	0.969
<i>Outgroups Time 2</i>				<i>Lifestyle</i>			
R_Nationality	0.364	0.008	0.011	Poorer	0.152	0.008	0.013
R_Ethn. group	0.927	0.008	0.006	Age, gener.	0.989	0.008	0.004
R_Sex. orient.	0.321	0.008	0.013	Live town/ country	0.533	0.008	0.008
				Believer/ nonbeliever	0.088	0.308	0.347
<i>Correlation Outgroups</i>				<i>Correlation</i>			
Time 1 <> Time 2	0.785	0.008	0.010	Outgroup <>Lifestyle	0.300	0.009	0.010
N		114				122	
$\chi^2$		168.543				20.392	
df		9				15	
p		0.000				0.157	
Bollen-Stine Bootstrap p		0.004				0.195	

Notes: Estimates revealed by ML estimation, significance levels revealed by bootstrapping; Bootstrapping: 250 samples; (a) N=391; (b) N=138; R\_ indicates items used in retest.  
Data: Social Relationships among Czech Citizen

In summary the internal consistency reliabilities as well as the test-retest reliabilities of the factors Lifestyle and Outgroups are bad. This also indicates a bad validity, because the internal consistency reliability can also be used as a measure of construct reliability and therefore as validity. Neither construct can be demonstrated despite the suggestions by former research.

### *Are the Constructs Outgroups and Lifestyle Internal Consistency Reliable in the Case of Acquaintances?*

Before discussing the reasons of the bad reliabilities of these items, we will take aim at another issue. Because the retest contained only 37 respondents that were members in associations and have the possibility to have acquaintances at the association, we cannot assess the test-retest reliability of these items via CFA. However, the test has a reasonable sample size that allows us at least to analyze if we find the two assumed factors among acquaintances. Accordingly we tested if the factors Outgroups and Lifestyle explain the variation in the measured variables and are mutually intercorrelated. The results are displayed in table 17 and reveal at first sight a good fit of the model to the data, the Bollen-Stine Bootstrap is insignificant ( $p = 0.195$ ) as is the  $\chi^2$  of 20.392 ( $p = 0.157$ ). However, the variation in the variables is not well explained by the factors. Especially low are the factor loadings of the items “sexual orientation” on the factor Outgroups ( $l = -0.007$ ) and “believing vs. non-believing” on the factor Lifestyle ( $l = 0.088$ ). As can be expected the significance levels estimated using PM and BC are not significant for these two items. Although significant at the 5% level, the items “ethnic group” ( $l = 0.279$ ) and “poorer” ( $l = 0.152$ ) show low factor loadings as well. This indicates that the assumed factor structure doesn’t exist among acquaintances; the constructs are neither internal consistency reliable nor valid. Accordingly, further research is necessary to determine what structures can be found among acquaintances. However, this is not the purpose of the present monograph and therefore, the task of future research.

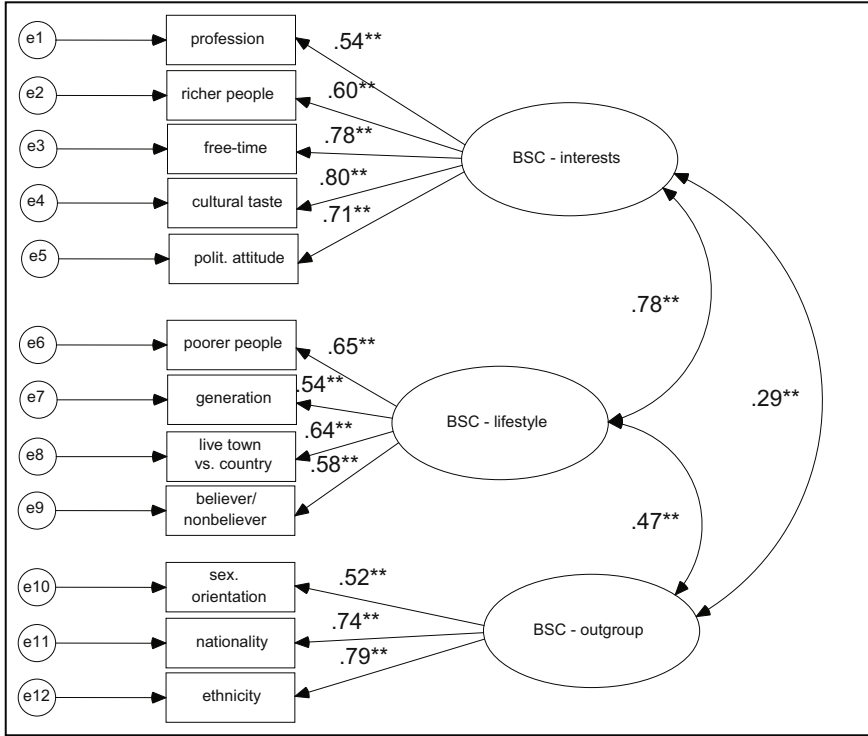
#### **11.4 Why Do We Find Such Bad Reliabilities?**

Both surveys, “Our Society” and “Social Relationships”, had the Czech society as universe population. Although, the surveys were not conducted at the same time, the time points did not differ greatly, so it can be assumed that the distribution of bridging social capital did not change in the society between the two surveys. Why don’t we find the same structure in both surveys?

Three reasons might account for the bad internal consistency reliabilities. The inclusion of different age categories might have caused different factor structures – the survey “Our Society” included respondents of age 21 and older and the survey “Social Relationships” included respondents older than 17. However, recalculating the CFA for the age groups 18 and older in the survey “Our Society” shows that the factor structure is stable – the factor loadings are all

above 0.5 and the fit measures indicate a good fit<sup>160</sup> (see figure 9; the original model can be found in Šafr, Häuberer (2007a, b)).

Figure 9: CFA Bridging Social Capital



Notes:  $\chi^2 = 170.207$ ;  $df = 9$ ;  $p = 0.000$ ;  $GFI = 0.967$ ;  $AGFI = 0.950$ ;  $RMR = 0.033$ ;  $RMSEA = 0.053$ ; covariance matrix,  $N = 966$ .  
 Data: Our Society

A second argument is that the differences are caused by the different answering categories. Using the free recall method in the survey “Social Relationships” may have led to the bad reliabilities. The results of the ISSP 2007 speak in favor of this argument. Also here, the authors found a similar factor structure to

<sup>160</sup> We assume the used 5-point likert scale to be interval-scaled, but we are aware of the fact that this might cause biases. For explanation of the fit measures, see Chapter 12, section 12.4.1.

that of the survey “Our Society” (c.f. Šafr, Häuberer 2008b). One objection is the good reliability revealed by the resource generator analyzed and discussed in Chapter 12 that also used the free recall method. Additionally, the number generating question should be used to avoid overestimation of the amount of friends with a specific characteristic. In favor of this argument speaks the comparison of the frequencies of the dichotomized variables used in the survey “Our Society” as well as in “Social Relationships” displayed in table 18. Only half of the items indicate the same amount of respondents having no friends with the particular characteristics. Among these are the items “sexual orientation” and “ethnic groups” that revealed the best test-retest reliability. Both items seem to be stable and might be used as indicators of bridging social capital in the future. However, the items “different generation”, “wealthier”, “cultural taste”, “political attitude”, “lives in town vs. in the country” and “believer vs. non-believer” show completely different distributions in both surveys. Unfortunately, the methodology currently used does neither allow us to test the significance of the differences nor which is the better measurement. A useful method would be also the Multitrait-Multimethod Analysis (Saris, Andrews 1991; Saris, Münnich 1995).

A third reason for the bad internal consistency of the factors may be caused by the assumption that different friends form latent variables (as derived from Pająk (2006)), that is, to assume people having friends with different sexual orientation are also likely to have friends from other Outgroups for example. One might argue that the bridging contacts do not form a latent variable, but are additive in their advantages. Thus, we should add up the items rather than factoring them. The criterion validity we will assess in the following section stands in favor of this argument.

### **11.5 Criterion Validity**

Concerning the assessment of validity, formally the internal consistency reliability as indicator of validity could not be supported by the data of the survey “Social Relationships”. However, as the previous discussion suggests, this might be caused by the wrong assumption of the existence of latent variables. Low internal consistency reliability is therefore, no indicator of bad validity.

Regarding the content of the measures, we can also examine the validity by correlating the measures with theoretically connected criteria (see Chapter 7 in this monograph). Again external criteria like sex, age, education, trust, participation and extraversion serve as criteria for the validation. Previous studies showed that males have bigger networks, as do the higher-educated (see Chapters 4 and 5 in this monograph). Concerning age the reverse should be valid, the older one

gets the more different contacts he/she can gather. According to Putnam (see Chapter 3 in this monograph), individuals get known to various contacts in associations; this should lead to a positive connection between bridging social capital and participation. Additionally, generalized trust should grow in these networks. However, research showed that this is not necessarily the case. Concerning the personality of the respondent, having a psychological predisposition for establishing contacts (extraversion) should be connected to more diverse networks. Previous studies using the data of the survey “Our Society” revealed good criterion validity with the exception of generalized trust that is positively but not significantly associated with bridging social capital (Šafr, Häuberer 2007a, b). We should find similar results in our data using a summated scale of bridging social capital.

Table 18: Frequencies of the Dichotomized Bridging Social Capital Items

	Our Society		Social Relationships			
	no	yes	Test		Retest	
			no	yes	no	yes
Age, generation	N 179	787	191	200	56	73
	% 18.5	81.4	48.8	51.3	43.4	56.7
Nationality	N 630	333	334	62	108	20
	% 65.4	34.6	84.3	15.7	84.4	15.7
Ethnic group	N 774	186	348	50	116	13
	% 80.6	19.3	87.4	12.7	89.9	10.2
Sex. orientation	N 779	138	345	38	109	16
	% 85.0	15.1	90.1	10.0	87.2	12.8
Poorer	N 196	643	313	77	85	41
	% 23.4	76.6	80.3	19.9	67.5	32.6
Wealthier	N 147	712	217	171	65	61
	% 17.1	82.9	55.9	44.4	51.6	48.5
Freetime activity	N 95	823	n.a.	n.a.	31	86
	% 10.3	89.7			26.5	73.8
Cultural taste	N 130	755	n.a.	n.a.	66	48
	% 14.7	85.3			57.9	42.1
Polit. attitude	N 104	736	n.a.	n.a.	46	59
	% 12.4	87.6			43.8	56.3
Live in town/ country	N 189	756	173	220	62	67
	% 20.0	80.0	44.0	56.4	48.1	52.2
Believer/ nonbeliever	N 223	619	221	129	70	38
	% 26.5	73.5	63.1	36.9	64.8	35.1

Data: Our Society, N = 966; Social Relationships among Czech Citizens, N test=400, N retest=129.

We summated the ratings of currently used bridging social capital item battery into a single variable, both for the test as well as the retest. We applied the same measures of the criteria as we did in Chapter 10 and included active participation and membership as criteria.

As the reader finds in table 19, the correlations also provide the expected results. Females have smaller amounts of bridging social capital than males (test  $r = -0.115$ ; retest  $r = -0.134$ ), as do younger respondents (test:  $r = -0.142$ ; retest:  $-0.125$ ) in comparison to older respondents. As was suggested by Putnam, membership (test  $t = 0.223$ ; retest  $t = 0.157$ ) and active participation (test  $t = 0.251$ ; retest  $t = 0.186$ ) are associated with a greater amount of bridging social capital. Also an open personality is connected with bigger diverse networks (test  $r = 0.141$ ; retest  $r = 0.228$ ). As was the case in the survey “Our society”, generalized trust, norms of reciprocity and bridging social capital do not strongly influence each other. This is in accordance with the argument of Uslaner (forthcoming); diversity does not increase generalized trust. The low correlations with norms of reciprocity replicate the empirical results discussed in Chapter 3. Also education shows no association with the openness of the network.

Table 19: Criterion Validity of the Bridging Social Capital Item Battery

		Sex	Age	Edu- cation	Gen. trust	Norms of reci- procity	Extra- version	Mem- ber- ship	Active part.	
Test	r	-0.115	-0.142	0.058	0.024	-0.027	0.141	t	0.223	0.251
	N	400	400	400	365	387	395	N	400	386
Re- test	r	-0.134	-0.125	0.088	0.040	-0.075	0.228	t	0.157	0.186
	N	129	129	129	121	125	129	N	129	123

Notes: Pearson Correlations r, Kendall’s  $\tau$  correlations t.

Source: Social Relationships among Czech Citizens

The influences in both surveys are rather small and are thus, only a weak support of criterion validity. Additionally, the survey “Social Relationships” includes only few criteria and many others are imaginable, like for example tolerance that should be higher in diverse surroundings (see Chapter 3; Šafr, Häuberer 2007a, b). Accordingly, future studies are useful to further assess the validity of the bridging social capital item battery.

## 11.6 Conclusion

The bridging social capital item battery used as a proxy for range and openness of a network shows particularly bad test-retest as well as internal consistency reliabilities. Although previous studies showed that the items construct the factors Outgroups, different Interests and different Lifestyles, the present study did not reproduce these results. However, we revealed that the formerly used 5-point item scale seems to overestimate the amount of friends with particular characteristics, and therefore, it can be assumed that the free recall method increases the precision of the answers.

In contrast to reliability, all the items seem to be criterion valid.

In sum, the results of Chapter 10 and 11 show the necessity of refining the applied network measures. Accordingly, future research is necessary to answer the questions raised by the present study: Is the free recall method appropriate to assess network sizes? Does the telephone survey cause unreliable ratings, or does the problem lie in the Czech context? To answer these questions further research, preferably in an international context, is necessary. To reveal broader results than the present study allows, the study should avoid one drawback our study featured. Although the study included measures to account for the changes that occurred between the two interviews, they are not able to account for all changes. Scientists agree on the necessity of three interviews to account for the effects of reconsideration and changes (c.f. Porst et al. 1987), but our present study included only two. A second possibility for future research is the use of a Multitrait-Multimethod approach as introduced by Campbell and Fiske (1959) and further developed by Saris and Andrews (1991). The advantage of this approach is the possibility to assess validity and reliability simultaneously.

Also, the criterion validity of our measures should be examined by future research. Although our criteria indicated reasonable criterion validity of the informal network measures, they were rather few and could be extended by others in the course of future research like, for example, tolerance that should have a positive impact on network size and diversity.

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# 12 The Quality of Measures of Accessed Social Capital – Is the Resource Generator Appropriate for the Czech Context?<sup>161</sup>

After analyzing the reliability and validity of the items measuring the access to resources, this chapter deals with the quality of measures of accessed social capital. In the first part, we will introduce an operationalization of the resource generator appropriate for the Czech context. As discussed in Part 1 of this monograph, we can distinguish between resources useful for expressive actions and resources useful for instrumental actions. Measures for the former have been applied in the test and the retest of the survey “Social Relationships”, measures for the later only in the retest. Accordingly, we will test the test-retest and internal consistency reliability of the item battery measuring accessed resources useful for expressive actions in the second and third part of the present chapter. As we did in Chapters 10 and 11, we will analyze if this reliability is dependent on sex, age and education, as well as changes the respondent experienced between the test and retest. In the fourth part, we will analyze the validity of the complete applied resource generator via loose cross validation with the results of the Van der Gaag and Snijders study and the Czech survey “Our Society” and by assessing basic criterion validity.

## 12.1 Operationalization

Concerning the access to resources, mainly social support networks (see ISSP 2001, or for example Bolger, Eckenrode 1991; Furukawa et al. 1998; Henderson 1977; Russell et al. 1997; Stokes 1985; Wasserman, Faust 1999; Wellman, Wortley 1990) or the access through positions (see Lin 2001, and also Chapter 5 in the present monograph) were measured in the past. A recent attempt to measure access to social support and other resources was made by Van der Gaag and

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<sup>161</sup> A preliminary version of this chapter was presented at the ESRA 2009 conference in Warsaw (29.06- 3.07.09). Furthermore, this chapter was prepared with aid of research funding from the Czech Ministry of Education, Youth, and Sports for a project entitled “Shared values and behavior norms...” (Grant No. 2D06014).

Snijders (2005) as discussed in Chapter 5. In the development of their so called resource generator the authors applied systematic and theoretic considerations about which social resources represent the general social capital of individuals. Van der Gaag and Snijders (2005: 4-5) highlighted that personal resources can be categorized as human, cultural, financial, political, and physical capital as well as universally valued resources like power, wealth and status as introduced by Lin (2001, see also Chapter 5 in this monograph). Generally, the authors expected that the social resources form different latent variables. Using a cumulative scaling procedure<sup>162</sup> their analyses revealed four different types of resource based social capital – Personal Support, Political and Financial Skills, Personal Skills and Prestige/Education related social capital. Recapitulating the main idea of social capital proposed by Lin, social resources are used in social actions to either maintain resources (expressive action) or to gain new ones (instrumental action). The reinvestment of these resources conveys their capital character. According to this distinction, we can assume that some resources are more useful for expressive and others for instrumental actions. While Personal Support Social Capital might enhance expressive actions, like maintaining physical and mental health, Political/Financial Skills and Prestige/Education related social capitals seem to be more useful for instrumental actions like getting a more prestigious job. Although the Personal Skills Social Capital may contribute to both kinds of goals, because knowledge can be gathered easily from these contacts, this contribution may be rather small, because knowledge can also be gathered via other channels, like Internet or newspapers. Therefore, Personal Skills Social Capital seems to be of only minor importance to goal attainment, and we excluded the items measuring this dimension of social capital from the present study.

As the Van der Gaag and Snijders (2005) study reveals, almost all respondents have access to all different kinds of resources via one of the contacts (family or friends or acquaintances). Accordingly, using their measure does not distinguish much among respondents. But it seems interesting to us how many sources provide the different resources. We can assume that the resources at one's disposal increase with the number of different sources providing them. Thus, we adapted the used items. In contrast to Van der Gaag and Snijders' item

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<sup>162</sup> The assumption behind a cumulative scale model is that the latent trait has a cumulative character. Van der Gaag (2005) highlights that in the case of resources no single cumulative scale can be expected. It is more reasonable to assume multiple latent traits connecting resources of different types, like for example high income and owning a holiday house abroad, or shopping for oneself and helping around the house. Although using different procedures and data, the idea behind multiple cumulative scales is similar to the one of factor analysis. While the former (as a special case of latent class models) identifies discrete latent variables from discrete observed variables, the latter characterizes continuous latent variables based on continuous observed variables (Green 1951, 1952; Häuberer 2008; McCutcheon 1987).

battery, we did not ask, if somebody from the group's family, friends or acquaintances could provide the resource in question. We asked instead for the concrete number of family members, friends and acquaintances that would provide these resources. To measure the social capital gathered via formal channels, we asked especially for acquaintances from the association the respondent is a member in. Using these number generating questions provides two advantages: first, we can assess the network size of the respondent indirectly, and secondly, it allows us to account for access to resources via strong (family) and weak ties divided by informal (friends) and formal contacts (acquaintances) at the same time. Additionally, we did not ask for the abstract possibility of access (could), but for the concrete access (can, will provide) to the resource in question.<sup>163</sup> This allows us to estimate the accessed resources more precisely.

### *12.1.1 Resources for Expressive Actions*

We asked about access to resources useful for expressive actions applying items of the Personal Support Social Capital scale introduced by the resource generator of Van der Gaag and Snijders. Where necessary, we changed their question wording to make the resource generator appropriate for the Czech Republic. We asked for the number of family members, friends and acquaintances from the association the respondent is a member in that “will help with small repairs in the house or flat”; “will shop for the respondent when he/she and other household members are ill”; “will put him/her in contact with a quality doctor in case one is needed”<sup>164</sup>; “will advise him/her in case of personal problems”<sup>165</sup>; “will temporarily put him/her up, if the home burned down, for instance” (for at least one week); “can advise him/her on legal or bureaucratic problems”; “will help him/her or another family member to find a job”<sup>166</sup> (see also appendix 15.1, items 11.1-11.7). In comparison to the original Personal Support Social Capital scale consisting of 4 items we added three more items (“would shop for you”, “contact with good doctor” and “advice concerning legal problems”), because we consider it important to reach expressive goals like maintaining physical health or personal property amongst others. All items were applied in the test and retest.

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<sup>163</sup> A similar approach was used in the ESS 2009 in the additional questionnaire used in Austria (see Paulinger 2009).

<sup>164</sup> This item was adapted from the item: “can give you medical advice”. We consider the contact to a doctor as more important than ordinary medical advice.

<sup>165</sup> This item was adapted from the item: “can give advice in the case of problems in the family”. Our intention was to make the item more general.

<sup>166</sup> This item was adapted from the item: “can be used as a reference when applying for a job”. This was also done to make the item more general.

Table 20: Frequencies of the Resource Generator Items

	N	Mean	Min	Max		N	Mean	Min	Max
<i>How many of your family members</i>									
Help with repairs	391	3.56	0	50		128	2.76	0	20
Shop for you	386	3.27	0	50		126	2.72	0	20
Contact with doctor	379	2.39	0	30		117	2.27	0	20
Advice pers. problems	386	2.63	0	30	R	123	2.43	0	20
Put you up	T 384	3.76	0	50	E	126	3.07	0	20
Advice legal problems	E 385	1.36	0	20	T	127	1.2	0	10
Help find a job	S 357	1.99	0	20	E	120	1.73	0	10
Employ people	T	n.a.			S	128	0.52	0	6
Work at town hall		n.a.			T	129	0.22	0	2
Know finan. matters		n.a.				128	1.19	0	5
Earn >100.000 CZK		n.a.				127	0.21	0	4
Appear in media		n.a.				128	0.2	0	10
<i>How many of your friends</i>									
Help with repairs	379	4.49	0	50		128	4.02	0	30
Shop for you	382	3.69	0	51		126	4.2	0	30
Contact with doctor	365	2.92	0	50		118	3.12	0	30
Advice pers. problems	386	3.48	0	50	R	125	3.09	0	30
Put you up	T 368	4.27	0	50	E	122	3.16	0	30
Advice legal problems	E 381	1.69	0	25	T	124	1.65	0	10
Help find a job	S 368	2.98	0	51	E	118	2.64	0	20
Employ people	T	n.a.			T	128	1.07	0	10
Work at town hall		n.a.			S	129	0.39	0	10
Know finan. matters		n.a.			T	122	1.39	0	8
Earn >100.000 CZK		n.a.				125	0.44	0	10
Appear in media		n.a.				129	0.14	0	3
<i>How many of your acquaintances (in an association)</i>									
Help with repairs	138	2.96	0	25		35	2.49	0	10
Shop for you	134	2.07	0	25		36	2.47	0	20
Contact with doctor	135	2.1	0	20		33	2.67	0	20
Advice pers. problems	137	2.51	0	25	R	36	1.31	0	10
Put you up	T 133	2.26	0	25	E	36	1.33	0	10
Advice legal problems	E 139	1.6	0	30	T	34	1.35	0	19
Help find a job	S 135	1.87	0	25	E	36	1.75	0	10
Employ people	T	n.a.			S	35	1.23	0	10
Work at town hall		n.a.			T	37	0.46	0	6
Know finan. matters		n.a.				32	1.69	0	25
Earn >100.000 CZK		n.a.				34	0.29	0	4
Appear in media		n.a.				37	0.35	0	6

Data: Social Relationships among Czech Citizens

As the reader finds in table 20, the respondents name up to 50 persons from the family, 51 from their circle of friends and 30 persons from the association (they are member in) that will provide several resources. We find the greatest number of people that will provide specific resources among friends. While on average 4.49 friends will “help with small repairs around the house” and 4.27 friends will “temporarily put up” the respondent; in the family only 3.56 and 3.76 members respectively can provide these resources and only 2.96 and 2.26 respectively among acquaintances. In all three cases the number of people that will “give legal advice” is the lowest, on average 1.36 members of the family, 1.69 friends and 1.6 acquaintances can do this. As should be noticed, the high number of missing values in the case of resources accessed by acquaintances is caused by a low number of memberships in associations as implied by the discussion in Chapter 9 and the results in Chapter 10. Especially in the retest, at most only 37 analyzable cases were recorded.

### *12.1.2 Resources for Instrumental Actions*

The items asking for resources useful for instrumental action were only applied in the retest. We adapted them also from Van der Gaag and Snijders’ (2005) Resource Generator. We operationalized Political and Financial Skills resources with two items only, that is, with the number of family members, friends and acquaintances that “work at a town hall or local office”<sup>167</sup> and that “know a lot about financial matters like taxes, grants, social allowances or retirement insurance”. Prestige and education related social capital was measured with three items: the number of family members, friends and acquaintances that have the possibility to “employ people, can close contracts with them, and search for workers”; “that earn more than 100.000 CZK a month”<sup>168</sup> and that “appear in mass media like celebrity, politician etc.”<sup>169</sup> Because of space limitation, we excluded other items (like “owns a holiday home abroad”, “has knowledge of literature”, “graduated from high school” and “has higher vocational training”).

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<sup>167</sup> Because the persons working at a town hall are well informed about governmental regulations we substituted the item “knows a lot about governmental regulations” with this item. Furthermore, because of the small number of memberships in political parties we excluded the item asking for people that are in a political party.

<sup>168</sup> We chose the amount of 100.000 CZK (ca. 3850 EUR), because it is high above the average income of 23.000 CZK (ca. 885 EUR) per month (Czech Statistical Office 2008).

<sup>169</sup> In contrast to Van der Gaag and Snijders’ item “has good contact to the media” we asked for the appearance in the media, because it is easier for the respondent to determine if their contacts have contact with the media if they are visible in it.

Concerning the measured resources for instrumental action, the ranges are much smaller than for resources useful for expressive action. Among family members and friends at most 10 people and among acquaintances at most 25 can provide the resources in question (see table 20). The highest number of respondents know people who “know about financial matters” – on average 1.19 family members, 1.39 friends and 1.69 acquaintances. The lowest number of family members (average = 0.2), friends (0.14) and acquaintances (0.35) “appear in the media”.

### 12.2 Test-Retest Reliability by Item

As we did in Chapters 10 and 11, we will analyze the general test-retest reliabilities and then the test-retest reliabilities in specific groups according to sex, age, education and changes that occurred between the test and retest.

Table 21: Test-Retest Reliabilities of Resource Generator Items

		Family	Friends	Acquaintances
Help with repairs	r	0.530	0.549	0.562
	N	123	120	27
Shop for you	r	0.512	0.412	0.267
	N	121	122	27
Put in contact with good doctor	r	<i>0.601</i>	0.562	0.220
	N	110	110	24
Advice personal problems	r	<i>0.611</i>	0.530	0.019
	N	118	122	27
Put you up	r	<i>0.612</i>	<i>0.764</i>	<i>0.831</i>
	N	119	113	26
Advice legal problems	r	<i>0.618</i>	0.538	<i>0.888</i>
	N	119	119	27
Help find a job	r	0.392	0.483	0.468
	N	111	109	27

Notes: Pearson Correlation Coefficient r, values in italics indicate reliable correlations.

Data: Social Relationships among Czech Citizens

Starting with the general test-retest reliabilities displayed in table 21<sup>170</sup>, we find a clear result. Only three correlations show values above 0.7 – only the

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<sup>170</sup> Again, we can use Pearson correlations, because firstly, the tested variables are measured at the interval level, and secondly, we won't test hypotheses, thus, the non-normal distribution of the variables is no problem.

items “temporarily put you up” in the case of the number of friends ( $r = 0.764$ ) and acquaintances ( $r = 0.831$ ) and “advice legal problems” in the case of the number of acquaintances ( $r = 0.888$ ) can be considered reliable.

However, concerning the number of family members, almost all items show correlations above 0.6, except for “help with small repairs” ( $r = 0.530$ ), “shop for you” ( $r = 0.512$ ) and “help to find a job” ( $r = 0.392$ ). Concerning the number of friends and acquaintances only two additional items reach values close to 0.6; the item “help with small repairs” ( $r = 0.562$ , acquaintances) and “put in contact with good doctor” ( $r = 0.562$ , friends). All other items reveal rather low correlations, but most of them reach the value of 0.5 and higher. Because of the long time span between test and retest, we can regard these correlations as satisfactory. The effect of reconsideration can explain the low reliability (see discussion in Chapters 7 and 10). While the respondent answered rather spontaneously in the test, the answers in the retest may be more thought-out. But also differences in the reliability between sex, age and education as well as changes experienced by the respondent between test and retest may cause the low reliabilities.

### *Sex, Age, Education Differences in the Reliability and the Impact of Changes on the Answering Behavior*

In table 22, we display the test-retest reliabilities for family members and friends divided by sex, education, age and changes the respondent experienced. Again, we cannot apply these comparisons to the items revealing the number of acquaintances that provide resources, because of the small number of cases.

The test-retest reliability is higher among women than men. For women, almost all items reveal correlations above or near 0.6, except for the item asking for the number of family members or friends that “would help to find a job” ( $r = 0.574$  (family),  $r = 0.522$  (friends)). For men, only the items asking for the number of friends that “would put you up” ( $r = 0.565$ ) and “would give advice in legal matters” ( $r = 0.539$ ) reach values of at least 0.5; all other correlations are far below. This hints to the fact, that the questions for the concrete number of people providing resources are not appropriate when interviewing men.

The comparison of respondents with higher and lower education levels<sup>171</sup> reveals a similar picture. The test-retest reliabilities are high for people with higher education, most correlations reach values at or above 0.6, only a few fail

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<sup>171</sup> As we did in Chapters 10 and 11, for analyzing the influence of education, we collapsed the 4 educational categories into two including respondents with compulsory education and that are skilled in terms of lower education and a second category (higher education) consisting of respondents with an A-level and a university degree.

to do so, but are still above 0.5 (the number of family members that “help to find a job” ( $r = 0.543$ ); number of friends that “will give advice concerning legal problems” ( $r = 0.515$ ) and friends that “shop for you” ( $r = 0.518$ )). Concerning less-educated respondents all correlations (except for the number of friends that “can give advice in legal problems”) are far below the correlations of people with higher education reveal. The higher-educated seem to be more aware of their sources of support. The lower-educated seem to be aware of the number of family members as well as friends that can give legal advice, only. It remains to be seen if this is because of their missing knowledge about these important things for life or because of their former contact with the law. Generally, the correlations indicate that in the case of all other items, the free recall method is not appropriate for persons with lower education.

The comparison of age categories also reveals a clear result<sup>172</sup>. Regarding the number of family members that will provide resources, the 18-44-year-old respondents give reliable answers, all correlations between the value of the test and the retest reveal correlations are above or near 0.6 (with exception of family members that “will help to find a job” ( $r = 0.353$ )). The respondents over 44 show low correlations that are unreliable answers. This clearly shows that the items regarding the number of family members are not appropriate for respondents in the second half of their life. Concerning the number of friends that provide several resources a mixed picture occurs, but with the same tendency. Again the younger respondents give more reliable answers, except for friends that “shop for you” ( $r = 0.362$ ) and “help to find a job” ( $r = 0.478$ ). In the case of older respondents only the item “temporarily put you up” ( $r = 0.610$ ) shows an acceptable reliability. Accordingly, the items that measure resources gained by friends are not appropriate for older respondents either.

Concerning the socio-economic characteristics the results are similar to some discussed in Chapter 7: the less-educated have problems giving reliable answers (cf. Martin 1983: 713-714; McClendon 1991; De Maio 1984: 273; Reuband 2001: 49, 2002: 83; Schröpfer 1996: 56; Schuman, Presser 1981: 39; Zhou et al. 1999: 1003) and the items seem inappropriate for older people, although the age group in question includes respondents aged 44 and older where the influence of health reasons should not be the predominant source of unreliability (cf. Kogovšek, Ferligoj 2005). Weighing the differences among sexes, our study revealed results that contrast Kogovšek and Ferligoj's (2005) in that we found that females give more reliable answers than males. These results might be caused by a different impression of the structure of personal networks and the social support resources in them. While females seem to think about the structure

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<sup>172</sup> Also here, we split variable age into two groups, respondents of age 18-44 and respondents over 44 as we did in previous chapters.



of their networks and are generally aware of them, males appear not to. The same accounts for higher vs. less-educated and younger vs. older respondents.

*Table 22: Test-Retest Reliabilities of Resource Generator Items for Different Groups*

		Education		Age		Sex		Changes	
		low	high	18-44	> 44	male	female	0/1	>1
<i>Family</i>									
Help with repairs	r	0.061	<i>0.715</i>	<i>0.704</i>	0.240	0.250	<i>0.735</i>	0.206	<i>0.826</i>
	N	62	61	67	56	66	57	89	34
Shop for you	r	0.223	<i>0.647</i>	0.560	0.253	0.076	<i>0.752</i>	0.202	<i>0.772</i>
	N	60	61	66	55	65	56	87	34
Contact with doctor	r	0.225	<i>0.719</i>	<i>0.740</i>	0.241	0.328	<i>0.689</i>	0.294	<i>0.841</i>
	N	53	57	64	46	60	50	77	33
Advice pers. problems	r	0.398	<i>0.655</i>	<i>0.720</i>	0.180	0.253	<i>0.749</i>	0.269	<i>0.842</i>
	N	57	61	67	51	61	57	84	34
Put you up	r	0.359	<i>0.650</i>	<i>0.673</i>	0.272	0.017	<i>0.877</i>	0.158	<i>0.857</i>
	N	58	61	65	54	65	54	84	35
Advice leg. problems	r	0.502	<i>0.723</i>	<i>0.726</i>	0.417	0.459	<i>0.653</i>	0.391	<i>0.872</i>
	N	57	62	68	51	64	55	85	34
Help find a job	r	0.206	0.543	0.353	0.449	0.321	0.574	0.364	0.421
	N	53	58	67	44	63	48	77	34
<i>Friends</i>									
Help with repairs	r	0.438	0.555	<i>0.622</i>	0.273	0.336	<i>0.697</i>	0.320	<i>0.750</i>
	N	59	61	69	51	65	55	85	35
Shop for you	r	0.217	0.518	0.362	0.526	0.245	<i>0.663</i>	0.164	<i>0.709</i>
	N	63	59	67	55	66	56	86	36
Contact with doctor	r	0.210	<i>0.651</i>	0.574	0.306	0.445	<i>0.653</i>	0.197	<i>0.887</i>
	N	53	57	66	44	60	50	78	32
Advice pers. problems	r	0.102	<i>0.647</i>	<i>0.644</i>	0.129	0.059	<i>0.712</i>	0.201	<i>0.721</i>
	N	61	61	69	53	64	58	86	36
Put you up	r	<i>0.671</i>	<i>0.786</i>	<i>0.766</i>	<i>0.610</i>	0.565	<i>0.858</i>	0.512	<i>0.897</i>
	N	54	59	65	48	62	51	79	34
Advice leg. problems	r	0.577	0.515	0.569	0.415	0.539	0.599	0.236	<i>0.910</i>
	N	58	61	65	54	61	58	86	33
Help find a job	r	0.419	<i>0.602</i>	0.478	0.431	0.450	0.522	0.505	0.535
	N	49	60	65	44	60	49	76	33

Notes: Pearson Correlation Coefficients r, values in italics indicate reliable correlations.  
 Data: Social Relationships among Czech Citizens

A second analysis targeted the effect of experienced changes<sup>173</sup> on response behavior. In contrast to the results revealed in Chapter 10 concerning the network size and density measures and in contrast to respondents that did not experience changes, respondents that experienced more changes gave reliable answers in the retest. For this group, all correlations are above 0.7 except for the items “help to find a job” in the case of family ( $r = 0.421$ ) and friends ( $r = 0.535$ ). Respondents that experienced no changes or one change show extremely bad test-retest reliabilities; only the items “temporarily put you up” ( $r = 0.512$ ) and “help to find a job” ( $r = 0.505$ ) in the case of friends reach correlations above 0.5; all other correlations are below. One plausible explanation is that only respondents that are aware of their sources of resources were able to conduct these changes, or vice versa they are aware of their sources of resources, because they needed them while experiencing these changes. In contrast, respondents that experienced no changes did not need resources and thus, were not aware of their sources.

The analyses raise the question, is the complete construct of Personal Support Social Capital unreliable. We will analyze this in the following.

### **12.3 Internal Consistency and Test-Retest Reliabilities of the Construct “Personal Support”**

As we did previously in Chapter 11 concerning the bridging social capital item battery, we use a CFA to analyze the internal consistency reliability of the construct Personal Support Social Capital. Figure 10 displays the model that we will analyze separately for the family members and friends using AMOS 16. The item battery concerning the number of acquaintances had to be excluded, because of the small number of cases in the retest (see table 20).

We discussed in Chapter 7 that high factor loadings are indicators of good internal consistency reliability of a construct and high correlation between the same constructs measured at different time-points indicates good test-retest reliability. Concerning the Personal Support factor we find that both requirements are fulfilled (see table 23): the Personal Support constructs of time one and time two are highly correlated<sup>174</sup>; the correlation is 0.97 for resources gathered from

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<sup>173</sup> As we did in Chapters 10 and 11, we summed up the items concerning changes that occurred between the test and retest (1. change of working situation; 2. moving; 3. changes in social life; 4. interaction with new people or breaking of relationships; and 5. slight change of living standard) and recoded the target variable where 0 indicates no changes or one change and 1 indicates two or more changes.

<sup>174</sup> To delete the missing cases, we calculated a correlation matrix and used it as input.

family members and 0.88 for resources revealed from friends – proving the test-retest reliability. Additionally, the factor loadings are all above 0.5 indicating a good explanatory power of the factors in the test and retest – supporting internal consistency reliability.

Figure 10: Model of Confirmatory Factor Analysis for Assessing the Test-Retest Reliability of the Construct “Personal Support Social Capital”

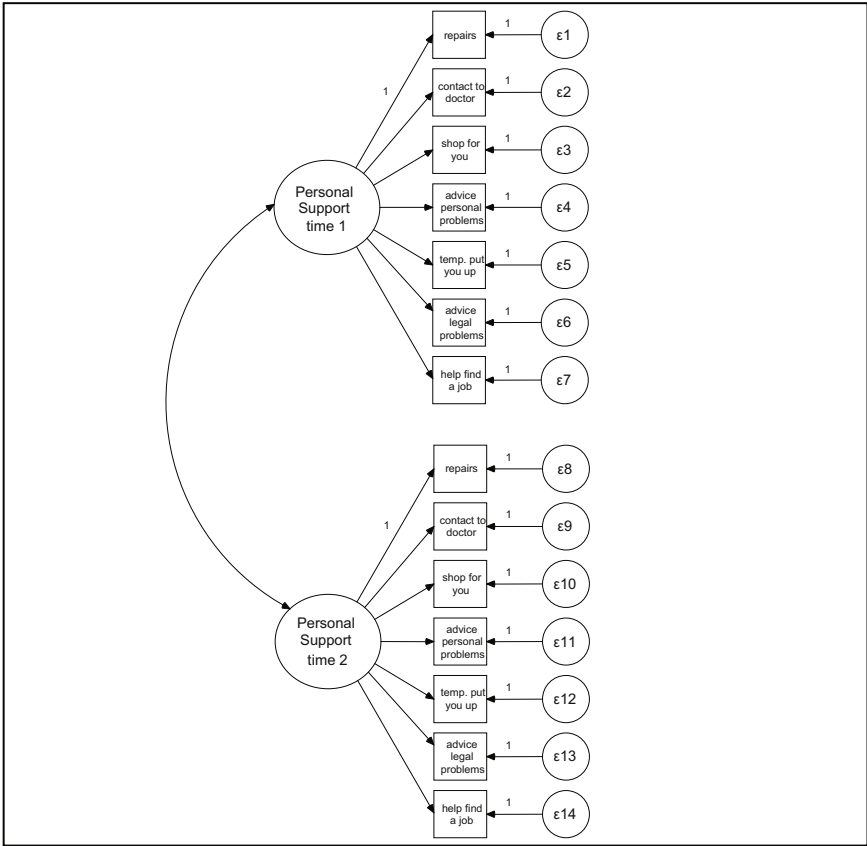


Table 23: CFA of the Construct “Personal Support”, General Model for Resources Acquired through Family and Friends Separately

	Resources gained by Family			Resources gained by Friends		
	Estimate	P (PC)	P (BC)	Estimate	P (PC)	P (BC)
<i>Time 1</i>						
Repairs	0.674	0.008	0.014	0.793	0.008	0.006
Shop for you	0.687	0.008	0.009	0.811	0.008	0.011
Contact to good doctor	0.779	0.008	0.011	0.748	0.008	0.018
Advice pers. problems	0.742	0.008	0.003	0.735	0.008	0.006
Temp. put you up	0.668	0.008	0.004	0.763	0.008	0.006
Help find job	0.544	0.008	0.003	0.635	0.008	0.003
Advice legal problems	0.728	0.008	0.008	0.655	0.008	0.012
<i>Time 2</i>						
R_Repairs	0.718	0.008	0.017	0.770	0.008	0.009
R_Shop for you	0.739	0.008	0.008	0.644	0.008	0.011
R_Contact to good doctor	0.772	0.008	0.006	0.790	0.008	0.010
R_Advice pers. problems	0.851	0.008	0.013	0.796	0.008	0.011
R_Temp. put you up	0.704	0.008	0.015	0.867	0.008	0.016
R_Help find job	0.673	0.008	0.006	0.526	0.008	0.005
R_Advice legal problems	0.705	0.008	0.012	0.682	0.008	0.011
<i>Correlation</i>						
Time 1 <> Time 2	0.967	0.008	0.008	0.880	0.008	0.010
$\chi^2$	89.106			84.392		
Df	76			76		
p	0.144			0.239		
Bollen-Stine Bootstrap p	0.514			0.614		

Notes: Estimates calculated by ML estimation, significance levels estimated by bootstrapping, 250 iterations, Percentile Method (PM) and Bias Corrected Percentile Method (BC), N=391, R\_ indicates items used in retest, for standard errors and confidence intervals see appendix 15.4.

Data: Social Relationships among Czech Citizens

However, the variables are also not normally distributed; thus, here we also apply the method of bootstrapping (for an introduction to the method see Chapter 11). In addition to the factor loadings and correlation coefficients computed using ML estimation, table 23 also displays the significance levels revealed by bootstrapping<sup>175</sup>. The bootstrapping shows that all factor loadings and the correlations are significant at the 1% level using PM and at the 5% level using BC estimates. Additionally, as a sign of accuracy (von der Heyde 1999), the PM and BC confidence intervals are small and include the estimates revealed by ML

<sup>175</sup> The estimated errors are rather low; the reader can find them in appendix 15.4.

estimation (see appendix 15.4). This approves both test-retest and internal consistency reliability. They are further supported by a good overall model fit indicated by non-significant Bollen-Stine bootstrap significance levels<sup>176</sup> ( $p = 0.514$  (family members);  $p = 0.614$  (friends)). For reasons of comparison of the different estimation procedures<sup>177</sup>, table 23 also reports the  $\chi^2$  statistic that further supports good model fit in both cases ( $p = 0.144$  (family members);  $p = 0.239$  (friends)).

In summary, the CFA's indicate that the previously revealed low test-retest reliabilities by item don't cause low internal consistency or low test-retest reliability of the construct Personal Support. However, the correlation analysis showed differences among sex, age and education as well as experienced changes in the reliability of several items. This leads to the question, if the respondents' characteristics influence also the reliability of the construct Personal Support. Accordingly, we calculated three group comparisons to see, if we find the same factor structure in the different groups (young vs. old, male vs. female and highly vs. less-educated). Because of the small sample size, we had to exclude the analysis of influences of changes on the answering behavior<sup>178</sup>.

For the group comparisons, we only included respondents that answered all items resulting in a decreased sample size of 87 cases for the models concerning family and 84 concerning friends. The results are displayed in table 24 and appendix 15.5.

Calculating the unconstrained model, that is assessing, if the same factor structure exists in both groups in questions, the results are similar to the results revealed by test-retest analysis by item. Comparing the reliabilities concerning the number of family members that can provide personal support shows that women give very reliable answers; the correlation between both time points is 0.907 while men realize a correlation of only 0.34. We find similar results concerning age; while young respondents answer all questions highly reliably and reveal a correlation of 0.931 the respondents aged 45 and older have a correlation of only 0.143. Also the less-educated are not able to give reliable answers ( $r = 0.144$ ), while the higher-educated are ( $r = 0.891$ ). Concerning the comparison of the items asking for the number of friends reveals a different picture. Here too, females ( $r = 0.782$ ) give more reliable answers than males ( $r = 0.507$ ) do, but the

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<sup>176</sup> As was the case in Chapter 11, the Bollen-Stine Bootstrap statistic seems appropriate, because our sample is small.

<sup>177</sup> In the case of non-normal distribution of variables and small sample size it is useful to apply different estimation procedures, because they account for different features of the sample (for discussion see Ory and Mokhtarian (2010)).

<sup>178</sup> Although the sample size is small it lies above the critical number of 30 (see Mooney, Duval 1993: 21). This critical  $n$  is also reached after splitting the file into the groups (sex, age, education), however not after splitting the file according to changes experienced by the respondent.

differences between younger ( $r = 0.758$ ) and older ( $r = 0.724$ ) respondents as well as between the less ( $r = 0.699$ ) and higher-educated ( $r = 0.766$ ) diminishes.

*Table 24:* Correlations Among the Constructs “Personal Support Social Capital” of the Test and Retest in Group Comparison

	Family (a)				Friends (b)			
	r	P (PM)	P (BC)	Bollen-Stine p	r	P (PM)	P (BC)	Bollen-Stine p
General	0.967	0.008	0.008	0.514	0.880	0.008	0.010	0.614
Age				0.255				0.522
18-44	0.931	0.018	0.016		0.758	0.045	0.013	
Over 44	0.143	0.669	0.868		0.724	0.009	0.003	
Sex				0.239				0.187
Male	0.340	0.127	0.237		0.507	0.008	0.012	
Female	0.907	0.179	0.064		0.782	0.130	0.070	
Education				0.032				0.135
Low	0.144	0.504	0.808		0.699	0.008	0.002	
High	0.891	0.008	0.001		0.766	0.055	0.011	

Notes: Correlations revealed by ML estimation, Significance levels revealed by Bootstrapping, Percentile Method (PM) and Bias Corrected Percentile Method (BC), and Bollen-Stine Bootstrap of the complete model, 250 iterations, (a) N=87, (b) N=84, raw data (listwise).

Data: Social Relationships among Czech Citizens

To assess if these differences are significantly important, we impose constraints on the model first by assuming the same factor loadings in the compared groups, second by assuming the same covariance structures and third by assuming the same error structures. The reader can find the model fits in table 25. In almost all cases the unconstrained model shows a good fit - the Bollen-Stine Bootstrap p-values are insignificant. It is only significant at the 5% level comparing the highly and less-educated in their reliability in naming the number of family members that can provide resources. This clearly indicates that the items reveal different reliabilities as well as factor structures comparing highly and less-educated respondents. Thus, the measures seem inappropriate for the less-educated. Concerning the other comparisons, these results show that all groups have the same factor structure; the differences among sex, age, and educational groups (for friends) are not prominent. However, although we find the same factor structures, the model fit is lower in all constrained models than in the unconstrained ones (lower p-values of Bollen-Stine Bootstrap). Especially in the

case of sex, the third model constraining the measurement residuals (errors) to be equal for the different groups is significant at the 5% level. This leads to the conclusion that the items measuring Personal Support are generally internal consistency reliable, however not completely differentiating among men and women. Males and females may have different access to social resources, thus the deviation does not necessarily indicate bad reliability.

*Table 25:* Bollen-Stine Bootstrap Model Fits of Group Comparisons of CFA of Test and Retest for Family and Friends and of the Test for Acquaintances

Model	Family (a)			Friends (b)			FA Acquaintances (c)		
	Sex	Age	Edu.	Sex	Age	Edu.	Sex	Age	Edu.
Unconstrained	0.239	0.255	<i>0.032</i>	0.187	0.522	0.135	<i>0.040</i>	0.088	0.056
Measurement weights	0.131	0.251	<i>0.024</i>	0.127	0.490	0.100	<i>0.028</i>	0.135	0.084
Structural covariances	0.080	0.239	<i>0.036</i>	<i>0.048</i>	0.367	0.064	<i>0.036</i>	0.147	0.092
Measurement residuals	<i>0.028</i>	0.127	<i>0.032</i>	<i>0.032</i>	0.088	0.052	0.080	0.179	<i>0.028</i>

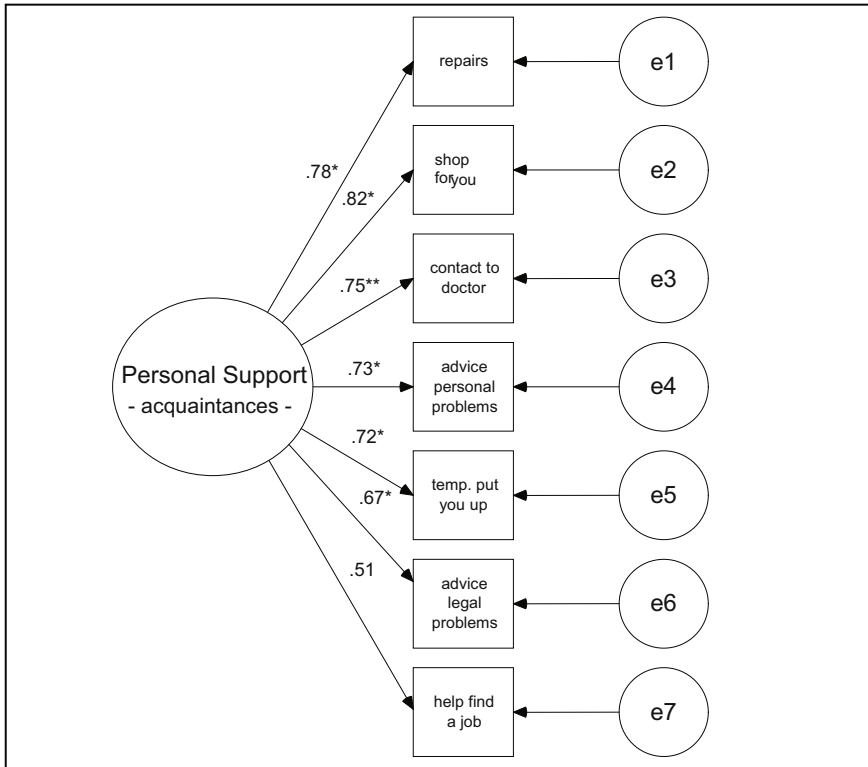
Notes: p-values, 250 samples, raw data (listwise): (a) N=87; (b) N=84, (c) N=121, values in italics are significant at the 5% level, see also appendix 15.7.

Data: Social Relationships among Czech Citizens

*A Side Note: Do we Find an Internally Consistent Factor of Personal Support among Acquaintances?*

As discussed previously, the low membership frequency of the respondents led to a small response frequency regarding the items asking for resources gained by acquaintances from the association the respondent is member in. This made it impossible to analyze the test-retest reliability, however, the test revealed a reasonable sample size; thus, we have the possibility to analyze at least the internal consistency reliability. Again, we calculated a general model and group comparisons regarding age, sex and education. The results are displayed in figure 11 and table 25. The general model shows factor loadings that are all above 0.5. Although the BC estimation of the probability level indicates a non-significant factor loading of the item “help to find a job”, the PM estimation indicates significance at the 5% level (see appendix 15.6). Overall, we find a good model fit (Bollen-Stine bootstrap is non-significant at the 1% level); the results indicate that we find the factor structure also among acquaintances, however, it seems better to exclude the item “help to find a job” from the construct.

Figure 11: CFA for Assessing the Internal Consistency Reliability of the Construct “Personal Support Social Capital” for Acquaintances



Notes: BC method: \*\*  $p < 0.01$ , \*  $p < 0.05$ ;  $\chi^2 = 33.254$ ;  $df = 14$ ;  $p = 0.003$ ; Bollen-Stine bootstrap  $p = 0.020$ ; 250 iterations,  $N = 121$ , see also appendix 15.6.

Data: Social Relationships among Czech Citizens

Comparing the different groups (see table 25) shows that the low reliability is caused by the respondent’s sex. The models are significant at the 5% level (except for the model constraining the measurement residuals) and constraining the models according to measurement weights and structural covariances even increases the model fit in comparison to the unconstrained model. In contrast, the results concerning age and education suggest that both characteristics do not influence reliability negatively (except for education in constraining the meas-



urement residuals to be equal). Accordingly we conclude that the items should be revised to account for the differences among men and women.

## 12.4 Construct Validity

As we discussed in Chapter 7, the CFA is also a useful tool for the measurement of the validity accompanied by construct reliability and extracted variance. Confirmation of validity of at least the Personal Support scale is provided by the previous analysis of internal consistency reliability. However, because the retest included additional items measuring also Political and Financial Skills and Prestige and Education related resources, further analyses are necessary.

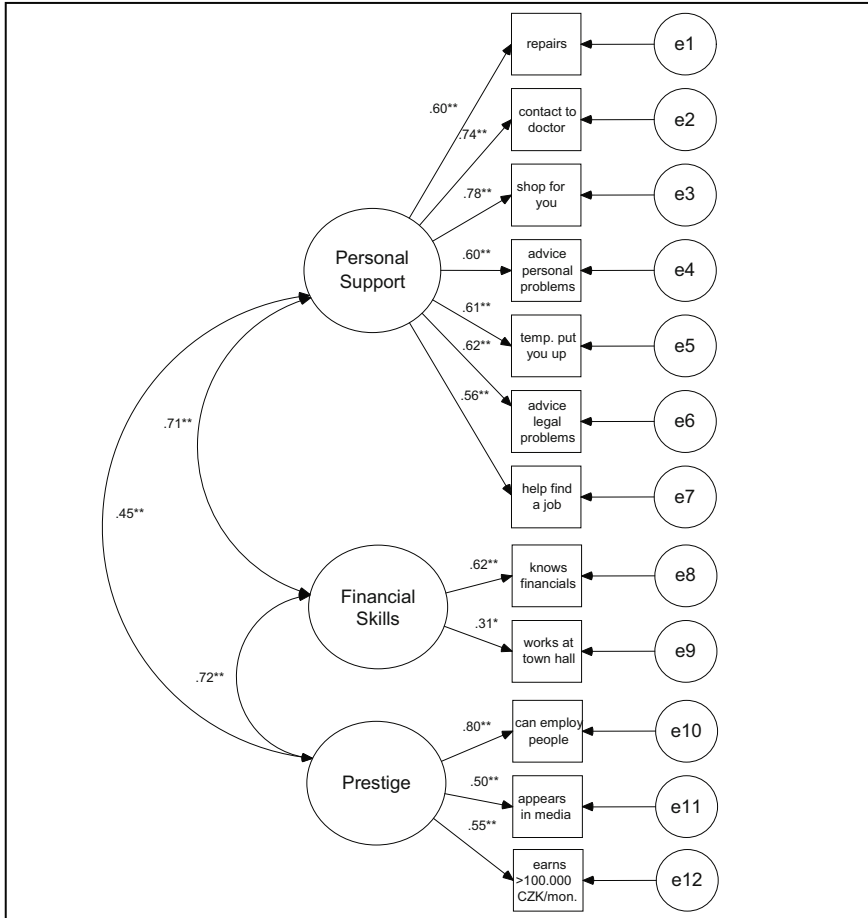
To assess the validity of the used resource generator we will use two cross-validations. First we will assess if we find the same structure as Van der Gaag and Snijders did in their Dutch survey; and secondly, we will compare our results to the results of a second data source, specifically the survey CVVM “Our Society”. In both cases only a loose cross-validation is possible because the sample of Van der Gaag and Snijders was drawn from a completely different population, the Dutch society, and also because, although the survey “Our Society” draws a sample from the Czech society as population, a different sampling strategy and method (face-to-face) were used as compared with the survey “Social Relationships”. Additionally, the surveys “Social Relationships” and “Our Society” used partially different items to measure the different dimensions of social capital than Van der Gaag and Snijders did. Accordingly, we cannot expect that the models will fit in all three contexts entirely; however, we expect at least a tendency.

### 12.4.1 CFA Using the Survey “Social Relationships”

The starting point is the four factor structure found in the Van der Gaag and Snijders (2005) survey - Personal Support, Political and Financial Skills, Personal Skills and Prestige/Education related social capital. As discussed in the first part of this chapter, the survey “Social Relationships” contained only items to measure the first three factors we assume to find in the samples (see figure 12).

For the purpose of validation, we follow a different strategy than in the previous analyses. We analyze the resources gained by family, friends and acquaintances together because Van der Gaag and Snijders also included all three types of relation in their analysis.

Figure 12: CFA – Factors Social Capital for Validation I



Notes: N = 129; \*\* p<0.01, \*p<0.05;  $\chi^2 = 74.757$ ; df = 51; p = 0.017; GFI = 0.915; AGFI = 0.870; RMR = 0.031; RMSEA = 0.060.

Data: Social Relationships among Czech Citizens

We summarized the particular items for family members, friends and acquaintances from the associations the respondent was a member of into single variables. Furthermore, we recoded these new created variables ranging from 0

(no access to resources) up to 3 (over 10 people provide access to resources)<sup>179</sup>. Because of their construction including the same intervals among the categories, we act on the assumption that the constructed items are interval scaled. Furthermore, the distributions of these 4-point variables approximately resemble a normal distribution<sup>180</sup> making the use of bootstrapping gratuitous.

Table 26: Construct Reliability and Variance Extracted for CFA of the Surveys Social Relationships and Our Society

Factor	Social Relationships (a)		Our Society (b)	
	CR	VE	CR	VE
Personal Support	0.88	0.42	0.80	0.35
Financial Skills	0.64	0.24	0.61	0.36
Prestige	0.87	0.39	0.76	0.32

Notes: (a) N=129, (b) N=971, for calculation see formulae 7.14 and 7.15 in Chapter 7, for error variances see appendix 15.8.

Data: Social Relationships among Czech Citizens, Our Society

The result of the CFA is displayed in figure 12 and serves as first evidence of validity. The model fits the data well; the  $\chi^2$  of 74.757 is non-significant at the 1% level. Furthermore, the GFI (0.915), the RMR statistic (0.031) and the RMSEA statistic (0.06) indicate good model fits. Only the AGFI<sup>181</sup> (0.870) shows a non-perfect model fit, however it is near to the critical value of 0.9. These results allow us to conclude that the same factor structure exists in the Czech population as does in Dutch society; the applied items measure the same

<sup>179</sup> 0 = 0; 1 = 1 to 5; 2 = 6 to 10; 3 = 11 and more people with access to the specific resources.

<sup>180</sup> We are aware of the fact that this can serve as an assumption only, and might be an explanation of biased results (see discussion of part 12.4.2 in this chapter).

<sup>181</sup> The *Goodness of Fit Index* (GFI) is considered to be good at values greater than 0.9 (Hair et al. 2006: 747). It is a measure of the relative proportion of the variances and covariances in the model and gives the proportion of variance in the empirical data matrix that is explained by the hypothetical model. The *Root Mean Square Residual* (RMR) is based on the discrepancy between the data and the hypothetical model generated matrix of residuals and indicates the difference between the matrix of the empirical model and of the hypothetical one. The model fit is good if the RMR is smaller than 0.05. The *Root Mean Square Error of Approximation* (RMSEA) uses the matrix of residuals as does the RMR, but accounts additionally for the degrees of freedom (Hadjar 2004: 216-217). For a good model fit the RMSEA should be smaller than 0.80 in small samples (below 250 cases) and below 0.7 in samples of sizes 250 and over (Hair et al. 2006: 748, 753). The *Adjusted Goodness of Fit Index* (AGFI) is similar to the GFI, but accounts also for the degrees of freedom, therefore penalizes more complex models. It should also reveal values over 0.9 to indicate a good model fit (Hair et al. 2006: 747; Hadjar 2004: 216-217).

dimensions. Furthermore, the factors show high factor loadings of at least 0.5 with the exception of the item “works at a town hall” which is minorly explained by the factor financial resources (0.31). The results are further supported by high construct reliability over 0.6 of the three factors (see table 26). In contrast, but as the factor loadings suggest, the Variance Extracted shows small values, especially for the factor “Financial Skills” where only 24% of the variation in the items is explained.

#### 12.4.2 CFA Using the Survey “Our Society”

As stated above, the survey “Our Society”<sup>182</sup> contained the same items<sup>183</sup> as the survey “Social Relationships”, but the response categories were different. Here no free recall was used but dichotomous answering categories – indicating only if a resource is available or not. In contrast to the Dutch survey, but in accordance with the survey “Social Relationships” it was asked separately for family members, friends and acquaintances. The category acquaintances included all known persons, while the survey “Social Relationships” includes only acquaintances from associations the respondent is a member in.

In order to get the reader acquainted with the survey “Our Society”, we will first introduce the distributions of the items. Only few respondents know somebody who “appears in the media” – 7.2% of the respondents concerning acquaintances, 4.0% concerning friends and 3.3% concerning family members (see table 27). On the other hand, at most 51.5% of the respondents have acquaintances as source of the resources “help with repairs” and “put in contact with a good doctor”. The picture is different, if we look at the percentage of respondents that get contact to some resource through friends. Here at most 80.5% of the respondents have friends that “will give advice in the case of personal problems” (among acquaintances: 34.3%, relatives: 79.2%). In the case of relatives a maximum of 86.8% of the respondents know somebody who “will temporarily put one up” if the home burned down for example (among acquaintances: 27.9%; friends: 64.7%). These frequencies suggest that the strength of a relation leads to a higher access of resources for an individual. However, the frequencies of the

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<sup>182</sup> As was stated before, for reasons of comparability we included only respondents of age 18 and older. Previous results including all age groups can be found in Häuberer (2008a). It has to be pointed out that the there presented results are slightly different, because we used the strategy of exploratory factor analysis.

<sup>183</sup> For the survey “Social Relationships” only small formulations were changed. To compare the used items see appendices 15.1 and 15.9.

survey “Social Relationships” (see table 20) show that the respondents have more friends than family members that can provide several resources.

Table 27: Frequencies of the Resource Generator Items

		Family	Friends	Acquaintances	Sum			
		yes	Yes	yes	0	1	2	3
Help with repairs	N	808	713	500	61	206	297	407
	%	83.2	73.6	51.5	6.3	21.2	30.6	41.9
Shop for you	N	824	662	388	53	276	328	314
	%	84.9	68.3	40.0	5.5	28.4	33.8	32.3
Contact with good doctor	N	678	640	500	148	209	233	381
	%	69.8	66.0	51.5	15.2	21.5	24.0	39.2
Advice personal problems	N	769	781	333	53	225	421	272
	%	79.2	80.5	34.3	5.5	23.2	43.4	28.0
Put you up	N	843	628	271	74	287	375	235
	%	86.9	64.7	27.9	7.6	29.6	38.6	24.2
Advice legal problems	N	502	494	402	236	283	241	211
	%	51.7	50.9	41.4	24.3	29.1	24.8	21.7
Help find a job	N	369	419	279	421	198	187	165
	%	38.1	43.3	28.8	43.4	20.4	19.3	17.0
Employ people	N	173	252	253	560	212	131	68
	%	17.8	26.0	26.1	57.7	21.8	13.5	7.0
Know financial matters	N	345	362	371	308	349	213	101
	%	35.5	37.3	38.2	31.7	35.9	21.9	10.4
Work at town hall	N	102	127	246	620	247	84	20
	%	10.5	13.1	25.4	63.9	25.4	8.7	2.1
Appear in media	N	32	39	70	860	86	20	5
	%	3.3	4.0	7.2	88.6	8.9	2.1	0.5
Earn >100.000 CZK	N	44	47	96	831	103	27	10
	%	4.5	4.9	9.9	85.6	10.6	2.8	1.0

Notes: N = 971  
Data: Our Society

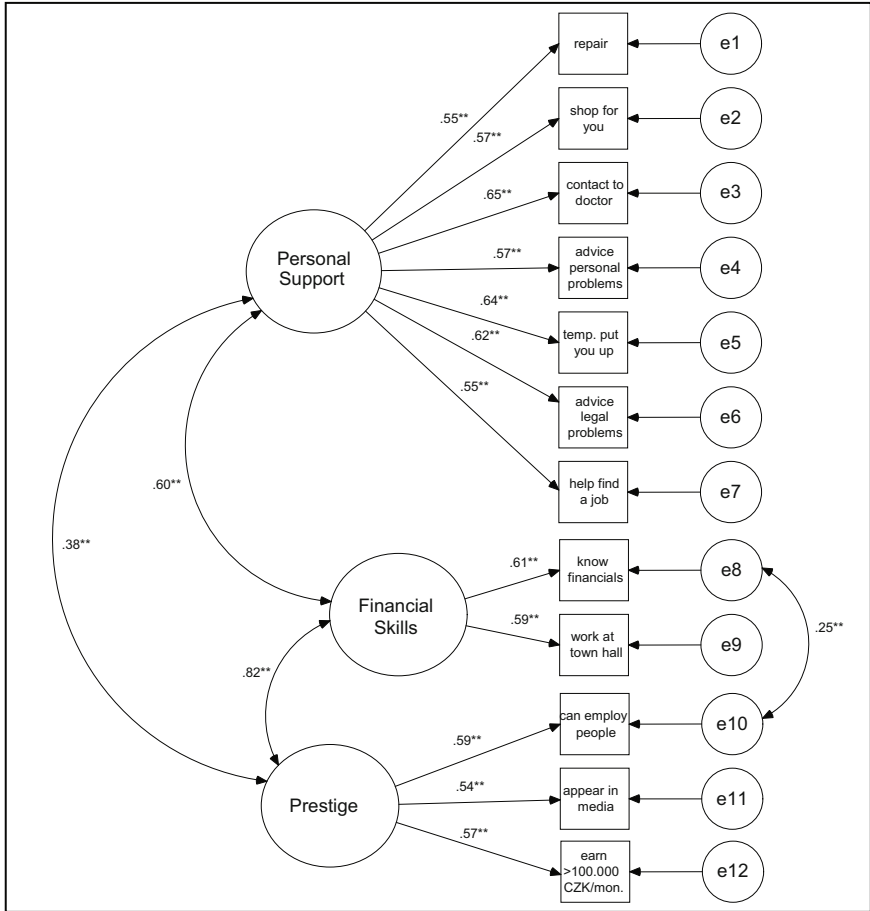
To answer the question if we can find the same structure of resources like in the Dutch and Czech surveys, we pooled the items. The three categories (acquaintances, friends and relatives) were counted as one variable for each of the items revealing variables ranging from 0 - no contact of this kind – up to 3 – contacts in all three categories.<sup>184</sup> Considering all three categories together, we find that the lowest percentage of respondents, only 5.5%, don’t know anybody

<sup>184</sup> The value 1 indicates one contact of this kind (acquaintance or friend or relative) and 2 indicates two contacts of this kind. Again, we assume the variables to be interval scaled, and found their distribution to be similar to a normal distribution.

who “will give an advice in the case of personal problems”. In all three categories, the plurality of the respondents (39.2%) knows somebody in all three categories who can “put them in contact with a good doctor”. The highest number of respondents (88.6%) does not know anybody who “has contact to the media” followed by people that “earn more than 100.000 CZK monthly” (85.6%).

Using these counted items, we calculated a CFA assuming the discussed three factor structure. The results are displayed in figure 13 and show that the factor structure is also valid in the survey “Our Society”. As can be expected in larger samples with more than 250 cases (see Hair et al. 2006: 756), the  $\chi^2$  value (463.103) is significant but the other model fit indicators - GFI (0.921); RMR (0.066) and RMSEA (0.092) - indicate a good model fit. As was the case in the previously tested model, the AGFI (0.876) does not reach the critical value but is close to it. Concerning the factors, the factor loadings are all above 0.5 demonstrating the good explanatory power of the factors as well as good internal consistency reliability. However, one difference to the survey “Social Relationships” can be found. The error values of the items “knows finances” and “can employ people” are highly correlated ( $r = 0.25$ ). This correlation is reasonable, because we can assume that the contacts able to employ people also know a great deal about finances and vice versa, because they have to know state regulations to get the license to be employer. Furthermore, in assessing the measures Construct Reliability and Variance Extracted a similar result to the one found in the survey “Social Relationships” occurs. While the CR has high values and indicates good validity, the values of VE are rather low, on average 32 to 35% of the variations in the items are explained by the factors (see also table 26). This indicates that the factors are not completely accurate for the Czech case, they might be slightly different. However, because the other measures indicate good validities for the factors, we can regard the measures as valid.

Figure 13: CFA – Factors of Social Capital for Validation II



Notes: N= 971; \*\* p<0.01, \*p<0.05;  $\chi^2 = 463.103$ ; df = 50; p = 0.000; GFI = 0.921; AGFI = 0.876; RMR = 0.066; RMSEA = 0.092.

Data: Our Society

In summary, although the answer categories were different than in the survey “Social Relationships” we find the same factor structure in the survey “Our Society”. Furthermore, both surveys show the same factor structure as did the Van der Gaag and Snijders (2005) study even they used partly different items. This is a clear indicator that the resource generator is valid and transferable to the

Czech context, regardless of the answer categories used (free recall vs. dichotomous). However, several aspects speak to the necessity of measure improvement. For one, the Variance Extracted levels are rather low in both surveys. This might be caused by a slightly different factor structure than revealed in the Dutch survey. The high correlations among the three factors in both surveys suggest this. Secondly, the item “works at a town hall” shows a small factor loading on the factor Political and Financial Skills in the survey “Social Relationships”. This item might be excluded from the scale in the future. Finally, the low test-retest reliability of the constructs – especially for the less-educated concerning the item battery on resources revealed from family members – indicate the necessity of revising the items. How this could be done is indicated by two facts. First, the free recall method revealed non-normal distributed variables, while the transformed 4-point scaled items feature a distribution similar to a normal distribution. Accordingly, the use of a 4 point scale from the beginning might be useful. To assess better measurement methods future research is necessary. An appropriate method for this assessment is the use of a Multitrait-Multimethod (see e.g. Saris, Andrews 1991, Saris, Münnich 1995) study including both kinds of answer categories. The second is that, using a reduced scale, we have to assume the measures are interval scaled, although we cannot ensure this entirely. Therefore, it is also useful to consider using a different analysis method appropriate for categorical data such the Item Response Theory (Lord 1980) or Latent Class Analysis (McCutcheon 1987; Häuberer 2008).

## 12.5 Criterion Validity of the Resource Generator

As was shown in the previous sections, the resource generator has good construct validity. However, this does not entirely prove that it measures what it is supposed to or that it also has theoretical validity. For this purpose criterion validation is necessary. As we derived from the model generated in the first section of the present monograph, theoretically the amount of resources facilitates instrumental and expressive actions. Thus, we can also use the outcomes as criteria. Our questionnaire includes only one expressive goal – life satisfaction.<sup>185</sup> According to Lin's concept, having more resources at ones disposal increases life satisfaction. This is especially the case for men, but less so for women as research shows (see Chapter 5 in the present monograph). This suggests that we should only find a small positive relationship if the measures of the resources are

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<sup>185</sup> The item “When I look at my life as a whole, I can say that I am satisfied with it” was used and recoded and had to be answered on a 4-point scale ranging from strongly agree to strongly disagree (see appendix 15.1, item 12k). We assume this item to be interval scaled.



valid. We will test also the sociodemographic variables of sex, age and education. As the theory and empirical results suggest (Chapters 4 and 5), males and higher-educated respondents have bigger and more diverse networks and therefore better access to resources, while older respondents don't have these diverse networks and have less access to resources.

To analyze the criterion validity, we constructed the three factors Personal Support Social Capital (test and retest separately), Political and Financial Skills and Prestige related Social Capital using the regression method (in SPSS). The correlations of the factors with the criteria are displayed in table 28. Generally, they indicate good criterion validities of the different factors. Males have more resources at their disposal. Only in the case of Personal Support are the correlations very low ( $r = -0.033$  (test);  $r = -0.024$  (retest)) indicating an equal amount of these resources for men and women. This is reasonable, because personal support is mainly provided by family members. As expected, the factors of resources are positively correlated with education and weakly but positively so with life satisfaction. Age is only strongly negatively correlated with Personal Support ( $r = -0.248$  (test);  $r = -0.399$  (retest)); the correlations with Political and Financial Skills ( $r = 0.013$ ) and Prestige ( $r = -0.059$ ) are rather low. This result is reasonable too, because younger respondents need more personal support like, for example, in child rearing or house building that is done mainly in the first half of adult life. In contrast, Financial Skills and Prestige-related Social Capital are needed in all age groups similarly, for example, everybody has to hand in a tax declaration every year.

Table 28: Criterion Validity of the Resource Generator

		Sex	Age	Education	Life satisfaction
Personal Support (test)	r	-0.033	-0.248	0.138	0.051
	N	343	343	343	339
Personal Support (retest)	r	-0.024	-0.399	0.166	0.102
	N	115	115	115	112
Financial Skills	r	-0.185	0.013	0.104	0.120
	N	129	129	129	126
Prestige	r	-0.269	-0.059	0.385	0.169
	N	128	128	128	125

Notes: Pearson Correlations r.

Data: Social Relationships among Czech Citizens

*In summary*, the results indicate good criterion validity of the resource generator. However, we have to note that the number of criteria for the analysis at

our disposal was very limited. Additionally, one might argue that sex, age and education are inappropriate because no research about the concrete distribution of the social capital factors in the society took place, yet. Thus, future research is needed to learn more about the validity of the resource generator. Concerning the theory more criteria are imaginable. Broad research took place on the positive connection between access to social resources and status attainment (Chapter 5). Accordingly, the first or current job status could be used as validation criteria in future research.

## 12.6 Summary

The present chapter analyzed the reliability and validity of the so called resource generator in the Czech context. We analyzed the quality of 12 items measuring three dimensions of social resources – Personal Support, Political and Financial Skills and Prestige-related Social Capital. The test-retest reliability of the different items is moderate; however, comparing sex, age and educational groups we find great differences. Especially males, older respondents and the less-educated seem to have problems giving reliable answers. We find the same results analyzing the test-retest reliability of the construct Personal Support divided into these groups. However, conducting group comparisons shows that the general factor structure is the same as are the factor loadings in the different groups. But, we cannot find the same covariance structures. Generally, this indicates that the results are the same for the different groups; the items are moderately reliable. We find one exception; the models for higher and less-educated respondents are different concerning the items about family members that will provide resources. This strongly points to the necessity of revising these items.

Concerning the construct validity, we find the same factor structure as did Van der Gaag and Snijders indicating the transferability of the item battery to the Czech context. Additionally, the correlations of the factors with the criteria of life satisfaction, as well as sex, age and education support the good construct validity of the item battery.

## 13 Summary and Conclusions: What the Study Tells Us and Where it Directs Future Research

The purpose of the present monograph was, to advance the social capital concept methodologically. The present study aims to formalize the social capital concept and evaluate measures that seem appropriate for testing the axioms of the formalized theory based on their quality.

Because current research does not provide a formalized social capital theory, we started with the basic concepts of social capital of Bourdieu (1983) and Coleman (1988) and derived a general definition of social capital. *Social capital is a property of relationships among individuals that are a resource actors can use and benefit from.* Because neither Bourdieu nor Coleman's concepts formulate empirically testable theorems, neither is appropriate as a general social capital theory. But the discussion of both reveals valuable features a general theory of social capital should have: social capital is an individual or public good, and therefore has to be theorized at the micro and macro levels of society. Social capital is produced in open and closed structures and institutionalized and non-institutionalized relationships equally. The resources embedded in these different structures may benefit different actions. Additionally, the thus far neglected negative effects of social capital, such as exclusion, have to be considered as well as the topic how social capital can be used to decrease inequality. In the following three chapters, we contested the concepts of Putnam (Chapter 3), Burt (Chapter 4) and Lin (Chapter 5) concerning these four entities as well as their formal character and empirical content.

While Bourdieu highlights the provision of support and the production and preservation of trust by social capital, Coleman sees it as an aspect of the social structure. He differentiates kinds of social capital – trust and authority relations, effective norms and sanctions, information potential and appropriable social organizations. Putnam (2000) deals with the strengthening of democracy and the economic output of society via networks of civic engagement that facilitate the creation of trust and norms of reciprocity. A different view is provided by Burt and Lin; both assume the social structure the actor is embedded in to be important. Burt (1992) highlights the brokering or spanning of structural holes and Lin (2001) the access to resources connected to valued positions in the societal strata.

Bourdieu and Coleman conceptualize social capital at the individual and collective levels. This encourages the danger of assuming conclusions drawn on one societal level to be valid on the other. In Putnam's concept, we find this concern confirmed. He discusses social capital at the macro-level and as a public good and assumes that we find the same structures at the individual level. In doing so, social capital is separated from its roots, that is, the relations it emerges from. His concept combines structural (networks) and cultural (generalized trust, norms of reciprocity) aspects. Incorporating both arguments divides social capital from its roots, that is, from its capital character as well and from the relations it emerges from. Capital features the possibility of investment to gain profits. Thus, the cultural societal elements generalized trust and norms of reciprocity are not social capital, because one cannot invest in them easily. In contrast, individual or collective actors can easily invest in relationships with other individuals or collectives. Therefore, we agree with Franzen and Pointner (2007) and conceptualize social capital as structural entity only.

However, the cultural societal aspects seem to be connected to social capital because they ease the creation and maintenance of relationships and are facilitated by relationships. This is why many scholars agree that social capital is not just a private good but that it has externalities and is thus also a public good. Although the concrete mechanisms have not been discovered yet, their discussion allows us to conclude that cultural societal aspects are preconditions as well as outcomes of social capital.

Another problem in Putnam's, but also Coleman's concept is the postulation of functionalism. This leads to the identification of social capital only when it works and further conceptualizes it as a cause and an outcome simultaneously. To construct a valid theory, provable theorems have to be created that can be empirically tested. This is only possible if we distinguish strictly among causes and effects. Among the reviewed concepts, only Lin's concept shows such a deductive character including provable theorems useful to adjust and develop a theory of social capital further. Nonetheless, all the discussed concepts fulfill the other requirements for a formal theory; they are explicit, simple and internally consistent.

Otherwise, Putnam's concept is valuable to the social capital discussion because it widens its view highlighting formal relations that emerge in associations. Formal relationships are neglected by the other authors (only Coleman speaks of appropriable social organizations). Both, formal and informal relations create access to resources for individuals. Accordingly, both have to be part of a social capital theory.

Concerning other characteristics of relations that create social capital, Bourdieu, Coleman and Putnam highlight closed and dense social structures

assuming that these generate the highest benefits in terms of facilitating access to information and allowing the establishment of norms and sanctions (Coleman), in terms of helping societal groups to demarcate from other groups (Bourdieu) or in terms of educating civic citizens (Putnam). This narrow view is highly criticized, because various empirical studies show that weak ties are also important. Burt on the other hand overemphasizes these weak ties and neglects the strong ones. Contrarily, in Lin's concept we find both types of ties.

None of the concepts explains how we can use social capital to fight inequality. Finally, various authors highlight that social capital can also have negative effects (e.g. in terms of exclusion). However, this aspect is not included in the presented concepts.

In summary, a general social capital theory is still under construction; however we can formulate a preliminary formalized concept that can be tested (see also figure 6 in Chapter 6): Concerning its scope, our social capital theory applies to hierarchically structured societies. Individuals and collectives are actors pursuing purposive action to facilitate expressive or instrumental goals. Social capital emerges in the structure of relations or networks among individuals or collectives. It provides access to social resources. Some resources are more useful for facilitating expressive actions and others are more useful for facilitating instrumental actions.

The structures or networks can be open (bridging) or closed (bonding). The former are more useful for instrumental actions and actions with a competitive character and the latter are more useful for expressive actions or actions with a cooperative character. Structures vary further according to size and range/diversity where small sizes and ranges are more likely to provide access to resources for expressive actions and large sizes and ranges are more likely to provide access to resources for instrumental actions.

Preconditions of social capital are cultural societal aspects like norms of reciprocity and generalized trust and collective assets (e.g. economy, technology and historical background) as well as the individual characteristics of the particular respondent (e.g. sex, ethnicity). Additionally, cultural societal aspects are a product of social capital. Finally, we assume social capital to have negative outcomes or externalities. The specific connections to its preconditions and its outcomes as well as the role of social capital in handling social inequality are avenues for future research.

Based on this preliminary social capital theory revealed in the first part, the second part of this monograph focused on the quality of measurements of the numerous theoretical parts. Because of the underdevelopment of the social capital theory and therefore, its measures we could not test our revealed hypotheses

in the frame of this monograph. Thus, we focus on the development of appropriate measures, only.

Chapters 7 to 9 have the purpose of acquainting the reader with the statistical methods used and with the Czech context. Chapter 7 introduced the methods to assess the quality factors formally, mainly reliability and validity, Chapter 8 introduces the analyzed surveys and Chapter 9 discussed the Czech background influencing the distribution of formal and informal networks. Social networks in the Czech Republic are strongly formed by the past experience of Communism and transformation to Capitalism. While Communism was characterized by political control and forced membership, Capitalism brought consumerism and individualism. Both contribute to reduced generalized trust and a rejection of civic engagement by the majority of Czech citizens. This is accompanied by a retreat into informal networks providing the main source of access to social capital. Informal networks are further supported by the Internet as technological background variable. However, since the Velvet Revolution formal networks have been growing (see Chapter 9). Accordingly, both network types have a right to be included in the model as revealed in the first part of the monograph and need to be measured.

Concerning the quality of measurements in the frame of a survey, social scientists generally agree on objectivity, reliability and validity as criteria. While objectivity is well realized by the use of a structured interview, reliability and validity are influenced by the socio-demographic characteristics of the respondent; especially age, sex and education (see Chapter 7). Because new measurement tools for social capital have recently been developed (see especially Chapters 4 and 5) but never used in the Czech context, the assessment of their reliability and validity are crucial before using them to analyze the data to answer hypotheses. To this end, we conducted the survey “Social Relationships among Czech Citizens” as a test-retest experiment. Before starting with the analysis, we assessed if the retest contains a bias in comparison to the test. This was not the case as both surveys follow the same distribution. We tested both the reliability and the validity of measures of access to and accessed social capital in Chapters 10 to 12. In all analyses, we distinguished between three kinds of relationships: informal strong ties composed by family members, informal weak ties assembled by friends and formal weak ties of acquaintances from the associations the respondent is a member in. Starting with well known measures of network size (number of contacts) and density (contact frequency) of informal relationships, the analyses showed rather unexpected results (cf. Chapter 10). While the measures are highly reliable for strong ties or family members, the opposite is true for the reliability of informal weak ties measured with the same items at both time points. With regards to the influence of personal characteristics on the reliability

of the measures concerning friendship, we couldn't reveal a clear pattern. Because the study contained only two questioning sessions, we included 5 variables controlling for changes between the time points. However, the changes a respondent experienced did not negatively influence the answering behavior. In contrast, both item batteries reveal good criterion validity. In short, the study points to the appropriateness of both the items measuring strong and weak ties, however the items concerning informal weak ties need refinement to yield better reliability.

Concerning formal weak ties or the size (number of memberships) and density (participation frequency) of formal networks (associations), we applied several items listing different organizations in the test, whereas the retest contained this question in an altered form asking for the participation frequency in any kind of association. The analyses showed that both versions of questioning are related, but not reliably. The applied items seem to measure different true values. This clearly shows that the different items do not reveal the same results concerning different measures of membership in associations. The socio-demographic characteristics of the respondents seem to influence the reliability, especially older females answer the items reliably and higher-educated respondents don't answer the items reliably. Future researchers need to be aware of this fact when interpreting their results. In contrast to the weak reliability, we find moderate criterion validity (correlating the summated network size and density indicators with sex, age, education, extraversion, generalized trust and norms of reciprocity), hinting at the appropriateness of the measure but also calling for a revision of the items.

For the measurement of spanning structural holes we used a different measure than developed by Burt (see Chapter 4). That is to say, we applied the bridging social capital item battery proposed by Pajač (2006). The main advantage of this item battery is the fact that it additionally assesses the range of an actor's network. Because former research revealed a factor structure of Outgroups, different Interests and different Lifestyles, not only the assessment of the test-retest reliability, but also the internal consistency reliability and construct validity was possible. Originally, the item battery asked for friends with different characteristics than the respondent. The present study enlarged this view by asking for the concrete number of friends as well as for the number of family members and acquaintances from the associations the respondent is a member in. Generally, the results are rather poor; the test-retest reliability of all items is very low. We could not reveal the assumed factor structure for friends, family members or acquaintances, although the data of the survey "Our Society" that we used for cross validation showed the analyzed factor structure. However, the previously applied measures using a 5-point scale seem to lead to higher reported numbers

of friends, indicating an overestimation of the amount of network contacts with different characteristics. Additionally, the results raise the question of whether the idea of latent bridging social capital factors is appropriate or if just the entire summated amount of bridging social capital is important. We found good criterion validity using a summated scale (correlating the bridging social capital factor with sex, age, education, generalized trust, norms of reciprocity, extraversion, membership as well as active participation in associations), which encourages favoring this scale over a consideration of the individual factors. Here, future research is necessary to shed more light on the topic.

The measurement of accessed social capital revealed more promising results (see Chapter 12). In the survey “Social Relationships among Czech Citizens”, we applied a resource generator containing 12 items appropriate for the Czech context. The used items show acceptable test-retest reliabilities. Analyzing the adequacy of the items for different social groups revealed the unreliability of the items especially for males, older respondents and the less-educated. However, viewing the resources as a construct (in this case the factor Personal Support Social Capital) we find these differences diminish; the differences between male and female, younger and older and higher vs. less-educated respondents are not any more significant than comparing single items of the test and retest with one exception, the items asking for resources revealed by family members are not appropriate for the less-educated, but for higher-educated respondents. These items should be revised before being applied in future research. The other items are applicable in future research when aiming to measure the factors of accessed social capital.

Concerning validity, we compared our results to the initial study results of Van der Gaag and Snijders (2005) and to the results of the survey “Our Society”. In all three cases, we find the three factors Personal Support, Financial/Political Skills and Prestige related Social Capital. This shows the construct validity independent of the answering method (the Dutch study asked only for access through family members or friends or acquaintances, the survey “Our Society” asked for access through all 3 categories separately using a yes/no response and the survey “Social Relationships” asked for the concrete number of persons in all three categories that are providing the resource in question). Thus, the construct seems to be stable across different contexts. The resource generator is therefore a promising measurement tool of social capital for future research. This result is further supported by good criterion validity (correlating the three factors with sex, age, education and life satisfaction).

To summarize, the study shows that we can recommend the items measuring network size and density for strong ties and the proposed resource generator items for future research. In contrast, we have to discourage the use of the items



on the network size and density of informal (friends) and formal (acquaintances) networks and the measurement of structural holes or openness and range in their current form. Although all measures seem to be valid, they need to be improved to construct reliable measures. Intensive future research is needed before using the items in the field.

This is also necessary, because our study reveals several constraints: for one, it examined a small number of cases; only 129 respondents participated in the retest study. This is no problem in correlation analyses, where the critical value of cases is above 30. However, regarding more complex calculations used in Structural Equation Modeling, problems are encountered. The small sample size especially affects the measures connected to membership in an association because only small formal networks exist in the Czech Republic as highlighted in Chapter 9. Accordingly, only 36 respondents of the second round were members in associations, constraining the possibilities to analyze the reliabilities beyond general item-by-item assessments. Also, although we showed that the changes experienced by the respondent did not influence reliability, our study could not include all possible changes in the 5 items meant to measure all changes. Future studies might use a different design, like applying the questionnaire at least three times to account for changes and reconsiderations of the respondents as proposed by Porst et al. (1987). Especially different seems the assessment of the number of friends. While the number of family members is present in the respondent's minds, the number of friends seems not to be. After asking the respondents to state the number of friends at the first time reconsideration may take place leading to another statement at the second time point of questioning. And finally, because our main focus was on the construct validation of the item batteries, the assessment of the criterion validities can be considered rather bounded. The questionnaire contained only few appropriate criteria – aside from the socio-demographic variables age, sex and education the questionnaire included only trust and norms of reciprocity to validate network measures, and it also included life satisfaction to validate the resource generator. But especially for the bridging social capital item battery, we can view tolerance as a useful criterion and for the resource generator expressive and instrumental goals, like physical health or attained status. Accordingly, we need future studies to follow up on the confirmation of the bridging social capital battery as a valuable measurement tool.

Future studies should aim to answer the following questions: (1) is the free recall method appropriate to assess network sizes? (2) does the telephone survey cause unreliable ratings? (3) is the problem of applicability caused by the Czech context? We cannot answer these questions with the present study; however, there are several ways to answer them. A Multitrait-Multimethod experiment, developed by Saris and Andrews (1991), appears especially useful and cost-

saving to us. This answers the first two questions and assesses, in what context the items are more reliable or valid. Furthermore it is based on a random sample and thus, forecloses the appearance of unobserved heterogeneity as might be the case in our quota sample. To account for the Czech context an international study with at least two countries is useful. However, for this approach we need a high number of cases (approx. 1000 respondents). Its assessment is valuable though, because several reasons speak for the influence of the following factors. First, in contrast to a face-to-face survey, a telephone survey guarantees higher anonymity and is mainly used in a constrained time frame. It is conceivable that this leads to less reflection about the questions during the interview. Second, the unreliability concerning the bridging social capital item battery indicates that the free recall method is inappropriate, while the good quality of the resource generator as discussed in Chapter 12 suggests that it the opposite is true.

As another way to assess the influence of the different interview situations (telephone and face-to-face interviews) as well as the appropriateness of the items for different subgroups (regarding for example ethnicity), qualitative analyses are also imaginable. For example, we could use focused interviews (c.f. Kendall, Merton 1946) with members of different subgroups to discuss the problems of the items in different forms of interviews. With these results the less appropriate item batteries (especially regarding bridging social capital and networks of friends) can be refined.

Besides this, more future research is necessary, before we will be able to analyze the complete model of social capital as proposed in Part 1 of the monograph (see Chapter 6 in the present monograph). The present study did not assess the quality of measures of the preconditions and outcomes of social capital such as cultural societal aspects (generalized trust, norms of reciprocity), instrumental outcomes like status attainment, or expressive outcomes like physical health. Before testing the complete model of social capital the quality of measures of all components must be guaranteed. Accordingly, also here a great deal of future research is necessary.

# 14 Literature

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# 15 Appendix

## 15.1 The Questionnaires of the Test and Retest Study “Social Relationships among Czech Citizens 2007/2008”

### 15.1.1 Czech Version of the Questionnaire / Dotazník “Společenské vztahy českých občanů”

*Test (T)* Dobrý den, jmenuji se \_\_\_\_\_jsem tazatelem společnosti SC&C a nyní provádíme výzkum pro Karlovu univerzitu v Praze na téma společenské vztahy českých občanů. Chtěli bychom Vás požádat o zodpovězení našich otázek. Rozhovor bude trvat pouze 15-20 minut. Veškeré informace, které nám poskytnete, budou zpracovány anonymně a pouze pro účely tohoto projektu.

*Retest (R)* Dobrý den, jmenuji se \_\_\_\_\_jsem tazatelem společnosti SC&C a nyní provádíme výzkum pro Karlovu univerzitu v Praze na téma společenské vztahy českých občanů. V listopadu 2007 jsme již mluvili s jedním členem/členkou vaší domácnosti, respektive nejspíše přímo s vámi. Chtěli bychom s vámi (s ním/s ní) mluvit podruhé. Vaše účast na tomto druhém kole studie je pro projekt velice důležitá! Rozhovor bude trvat pouze 10 minut. Veškeré informace, které nám poskytnete, budou zpracovány anonymně a pouze pro účely tohoto projektu.

*(T/R) SOC.1* Jste:

- (1) muž
- (2) žena

*(T/R) SOC.3* Jaký je rok narození:

*(T) SOC.6* Jaké je Vaše nejvyšší dosažené vzdělání?

- (1) základní
- (2) vyučen(a)
- (3) maturita
- (4) VŠ
- (9) neví

(T) SOC.2 Bydlíte:

(T/R) (1) ve velkém městě

(T/R) (2) v malém městě

(T/R) (3) na venkově

(R) (9) Nebyl/a jsem tehdy vůbec dotazován/a.

(T) SOC.11 Jaká je velikost obce v níž bydlíte?

(1) do to 5 000 obyvatel

(2) 5 000 – 9 999 obyvatel

(3) 10 000 – 19 999 obyvatel

(4) 20 000 – 49 999 obyvatel

(5) 50 000 – 99 999 obyvatel

(6) 100 000 +

(T) SOC.12 V jakém bydlíte kraji?

(1) Praha

(2) Středočeský

(3) Jihočeský

(4) Plzeňský

(5) Karlovarský

(6) Ústecký

(7) Liberecký

(8) Královehradecký

(9) Pardubický

(10) Vysočina

(11) Jihomoravský

(12) Olomoucký

(13) Zlínský

(14) Moravskoslezský

(T/R) Nás zajímají kontakty s osobami ve Vašem životě (započítejte členy rodiny, přátele a známé).

(T/R) 1. Kolik máte dospělých sourozenců? – Máme na mysli bratry nebo sestry, kterým je 18 a více let a jsou naživu. Prosíme započítejte také nevlastní a adoptované sourozence.

Dospělých sourozenců: \_\_\_\_

(T) 2. A kolik máte dětí, kterým je 18 a více let? Máme na mysli děti, které jsou naživu. Prosíme započítejte také nevlastní a adoptované děti.

Počet dětí starších 18 let: \_\_\_\_



3. Budu Vám číst jednotlivé příbuzné a Vy mi prosím řekněte, jak často jste s nimi byl/a v uplynulých čtyřech týdnech v kontaktu (myšleno osobním, telefonickým nebo mailovým):

- (1) Třikrát nebo vícekrát za poslední měsíc
- (2) Jednou nebo dvakrát za poslední měsíc
- (3) Za poslední měsíc vůbec
- (4) Nemám žijící příbuzné tohoto druhu
- (9) Neví

(T/R) a) Matka	1 2 3 4 9
(T/R) b) Otec	1 2 3 4 9
<i>Filtr : Pokud byla odpověď na otázku 2 "0", přejděte k otázce 3d.</i>	
(T/R) c) Některé z dospělých dětí (starší 18 let)	1 2 3 4 9
<i>Filtr : Pokud byla odpověď na otázku 1 "0", přejděte k otázce 3e.</i>	
(T/R) d) Některý z dospělých sourozenců (starší 18 let)	1 2 3 4 9
(T) e) Některý ze strýců nebo některá z tet	1 2 3 4 9
(T) f) Některý z bratraců nebo sestřenic	1 2 3 4 9
(T/R) g) Tchán nebo tchýně	1 2 3 4 9
(T/R) h) Švagr nebo švagrová	1 2 3 4 9
(T/R) i) Synovci nebo neteře	1 2 3 4 9
(T) j) Kmotr nebo kmotra	1 2 3 4 9

(T/R) 4. Nyní bychom se Vás zeptali na známé na Vašem pracovišti, kteří nepatří k Vaší rodině ani příbuzným. Kolik z nich považujete za své blízké přátele?

Počet blízkých přátel na pracovišti: \_\_\_\_

(T/R) 5. A kolik Vašich sousedů považujete za blízké přátele?

Počet blízkých přátel, žijících blízko Vás: \_\_\_\_

(T/R) 6. Kolik dalších blízkých přátel máte – kromě těch na pracovišti, ve svém sousedství nebo mezi příslušníky rodiny?

Počet blízkých přátel: \_\_\_\_

(T/R) 7. Jak často jste byl/a v kontaktu (myšleno osobní, telefonickým nebo mailovým) s kterýmkoli z následujících přátel v uplynulých čtyřech týdnech.

- (1) Třikrát nebo vícekrát za poslední měsíc
- (2) Jednou nebo dvakrát za poslední měsíc
- (3) Za poslední měsíc vůbec
- (4) Nemám přátele tohoto druhu
- (9) Neví

a) Přátelé v práci	1 2 3 4 9
b) Přátelé v sousedství	1 2 3 4 9
c) Ostatní přátelé	1 2 3 4 9

(T) 8.1. Lidé někdy patří do různých skupin či sdružení. Budu číst jednotlivé typy skupin a poprosím Vás, abyste uvedl/a, zda jste se v posledním měsíci zúčastnil/a její činnosti. Pokud ano, pak nás také zajímá kolikrát

- (1) Zúčastnil/a jsem se třikrát nebo vícekrát za poslední měsíc
- (2) Zúčastnil/a jsem se jednou nebo dvakrát za poslední měsíc
- (3) Za poslední měsíc jsem se nezúčastnil vůbec
- (9) Neví

(T) 8.2. Jste členem/členkou tohoto druhu sdružení?

- (1) Ano
- (2) Ne

	8.1.	8.2.
a) Politické, odborové nebo profesní sdružení	1 2 3 9	1 2
b) Církevní, náboženská nebo charitativní či obecně prospěšná organizace	1 2 3 9	1 2
c) Sportovní, kondiční, kulturní nebo zájmová organizace	1 2 3 9	1 2
d) Sousedské občanské sdružení	1 2 3 9	1 2
e) Jiné sdružení nebo skupina	1 2 3 9	1 2
e1) Uveďte název této skupiny		

(R) 8.3. Lidé se někdy ve volném čase účastní aktivit takových organizací jako jsou sportovní kluby, zájmová sdružení, charitativní organizace, politické strany apod. Jak často se aktivit těchto organizací účastníte Vy?

- (1) Zúčastnil/a jsem se třikrát nebo vícekrát za poslední měsíc
- (2) Zúčastnil/a jsem se jednou nebo dvakrát za poslední měsíc
- (3) Za poslední měsíc jsem se nezúčastnil vůbec
- (9) Neví

(T/R) 9. A kolik Vašich přátel je činných ve stejných organizacích jako Vy?

vepište počet: \_\_\_

(T/R) 10. A kolik členů Vaší rodiny je aktivních v kterémkoliv z typů sdružení, na jejichž činnosti se podílíte?

vepište počet: \_\_\_

(R) 13. Kolik vašich kolegů v práci je činných ve stejné organizaci jako vy?

vepište počet: \_\_\_

(R) 14. A kolik z vašich sousedů je činných ve stejné organizaci jako vy?

vepište počet: \_\_\_

11.

- a) Kolik ze členů Vaší rodiny ...  
 b) Kolik z Vašich přátel ...  
 c) Kolik ze členů sdružení, ve kterém jste činný/á...  
 vepište počet: \_\_\_

	a)	b)	c)
(T/R) 11.1. Vám pomůže s drobnými pracemi v bytě či domě?			
(T/R) 11.2. Vám nakoupí, když jste Vy i ostatní členové domácnosti nemocní?			
(T/R) 11.3. Vám sežene kontakt na dobrého lékaře, kdybyste potřeboval/a?			
(T/R) 11.4. kdo Vám poradí v případě osobních problémů?			
(T/R) 11.5. kdo Vás přechodně ubytuje, kdybyste třeba vyhořel (alespoň na týden)?			
(T/R) 11.6. Vám umí poradit s právními problémy nebo s úřady?			
(T/R) 11.7. Vám nebo jinému členu rodiny pomůže najít práci?			
(T/R) 11.8. je jiného věku, jiné generace než jste Vy?			
(T/R) 11.9. má jiné národnosti než jste Vy (nezahrnujte sem přátele ze Slovenska)?			
(T/R) 11.10. má jinou barvu pleti, je jiného etnika nebo jiné rasy než jste Vy?			
(T/R) 11.11. má odlišnou sexuální orientaci než je Vaše?			
(T/R) 11.12. je podstatně chudších než jste Vy?			
(T/R) 11.13. je podstatně bohatších než jste Vy?			
<i>Filtr : Pokud respondent/ka odpověděla „1“ nebo „2“ na otázku SOC.2, přejděte k otázce 11.14b</i>			
(T/R) 11.14a žije ve městě?			
(T/R) 11.14b žije na venkově?			
(T/R) 11.15. věří v Boha, když Vy nevěříte nebo je nevěřící, pokud Vy jste věřící?			
(R) 11.16. tráví svůj volný čas úplně jinak než ho trávíte Vy?			
(R) 11.17. má zcela odlišný politický názor než máte Vy?			
(R) 11.18. má úplně jiný kulturní vkus než máte Vy?			
(R) 11.19. má možnost zaměstnat lidi, uzavírat s nimi smlouvy, najímat pracovníky?			
(R) 11.20. pracuje na radnici nebo místním úřadě?			
(R) 11.21. se vyzná ve finančních záležitostech (daně, dotace, sociální dávky, důchodové pojištění)?			
(R) 11.22. vydělává více než 100 tis. Kč měsíčně?			
(R) 11.23. se objevuje v médiích (celebrity, politik apod.)?			

(T/R) Ted‘ bychom se Vás rádi zeptali na Vaše názory a Váš život obecně.

12. Do jaké míry souhlasíte, nebo nesouhlasíte s následujícími výroky?

- (1) Rozhodně souhlasím
- (2) Souhlasím
- (3) Nesouhlasím
- (4) Rozhodně nesouhlasím
- (9) neví
- (0) Nestýkám se (nemám sousedy, nepracuji)

(T/R) a) Pokud mám problém, který by mi mohl někdo z rodiny pomoci vyřešit, obvykle ho požádám o pomoc.	1 2 3 4 9
(T/R) b) Pokud mám problém, který by mi mohl někdo z mých přátel pomoci vyřešit, obvykle ho požádám o pomoc.	1 2 3 4 9
(T/R) c) Pokud mám problém, který by mi mohl pomoci vyřešit známý/á ze sdružení, ve kterém jsem činný/á, obvykle ho/ji požádám o pomoc.	1 2 3 4 9
(T) d) Dospělé děti mají povinnost starat se o své staré rodiče.	1 2 3 4 9
(T) e) Je v pořádku pěstovat přátelství s lidmi jen proto, že víte, že Vám mohou být prospěšní.	1 2 3 4 9
(T) f) Existuje pouze málo lidí, kterým mohu zcela důvěřovat.	1 2 3 4 9
(T) g) Většinou si můžete být jist/a, že ostatní lidé pro Vás chtějí to nejlepší.	1 2 3 4 9
(T) h) Pokud si nebudete dávat pozor, ostatní lidé Vás budou využívat.	1 2 3 4 9
(T) i) Lidem z mého sousedství mohu důvěřovat.	1 2 3 4 9 0
(T) j) Lidem, se kterými pracuji, mohu důvěřovat.	1 2 3 4 9 0
(T) k) Pokud se podívám na svůj život jako na celek, mohu říci, že jsem s ním spokojený/á.	1 2 3 4 9
(T) l) Jsem poměrně aktivní, činorodý/á.	1 2 3 4 9
(T) m) Rád/a se seznamuji s novými lidmi.	1 2 3 4 9
(T) n) V hovoru s neznámými lidmi jsem spíše zdrženlivý/á.	1 2 3 4 9
(R) o) Pokud mám problém, který by mohl pomoci vyřešit kolega/kolegyně z práce, obvykle ho/ji požádám o pomoc.	1 2 3 4 9
(R) p) Pokud mám problém, který by mi mohl pomoci vyřešit někdo z mých sousedů, obvykle ho/ji požádám o pomoc.	1 2 3 4 9

(T) Nyní přejdeme k poslední části dotazníku. Rádi bychom se zeptali na některé věci ohledně Vaší osoby.

(T) SOC.4 Jste

- (1) svobodný, svobodná,
- (2) ženatý, vdaná,
- (3) rozvedený, rozvedená
- (4) vdovec, vdova.
- (9) neví

(T) SOC.5 Jsou lidé, kteří mají vysoké postavení v naší společnosti, a jiní, jejichž postavení je nízké. Kam byste v současné době zařadil/a sám sebe/ sebe sama a svou rodinu na tomto žebříčku?

- (1) Horní vrstva
- (2) Střední vrstva
- (3) Dolní vrstva
- (9) Neví

(T) SOC.7 Jste osoba samostatně výdělečně činná?

- (1) Ano
- (2) Ne
- (9) Neví

(T) SOC.8 Jaké je Vaše současné zaměstnání?

Uveďte \_\_\_\_\_

(T) SOC.9 Jste zaměstnán na plný úvazek nebo na částečný úvazek?

- (1) Plný úvazek
- (2) Částečný úvazek
- (3) Jinak – uveďte jak \_\_\_\_\_
- (9) Neví

(T) SOC.10 Bydlíte Vy, Vaše rodina

- (1) ve vlastním rodinném domku
- (2) ve Vašem vlastním nebo družstevním bytě
- (3) v bytě, na který máte dekret a platíte z něj nájemné
- (4) v pronajatém bytě, podnájmu apod.
- (9) Neví

(R) 15. Změnil/a jste v posledních šesti měsících pracoviště nebo pracovní zařazení na vašem pracovišti? Pokud nepracujete: stal/a jste se nezaměstnaným/nezaměstnanou, ukončil/a jste odborné školení nebo vaše studia, anebo jste odešla/odešel na mateřskou/otcovskou dovolenou, respektive odešel/odešla jste v posledních šesti měsících do důchodu?

ano/ne

(R) 16. Když si vybavíte posledních šest měsíců, přestěhoval/a jste se do jiného sousedství nebo jiné části města, ve kterém žijete?

ano/ne

(R) 17. Změnilo se za posledních šest měsíců něco ve vašem společenském životě? Změnami myslíme něco jako narození vašeho vlastního dítěte nebo dítěte ve vaší rodině nebo v okruhu vašich přátel anebo úmrtí blízké osoby.

ano/ne

(R) 18. Seznámil/a jste se za posledních šest měsíců s novými lidmi, se kterými se pravidelně stýkáte, respektive ukončil/a jste styky s přáteli, známými nebo členy rodiny?

ano/ne

(R) 19. Životní úroveň lidí se může nepatrně změnit například nákupem či prodejem auta, nebo se může změnit středně vzrůstem či snížením platu, koupením či prodejem domu, anebo se může změnit výrazně neobvyklými událostmi jako je náhlé získání peněz výhrou v loterii nebo dědictvím. Pokud se zamyslíte nad posledními šesti měsíci, změnila se vaše životní úroveň událostmi podobnými těm jmenovaným?

ano/ne

(T/R) Dosáhli jsme konce dotazníku. Velice Vám děkujeme za Vaši účast na našem výzkumu. Jak jsme již uvedli na začátku, Vámi sdělené informace jsou zcela anonymní.

### 15.1.2 English Version of the Questionnaire

*Test (T)* Good morning/afternoon/etc., my name is \_\_\_\_\_ and I am an interviewer for the SC&C company. We are currently doing a research for Charles University Prague on social relations of Czech citizens. We would like to ask you to answer our questions. The interview will only take 15 - 20 minutes. All the information you provide will be processed anonymously and for the purposes of this research exclusively.

*Retest (R)* Good morning/afternoon/etc., my name is \_\_\_\_\_ and I am an interviewer for the SC&C company. We are currently doing a research for Charles University Prague on social relations of Czech citizens. In November 2007 we already spoke with one of your household members, resp. you. We would like to interview him/her/you for a second time. Your participation in this second round of the study is very important for the project! The interview won't take longer than 10 minutes. All the information you provide will be processed anonymously and for the purposes of this research exclusively.

(T/R) SOC.1 Are you:

(1) male

(2) female

(T/R) SOC.3 In which year were you born?

(T) SOC.6 What is your highest accomplished education?

- (1) elementary
- (2) skilled
- (3) "maturita" (cf. "A" levels)
- (4) university degree
- (9) does not know

(T) SOC.2 Do you live in

- (T/R) (1) a city
- (T/R) (2) a town
- (T/R) (3) the country
- (R) (9) I was not interviewed the last time

(T) SOC.11 What is the size of the municipality you live in?

- (1) up to 5 000 inhabitants
- (2) 5 000 – 9 999 inhabitants
- (3) 10 000 – 19 999 inhabitants
- (4) 20 000 – 49 999 inhabitants
- (5) 50 000 – 99 999 inhabitants
- (6) 100 000 +

(T) SOC.12 Which region do you live in?

- (1) Prague
- (2) Central Bohemian Region
- (3) South Bohemian Region
- (4) Plzeň Region
- (5) Karlovy Vary Region
- (6) Ústí nad Labem Region
- (7) Liberec Region
- (8) Hradec Králové Region
- (9) Pardubice Region
- (10) Vysočina Region
- (11) South Moravian Region
- (12) Olomouc Region
- (13) Zlín Region
- (14) Moravian Silesian Region

(T/R) We are interested in your contacts with people in your life (include your family members, friends and acquaintances).

(T/R) 1. How many adult brothers or sisters do you have? - We mean brothers or sisters who are 18 years old or older and who are alive. Please, include your step and adopted brothers or sisters, too.

Adult brothers or sisters: \_\_\_\_\_

(T) 2. And how many children who are 18 and older do you have? We mean children who are alive. Please, include step and adopted children, too.

Number of children 18+: \_\_\_\_\_

3. I am going to read out single relatives. Indicate how often you have you been in touch with them in the last four weeks, please (we mean personal, telephone or e-mail contact):

- (1) Three or more times in the last month
- (2) Once or twice in the last month
- (3) Not at all in the last month
- (4) I do not have living relatives of this kind
- (9) Does not know

(T/R) a) Mother	1 2 3 4 9
(T/R) b) Father	1 2 3 4 9
<i>Filter : If the answer to question 2 was "0", go to question 3d</i>	1 2 3 4 9
(T/R) c) One of the adult children (aged 18+)	1 2 3 4 9
<i>Filter : If the answer to question 1 was "0", go to question 3e.</i>	1 2 3 4 9
(T/R) d) One of the adult siblings (aged 18+)	1 2 3 4 9
(T) e) One of uncles or aunts	1 2 3 4 9
(T) f) One of cousins	1 2 3 4 9
(T/R) g) Father-in-law or mother-in-law	1 2 3 4 9
(T/R) h) Brother-in-law or sister-in-law	1 2 3 4 9
(T/R) i) Nephews or nieces	1 2 3 4 9
(T) j) Godfather or godmother	1 2 3 4 9

(T/R) 4. Now we would like to ask you about your acquaintances from your workplace who are not members of your family or relatives. How many of them do you consider to be close friends of yours?

Number of close friends at workplace: \_\_\_\_\_

(T/R) 5. And how many of your neighbours do you consider to be close frineds?

Number of close friends living in your neighbourhood: \_\_\_\_\_

(T/R) 6. How many other close friends do you have - apart from those at your workplace, in your neighbourhood or among your family members?

Number of close friends: \_\_\_\_\_



(T/R) 7. How often have you been in touch (we mean personal, telephone or e-mail contact) with any of the following friends in the last four weeks?

- (1) Three or more times in the last month
- (2) Once or twice in the last month
- (3) Not at all in the last month
- (4) I do not have a friend of this kind
- (9) Does not know

a) Friends at workplace	1 2 3 4 9
b) Friends in the neighbourhood	1 2 3 4 9
c) Other friends	1 2 3 4 9

(T) 8.1. People sometimes belong to groups or associations. I am going to read out single types of groups and I would like to ask you to indicate whether you have taken part in its activities in the last month. If so, we are interested in how many times.

- (1) I have taken part three or more times in the last month
- (2) I have taken part once or twice in the last month
- (3) I have not taken part at all in the last month
- (9) Does not know

(T) 8.2. Are you a member of this type of association?

- (1) Yes
- (2) No

	8.1.	8.2.
a) Political, trade unions or professional association	1 2 3 9	1 2
b) Church, religious or charity or public beneficial body	1 2 3 9	1 2
c) Sport, fitness, cultural or interest organisation	1 2 3 9	1 2
d) Neighbourhood civic association	1 2 3 9	1 2
e) Other association or group	1 2 3 9	1 2
e1) Give the name of this group		

(R) 8.3. In their free time people sometimes participate in activities of organisations such as sport clubs, leisure associations, charities, political parties etc. How often do you participate in the activities of such organisations?

- (1) I participated three times or more often in the last month
- (2) I participated once or twice in the last month
- (3) In the last month I did not participate
- (4) I don't know

(T/R) 9. And how many of your friends are active in the same organisations as you?

Fill in the number: \_\_\_\_\_

(T/R) 10. And how many of your family members are active in any type of association you participate in?

Fill in the number: \_\_\_\_\_

11.

a) How many members of your family...

b) How many of your friends...

c) How many members of the association you are active in...

fill in the number: \_\_\_\_\_

	a)	b)	c)
(T/R) 11.1. will help you with repairs in the house or flat?			
(T/R) 11.2. will shop for you when you and the other household members are ill?			
(T/R) 11.3. will put you in contact with a quality doctor should you need one?			
(T/R) 11.4. will advise you in case of personal problems?			
(T/R) 11.5. would temporarily put you up if your home burnt down for instance (for at least one week)?			
(T/R) 11.6. can advise you on legal or bureaucratic problems?			
(T/R) 11.7. will help you or another family member to find a job?			
(T/R) 11.8. are of different age, different generation than you?			
(T/R) 11.9. has a different nationality than you (except for Slovaks)?			
(T/R) 11.10. have a different skin colour, different ethnicity or race than you?			
(T/R) 11.11. have a different sexual orientation than you?			
(T/R) 11.12. are considerably poorer than you?			
(T/R) 11.13. are considerably wealthier than you?			
<i>Filter : If the respondent answered „1“ or „2“ to SOC.2, go to question 11.14b</i>			
(T/R) 11.14a live in a town?			
(T/R) 11.14b live in the country?			
(T/R) 11.15. believe in God if you do not or are nonbelievers if you are a believer?			
(R) 11.16. spend their free-time entirely different than you do?			
(R) 11.17. have a different political opinion than you do?			
(R) 11.18. have an entire different cultural taste than you?			
(R) 11.19. have the possibility to employ people, close a contract with others, hire employees?			
(R) 11.20. works at the town hall or local office?			
(R) 11.21. is well up in financial questions (tax, subsidies, social support, pension insurance?)			
(R) 11.22. earns more than 100.000 CZK monthly?			
(R) 11.23. appears in media (celebrity, politics, etc.)?			

(T/R) Now we would like to ask you about your opinions and your life in general.

12. To what extent do you agree or disagree with the following statements?

- (1) I strongly agree
- (2) I agree
- (3) I disagree
- (4) I strongly disagree
- (9) does not know
- (0) I do not socialize with (I do not have neighbours, I do not work)

(T/R) a) When I have a problem somebody from my family could help me solve, I usually ask him/her for help.	1 2 3 4 9
(T/R) b) When I have a problem one of my friends could help me solve, I usually ask her/him for help.	1 2 3 4 9
<i>Filter: If the respondent answered „3“ or „9“ to question 8.1, go to question 12d</i>	1 2 3 4 9
(T/R) c) When I have a problem one of my acquaintances from the association I am active in could help me solve, I usually ask her/him for help.	1 2 3 4 9
(T) d) Adult children are obliged to take care of their elderly parents.	1 2 3 4 9
(T) e) It is alright to associate with people just because you know they might be of benefit to you.	1 2 3 4 9
(T) f) There are only few people I can trust entirely.	1 2 3 4 9
(T) g) Generally, you can be sure that others want the best for you.	1 2 3 4 9
(T) h) Unless you take care, others will take advantage of you.	1 2 3 4 9
(T) i) I can trust the people in my neighbourhood.	1 2 3 4 9 0
(T) j) I can trust the people I work with.	1 2 3 4 9 0
(T) k) When I look at my life as a whole, I can say that I am satisfied with it.	1 2 3 4 9
(T) l) I am relatively active, energetic.	1 2 3 4 9
(T) m) I like meeting new people.	1 2 3 4 9
(T) n) When talking to strangers, I am rather reserved.	1 2 3 4 9
(R) o) If I have a problem one of my colleagues from work could help me solve, I usually ask her/ him for help.	1 2 3 4 9
(R) p) If I have a problem one of my neighbors could help me solve, I usually ask her/him for help.	1 2 3 4 9

(T) We shall now move on to the last section of the questionnaire. We would like to ask you about some matters concerning your personality.

(T) SOC.4 Are you

- (1) single,
- (2) married,
- (3) divorced,
- (4) widowed.
- (9) does not know

(T) SOC.5 There are people with high rank in our society and others with low rank. Where would you place yourself and your family on this scale?

- (1) Upper-class
- (2) Middle-class
- (3) Lower-class
- (9) Does not know

(T) SOC.7 Are you self-employed?

- (1) Yes
- (2) No
- (3) Does not know

(T) SOC.8 What is your current job?

Indicate \_\_\_\_\_

(T) SOC.9 Are you employed full-time or part-time?

- (1) Full-time
- (2) Part-time
- (3) Other – indicate how \_\_\_\_\_
- (9) Does not know

(T) SOC.10 Do you, your family live

- (1) in your own house
- (2) in your own or cooperative apartment
- (3) in a flat for which you have a contract and pay the rent
- (4) in a rented apartment, subtenancy, and the like
- (9) Does not know

(R) 15. In the last six months, did you change your working place or your working position in your working place? If you are not working: did you get unemployed, did you finish any vocational training or your studies, or did you go into maternity leave, resp. did you retire in the last six months?

yes/no

(R) 16. If you think of the last six months, did you move to another neighborhood or another part of the city you are living in?

yes/no

(R) 17. Did something change in your social life in the last 6 months? With changes we mean something like the birth of an own child or a child in your family or in the circle of your friends or the death of a close person.

yes/no

(R) 18. Did you get to know new people you are socializing with regularly, resp. did you break up contacts to friends, acquaintances or family members in the last 6 months?

yes/no

(R) 19. The living standard of people can change slightly by for example buying or selling a car, or in a medium amount by increase or decrease of the salary, by buying or selling a house, or in a big amount by seldom things like a sudden liquidity through lottery winning or heritage. If you think about the last six months, did your living standard change by events similar to the named ones?

yes/no

(T/R) We have reached the end of the questionnaire. Thank you very much indeed for participating in our research. As we have already stated at the beginning, all the data you provided are completely anonymous.

## 15.2 The Bridging Social Capital Item Battery Used in the Survey “Our Society”

### 15.2.1 Czech Version

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

- (1) vůbec žádní
- (2) ojedinele
- (3) málo
- (4) mnoho
- (5) skoro všichni
- (9) neví

- a) z jiné generace než jste Vy,
- b) jiné národnosti než jste Vy (nezahrnujte sem přátele ze Slovenska),
- c) jiného etnika nebo rasy než jste Vy,
- d) s odlišnou sexuální orientací než je Vaše,
- e) se zcela odlišným povoláním než je Vaše nebo než je běžné ve Vaší rodině?
- f) kteří sledují zcela odlišné TV pořady než sledujete Vy,
- g) kteří jsou podstatně chudší než jste Vy,
- h) kteří jsou podstatně bohatší než jste Vy,
- i) kteří tráví svůj volný čas úplně jinak než ho trávíte Vy,
- j) kteří mají úplně jiný kulturní vkus než máte Vy,
- k) kteří čtou jiné noviny nebo časopisy než čtete Vy,

- l) kteří mají zcela odlišný politický názor než máte Vy?
- m) žijící na venkově, žijete-li ve městě. Nebo naopak lidé žijící ve městě, žijete-li na venkově?
- n) Do okruhu Vašich přátel patří lidé věřící, pokud Vy jste nevěřící. Nebo naopak lidé nevěřící, pokud Vy jste věřící?“

### 15.2.2 *English Version*

In the circle of your friends belong people ...

- (1) none at all
  - (2) sporadically
  - (3) a few
  - (4) lot of
  - (5) almost everyone
  - (9) I don't know
- a) of different age, different generation than you?
  - b) of a different nationality than you (except for Slovaks)?
  - c) different ethnicity or race than you?
  - d) different sexual orientation than you?
  - e) completely different profession than yours or which is common in your family?
  - f) watch different TV programs than you do?
  - g) considerably poorer than you?
  - h) considerably wealthier than you?
  - i) spend their freetime entirely different than you do?
  - j) have an entire different cultural taste than you?
  - k) that read different newspapers and journals than you do?
  - l) have a different political opinion than you do?
  - m) living in the country, if you are living in a town. Or the other way around, that live in a town, if you are living in the country?
  - n) believe in God if you do not or are nonbelievers if you are a believer?

### 15.3 Confidence Intervals and Errors Revealed by Bootstrapping for the Bridging Social Capital Item Battery

Table 29: Standard Errors of BSC Factor Lifestyle (Friends)

	SE	SE-SE	Mean	Bias	SE-Bias
<i>Time 1</i>					
Age, generation	0.131	0.008	0.497	-0.001	0.011
Believer/ nonbeliever	0.147	0.008	0.453	-0.004	0.012
Poorer	0.131	0.008	0.486	-0.008	0.011
Living town vs. country	0.121	0.007	0.605	-0.008	0.010
<i>Time 2</i>					
R_Age, generation	0.113	0.007	0.794	0.019	0.009
R_Believer/ nonbeliever	0.127	0.007	0.306	0.000	0.010
R_Poorer	0.088	0.005	0.645	-0.007	0.007
R_Living town vs. country	0.102	0.006	0.568	-0.005	0.008
<i>Correlation</i>					
Time 1 $\diamond$ Time 2	0.156	0.009	0.565	0.013	0.013
e4 $\diamond$ e8	0.112	0.006	0.318	-0.011	0.009

Notes: Bootstrapping: 150 samples, R\_ indicates items used in retest, N=391.

Data: Social Relationships among Czech Citizens

Table 30: Confidence Intervals of BSC Factor Lifestyle (Friends)

	Estimate	Percentile Method			Bias Corrected PM		
		95% Con. Interval		P	95% Con. Interval		P
		Lower	Upper		Lower	Upper	
<i>Time 1</i>							
Age, generation	0.498	0.253	0.760	0.013	0.250	0.754	0.015
Believer/ nonbel.	0.457	0.122	0.703	0.013	0.198	0.720	0.007
Poorer	0.494	0.193	0.741	0.013	0.155	0.733	0.016
Town/ country	0.613	0.352	0.831	0.013	0.378	0.839	0.009
<i>Time 2</i>							
R_Age, gen.	0.775	0.611	1.014	0.013	0.522	0.969	0.025
R_Believer/ nonbel.	0.306	-0.005	0.538	0.054	-0.013	0.523	0.068
R_Poorer	0.651	0.459	0.805	0.013	0.452	0.801	0.015
R_Town/ country	0.573	0.326	0.737	0.013	0.326	0.737	0.013
<i>Correlation</i>							
Time 1 $\diamond$ Time 2	0.552	0.195	0.875	0.013	0.160	0.851	0.025
e4 $\diamond$ e8	0.329	0.088	0.518	0.013	0.100	0.542	0.008

Notes: Estimates calculated using ML estimation. Significance levels estimated using Bootstrapping: 150 samples, R\_ indicates items used in retest, N=391.

Data: Social Relationships among Czech Citizens

Table 31: Standard Errors of BSC Factor Outgroups (Friends)

	SE	SE-SE	Mean	Bias	SE-Bias
<i>Time 1</i>					
Nationality	0.076	0.003	0.603	-0.003	0.005
Ethnic group	0.010	0.000	0.931	-0.002	0.001
Sex. orientation	0.094	0.004	0.313	-0.001	0.006
<i>Time 2</i>					
R_Nationality	0.094	0.004	0.366	0.002	0.006
R_Ethnic group	0.097	0.004	0.936	0.009	0.006
R_Sex. orientation	0.089	0.004	0.323	0.003	0.006
<i>Correlation</i>					
Time 1 <> Time 2	0.094	0.004	0.781	-0.003	0.006

Notes: Bootstrapping 250 samples, R\_ indicates items used in retest, N=391.

Data: Social Relationships among Czech Citizens

Table 32: Confidence Intervals of BSC Factor Outgroups (Friends)

	Estimate	Percentile Method			Bias Corrected PM		
		95% Con. Interval		P	95% Con. Interval		P
		Lower	Upper		Lower	Upper	
<i>Time 1</i>							
Nationality	0.606	0.437	0.737	0.008	0.390	0.730	0.017
Ethnic group	0.933	0.907	0.947	0.008	0.909	0.949	0.004
Sex. orientation	0.314	0.114	0.484	0.008	0.117	0.484	0.008
<i>Time 2</i>							
R_Nationality	0.364	0.168	0.533	0.008	0.157	0.528	0.011
R_Ethnic group	0.927	0.777	1.153	0.008	0.778	1.169	0.006
R_Sex. orientation	0.321	0.134	0.483	0.008	0.128	0.472	0.013
<i>Correlation</i>							
Time 1 <> Time 2	0.785	0.588	0.946	0.008	0.584	0.943	0.010

Notes: Estimates calculated using ML estimation. Significance levels estimated using Bootstrapping, 250 samples, R\_ indicates items used in retest, N=391.

Data: Social Relationships among Czech Citizens



Table 33: Standard Errors of BSC Factor Lifestyle (Family)

	SE	SE-SE	Mean	Bias	SE-Bias
<i>Time 1</i>					
Age, generation	0.115	0.005	0.544	-0.031	0.007
Believer/ nonbeliever	0.127	0.006	0.736	0.004	0.008
Poorer	0.102	0.005	0.342	-0.007	0.006
Living town vs. country	0.127	0.006	0.869	0.014	0.008
<i>Time 2</i>					
R_Age, generation	0.151	0.007	0.469	0.004	0.010
R_Believer/ nonbeliever	0.227	0.010	0.617	0.026	0.014
R_Poorer	0.128	0.006	0.327	0.004	0.008
R_Living town vs. country	0.150	0.007	0.582	-0.015	0.009
<i>Correlation</i>					
Time 1 $\diamond$ Time 2	0.187	0.008	0.635	-0.016	0.012

Notes: Bootstrapping 250 samples, R\_ indicates items used in retest, N=387.

Data: Social Relationships among Czech Citizens

Table 34: Confidence Intervals of BSC Factor Lifestyle (Family)

	Estimate	Percentile Method			Bias Corrected PM		
		95% Con. Interval		P	95% Con. Interval		P
		Lower	Upper		Lower	Upper	
<i>Time 1</i>							
Age, generation	0.574	0.266	0.739	0.008	0.307	0.767	0.003
Believer/ nonbel.	0.732	0.491	1.036	0.008	0.491	1.036	0.008
Poorer	0.349	0.141	0.548	0.008	0.140	0.541	0.008
Town vs. country	0.855	0.579	1.130	0.008	0.553	1.076	0.016
<i>Time 2</i>							
R_Age, generation	0.465	0.093	0.738	0.008	0.085	0.694	0.018
R_Believer/ nonbel.	0.591	0.291	1.236	0.008	0.302	1.370	0.007
R_Poorer	0.323	0.085	0.558	0.025	0.084	0.558	0.028
R_Town vs. country	0.597	0.241	0.838	0.008	0.246	0.842	0.007
<i>Correlation</i>							
Time 1 $\diamond$ Time 2	0.651	0.321	0.857	0.008	0.355	0.891	0.005

Notes: Estimates calculated using ML estimation. Significance levels estimated using Bootstrapping, 250 samples, R\_ indicates items used in retest, N=387.

Data: Social Relationships among Czech Citizen

**Table 35:** Standard Errors of BSC Factors Outgroups and Lifestyle (Acquaintances)

	SE	SE-SE	Mean	Bias	SE-Bias
<i>Outgroups</i>					
Nationality	0.017	0.001	0.880	-0.005	0.001
Ethnic group	0.093	0.004	0.284	0.005	0.006
Sex. orientation	0.098	0.004	-0.017	-0.010	0.006
<i>Lifestyle</i>					
Poorer	0.075	0.003	0.163	0.011	0.005
Age, generation	0.001	0.000	0.989	0.000	0.000
Living town vs. country	0.066	0.003	0.533	0.000	0.004
Believer/ nonbeliever	0.088	0.004	0.087	0.000	0.006
<i>Correlation</i>					
Outgroup <> Lifestyle	0.094	0.004	0.298	-0.002	0.006

Notes: Bootstrapping 250 samples, R\_ indicates items used in retest, N=138.  
 Data: Social Relationships among Czech Citizens

**Table 36:** Confidence Intervals of BSC Factors Outgroups and Lifestyle (Acquaintances)

	Estimate	Percentile Method			Bias Corrected PM		
		95% Con. Interval		p	95% Con. Interval		p
		Lower	Upper		Lower	Upper	
<i>Outgroups</i>							
Nationality	0.885	0.847	0.906	0.008	0.851	0.910	0.002
Ethnic group	0.279	0.087	0.466	0.020	0.049	0.458	0.029
Sex. orientation	-0.007	-0.207	0.194	0.847	-0.184	0.258	0.969
<i>Lifestyle</i>							
Poorer	0.152	0.028	0.320	0.008	0.028	0.306	0.013
Age, generation	0.989	0.986	0.991	0.008	0.986	0.992	0.004
Town / country	0.533	0.409	0.668	0.008	0.412	0.672	0.008
Believer/ nonbel.	0.088	-0.094	0.250	0.308	-0.099	0.243	0.347
<i>Correlation</i>							
Outgroup <> Lifestyle	0.300	0.065	0.467	0.009	0.056	0.466	0.010

Notes: Estimates calculated using ML estimation. Significance levels estimated using Bootstrapping, 250 samples, R\_ indicates items used in retest, N=138.  
 Data: Social Relationships among Czech Citizens

## 15.4 Standard Errors and Confidence Intervals of the CFA of the Construct Personal Support

Table 37: Standard Errors of the Factor Personal Support (Family)

	SE	SE-SE	Mean	Bias	SE-Bias
<i>Time 1</i>					
Repairs	0.121	0.005	0.668	-0.005	0.008
Shop for you	0.116	0.005	0.683	-0.004	0.007
Contact to doctor	0.095	0.004	0.768	-0.011	0.006
Advice personal problem	0.103	0.005	0.715	-0.027	0.007
Temp. put up	0.113	0.005	0.655	-0.013	0.007
Help find job	0.142	0.006	0.525	-0.019	0.009
Advice legal problem	0.119	0.005	0.712	-0.016	0.008
<i>Time 2</i>					
R_Repairs	0.103	0.005	0.711	-0.007	0.007
R_Shop for you	0.095	0.004	0.733	-0.005	0.006
R_Contact to doctor	0.092	0.004	0.756	-0.015	0.006
R_Advice personal prob.	0.069	0.003	0.845	-0.005	0.004
R_Temp. put up	0.096	0.004	0.699	-0.006	0.006
R_Help find job	0.115	0.005	0.654	-0.019	0.007
R_Advice legal problem	0.100	0.004	0.696	-0.009	0.006
<i>Correlation</i>					
Time 1 <> Time 2	0.064	0.003	0.955	-0.012	0.004

Notes: Bootstrapping 250 iterations, R\_ indicates items used in retest, N=391.

Data: Social Relationships among Czech Citizens

Table 38: Confidence Intervals of the Factor Personal Support (Family)

	Estimate	Percentile Method			Bias Corrected PM		
		Con. Interval 95%		P	Con. Interval 95%		P
		Lower	Upper		Lower	Upper	
<i>Time 1</i>							
Repairs	0.674	0.401	0.881	0.008	0.373	0.853	0.014
Shop for you	0.687	0.430	0.876	0.008	0.429	0.875	0.009
Contact to doctor	0.779	0.487	0.910	0.008	0.456	0.900	0.011
Advice pers. probl.	0.742	0.448	0.880	0.008	0.518	0.897	0.003
Temp. put up	0.668	0.418	0.860	0.008	0.450	0.879	0.004
Help find job	0.544	0.222	0.762	0.008	0.267	0.777	0.003
Advice legal probl.	0.728	0.446	0.873	0.008	0.440	0.872	0.008
<i>Time 2</i>							
R_Repairs	0.718	0.440	0.866	0.008	0.402	0.858	0.017
R_Shop for you	0.739	0.516	0.887	0.008	0.516	0.888	0.008
R_Contact to doctor	0.772	0.543	0.902	0.008	0.563	0.906	0.006
R_Advice pers. probl.	0.851	0.668	0.950	0.008	0.661	0.946	0.013
R_Temp. put up	0.704	0.487	0.859	0.008	0.462	0.839	0.015
R_Help find job	0.673	0.403	0.851	0.008	0.413	0.855	0.006
R_Advice legal probl.	0.705	0.453	0.843	0.008	0.442	0.837	0.012
<i>Correlation</i>							
Time 1 <> Time 2	0.967	0.795	1.056	0.008	0.795	1.056	0.008

Notes: Bootstrapping 250 iterations, R\_ indicates items used in retest, N=391.

Data: Social Relationships among Czech Citizens

Table 39: Standard Errors of the Factor Personal Support (Friends)

	SE	SE-SE	Mean	Bias	SE-Bias
<i>Time 1</i>					
Repairs	0.079	0.004	0.780	-0.013	0.005
Shop for you	0.074	0.003	0.801	-0.010	0.005
Contact to doctor	0.098	0.004	0.744	-0.004	0.006
Advice personal problems	0.101	0.005	0.715	-0.020	0.006
Temp. put up	0.091	0.004	0.750	-0.012	0.006
Help find job	0.124	0.006	0.613	-0.022	0.008
Advice legal problems	0.122	0.005	0.649	-0.006	0.008
<i>Time 2</i>					
R_Repairs	0.090	0.004	0.760	-0.011	0.006
R_Shop for you	0.117	0.005	0.640	-0.004	0.007
R_Contact to doctor	0.087	0.004	0.781	-0.009	0.006
R_Advice personal prob.	0.086	0.004	0.787	-0.010	0.005
R_Temp. put up	0.061	0.003	0.863	-0.004	0.004
R_Help find job	0.137	0.006	0.510	-0.016	0.009
R_Advice legal prob.	0.108	0.005	0.673	-0.008	0.007
<i>Correlation</i>					
Time 1 $\diamond$ Time 2	0.071	0.003	0.876	-0.004	0.004

Notes: Bootstrapping 250 iterations, R\_ indicates items used in retest, N=391.  
 Data: Social Relationships among Czech Citizens

Table 40: Confidence Intervals of the Factor Personal Support (Friends)

	Estimate	Percentile Method			Bias Corrected PM		
		Con. Interval 95%		P	Con. Interval 95%		P
		Lower	Upper		Lower	Upper	
<i>Time 1</i>							
Repairs	0.793	0.580	0.900	0.008	0.603	0.913	0.006
Shop for you	0.811	0.639	0.916	0.008	0.622	0.916	0.011
Contact to doctor	0.748	0.507	0.901	0.008	0.446	0.889	0.018
Advice pers. probl.	0.735	0.477	0.886	0.008	0.485	0.894	0.006
Temp. put up	0.763	0.527	0.893	0.008	0.539	0.895	0.006
Help find job	0.635	0.367	0.827	0.008	0.421	0.849	0.003
Advice legal probl.	0.655	0.341	0.840	0.008	0.301	0.838	0.012
<i>Time 2</i>							
R_Repairs	0.770	0.542	0.920	0.008	0.541	0.918	0.009
R_Shop for you	0.644	0.380	0.836	0.008	0.362	0.823	0.011
R_Contact to doctor	0.790	0.576	0.910	0.008	0.575	0.906	0.010
R_Advice pers. probl.	0.796	0.588	0.911	0.008	0.568	0.904	0.011
R_Temp. put up	0.867	0.717	0.960	0.008	0.702	0.951	0.016
R_Help find job	0.526	0.213	0.754	0.008	0.244	0.771	0.005
R_Advice legal probl.	0.682	0.411	0.857	0.008	0.384	0.839	0.011
<i>Correlation</i>							
Time 1 $\diamond$ Time 2	0.880	0.702	0.984	0.008	0.686	0.982	0.010

Notes: Bootstrapping 250 iterations, R\_ indicates items used in retest, N=391.

Data: Social Relationships among Czech Citizens

### 15.5 Estimates of the Constructs Personal Support Social Capital in Group Comparisons

Table 41: Resources Gained by Family Members Compared by Age

	Estimate	Percentile Method			Bias Corrected PM		
		Con. Interval 95%		P	Con. Interval 95%		P
		Lower	Upper		Lower	Upper	
<i>18-44 years</i>							
<i>Time 1</i>							
Repairs	0.850	0.662	0.971	0.008	0.432	0.947	0.046
Shop for you	0.874	0.393	0.981	0.008	0.366	0.980	0.009
Contact to doctor	0.885	0.022	0.975	0.041	0.000	0.974	0.050
Advice pers. probl.	0.939	0.227	0.987	0.008	0.226	0.986	0.010
Temp. put up	0.847	0.468	0.959	0.008	0.383	0.952	0.023
Help find job	0.561	0.333	1.000	0.008	...	0.938	0.050
Advice legal probl.	0.910	0.216	0.972	0.008	0.250	0.976	0.004
<i>Time 2</i>							
R_Repairs	0.920	0.196	0.980	0.008	0.316	0.982	0.005
R_Shop for you	0.916	0.490	0.972	0.008	0.593	0.979	0.002
R_Contact to doctor	0.892	0.411	0.964	0.008	0.477	0.967	0.002
R_Advice pers. prob.	0.885	0.511	0.979	0.008	0.586	0.987	0.003
R_Temp. put up	0.906	0.327	0.968	0.008	0.387	0.971	0.004
R_Help find job	0.663	0.237	0.902	0.008	0.201	0.874	0.021
R_Advice legal probl.	0.796	0.247	0.921	0.019	0.326	0.933	0.009
<i>Correlation</i>							
Time 1 <math>\diamond</math> Time 2	0.931	0.068	0.986	0.018	0.079	0.986	0.016
<i>Over 44 years</i>							
<i>Time 1</i>							
Repairs	0.735	0.320	0.939	0.008	0.278	0.932	0.013
Shop for you	0.467	-0.100	0.889	0.096	-0.103	0.883	0.109
Contact to doctor	0.802	0.323	0.920	0.016	0.289	0.917	0.023
Advice pers. probl.	0.757	0.517	0.942	0.008	0.514	0.938	0.009
Temp. put up	0.957	0.752	1.039	0.008	0.875	...	0.001
Help find job	0.755	0.482	0.924	0.008	0.482	0.924	0.008
Advice legal probl.	0.669	0.365	0.903	0.008	0.318	0.879	0.015
<i>Time 2</i>							
R_Repairs	0.851	0.324	0.969	0.008	0.489	1.123	0.003
R_Shop for you	0.896	0.304	1.113	0.011	0.422	1.140	0.007
R_Contact to doctor	0.199	-0.112	0.749	0.235	...	0.612	0.638
R_Advice pers. prob.	0.628	0.223	0.970	0.016	0.133	0.947	0.039
R_Temp. put up	0.203	-0.224	0.633	0.393	-0.379	0.598	0.554
R_Help find job	0.305	-0.050	0.934	0.068	-0.067	0.913	0.114
R_Advice legal Probl.	0.620	-0.036	0.975	0.064	-0.004	0.989	0.053
<i>Correlation</i>							
Time 1 <math>\diamond</math> Time 2	0.143	-0.427	0.923	0.669	-0.487	0.888	0.868

Notes: Estimates calculated using ML estimation. Significance levels estimated using Bootstrapping, 250 iterations, R\_ indicates items used in retest, N=87 raw data (listwise).

Data: Social Relationships among Czech Citizens

Table 42: Resources Gained by Family Members Compared by Sex

	Estimate	Percentile Method			Bias Corrected PM		
		Con. Interval 95%		P	Con. Interval 95%		P
		Lower	Upper		Lower	Upper	
<i>Male</i>							
<i>Time 1</i>							
Repairs	0.829	0.565	0.958	0.008	0.487	0.934	0.026
Shop for you	0.782	0.083	0.952	0.034	0.114	0.962	0.021
Contact to doctor	0.355	-0.054	0.945	0.097	-0.112	0.911	0.156
Advice pers. probl.	0.409	0.197	0.852	0.008	0.180	0.792	0.018
Temp. put up	0.913	0.411	1.002	0.008	0.606	1.027	0.001
Help find job	0.725	0.312	1.002	0.008	0.288	0.997	0.014
Advice legal probl.	0.444	0.195	0.736	0.008	0.189	0.731	0.009
<i>Time 2</i>							
R_Repairs	0.746	0.425	0.963	0.008	0.441	0.967	0.007
R_Shop for you	0.783	0.427	0.980	0.008	0.492	0.988	0.004
R_Contact to doctor	0.500	0.098	0.810	0.021	0.128	0.825	0.012
R_Advice pers. probl.	0.784	0.488	1.002	0.008	0.510	1.003	0.005
R_Temp. put up	0.282	-0.079	0.562	0.124	-0.026	0.598	0.079
R_Help find job	0.448	0.062	0.834	0.022	0.026	0.799	0.046
R_Advice legal probl.	0.399	0.013	0.700	0.037	0.044	0.713	0.027
<i>Correlation</i>							
Time 1 <> Time 2	0.340	-0.095	0.844	0.127	-0.123	0.776	0.237
<i>Female</i>							
<i>Time 1</i>							
Repairs	0.964	0.585	0.991	0.008	0.585	0.991	0.008
Shop for you	0.941	-0.023	0.995	0.053	0.094	0.997	0.024
Contact to doctor	0.965	0.664	0.994	0.008	0.646	0.993	0.011
Advice pers. probl.	0.965	0.522	0.992	0.008	0.525	0.993	0.006
Temp. put up	0.958	0.583	0.987	0.008	0.641	0.988	0.004
Help find job	0.916	0.511	0.970	0.008	0.570	0.985	0.002
Advice legal probl.	0.939	0.337	0.985	0.008	0.421	0.990	0.001
<i>Time 2</i>							
R_Repairs	0.941	0.376	0.988	0.008	0.376	0.988	0.008
R_Shop for you	0.929	0.480	0.987	0.008	0.487	0.989	0.006
R_Contact to doctor	0.809	0.067	0.979	0.035	0.107	0.982	0.020
R_Advice pers. probl.	0.876	0.393	0.978	0.008	0.483	0.986	0.001
R_Temp. put up	0.923	0.356	0.982	0.008	0.497	0.986	0.001
R_Help find job	0.736	0.235	0.935	0.008	0.238	0.943	0.006
R_Advice legal probl.	0.874	0.572	0.966	0.008	0.525	0.954	0.013
<i>Correlation</i>							
Time 1 <> Time 2	0.907	-0.202	0.982	0.179	-0.008	0.988	0.064

Notes: Estimates calculated using ML estimation. Significance levels estimated using Bootstrapping, 250 iterations, R\_ indicates items used in retest, N=87 raw data (listwise).

Data: Social Relationships among Czech Citizens



Table 43: Resources Gained by Family Members Compared by Education

	Estimate	Percentile Method			Bias Corrected PM		
		Con. Interval 95%		P	Con. Interval 95%		P
		Lower	Upper		Lower	Upper	
<i>Lower Education</i>		<i>Time 1</i>					
Repairs	0.900	0.628	0.988	0.008	0.628	0.988	0.008
Shop for you	0.141	-0.345	0.821	0.531	-0.376	0.765	0.656
Contact to doctor	0.779	0.350	0.947	0.008	0.375	0.962	0.004
Advice pers. probl.	0.667	0.338	0.933	0.008	0.305	0.909	0.021
Temp. put up	0.890	0.561	1.029	0.008	0.654	1.048	0.004
Help find job	0.332	0.066	0.787	0.008	0.063	0.782	0.010
Advice legal probl.	0.375	0.036	0.689	0.015	0.008	0.643	0.045
		<i>Time 2</i>					
R_Repairs	0.769	0.559	0.934	0.008	0.448	0.924	0.029
R_Shop for you	0.813	0.488	0.978	0.008	0.631	1.042	0.003
R_Contact to doctor	0.576	0.312	0.853	0.008	0.298	0.837	0.014
R_Advice pers. probl.	0.784	0.463	0.954	0.008	0.476	0.961	0.006
R_Temp. put up	0.589	-0.050	0.855	0.074	-0.214	0.834	0.160
R_Help find job	0.429	-0.017	0.910	0.079	-0.106	0.861	0.204
R_Advice legal probl.	0.855	0.635	0.980	0.008	0.599	0.971	0.023
		<i>Correlation</i>					
Time 1 <> Time 2	0.144	-0.349	0.703	0.504	-0.472	0.571	0.808
<i>Higher Education</i>		<i>Time 1</i>					
Repairs	0.923	0.597	0.979	0.008	0.597	0.979	0.008
Shop for you	0.948	0.568	0.989	0.008	0.569	0.989	0.008
Contact to doctor	0.836	0.098	0.981	0.020	0.145	0.986	0.007
Advice pers. probl.	0.860	0.234	0.978	0.008	0.262	0.984	0.002
Temp. put up	0.925	0.554	0.982	0.008	0.598	0.983	0.005
Help find job	0.840	0.744	1.005	0.008	....	0.912	0.467
Advice legal probl.	0.871	0.284	0.977	0.008	0.358	0.983	0.002
		<i>Time 2</i>					
R_Repairs	0.858	0.224	0.960	0.008	0.303	0.969	0.004
R_Shop for you	0.929	0.399	0.981	0.008	0.502	0.984	0.003
R_Contact to doctor	0.791	0.111	0.963	0.020	0.176	0.972	0.012
R_Advice pers. probl.	0.880	0.509	0.976	0.008	0.559	0.978	0.003
R_Temp. put up	0.857	0.109	0.967	0.008	0.096	0.965	0.013
R_Help find job	0.795	0.471	0.921	0.008	0.421	0.913	0.020
R_Advice legal probl.	0.780	-0.023	0.941	0.080	-0.013	0.941	0.074
		<i>Correlation</i>					
Time 1 <> Time 2	0.891	0.260	0.989	0.008	0.385	0.998	0.001

Notes: Estimates calculated using ML estimation. Significance levels estimated using Bootstrapping, 250 iterations, R\_ indicates items used in retest, N=87 raw data (listwise).

Data: Social Relationships among Czech Citizens

Table 44: Resources Gained by Friends Compared by Age

	Estimate	Percentile Method			Bias Corrected PM		
		Con. Interval 95% Lower	Upper	P	Con. Interval 95% Lower	Upper	P
<i>18-44</i>							
<i>Time 1</i>							
Repairs	0.909	0.742	0.990	0.008	0.677	0.981	0.019
Shop for you	0.945	0.529	0.995	0.008	0.493	0.989	0.022
Contact to doctor	0.858	-0.004	0.969	0.051	0.031	0.972	0.040
Advice pers. problem	0.913	0.318	0.986	0.008	0.396	0.988	0.003
Temp. put up	0.898	0.593	0.977	0.008	0.625	0.978	0.005
Help find job	0.670	0.251	0.886	0.015	0.200	0.872	0.023
Advice legal problem	0.850	0.031	0.971	0.027	0.031	0.971	0.029
<i>Time 2</i>							
R_Repairs	0.882	0.718	0.959	0.008	0.588	0.948	0.027
R_Shop for you	0.699	0.359	0.962	0.008	0.291	0.947	0.016
R_Contact to doctor	0.905	0.672	0.966	0.008	0.591	0.960	0.021
R_Advice pers. prob.	0.821	0.369	0.954	0.008	0.414	0.966	0.002
R_Temp. put up	0.868	0.433	0.965	0.008	0.458	0.978	0.004
R_Help find job	0.382	0.024	0.694	0.035	0.024	0.693	0.037
R_Advice legal prob.	0.747	0.454	0.877	0.008	0.339	0.843	0.032
<i>Correlation</i>							
Time 1 $\diamond$ Time 2	0.758	0.013	0.951	0.045	0.105	0.971	0.013
<i>Over 44</i>							
<i>Time 1</i>							
Repairs	0.725	0.355	0.932	0.008	0.348	0.930	0.008
Shop for you	0.851	0.694	0.983	0.008	...	0.933	0.099
Contact to doctor	0.734	0.495	0.971	0.008	...	0.864	0.131
Advice pers. problem	0.743	0.551	0.913	0.008	0.538	0.902	0.011
Temp. put up	0.955	0.809	1.008	0.008	0.853	1.019	0.003
Help find job	0.608	0.172	0.934	0.008	0.148	0.930	0.011
Advice legal problem	0.742	0.623	0.898	0.008	0.568	0.856	0.034
<i>Time 2</i>							
R_Repairs	0.574	0.181	0.909	0.008	0.169	0.896	0.010
R_Shop for you	0.898	0.629	1.012	0.008	0.643	1.014	0.007
R_Contact to doctor	0.846	0.546	0.972	0.009	0.505	0.967	0.015
R_Advice pers. prob.	0.757	0.216	0.988	0.008	0.097	0.983	0.014
R_Temp. put up	0.841	0.482	0.957	0.011	0.574	0.967	0.004
R_Help find job	0.901	0.424	0.984	0.008	0.275	0.974	0.029
R_Advice legal prob.	0.787	0.424	0.979	0.008	0.452	0.982	0.006
<i>Correlation</i>							
Time 1 $\diamond$ Time 2	0.724	0.345	0.961	0.009	0.408	0.993	0.003

Notes: Estimates calculated using ML estimation. Significance levels estimated using Bootstrapping, 250 iterations, R\_ indicates items used in retest, N=84 raw data (listwise).

Data : Social Relationships among Czech Citizens

Table 45: Resources Gained by Friends Compared by Sex

	Estimate	Percentile Method			Bias Corrected PM		
		Con. Interval 95% Lower	Upper	P	Con. Interval 95% Lower	Upper	P
<i>Male</i>							
<i>Time 1</i>							
Repairs	0.845	0.576	0.972	0.008	0.621	0.982	0.004
Shop for you	0.624	0.338	0.934	0.008	0.302	0.907	0.017
Contact to doctor	0.261	-0.104	0.764	0.146	-0.099	0.791	0.125
Advice pers. probl.	0.504	0.156	0.834	0.008	0.147	0.824	0.011
Temp. put up	0.855	0.467	0.978	0.008	0.369	0.956	0.041
Help find job	0.827	0.428	0.958	0.008	0.484	0.978	0.004
Advice legal probl.	0.372	0.014	0.757	0.041	0.035	0.819	0.025
<i>Time 2</i>							
R_Repairs	0.760	0.586	0.910	0.008	0.516	0.868	0.030
R_Shop for you	0.548	0.274	0.884	0.008	0.205	0.869	0.017
R_Contact to doctor	0.841	0.629	0.958	0.008	0.402	0.936	0.041
R_Advice pers. probl.	0.744	0.371	0.940	0.008	0.363	0.933	0.008
R_Temp. put up	0.713	0.274	0.923	0.008	0.225	0.895	0.017
R_Help find job	0.577	0.225	0.877	0.008	0.166	0.863	0.017
R_Advice legal probl.	0.707	0.374	0.895	0.008	0.350	0.893	0.010
<i>Correlation</i>							
Time 1 <> Time 2	0.507	0.233	0.791	0.008	0.204	0.770	0.012
<i>Female</i>							
<i>Time 1</i>							
Repairs	0.991	0.898	0.998	0.008	0.906	0.998	0.006
Shop for you	0.997	0.945	1.004	0.008	0.902	1.003	0.021
Contact to doctor	0.902	0.200	0.983	0.008	0.274	0.992	0.003
Advice pers. probl.	0.944	0.618	0.992	0.008	0.637	0.995	0.004
Temp. put up	0.967	0.742	0.994	0.008	0.742	0.994	0.008
Help find job	0.818	0.082	0.955	0.008	0.106	0.963	0.004
Advice legal probl.	0.896	0.089	0.983	0.021	0.039	0.980	0.032
<i>Time 2</i>							
R_Repairs	0.902	0.390	0.985	0.008	0.435	0.987	0.005
R_Shop for you	0.968	0.759	1.000	0.008	0.685	0.997	0.025
R_Contact to doctor	0.920	0.446	0.984	0.008	0.470	0.985	0.007
R_Advice pers. probl.	0.870	0.389	0.984	0.008	0.395	0.987	0.006
R_Temp. put up	0.934	0.714	0.996	0.008	0.720	0.998	0.005
R_Help find job	0.610	0.024	0.884	0.043	-0.032	0.868	0.065
R_Advice legal probl.	0.819	0.383	0.947	0.008	0.196	0.923	0.037
<i>Correlation</i>							
Time 1 <> Time 2	0.782	-0.085	0.984	0.130	-0.043	0.991	0.070

Notes: Estimates calculated using ML estimation. Significance levels estimated using Bootstrapping, 250 iterations, R\_ indicates items used in retest, N=84 raw data (listwise).

Data: Social Relationships among Czech Citizens

Table 46: Resources Gained by Friends Compared by Education

	Estimate	Percentile Method			Bias Corrected PM		
		Con. Interval 95%		P	Con. Interval 95%		P
		Lower	Upper		Lower	Upper	
<i>Lower Education</i>		<i>Time 1</i>					
Repairs	0.757	0.386	0.919	0.008	0.386	0.919	0.008
Shop for you	0.758	0.338	0.969	0.008	0.320	0.949	0.011
Contact to doctor	0.572	0.335	0.866	0.008	0.244	0.783	0.048
Advice pers. probl.	0.659	0.476	0.923	0.008	0.443	0.875	0.025
Temp. put up	0.691	0.436	0.971	0.008	0.442	0.975	0.007
Help find job	0.620	0.189	0.843	0.008	0.262	0.885	0.003
Advice legal probl.	0.595	0.302	0.827	0.008	0.300	0.803	0.010
		<i>Time 2</i>					
R_Repairs	0.677	0.307	0.956	0.008	0.365	0.977	0.003
R_Shop for you	0.468	0.234	0.980	0.008	0.204	0.973	0.025
R_Contact to doctor	0.932	0.700	0.987	0.008	0.469	0.982	0.016
R_Advice pers. probl.	0.765	0.267	0.946	0.008	0.359	0.959	0.004
R_Temp. put up	0.878	0.419	0.970	0.008	0.386	0.970	0.010
R_Help find job	0.653	0.406	0.986	0.008	0.366	0.973	0.026
R_Advice legal probl.	0.959	0.768	0.998	0.008	0.883	1.030	0.002
		<i>Correlation</i>					
Time 1 <> Time 2	0.699	0.262	0.905	0.008	0.355	0.957	0.002
<i>Higher Education</i>		<i>Time 1</i>					
Repairs	0.924	0.740	0.992	0.008	0.718	0.986	0.014
Shop for you	0.954	0.587	0.998	0.008	0.565	0.997	0.016
Contact to doctor	0.869	-0.027	0.975	0.065	0.152	0.984	0.029
Advice pers. probl.	0.923	0.360	0.987	0.008	0.414	0.990	0.003
Temp. put up	0.938	0.705	0.994	0.008	0.618	0.990	0.017
Help find job	0.740	0.296	0.943	0.008	0.252	0.934	0.013
Advice legal probl.	0.854	0.048	0.975	0.028	0.155	0.987	0.012
		<i>Time 2</i>					
R_Repairs	0.896	0.701	0.985	0.008	0.670	0.976	0.014
R_Shop for you	0.835	0.584	0.978	0.008	0.482	0.961	0.027
R_Contact to doctor	0.894	0.614	0.964	0.008	0.552	0.961	0.011
R_Advice pers. probl.	0.823	0.384	0.957	0.008	0.390	0.961	0.005
R_Temp. put up	0.844	0.273	0.967	0.008	0.300	0.969	0.006
R_Help find job	0.487	0.025	0.743	0.043	0.023	0.735	0.046
R_Advice legal probl.	0.771	0.312	0.900	0.008	0.244	0.890	0.013
		<i>Correlation</i>					
Time 1 <> Time 2	0.766	-0.015	0.980	0.055	0.151	1.004	0.011

Notes: Estimates calculated using ML estimation. Significance levels estimated using Bootstrapping, 250 iterations, R\_ indicates items used in retest, N=84 raw data (listwise).

Data: Social Relationships among Czech Citizens

**15.6 CFA Estimates Assessing the Internal Consistency Reliability of the Construct Personal Support Social Capital for Acquaintances**

*Table 47: Standard Errors of the Factor Personal Support (Acquaintances)*

	SE	SE-SE	Mean	Bias	SE-Bias
Repairs	0.115	0.005	0.765	-0.010	0.007
Shop for you	0.102	0.005	0.813	-0.005	0.006
Contact to doctor	0.111	0.005	0.725	-0.024	0.007
Advice personal problems	0.108	0.005	0.715	-0.016	0.007
Temporarily put you up	0.114	0.005	0.706	-0.011	0.007
Help find job	0.182	0.008	0.491	-0.015	0.012
Advice legal problems	0.151	0.007	0.655	-0.019	0.010

Notes: Bootstrapping, 250 iterations, N=121.

Data: Social Relationships among Czech Citizens

*Table 48: Estimates of the Factor Personal Support (Acquaintances)*

	Estimate	Percentile Method			Bias Corrected PM		
		Con. Interval 95%		P	Con. Interval 95%		P
		Lower	Upper		Lower	Upper	
Repairs	0.775	0.501	0.948	0.008	0.488	0.941	0.011
Shop for you	0.818	0.582	0.976	0.008	0.560	0.966	0.011
Contact to doctor	0.749	0.454	0.903	0.008	0.480	0.916	0.005
Advice pers. probl.	0.730	0.405	0.892	0.008	0.389	0.878	0.013
Temp. put up	0.717	0.408	0.895	0.008	0.399	0.892	0.010
Help find job	0.506	0.083	0.758	0.042	-0.019	0.755	0.055
Advice legal probl.	0.674	0.228	0.879	0.008	0.216	0.873	0.009

Notes: Estimates calculated using ML estimation. Significance levels estimated using Bootstrapping, 250 iterations, N=121 raw data (listwise).

Data: Social Relationships among Czech Citizen

### 15.7 Estimates of Construct Personal Support Social Capital for Acquaintances in Group Comparisons

Table 49: Resources Gained by Acquaintances Compared by Age

	Estimate	Percentile Method			Bias Corrected PM		
		Con. Interval 95%		P	Con. Interval 95%		P
		Lower	Upper		Lower	Upper	
<i>18 – 44 years</i>							
Repairs	0.761	0.322	1.010	0.008	0.308	0.999	0.013
Shop for you	0.738	0.346	0.971	0.008	0.368	0.981	0.003
Contact to doctor	0.756	0.290	0.985	0.008	0.243	0.941	0.037
Advice pers. probl.	0.809	0.418	0.990	0.008	0.451	1.000	0.006
Temp. put up	0.750	0.435	0.949	0.008	0.498	0.960	0.003
Help find job	0.542	0.091	0.899	0.014	0.068	0.875	0.027
Advice legal probl.	0.611	0.114	0.919	0.013	0.051	0.914	0.021
<i>Over 44 years</i>							
Repairs	0.656	0.125	0.944	0.008	...	0.842	0.172
Shop for you	0.519	0.334	1.002	0.008	...	0.962	0.119
Contact to doctor	0.934	0.183	1.026	0.011	0.137	1.017	0.023
Advice pers. probl.	0.921	0.361	0.998	0.008	0.447	1.008	0.001
Temp. put up	0.536	0.307	0.987	0.008	...	0.918	0.058
Help find job	0.557	0.319	0.962	0.008	...	0.866	0.125
Advice legal probl.	0.588	0.011	0.889	0.046	0.105	0.947	0.010

Notes: Estimates calculated using ML estimation. Significance levels estimated using Bootstrapping: 250 samples, N = 121 raw data (listwise).

Data: Social Relationships among Czech Citizen

Table 50: Resources Gained by Acquaintances Compared by Sex

	Estimate	Percentile Method			Bias Corrected PM		
		Con. Interval 95%		P	Con. Interval 95%		P
		Lower	Upper		Lower	Upper	
<i>Male</i>							
Repairs	0.855	0.334	0.969	0.008	0.428	0.989	0.004
Shop for you	0.615	0.374	0.968	0.008	0.352	0.885	0.046
Contact to doctor	0.475	0.173	0.952	0.008	0.131	0.914	0.021
Advice pers. probl.	0.578	0.264	0.952	0.008	0.294	0.960	0.007
Temp. put up	0.925	0.608	1.005	0.008	0.650	1.010	0.004
Help find job	0.772	0.335	0.936	0.008	0.401	0.946	0.003
Advice legal probl.	0.331	0.164	0.878	0.008	0.102	0.783	0.041
<i>Female</i>							
Repairs	0.840	0.664	0.983	0.008	0.617	0.971	0.021
Shop for you	0.684	0.215	0.990	0.008	0.196	0.983	0.016
Contact to doctor	0.835	0.366	0.971	0.008	0.303	0.968	0.018
Advice pers. probl.	0.993	0.772	1.055	0.008	0.869	1.072	0.003
Temp. put up	0.590	0.156	0.958	0.008	0.084	0.945	0.016
Help find job	0.660	-0.011	0.965	0.068	0.005	0.968	0.047
Advice legal probl.	0.622	0.050	0.943	0.022	0.062	0.951	0.017

Notes: Estimates calculated using ML estimation. Significance levels estimated using Bootstrapping: 250 samples, N = 121 raw data (listwise).

Data: Social Relationships among Czech Citizens

Table 51: Resources Gained by Acquaintances Compared by Education

	Estimate	Percentile Method			Bias Corrected PM		
		Con. Interval 95%		P	Con. Interval 95%		P
		Lower	Upper		Lower	Upper	
<i>Lower Education</i>							
Repairs	0.963	0.630	1.090	0.008	0.455	1.055	0.017
Shop for you	0.478	0.116	0.950	0.008	0.080	0.893	0.018
Contact to doctor	0.690	0.301	0.946	0.008	0.300	0.944	0.009
Advice pers. probl.	0.873	0.367	0.992	0.008	0.297	0.989	0.012
Temp. put up	0.486	0.116	0.896	0.012	0.076	0.825	0.030
Help find job	0.767	0.508	0.975	0.008	0.499	0.973	0.011
Advice legal probl.	0.217	-0.124	0.762	0.092	-0.311	0.547	0.302
<i>Higher Education</i>							
Repairs	0.537	0.391	0.920	0.008	...	0.735	0.071
Shop for you	0.828	0.503	0.969	0.008	0.462	0.953	0.022
Contact to doctor	0.888	0.368	0.984	0.008	0.348	0.979	0.013
Advice pers. probl.	0.964	0.567	1.004	0.008	0.715	1.013	0.001
Temp. put up	0.743	0.559	0.973	0.008	...	0.951	0.086
Help find job	0.323	0.048	0.897	0.027	0.046	0.881	0.033
Advice legal probl.	0.868	0.304	0.953	0.008	0.395	0.968	0.002

Notes: Estimates calculated using ML estimation. Significance levels estimated using Bootstrapping: 250 samples, N = 121 raw data (listwise).

Data: Social Relationships among Czech Citizens

### 15.8 Comparison of Surveys “Social Relationships among Czech Citizens” and “Our Society”

Table 52: Error Variances of Social Capital Factors

	Social Relationships (a)		Our Society (b)	
	Estimate	S.E.	Estimate	S.E.
e1	0.518	0.073	0.612	0.032
e2	0.307	0.049	0.551	0.029
e3	0.296	0.052	0.691	0.039
e4	0.427	0.060	0.493	0.025
e5	0.359	0.050	0.474	0.026
e6	0.270	0.038	0.714	0.039
e7	0.583	0.079	0.898	0.046
e8	0.219	0.065	0.585	0.041
e9	0.268	0.036	0.357	0.023
e10	0.168	0.067	0.593	0.043
e11	0.134	0.020	0.138	0.009
e12	0.183	0.029	0.185	0.012

Notes: see models in figures 12 and 13, (a) N=129, (b) N=971.

Data: Social Relationships among Czech Citizens, Our Society



## 15.9 The Resource Generator Used in the Survey “Our Society”

### 15.9.1 Czech Version

Nyní vám budu předčítat charakteristiky několika skupin lidí. Vy mi prosím u každé z nich postupně řekněte, zda někoho takového máte zvlášť

1) mezi svými známými,

ano/ne

2) mezi přáteli

ano/ne

3) a mezi příbuznými.

ano/ne

Máte někoho, kdo...

a) Vám pomůže s drobnými pracemi v bytě či domě?

b) Vám nakoupí, když jste Vy i ostatní členové domácnosti nemocní?

c) Vám pomůže sehnat kontakt na dobrého lékaře, pokud byste ho potřeboval?

d) s Vámi probere důležité věci v životě, poradí v případě osobních problémů?

e) Vám poskytne ubytování, kdybyste musel dočasně opustit svůj byt (alespoň na týden)?

f) Vám umí poradit s právními problémy (s bydlením, v práci, s městským úřadem)?

g) Vám nebo jinému členu rodiny pomůže najít práci?

h) má možnost zaměstnat lidi, uzavírat s nimi smlouvy, najímat pracovníky?

i) se vyzná ve finančních záležitostech (daně, dotace, sociální dávky, důchodové pojištění)?

j) pracuje na radnici nebo místním úřadě?

k) se objevuje v médiích (celebrita, politik apod.)?

l) vydělává více než 100 tis. Kč měsíčně?

### 15.9.2 English Version

Now I am going to read out some characteristics of groups of people. Please quote among all the following, if you have somebody of them among your

1) acquaintances,

yes/no

2) among your friends

yes/no

3) and among your relatives

yes/no

Do you have somebody, who

- a) will help you with repairs in the house or flat?
- b) will shop for you when you and the other household members are ill?
- c) will put you in contact with a quality doctor should you need one?
- d) will advise you in case of personal problems?
- e) would temporarily put you up if your home burnt down for instance (for at least one week)?
- f) can advise you on legal or bureaucratic problems?
- g) will help you or another family member to find a job?
- h) has the possibility to employ people, can close contracts with them, searches for workers?
- i) knows a lot about financial matters (taxes, grants, social allowances, retirement insurance)?
- j) works at the town hall or local office?
- k) has contact to media (celebrations, politic etc.)?
- l) earns more than 100.000 CZK a month?

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# 18 Zusammenfassung – Sozialkapitaltheorie: Eine methodologische Fundierung

Das Konzept Sozialkapital erfreut sich seit Anfang der 1990er Jahre großer Beliebtheit. In den letzten Jahren wurden tausende Artikel und Bücher zu diesem Thema verfasst, was unter anderem darin begründet liegt, dass bisher keine anerkannte und generelle Theorie sozialen Kapitals existiert. Die vorliegende Arbeit verfolgt das Ziel einen Beitrag zur Schließung dieser Lücke zu leisten und stellt einen ersten Schritt auf dem Weg zu einer formalisierten Sozialkapitaltheorie dar.

Ausgangspunkt der vorliegenden Arbeit sind die ursprünglichen Sozialkapitalkonzepte Pierre Bourdieus (1983) und James S. Colemans (1988) (siehe Kapitel 2). Aus beiden Konzepten lässt sich eine allgemeine Definition sozialen Kapitals ableiten: *Sozialkapital als Eigenschaft von Beziehungen zwischen Individuen ist eine Ressource, die Akteure gewinnbringend nutzen können*. Die beiden Wissenschaftler liefern zwar keine zufriedenstellende Sozialkapitaltheorie, doch lassen sich aus der Diskussion ihrer Entwürfe wichtige Eigenschaften, die eine formalisierte Sozialkapitaltheorie erfüllen sollte, ableiten: (1) Sozialkapital ist ein individuelles oder öffentliches Gut und verlangt nach einer Theoretisierung sowohl auf der Mikro- als auch der Makrosozialen Ebene. (2) Sozialkapital entsteht in offenen, geschlossenen sowie in institutionalisierten und nicht institutionalisierten Beziehungen, wobei die hier eingebetteten sozialen Ressourcen für verschiedene Handlungen von Vorteil sind. Zudem sollten (3) in einer Sozialkapitaltheorie bisher vernachlässigte negative Effekte sozialen Kapitals, wie z.B. Exklusion, Beachtung finden und (4) Strategien zum effektiven Einsatz sozialen Kapitals zur Bekämpfung sozialer Ungleichheit diskutiert werden. In den folgenden drei Kapiteln werden die gegenwärtigen Konzepte Robert D. Putnams (Kapitel 3), Ronald S. Burts (Kapitel 4) und Nan Lins (Kapitel 5) hinsichtlich dieser vier Richtlinien, ihres formellen Charakters und ihres empirischen Gehalts geprüft.

Zentrale Ergebnisse dieser sind Folgende: Putnam (2000) fokussiert die Stärkung der Demokratie sowie des ökonomischen Outputs einer Gesellschaft durch Netzwerke zivilgesellschaftlichen Engagements, in denen Vertrauen und

Reziprozitätsnormen entstehen. Einen anderen Standpunkt nehmen Burt und Lin ein. Beide betonen die Bedeutung der Sozialstruktur, in die ein Akteur eingebettet ist. Burt (1992) hebt die Überspannung struktureller Lächer hervor, während Lin (2001) sich auf den Zugang zu Ressourcen konzentriert, die an sozial wertgeschätzte Positionen in der Sozialstruktur gebunden sind.

Die Diskussion der Konzepte zeigt, dass die gleichzeitige Konzeptualisierung sozialen Kapitals als individuelles und als Kollektivgut die Gefahr birgt, die auf einer gesellschaftlichen Ebene ermittelten Zusammenhänge auf die jeweils andere Ebene zu übertragen, ohne ihren empirischen Gehalt zu prüfen. Dies ist der Fall in Putnams Konzept. Er diskutiert Sozialkapital auf der makrosozialen Ebene sowie als öffentliches Gut und nimmt an, dass die Gesetzmäßigkeiten auch auf der individuellen Ebene Gültigkeit beanspruchen. Weiterhin kombiniert er in seinem Konzept eine strukturelle (Netzwerke) und kulturelle (generalisiertes Vertrauen, Reziprozitätsnormen) Dimension sozialen Kapitals. Mit dieser Konzeptualisierung trennt Putnam Sozialkapital von seinen Wurzeln, d.h. einerseits von seinem Kapitalcharakter und andererseits von den Beziehungen, in denen es entsteht. „Kapital“ an sich trägt die Eigenschaft der Investitionsmöglichkeit. Zwar können individuelle oder kollektive Akteure (z.B. Vereine) sehr einfach in Beziehungen mit anderen Individuen oder Kollektiven investieren, doch ist die Investition in makrosoziale kulturelle Elemente, wie generalisiertes Vertrauen oder Reziprozitätsnormen, ein komplexer Vorgang und nur indirekt möglich. Daraus schlussfolgernd und in Anlehnung an Franzen und Pointner (2007) wird Sozialkapital im Folgenden als strukturelles Phänomen verstanden.

Jedoch werden die Effekte der kulturellen gesellschaftlichen Aspekte (generalisiertes Vertrauen und Reziprozitätsnormen) keineswegs im hier erarbeiteten Konzept vernachlässigt oder gar vollständig ausgeschlossen. Die Wissenschaft ist sich einig, dass diese eng mit sozialem Kapital verknüpft sind, da sie einerseits den Aufbau und den Fortbestand von Beziehungen erleichtern und andererseits in Beziehungen entstehen. Sie sind somit Voraussetzung und Effekt sozialen Kapitals.

Ein anderes Problem ist die funktionalistische Konzeptualisierung sozialen Kapitals sowohl bei Putnam, als auch bei Coleman. Eine solche vermengt Ursachen und Wirkungen wodurch empirische Tests dieser nicht durchführbar sind. Unter den diskutierten Konzepten weist nur Lins einen deduktiven Charakter auf: es beinhaltet empirisch prüfbar Theoreme, die in Übereinstimmung mit der Empirie adaptiert und weiterentwickelt werden können. Allerdings erfüllen alle Konzepte weitere Voraussetzungen einer formellen Theorie – sie sind explizit, zugänglich und konsistent.

Trotz seiner Probleme ist Putnams Konzept für die Sozialkapitaldiskussion von hohem Wert, da es – im Gegensatz zu den anderen, die informelle Bezie-



hungen favorisieren – formelle Beziehungen, die vorwiegend in Vereinen entstehen, priorisiert.

Auch in der Frage, welche Eigenschaften von Beziehungen Sozialkapital erzeugen, sind die Wissenschaftler uneins. Bourdieu, Coleman und Putnam betonen, dass Sozialkapital in geschlossenen und dichten Sozialstrukturen besteht. Diese erleichtern den Informationsaustausch und die Etablierung von Normen und Sanktionen (Coleman), sie befähigen gesellschaftliche Gruppen, sich von anderen Gruppen abzugrenzen (Bourdieu), und sie ermutigen Bürger zu zivilgesellschaftlichem Engagement (Putnam). Diese begrenzte Sichtweise wird stark kritisiert, da ein Großteil empirischer Studien aufzeigt, dass schwache oder flüchtige Beziehungen auch wichtig sind. Burt wiederum strapaziert den Nutzen von schwachen Beziehungen über und vernachlässigt hingegen starke, intensive Beziehungen. Im Gegensatz zu diesen einseitigen Ansichten finden beide Beziehungstypen Beachtung in Lins Konzept.

Obwohl soziale Ungleichheit ein zentrales Thema der diskutierten Konzepte ist (außer in Putnams), kommt doch keines dem Drängen vieler Kritiker nach, die Nutzung sozialen Kapitals zur Verringerung von Ungleichheit zu konzeptualisieren. Auch negative Effekte des Sozialkapitals werden in den vorgestellten Konzepten nur fragmentarisch aufgegriffen. Die Konzeptualisierung und der empirische Test beider Aspekte ist daher Pflicht künftiger Forschung.

*Zusammenfassend* zeigt die Diskussion, dass eine Sozialkapitaltheorie noch im Aufbau begriffen ist, jedoch kann ein vorläufiges formalisiertes Konzept abgeleitet werden (siehe Kapitel 6). Die hier formulierte Sozialkapitaltheorie beansprucht Gültigkeit in einer hierarchisch strukturierten Gesellschaft und umfasst folgende Aspekte: Individuen und Kollektive als Akteure vollziehen zweckgerichtete Handlungen, um expressive (z.B. psychische oder physische Gesundheit) oder instrumentelle Ziele (z.B. Aufwärtsmobilität) zu erreichen. Sozialkapital entsteht in Beziehungsstrukturen oder Netzwerken von Individuen oder Kollektiven, welche den Zugang zu sozialen Ressourcen (z.B. soziales Ansehen, emotionale Unterstützung) sichern. Hierbei begünstigen manche Ressourcen eher expressive und andere vorwiegend instrumentelle Handlungen.

Offene bzw. brückenbildende Netzwerkstrukturen ermöglichen im Wesentlichen instrumentelle Handlungen oder Handlungen in kompetitiven Kontexten. Geschlossene bzw. bindende Strukturen unterstützen vor allem expressive Handlungen oder Handlungen in kooperativen Zusammenhängen. Netzwerke variieren zudem je nach Größe und Reichweite/Diversität. In kleinen und homogenen Netzwerken erhalten Akteure vorwiegend Zugang zu Ressourcen, die hilfreich zur Erfüllung von expressiven Handlungen sind, wohingegen große und diverse Netzwerke in der Regel Ressourcen für instrumentelle Handlungen zur Verfügung stellen.

Voraussetzungen sozialen Kapitals sind kulturell-gesellschaftliche Aspekte (z.B. Reziprozitätsnormen und generalisiertes Vertrauen), kollektive Eigenschaften der Gesellschaft (z.B. Wirtschaftsform, Technologie, historischer Hintergrund) sowie individuelle Eigenschaften des Akteurs (z.B. Geschlecht, Ethnizität). Zudem formt Sozialkapital kulturell-gesellschaftliche Aspekte und hat negative Effekte oder externe Kosten. Die konkreten Zusammenhänge diesbezüglich sowie die Rolle von individuellen kulturellen Aspekten wie sozialem Vertrauen sind Gegenstand zukünftiger Forschung. Mit dieser theoretischen Grundlegung endet der erste Teil der Monographie, dem sich im zweiten Teil die Diskussion der Qualität geeigneter Messinstrumente anschließt.

In Kapitel 7 bis 9 erhält der Leser eine Einführung in die später verwendeten Methoden sowie den tschechischen Kontext. Dabei behandelt Kapitel 7 statistische Verfahren zur Erfassung von Messqualitätsfaktoren – vorwiegend der Reliabilität und Validität. Kapitel 8 stellt die verwendeten Surveys vor und Kapitel 9 diskutiert den Einfluss des tschechischen Hintergrunds auf die Verteilung von formellen und informellen Netzwerken. Soziale Netzwerke wurden sehr stark von der kommunistischen Vergangenheit und der Transformation zum Kapitalismus geprägt. Während unter dem kommunistischen Regime politische Kontrolle einen wesentlichen Bestandteil des Alltags darstellte und Mitgliedschaften in Vereinigungen erzwungen wurden, brachte der Kapitalismus Konsumdenken und Individualismus. Beide Entwicklungen führten zu einer Reduzierung generalisierten Vertrauens und verursachten die Ablehnung zivilgesellschaftlichen Engagements bei der Mehrheit der Bevölkerung, begleitet von einem Rückzug in informelle Netzwerke. Diese stellen somit die größte Quelle sozialen Kapitals dar. Zudem wird die Bildung informeller Netzwerke weiterhin vom Internet als technologische Hintergrundvariable unterstützt. Jedoch ist auch ein Anstieg an Mitgliedschaften in Vereinen seit der Samtenen Revolution (1989) zu verzeichnen, was auf eine Erholung der formellen Netzwerke hinweist.

Die sich daran anschließenden drei Kapitel diskutieren die Ergebnisse des Surveys „Soziale Beziehungen zwischen tschechischen Bürgern 2007/2008“, welches in Form einer Test-Retest-Studie durchgeführt wurde, in deren Rahmen dieselben Respondenten an zwei, sechs Monate auseinanderliegenden Zeitpunkten telefonisch befragt wurden. Der Fragebogen enthielt unter anderem zwei Itembatterien, die bisher nur sporadisch bzw. noch nie in der Tschechischen Republik verwendet wurden – die Itembatterie zu brückenbildendem Sozialkapital (bridging social capital item battery) und der Ressourcengenerator.

Kapitel 10 und 11 beleuchten die Qualität von Indikatoren zur Messung des Zugangs zu Sozialkapital über Netzwerke. Die Analysen erprobter Items zur Beurteilung der Netzwerkgröße (Anzahl and Kontakten) und -dichte (Kontakthäufigkeit) von informellen Netzwerken zeigen eher unerwartete Ergebnisse.

Während die Messinstrumente zur Erhebung starker Beziehungen zu Familienmitgliedern sehr reliabel sind, ist das Gegenteil der Fall für Messungen von schwachen Beziehungen im Freundeskreis. Die Frage, ob die Items für bestimmte Bevölkerungsgruppen (nach Geschlecht, Alter und Bildung) reliabler sind als für andere, muss verneint werden – es zeigt sich kein klares Muster in den Reliabilitätsanalysen der Freundschaftsnetzwerkitems. Da die Studie nur zwei Befragungszeitpunkte beinhaltete, die wiederum die Ermittlung von Effekten der Veränderung der Lebenssituation des Respondenten nicht zulassen, wurden fünf Items zur dieser Thematik einbezogen (z.B. Umzug oder Arbeitsplatzwechsel des Respondenten zwischen den Befragungszeitpunkten). Doch auch diese Veränderungen im Lebenszusammenhang des Respondenten erklären die niedrige Reliabilität der Items nicht. Im Gegensatz zur fragwürdigen Zuverlässigkeit zeigen beide Itembatterien allerdings eine zufriedenstellende Kriterienvaliditäten (z.B. bei der Korrelation mit generalisiertem Vertrauen).

Schwache formelle Beziehungen wurden mit zwei verschiedenen Itembatterien gemessen. Im Test wurden Netzwerkgröße (Anzahl der Mitgliedschaften in Vereinen) und -dichte (Partizipationshäufigkeit im Verein) mit Hilfe einer Liste von Vereinstypen ermittelt. Im Retest kam eine alternative Frage zur Partizipationshäufigkeit in allen denkbaren Vereinigungen zur Anwendung. Die Analysen zeigen, dass die Antworten zu beiden Frageversionen korreliert sind, allerdings nur in geringem Maße, so dass sie nicht als reliabel bezeichnet werden können. Die Items erscheinen für bestimmte Gruppen reliabler zu sein als für andere. Besonders für ältere Frauen sind die Items geeignet, jedoch für höher gebildete Respondenten eher ungeeignet. Ähnlich wie im Falle der Items zur Netzwerkgröße und -dichte informeller Netzwerke zeigen die Items zu formellen Netzwerken allerdings eine zufriedenstellende Kriterienvalidität (siehe Kapitel 10).

Strukturelle Lücken werden hier mit einer Itembatterie zu brückenbildendem Sozialkapital operationalisiert (vgl. Kapitel 11). Der Vorteil dieser Itembatterie besteht in der gleichzeitigen Messung der Reichweite des Akteursnetzwerkes. Frühere Forschungsergebnisse zeigen, dass die Freunde, die brückenbildendes Sozialkapital für den Respondenten darstellen, sich in drei Gruppen (Faktoren) aufspalten – Freunde aus Fremdgruppen, mit abweichenden Interessen und mit unterschiedlichen Lebensstilen. Diese Faktorstruktur erlaubt neben der Analyse der Test-Retest-Reliabilität zudem die Beurteilung interner Konsistenz und Konstruktvalidität. Die ursprüngliche Itembatterie erfragte das Vorkommen von Freunden mit Eigenschaften, die denen des Befragten nicht entsprechen (z.B. mit anderer sexueller Orientierung oder aus einer anderen Generation). In der gegenwärtigen Studie wurde diese weiterentwickelt und ermittelt nun nicht nur das Vorkommen von Freunden im Netzwerk des Befragten, die andere Eigenschaften haben als dieser, sondern auch die Anwesenheit von Familienmitgliedern und

Bekannten aus dem Verein in dem der Respondent aktiv ist. Zudem erfragt sie die konkrete Anzahl dieser Kontakte. Insgesamt sind die Befunde eher unzufriedenstellend. Die Test-Retest-Reliabilitäten der Items sind sehr gering und es scheinen keine Dimensionen oder Faktoren zu existieren. Letzteres Resultat wirft die Frage auf, ob nicht die Betrachtung der Summe des gesamten brückenbildenden Sozialkapitals angebracht ist. Für dieses Argument spricht die gute Kriterienvalidität (in der Korrelation mit generalisiertem Vertrauen, Extraversion etc.) der Summenskala.

Verheißungsvolle Ergebnisse zeigen die Analysen der Qualität der Indikatoren zu abgerufenem Sozialkapital in Form von spezifischen Ressourcen (vgl. Kapitel 12). Es wurden 12 für den tschechischen Kontext geeignete und verbesserte Ressourcengeneratorsitems eingesetzt, welche die konkrete Anzahl von Familienmitgliedern, Freunden und Bekannten erfragen, die beabsichtigen (und nicht nur abstrakt können) eine bestimmte Ressource zur Verfügung zu stellen (z.B. bei Reparaturen im Haushalt zur Hand gehen oder sich in finanziellen Fragen auskennen). Die Items weisen akzeptable Test-Retest-Reliabilitäten auf, erscheinen allerdings weniger reliabel für Männer, ältere Respondenten und niedrig Gebildete. Allerdings zeigen weitere Analysen einer latenten Dimension der Ressourcen (Faktor persönliches Unterstützungssozialkapital), dass diese Unterschiede nach Geschlecht, Alter und Bildung vernachlässigbar sind. Eine Ausnahme bilden die Items zu Ressourcen, welche der Respondent von seinen Familienmitgliedern erhält. Diese Items sind nicht geeignet für die Befragung von gering Gebildeten, jedoch für höher Gebildete. Zur Analyse der Validität wurden die Ergebnisse mit denen der ursprünglichen Studie von Van der Gaag und Snijders (2005) und denen des Surveys „Unserer Gesellschaft 2007-4“ verglichen. In allen drei Studien beschreiben die Ressourcengeneratorsitems drei Faktoren – Persönliche Unterstützung, Finanzielle/Politische Kenntnisse und Prestigeverwandtes Sozialkapital. Diese Ergebnisse zeigen, dass die Konstrukte in verschiedenen Kontexten stabil sind und der Ressourcengenerator somit ein adäquates Messinstrument für zukünftige Studien ist. Diese Schlussfolgerung wird zudem von einer guten Kriterienvalidität bestärkt.

Insgesamt zeigt die hier vorgestellte Studie, dass die Items zur Messung von Netzwerkgröße und -dichte von starken Beziehungen (in der Familie) und der perfektionierte Ressourcengenerator über eine gute Qualität verfügen und daher für zukünftige Studien empfohlen werden können. Im Gegensatz dazu muss von der unreflektierten Verwendung der Items zur Messung der Netzwerkgröße und -dichte von informellen (Freunden) und formellen (Bekannte) Netzwerken sowie der Items zur Messung struktureller Lücken und Offenheit sowie Reichweite der Netzwerke abgeraten werden. Obwohl diese Messinstrumente über eine gewisse Validität verfügen, muss eine Weiterentwicklung erfolgen, um auch reliable

Ergebnisse zu liefern. An dieser Stelle ist intensive Forschung vonnöten. Zu diesem Zwecke bietet sich die Durchführung von Multitait-Multimethod-Experimenten, bevorzugt in internationaler Perspektive, an.

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## 19 Shrnutí – Teorie sociálního kapitálu: nástin metodologických základů

Koncept sociálního kapitálu se těší velké popularitě od počátku 90. let a plní tak tisíce stran knih a článků. Hlavní důvod lze spatřovat v tom, že neexistuje pouze jedna uznávaná obecná teorie sociálního kapitálu, setkáváme se tak s mnoha konceptuálními přístupy, které využívají rozdílné způsoby měření. Předkládaná studie přispívá k zaplnění této mezery. Nejprve je v druhé kapitole ze základních konceptů P. Bourdieuho (1983) a J. Colemana (1988) odvozena obecná definice sociálního kapitálu. Ten představuje vlastnosti vztahů mezi jedinci, které jsou zdrojem, jež mohou aktéři používat a těžit z něj. Protože ani Bourdieu, ani Coleman neformulují empiricky testovatelné teoremy, ani jedno z těchto pojetí není vhodné považovat za obecnou teorii sociálního kapitálu. Proto jsou dále vyvozeny čtyři předpoklady, které by obecná teorie sociálního kapitálu měla obsahovat. (1) Předně je třeba vzít v úvahu, že sociální kapitál je buď individuální, nebo veřejný statek, a proto musí být teoreticky konceptualizován na mikro a makro úrovni společnosti. (2) Sociální kapitál je vytvářen v otevřených i uzavřených strukturách, jakož i v institucionalizovaných a neinstitucionalizovaných vztazích. Zdroje zakořeněné v těchto rozličných strukturách mohou být prospěšné při jednání sledující dosažení určitého cíle. Navíc je třeba zvážit často opomíjené negativní dopady sociálního kapitálu ve smyslu vyloučení (3), a způsoby, jimiž může být sociální kapitál využit k boji proti nerovnosti (4).

Následující tři kapitoly kriticky diskutují koncepty R. Putnama (kapitola 3), R. Burtu (kapitola 4) a N. Lina (kapitola 5) ve vztahu k vyjmenovaným nárokům na obecnou teorii. Putnam (2000) se zabývá posilováním demokracie a ekonomického výkonu na základě sítě občanské angažovanosti, které usnadňují vznik důvěry a norem vzájemnosti. Jiný pohled nabízí Burt a Lin; oba považují za podstatnou sociální strukturu, ve které je aktér ukotven. Burt (1992) zdůrazňuje překlenutí strukturálních mezer, zatímco Lin (2001) přístup ke zdrojům spojeným s ceněným postavením ve společenské stratifikaci.

Diskuse ukazují, že pojímat sociální kapitál jako individuální a kolektivní statek zároveň, jak to činí Bourdieu a Coleman, s sebou nese nebezpečí zjednodušeného převzetí platnosti závěrů z jedné úrovně na druhou. Putnamův koncept je ukázkou tohoto problému. Hovoří o sociálním kapitálu na kolektivní úrovni

jako o veřejném statku, stejně tak jako předpokládá existenci stejných struktur na individuální úrovni. Přitom v tomto pojetí je myšlenka sociálního kapitálu odtržena od svých kořenů, tj. od vztahů, ze kterých se vynořuje či vzniká. Putnamův koncept kombinuje strukturální (sítě) a kulturní (generalizovaná důvěra k druhým a normy reciprocity) aspekty sociálního kapitálu. Obecně platí, že kapitál lze charakterizovat možností do něj investovat za účelem dosažení zisku. Makrosociální kulturní prvky – generalizovaná důvěra a normy reciprocity pak ovšem nejsou kapitálem v pravém slova smyslu, protože jedinec do nich může na celospolečenské úrovni investovat jen obtížně. Naproti tomu jednotlivec nebo kolektivní aktéři mohou jednodušeji investovat do vztahů s ostatními jednotlivci či kolektivitami. Proto souhlasíme s Franzenem a Pointerovou (2007) a pojmáme sociální kapitál pouze jako strukturální entitu. Mnozí autoři se ovšem shodují v tom, že kulturní aspekty jsou nějakým způsobem spojeny se sociálním kapitálem. Usnadňují vytváření a udržování vztahů (sítě), stejně tak jako jsou těmito vztahy usnadňovány.

Dalším problém Putnamovy stejně tak jako Colemanovy koncepce představuje předpoklad funkcionalismu – tedy, že sociální kapitál vždy plní specifickou funkci. Ten činí testování teorie v podstatě nemožným, neboť tak nedostatečně odděluje příčiny a důsledky. Z diskutovaných konceptů pouze Linův vykazuje deduktivní podstatu, navíc zahrnuje ověřitelné teoremy, které jsou užitečné pro adaptaci v odlišném prostředí a další rozvíjení teorie sociálního kapitálu. Nicméně, všechny ostatní diskutované koncepty rozvíjejí další požadavky na formální teorii: jsou explicitní, jednoduché a vnitřně konzistentní. Na druhou stranu je třeba připustit, že Putnamův koncept významně přispívá do diskuse o sociálním kapitálu, protože zdůrazňuje, že nejenom neformální ale i formální vztahy jsou důležité a tedy napomáhají vytváření sociálního kapitálu.

Pokud jde o povahu vztahů, které vytvářejí sociální kapitál, Bourdieu, Coleman a Putnam zdůrazňují uzavřené a husté sociální struktury, protože předpokládají, že přinášejí největší prospěch tím, že usnadňují přístup k informacím a ustanovování norem a sankcí (Coleman), napomáhají vymezování vůči ostatním skupinám (Bourdieu) a přispívají k výchově k občanství (Putnam). Tento úzký pohled je ovšem často ostře kritizován, poněvadž rozličné empirické studie ukazují, že stejně tak důležité jsou slabé vazby (přátelé, známí). Na druhé straně Burt klade přílišný důraz na slabé vazby a opomíjí ty silné. Linovo pojetí pak zahrnuje obě strukturální charakteristiky sítí – silné i slabé vazby. Jeho koncept také splňuje čtvrtou podmínku konceptualizace – propojení sociálního kapitálu a nerovností ve společnosti, které je u ostatních tří autorů v podstatě zanedbáno. Kritikové dále požadují uchopení toho, jak sociální kapitál přispívá ke zvýšení rovnosti. Přestože je nerovnost ústředním tématem diskutovaných konceptů (kromě Putnamových), žádný z nich nerozebírá, jak lze sociální kapitál využít v



boji proti nerovnosti. Proto musíme ponechat tento bod otevřený budoucímu výzkumu. Konečně řada autorů a autorek zdůrazňuje, že sociální kapitál může být též negativní, tj. přispívat k vyloučení. Nicméně toto hledisko není v uvedených klasických pojetích sociálního kapitálu obsaženo.

Stručně řečeno obecná teorie sociálního kapitálu je stále ve stadiu vývoje; můžeme nicméně formulovat provizorní formální koncept, který lze dále empiricky testovat (viz Kapitola 6). Co se týče oblasti uplatnění, tato teorie sociálního kapitálu se vztahuje na hierarchicky strukturované společnosti. Jednotlivci a kolektivity jsou aktéry, kteří v účelovém jednání sledují dosažení cílů. Sociální kapitál vzniká ve struktuře vztahů nebo sítí mezi těmito aktéry. Ten poskytuje přístup k sociálním zdrojům, které lze rozlišit na ty, jež napomáhají expresivnímu jednání (např. udržování fyzického a psychického zdraví) a ty, které jsou užitečné při instrumentálním jednání (např. vzestupná sociální mobilita). Struktury vztahů mohou být otevřené (přemostující) nebo uzavřené (svazující). Otevřené struktury napomáhají především při instrumentálním jednání a jednání se soutěživou podstatou, zatímco uzavřené podporují spíše expresivní jednání nebo jednání mající kooperativní charakter. Struktury se dále liší podle velikosti a rozpětí/diverzity, kdy malá síť a její nízké rozpětí pravděpodobněji zajistí dostupnost zdrojů uplatnitelných při expresivním jednání, zatímco velká síť a případně vysoké rozpětí v ní pak spíše umožní přístup ke zdrojům užitečným při instrumentálním jednání.

Předpoklady sociálního kapitálu tvoří kulturní sociální stránky (normy reciprocity a generalizované důvěry) a kolektivní statky společnosti (tj. ekonomie, technologie a historické kořeny), stejně tak jako individuální charakteristiky konkrétního jedince (například pohlaví či etnikum). Navíc kulturní složka slouží jako výsledek sociálního kapitálu. Konečně předpokládáme, že sociální kapitál má rovněž negativní důsledky a externality. Provázanost předpokladů vzniku sociálního kapitálu s jeho důsledky je stále otevřena dalšímu bádání.

Na základě obecnějšího konceptu sociálního kapitálu vypracovaného v první části se druhá část práce zaměřuje na kvalitu měření odlišných teoretických dimenzí. Cílem kapitol 7 až 9 je seznámit čtenáře s použitými metodami a českým kontextem. První z nich představuje metody pro formální hodnocení faktorů kvality měření – především spolehlivosti a validity; druhá představuje analyzované studie a třetí pojednává o vlivu českého prostředí na podobu formálních a neformálních sítí. Zde je třeba poznamenat, že utváření sociálních sítí bylo v České republice silně ovlivněno minulou zkušeností se socialismem, stejně jako přechodem ke kapitalismu. Oba faktory přispěly k nízké úrovni generalizované důvěry a odmítání občanské angažovanosti. Tato malá ochota k participaci na veřejnosti byla, a stále do určité míry ještě je, spojena s ústupem do neformálních sítí, které poskytují přístup ke sociálnímu kapitálu. Významný novodobý techno-

logický faktor podporující rozvoj neformálních sítí představuje Internet. Nicméně je třeba dodat, že od Sametové revoluce účast ve formálních sítích v české společnosti narůstá.

Následující tři kapitoly se zabývají výsledky výzkumu „Sociální vztahy českých občanů“ provedeného autorkou ve dvou etapách s odstupem šesti měsíců v letech 2007 a 2008 s využitím telefonického dotazování. Test-retest experiment (první a druhá etapa) mimo jiné využil dvě nové baterie otázek, které byly doposud v České republice použity pouze jednou – položkovou baterii přemosťujícího sociálního kapitálu a tzv. generátor zdrojů.

Kapitoly 10 a 11 se zabývají kvalitou měření přístupu k sociálnímu kapitálu, který poskytují sítě (velikost, diverzita, atd.). Analýza běžně používaných indikátorů velikosti sítí (počet kontaktů) a hustoty (četnost kontaktů) přináší v 10 kapitole poměrně nečekané výsledky. Zatímco měření vykazují vysokou spolehlivost pro silné vazby, tj. rodinné příslušníky, pro neformální slabé vazby (přátelství) platí opak. Analýza vlivu osobních charakteristik, jakož i změn, kterými respondent/ka prošel/a mezi dvěma časovými body, kdy rozhovory proběhly, neodhalila žádný obecný vzorec vlivu těchto okolností na spolehlivost měření ve sféře přátelství. Obě sady indikátorů – pro silné vazby a neformální slabé vazby – nicméně vykazují dobrou validitu na základě kritérií (korelace s generalizovanou důvěrou atd.).

Co se týče slabých formálních vazeb, tj. velikosti (počet členství v organizacích) a hustoty (četnost participace) formálních sítí, tj. asociací, sdružení apod., bylo v testu použito několik položek, zatímco v retestu byla zařazena pouze jedna alternativní otázka (obecná četnost participace ve sdruženích). Analýzy ukázaly, že obě verze dotazování jsou sice vzájemně propojené, avšak nedosahují dostatečné spolehlivosti. Při zkreslení zde hrají významnou roli socio-demografické charakteristiky respondentů, zejména starší ženy odpovídají na otázky spolehlivě a respondenti s vyšším vzděláním neodpovídají na otázky spolehlivě. Na rozdíl od nízké spolehlivosti zde ovšem můžeme hovořit o uspokojivé validitě na základě výše uvedených kritérií.

Kapitola 11 se věnuje položkové baterii přemosťujícího sociálního kapitálu určené k měření otevřenosti sítě, respektive strukturních mezer. Hlavní výhodou této baterie otázek je, že navíc ohodnocuje rozsah aktérový sítě. Položková baterie se původně ptala na přátele s odlišnými vlastnostmi než měl/a respondent/ka. Stávající studie rozšířila tento pohled tím, že se ptala na konkrétní počet přátel i počet rodinných příslušníků a známých ze sdružení, jichž je respondent/ka členem/členkou. Protože dřívější výzkumy odhalily faktorovou strukturu cizích skupin (out-groups), různých zájmů a různých životních stylů, byla tato struktura ověřována i v datech z výzkumu „Sociální vztahy českých občanů“ s cílem posoudit tak spolehlivost vnitřní konzistence a konstruktovou validitu. Obecně lze

řící, že výsledky ukazují na nízkou kvalitu měření, test-retest spolehlivost všech položek je neuspokojivá, stejně jako spolehlivost vnitřní konzistence. Tyto výsledky vedou k otázce, zda myšlenka existence odlišných latentních dimenzí přemostujícího sociálního kapitálu je produktivní, anebo zda za podstatný lze považovat pouze jednodimenzionální celkový objem přemostujícího kapitálu. Dobrá validita na základě kritérií, tedy korelace s občanskou participací, sociální důvěrou a extroverzí, zjištěná při použití úhrnné škály rovněž ukazuje na určitý nedostatek v teoretické argumentaci existence odlišných dimenzí různosti v síti.

Slibnější výsledky nabídlo měření sociálního kapitálu získaného ze specifických zdrojů skrze aktéry v jedincově síti pojednané v kapitole 12. Výzkum zde využil tzv. generátor zdrojů obsahující 12 položek vhodných pro český kontext, jako například pomoc při drobných opravách, nakupování či hledání práce. Tato metoda byla dále obohacena o otázku na konkrétní počet rodinných příslušníků, přátel a známých, kteří poskytnou specifický zdroj – tedy nikoliv pouze poskytnout mohou, jak je tomu v původní verzi generátoru zdrojů. Použité položky vykazují přijatelnou test-retest spolehlivost. Podrobnější analýza spolehlivosti pro různé sociální skupiny ukázala, že většina položek nedosahuje uspokojivé spolehlivosti měření v případě mužů, starších respondentů a osob s nízkým stupněm dosaženého vzdělání. Pokud ale na tyto zdroje budeme nahlížet jako na latentní konstrukt (v tomto případě faktor sociálního kapitálu osobní podpory), spolehlivost měření se zvýší – s jedinou výjimkou, kdy se pro osoby s nižším vzděláním ukázaly jako nevhodné položky ptající se po zdrojích poskytnutých rodinnými příslušníky. Tyto jsou nicméně bezproblémové pro respondenty/ky s vyšším vzděláním. Z hlediska validity byly výsledky porovnány s dřívějšími výsledky holandské studie Van der Gaaga a Snijderse [2005] a s výsledky českého výzkumu “Naše společnost 2007/04”. Ve všech třech výzkumech byly odhaleny stejné faktory: Osobní podpora, Finanční/politické dovednosti a Sociální kapitál ve formě prestiže. Zdá se, že tyto latentní konstrukty jsou stabilní v různých kontextech. Generátor zdrojů je tedy slibným nástrojem měření sociálního kapitálu uplatnitelným v budoucích výzkumech. Tento závěr je navíc podpořen dobrou validitou na základě kritérií (korelace se spokojeností se životem).

Stručně řečeno, na základě poznatků této studie lze pro potřeby dalšího výzkumu doporučit používání těchto indikátorů: pro měření strukturálního sociálního kapitálu, tj. dostupnosti zdrojů skrze síť samotné, velikost a hustotu sítě u silných vazeb a pro měření sociálního kapitálu jako dostupnosti specifických zdrojů skrze aktéry v jedincově síti všechny použité položky v generátoru zdrojů. Naproti tomu je třeba výzkumníky odrazovat od používání indikátorů velikosti sítě a hustoty neformálních – přátelských sítí a sítí formálních (známosti z organizací) jakož i měření strukturálních mezer, otevřenosti a rozsahu sítí pomocí baterie přemostujícího sociálního kapitálu v jejich stávající podobě. Ačkoliv se

všechna měřítka zdají být validní, je nezbytné dále zlepšovat jejich konstrukci, zejména proto, aby bylo dosaženo použitelné spolehlivosti měření. Než budou tyto indikátory dále běžně využívány k víceméně automatickému měření sociálního kapitálu, bylo by vhodné provést další intenzivní metodologický výzkum využívající kupříkladu experimentální „multitrait-multimethod“ design v mezinárodní komparativní perspektivě.