Social Capital from an Individual Perspective

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Preface

Writing this dissertation has at times been a solitary effort, but I have never felt lonely at it. I count myself lucky for the support I have experienced on my way. Foremost, I want to thank my supervisor, Michael Ahlheim, for openheartedly joining me on my journey to the borderlands between economics and sociology and for the long and enlightening discussions we had on the discoveries that we made there. I also want to express my gratitude to my second supervisor, Sabine Pfeiffer, for showing me a light when I was about to lose track and for seeing the strengths rather than the weaknesses of my interdisciplinary endeavour.

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Contents

1 Introduction

The etymological connection between capitalism and capital is apparent. The latter seems to play a crucial role in the former. But what is capital? Samuelson and Nordhaus (2001) state that "the factors of production" (p. 33) in a capitalist economy are called capital. According to them, capital is "a durable input" (ibid.) which "has to be produced before [...] use" (ibid.). What precisely the term capital encompasses has broadened over time.

The classic notion of capital that can already be found in Marx' *Kapital* from 1867 [Marx, (1957)] is that capital are tangible things and the financial assets that reflect the value of these things in monetary units. Samuelson and Nordhaus (2001) give a number of tangible things as examples for what constitutes capital: "buildings, machines, computers" (p. 33). Although this type of capital typically depreciates over time, it is durable in the sense that it can be used repeatedly before it needs to be written off. Over time, intangible assets such as "technology licenses, patents and copyrights" [Corrado, Hulten, and Sichel (2009), p. 667] have been added to the list. Different from a machine, their value is directly connected to the legal framework they are valid in. Nonetheless, in such a framework, they fulfil the definition set up by Samuelson and Nordhaus (2001): they are durable in the sense that they are valid for a certain time span and they have to be produced before use. Patents, for example, can be produced through research and development (and patent attorneys). Intangible assets, just as tangibles, can in principle be converted into financial assets and the other way around.

The notion of capital has been expanded beyond tangible, intangible and financial assets. Becker (1964) is credited with the concept of human capital. The idea is that the skills an individual possesses and that he can engage in a productive process constitute capital as well. Again, the definition by Samuelson and Nordhaus (2001) can be applied: human capital is durable because an individual can use his skills repeatedly. It also has to be produced before use. This production process has many forms: examples include formal education in schools and universities or informal training at the workplace. Human capital is different from the tangible and intangible assets discussed above in that it cannot be sold, at least not, as Samuelson and Nordhaus (ibid.) point out, since slavery has been abolished. It thus cannot immediately be converted into financial assets. Instead human capital is typically rented out for certain amounts of time in the labor market.

Human capital is not the only extension of the notion of capital. The concept of natural capital has also gained some prominence in economics. Costanza and Daly (1992) explain that the stock of natural capital yields a flow of services. In the case of renewable natural capital, these services can be produced without a reduction in the stock.

In the case of non-renewable natural capital, the stock is liquidated to produce the flow of services. Checking with the definition of capital by Samuelson and Nordhaus (2001) yields that natural capital is certainly durable in a way that is at least comparable to tangibles and intangibles and human capital. It is also the result of a prior productive process, although the extent to which humans are involved in this process differs. It is often difficult to convert natural into financial capital since many of the services produced using natural capital are non-excludable, e.g. the production of oxygen by a tree.

The extended notion of capital that includes not only tangible, intangible and financial assets, but also human and natural capital still has a blind spot. It says nothing about the resources that possibly lie in the relationships between individuals. This negligence may well be rooted in the individualistic nature of neo-classical economic theory. Here, individuals do not interact directly. Instead, they act on markets that bring together buyers and sellers. Markets are assumed to be anonymous in the sense that it is irrelevant to the buyer who the seller is and vice versa. Since the middle of the 20th century, game theory has served to model the interaction between agents [Neuman and Morgenstern (1944), Nash (1950)]. Game theory is a very helpful instrument to understand how agents behave in specific situations where the final number of interactions are finite and known ex-ante. Game theoretic analysis quickly gains complexity when it comes to representing repeated interactions that characterize most people's everyday lives. Here, in order to keep complexity at bay, textbooks like Osborne (2004), even for simple games like the prisoner's dilemma[1], revert, much in the spirit of Axelrod (2009), to proposing different simple strategies and examining their results when played against other simple strategies. An alternative that helps to avoid the overboarding complexity of repeated game theory but stays within the framework of economic theory is needed, because, as Jackson (2014) stresses, if "economists endeavor to build better models of human behavior, they cannot ignore that humans are fundamentally a social species" (p. 3). The approach that is pursued in this thesis is to conceptualize the value that lies in the relationships between individuals as capital.

A number of such concepts have been proposed, often by authors that are either sociologists, social theoreticians or political scientists rather than economists. All these concepts share the basic intuition, namely that relationships between individuals and the resulting networks "have value" [Fernandez and Castilla (2001), p. 85] and the name, *social capital*. In a first step, this thesis will look at the concepts of social capital developed by five different scholars. The aim of this section is twofold:

It will become apparent that social capital does not stand for one concept only; sev-

[1] The prisoner's dilemma is a well-known game in game theory. Two criminals, A and B, are impeached for a crime. They cannot communicate with each other. They can either confess or keep silent. If individual A confesses and B stays silent, A receives *w* years in prison and B *z* years. The reverse is true when B confesses and A stays silent. When both criminals confess, they both receive *y* years in prison, while if both criminals stay silent, they both receive *x* years in prison. For $w < x < y < z$, a situation arises where it is the dominant strategy for both individuals to confess although the pareto superior solution would be for both criminals to stay silent.

eral different concepts are found under the notion *social capital*. This variety of concepts reveals the necessity of at least two steps in order to assess whether introducing a concept of social capital to economic analysis might be a fruitful endeavour: In a first step it is necessary to specify each of the concepts of social capital in some detail. In a second step the different concepts and their similarities and differences should be highlighted. Otherwise, confusion about what is aimed for when using the term social capital is bound to arise. This specification needs to be rooted in the literature on social capital, hence an analysis of this is necessary, yet also easily accessible to economists.

Connected to this, the question arises which elements from the different social capital concepts are compatible with economic theory. This points, more fundamentally, to the methodological approach used by economic theory. Within neo-classical, or mainstream, economics, there is usually little debate on methodology. Rational utility maximization by individuals with well-behaved preferences is the usual assumption even in advanced microeconomic textbooks [e.g. Mas-Colell, Whinston, and Green (1995), Silberberg (1990)]. All kinds of institutions, or social wholes, can, at least in principle, be explained by the actions and interactions of the individual agents involved. This methodological approach is commonly referred to as methodological individualism. Udehn (2001) argues that methodological individualism can be differentiated into strong and weak versions. He gives the following definition for strong methodological individualism: “In any social scientific model, the exogenous variables and conditions must refer only to individuals, etc., but not to social institutions [or structure]” [Udehn (ibid.), p. 355]. Most economists do not use the strong version of methodological individualism consequently, but rather weak versions which give some explanatory power to exogenous variables.

Things, however, become more difficult when transgressing into neighbouring social sciences as is inevitable when writing about a concept originating there, like social capital. In the social sciences outside economics, there is a long tradition of quite the opposite paradigm, namely methodological collectivism or holism. As Udehn (ibid.) puts it, the core idea is that social wholes are “irreducible to [...] human individuals and their actions” (p. 39). This paradigm tends to leave little explanatory power for an individual, leaving him, in the most extreme case, as “homo sociologicus” [c.f. Dahrendorf (2006)], as a mere fulfiller of an exogenously assigned role.

There are good arguments to stick with methodological individualism beyond the fact that it is the predominant methodological approach in economics. As Udehn (2001) points out, it is the methodology that “follow[s] from individual humanism” (p. 340) and, unlike collectivism and holism, is not endangered to reduce the individual “to a means for the ends of history [or] a cog in the social machine” (ibid.). However, sociology has, at least since Homans (1961), adopted a vivid pluralism in methodology. There is by now also a strand of rational choice, or, as it is referred to within sociology, social exchange theory [Fine (2001)], which also uses a weak form of methodological individualism. Some of the authors who contribute to the literature on social capital are rational choice sociologists. With them, different methodologies are not an issue.

Others are no proponents of rational choice, but still use weak forms of methodological individualism. Here, a careful investigation of their writings is necessary. Still others are methodological holists, whose writings are difficult from the perspective of methodological individualism. Thus, when specifying a concept of social capital, the accessibility of the different contributions to the social capital literature from a perspective of methodological individualism plays a major role. This is the individual perspective that also appears in the title of this thesis,

From this foundation, namely the specification of a social capital concept that can be used for further analysis, two research questions arise:

The first research question this thesis will investigate into asks for the different predictors of social capital possession. Once a social capital concept that is compatible with economic theory has been found, it can be used to formulate further research hypotheses. An interesting endeavour is to look into the distribution of social capital, i.e. which kinds of persons have much and which kinds of persons have little social capital. The answer to this question does not only yield insights into the mechanisms that effect social capital in reality, but also into the relationship between social capital and other forms of capital and into its distribution.

Moreover, the development of research hypotheses on the different predictors of individual social capital possession is a purely theoretical exercise unless they can be tested. To do so, social capital needs to be measured. The second research question pursued in this thesis asks how this can be done. While there are numerous different proposals to measure social capital, they either aim at different concepts of social capital relative to the one proposed in this thesis or exhibit severe design flaws. A part of the answer to the second research question will thus be the development of a new tool to measure social capital. This tool has also been included in an internet survey that has been conducted with a sample of 1000 participants which are representative for the German adult resident population with respect to age, gender, income and educational level.

The social capital possession measured with this tool can then be used to test the hypothesis formulated as part of the first research question. Thus, determinants of social capital possession can be identified. Moreover, statements on the distribution of social capital can be made.

The structure of this thesis will be as follows: in the first four sections of chapter 2, the theoretical foundation for the social capital concept used throughout this thesis will be laid. Section 2.1 will briefly look at three early uses of the term social capital and investigate into the the five most prominent contributions to the social capital literature in detail. Here, the similarities and differences of the different concepts will be exposed. Moreover, the connections between the different concepts will be analysed. Since all of the concepts in section 2.1 originate outside economics, section 2.2 looks at the modelling of social capital in economic theory. The aim is to see which additional insights can be gained by investigating social capital from the perspective of different economists. Section 2.3 will introduce a system to categorize the different concepts

of social capital presented in sections 2.1 and 2.2. With this systematization, a social capital concept that is compatible with the individual perspective can be proposed. Section 2.4 will investigate into the details of this concept. Finally, section 2.5 will develop hypotheses regarding the different predictors of social capital possession. Here, the first research question is specified in more detail.

In chapter 3, the question how to measure social capital will be investigated in detail. Specifically, section 3.2 looks at the types of resources identified as social capital resources in the literature in order to assess what should be captured by a social capital measure. Section 3.1 briefly investigates into the question how different items can be combined to form an indicator. In section 3.3, different existing social capital measures will be analyzed. Building on this analysis, a new tool for social capital measurement will be proposed in section 3.4.

In chapter 4, the results of the empirical survey will be presented. This includes a descriptive summary of the survey in section 4.1 and an overview over the results regarding the social capital measurement tool and the indicators hereby created in section 4.2. Moreover, the results of testing the different hypotheses developed in section 2.5 are presented in section 4.3. Chapter 5 concludes.

2 Theoretical Concepts of Social Capital

In order to assess whether social capital might be a viable concept for use in economics, it needs to be clear what is meant by the term social capital. While this might look easy at first glance, it becomes more difficult at second: social capital is a term that is defined in many ways in the literature. Moreover, many of these definitions do not seem to converge on the same concept. Thus, a specification of the concept of social capital used in this thesis is necessary. Since this specification needs to be rooted in the existing literature, a thorough investigation of the concepts proposed in this literature is necessary. Moreover, it needs to be analyzed which aspects of these concepts can be connected to economic theory as capital.

In this chapter, firstly, an investigation into the development of the different social capital concepts and the analytical constructs that have been proposed to bridge the gaps between them will take place. After a brief overview over early usage of the term social capital, the works of five key authors will be looked at, who all developed their respective concept of social capital. It will be analyzed what these authors understand by the term social capital and what their specific conceptual contributions are. This aims at depicting the analytical developments that lead to the different concepts that today bear the name social capital. The second part will look at the reception of social capital in formal economic modelling. In a third part, a concept of social capital will be proposed that is sound from an individual perspective. To do so, the concepts developed in the first part will be systemized and their compatibility with said perspective will be analyzed. Here, a definition of social capital will be given that will be used for the rest of this thesis. The fourth part of this chapter will further investigate into this proposed concept of social capital. To do so, a look will be taken at a number of debates that have been led in the literature regarding certain properties of social capital. The respective arguments will be analyzed and assessed.

The first research question of this thesis asks for the different predictors of social capital possession. This research question will be dealt with in two steps: Firstly, in the fifth part of this chapter, theoretical considerations on different predictors for social capital possession will be presented. Here, research hypotheses are developed that will be tested in the empirical investigation in chapter four of this thesis. The second step, i.e. an empirical testing of these hypotheses, will take place in the fourth chapter.

2.1 Constitutive Literature

The recent literature on social capital can be traced back to Bourdieu and Coleman, who developed their respective concepts in the 1980s. However, social capital is a

term that had been given to different concepts several times before. In this section, these early uses of the term will be looked at briefly before the more recent literature is introduced. For the latter, the concepts of Bourdieu (1983), Burt (1992, 2000, 2005), Coleman (1988, 1990), Putnam (1993, 2000) and Fukuyama (1995a, 1995b) will be discussed in turn. The selection of these authors is based on their role as often-cited proponents of certain streams within the social capital literature, a role which is based on their major analytical contributions. For each author, his concept of social capital will be explained in detail and contrasted to the concepts of the other authors. It will be assessed what his main conceptual contribution is. The arrangement of the different authors is not strictly chronological. Instead, it is such that certain developments in the social capital literature can be shown in a coherent way.

2.1.1 Early Use of the Term Social Capital

There are three notable early inventors of the term *social capital*, i.e. scholars who used it before approximately 1980: Hanifan already employed the term in 1916. Homans (1961) and Loury (1977) are more recent users, writing in the 1960s and 1970s, respectively. Looking at these early contributions is interesting because they all use the term social capital in different contexts and with different meanings. This variety already foreshadows the discrepancy of meanings of the term *social capital* in the more recent literature discussed later in this thesis. In the following part, a brief introduction will take place to the perspective of the three authors mentioned above and their understanding of the term.

Hanifan's School Community Center

Putnam (2000) and Woolcock (2010) cite Hanifan (1916) as the first to use the term social capital. He defines social capital as "goodwill, fellowship, mutual sympathy and social intercourse among a group of individuals and families who make up a social unit" [Hanifan (ibid.), p. 130] and sees it in close analogy to accumulated physical capital. While accumulated physical capital can be used to produce consumption goods and infrastructure to ameliorate the material living conditions of the people, social capital can be "directed towards a general improvement of the community well-being" [ibid., p. 131]. Accordingly, social capital can be created by events such as "public entertainments, "sociables", picnics and a variety of other community gatherings" (ibid.). In his analysis, this social capital is lacking in many rural communities at the time, and increasing the level of social capital could help to improve the local living conditions. He afterwards recounts how a new teacher created social capital in a rural West Virginia community by initiating regular community meetings. As an effect of these, and the social capital created therein, school attendance rates increased. Moreover, the need of evening classes for illiterate adults was discovered and these were subsequently introduced. Additionally, money for school libraries could be raised.

Hanifan's (1916) concept thus sees social capital as an asset which is owned by an entire community. Different from physical capital, individual possession of social capital is not possible. Nevertheless, the direct benefits of the community's social capital possession accrue to the community's individual members, e.g. pupils that now attend school more often or adults that can now learn how to read and write. Notwithstanding, Hanifan (ibid.) aims at showing that the well-being of the entire community is increased since it now consists of better educated citizens.

Social Capital in Homans' Theory on Social Behaviour

Astone et al. (1999) and Adler and Kwon (2002) point to Homans (1961) as the originator of the term and the concept. According to them, he "describes in detail how activities, interactions, sentiments, and their interrelationships create new resources" [Astone et al. (1999), p. 11]. Homans (1961) brings up the term social capital when explaining how investments may also take place without the direct involvement of physical or financial capital. Like Hanifan (1916), Homans (1961) argues that the concept of capital can easily be extended beyond these "classical" types of capital[1]. For him, capital is "anything that allows it to postpone actions leading to some immediate reward in order to undertake others whose rewards [...] are both uncertain and deferred" [Homans (ibid.), p. 386]. Instead of a definition of the term social capital, he describes it: firstly, he gives the example of an individual A[2] who has earned himself some respect from other individuals by giving good advice. Individual A thus possesses the social capital to tell these other individuals what to do "on a new occasion" [Homans (ibid.), p. 373]. By doing so, individual A is putting his "social capital at hazard" (ibid.) as he is in danger of losing his esteem if the other individuals do not find the outcome rewarding. However, he also has the chance of increasing his social capital if the other individuals find the outcome satisfactory. Secondly, Homans gives the example of a medieval king who creates institutions like judges or treasurers. His argument is that institutions are the result of the investment of capital, including social capital, by, ultimately, individuals. Consequently, institutions persist "if they turn out to pay off " (p. 389).

Summing up, social capital for Homans (ibid.) is esteem and the power derived from it. It is thus an asset that an individual A can use to influence other individuals to behave in his interest. This asset, however, is not exogenous: it can build up or deteriorate depending on the use individual A makes of it. There is, thus, a marked difference to the concept of social capital as developed by Hanifan (1916). The benefit for society

[1] In what follows, these classical types of capital, i.e. physical and financial capital, will also be called economic capital.

[2] There are two alternative ways to clearly denote interacting individuals. In economic game theory, it is standard to denote them with numbers or letters, i.e. individual *one, two, three*, etc. or *A, B, C*, etc. In sociology, an often-used nomenclature is to denote the individual under investigation as *ego* and other interacting individuals as *alter* in singular, or *alters* in plural. The nomenclature from economic game theory has the advantage of being able to further differentiate between individual *alters*. It will thus be sticked to. The individual that would be denoted *ego* in the sociological tradition will typically be denoted as individual A throughout this thesis.

Homans (1961) sees is that individuals who invest social capital to try out a variety of institutions in a process of trial and error can help a society to develop.

Loury's Idea of Social Capital as a Factor in Human Capital Creation

Coleman (1990) cites Loury (1977) as the originator of the term. The latter deals with racial income differences and the question whether they will diminish over time. He develops an economic model where the parental socioeconomic status as well as the community environment influence the cost of human capital accumulation, and thus job opportunities, for an individual. In this model, diminishing returns to scale for parental income in the production of their offspring's human capital are assumed: if the offspring's human capital creation would only be dependent on the parental socioeconomic status, income between races would converge over time. Accordingly, Loury (ibid.) proposes that there are communities exhibiting "more favorable environmental influences" (p. 161) on the cost of human capital accumulation and that these are the communities where the average level of income is higher. He thus argues that it is necessary to include the community environment as an explanatory variable. Moreover, the assumption is introduced that there is some social stratification between races and that individuals in some racial groups exhibit a lower average socioeconomic status. With these assumptions, it can be shown that income levels may, but need not converge over time. Loury (ibid.) proposes to call these influences of the community environment on an individual's cost of human capital accumulation "social capital" (p. 176).

Different from Homans (1961) and Hanifan (1916), Loury (1977) does not see social capital as a resource in analogy to economic capital which allows groups [in the case of Hanifan] or individuals [in the case of Homans] to use it for possibly profit-bringing endeavours in the widest sense of the word. For him, social capital is a variable exogenous to the individual or the social group, describing the influence of the social environment on an individual's capacity to build human capital.

These three authors already represent almost the entire disparity of the latter concepts of social capital: the very same term is used for exogenous environmental variables, capital stocks owned and controlled by a community and capital stocks owned and controlled by individuals. However, while all three authors offer very insightful analysis and use the term social capital in a way that could almost seamlessly be connected to the work of later authors, it was not until the work by Bourdieu (1983), Coleman (1988, 1990), Burt (1992) and Putnam (1993) that the concept of social capital found widespread attention. In addition, later work by Fukuyama (1995a, 1995b), Burt (2000) and Putnam (2000) has also attracted intense scholarly interest. In the next section, an in-depth discussion of the social capital concepts of these five authors will take place.

2.1.2 Bourdieu's Concept of Social Capital

As shown above, Bourdieu has not been the first author to use the term social capital. However, it was one of his articles that initiated a widespread academic discussion on the subject.

Although Bourdieu's article from 1983[3] is widely referred to in the social capital literature, he had already dealt with the topic earlier: Coleman (1990) points to a two-page long research note from 1980 as his first publication on social capital. While this short research note captures his main ideas on social capital, it remains largely uncited in the literature. The same is true for the short references to social capital in Bourdieu's magnum opus "La distinction" that was published a year earlier, in 1979 [Bourdieu (2008)]. Woolcock (2010) even points to the book "Esquisse d'une théorie de la Pratique, précedé de trois études d'ethnologie kabyle" [Bourdieu (1972, 1976)] as his first elaboration on social capital. Indeed, some parts of his concept are already included in the fifth chapter of the second part of the book. Portes (1998) presumes that these earliest works of Bourdieu on social capital receive little attention because they are written in French. Moreover, the treatment in the article from 1983 is theoretically more refined. The focus will thus be put on this latter publication when examining Bourdieu's concept of social capital.

In the context of Bourdieu's sociology, the different forms of capital constitute a major building block [see e.g. Lenger, Schneickert, and Schumacher (2013), Rehbein (2011) or Schwingel (1995)]. Together with an individual's *habitus* and the rules of a certain *field*, they create *practice*, i.e. observed reality. A field is to be understood as a relatively autonomous area of society. An individual's aim is to gain an advantage in a certain field [Rehbein (2011)]. In order to do so, an individual acts. His actions are constrained by two factors: firstly, the set of possible actions is limited by his habitus. The habitus are an individual's tastes, behavioral patterns and patterns of action that have been acquired during his socialization [Browne-Yung, Ziersch, and Baum (2013)]. The habitus allows an individual to act quickly even in unknown situations and, at the same time, to keep his identity. While it does not predetermine his actions, it limits, as described, the number of possible actions. However, the individuals' aggregated habitus also shapes the field, creating a pattern of co-determination [Schwingel (1995)]. Within this framework, the different forms of capital constitute the action resources available to an individual, i.e. the resources that determine which actions in the set of possible actions are also realizable.

Bourdieu (1983) begins by explaining why examining capital is important: capital is the main driver of inequality that can explain why "everything is not equally possible or impossible" [Bourdieu (1986), p. 241 f]. The argument is that "capital is accumulated labor" [ibid., p. 241], which enables those who possess it to "appropriate social energy in the form of reified or living labor" (ibid.), an idea that can be traced to Marx (1957)

[3] This article was originally published in German. An often-cited translation to English was published in 1986.

[c.f. Fuchs-Heinritz (2011)]. The difference is as follows: while Marx' (1957) analysis is limited to economic capital[4], Bourdieu thus extends Marx' notion of capital and identifies three types of capital: economic capital, cultural capital and social capital[5]. These three forms of capital can be transformed into one another, time being the main resource necessary to do so. Bourdieu (1983) does not examine economic capital any closer and presumes it is a concept familiar to the reader. He does, however, offer a closer examination of cultural and social capital. The concept of cultural capital is related to, but of a broader scope than Becker's (1964) concept of human capital, an interpretation also shared by Portes (1998).

Social capital is defined as "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), p. 248 f]. Thus, membership in a "network [...] of mutual acquaintance and recognition" [ibid., p. 248], has a twofold advantage to its members. Firstly, it allows access to the resources of other network members. This entails their economic, but also their cultural and social capital. Secondly, with Bourdieu's prime example being the aristocracy, membership in such a network may serve as a signal to outsiders about the resources an individual A has access to by virtue of his membership. These resources may serve as a collateral vis a vis individuals from outside individual A's group and thus give individual A access to further resources, again entailing economic, cultural and social capital. The social capital individual A possesses thus "depends on the size of the network of connections he can effectively mobilize" [Bourdieu (ibid.), p. 249] and on the resources individual A and those he is connected to control. Thus, there is a "multiplier effect" (ibid.) on an individual's own resources, including his economic and cultural capital, that is caused by social capital.

Creation of Social Capital in Bourdieu (1983)

With the definition of social capital as the access to other individuals' resources, the question that subsequently arises is how social capital is created. For Bourdieu, social capital results from "more or less institutionalized relationships" [Bourdieu (ibid.), p. 248]. These, in turn, are based on, maintained and generated by "indissolubly material and symbolic exchanges" (p. 249), i.e. social interaction in a broad sense. This includes, but is by no means limited to, economic exchanges[6]. This social interaction turns "contingent relations [...] into relationships that are at once necessary and

[4] Marx acknowledges the role of nature in the production process (p. 23), but would not identify natural inputs into the production process as natural capital as they are not the product of human labor.

[5] Bourdieu identifies further forms of capital later in his research which he does not analyze in the same depth [Fuchs-Heinritz (2011)]. However, as this dissertation is about social capital and not about capital theory in general, this will not be further elaborated on.

[6] Bourdieu claims to utilize this interpretation throughout his entire article

elective, implying durable obligations" (ibid.). These durable obligations between two individuals A and B are at the core of Bourdieu's social capital concept, as they, for example, allow an individual A to access individual B's resources and vice versa.

Moreover, social capital is the result of "investment strategies" (ibid.) followed "consciously or unconsciously" (ibid.). The reasoning is as follows: as pointed out, forming durable obligations requires material or symbolic exchanges between individuals. Material exchanges are costly in terms of economic capital. Symbolic exchanges, as the non-material part of social interaction, require time. This time has an opportunity cost as it cannot be used for paid labor. Investment in and maintenance of social capital thus "directly or indirectly" (ibid., p. 250) requires economic capital. Hence, the investment analogy is that, ultimately, economic capital needs to be spent in order to generate social capital. This constitutes an investment because social capital can be used at a later point in time to generate payoffs.

Bourdieu (1983) makes a further point: the cost of forming lasting connections are heterogenous between individuals. An individual A richly endowed with resources may generate a larger benefit (i.e. larger increase in access to resources) for other individuals he acquaints himself with than an individual B who only has a small endowment. Thus, individual A needs to invest less in social interactions, compared to individual B, to obtain lasting connections. The reason is that individual A is a more attractive person to know.

A final aspect is that social capital is a risky investment. As already mentioned, social interaction may create obligations. Examples include "exchanges of gifts, services, visits" [Bourdieu (1986), p. 253], that are costly now and that may be honored in some different form in the future. However, they might as well not be honored. Social obligations are usually not guaranteed in any explicit form and thus particularly vulnerable to a "refusal of [...] recognition" (ibid., p. 254). Consequently, social capital in the form of obligations arising from social interaction comes at a higher risk of loss than economic capital. This is a point widely accepted in the literature [e.g. Coleman (1990), Burt (1992), Putnam (2000)]. As the upside of this increased risk of loss Bourdieu (1983) identifies a high degree of concealment of economic power if the economic power is exercised by the possession of social capital instead of economic capital.

The Role of Group Membership in Bourdieu (1983)

Bourdieu's ibid. focus lies, just as in "La distinction" [Bourdieu (1979)], on the reproduction of social groups and classes. The membership of individuals in networks and groups thus influences their opportunities to create and access social capital. It is hence important to further examine this aspect. The mere existence of groups is assumed to be exogenous. Group membership can be gained through "the alchemy of consecration" [Bourdieu (1986), p. 250] in "institution rites" [Bourdieu (ibid.), p. 249]. Once membership has been achieved, groups generate plenty opportunities for their members to socialize, thus creating and reproducing social capital as described above.

The members of a group thus profit from their group membership as it helps them to access the resources of other group members. Moreover, as can be seen from the definition of social capital given above, members of a group can also use the resources of other group members as a credential when interacting with individuals from outside the group, thus enhancing their credit (in the widest sense of the word). Unfortunately, Bourdieu (1983) does not elaborate on how this process works in detail, i.e. which members of a group have access to which amount of credential and how this is made visible for outsiders.

There is a second argument why group membership may help an individual to create and access social capital: social capital implies a "mutual acknowledgment" [Bourdieu (1986), p. 249] between participating individuals, which in turn requires "the reacknowledgment of a minimum of objective homogeneity" (ibid.). This can be interpreted to be a homogeneity in habitus. Groups thus serve to bring together individuals with said homogeneity. Moreover, there is a sharp divide between those in a group and those outside it, i.e. that each group has a clear limit in order to preserve its inner homogeneity. The opportunities groups generate for their members to socialize thus do not only serve to build their social capital, but also to favor "legitimate exchanges" (ibid., p. 250) and to exclude "illegitimate ones" (ibid.), i.e those between very heterogeneous individuals that may well come from very different social classes. The result is that social capital may be concentrated within relatively homogeneous groups, an effect widely recognized in the literature [e.g. Portes (1998), Putnam (2000), Adler and Kwon (2002), Dasgutpa (2005) and Jackson (2014)].

In this context, it is also relevant that social capital is delegable within groups. This delegation can take place by the members of a group towards a single leader or a smaller group. It creates the opportunity of aggregating the individual social capital stocks to "exercise a power incommensurate with the individual's personal contribution" [Bourdieu (1986), p. 251]. However, in order to avoid that the competition for becoming the group representative tears the group apart, the members of the group will have to establish rules to determine this representative. Consequentially, the delegation of power within can be institutionalized. There are a number of examples from the "pater familias" (ibid.) as "the most elementary form of institutionalization" (ibid.) to the "title of the noble [...] [as] the form par excellence of the institutionalized social capital " (ibid.) and who actually used to bear the name of the group he represented. This property of social capital, i.e. that it is delegable and that it can be institutionalized, does lead to problems of misappropriation. This may even include the use of the power delegated to an individual A against the group by that individual A. However, it is not clear how this delegation takes place. If social capital is understood as an individual B's access to individual C's resources, which is possible because of the longstanding social interaction between them, would individual C also grant access to individual A if individual B mandated it? And, if individual C would do so, would individual C allow that his resources are used against individual B?

The described connection between membership in groups and social capital is prob-

lematic for three reasons. Firstly, it implies an additional assumption implicitly made by Bourdieu (1983): all members have the same access to the capital of the members of a group to at least use it as "credential" [Bourdieu (1986), p. 249]. As Astone et al. (1999), albeit in reference to Coleman (1990) point out, this is not necessarily so as there may be "social stratification" (p. 9) within groups. Secondly, it is not really clear how intra-group processes work, e.g. how the delegation of social capital is supposed to be organized. Thirdly, Bourdieu (1983) emphasizes, as mentioned above, that groups have clearly defined limits. This may be true for exclusive clubs and (some) families - two of Bourdieu's (ibid.) examples. However, some relationships may take place in groups where the limits are much less clearly defined. Friendship ties may be a good example, which may or may not take place in groups (e.g. cliques), and the limits to these groups may by no means be clear. A straightforward solution to solve this would be to limit the size of the group to those, to stay with the example, friends which mutually acknowledge themselves as members of the group. The implication would be that each individual would be the member of a multiplicity of tiny groups which have, in the most extreme example, only two members. As membership in multiple, even overlapping groups is clearly implied by Bourdieu (ibid.), nothing stands against such a solution [Browne-Yung, Ziersch, and Baum (2013)]. However, such a broadening of the definition of the group reduces the explanatory power of the concept. It is thus questionable whether the attention Bourdieu (1983) gives to group membership is really a convincing part of his concept of social capital.

Focus of Analysis in Bourdieu (1983)

With respect to the question whether the concept is viable from an individual perspective, it is important to also examine the focus of analysis: Bourdieu's (ibid.) focus of analysis is at first sight twofold: A large part of his analysis of social capital examines the individual and his actions, leading Fine (2001) to describe his concept of capital as "individualistic" (p. 57). However, to do him justice, it has to be mentioned that Bourdieu emphasizes the role of the existing structure of society on the (perceived) possibilities and even the individual's preferences as expressed by the habitus [c.f. Bernhard (2008)] and is reported to dismiss the idea of rational choice [c.f. Fuchs-Heinritz (2011)]. While he also claims that individuals follow strategies, he does not believe that they rationally calculate their actions all the time [Lenger (2013)]. Rather, they are guided by their habitus in many situations. Nonetheless, large parts of Bourdieu's (1986) analysis of social capital are compatible with weak forms of methodological individualism, which accept that individuals are by no means unaffected by the social structure around them.

Other parts of his concept, however, are more difficult to reconcile with even weak forms of methodological individualism. On several occasions, groups are described as acting entities, e.g. that they follow their own investment strategies and arrange opportunities to socialize [Bourdieu (1983), p. 192 f.]. Giving to a group the status

of an acting entity is obviously at odds with methodological individualism, as many individuals form the group. There is at least a lack of examination of the processes within a group, which is a weakness of Bourdieu's (1983) writing on social capital. However, even if Bourdieu sees the group as an acting entity of its own right, little is lost if this aspect will be left aside. The reason is that his examination of social capital is in its core – how and why social capital is created – based on the individual and his deliberate actions, embedded in the social structure.

Summary of Bourdieu (1983)

The treatment of social capital by Bourdieu offers a solid foundation for further work with the concept. He clearly carves out the purpose of social capital to the individual and thus his motivation to create and own social capital: the access to other individuals' resources. Bourdieu (ibid.) moreover explains how social capital is created and maintained, by social interaction between individuals, turning acquaintances into durable relationships. This creation of connections between individuals necessarily leads to a network structure of social ties. In this concept, social interaction is costly to the individuals and these costs decrease with the attractiveness, i.e. control over resources, of an individual for other individuals. Lastly, as individuals prefer to interact with rather homogeneous other individuals, homogeneous groups will arise. These homogeneous groups then facilitate the creation and strengthening of social capital within the group, thus leading to a certain segregation between different groups. The treatment of social capital by Bourdieu already entails a good share of the topics discussed in the social capital literature in later years. Portes (1998) highlights that "Bourdieu's analysis is arguably the most theoretically refined among those that introduced the term in contemporary sociological discourse" (p. 3).

2.1.3 Burt's Concept of Social Capital

Burt is the author of numerous publications in which he explains his conception of social capital. His book "Structural Holes" (1992) is perhaps the most prominent one. A later article (2000) and the book "Brokerage and Closure" (2005) further elaborate on his ideas. Although Burt's writings on social capital were published later than those by Coleman, they are introduced here before Coleman's as they have a stronger focus on the individual and can easily be connected to the concept by Bourdieu, 1983. An important difference is that Burt puts a stronger focus on the position of an individual A within the network that comprises all individuals. His definition of social capital is that "holding a certain position in the structure of these exchanges [meaning connections between individuals, obligations to support between individuals, dependence of exchange between individuals,*remark by the author*] can be an asset in its own right" [Burt (2000), p. 347] and that this "asset is social capital" (ibid.). That is, although he recognizes that access to resources, or, as he puts it "whom you reach" [Burt (1992), p.

12] is an essential part of social capital, he argues that the position of these individuals in the network, i.e. “how you reach” (ibid.) may be even more important.

Burt also draws on the theory of social and economic networks. Thus, when analyzing his concept of social capital, introducing some terminology used in the economic theory of networks up front may be helpful [cf. Jackson (2008)]: the entire set of individuals that is under consideration forms a network. Individuals within the network may or may not be connected. Individuals that are directly connected to each other are linked. There exists a path between two individuals in a network if they are connected by at least one link (i.e. there is a direct connection) or a sequence of links (i.e. there is an indirect connection). The length of a path is given by the number of links it consists of. The distance between two individuals is the length of the shortest path between them. A network is called connected if there exist paths between all individuals in the network. Otherwise, the network consists of at least two components, between which no link exists. In a connected network, there may be individuals that are interconnected by direct links. These are called a clique.

The baseline assumption by Burt is a typical one in network theory: there is a value for an individual in being connected to other individuals. This value is access to information, understood as “access, timing and referrals” [Burt (1992), p. 13] and, connected to that “opportunities to use [one’s] financial and human capital” (ibid., p. 9). As different individuals hold different pieces of information, there is an incentive for any individual to make such connections that maximize the amount and quality of information he has access to. Burt (2000) systemizes the individuals in the network according to the information they hold relative to each other. Firstly, there are “cohesive contacts” (p. 353), i.e. “contacts strongly connected to each other” (ibid.). Secondly, there are “structurally equivalent contacts” (ibid.) that do not have a direct link, but share a common third individual as contact. Due to their common acquaintance, structurally equivalent contacts are likely to possess the same information, i.e. they have “redundant information” (ibid.) and forming a link between them is of little worth when it comes to improving the amount and quality of information an individual has access to.

Thirdly, there are contacts on the other side of a so-called “structural hole” (ibid.). Technically speaking, these are individuals in a different component that was hitherto unconnected with the component individual A is a part of. Thus, no information flow took place between the components. There are three benefits for an individual to form a link that “bridge[s]” (p. 356) a structural hole. Firstly, structural holes are “like an insulator in an electric circuit” (p. 353) and different, “nonredundant” (ibid.) informations circulate in the two components on either side of the hole. An individual A spanning the structural hole thus profits from the new information available in the other component. Here, the individual A has an advantage over the other individuals in his initial component. Secondly, as long as individual A is the only one who spans the structural hole, he can “broker” (ibid.) information between the two previously unconnected components. If the new nonredundant information individual A now has access to is helpful to another individual B in his initial component, individual A can “sell” this in-

formation to this other individual B. A possible example would be a job offer hitherto only circulated on the other side of the structural hole. Thirdly, an individual A who has such ties across structural holes does not only possess better information. Relative to other members of their initial component, individual A is also more likely to be part of interesting information. A possible example would be a recommendation for a job by its bridging partner on the other side of the structural hole.

Creation of Social Capital in Burt (1992, 2000, 2005)

The creation of social capital in Burt's concept is specifically the creation of links between individuals. In network economics, links are typically assumed to be costly, an assumption shared by Burt. This creates a trade-off between the benefits occurring from direct links and the costs they cause. Direct links generate a higher payoff vis-à-vis longer paths because there are no intermediate individual's involved that may act as brokers and claim a share in the profit created through the connection. In this setting, if individuals are allowed to decide endogenously on which links to form, anything from a fully connected network, i.e. one where all possible links exist, and an empty network, i.e. one where no links exist at all, is possible. The result depends on the benefits from direct links and the relative discounts the payoffs from connections made via longer paths face. Needless to state, the costs of links also play a role[7].

Nonetheless, a little more can be said about the links an individual A is specifically interested in to create in any given network and the incentives connected to this decision. Consider the following case, in which individual A has two options. Firstly, he can create an additional link to another individual in a possibly already highly interconnected component he is already connected to. Secondly, he can form a link to an individual B in a different component, i.e. bridge a structural hole. Assume that in both cases, the cost of forming the new link will be identical. In the first case, individual A will not gain access to individuals hitherto not connected to him, but in the best case he will only shorten the distance to some of them. The information individual A will access will most probably be redundant. In the second case, he will gain access to all the individuals in the newly connected component. He is thus likely to gain access to non-redundant information. Even if the bridging link is more expensive to form, it may still generate the greater overall benefit for individual A. Burt (1992) argues that it is optimal for an individual to bridge as many structural holes as possible in order to maximize the "nonredundancy of contacts" (p. 20). As a consequence, he proposes to maintain only one contact to each clique and to use them as "ports of access to clusters of people beyond" (p. 21).

It is apparent that, in this setting, a very conscious investment in social capital takes

[7]Network theory can be complex. Of course, the result also depends on the specific mechanism of network formation, e.g. whether individuals propose links simultaneously or serially, whether proposed links have to be accepted or can also be declined and whether the costs of links are shared equally between the two individuals involved, only by the proposing individual or, possibly, also other individuals in the network. A discussion of these details is, however, not the focus of this thesis.

place: individuals form links endogenously to maximize their payoff from the network. Burt (2000) goes as far as calling individuals that systematically bridge structural holes "entrepreneurs" (p. 355). With time, other individuals will imitate these entrepreneurs, thereby making their ties redundant and thus reducing their profit. Thus, the return to social capital is the higher, the more imperfect a market is, i.e. the fewer links across structural holes there already are.

Burt (1992) touches upon an interesting point on the optimal strength of ties that will be useful in later analysis. He stresses that social capital is a risky investment as it is not necessarily symmetric: doing another individual B a favor, e.g. passing on information, may or may not yield a reward for individual A in the future. It is thus important for individual A to select carefully to whom he forms strong connections. These will be other individuals that individual A trusts. Burt points out that these strong connections which imply trust are more likely to form between homogeneous individuals as they are most likely to accept each other as equal and not to mistake a favor for "proper obeisance" (p. 16).

Summary and Discussion of Burt (1992, 2000, 2005)

Burt makes a strong case that strong ties are necessary to ensure that relevant information is actually passed on. However, there is a prominent earlier finding from Granovetter (1973) who observed that individuals get job information via weak ties, not via strong ties. This result is clearly at odds with Burt's recommendations. The solution to this dilemma presented by Burt (1992) is as follows: Granovetter's (1973) observation is correct, but the reason for his findings is that the individuals he observed have strong ties that access redundant information whereas non-redundant information is mainly provided to them via their weak ties. Granovetter's individuals bridge structural holes using weak ties, which is not optimal. There is thus a difference between the normative recommendations of Burt, i.e. the recommendation to bridge structural holes using strong ties, and the positivist observations by Granovetter. Additionally, Adler and Kwon (2014) elaborate on two interesting contributions in this context that confirm the stance of Burt: Firstly, Marin (2012) finds that agents who have information on job availability may be reluctant to share it with others because they do not want to appear intrusive. This may hold especially true with agents they only have weak ties to and where the personal relationship may not be as deep. Secondly, Smith (2005) argues that those agents with job information may be reluctant to pass it on because a large investment of time and energy might be necessary to motivate the agents they pass it on to. Again, it should be expected that the agents who have the job information may be more willing to shoulder these costs for agents they have thick ties to.

Burt's concept of social capital picks up numerous aspects of Bourdieu's concept, i.e. the inherent riskiness investments in social capital and, connected to that, the role of trust. This latter point is not explicit in Bourdieu's writings, but rather concealed in the requirement of intra-group homogeneity: a certain degree of homogeneity with others

is required for an individual to deeply trust them.

Moreover, Burt adds an important aspect to Bourdieu's concept: in order to gain access to information and the opportunities connected to them, it is not only important to be well connected within a group. Instead, it is valuable to know people that can provide non-redundant and thus diverse information. Since forming connections is costly and resources are limited, an individual A should concentrate his links on these individuals that provide non-redundant information and that he can trust, e.g. because they are homogenous to him.

The focus of analysis by Burt is more clearly individualistic than Bourdieu's. Social capital is the result of individual decisions and individual optimizing behaviour. Individuals can rent out their social capital just as they could with their human capital, e.g. to use their contacts to help advance their company, but it will ultimately stay with them.

Burt's focus on non-redundant ties is in stark contrast to the focus in Coleman's (1988, 1990) social capital concept, which will be discussed next.

2.1.4 Coleman's Concept of Social Capital

Looking at Coleman's concept of social capital is worthwhile for two reasons: Firstly, it adds some interesting aspects to the concepts of Bourdieu and Burt. Coleman e.g. elaborates on the benefits of redundant ties and the externalities inherent in social capital. Secondly, Coleman lays the seed for treating social capital as a phenomenon on the macro level. Since this is a highly popular strand of the social capital literature up to this day, it is worth investigating Coleman's concept of social capital to find the beginnings of the divide between individual level social capital and social capital at the macro level of the society.

Coleman has made two noteworthy publications on social capital. The first is an article from 1988. The second can be found in chapter 12 of his book "Foundations of Social Theory" (1990). The two publications are similar to a large extent, which leads Astone et al. (1999) to argue that the latter is a revised version of the former. However, close examination yields that they exhibit a slightly different focus. The article from 1988 concentrates on the role of "social capital in the creation of human capital", as promised by the title, and includes an empirical part. The later publication lacks this focus on the role of social capital in the creation of human capital. It elaborates in more detail on the role of mutual obligations for social capital and adds a section on the "creation, maintenance and destruction of social capital" [Coleman (1990), p. 318]. Moreover, the chapter from ibid. exhibits references to the work of Loury (1977) and Bourdieu (1980), something which is, as Portes (1998) points out, missing in the article from 1988 in spite of the similarities of the concept of social capital by Coleman and Bourdieu. In the following section, when describing Coleman's contribution to the literature on social capital, both publications will be drawn upon.

Coleman, in comparison to Bourdieu (1983) and Burt (1992, 2000, 2005), goes to greater lengths to motivate the necessity of a concept of social capital. He does so

slightly differently in his two aforementioned publications, but in both cases he argues from a perspective which can be called philosophy of science.

On the one hand, Coleman refers to the individual-centered philosophy developed by Hobbes in the seventeenth century, which, since Adam Smith's work, supposedly dominates the thinking in especially neoclassical economics. Although not explicitly mentioning it, Coleman identifies as its core *homo oeconomicus*, the agent that acts independently of others and wholly self-interested, maximizing his utility. Coleman (1988) argues that this "principle of action" (p. S95) is the "main virtue" (ibid.) of the individual-centered philosophy in general and neoclassical economics in particular. However, he also points out that this school of thought has an important flaw in that it underestimates, or even neglects, that "individuals do not act independently" [Coleman (1990), p. 301].

On the other hand, Coleman points to the concept of man used in sociology, where the individual is "governed by social norms, rules, and obligations" [Coleman (1988), p. S95]. Although he does not mention the work of Dahrendorf (2006) in this context, the concept of *homo sociologicus* is what he obviously aims at. While Coleman stresses that for the homo sociologicus the social context plays an important role, describing this as the concept's main virtue, he also hints at the problem that it lacks an "engine of action" [Coleman (1988), p. S96]. He claims that bringing together homo oeconomicus and homo sociologicus is the aim of his concept of social capital[8]. Here, at first glance, a parallel between Coleman and Bourdieu seems to exist. There is a fundamental difference, though: Coleman is a proponent of rational choice [Fine (2001), Häuberer (2011)], treating preferences as exogeneous, whereas Bourdieu argues that preferences arise from the social context the individual is situated and habituated in [c.f. Bernhard (2008)].

Definition of Social Capital in Coleman (1988, 1990)

To fully grasp Coleman's argument, some explanation of his terminology is necessary. Coleman (1990) uses the term "social-structural resources" (p. 302). By social structure, Coleman means the structure that arises if "social relationships [...] [have] some persistence over time" (p. 300). For this, he provides "authority relations" (ibid.) and "relations of trust" (ibid.) as examples. Additionally, he goes back one step further and analyzes why people have social relationships in the first place. He argues that they are the result of social exchanges and "unilateral transfers of control" (ibid.) that come into being if an individual is interested in resources that are "fully or partially under the control of other actors" (ibid.). Social-structural resources are thus resources that an individual has control over or access to through his social relationships which persist over time.

Coleman (ibid.) proposes to "conceive of these social-structural resources as a capital asset for the individual" (p. 302). As Lin (1999) stresses, Coleman chooses a

[8] Although he acknowledges that he is not the first to have this idea.

functionalist definition[9], namely: "Social capital is defined by its function. It is not a single entity, but a variety of different entities, with two elements in common: They all consist of some aspect of social structures, and they facilitate certain actions of actors [...] within the structure." [Coleman (1988), p. S98]. Thus Coleman sees the core aspect of social capital in facilitating the access of an individual A to the resources of other individuals. He defines resources as encompassing economic capital, or, as he puts it, "private goods" [Coleman (1990), p. 33], and certain aspects of human or cultural capital, or "certain attributes [of individuals], such as skills" (ibid.). Moreover, Coleman's resources include "rights to control" (ibid.) on actions that are directly or indirectly alienable, as well as resources that "are effective in determining [...] the outcomes of events" (ibid.) in which an individual is interested because he is affected by them.

Forms of Social Capital in Coleman (1990)

This broad definition of social capital allows Coleman to identify a vast array of phenomena as what he calls *forms* of social capital. Coleman (ibid.) gives six examples of forms of social capital. It rather appears that two of these forms, the first and the third form of social capital, are really different forms, an analysis also shared by Portes (1998). The remaining four forms are more or less specific examples of the two different main forms or "consequences of [the] possession [of social capital]" [Portes (ibid.), p. 5]. Thus the two different main forms will be introduced, which Coleman (1990) calls "Obligations and Expectations" (p. 306) and "Norms and Effective Sanctions" (ibid.), respectively. The distinction between these two forms of social capital has been picked up in the literature, e.g. by Esser (2008). Esser (ibid.) differentiates between "relational capital" and "system capital", meaning the form of obligations and expectations and the form of macro level norms, respectively. This differentiation will be investigated in more detail in section 2.3.

Obligations and Expectations

The first main form Coleman (1990) introduces requires a "level of trustworthiness of the social environment" (p. 306) high enough that "obligations will be repaid" (ibid.). This requirement is identical to a norm of reciprocity. If this holds, an individual A doing a favor for another individual B creates an obligation to return this favor, or, as Coleman (ibid.) puts it, a "credit slip" (p. 306). This credit slip gives individual A the right to have the favor returned by individual B some time in the future. This credit slip is seen by Coleman as a direct "analogy to financial capital" (ibid.). It is apparent that reciprocity and the idea of obligations created by favors is easy to align with the definition of social capital as access to the resources of other individuals. The more credit slips individual

[9]This is curious as Coleman (1990) picks up Granovetter's (1985) criticism of the functionalist approach of new institutional economics.

A possesses, the more returns for favors done by him in the past can he claim and the more access to resources of other individuals he accordingly has.

The favor which "created" the credit slip does not need to be returned in kind. Social capital has no currency, i.e. the exact value of favors is unknown. Moreover, the credit slips are, to a certain extent, not fungible, and thus appear not to cancel out. Accordingly, even after two individuals have done and returned a favor, to a certain extent, they both still possess access to each other's resources.

Favors that create credit slips, and thus social capital, can of course be done as a by-product to everyday social interaction. According to Coleman's analysis, this is what mostly happens since there is "often little or no direct investment in social capital" (p. 312). However, some individuals create more social capital than others, depending on their preferences for pro- or anti-social behaviour, something Coleman (1990) describes as their "ideology" (p. 320).

Moreover, the possibility that obligations are wilfully created by doing favors unasked for and unwanted is also explored by Coleman. This factually amounts to an investment in social capital. Coleman argues that there is a lack of direct investment in social capital as a result of an externality inherent in the mechanism of obligations and expectations. This comes about because social capital resides in the relationship between individuals, i.e. it is contingent on the stability of the social structure, which is made of the relationships between different individuals. These individuals have created obligations on one another, i.e. they own credit slips. It must be kept in mind that Coleman defines the right to access another individual's resources or to control his actions as a relationship. From this, it follows directly that if an individual A severs his relationship to another individual B, he loses his rights to access and control on individual B's actions and resources and vice versa. Thus the entire social capital that is contingent on this relationship between the individuals A and B is lost. Coleman gives individual mobility as an intuitive example where relationships are completely severed. If an individual moves away, usually not all ties to individuals in his former place of residence are cut, but still some are cut completely. As these obligations, as described above, typically exist on both sides of a relationship between two individuals, the unilateral ending of that relationship by an individual A will also deplete the social capital of the other individual B involved in that relationship, without this being taken into consideration by the individual A. In the process of creation of social capital, this implies that when deciding on the establishment or ending of a relationship to another individual B, individual A only weighs his benefits of this relationships against his (opportunity) cost. He does not take into account the effects of his decision in the form of creation or loss of social capital for the other individual B.

Coleman also comes to the result that creating social capital is a risky investment as the obligation thus created might not be honored. Still, it might be rational: an individual A might wish to create obligations in times of affluence to call on them in times of need, i.e. for insurance motives. How risky an investment in the creation of a credit slip is depends on how likely the other involved individual B is to honor the norm of reciprocity,

i.e. to return the trust placed in him. This level of trust is endogenous. Coleman points out that an individual is likely to trust individuals he knows well, i.e. that have honored their obligations in the past. Since these obligations do not cancel out completely due to their infungibility, this means that an individual B which is trusted in is usually one which has a large amount of credit slips outstanding with the individual A who puts trust into him. On the other side, it also means that this individual A also has a large amount of credit slips outstanding with individual B. Consequently, individuals that are trusted in may possess high social capital, but this high social capital is no one-way street but typically includes the possibility that other individuals ask for access to the individiual's resources.

As already pointed out above, Coleman claims to bring up several further forms of social capital. These are, as mentioned, rather examples for one of the two main forms. Three of them that can be aligned with the form called *obligations and expectations*, i.e. the "information potential" (ibid., p. 310) of a connection and the ones that Coleman calls "appropriable social organization" (ibid., p. 311) and "intentional organization" (ibid., p. 312). Since their detailled discussion does not add to the understanding of Coleman's concept of social capital, it will be omitted here.

Norms and Effective Sanctions

The second main form of social capital introduced by Coleman (1990) is what he calls "norms and effective sanctions" (p. 310). In chapter 10 of the "Foundations of Social Theory", he defines norms as follows: "They specify what actions are regarded by a set of persons as proper or correct, or improper or incorrect." (p. 242). Norms are "ordinarily enforced by sanctions" (ibid.), but may as well be internalized and thus be effective without external sanctions. Moreover, those who "hold [...] a norm" (p. 243) possibly enact sanctions on those that are "subjects" (ibid.) of a norm to make them act as specified by the norm. Thus, the holders of a norm effectively claim the rights to control on a certain action by another individual. Coleman (ibid.) differentiates between norms which discourage certain actions, which he calls "proscriptive norms" (p.247) and those that encourage certain actions, which he calls "prescriptive norms" (ibid.).Prescriptive and proscriptive norms are usually two sides of the same coin and in a situation where there are two options for action, one option might be subject to a prescriptive norm while the other is subject to a proscriptive norm. If the norm actually affects how those subject to it act, i.e. if it is "effective" (ibid., p. 310), then those that hold a norm have a right of control on other individuals' actions. So defined norms constitute social capital according to Coleman's definition as they facilitate certain actions by certain individuals within the social structure (although they certainly also serve to impede others).

At first thought, it may seem that norms and their enforcement may in part be explained with the assumption of reciprocity described above and the mechanism of obligations and credit slips connected to it. Coleman himself writes that "credit slips" (ibid.,

p. 281) may serve as positive sanctions for adhering to a prescriptive norm, e.g. to "forgo self-interest to act in the interests of collectivity" (ibid.). On the other side, those that act against a proscriptive norm are negatively sanctioned. In effect, someone violating a proscriptive norm refuses to give up his right to control on a certain action. If, however, the holders of the norm claimed this right of action in the first place, they now have an incentive to negatively sanction the violator in order to make the norm effective and thus defend their right of control. In the case of adhering to a proscriptive norm, it is harder to see how the mechanism of obligations and credit slips might be involved. But even here, a transaction takes place as the individual subject to the norm is spared from further sanctions in return for adhering to it.

If norms are not internalized, as discussed below, the realization of norms employing sanctions is the standard case for Coleman. It is part of a more complex mechanism which is, for larger groups, different from the mechanism of reciprocity, obligations and credit slips described above. This mechanism involved in the realization of norms is based on mutual exchanges between two individuals, which brings up a public goods problem as a typical free rider problem: an individual A that puts a sanction on another individual B to make a norm effective bears all the cost of the sanction, but only receives a part of the benefit. The reason for this is that the rights of control of the sanctioned individual on the action subject to the norm, i.e. the benefits of the norm being effective, are not only transferred to individual A, but to the entire group of individuals holding the norm. Coleman identifies this as a problem of the coordination of social exchange and proposes various solutions from an "action-rights bank" (ibid., p. 267) to examples to show how this first individual A, who enacted the costly sanction, might be reimbursed by other individuals holding the norm. Nevertheless, Coleman's proposals all share that they are only working if transaction costs are low, and if the individuals that are holding the norm are highly interconnected, an aspect also recognized by him and described as "closure of social networks" (p. 318).

Coleman describes a social structure in which the individuals that uphold a norm are interlinked to exhibit closure. Homans (1961) has already used the term "closed network" (p. 7) to describe a network where all individuals have links to all other individuals in the network. Coleman's conception of closure is less strict in that there are varying degrees of closure possible depending on which share of possible connections is actually established. Closure may help to overcome the free rider problem connected to the sanctioning of norms described above. Coleman presents two mechanisms how this may come about:

Firstly, the individuals upholding a norm may, if interlinked, coordinate to jointly and simultaneously sanction an individual that violated a norm[10], thus avoiding a situation characterized by the prisoner's dilemma game. Secondly, if only one individual A executes the sanction, a situation labeled as a "heroic sanction" [Coleman (1990), p.278], the other interlinked individuals may compensate him for his cost of doing so. This may come as a joint positive sanction in the form of outstanding obligations, i.e. as

[10]For the sake of readability, the term *norm* will from now on be used to describe a proscriptive norm.

credit slips. As Coleman (1990) points out, the cost of sanctioning an individual B who violates a norm rise the more powerful individual B is. Thus, the possibility of sharing the cost of a sanction amongst those that uphold the norm is the more important for the emergence of effective norms the larger the differences in power are between the individuals which are present in the social structure. Coleman (ibid.) gives honoring of obligations and reciprocity as a specific example for a norm that benefits from closure. This is important as it supports the first mechanism how social capital works (described on page 22 of this thesis). Here, the problem arises what came first: obligations and credit slips, which make the emergence of norms possible, or the norm of reciprocity, which makes the mechanism of obligations and credit slips possible[11]

Closure may thus be a useful tool to explain how norms can be sustained amongst small groups of individuals. As closure is typically decreasing when the size of a group is growing, and converges towards zero for whole societies, it cannot serve as an explanation how norms can be transferred to or be upheld at the macro level, i.e. the scale of society. Moreover, Coleman (ibid.) does not propose an alternative micro level explanation for this. Consequently, norms, at least those also effective in relatively large groups, cannot be satisfactorily explained by the mechanism of reciprocity, obligations and credit slips. They have to be seen as a form of social capital of its own right in Coleman's concept of social capital. [12]

Of the six original forms of social capital Coleman (ibid.) identifies, the one that is rather an example for norms and effective sanctions than a form of its own are "authority relations" (p. 311). As with the forms that are rather examples for the mechanism of obligations and expectations, it will not be discussed in more detail in this thesis.

Summary and Discussion of Coleman (1988, 1990)

Coleman picks up quite a number of ideas also included in the concepts of Bourdieu and Burt. The similarities can be found on a basic level, e.g. that social capital is created in social interaction, but are not limited to this. Coleman's analysis that purposeful investment in social capital (in the form of credit slips and obligations) takes place, albeit to a limited extent, is also shared by both Bourdieu and Burt. Bourdieu argues that the individual stock of social capital is the result of a, maybe unconscious, investment strategy. Burt goes even farther and recommends a strategic planning of one's position in the social network and thus a very conscious investment in social capital. Conse-

[11] Other authors have tried to solve this puzzle, i.e. Putnam (1993, 2000), as will be elaborated on in section 2.1.5 of this thesis.

[12] A further special case are internalized norms, which are effective without the prospect of a sanction. Individual A who internalized a norm voluntarily gives away his right of control without receiving a credit slip in return or being afraid of negative sanctions. This may be because his utility function is such that he believes that the action a norm prescribes is the right thing to do, or that the action a norm proscribes is wrong to do. If his utility is such, there is no need for (external) sanctions, as individual A, the subject of the norm, has developed an "internal sanctioning system" [Coleman (1990) ,p. 293]. How norms can become internalized in such a way is not the focus of this thesis, however, and will thus be discussed no further.

quently, all three authors also share the analysis that an investment in social capital is a risky investment, as it might not be honored. Finally, the externality connected to the mechanism of obligations and expectations that is described on page 23 is also identified by Burt.

However, there are also differences between the social capital concepts: When looking at the definition of social capital, it becomes clear that Coleman (ibid.) has a broader definition of resources than Bourdieu. The latter confines himself to economic, cultural and social capital as resources, while for Coleman, anything that is useful for the individual and that can be accessed via the social structure may well be a resource. This includes the right for certain actions to be performed.

Still other aspects of Coleman's concept require a more detailed discussion. Especially when looking at the mechanism of norms and effective sanctions as social capital, Coleman puts a strong focus on closure as a possibility to keep the free rider problem associated with sanctioning in check. Closure can be seen as the conceptual opposite to Burt's emphasis on non-redundant bridging ties, as it implies links with individuals an individual A is already connected to, i.e. redundant links. Coleman's concept of closure can moreover be seen as connected to Bourdieu's (1983) statement that there is a divide between those within a group and those outside. As a consequence, both authors stress that an interconnected group is a prerequisite for social capital to function. But while Bourdieu argues that the aim of groups is to exclude "illegitimate exchanges" [Bourdieu (1986), p. 250] and that, accordingly, acquiring membership in a group may be difficult and costly, there is no comparable statement by Coleman. For Coleman, the interconnectedness of individuals, or closure, is a phenomenon that is necessary to bring together the form of obligations and expectations and norms and effective sanctions, which, as pointed out above, only works out up to limited group size. For Coleman, closure arises endogenously "where one type of individual is weaker in a relationship" [Coleman (1990), p. 319] who "will subsequently develop social networks that have closure" (ibid.) to outbalance this weakness. Moreover, external factors may "facilitate" the emergence of networks exhibiting closure, such as "social proximity", which may be seen as connected to Bourdieu's analysis that a certain homogeneity between individuals is necessary for social capital to develop within a group. However, while this is a requirement for Bourdieu, it is only one aspect among others for Coleman.

Inalienability of Social Capital

Coleman's (ibid.) elaborations on the question whose property social capital is have created much confusion in the literature. Thus, a more detailed discussion on them is necessary. To understand this, it is important to know that, for Coleman, social capital is inalienable, i.e. "it cannot easily be exchanged" (ibid., p. 315). The reason is that social capital is bound to the relationship between specific individuals. It thus is an "attribute of the social structure in which a person is embedded" (ibid.) and that

it is “not the private property” of any individual. However, Coleman does not offer an alternative specification whose property, or what kind of property, it is instead. The problem is aggravated by his inconsistent use of terminology. He describes property as a “physical thing[...]” (ibid., p. 45). He adds, however, that “intangibles” (ibid.), i.e. rights to control or access, have comparable characteristics to physical things in economic and social exchanges . Supporting this interpretation, Coleman defines property rights to include “rights of use [...], rights of consumption [if applicable] [...], and rights of disposal” (ibid.). Consequently, a right to control may be transferred from one individual to another “as [...] a material resource” (p. 58): to do so, the individual needs to “hold[...] the right [to control] and also the right to transfer it” (ibid.). This is what Coleman most plausibly aims at when using the word “property” in chapter 12 of the Foundations of Social Theory. It is the right of transfer which is usually lacking for an individual’s social capital, which is a consequence of its inalienability. This differentiates social capital from an individual’s private property as Coleman defines it, which the individual can freely sell at will. A this is impossible for social capital, it is not private property for Coleman[13].

Social capital is thus not the private property of an individual because of a definition of private property which states that private property is necessarily alienable. This is in line with Lin and Erickson (2008), who point out that social capital means that resources are accessed, but not “possessed by the individual” (p. 4). This point has caused some confusion in the literature. Some scholars, e.g. Putnam (2000), as will be shown in chapter 2.1.5, and Häuberer (2011), draw the conclusion that if social capital is not a private good, then it must be a public good. Although the outcome of some norms may exhibit the properties of a public good, the interpretation that social capital always is a public good is by no means consistent with Coleman’s concept of social capital.

Astone et al. (1999) point out that Coleman’s assertion of social capital not being an individual’s private property but an attribute of the social structure leads to a problematic measurement of social capital in empirical studies: it is often assessed as a property of certain groups rather than as a property of individuals. Coleman (1988) additionally invites to making this mistake, e.g. by assuming that children who visit catholic schools have access to a larger amount of social capital. Astone et al. (1999) explain that especially political scientists who work with the concept of social capital subsequently measure it as the property of a specific group in society or of a specific political entity. Measuring the social capital of a group as a product of its members’ social capital is, according to Astone et al., problematic as individuals may have access to resources outside the social group they are assumed to belong to. Moreover, they may even belong to multiple groups. The social capital of the members of a group may well have developed outside the group and need not necessarily be available to the other members of the group. Measuring the social capital of the group in this way

[13] Even if social capital cannot be sold, it may well be possible to rent it out. Coleman does not elaborate on this possibility.

may thus carry little explanatory information about the social capital available within the group. Moreover, even if individuals were to have only relationships within a group, using social capital on the group level as a proxy for the group members' social capital "rests on two shaky assumptions" [ibid., p. 9 f.] already discussed in the context of Bourdieu's concept of social capital: firstly, that the group level resources are club goods to which all members have equal access. Secondly, that access to rights of control acquired through relationships of individuals within a group are available to the group as a whole, i.e. to every group member. Astone et al. argue that access to resources within a group may depend on the power relations between the individuals in that group, something also recognized by Coleman. Hence, Astone et al. stress that a close examination of social groups is necessary to check whether their group level social capital is really a good proxy for the group members' social capital.

Focus of Analysis in Coleman (1988, 1990)

The focus of Coleman's analysis is, different than Bourdieu's analysis, at first glance, solely the individual [e.g. Fine (2001)]. Nonetheless, Coleman's failure to give a satisfactory explanation for the micro-to-macro-transition between obligations and expectations and norms and effective sanctions for large groups and the confusion he causes on the question whether social capital can be some individual's private property or not has greatly contributed to many scholars conceptualizing and measuring social capital solely as a group level attribute. Thus, although Coleman's concept can be restricted to its individual parts, it can also easily be interpreted as including holistic aspects.

Coleman's identification of the incentives an individual faces when acting within the social structure makes his work easily accessible for economists who build their theories in line with methodological individualism. Coleman's concept of social capital is wider than that of Bourdieu or Burt. For Coleman, social capital is the name for two separate phenomena:

Firstly, social capital describes the access an individual A gains to other individuals' resources in return for promising them access to his resources in return in the future. Coleman's main contribution to this aspect of social capital relative to Bourdieu (1983) is the identification of the externalities inherent in social capital as it lies in the relationship between individuals, not within individuals. The main difference to Burt is the emphasis on closure as an important factor in maintaining norms as a form of social capital on a local level.

Secondly, in Coleman's concept, social capital can also be found in the form of effective norms, which, if they exist on a macro level and exist irrespective of the public goods problem connected to them, are a form not envisaged as social capital by Bourdieu or Burt. Nonetheless, this second form of social capital is the one that arguably inspired the larger part of the literature on social capital.

Other than Bourdieu's (ibid., 1986) article on the forms of capital, Coleman's (1988) article was published in the widely circulated "American Journal of Sociology". Con-

sequently, its reception has been large and Coleman's influence on the social capital literature, especially on the early social capital literature, is larger than Bourdieu's. Astone et al. (1999) even state that Coleman is "the scholar who inspired most recent research on social capital" (p. 6).

2.1.5 Putnam's Concept of Social Capital

Putnam's approach follows Coleman's in the two forms of social capital identified, i.e. obligations and expectations, or, to use Esser's (2008) terminology, *relational capital*, and norms, or, in Esser's terminology, *system capital*[14]. However, while Coleman puts more or less equal emphasis on both forms, Putnam's focus is clearly on the second form, i.e. norms or *system capital*. It is interesting to look at Putnam's work for two reasons: Firstly, he brings in two new approaches to connect the micro and the macro level of social capital introduced by Coleman. Secondly, he introduces macro level social capital as a vehicle to explain the performance of macro level institutions, which has found widespread scholarly attention.

Putnam's main question is how social interaction between individuals, i.e. on the micro level, and outcomes on the macro level of society are connected. He argues that social capital as he understands it is an important element of this connection. Putnam's concept has been picked up by a very large number of scholars who argue that social capital is a macro level phenomenon and use it to explain macro level outcomes. At the end of this section, it will be shown that, just as in the concept by Coleman, the connection between individual social interaction and macro level outcomes as postulated by Putnam is unconvincing from an individual perspective. Hence, it is doubtful whether micro level social capital in the sense of Bourdieu and Burt, understood as individual access to resources, and macro level social capital as used by Putnam, really share a common base. Instead, it will be shown that they are two basically distinct concepts. Putnam's concept of social capital will be introduced in more detail in the the next section as a starting point for this discussion. Due to its close relationship with Coleman's social capital concept, it will be contrasted with the latter throughout.

Unlike Bourdieu, Burt and Coleman, Putnam has not written a mostly theoretical work on social capital. He has included some elaborations on the topic in his book "Making Democracy Work" (1993) on civic institutions, their performance and their roots in Italy. He dealt with the concept of social capital in more detail in his book "Bowling Alone" (2000), where he developed the hypothesis that the stock of social capital in the U.S. is declining. However, while "Making Democracy Work" is clearly geared towards an academic audience, "Bowling Alone" is a popular science book, advertised as "the national bestseller" on its front page. As Putnam elaborates on social capital extensively in it, it will still be used in this thesis, with the aim to strip it to its scientific core.

[14] Putnam (1993, 2000) does not use this wording.

Definition of Social Capital in Putnam (1993, 2000)

Putnam (1993) defines social capital with explicit reference to Coleman (1990) as "features of social organization, such as trust, norms, and networks, that can improve the efficiency of society by facilitating coordinated actions" (p. 167). This definition can easily be aligned with Coleman's (1988, 1990) form of macro level norms as social capital. Interestingly, Putnam (1993) only very briefly touches upon the subject of social capital creation: he hardly says more about it than that it is created in social interaction.

At first sight, it seems more difficult to align Putnam's definition with Coleman's other main form of social capital, obligations and expectations. It is not a priori clear what individuals and their respective access to other individuals' rights of control have to do with coordinated actions and the efficiency of society, at least in the case that does not directly encompasses norms. Further investigation reveals that Putnam also recognizes "that social networks have value" [Putnam (2000), p. 19] for individuals because they "affect the productivity of individuals and groups" (ibid.). Moreover, Putnam explicitly stresses the benefits of social capital possession for the individual, summing them up as "individual clout and companionship" (ibid., p. 20). This part of his concept is thus connected to Coleman's form of obligations and expectations as social capital. Consequentially, Putnam acknowledges both forms of social capital as he aims to connect micro level social interaction and macro level outcomes.

The Norm of Reciprocity in Putnam (1993, 2000)

Up to this point, Putnam is in line with the general definition and the two forms of social capital that can be found in Coleman's work, as shown in chapter 2.1.4: for Coleman (1990), a norm of general reciprocity is a necessary condition for a system of social obligations and credit slips to function. It is, as the name suggests, part of the mechanism how social capital works which is based on "norms and effective sanctions" (p. 310). As pointed out on page 26, Coleman (ibid.) has an ambiguous relationship to the norm of reciprocity: he needs it for the mechanism of obligations and credit slips to work, but at the same time points to the difficulty of sustaining it as a macro level norm due to the free rider problem. Summing up, it is fair to say that Coleman (ibid.) cannot offer a satisfactory solution to the question how a micro level norm of reciprocity can be generalized into a macro level norm.

Putnam also, be it implicitly, acknowledges that norms may develop endogenously within social networks. He tries to solve Coleman's dilemma with the norm of reciprocity, arguing that "norms of reciprocity and trustworthiness" (p. 19) arise from social networks. This step in principle allows for integrating the two forms of social capital that can be identified in Coleman's work. Frequent social interaction, be it through favor-doing or through joint adhering to norms, builds trust. This, in turn, facilitates further social interaction since trust reduces the perceived risk of not receiving a return for outstanding obligations and simplifies the sanctioning of those who violate a norm. Unfortunately, Putnam does not devote more effort into developing the microfounda-

tions of his micro-to-macro-transition. The precise mechanism thus remains unclear [c.f. Jordana (1999)]. This is also a consequence of his level of analysis, which is only to a small extent concerned with the individual.

Although Putnam does not state in detail how he imagines the norm of reciprocity to arise from social interaction, he further investigates into its details. As the norm of reciprocity is central to his concept of social capital, this is worth looking at: Putnam differentiates between "specific" [Putnam (2000), p.20] and "generalized" (ibid.) reciprocity, but his definition of the two is different in "Making Democracy Work" and in "Bowling Alone". Specific reciprocity as described in "Making Democracy Work" is a norm of immediate exchange of favors of equivalent value between the same individuals. The way specific reciprocity is used in "Bowling Alone" is akin to the description of the norm of reciprocity used by Coleman when defining his form of social capital of credit slips and obligations (c.f. p. 22 of this thesis): here, reciprocity is limited to the persons directly involved in an interaction, e.g. if one individual is doing a favor to another individual now, the other individual is expected to return the favor some time due to the norm of specific reciprocity. Interestingly, this is the same as described as generalized reciprocity in "Making Democracy Work". In "Bowling Alone", a norm of generalized reciprocity postulates that the return of a favor is not specific to the individual who has done or who has received the favor. It rather states that a favor done will be returned, but maybe by some other individual not involved in the initial interaction. In what follows, the terms specific and generalized reciprocity will be used as used in "Bowling Alone" and the term *matching reciprocity* [Kolm (2006)] will be introduced for what is described as specific reciprocity in "Making Democracy Work"[15].

It is apparent that generalized reciprocity is subject to an additional problem relative to specific reciprocity: why should some other individual *return*, i.e. do, a favor he has not initially received? A possible answer would be that sanctions are attached to this norm and that the individual is in danger of being negatively sanctioned if he violates the norm. However, in a group of many individuals, which individual is to be singled out to do the favor and hence be negatively sanctioned if he does not do it? The solution Putnam implicitly offers is, in reference to Tom Wolfe's novel *The Bonfire of Vanities*, "the favor bank" [Putnam (2000), p. 20][16]. This idea is related to Coleman's (1990) action-rights bank (c.f. p. 25 of this thesis). Unfortunately, like Coleman, Putnam does not elaborate how this favor bank works in practice. Thus, it remains unclear how individuals know whose turn it is to do or to receive a favor. This is especially true in large groups or even societies, to whom Putnam attributes the possibility to be "characterized by general reciprocity" [Putnam (2000), p. 21]. The consequence is that Putnam is also unable to offer a satisfactory explanation how macro level norms, as generalized reciprocity on the scale of an entire society would be, emerge on a micro level.

[15] In the literature, further forms of reciprocity are discussed. An investigation into this discussion will take place in the section on reciprocity as a determinant of social capital possession on page 61

[16] Putnam (2000) notes that Robert Frank called his attention onto this example "in private conversation" (p. 446).

Trust as a Key Concept in Putnam (1993, 2000)

Like Coleman, who identifies the role of trust in the mechanism of obligations and expectations, Putnam argues that trust plays an important role in connection with social capital. He goes further than Coleman in that he also sees a role for trust in connecting between micro and macro level social capital. He differentiates between "thick trust" [Putnam (2000), p. 136] and "thin trust" (ibid.).

For the term thick trust, Putnam (ibid.) refers to Williams (1988) and Burt and Knez (1996)[17]. Thick trust is the type of trust already identified as a byproduct of repeated interaction by Coleman and as a prerequisite for the passing on of information between contacts by Burt.

As an addition to the concept of thick trust, Putnam (2000) introduces the term thin trust. This idea goes well beyond what Coleman means when writing about trust being created as the result of repeated interaction. Thin trust is the idea of trust "in the generalized other" [ibid., p. 136]. Generally, trust in other individuals alone does not help to reduce transaction cost. The other individuals must also be trustworthy, i.e. de facto honor their obligations. In the concept of thick trust, trust and trustworthiness typically fall together: an individual A trusts other individuals because they have proven to be trustworthy in repeated interaction. With thin trust, this is more difficult as there is no repeated interaction with "the generalized other" (ibid.). Putnam's solution is "honesty based on a general community norm" (p. 136). It is easy to see how such a norm would help to reduce transaction cost in a community, but it is difficult to imagine how it could be enforced. Take the extreme case of two complete strangers who, in addition, have no joint acquaintances. If individual A cheats on the other individual B, how is individual A to be sanctioned? There are two possibilities: one is that the individuals the cheating individual A is connected to impose sanctions on him because cheating means the violation of a norm - but how can they find out that individual A cheated? The individuals A and B have no joint acquaintances, so individual B, who was cheated upon, cannot tell them and individual A, who cheated, certainly will not tell them. The other possibility is that some third individual C who observes the cheating imposes a sanction. However, in many cases, there is no third individual C to observe the cheating. Even if there is, as pointed out by Coleman (1990) (c.f. p. 24 of this theses), the sanction will be the more costly to individual C, the less individuals are involved (although this point is somewhat mitigated by the possibility that the sanctioning individual receives positive sanctions from his acquaintances). A further problem is that the sanctioning would need to take place on the spot because the individuals involved might never meet again. The problem resulting from this is: how bad can a sanction from a stranger be, whom the cheating individual A might never meet again? It is intuitive that the disutility connected to a sanction is worse, the more value the connection to the sanctioning individual has, which is put at stake

[17] Although Burt and Knez (1996) do not use the term thick trust, they recognise that trust increases in the density of a relationship.

through the sanction. In effect, it is very difficult to imagine how a norm of general honesty could be made effective. This result is very similar to that already pointed out on page 24 of this thesis in connection with Coleman's social capital concept, i.e. that the emergence of macro level norms is not satisfactorily explained on a micro level using the mechanism of obligations and credit slips.

Implicitly, Putnam (2000) recognizes this, and his solution is very similar to the idea of closure prominent in Coleman's work: the norm of thin trust is easier to sustain in a community which exhibits a dense social network, as a dense network is more effective in "transmitting and sustaining reputations" (p. 136). But then, reputation is basically what thick trust is about. In the end, it remains unclear how thin trust can be sustained without making it thick trust. This is especially important as Putnam (ibid.) and many other researchers use a variant of 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?" (p. 137) [18], which clearly aims at thin trust, to measure social capital in a community, which may or may not [Newton (2001)] lead to empirically valid results. Interestingly, even Williams, to whom Putnam refers with the term thick trust, dismisses the idea of thin trust. He points out that he finds it difficult to imagine how such a community norm of cooperation could work "without an arrant degree of traditionalist or charismatic mystification" [Williams (1988), p. 12]. In any case, the idea of integrating the two forms of social capital using trust stands on theoretically weak foundations, as has hopefully been shown.

Summary and Discussion of Putnam (1993, 2000)

An interesting side feature of his strong focus on macro level norms as social capital is that Putnam identifies further externalities connected to social capital creation: for Putnam, social interaction on a micro level and the existence of norms on a macro level are, as pointed out, more or less automatically connected via the mechanisms of thin trust and general reciprocity. If this is true, then the creation of norms is an external effect of social interaction. The resulting norms may have features of a public good, i.e. non-excludability and non-rivalry. Putnam's (2000) example is that of a norm of "keeping an eye on one another's homes" (p. 20) in a neighborhood, which usually keeps crime low for anyone in the neighborhood. There is underinvestment in social capital because the benefits of this norm for everyone in the neighborhood are not sufficiently taken into account by individuals when deciding on their optimal level of social interaction and thus social capital.

The high level of interest Putnam exhibits on the effects of social capital on an entire society or country also has an effect on his level of analysis: Different from Coleman's or Bourdieu's analysis, it remains largely unclear what the engine of action of Putnam's individuals is. To pick up the stylized models of man introduced by Coleman, it is an

[18] Variants of this question are included in many popular surveys, such as the World Values Survey, the Eurobarometer, the International Social Survey Program, and others.

individual much closer to homo sociologicus than to homo oeconomicus. As a direct consequence, the two main additions to Coleman's concept of social capital introduced by Putnam, i.e. generalized reciprocity and thin trust, are difficult to sustain from a perspective of methodological individualism. Consequently, other scholars had similarly little success in explaining how individual level social capital leads to macro level social capital, leading Häuberer (2011) to conclude that "the concrete mechanisms [how individual level social capital leads to generalized reciprocity] are not discovered yet" (p. 148). Neves (2013) states that: "theoretically, it is clear that relationships and resources are main elements of social capital; it is not clear how norms, civic engagement, or social trust [meaning thin trust, *remark by the author*] can be elements of social capital" (p. 600). This is especially problematic as the concept of generalized reciprocity is central to Putnam's (2000) main thesis that there is a lack of social capital in the U.S., which is a problem, as "[a] society characterized by generalized reciprocity is more efficient than a distrustful society" (ibid.). Putnam's argument here is simple: he draws an analogy to barter trade, which is less efficient than trading with money as "every exchange [has to be balanced] instantly" (ibid.). The lack of social capital in the U.S., according to him, embodies itself in the lacking effectiveness of a norm of generalized reciprocity.

Even though Putnam's concept of social capital may not offer a satisfactory link between micro and macro level social capital, it has raised widespread attention among (especially) political scientists. Both "Making Democracy Work" and "Bowling Alone" have been cited more than 40.000 times by other scientific publications. This popularity is understandable as Putnam offers a new explanation for the efficiency of institutions in a society, namely the level of social capital. Moreover, he underpins it with two, at least at first sight, plausible case studies. Nevertheless, Putnam's conceptual contribution to the theoretical literature on social capital is relatively small, a conclusion shared by Fine (1999). Putnam needs the mentioned two relatively problematic extensions relative to Coleman to create a link between the micro level of the individual and the macro level of the community or society. Only with the use of thin trust and generalized reciprocity can Putnam explain why social capital as an asset to individuals is connected to the efficiency of society, e.g. by reducing transaction costs.

Not only Putnam's theoretical, but also his empirical approach has come under fire. Portes (1998) heavily criticizes Putnam's (1993) empirical approach to identifying social capital as the key driver in making Italian cities democratic. Portes argues that it is tautological as it mingles cause and effect and tries to explain all observed differences. [19]

[19] Nonetheless, Putnam is the pop-star in the social capital literature: Portes (1998) points out that his research on social capital has earned him "a tête-à-tête with President Clinton and a profile in *People* magazine" (p. 19).

2.1.6 Fukuyama's Concept of Social Capital

The final social capital concept to be investigated here in depth is that of Fukuyama (1995a). From an individualistic point of view, looking at Fukuyama's concept of social capital is interesting as it is the most holistic of the prominent concepts with relatively few connections to those of the other four scholars discussed above. It readily reduces social capital to an exogenous variable that explains macro level phenomena.

Fukuyama, who has become popular outside academia with his thesis about "the End of History" (1992) [20] has elaborated on social capital in two often referred-to works: his article "Social Capital and the Global Economy" (1995a) and his book "Trust" (1995b)[21]. Fukuyama's perspective on social capital is different from the ones of Bourdieu, Burt, Coleman and Putnam. Fukuyama argues that the level of social capital of a society is a part of its culture, inherited from its past and unlikely to build up quickly nowadays. The role for individuals and their behavior depending on the incentives they face is consequently small in Fukuyama's texts. Moreover, Fukuyama overtly questions whether methodological individualism is the right approach to tackle the concept of social capital.

Definition of Social Capital in Fukuyama (1995a, 1995b)

Like Putnam, Fukuyama explicitly refers to Coleman when introducing a definition of social capital. For Fukuyama (ibid.), social capital is a part of human capital[22], "the ability of people to work together for common purposes in groups and organizations" (p. 10). This definition is relatively close to Putnam's as it shares its focus on the enhancement of groups' possible actions by social capital. However, while for Putnam, social capital belongs to an individual and the social capital in a society is connected to the social capital accumulated by its members, Fukuyama sees social capital as a direct attribute of societies or communities. Consequently, for Fukuyama (ibid.), the ability to cooperate "depends [...] on the degree to which communities share norms and values and are able to subordinate individual interests to those of larger groups" (p. 10).

Furthermore, Fukuyama pursues a broader endeavor. He wants to explain why some nations are economically successful and others less so. To do so, he explicitly specifies some norms that are especially important for the ability to associate and for the "institutions of democracy and capitalism [...] to work properly" [Fukuyama (ibid.), p. 10]. These are norms of "reciprocity, moral obligation [and] duty towards community" [ibid., p. 12], together with trust, meaning trust even thinner than the thin trust described by Putnam. For Fukuyama (ibid.), this trust extends across the members of

[20] In short, Fukuyama's (1992) argument is that western-style liberal democracy has emerged from the struggle with communism as the dominant ideology for the time to come.

[21] However, without doing him any wrong, it can be said that the article is simply a summary of the book.

[22] Fukuyama (1995b) does not mention social capital's analytical decoupling from human capital in Coleman's (1990) *Foundations of Social Theory*. However, it is not central to his argument.

entire nations. Moreover, Fukuyama does not elaborate in detail how this trust can be created, beyond the point that it requires habituation across long periods of time. His notion of trust has so little to do with Coleman's (1990) idea of trust in networks characterized by closure that Fellmeth (1996) argues that "Fukuyama's theory of trust relies on a misinterpretation of [...] Coleman's theory of social capital" (p. 156).

Social Capital and Methodological Individualism

Highly important for Fukuyama (1995b) is the norm of subordinating an individual's own interests to the benefit of a greater good, meaning that individuals are "motivated [...] by something broader than individual self-interest" (p. 9). He gives the example of showing solidarity as a form of caring for other individual's well-being. What he aims at is homo oeconomicus: in his interpretation of this concept, individuals follow their narrow self-interest without considering the pleasure or pain of other individuals or "pursu[ing] some kind of common good" (ibid., p. 18). He rejects the idea of broadening the definition of utility, which is what homo oeconomicus maximizes, to include "psychic utility" (ibid., p. 19). What he means by psychic utility is utility from non-selfish goals. His example is the "abolitionist dying to end slavery" (ibid.). Fukuyama's argument is that this would reduce utility to "a purely formal concept to describe whatever ends or preferences people pursue" (ibid.), implying that the "premise" (ibid.) of utility maximization is reduced to the "tautology that robs the model of any [...] explanatory power" (ibid.) when "people maximize whatever it is they choose to maximize" (ibid.). Regrettably, Fukuyama does not elaborate further on this point. His claim is that the model of homo oeconomicus without including said psychic utility is "about eighty percent right" [Fukuyama (ibid.), p. 17]. However, according to him, some part of individual behavior is not the product of "rational calculation but [...] [of] inherited ethical habit" (p. 20). A part of this inherited ethical habit, or culture, are the habituated norms described above that facilitate the association among strangers in a society and thus social capital.

Summary and Discussion of Fukuyama (1995a, 1995b)

There are few connections between the concepts by Fukuyama on the one side and Bourdieu and Burt on the other side. There is one notable exception: the argument of shared norms as a central prerequisite for the formation of social capital can also be found in Burt's and, more prominently, in Bourdieu's work. The latter argues that "a minimum of objective homogeneity" [Bourdieu (1986), p. 249] of two individuals is required for them to successfully engage in an exchange which is necessary to maintain the relationship which is the essential prerequisite for social capital. This objective homogeneity includes tastes and norms. Bourdieu's (2008) main point is to show that these tastes and norms differ between individuals within a society, reflecting class differences. Bourdieu (1983) thus argues that individuals need to originate from relatively similar classes in order to form relationships from which social capital can

emerge. Fukuyama (1995b) in principle shares this argument, but extends its scope. For him, as a result of history, norms are shared within nations to an extent which is sufficient for individuals to relate.

In his concept of social capital Fukuyama separates it from the perspective of individual utility maximisation and rational action used in economic theory. His examples of individual acting, usually from workplaces as his analysis is concerned with the economic performance of nations, are that of individuals acting as homo sociologicus, i.e. fulfilling a role. Depending on the norms of the society they were socialized in, individuals trust or do not trust strangers. He goes as far as arguing that, at least when it comes to social capital and, ultimately, culture, individuals do not act as "individual utility maximisers" [Fukuyama (ibid.), p. 21). The level of trust in a society is subject to change, but only over long periods of time. In the end, Fukuyama tells a story about the influence of culture on the economic success of nations, an endeavor comparable to that of Max Weber in his "The Protestant Ethic and the Spirit of Capitalism" from 1920 [Weber (2013)]. A side effect of this argumentation is that there is no necessity for Fukuyama to establish a link between micro level behaviour of individuals and macro level norms. Norms are something which is de facto beyond individual-level explanation. Although this is, albeit unintentionally, also present in Coleman's and Putnam's concepts (see chapters 2.1.4 and 2.1.5 of this thesis), the separation between micro level and macro level social capital is driven furthest by Fukuyama.

2.2 Social Capital in Economic Modelling

Economics is the social science where the individualistic perspective is most common. Since one of the aims of this thesis is to find a social capital concept that is compatible with methodological individualism, looking at the treatment of social capital in economics might yield interesting insights. However, attempts at integrating social capital into the framework of mathematical modelling common in economics have been sparse. There are three notable approaches: the first is to model social capital in analogy to private consumption goods. A proponent of this approach is Becker (1974). The second approach is to model it in a way comparable to human capital. Here, the model by Glaeser, Laibson, and Sacerdote (2002) is the most prominent example. The third approach is to integrate social capital into models of economic growth. Proponents are Dasgutpa (2005) and Chou (2006). All all three approaches will be discussed in turn.

Becker's Concept of Social Income

Esser (2008) refers to a model by Becker (1974) in his treatment on relational social capital. In this model, social relations in the form of "characteristics of other persons" (ibid., p. 1066) ultimately enter an individual's utility function and their level can be endogenously changed by that utility maximizing individual. What Becker aims at is relatively similar to the concepts of altruism as e.g. proposed by Ahlheim and Schnei-

der (1996): how does an individual's behavior change if he is interested in e.g. the level of consumption of market goods of other individuals, for example his family members.

Esser proposes that Becker's model can be reinterpreted so that it is not another individual's characteristics that enter an individual's utility function, but resources of other individuals an individual has access to. Moreover, to simplify things, a slightly modified version of Becker's model will be depicted.

This model represents a very simple way to include connections to other individuals into a neoclassical utility maximization framework. The mechanism is very straightforward: social connections come at a price, and thus generate opportunity costs. These opportunity costs are represented in reduced consumption of a market good by the individual. The individual thus has to trade-off between the marginal utility gains from the two components in his utility function, with the usual result that in an equilibrium, the marginal rate of substitution will equal the ratio of the prices of the two components. The emphasis on the costs of social connections is an aspect the model shares with the concept by Bourdieu (1983). It is insightful insofar as these costs are not as present in the other concepts of social capital outlined in section 2.1.

In the model, an individual depends on the consumption of a market good and a component dependent on the connections to other individuals[23]. This latter component may represent several things: it may depict how many resources the individual under investigation can access via other individuals, but also how close the connection to other individuals is. This is important e.g. if it comes to thinking about the intrinsic value derived from friendships. A peculiarity of Becker's model is that the component dependent on the connection to other individuals has a base level: there seems to be some basic minimum of social connections that are there even without any effort.

The individual maximizes his utility subject to a budget constraint. Here, social connections have a price that is measured in the same currency as market goods. The price of social connections can e.g. be understood as an opportunity cost of the time involved in maintaining these connections[24]. When adding the base level of social connections described above, a sum results that Becker (1974) calls the "social income" (p. 1063) of an individual. From this point onwards, the usual equilibrium conditions can easily be derived.

Its simplicity is also the greatest weakness of the model when it comes to thinking about social capital: there is no role for capital formation, i.e. either conscious or unconscious investment. Social connections are modelled as a consumption good, which can be consumed in lieu of other consumption goods. This may make sense in the applications Becker proposes, e.g. when one family member transfers funds to another family member as he is interested in the other's well-being. However, what is

[23] Becker (1974) discusses the possibility of negative marginal utility from the characteristics of other individuals, i.e. in the case of envy or anger. However, this is not the focus of this analysis and will thus not be discussed further. Instead, a positive marginal utility from the connections to other individuals will be assumed.

[24] A richer model that would explicitly depict the individual's decision on time spent on earning money and maintaining social connections is easily imaginable. However, it would yield few additional insights.

interesting about social capital, i.e., as Bourdieu (1983) puts it, that it creates structures which are not ad hoc and that can thus make a systematic difference in peoples lives, cannot be captured with this simple model.

Glaeser, Laibson and Sacerdote's Model

The model by Glaeser, Laibson, and Sacerdote (2002) is interesting due to its closeness to classical human capital investment models. It can thus be interpreted to look at social capital at an individual level and hence serve as a theoretical basis for deriving hypotheses on the effects of certain variables, i.e. those included in the model such as age or mobility, on social capital possession.

Glaeser, Laibson, and Sacerdote describe their approach to modelling the creation of social capital as one of modelling "the social component of human capital" (ibid., F. 438) as they focus on the individual and the benefits he reaps from the possession of social capital. Consequently, in modelling the creation of social capital, they do not consider any externalities of social capital the individual potentially creates when creating social capital as externalities are usually assumed not to be taken into account by individuals.

Glaeser, Laibson, and Sacerdote effectively model what they call a "simple investment problem" (ibid., p. F440). They assume that individuals possess a stock of social capital and receive a payoff which depends on their individual level of social capital. This payoff is moreover a function of the exogenously given aggregate stock of social capital. The aim of this formulation is to capture the externalities of the social capital existing in a community, which they assume to be positive. This idea of externalities of the social capital stock of a community is reminiscent of the macro level part of the concept by Putnam, although, just as in Putnam's concept, it remains unclear why these positive externalities would necessarily interact with the social capital of a specific individual. Moreover, it is unclear what the social capital stock of the community precisely is. Glaeser, Laibson, and Sacerdote even warn of simply summing up individual level social capital to obtain the social capital of a community as the aggregation is complicated by the existence of positive and negative externalities.

As usual in investment problems, the social capital stock of the individual follows an equation of motion, according to which the stock of social capital in the next period is given by the sum of investment into the stock plus what is left of the current stock after a given depreciation rate is taken into account. The authors additionally assume that there is a certain chance hat individuals leave their community, leading to an instant depreciation of their social capital by an exogenously given factor. The reasoning is intuitive and also brought up by Putnam (2000): if an individual moves away from his community, communication with the individuals he has relationships with becomes more difficult and accessing their resources more costly, with cost increasing in distance, thus depreciating the value of his social capital. This factor is, as Glaeser, Laibson, and Sacerdote point out themselves, inspired by Becker's (1964) notion of

firm specific human capital.

Moreover, the authors assume that investment in social capital has a production function with decreasing returns to scale and a time cost. Time is valued with the opportunity cost of time usage. This may represent either "the wage rate of the value of leisure time" [Glaeser, Laibson, and Sacerdote (2002), p. F440], which should, of course, be the leisure time not spent socializing. Individuals moreover live a given, fixed number of periods and are impatient, i.e. prefer to experience a given level of utility now rather than in the future.

The only variable that is under the control of the individual in the resulting investment problem is the individual investment into social capital in the current and future periods. From this, an optimality condition can be derived. Glaeser, Laibson, and Sacerdote point to the following results of comparative dynamic analysis: the investment in social capital is decreasing in the time preference rate, i.e. the more impatient the individual is, the lower will be his investment in social capital. Moreover, it is decreasing in the chance of relocation and the share of social capital lost with relocation. Furthermore, it is decreasing in the opportunity cost of time, decreasing in age and decreasing in the rate of social capital depreciation. Finally, in line with Putnam's concept, it is increasing in the amount of social capital available in the community. Accordingly, there is a net accumulation of social capital in the beginning of the life cycle and a net deaccumulation of social capital towards the end of the life cycle. Glaeser, Laibson, and Sacerdote sum up that these "are not surprising results, and most would hold for any type of capital" (ibid., p. F441).

The strength of the model by Glaeser, Laibson, and Sacerdote (ibid.) is its close analogy to classic investment models and thus its ability to make strong predictions about individual level investment in social capital and its determinants. However, there are a number of problems: firstly, there is the problem of generating general results from a very specific functional form. In this model, the individual's social capital yields a linear (!) payoff. Secondly, the assumption of constant depreciation of social capital is problematic. As pointed out, there is a consensus in the literature that social capital does not depreciate with use, but with non-use. The model is also problematic in assuming convex investment cost in social capital - why should forming a relationship to the third friend take longer than to the first friend? Even a contrary reasoning might be possible, i.e. assuming a concave cost of investment. Moreover, as described in section 2.1.2, Bourdieu (1983) suggests that the cost of investment may be a function of the available amount of social capital - those who already have a lot of social capital need to invest comparatively little to build or maintain it since having access to their resources is highly attractive. How concrete actions other than investment in social capital are influenced by the stock of social capital an individual and other individuals in his community possess is beyond the scope of the model by Glaeser, Laibson, and Sacerdote (2002).

Social Capital and Growth Theory: Chou's Model(s)

Putnam's idea that social capital and economic performance might be connected has been a starting point for growth theorists. Looking at these models is interesting as they might, in principle, provide an answer to the question of the micro-to-macro-transition: they start at investigating individual level investment decisions, but present results on the macro level.

Chou (2006) proposes no less than three different growth models to incorporate the different effects of social capital on economic growth. Other authors have also proposed models to this end, e.g. Sequeira and Ferreira-Lopes (2011) and Bartolini and Bonatti (2008). To avoid redundancy, the focus here will be put on the work by Chou (2006). He identifies three effects of the presence of social capital that in the end help to further growth: firstly that of a facilitated creation of human capital, an idea Chou picks up from Coleman (1988), secondly that of improved financial development and thirdly that of facilitated diffusion of information and thus innovation through networks which represent social capital. Although the three models aim at different effects of social capital creation, they share the same basic mechanism: social capital has spillovers on the creation of another type of capital or other sectors in the economy. As individuals do not take these spillovers into account when deciding on their investment in different types of capital, the overall production of social capital is too low relative to the social planner's solution. In what follows, an outline of the model by Chou (2006) will be given where social capital facilitates the creation of human capital as it is the model which is easiest to align with an individual perspective on social capital.

Chou's model on social and human capital creation is in effect a relatively straightforward extension of Lucas's (1988) incorporation of human capital into a model of endogenous economic growth. In the decentralized solution, firms maximize profits and households maximize utility. In order to maximize profits, firms sell an output, which can be produced according to a standard Cobb Douglas type production function with capital and the share of human capital used in production of the output as input factors. Moreover, there is assumed to be a non-profit education sector in the economy, which creates human capital. The sector sells new human capital at a price such that its costs can be covered. Social capital does not enter directly in the production function of the output, but merely as an input in human capital production.

The representative household maximizes the present value of its lifetime utility, which is given as a CRRA utility function depending only on consumption. It would be intuitive to have social capital enter the utility function directly to represent the intrinsic utility of social contacts. Its lacking is justified by Chou (2006) with technical reasons, i.e. "for tractability's sake"[25] (p. 896). The household maximizes utility keeping in mind several equations of motion, i.e. one for economic capital, one for human capital and one for social capital.

This maximization problem cannot be solved explicitly using the tools from dynamic

[25]This is an irritating point because the model can nonetheless not be solved explicitly.

optimization, but only numerically. Also, comparative dynamics can only be done using simulation methods and the results of this exercise are rather trivial: specifically, Chou (2006) claims that the overall stock of social capital will be lower the more individuals value present over future consumption. Moreover, the more efficient the creation of social capital and human capital is, the more social capital will be created.

The clou of Chou's model are the spillover effects of social capital on the creation of different forms of capital and the effectiveness of other processes in the economy. To do so, aspects of micro and macro level social capital are mixed. Individuals invest in social capital, which is a feature of micro level social capital, but it then has spillover effects, which is a feature of macro level social capital. Unfortunately, what would have been most interesting about this model, the transition from the micro to the macro level, is not modelled at all, but skipped as a representative individual model is used[26]. The modelling of this transition has already not been satisfactorily solved by Coleman, Putnam and Fukuyama as pointed out in the respective sections 2.1.4 to 2.1.6. While it might be imaginable that relational social capital is "assisting [an individual] in the accumulation of human capital" [ibid., p. 890], it is highly problematic to argue that individuals high in social capital benefit more from "financial development" (ibid.) or are able to capture the entire benefits of innovations they help diffusing via the networks they are a member of without specifying the mechanism how this can come about.

What is to Learn?

Looking at the way social capital is modelled in economic theory is worthwhile. Different from the social theorists looked at in section 2.1, with the notable exception of Bourdieu, a much stronger emphasis is put on the costs of creating and maintaining social capital. Here, the proverb "There's no such thing as a free lunch" made popular in economics by Friedman (1975) reverberates. Moreover, the two models that actually treat social capital as capital, i.e. by Glaeser, Laibson, and Sacerdote (2002) and Chou (2006), agree that social capital is actually invested in purposefully.

The weakness of the models investigated here is the superficiality of the conceptual treatment of social capital. This is especially striking vis-à-vis the concepts outlined in section 2.1. While Becker (1974) cannot be blamed for this as his model was only recently reinterpreted by Esser (2008) to describe social capital, it is lamentable for Glaeser, Laibson, and Sacerdote (2002) and Chou (2006). Both approaches assume some sort of spillover effects between individual and community or society level social capital, but do not motivate this assumption in greater detail. The same is true for details of the benefits that originate from social capital possession. Summing up, it is fair to say that the social capital concepts developed outside economics are rather picked up and used by economists, maybe with a small economics-related focus added,

[26] The transition from micro to macro is also a hotly debated issue in macro models, including endogenous growth models which employ the representative individual framework, see e.g. King (2012) for a critique.

with neither any major contributions added nor any of the problems, e.g. the micro-to-macro-transition in the concept especially by Putnam, solved.

2.3 Relational Capital and System Capital

As has been shown in section 2.1, the five most prominent authors in the debate on social capital deliver five different social capital concepts. These concepts, although they also share similarities, differ markedly in two related points: firstly, the question whether macro level norms also constitute social capital and, if they do, whether they are related to social capital on the individual level, and secondly, the question to whom social capital belongs, i.e. whether it is an individual or a collective asset. This last point is connected to the question whether the benefits connected to its possession mainly accrue to the individual or to society as a whole. In the following section, an investigation into these questions will take place using the concepts of *relational capital* and *system capital* introduced by Esser (2008). Building on this, a re-examination and comparison of the level of analysis of the five concepts presented above will be undertaken. Moreover, a working definition will be presented for the term *social capital* that will be used for the remainder of this thesis.

Esser (ibid.)[27] argues that the two different forms of social capital identified in the previous chapters, firstly, obligations and credit slips and, secondly, macro level norms are theoretically very different and that subsuming them under the same term "social capital" is bound to lead to confusion. Esser's (ibid.) point is that the two forms are different with respect to the degree of "*autonomy* or *heteronomy* in the production and use" (p. 23, sic). An individual A is relatively autonomous on when and how to do a favor which creates a credit slip or when and how to access another individual B's resources using outstanding credit slips, given that the individual B honors the obligation connected to the credit slip. Social capital in the form of obligations and credit slips thus comes with a large degree of autonomy. Consequently, it has many features of a private good. However, an individual is less autonomous when it comes to the question which macro level norms are valid in a society. Such norms exhibit properties of, as Esser (ibid.) puts it, "collective goods" (ibid.). If effective, every person in a society can benefit from them in the same way, i.e. they are non-excludable and non-rival. Esser (ibid.) thus proposes to use the terms "relational capital" (p. 25) for forms of social capital that have properties similar to that of private goods and "system capital" (ibid.) for forms of social capital where the collective good aspect dominates. In the following section, two concepts will be elaborated on in more detail. However, this treatment will be kept short as large parts of it have already been pointed out in the respective sections of parts 2.1.4 to 2.1.6 of this thesis.

[27] This article is a modified and translated version of a part of Esser (2000).

2.3.1 Relational Capital

Esser (2008) claims that three aspects are important for an individual's relational capital. The first aspect he points to is the individual's "positional capital" (p. 30), the second is the individual's "trust capital" (ibid.) and the third is the individual's "obligation capital" (ibid.) In the next part, all three aspects will be addressed in turn.

The idea behind positional capital is that, in a network, some positions are more valuable than others. This idea was introduced into social capital theory by Burt (1992) (c.f. chapter 2.1.3 of this thesis). Especially non-redundant ties give an individual access to a most diverse set of informations. However, Esser argues that optimizing one's position in a network is not sufficient since, in order to get access to information, an individual needs to be trusted in by those he is connected to. His argument is that this is impossible if the individual is optimizing his network too openly. This is especially so since openly keeping contacts for purely utilitarian reasons is, according to Esser, socially unacceptable in modern societies. An individual A thus needs to have at least some friends that are redundant contacts, i.e. people he is friends with for reasons that do not have to do with improved access to information. They serve as a signal to other individuals that individual A is not merely interested in keeping contact to them due to his interest in improving his position in the network.

Esser points out that bringing oneself into a strategic position is not enough to reap all the possible benefits of positional capital. A lot of interesting information will only be passed on to another individual if that individual is trusted not to misuse this information. This is an individual's trust capital. Trust can of course develop if the individual did not misuse the information on previous occasions and if he honored the obligations he had from getting these interesting informations in the past. Trust capital may thus be seen as related to the concept of thick trust discussed above. However, even if two individuals have never interacted with each other before, they both may have a reputation to be trustworthy. A reputation to be trustworthy of individual A facilitates obtaining information e.g. from an individual B with whom an individual A has not interacted before. This is because individual B is more willing to hand out information as he expects it not to be misused. Esser argues that having a reputation to be trustworthy allows an individual A to access other individuals' resources and hence constitutes capital by itself.

The idea of reputation as a capital resource may be seen as sharing aspects with Coleman's (1990) action rights bank and Putnam's (2000) favor bank: an individual A has a deposit he can draw on in interaction with other individuals he has not previously interacted with. However, there is a marked difference: especially Putnam's favor bank works such that an individual A, who has a deposit there, can ask some random individual B to do him a favor, although they share no acquaintances. It is unclear how individual B is to know whether individual A really has a favor outstanding and how individual B is to be compensated for his doing the favor to individual A, with all the incentive problems involved (c.f. p. 31). This is different in Esser's concept of trust

capital. Here, having a reputation merely helps an individual A to be the first in a relationship to receive a favor as it signals his trustworthiness. Nonetheless, individual B receives a credit slip on this occasion in order to have the favor returned by individual A at a later point in time.

The last part of relational capital Esser brings up is obligation capital. It is precisely what Coleman means when writing about obligations and expectations as a form of social capital: one individual does a favor to another individual and receives a credit slip in return due to a macro level norm of reciprocity effective in the respective society. Credit slips can be redeemed at some future point in time more or less at the will of the individual holding the credit slip, so the analogy to privately owned capital is apparent. Favors do not cancel out completely [due to the infungibility of social capital Coleman already discusses], so the longer a relationship between two individuals lasts and the more favors have been done and returned, the more obligation capital they possess.

In addition to this process already described by Coleman, Esser points out that creating obligation capital is a delicate process. His argument is, as already mentioned, that there is a strong norm on not maintaining social relationships for instrumental purposes. Thus, he argues, if an individual A ever gives but the slightest hint that he is keeping the relationship to another individual B mainly to gain access to individual B's resources, his investment in social capital will have been in vain. Thus, different from other privately owned economic capital, the possibility to overtly invest in relational capital is limited.

It is apparent that the three parts that form relational capital interact. Especially trust capital and obligation capital are important in generating a payoff from one's positional capital. However, a high obligation capital also leads to a better reputation, i.e. higher trust capital, as it means that an individual A has fulfilled his obligations in the past, making it easier for individual A to start new relationships as he is immediately trusted in. This in turn makes it easier for individual A to generate obligation capital or positional capital returns from these new relationships.

2.3.2 System Capital

As mentioned above, the term *system capital* is used by Esser to describe those features attributed to social capital in the literature where social capital is mainly seen as a good owned by entire societies or at least very large groups. He mentions three aspects that are important for the system capital in a society. The first aspect is "system control" [Esser (2008), p. 38], the second is "system trust" (ibid.) and the third is "system morality" (ibid.) In the next part, all three aspects will be elaborated on in turn. The main point will be that, although relational capital can plausibly explain how these mechanisms work at the scale of small groups that exhibit closure, it is unclear how the micro-to-macro-transition to the level of the entire society can take place. Thus, relational capital and system capital may well describe conceptually more or less unrelated concepts, that both share the term *social capital* as their name.

For Esser, system control denominates the ability of a society to monitor the behavior of its members. He argues that system control can help to "overcome problems of collective behaviour fairly easily" [Esser (2008), p. 38]. This is "because free riders will be detected" (ibid.) and credit slips can be given to those who "unselfishly contribute[s] to the community" (ibid.). There is a marked resemblance to Putnam's idea of generalized reciprocity here: if an individual A does a favor towards a stranger, in a society characterized by general reciprocity, it will be returned to him by someone else. In Putnam (2000), the unsolved question is who among the many other members of society is to be singled out to do individual A the favor? Esser proposes the same solution to this dilemma already proposed by Coleman (1990): system control works best in stable, close-knit networks which exhibit closure. Then, however, no transition to the macro level of society is possible, which is also admitted by Esser.

System trust, the second aspect identified by Esser, is "a diffuse and generalized trust in the proper functioning of the system" [Esser (2008), p. 38]. Its archetype is trust as used by Fukuyama, but also Putnam's thin trust. Esser (ibid.) also uses the term "social trust" (ibid.) for system trust. He argues that system trust develops from system control, i.e. that in a society where system control is working, people generally put trust in each other.

The last aspect of system capital Esser (ibid.) points to is system morality. It represents what Coleman (1990) describes as internalized norms, i.e. norms (or values) that individuals conform to (or act in line with) without extrinsic motivation. Without specifying how the mechanism works precisely, Esser (2008) argues that system morality can "considerably reduce the risk of social dilemmas" (p. 39) and reduce "the costs and risks of all individually or collectively useful transactions" (ibid.). What readily comes to mind here is the norm of reciprocity: if an individual has internalized a norm of reciprocity, this will help him in creating relational capital as he will tend to honor the obligations he has with other individuals for favors he has received in the past.

Esser (ibid.) also does not specify in detail how system morality comes into existence. He claims that it develops from system control and system trust, but he does not describe a mechanism. Coleman disagrees here. He argues that the internalization of norms requires socialization. This socialization should be aimed at by strengthening "the internal sanctioning system" [Coleman (1990), p. 294] of an individual instead of employing external sanctions. As applying external sanctions is the mechanism which is mainly used in system control, the connection between system control and system morality seems at least vague.

2.3.3 Level of Analysis

As has already been shown in section 2.1, apart from the definition of social capital used and the question whether it is an individual or a public good, the level of analysis is not the same among the five authors discussed either. This applies for the entire literature on social capital. When studying the literature, the question is always: what

level of analysis is used by the author to investigate social capital? Do authors look at individuals and the incentives they face or do they rather look at societies as a whole and give little attention to the incentives faced by the individuals? A brief summary of the authors' observations regarding this point will be given in the next section:

The author which is most clearly focussed on the individual is Burt (1992, 2000, 2005). At first sight, Coleman's (1988, 1990) object of analysis seems to be the individual, too. However, two reservations have to be made here: firstly, as pointed out, Coleman is unable to explain how individual behaviour can lead to macro level norms, which he defines as a form of social capital. Thus, a part of his concept remains exogenous from a standpoint of methodological individualism. Secondly, Coleman implicitly attributes the same level of social capital to all children who attend a catholic school in his empirical research, thus making a step away from methodological individualism and towards methodological holism. The same is largely true for Bourdieu (1983). He attributes the level of social capital to individuals. However, as mentioned, he introduces elements of methodological holism by giving the property of an agent to groups at several occasions without explaining their internal mechanisms. Nonetheless, for both Bourdieu and Coleman, social capital is a micro phenomenon insofar as they use it to primarily explain phenomena on a micro level. As Bourdieu (1986) puts it, his concept of social capital aims at explaining "all cases in which different individuals obtain very unequal profits from virtually equivalent (economic or cultural) capital" (p. 248)[28]. Lin (1999) argues that both authors take a "relational" (p. 32) perspective insofar as their concepts focus on the relations between individuals on the one hand and between individuals and exogenous elements of the social structure on the other hand. This is also true for the model by Glaeser, Laibson, and Sacerdote (2002), where spillover effects from the societal social capital stock on the individual social capital stock are assumed, but treated as exogenous by the optimizing individual.

Coleman's notion of externalities connected to social capital is picked up by Putnam (1993, 2000). In principle, he also sees social capital as the attribute of an individual. However, as has been discussed above, he expands the concept to explain macro level phenomena. In his empirical application, he also uses macro level observations to explain macro level phenomena, e.g. by creating a social capital index for entire US states. Thus, Putnam effectively adds a macro level perspective when it comes to the effects of social capital. This is also true for Chou (2006), although it is at first sight concealed because he uses the representative agent framework common in endogenous growth theory. Fukuyama (1995a, 1995b) is concerned with macro level phenomena too. Yet, very different from the four other authors discussed, his level of analysis is fully holist. There is simply no role for any individually acting persons in his theory as social capital is the property of communities [in fact, Fukuyama thinks of nations by this term]. These communities also reap the benefits from their stock of

[28] Although, of course, Bourdieu (1983) ultimately aims to explain a macro phenomenon, i.e. the reproduction of social classes, he approaches it by always looking how this comes about at the level of the individual.

social capital. Especially the work of Putnam and Fukuyama continues to serve as the (thin) theoretical justification for empirical studies regressing microdata on trust on the values of macrovariables in different entities, typically US-counties [e.g. Rupasingha, Goetz, and Freshwater (2006)], US-states [e.g. Andrews and Brewer (2012)] or entire countries [e.g. Dinda (2008)].

Consequently, system capital has come to explain quite a number of macro level phenomena. It includes less criminality [Putnam (2000)], higher overall wealth and economic development [Westlund and Adam (2010), Woolcock (2010), Dinda (2008), Putnam (2000), Fukuyama (1995b)], better working democratic institutions [Rossteutscher (2008), Putnam (2000)], facilitated cooperation for collective action [Woolcock (2010), Ahn and Ostrom (2008), Paldam and Svendson (2001), Woolcock and Narayan (2000)], or for environmental management [Adger (2010), Rydin and Pennington (2000), Ostrom (1994, 1990)], more innovation [Akçomak and ter Weel (2009), Chou (2006)], more entrepreneurship [Westlund and Bolton (2003)], superior public services [Andrews and Brewer (2012)], higher financial development [Guiso, Sapieza, and Zingales (2004)] and better community development and governance [Lelieveldt (2008), Newman and Dale (2005), Bowles and Gintis (2002)].

2.3.4 A Definition of Social Capital

Given the variety of different concepts and social capital definitions, a working definition for the remainder of this text is needed. As has already become clear, it should focus on micro level social capital, i.e. relational capital, which is satisfactorily explainable from the individual perspective adopted in this thesis. What readily comes to mind is a functionalist approach much in the spirit of Coleman: whatever an individual finds useful, or, in the language of economics, enhances his utility, and is available to him because of his social connections constitutes his social capital. This approach seems attractive at first glance since it readily includes a wide array of different phenomena as social capital.

The problem with such a definition is that it is difficult to operationalize it empirically: While it gives a clear enough picture what is meant by the term social capital for theoretical work, it leaves ample room for discussion how it should be measured. Van Der Gaag and Snijders (2004) propose a more narrowed-down definition of social capital: “The 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 the relationships” (p. 155). When a wide definition of resources is employed, this resource-oriented definition gives an analytical handle to pin down the aspects of social capital that an individual finds useful, i.e. increase his utility. Thus, e.g. the access to information and an individual’s reputation will be understood as resources, i.e. Esser’s (2008) positional capital and trust capital, but also the possibility to spend time together with others in an enjoyable or helpful way. The definition by Van Der Gaag and Snijders (2004) will thus be used to operationalize social capital in this thesis.

2.4 Is Social Capital Really Capital?

This section comprises the discussion whether *capital* is really a good term for the concept of social capital. This is an important discussion as one of the main aims of this thesis is to find out whether there is a concept of social capital that can be used to complement the concepts of capital already prominent in economics. Moreover, two prominent authors, i.e. Arrow (1999) and Solow (1999)], doubt whether social capital is actually a good term on the grounds that the implied analogy to economic or human capital is misleading. Arrow (1999) argues that capital entails three aspects, namely "extension in time, [...] deliberate sacrifice in the present for future benefit, and [...] alienability" (p. 4). All three of these aspects will be discussed in turn. Moreover, some further details of the social capital concept outline above will be highlighted.

Durability

There is no principle disagreement on the point that Arrow (ibid.) lists as "extension in time" (p. 4). Arrow (ibid.) admits that social capital has an effect that goes beyond the imminent moment. This is also clear for Coleman (1988), but it is more apparent in Bourdieu's (1983) writing, who begins his essay on social capital by stating that the "social world is accumulated history" [Bourdieu (1986), p. 241].

An interesting point connected to the aspect of durability is the question of depreciation, i.e the question of the time span over which social capital is durable. Astone et al. (1999) argue that social capital depreciates, much like human capital and most forms of physical capital but, as Adler and Kwon (2002) point out, unlike financial capital[29]. This argumentation is also shared by Bourdieu (1983) and Coleman (1990). Indeed, this is intuitive: social relationships that are not "maintained" [Bourdieu (1986), p. 250; Coleman (1990), p. 321] can less easily be used by an individual A to access the resources of another individual B, i.e. they lose their value. Interestingly, however, Adler and Kwon point out that unlike physical capital but akin to human capital, social capital does not depreciate with use, but with non-use. This is apparent in Coleman's analysis of social capital: according to him, obligations that form social capital do not cancel out when used, but rather increase the total available amount of social capital. Thus, to stay with the example of a bank account: a withdrawal and depositing of equal amounts of social capital of two individuals on their hypothetical capital accounts would result in both being *richer* in social capital than before.

The Question of Purposeful Investment

The aspect Arrow (1999) finds problematic is that of the "deliberate sacrifice in the presence for future benefit" (p. 4). He claims that social capital is a byproduct of social interaction made for other reasons, namely the intrinsic benefit of social interaction.

[29]Note that it may be argued that inflation represents the depreciation of financial capital.

Bourdieu, Coleman and Putnam, together with most of the social capital literature, agree that most investment in social capital takes place unconsciously as a byproduct of other activities aiming at the obvious utility gain that lies in the interaction with others. However, there are cases where social capital is purposefully invested in and where the intrinsic benefit of interaction does not serve as the main motivation, as both Bourdieu and Coleman admit, a point also stressed by Robison, Schmid, and Siles (2002). Esser (2008), as elaborated on above, argues that a purposeful investment in social capital has to be concealed because it is socially unacceptable to openly invest in social capital. On the other end of the spectre, economists dealing with social capital, such als Glaeser, Laibson, and Sacerdote (2002) and Chou (2006), naturally assume that conscious investment in social capital takes place.

The argument brought up by Arrow (1999) has been further discussed in the literature. The question is whether the investment in social capital really needs to be deliberate for social capital to constitute capital? Astone et al. (1999) propose to use Samuelson and Nordhaus' (1987) definition of capital, which splits up this aspect of Arrow's capital definition into two parts: firstly, capital needs to be the product of a "prior productive process" [Astone et al. (1999), p. 3]. In the case of economic capital, this productive process usually entails foregoing consumption in the present period. This part of the definition used by Astone et al. thus captures what Arrow (1999) means by "deliberate sacrifice in the presence" (p. 4). As pointed out, some authors share the view that social capital is predominantly purposefully invested into. Of course, if the social interaction creating social capital is motivated by the intrinsic benefit it conveys, no deliberate sacrifice takes place. However, the same may also be true for human capital: to some individuals, accumulating human capital may give an enormous intrinsic benefit. The idea of the prior productive process as a perquisite for the creation of capital as proposed by Samuelson and Nordhaus (1987), instead of a deliberate sacrifice, thus appears to be more appropriate. Given this definition, social capital can constitute capital.

The second part of Samuelson and Nordhaus' definition of capital used by Astone et al. claims that capital is productive in a production process, i.e. that social capital is capital as it helps in achieving certain ends. This is the "future benefits" (p. 4) part of Arrow's (1999) definition. This aspect is present in Bourdieu (1983), but visible most clearly in Coleman's definition of social capital, namely that social capital "facilitate[s] certain actions of individuals [...] within the structure" [Coleman (1988), p. S98]. These two aspects are also brought up by Adler and Kwon (2002), albeit without explicit reference to Samuelson and Nordhaus (1987), to check whether social capital is capital.

Alienability

A third aspect Arrow (1999) brings up is the question whether social capital is "alienable" [Astone et al. (1999), p. 4], i.e. whether it is bound to a specific individual or not. Both Arrow and Astone et al. claim that social capital is not alienable. This no-

tion is explicitly confirmed, with reference to Loury (1987)[30], in Coleman's social capital concept.

Bourdieu (1983) disagrees on this point. He assumes that the transfer of social capital is in principle possible. However, this transfer process is problematic for two reasons: firstly, its success is a priori unsafe, i.e. it is unclear for the transferring individual how much of his social capital will be honored after the transfer to the new individual. Secondly, it is time intensive and thus, after all, intensive in economic capital. The logic behind this argument is that the amount of time available to an individual is ultimately limited by his necessity to earn money. Beside the fact that it is, to a certain extent alienable, Bourdieu argues that social capital is delegable, i.e. that the entire social capital of a group can be placed in the hands of a single individual or a small number of individuals. Social capital being delegable is, however, something different from it being alienable. Delegating social capital is, according to Bourdieu, only possible within a group, which is by itself based on relationships which constitute social capital. Moreover, different from when it is alienable, it is not lost for the individual delegating it.

Summing up, it is safe to say that social capital is not as easily alienable as economic capital. However, this should not be a problem when discussing whether capital is a good term for social capital. Astone et al. point out that, while physical capital is usually alienable, the property of non-alienability also holds true for human capital. Even if social capital is non-alienable, this would thus not be problematic for the use of the term *capital* in social capital.

Dependence on Being Honored by Others

Bowles and Gintis (2002) argue that social capital is not a good term as capital "refers to a thing that can be owned" (F. 420). According to them, social capital cannot be owned. Adler and Kwon (2002) elaborate on this argument: social capital is different from other forms of capital as its existence depends on being honored by other individuals. While economic capital is usually guaranteed by the legal system, human capital cannot be taken away from a person[31] as it is deeply entangled to the person's physical presence. Social capital, is, as pointed out, also bound to a person's physical presence - but unlike human capital, it depends on other people honoring it, and unlike economic capital, it is not protected by the legal system[32]. Both economic capital and human capital might of course lose value if the demand for them in the general market diminishes, and for certain highly specialized kinds of economic and human capital, there

[30] Loury (1987) discusses this question in the context of affirmative action.

[31] Bourdieu (1983) makes the interesting case that the value of the cultural capital, which is, as pointed out, related but not similar to human capital, increases if it is institutionalized, i.e. if the possessor of the cultural title holds a title confirming it. These titles can, in principle, be taken away just like economic capital can be expropriated. However, this is not the focus of discussion here.

[32] Adler and Kwon (2002) state that the value of a certain type physical capital goods, called network goods, also depends on other individuals. A telephone is of little use, and thus of little value, if there is no one to call.

may only be one specific customer demanding it. This may create a situation where the honoring, and thus the value, of that specific capital depends on the demand of one specific other customer, a situation similar to that of the honoring of social capital. But while this is a rarely occurring special case for economic and human capital, it is the usual case for social capital. Both Bourdieu as well as Coleman accordingly agree that investing in social capital is a comparatively risky investment as it is the form of capital most likely to be defaulted on, as far as defaulting is an appropriate term for an obligation which is not litigable.

As a consequence, in the language of credit slips and outstanding obligations used by Coleman, social capital may be a usable resource only as long as the amount of outstanding favours is somewhat balanced, or both individuals involved at least believe it to become balanced at some point in the future. This can easily be included in Coleman's concept: if social capital is represented by credit slips, an individual A asking for a favor will give a credit slip to another individual B. Individual B may be confident that the favor will be returned at some point. However, further requests for favors by individual A that are not returned at some point will result in an imbalance of outstanding credit slips, leading the individual B to become increasingly reluctant in receiving further credit slips for fear of default. At some point, individual A will notice that, just like a bank account, an account of social capital may run dry if withdrawals are unaccompanied by corresponding deposits.

Fungibility

A final point Astone et al. (1999) bring up is the question of fungibility, defining it as "the ability of a resource to be used in a variety of ways" (p. 4). They cite Coleman (1990), who argues that social capital is "not completely fungible, but fungible with respect to specific activities" (p. 302). Of course, and as Coleman and subsequently Astone et al. and Robison, Schmid, and Siles (2002) agree, this is also true for human and physical capital. It is, in effect, an almost trivial argument: specific resources are good for specific causes, and some are good for a wider array of specific causes than others. Bourdieu (1983) brings up a related issue, namely that different forms of capital can be transformed into one another in a conversion process requiring time and implying losses. Thus, complete fungibility of social capital could eventually be achieved, but at a cost, a conclusion also drawn by Adler and Kwon (2002).

Adler and Kwon bring a related point into the discussion whether social capital actually constitutes capital. They argue that it can serve as a substitute for other forms of capital as well as a complement to them. This is certainly recognized by Coleman, who gives the example of social capital granted to a doctor as a substitute for higher pay. Bourdieu does not make a statement concerning this question. However, he (2008) finds that cultural and economic capital are imperfect substitutes for each other at least for the individuals who possess them. The result of this incomplete fungibility are different outcomes between individuals with high cultural and low economic capital and

those with high economic and low cultural capital. This may also be true for social capital as it makes possible exchanges not usually made on economic markets.

2.5 Predictors of Social Capital Possession

The aim of this chapter is to develop various hypotheses on the predictors of individual social capital possession[33], that can either be found in the literature or that follow directly from the social capital theory outlined in the previous parts of this chapter. The hypotheses developed here will be tested in an empirical study using the indicator that will be developed in the next chapter of this thesis. The aim will be twofold: a first aim is to test this indicator. An indicator that would reject all hypotheses that follow from the theory would obviously be a problematic indicator. The question that would arise is whether the indicator developed is actually related to the theory that was used to create it. A second aim is to test the theory: some hypotheses are disputed in the theory, some aim at different conceptions of social capital and in some cases the predicted effects even run in opposite directions. Here, the indicator can be used as a tool to see whether some hypotheses actually echo reality. In the case of conflicting hypotheses, the indicator can be used to get an idea which effect dominates. A systematic development and testing of hypotheses regarding individual level social capital possession has hitherto not taken place. The study that comes closest to this research endeavour is that by Pena-López and Sánchez-Santos (2017). However, they include only a limited number of determinants and do not provide for theoretically developed research hypotheses. Moreover, their study uses a conceptually different approach to individual level social capital, as will be discussed in more detail in the next chapter of this thesis.

Thinking about predictors of social capital is complicated by the fact that it is not always obvious whether a predictor is a determinant or an effect of social capital possession. It is thus unclear in which way the causality runs, i.e. whether a certain variable outcome determines an individual's social capital or whether the individual's social capital determines a certain variable outcome. Moreover, in many cases, the effect is not unidirectional. Social capital and other variables might influence each other at the same time. This is a direct consequence of the definition of social capital as access to (other individuals') resources: having access to resources enhances an individual's possibilities and thus changes his life. This can include the variables that originally caused the individual to be able to build up social capital in the first place. While it is futile to go into more detail on this at this very abstract level, this matter will be deeper investigated when discussing the respective aspects.

This section will proceed as follows: for each hypothesis, its theoretical background is briefly explained. If there is a controversy on an hypothesis, some light will also be

[33] As pointed out by Lin and Erickson (2008) and discussed in section 2.1, the resources accessed by an individual as his social capital are not really possessed by him, but just accessed. Nonetheless, the term social capital possession will be used since it highlights the analogy to human and economic capital.

shed on it.

2.5.1 Demographic Variables

In this section, it will be illuminated whether an individual's age or gender should be expected to have an effect on his social capital.

Age Effects

Social capital theory predicts that, ceteris paribus, an individual's age has consequences on his stock of social capital. There are two opposing effects at work. Firstly, social capital can be expected to increase as an individual grows older. The argument is that people start their life with relatively little social capital. The reason for this is as follows: as explained on page 51 of this thesis, social capital is more or less inalienable. If it is really inalienable, social capital cannot be bequeathed. Even if one follows Bourdieu (1983) on this, the transmission of social capital is only possible to a relatively limited extent as the transfer is time-intensive. Thus, the social capital of a newborn is more or less limited to what comes from the sympathy of his immediate relatives and other individuals who are attracted by his cuteness. Obtaining any further social capital takes time. Thus social capital can be expected to increase as time passes, i.e. with the individual's age.

As a matter of fact, this does not mean that social capital grows inexorably with an individual's age. At some point, effects connected to an individual's life-cycle may dampen the creation of social capital, e.g. increased opportunity cost of time when an individual enters into full-time work or starts a family. Time use research shows that parents, and especially employed parents, are the social groups that have least leisure time [Zuzanek and Smale (1999)]. This means that the creation of social capital should be depressed during these years.

Secondly, from a certain age onwards, social capital may even begin to decrease again. There are two arguments for this. One follows from the idea that social capital cannot, or only to a limited extend, be bequeathed, as pointed out above. The incentive to invest in social capital in order to pass it on to the next generation, a motive well accepted in the literature on bequeathing economic capital [see e.g. Dynan, Skinner, and Zeldes (2002)], is thus inexisting or at least depressed.

Moreover, the sum of utility flowing from social capital, be it intrinsic or triggered by the access to resources, i.e. what economists would refer to as a net present value, is decreasing as life is drawing to a close. It would thus be consequential to expect that an individual A with a relatively small remaining lifespan would invest less to create social capital. However, this effect is not limited to him. Due to the double-sided nature of social capital pointed out by Coleman (1990), i.e. the fact that it always takes two individuals to create social capital, said net present value of a social capital relationship is also decreasing for any individual B an individual A with a relatively small remaining

life span would try to form a social capital relationship to. Independent from his own depressed incentive to create social capital, this makes it also more difficult for such an individual A to do so. A final aspect is that longstanding social capital relationships an individual A has become fewer as he grows older as it is more probable that the counterparts die the older individual A, and consequently the counterparts, become.

Concerning the direction of the effect, it is relatively clear that an individual's age determines his stock of social capital and not vice versa. Our age (albeit not our lifespan, but that is a different matter) is very much exogenous.

Summing up, the research hypothesis would be that a distribution of social capital over the life cycle can be expected that looks as follows: individuals start with relatively little or no social capital, which is then increasing as they grow older. However, as individuals grow old, their social capital should be expected to decrease again. Although they do not take into account the varying opportunity cost of time and the possibility of bequeathing social capital, the relationship between age and social capital depicted here results in a pattern also predicted in the model by Glaeser, Laibson, and Sacerdote (2002) discussed in section 2.2.

The Role of Gender

Gender plays a subordinate role in economic theory. The major exception is literature following Becker's (1981) research. This area of research has become known as family economics. Basically, its starting point is that, at least traditionally, women and men specialized in different things[34]: women specialized in childrearing and "other domestic activities" [Becker (ibid.), p. 14], while men have been active in the market sector. The advantage of this division of labor is, according to Becker, that productivity advantages that follow specialization can be reaped. Thus, the hypothesis developed here is not really about gender, but about role models lived whose prevalence may be correlated with gender. This may still be present today, although, as Becker states (already in 1981!), it used to be even more true in the past.

Moreover, in line with its gender specific role, an individual invests more either into his (or her) productivity in the market sphere or into the private sphere of the household. In the social capital indicator outlined in the next chapter of this thesis, these are precisely the spheres that are covered by the different measures. Thus, if an individual specializes in one of these spheres according to his (or her) gender, this specialization should, consequentially, also include social capital connected to this sphere. As a consequence, if men and women live the traditional roles, this should also be reflected in their distribution of social capital. However, Putnam (2000) argues that the workplace can be a good place to form new connections and to get to know people, i.e. to create new social capital also for private purposes. Moreover, he points out that "[t]he role of

[34] Becker (1981) also discusses the question whether the different positions of men and women that result from his models are determined biologically. However, his conclusion is that his theory does not lose explanatory power even if they are not. Thus, the author has no intention and no need on lingering on this ideologically supercharged question.

the housewife is often socially isolating" (p. 195). Consequently, while male individuals that specialize in the market sphere should have more work-related social capital, female individuals that specialize in the private sphere might or might not have more private social capital.

The caveat to this entire reasoning is of course that individuals live the traditional role models. If female labor market participation is taken as an indicator for their prevalence, this is an assumption which becomes increasingly difficult to sustain. According to a report from the German Federal Statistical Office, the labor market participation of women is only about 10 per cent lower than that of men in all age cohorts [Mischke and Wingerter (2012)]. The same report, however, also states that women are much more likely to hold part-time jobs in order to have time to fulfil their family- and household-related duties. On the one hand, this leaves them, according to Zuzanek and Smale (1999), as one of the groups with the least leisure time and thus the least time to create social capital, which should depress their level of social capital. On the other, being active in both the private and the market sphere may also boost social capital.

The likely direction of the effect is that the choice of the role model a woman follows determines her stock of social capital. However, this does not need to be the case: women who have little social capital may find it difficult to find appropriate childcare. They would thus have little choice but to engage as a full-time or at least part-time mother. While in Germany a legal entitlement to child care for children from the age of one year onwards has been introduced in 2013, this has historically been an issue for many mothers. Hence there may be cases where the effect runs both ways, i.e. where a low stock of social capital forced a women to reduce work-hours, which in turn reduced her social capital.

Summing up, only one clear hypothesis on the relationship between social capital and gender related roles can be formulated: working men should have more work-related social capital relative to women who do not participate in the labor market. For women who are also active in the labor market, no clear-cut research hypothesis can be formulated.

2.5.2 The Capital Analogy

In this section, it will be illuminated whether an individual's stock of other capital should be expected to have an effect on his social capital. Moreover, it will be investigated whether conscious investment behaviour into social capital actually takes place and what may be the effect of an individual's attitude towards reciprocity on his stock of social capital.

The Stock of Other Capital

Concerning the effects of an individual's stock of other capital, i.e. economic and human capital, two effects are imaginable: firstly, social capital and other forms of capital

might be substitutes. Secondly, social capital and other forms of capital might be complements. Interestingly, there are good arguments and prominent proponents for both perceptions: Coleman (1990) claims that specifically economic capital serves as a substitute for social capital. Bourdieu (1983) on the other hand argues that other forms of capital are complementary to social capital. Both positions will briefly be illuminated in turn:

Coleman (1990) thinks that there may be an inverse causality between an individual's possession of economic capital and an individual's dependency on social capital. If an individual A can pay someone to help him out in certain situations, he is in no need to access such resources via his social capital. Thus, his incentive to purposefully create social capital to gain access to another individual B's resources is depressed and moreover no opportunity to create social capital as a side effect of social interaction might be present since the latter might simply not be necessary. Consequently, according to Coleman, a clearly negative effect of economic capital on the stock of social capital can be expected. This view is shared by Xu and Wang (2015), who find that individuals that have a high stock of social capital value thrift less. These individuals should thus be expected to have less wealth. Their argument is that social capital possession may serve as an informal insurance, which reduces the need to build up a stock of economic capital for emergency situations.

Interestingly, Coleman takes a different stance when it comes to human capital. Here, an argument analogous to that with economic capital outlined above could be made. Moreover, a possible argument would be that human capital increases the wage rate and hence the opportunity cost of time, which should, with time being the main ingredient in social capital formation, depress social capital creation. However, Coleman (1990) argues that there "often" (p. 304) is a complementarity here. His example is that of education: a child which has highly educated parents can learn more from them, i.e. create more human capital, if the relationship between them is strong.

The example presented by Coleman is a relatively special case, and he does not offer a more general explanation. The argument presented by Bourdieu (1983) why there is a complementarity between social capital and other forms of capital may be more convincing: Bourdieu argues that an individual A who possesses a relatively high amount of economic or cultural capital[35] is a more attractive partner to form a connection to as he can give access to a comparatively large pool of resources. Thus, as a consequence, such an attractive individual A needs to invest relatively little time to keep alive a relationship to another individual B. Although Bourdieu does not explicitly point this out, this also counteracts the effect that the opportunity costs of time are rising especially in an individual's human capital. Thus, following Bourdieu (ibid.), it should be expected that social capital is increasing in both economic and human capital. A complementarity between human and social capital is also predicted by Sequeira and Ferreira-Lopes (2011).

[35] As already pointed out, Bourdieu's (1983) concept of cultural capital is related to, but different from human capital.

Concerning the direction of the effect, it is helpful to differentiate between human and economic capital. As described above, Coleman (1988) argues that social capital may help in the creation of human capital. However, his example is limited to schooling, and generally most (formal) human capital creation takes place relatively early in life. In contrast, social capital creation takes place throughout life. Consequently, as an individual grows older, the effect of his human capital on his social capital can be expected to increase relative to the effect of his social capital on his human capital.

For economic capital, the bidirectionality of the effect is more apparent. Maybe, as noted before, economic capital helps or establishes a disincentive to create social capital. However, social capital may also help to create economic capital or create a disincentive to do so. It may be helpful in getting or advancing in a job, or in raising seed money and generating a customer base. However, the argument presented by Coleman also holds true in the inverse: having social capital may well depress the need of an individual to increase his economic capital and thus his effort to do so. As a result, for economic capital, neither the direction of the effect nor whether the effect is positive or negative can be inferred from the literature.

Summing up, the following can be said: Concerning economic capital possession, the effect on an individual's social capital is positive, zero (if the effects cancel out) or negative. For human capital, there seems to be a consensus in the literature that it is a complement to social capital.

Investment Behavior

The debate whether individuals consciously invest into social capital has already been briefly touched on page 50 of this thesis. There is an eager discussion in the literature whether, and to what extent, purposeful investment in social capital actually takes place.

The most extreme proponents on the side of those who argue that purposeful investment actually takes place are Glaeser, Laibson, and Sacerdote (2002). In their paper, they explicitly model the investment decision of individuals in social capital and assume that the individual under investigation rationally solves a maximization problem also taking into account his remaining lifespan, his opportunity cost of time and other factors. An example of similar quality is the work by Burt (1992), who argues that individuals should actively try to form connections in order to bridge structural holes and sever ties that are redundant. The contribution by Pena-López and Sánchez-Santos (2017) is a further example.

Then, there are more moderate points of view in the literature, which admit that investment into social capital takes place, but that not all social interaction is connected to the aim of creating social capital. Prominent proponents of this stance are e.g. Bourdieu (1983) and Coleman (1990). Bourdieu argues that investment into social capital may take place "consciously or unconsciously" [Bourdieu (1986), p. 249], thus explicitly allowing for the possibility of purposeful investment in social capital. The same

is true for Coleman (1990), who elaborates on this point in more detail: he explains that "most forms[36]" of social capital are created or destroyed as a byproduct of other activities" (p. 317) but also argues that for some uses, social capital is "the direct result of investment by actors who have the aim of receiving a return on their investment" (p. 313). His example is a "business organization" (ibid.), i.e. a firm, which is an unfitting example as the obligations created therein are typically fixed by justiciable employment contracts, a feature untypical for social capital relationships. A more fitting example would be a voluntary trade association, where businessmen meet in the hope to find new clients or partners for future business ventures.

Kadushin (2004) picks up this thought from Coleman, although he does not cite him in this context: he is generally sceptical towards the idea that investment is a good term for purposeful social capital creation, stating that "[t]he analogy to "investment" in "real capital" is the weakest aspect of social capital theorizing" (p. 87). Nevertheless Kadushin agrees that if something like purposeful investment in social capital takes place, this is in the world of business. For the private sphere, he denies the idea of conscious investment in social capital. The main point of his argument is that "most people [...] enjoy being with their friends for non-instrumental reasons" (ibid.), an argument also shared by Daly and Silver (2008).

Esser (2008), makes an additional point on conscious investments on social capital: having relationships for purely strategic reasons is contemned by society, or, as he puts it, "[t]he process of creating [...] obligations through credit slips is not compatible with open 'rational' and 'egoistic' reasoning and investments" (p. 35 f.). Esser argues that having some good friends, who are obviously not there for purely instrumental reasons, is an important signal an individual can send to potential contacts that he can be "trusted to and obliged in" (p. 36). This is relevant as creating obligations with another individual always means putting trust in that individual to redeem these obligations some day. Thus, he argues, even an individual optimizing his position in the social network, as Burt (1992) proposes, needs to have some close friends he is friends with for intrinsic reasons.

Concerning the direction of the effect, it is relatively clear that people who invest in social capital increase their stock of social capital, while it is difficult to imagine why the effect should work the other way around, i.e. why having more social capital would trigger more investment behavior.

Summing up, there is some scepticism in the literature whether a lot of conscious and purposeful investment in social capital takes place. The place where at least some authors like Coleman and Kadushin rather expect a conscious investment in social capital is the work sphere. The research hypothesis would thus be that conscious and purposeful investment in social capital should primarily be expected in the work sphere.

[36] As pointed out in section 2.1.4, Coleman's (1990) four of his six forms of social capital are rather different ways of how social capital can be useful, which can be aligned with the two main forms of obligations and norms.

The Norm of Reciprocity

In this section, an investigation into the role of an individual's attitude towards reciprocity on his social capital will take place. Reciprocity is important because, as already mentioned, social capital is not justiciable. Thus, with the mechanism of obligations and credit slips, its existence depends on the honoring of those credit slips by the individuals who have them outstanding. This honoring, in turn, depends, as pointed out above, on the adherence to a norm of reciprocity by said individuals. To make things more complicated, there are different variants of the norm of reciprocity. Putnam (1993, 2000) alone proposes three variants. A look into the literature on reciprocity brings further insights.

As already seen in section 2.1.5, Putnam, in his two seminal works on social capital employs three concepts of reciprocity but gives them only two names: "specific" [Putnam (ibid.), p. 20] and "generalized" (ibid.) reciprocity. In his earlier work, "Making Democracy Work", specific reciprocity is better described as comparative or matching reciprocity [Kolm (2006)]: an individual does another individual a favor, the other individual immediately returns the favor and the two individuals are done with each other. Kolm argues that this type of reciprocity can cause the person which is indebted to have feelings of "shame or guilt" (ibid., p. 380), which need to be relieved by returning the favor. It is very apparent that such a form of reciprocity is of little help in creating social capital: firstly, if all favors are returned immediately, there is no room for obligations to be outstanding. Secondly, feelings of shame or guilt are not a good basis for a relationship of any sort.

The second form of reciprocity Putnam (1993) proposes is what he calls generalized reciprocity, a concept very much akin to the reciprocity described by Coleman (1990): if an individual does a favor to another individual, and there is an effective norm of this type of reciprocity, then an obligation, or credit slip, comes into existence. This credit slip does need not to be cashed in immediately and, moreover, when it is redeemed one day, and a favor is done in return, it is not completely cancelled out. Thus, this type of reciprocity induces that the relationship between two individuals becomes ongoing. Kolm (2006) describes this form of reciprocity as "continuation reciprocity" (p. 380).

This kind of reciprocity, i.e. continuation reciprocity, can also be identified in the writings of Bourdieu. Kolm (ibid.) describes that continuation reciprocity and the sequential exchange of gifts are synonymous. This sequential giving of gifts is a core piece of social capital creation identified by Bourdieu (1983), who writes that social capital is created by thus transforming "contingent relations" [Bourdieu (1986), p.249] into "relations that are at once necessary and elective, implying durable obligations" (ibid.).

The third form of reciprocity Putnam describes is generalized reciprocity as used in "Bowling Alone" [see also chapter 2.1.5 of this thesis]. This form of reciprocity is such that individual A does individual B a favor, and some other day, individual B does individual C a favor, while some individual D does individual A a favor, and so on. It

is rather connected to thin trust and thus not relevant for individual level social capital creation.

Concerning the direction of the effect, it is clear apparent that social capital formation is helped if an individual adheres to the norm of continuation reciprocity. However, the reverse case is also plausible: Someone who has a large stock of social capital is interested in sticking to a norm of continuation reciprocity as the existence of his stock is effectively tied to a continued interaction with specific other individuals.

Summing up, the research hypothesis would be that individuals who see the exchange of favors primarily in the light of this continuation reciprocity should, ceteris paribus, have access to a larger stock of social capital while those individuals who see the exchange of favors primarily in the light of matching reciprocity should have less social capital available to them.

2.5.3 Social Networks

In this section, the role of an individual's social network in the creation of his social capital will be discussed. The point might seem trivial, but is nevertheless worth looking at: do connections to many people also improve the access to resources, i.e. do they increase social capital? Is it helpful to have many different places to meet people, e.g. a private network, a job, a voluntary organization and a social network site? To investigate into this, it will firstly be thought about the time spent in the private social network. Secondly, workplace effects will be looked at, i.e. an investigation will take place into the question how important having a job is for an individual's social capital creation. Thirdly, it will be checked how important the membership in all kinds of voluntary organizations is for an individual's social capital. Lastly, an investigation will take place into the the effect of membership in an internet-based social network site.

Role of Time Spent in the Private Social Network

As already pointed out, it is stressed especially by Bourdieu (1983), but also implicitly in the model of Becker (1974) in the interpretation by Esser (2008) and the model by Glaeser, Laibson, and Sacerdote (2002), that time is a highly important factor in social capital creation.

The intuition is clear: Intensive and repeated interaction is where social capital is created. In this kind of interaction, favors are done inevitably, even if there is no intentional or conscious social capital investment. Of course, intensive interaction may also take place in relatively little time and some intensive relationships between individuals may not rely on repeated interactions in high frequency. Nonetheless, a connection between time and social capital creation can be postulated for two reasons: Firstly, many of these intensive relationships that now may take relatively little time to maintain may have taken relatively much time to build up. Secondly, individuals should be expected to allocate their time such that they spend it with others they find it worthwhile spending

it with. Individuals who spend a lot of time with other individuals in their social network should thus, ceteris paribus, be expected to have access to more social capital.

Concerning the direction of the effect, it is clear that the time an individual spends with his family, friends and acquaintances in his social network and his social capital are so close to each other that it is not actually helpful to ask what determines what: social capital creation is a quasi-automatic byproduct of having friendly social interaction, and it is of course easy to spent time having friendly interactions with those people that an individual, for some reason, has social capital relationships to.

The research hypothesis would thus be that people who spend more time with their friends, acquaintances and family should have access to more social capital. This should, of course, be primarily true in the private sphere, but this may as well be true when it comes to work-related social capital, especially when contacts outside an individual's immediate workplace come into focus.

Workplace Effects

Apart from the private social network, it is also possible to investigate into the effects of regularly meeting other people at the workplace on an individual's social capital. Generally speaking, there are two competing effects at work when an individual enters into the paid labor force. These have already been illuminated in section 2.5.1: firstly, having a paid job increases the opportunity cost of time as the amount of free time is then limited. This effect would thus work in the direction of reducing an individual's social capital as time is the fundamental resource necessary to create social capital. Secondly, however, there is a consensus that the workplace is a good place to get to know people, colleagues and customers, and thus to create social capital [see e.g. Putnam (2000) and Kaasa and Parts (2008)]. This should be especially true for job-related social capital for obvious reasons.

The arguments outlined so far should not only hold true for employees, but also for individuals who are self-employed. Instead of colleagues, they have customers, other self-employed individuals they meet via the chamber of commerce or voluntary trade associations and their employees. All these factors combined should lead to comparable opportunities to create social capital.

What about the unemployed, then? Gallie, Paugam, and Jacobs (2003) argue that unemployment and social isolation are not directly connected, but that it is rather poverty caused by unemployment which then, in turn, causes social isolation. It is apparent that socially isolated individuals should not be expected to command over a large stock of social capital. The opposite argument would be, as already pointed out in the inverse direction above, that the unemployed have more time to spend on their social contacts. Moreover, they would be more reliant on an exchange of favors instead of buying comparable services on the market due to their depressed economic resources.

As an additional problem, regarding workplace effects, it is unclear what is cause

and what is effect. If unemployed individuals have less job-related social capital, the question is the following: are these individuals having less social capital because they are unemployed, i.e. because they do not have colleagues they meet regularly and can create social capital and are unattractive people to know for their limited economic resources? Or is it rather that they are unemployed because they have less job-related social capital, especially bridging-capital in the sense of Granovetter (1973) and Burt (1992), i.e. are they not part of a network where job offers are regularly circulated?

The theory does not allow for a clear-cut research hypothesis on this point. However, there seems to be a tendency in the literature that being unemployed is hampering in social capital creation and having a workplace is helpful.

Effects of Group and Organization Membership

The idea that an individual's membership in organizations or groups[37] and his social capital are connected is already included in Bourdieu's (1983) theory of social capital. For him, individuals who belong to a group can use the group's resources as a credential to multiply the number of resources they have access to via their social capital. Thus, as it increases the amount of resources available, membership in a group is profitable. Moreover, Bourdieu declares that some groups are "deliberately organized in order to concentrate social capital" [Bourdieu (1986), p. 249], naming especially "prestigious groups" (ibid.) as an example. Bourdieu (1983) does not give a precise definition, but gives the examples of "rallies, cruises, hunts, parties, receptions, etc" (p. 250) as events organized by such groups, which already brings to mind a relatively clear picture. Thus, following Bourdieu (ibid.), it should be expected that the membership especially in prestigious groups should enhance an individual's social capital.

Coleman (1990) also finds that organizations and social capital belong together: organizations, formed for whatever reasons, connect different individuals. In following a common goal, individuals do favors for each other. Even if no common purpose is pursued, but simple interaction takes place, trust between interacting individuals builds up, as Häuberer (2014) points out. Thus, obligations and credit slips can easily come into being and social capital is created. This social capital can then be used by an individual or multiple individuals who are members of the group to also achieve other joint interests. This argument is shared by Putnam (1993, who, especially in "Bowling Alone", uses an individual A's membership in all kinds of groups and organizations as a proxy to assess the individual A's social capital. However, it is not clear why membership in many groups should per se be more helpful than membership in just one group. This will be discussed in more detail in section 3.3.1.

Different from the private network, the direction of the effect with groups is clearer, but some differentiation is necessary: being a member of a group connects an individual to other individuals, thus enhancing his social capital. It is not clear why having social capital makes it more likely for an individual to join a group that pursues some endeavor.

[37] For the sake of the argument in this section, both terms serve the same purpose.

However, there are some prestigious groups where entry is not open to everyone, but rather subject to being invited or at least being able to present a number of guarantors within the organization. For these groups, having social capital is surely helpful for joining.

Summing up, the following can be said: an individual's membership in groups and organizations should enhance his social capital. However, it should not just be the number of groups an individual is involved with, but also the amount of time he spends there which should have a positive effect. The research hypothesis would thus be that individuals who spend more time in groups and organizations should have more social capital. As a second hypothesis, this should be especially true for prestigious groups and organizations.

Social Network Sites

Social network sites, of which *Facebook* in the privat sphere and *Xing* and *LinkedIn* in the job-related sphere are probably the most prominent proponents, are a relatively new phenomenon. Nonetheless, an ample literature on the effect of using such sites on an individual's social capital has quickly developed. The debate has two poles: firstly, which is the point most authors make, the use of social network sites makes it easier for individuals to stay in touch with people. Secondly, time spent on a social network site is time spent alone insofar as people are usually alone with their computer when they do so.

Regarding the first argument, Donath and Boyd (2004) and Neves (2013) argue that social network sites reduce the cost of connections, i.e. they make it possible to "keep in touch with unprecedentedly large number of people" [Donath and Boyd (2004), p. 71] because of the web's "low cost and high speed and ubiquity" [Neves (2013), p. 602]. Donath and Boyd discuss that, while the number of close ties, i.e. thick ties, an individual can have, may be limited, social network sites may especially help to increase the number of an individual's thin ties. Steinfield, Ellison, and Lampe (2008), who investigate the use of social network sites among young adults in the United States, confirm this. They find that social network sites help these individuals to stay in touch with their friends when they move away from their hometown for tertiary education.

Moreover, Donath and Boyd (2004) contend that social network sites also offer an easy way to contact people hitherto unknown to an individual, and might thus offer a way to create a new social network, e.g. when moving to a new city. However, this might not be a superior possibility, as she points out that "the resulting personal network is similar to the sort of network they would have had[,] had they met through more traditional means" (p. 80).

The opposite argument goes, according to Valenzuela, Park, and Kee (2009), back to Putnam (2000), who argues that media consumption, meaning primarily TV consump-

tion, consumes time that would otherwise be used for social interaction[38]. Considering the importance of time in the creation of social capital, it is clear that TV consumption should, ceteris paribus, be expected to reduce an individual's social capital. Valenzuela, Park, and Kee (2009) refer to Nie (2001), who extended this hypothesis, which is called the "time displacement hypothesis" [Neves (2013), p. 604], to the computer. However, this study stems from the beginning of the internet age, when internet users were relatively few and, according to Nie (2001), better educated than the average of the population. At this point in time, social network sites were not as common as they are today, and Nie (ibid.) does not include them when listing the things people do on the internet. Neves (2013) shares this point, claiming that "many online activities are social" (p. 604). It is apparent that a medium that is mostly used for one-way communication, like TV, does not enhance the time an individual spends socializing[39]. Since this hypothesis is about the use of social network sites and not about the internet in general, the question arises how relevant the findings of Nie (2001) are in this case.

Concerning the direction of the effect, there are two conflicting possibilities. Firstly, the use of social network sites may help individuals to stay or get in contact with other individuals and thus to increase their social capital. Secondly, it might be that individuals that already have relatively much social capital find the use of social network sites more helpful as it allows them to, for want of a better word, manage their existing contacts at a lower cost.

Summing up, the research hypothesis is that the use of social network sites is especially helpful in keeping up weak ties. Thus, if any, they should have a positive effect on an individual's social capital.

2.5.4 Geographical Effects

In this section, various effects that can be subsumed under the headline *geographical effects* will be discussed. These include effects of an individual's within-country mobility, i.e. moving his residence within a country or migrating from one country to another. Moreover, an investigation will take place into possible effects of the German Partition from 1949-1989 and on whether living in a city or in a rural area has effects on an individual's social capital.

Mobility

The idea that an individual's mobility, understood as his propensity to move within a country from one place to another, has an effect on his social capital has been intro-

[38] Interestingly, Putnam (2000) himself is not as sceptical on the effects of the internet: in chapter 9 of "Bowling Along", he briefly touches upon the question whether the internet may help to create new social capital, and is positively optimistic, stating that "[S]ocial capital is about networks, and the Net is the network to end all networks" (p. 171).

[39] Neves (2013) points to the argument that people may also watch TV in groups, making it a social activity. However, she dismisses this argument as watching TV together does not really cause social interaction.

duced by Putnam (2000)[40]. As has already been pointed out, keeping social ties alive requires regular interaction. This is, of course, easier if the physical distance between individuals is smaller, i.e. it is possible to meet without having to incur relatively large cost in the form of travel time or travel cost. Thus, if an individual moves, it should be expected that his social capital decreases at first. However, it should also be expected that this decrease will be compensated after some time as the individual will build up a new social network in the place he moved to. Glaeser, Laibson, and Sacerdote (2002) add an additional mechanism: individuals know their propensity to move and anticipate that moving will cost them a certain share of their stock of social capital. The reasons for this are the same as outlined above. Since individuals include their individual propensity to move in their maximization problem, individuals who have a high propensity to move will have a depressed incentive to invest in social capital.

In addition, there may be a problem of cause and effect here: Boenisch and Schneider (2013) and Kan (2007) argue that movement decisions may be endogenous, i.e. that individuals who have a lot of social capital, especially of the bonding type, in one specific geographic place may be more likely to stay there given the same migration incentive. Thus, the additional question is whether people move and thus have less social capital or whether they have less social capital in the first place and thus find it easier to move. David, Janiak, and Wasmer (2010) extend this argument: Social capital that is accessed via membership in organizations might make moving easier relative to social capital that is accessed via thick ties to family members and friends since similar organizations might be available at the new place of residence. As a consequence, an individual hitherto active in a number of organizations might envisage the possibility to build up new social capital quickly, whereas family members and friends typically stay behind. This last point is, for the case of the family, also made by Alesina et al. (2015).

The prediction of the literature, and thus the research hypothesis, is clear: individuals who have moved, especially those who have moved relatively recently, and who have a higher propensity to move at all, should be expected to have lower levels of social capital. This should be especially true for individuals who are not active in organizations but rather access their social capital primarily via close friends and family members.

However, these predictions are typically made for a bigger country - the United States - and stem from a time when communication technology was not as advanced as it is today. Today, it is possible to stay in contact with far-away people virtually everywhere at almost no cost. Moreover, distances in Germany, even when an individual moves, are typically much smaller than in the United States. Thus, the effect may be mitigated in Germany in 2015 relative to the United States 15 years earlier, the case investigated by Putnam (2000) and Glaeser, Laibson, and Sacerdote (2002).

[40] Coleman (1990) already discussed individual moving decisions, but in a different light: his focus is on the social capital of other individuals that is lost if an individual decides to move away, not on the moving individual's loss.

Migration Effects

It will secondly be investigated whether an individual's migration background, i.e. whether he or his parents migrated to their current place of residence from another country, has an effect on his social capital. The question is whether an effect by the different cultural background of immigrants should be expected, as e.g. proposed, although for a completely different understanding of social capital, by Fukuyama (1995a, 1995b). This will be discussed specifically for the case of people from the former German Democratic Republic as the next hypothesis, but of course the arguments there should in principle also hold true for migrants from other countries from the formerly communistic eastern states. For individuals from other cultures, there are few substantial arguments in the literature why there should be an effect of their culture on their stock of social capital[41]. Consequently, there is little reason to expect that migration effects should behave differently from the intra-country mobility as outlined in section 2.5.4, especially with the now greatly improved communication methods already mentioned there.

In the literature, what is moreover discussed are cases where migrants flock in communities with little connections to mainstream society and other migrant communities, i.e. communities that exhibit very high degrees of closure. Portes (1998) gives a number of examples what the effects of such communities can be: for entrepreneurs from such a community, the access to start-up capital can be simplified, as can be the access to the market and to potential employees. For non-entrepreneurs, the privileged access to certain jobs in firms controlled by other members of the community remains. Munshi (2014) also points to generally "improved outcomes for [the] members" (p. 50) of communities which exhibit a very high degree of closure. These ethnic communities function the way they do because individuals in them know each other for a long time and the existing networks within them exhibit a high degree of closure. The overall effects are to a certain extent comparable to those pointed out for all kinds of groups and organizations in section 2.5.3.

Portes does, however, make a second argument in connection with ethnic communities, pointing out that the mechanisms they operate by might also be hindering for their members, depending on the relevant community. When ethnic communities are impoverished, it may well be that they are no great help to their members, a point also made by Di Falco and Bulte (2015). Portes (1998) gives the example of "poor urban communities" (p. 13). If connections are important for finding jobs, and entrepreneurs or other members of the community an individual has connections to cannot offer such jobs to him, or only to a smaller extent than is the case in other communities, his membership in a community is of no help for him. Portes points to Granovetter (1973) to prove this for teenagers who are looking for a job. The same may be true for entrepreneurs. When an entrepreneur is expected by another member of the community to hire him as he has no other chance for employment, the entrepreneur may face the choice be-

[41] Coleman (1990) brings the argument that the central market in Cairo is a place where the merchants are especially rich in social capital. However, it is difficult to draw conclusions from such anecdotical evidence on e.g. the social capital stock of all Arab people.

tween the ruin of his business and his exclusion from the community. The latter may be equivalent to a loss of virtually all his social ties. Di Falco and Bulte (2015) also point to the disincentive to actually become an entrepreneur created by such a situation.

Concerning the direction of the effect, two cases have to be distinguished: second generation migrants did not choose to have a migration background. Consequently, the direction of the effect would be that their migration background influences their social capital stock. For first generation migrants, basically the same argumentation holds true as for individual mobility as discussed above: it is not clear whether they moved and this influenced their social capital stock, or whether they had little social capital in the first place and thus found it easy to move.

Concerning the research hypothesis: It is relatively clear that no effect for migration per se should be expected that is different than the one for intra-country mobility outlined above, i.e. there could be a negative effect for recent immigrants. With regard to the argument with close-knit immigrant communities, there are arguments for both positive or negative effects. However, this latter aspect is certainly not relevant for all migrants.

The Berlin Wall Experiment

As is common knowledge, Germany has been partitioned for over 40 years between 1949 and 1990 as a result of the Second World War. During these years, the two German states featured two very different political systems. While a liberal democracy was established in the Federal Republic of Germany in the west, a socialist dictatorship which closely spied on its residents was established in the German Democratic Republic (GDR) in the east. Especially between 1961 and 1989, while the Berlin Wall was standing, the direct communication between people in east and west was limited. In this section, it will be investigated how this natural experiment, which is called the "Berlin Wall Experiment" by Boenisch and Schneider (2013), (p. 391), had an impact on an individual's social capital.

There exist two arguments on the connection between social capital and communist dictatorships: firstly, Paldam and Svendson (2001) point out that dictatorships in general are not eager on their subjects organizing beyond their control as this might be a good starting point for organizing against them. Eastern block countries, such as the GDR, typically had a secret police to control their residents' doings. Such a secret police is a very effective tool to achieve that people do not organize: besides that it may find out if they do, its existence also creates distrust even among individuals who are not spied upon, as it is never entirely clear whether the person an individual is in contact with is an informer of the secret police or not. Thus, individuals face a strong incentive to restrict their social ties to a small number of people they believe they can trust, which are often acquaintances other people they know trust as well, i.e. they prefer bonding over bridging ties, an argument also shared by Boenisch and Schneider, 2013. Note that this is fine for the dictators as it is difficult to organize a revolt in

a country separated into a multitude of small groups which are highly interconnected, but where only very few connections between the numerous small groups exist.

For the communist states of eastern Europe, Paldam and Svendson (2001) describe a second, contradicting incentive: in these states, many goods were not available via the official channels. Thus, individuals, directors of firms as well as private consumers, had to search for different ways to get access to the goods they required. These goods were often only available via informal networks. It is apparent that the more diverse the required goods were, the more important were bridging ties to acquire them. Paldam and Svendson (ibid.) argue that such structures were, at least to a certain extent, tolerated because they increased economic efficiency and helped to mitigate supply problems for the normal population.

Burchardi and Hassan (2013) investigate into another aspect connected to German reunification: in 1989, ties by people living in West Germany to people living in the GDR suddenly had an economic potential as it was now possible to make business with them, which had been impossible before. Burchardi and Hassan show that individuals that had this kind of ties benefited economically by experiencing a more-than-average increase in their income. Moreover, they suggest that it was mainly persons who were expelled from the former eastern territories of the German Empire after 1945 and their descendants who profited as their families were often torn apart after 1945 with one branch ending up in the GDR and the other ending up in West Germany. Thus, expellees were more likely to have ties to the former GDR. The observed effect is, however, a one-time effect and should not have any lasting effect on the social capital of expellees and their descendants in general.

Thus, the direction of the effect is clear since people were not selected to live in the GDR for their stock of social capital. The overall effect of the communistic dictatorship on the former GDR's inhabitant's social capital is, per se, unclear. If any, the research hypothesis would be that they have fewer, but thicker ties. Moreover, more than 25 years after German Reunification, it is questionable whether these effects can still be found, especially keeping in mind the huge migration flow from east to west Germany following the fall of the Berlin Wall.

Differences between City and Countryside

An interesting point to investigate is whether an individual's social capital differs depending on whether he lives in a city or in the country. The alleged anonymity in big cities is a recurring theme in both the scientific [e.g. Simmel's (1995) "Die Großstädte und das Geistesleben" from 1903] and the fictional literature [e.g. Döblin's (2002) "Berlin Alexanderplatz" from 1929]. The argument has two lines, and both are, in effect, simple stochastics: firstly, in big cities, relative to small towns, an individual is less likely to meet someone he knows randomly on the street, in a restaurant or in a night club. This is because there are many more streets, restaurants or night clubs he can go to, and thus his chance to meet someone he knows is decreasing. Secondly, if

the individual gets to know someone new, again compared to a small town, it is much less likely that this person has a common acquaintance with him. Again, this is just stochastics: if the pool of people there are to know gets bigger, the chance that two random individuals know the same person out of that pool is ceteris paribus decreasing. In the language of social capital, this second argument means that networks which exhibit closure should be less likely to develop accidentally in big cities. Of course, the contrast against which the big city is to be seen is the small town or village. Here, things are reversed.

However, this closure of social networks that can allegedly be found in small towns, in connection with the high probability to meet people, and thus also to observe them, are ideal conditions for gossip to spread around town, and thus for social control to be executed. This is a common feature of small towns as also described in the social capital literature, e.g. by Esser (2008), who classifies it as an example for "system control" (p. 38). This can lead to the same phenomena already identified in connection with migrant communities on page 68 of this thesis: it can help individuals, i.e. when inhabitants of a village have preferred access to certain jobs or if entrepreneurs from the village can count on the inhabitants as loyal customers, but it can also hinder individuals, e.g. when the community is impoverished and successful members are expected to help out less successful members. It is thus per se unclear what effect this system control has on an individual's access to resources.

The question is whether the relatively simple story of denser networks in small town still holds true today, if it ever did. Firstly, even in big cities, opportunities for individuals to organize in networks that exhibit closure are abundant: it starts in school, continues via all kinds of groups and organizations an individual can join and does not end at the workplace.

Secondly, many big cities in Germany are actually not that big. Only four cities, Berlin, Hamburg, Munich and Cologne, have more than a million inhabitants, and even these have a number of suburbs that appear more as small towns in their own right than as integral parts of the big city they formally belong to. That they are no longer self-administered is an artefact of administrative reforms rather than the result of an organic growing together.

Thirdly, even if people live in a village, this does not mean that it is the place where their life actually takes place: firstly, they may need to commute long distances to reach their workplace, maybe in the next big city, thus lacking time necessary to create social capital. This effect could counteract a possibly positive effect of living in a small town or village on social capital. Moreover, people may live in a small village now, not because they grew up there, but because they moved there as a consequence of a trend of suburbanization, attracted by the combination of fresh air and cheap property prices. With their friends and workplace in some bigger city nearby, they may not integrate into the village they live in, and thus, maybe, not benefit from its increasing effect on social capital. It is, however, difficult to differentiate between "real" village dwellers and "aliens" from the city.

Concerning the direction of the effect, it may well be that there is a certain interdependency here: individuals that have a lot of social capital in a small town might find it more difficult to move away. The research hypothesis would be that inhabitants of small towns have more social capital, although, for the reasons pointed out above, a question mark is attached to this research hypothesis.

2.5.5 Intrinsic Reasons

In this section, the question what role certain personality dimensions of an individual play in his accumulation of social capital will be discussed. To do so, the individual's preferences for sociability will be assessed directly. Moreover, the so-called Big-Five model, which identifies five broad personality dimensions will be used. In the following section, the model will briefly be introduced and it will be pointed out which effects of the respective broad personality dimensions should be expected. Moreover, an investigation into the relationship between an individual's social capital and his subjective life satisfaction will take place.

The Role of the Character

The basic idea of the Big-Five model is quite simple. It is a straightforward everyday observation that people are different: some are quite outgoing and find it easy to make new friends, while others are relatively shy and even find it difficult to actually talk to strangers. Some people are easy to get to know and nice to have around, while spending time with others may turn out to be somewhat awkward. This should, of course, have an effect on these individual's social capital: if it is relatively easier for an individual to find friends he is more pleasant as company, he should be expected to have more social capital simply because he should be more likely to know more people.

To grasp these effects, the Big-Five model developed by personality psychologists will be used [see John and Srivastava (1999) for a review]. The idea is as follows: based on a lexical approach, i.e. by investigating the words in our language describing personality, five broad personality dimensions are identified. These are extraversion, agreeableness, conscientiousness, emotional stability and openness to experience [Gosling, Rentfrow, and Swann Jr. (2003)], where the dimension of emotional stability is sometimes also called neuroticism. John and Srivastava (1999) point out that these dimensions do not entirely determine the character or personality of a person, but rather "represent personality at the broadest level of abstraction" (p. 105) and that numerous "more specific personality characteristics" (ibid.) are summarized by them.

Specifically, John and Srivastava (ibid.) give the following descriptions for the respective personality dimensions. That they are sometimes little more than a listing of different adjectives is possibly an artefact of the lexical origin of the approach. Extraversion represents "an *energetic approach* to the social and material world" (p.121,

sic) with "traits such as sociability, activity, assertiveness, and positive emotionality" (ibid.). Agreeableness stands for a "*prosocial and communal orientation* towards others" (ibid., sic) and represents "traits such as altruism, tender-mindedness, trust and modesty" (ibid.). Conscientiousness represents a "*socially prescribed impulse control* that facilitates task- and goal-directed behaviour" (ibid., sic). Here, John and Srivastava (1999) give the following examples: "[T]hinking before acting, delaying gratification, following norms and rules, and planning, organizing and prioritizing tasks" (ibid.). Neuroticism is described as "*negative emotionality*, such as feeling anxious, nervous, sad, and tense" (ibid., sic). Openness to experience, as a last characteristic, is described as "the breadth, depth, originality, and complexity of an individual's *mental and experiental life*" (ibid., sic).

Concerning the effect of these personality traits on an individual's social capital, it is clear that the following should be expected: personality traits that make it easier for an individual to connect to others should also increase his social capital. Wolff and Kim (2012) investigate into the effects of the Big Five personality dimensions on individuals networking behaviour in connection with their job. They argue that extraversion and agreeableness are the dimensions which are linked to "the domain of interpersonal behaviour" (p. 47). Thus, a high score in these two dimensions should identify individuals who find it easier to connect to others and thus build a network. Moreover, they argue that openness to experiences is related to an individual's "intellectual life or idea-related endeavours" (ibid.). Since networking is, according to Wolff and Kim (ibid.), also about the exchange of information and ideas, which seems plausible given their focus on the world of work, they expect that individuals who score high in openness also fare better in networking. In contrast, they do not expect any effect of conscientiousness or neuroticism, as these dimensions refer to "task-related and feeling-related" (ibid.) domains. The plausibility of the hypothesis developed by Wolff and Kim (ibid.) is apparent when looking at the descriptions of the personality dimensions above. They are likely to hold true for the private realm, too.

Beside their character traits, which may or may not make it easier for individuals to connect to others, individuals may also exhibit a preference for sociability. That is, they may prefer to spend their leisure time with others or choose a job where they come into contact with many different people. Such a preference should enlarge an individual's personal network simply because meeting people and spending time with them is a natural way of creating a connection to them. Thus, individuals exhibiting such a preference should also be expected to have, ceteris paribus, more social capital.

Character traits are typically assumed to be stable, and character is thus an exogenous variable. The direction of the effect is thus clear. The research hypothesis would be that the character traits extraversion, agreeableness and openness have a positive influence on an individual's social capital. The same can be expected to be true for individuals who directly express a preference for sociability.

Life Satisfaction

In this section, an investigation will take place into the relationship between social capital and life satisfaction, which is often used as a proxy for subjective happiness [c.f. Valenzuela, Park, and Kee (2009)]. Putnam (2000) introduces this idea into the debate: referring to undisclosed studies, he claims that "social connectedness is one of the most powerful determinants of [...] well-being" (p. 326). Basically, his argument is that man is an animal who does not do well in loneliness. Individuals who possess social capital do, ceteris paribus, possess more and deeper social connections. They are thus less likely to be lonely. Consequently, Putnam (ibid.) argues that there is a strong link between social connectedness and life satisfaction.

However, although his argumentation is suggestive in that social connections cause life satisfaction, Putnam (ibid.) explicitly states that there is a problem with the direction of the effect here, a problem also stressed by Valenzuela, Park, and Kee (2009): does social capital, through social connectedness, increase an individual's life satisfaction, or is it easier for more satisfied individuals to achieve social connectedness? Helliwell and Putnam (2004) make a case for social capital being a determinant of well-being by pointing out that "people *themselves* report that good relationships with family members, friends or romantic partners [...] are prerequisites for their happiness" (p. 1437, emphasis not added). Lin (1999) argues into the same direction, claiming that life satisfaction might be a possible type of return from social capital possession. Valenzuela, Park, and Kee (2009) argue, pointing to Inglehart (1990), that a reciprocal relationship might be possible, i.e. that individuals who are more satisfied with their life due to their social network might find it easier to keep and strengthen that social network because it is easier for them to further socially connect.

Becchetti, Pelloni, and Rossetti (2008) try to solve this problem empirically, using panel data from the German Socio Economic Panel. They do not use the concept of social capital, but rather that of relational goods, which encompasses non-material goods acquired through social interaction and which is thus vaguely similar to a part of the definition for private social capital. As these items are not directly measured in the SOEP, they use the time spent for certain leisure-time activities such as participation in sports or attendance of cultural or religions events as proxies, which may or may not be viable. Becchetti, Pelloni, and Rossetti (ibid.) find that the causal relationship is running both ways, thus confirming the hypothesis by Valenzuela, Park, and Kee (2009). The research hypothesis would thus be that life satisfaction helps to create social capital but also that social capital increases life satisfaction.

2.6 Summary

In this chapter, it has become clear that social capital is a term used for two distinct concepts, i.e., in the terminology of Esser (2008), system and relational capital.

System capital describes norms that are upheld at the macro level of society or at

least very large communities. It aims at explaining differences in macro level variables across different regions of a country or, for the same country, across different points in time. Proponents of this concept are Fukuyama (1995a, 1995b) and Putnam (1993, 2000), who develops his concept building on the form of norms and effective sanctions formulated by Coleman (1988, 1990). Attempts to find a theoretical bridge between system capital and relational capital, e.g. through the concepts of generalized reciprocity and thin trust, have, as has been shown, remained unconvincing.

Relational capital describes the resources, in the widest sense of the word, an individual has access to via his ties to other individuals. Of course, the access to these resources ultimately increases the individual's utility. Unlike system capital, relational capital, for want of a better word, *belongs* to the individual. The concepts of Bourdieu (1983) and Burt (1992, 2000, 2005) can be said to describe relational capital. This is also the case for the other of two forms of social capital introduced by Coleman, i.e. that of obligations and expectations. Relational capital is the concept of social capital most accessible from the viewpoint of methodological individualism, which was thus selected to be used in this thesis.

However, further investigations were necessary to see whether relational capital is really viable as a concept of capital in economics. Although social capital is special in some respect relative to other forms of capital, e.g. in its dependence on being honored by others, its coming into existence partially without purposeful investment and its limited alienability (although the two latter points might also apply for human capital), it could be concluded that the defined concept of social capital actually qualifies theoretically as capital from the perspective of economics.

Finally, an investigation into possible predictors of individual social capital possession took place. In many cases, the direction is not a priori clear, and social capital and the respective variables under consideration might co-determine each other. Moreover, it is often not clear whether a variable can predict individual level social capital positively or negatively since there are good arguments for both sides. In these cases, only an empirical investigation can yield further insights. To do so, a tool to measure social capital is necessary. While this tool will be developed in the next chapter, the fourth chapter of this thesis will present the results of a representative internet survey where the hypotheses developed above are tested.

3 Measuring Social Capital

In order to measure the empirical validity of the concept and the hypothesis concerning the different predictors outlined in chapter 2, it is indispensable to measure social capital. However, how should an indicator that measures social capital be created? Firstly, this chapter will look at how indicator construction can take place. To do so, an investigation of psychometric and compositional measures will be undertaken. Afterwards, the resources that can be accessed via social capital will be specified and categorized. Building on this, existing measures of social capital will be presented and discussed in detail. Finally, a new indicator to measure social capital will be proposed.

3.1 Psychometric and Compositional Measures

Without telling too much of what will later be discussed in more detail, it can be said that there is not one observation that can serve as a convincing proxy for an individual's social capital. Instead, it will be necessary to combine different observations into one indicator. There are two alternative approaches to do this, that are appropriate in different situations: psychometric and compositional measures. In the following section, the details of these approaches will briefly be investigated.

3.1.1 Psychometric Measures

Psychometric Measures aim at measuring an attribute which itself cannot be "directly observed or measured" [Fayers and Hand (2002), p. 233], i.e. which is a latent variable. To measure such a variable, psychometric measures use a number of items that all supposedly represent a proxy for that attribute, i.e. help to "assess a single construct" [Switzer et al. (1999), p. 401], which is the latent variable. Consequently, the expectation would be that a respondent should more or less achieve the same score across all items, at least if they are of the same scale. As a consequence, creating the index is relatively simple: Because the items are expected to be a proxy for the same latent variable anyways, and thus in the end measure the same thing, the score of the items is often simply added up. This approach requires that they are of the same scale.

The value for a psychometric measure can thus theoretically be decomposed into a "true" [Switzer et al. (ibid.), p. 401] value for the latent variable, which is unobservable, and an error term, which is due to necessarily imprecise measurement. The size of this error is also unknown. The best chance a researcher has to reduce the size of the error is to make sure that his psychometric scale has a high internal consistency. The reliability of the scale can be confirmed by measuring its internal consistency, i.e.

that all items do at least show more or less the same score, as theoretically predicted. This can be done by using statistical measures such as Cronbach's Alpha, as e.g. proposed by Switzer et al. (1999): A good scale should exhibit a high degree of internal consistency. The details of using Cronbach's Alpha will be investigated in section 4.2.

Psychometric measures are very popular in empirical applications. This holds true especially for concepts originating in psychology, as the name psychometric measure readily suggests, where unobservable, latent variables are an important field of research due to the nature of the subject. Popular examples include the ten item inventory to measure the big five personality traits [Gosling, Rentfrow, and Swann Jr. (2003)] and the positive and negative affect scales [Watson, Clark, and Tellegen (1988)].

When thinking about social capital, at first thought, it is apparent that one and the same social tie can yield access to a variety of different resources. Thus, especially as long as the resources assessed are more or less closely related to each other, creating a psychometric measure from the set of items used to measure these resources might be appropriate. Cronbach's Alpha is one tool to assess the quality of such a measure. However, when the resources are not so closely related to each other, creating a psychometric measure might no longer be appropriate. Instead, creating a compositional measure might lead to better results. This will be investigated in the next paragraph.

3.1.2 Compositional Measures

Compositional Measures, which are also known as multidimensional indices or clinimetric scales [for this last term, see Feinstein (1987)], aim at a slightly different question: How can the researcher create an indicator that does not represent a latent variable, but rather aggregates the information of a number of different variables or elements that measure quite different things? Simply summing up their values, as is typically done in a psychometric measure, may thus be inappropriate. Consequently, a number of questions arise for compositional measures that are not relevant for psychometric measures: Which items are to be included into a compositional measure, i.e. which pieces of information are to be included in the resulting aggregate? How should they be combined, i.e. which weight should be assigned to the different items? To what extent can they substitute each other, i.e. can a high score in one item compensate for a low score in another?

Noble et al. (2006) propose three admittedly vague criteria for compositional measures: Firstly, their construction should be due to a theoretical model. This means that the researcher should ex ante develop a concept what he aims to measure and which components it includes. Secondly, compositional measures should operationalize this model. Thirdly, the scale must "fit the purpose" [Noble et al. (ibid.), p. 172]. This last point can, of course, only be assessed ex post. Different from psychometric scales, there is no statistical way to assess the reliability of a compositional measure: Its internal consistency, for example, is not a helpful tool as the respondent might score very differently in the different, more or less unrelated, variables that form the con-

struct. Thus, the question whether a scale fits its purpose can only be answered by the researcher: does it help him to answer his research questions?

As already mentioned, the combination of different items to form a scale is also non-trivial because the question of their weight and their substitutability has to be solved. As Noble et al. (2006) points out, "weighting *always* takes place when elements are combined together" (p. 182, emphasis as in original). Thus, the weighting decision should always be communicated explicitly by the researcher. In principle, four different weighting schemes can be differentiated: Firstly, weighting all items the same way. Cavapozzi, Han, and Miniaci (2015) claim that it is the weighting scheme used most frequently. Mayer and Jencks (1989) argue that it might be appropriate in cases where the researcher has absolutely no idea about the relative importance of the various elements. However, this weighting is discredited by Noble et al. (2006) as "entirely arbitrary" (p. 182). Secondly, weighting can be done using the weights assigned by experts. Decancq and Lugo (2013) demand that there should always be several experts involved when deciding on the weights and that their proposals for weighting should be aggregated to form an average. This is e.g. the procedure in the English Index of Deprivation [Smith et al. (2015)]. Thirdly, a proposed procedure is that the respondents assign the weights to the different elements. Thus, respondents that find a certain element particularly important give it a higher weight than others that do not find this element particularly important. Benjamin et al. (2014) propose an approach to assess these weights indirectly. However, the inevitable result from such a weighting scheme is that the resulting values of the measure are no longer comparable across respondents. The same is the problem for the fourth weighting scheme, namely to calculate the index such that the result is most favorable for the respondent, i.e. that he scores as high as possible. Moreover, such an approach may have the consequence that elements that are particularly unfavourable for the respondent may be dropped from the calculation altogether.

Concerning the question of substitutability, very little can be found in the literature. Decancq, Decoster, and Schokkaert (2009) state that the different items that form the compositional measure can either be perfect complements, perfect substitutes or anything in between. Choosing the degree of substitutability appropriately is left to the researcher and the specific measure under construction. They propose to use the following formula to create a compositional measure:

$$M_i^{Decancq} = \left(\sum_{j=1}^{p} w_j z_{ij}^{\left(\frac{\beta-1}{\beta}\right)} \right)^{\left(\frac{\beta}{\beta-1}\right)} \qquad \forall i, \beta \neq 1. \tag{3.1}$$

z_{ij} is the value of item j for respondent i. p gives the total number of items. w_j is the weight allocated to item j. β gives the constant elasticity of substitution between the items. The formula is closely related to the constant elasticity of substitution (or CES) utility function commonly used in microeconomics [see Mas-Colell, Whinston, and Green (1995) for a discussion]. Specifically, for $\beta \to \infty$, i.e. for an infinite elasticity

of substitution, the case of simple summing up of items as in the construction of a psychometric indicator is replicated, at least as long as equal weights are given to the different items. This is e.g. the way the Human Development Index is calculated [see United Nations Development Program (2015) for details]. For $\beta \to 0$, a *Leontief*-type function results, where the value of the function is equal to the lowest item value included. There are some studies using this approach, e.g. Proud et al. (2015) and Pin (2014).

An alternative formula is proposed by Firth (2002), which is used in the English Index of Deprivation [Smith et al. (2015), Noble et al. (2006)]. It can be expressed as:

$$M_i^{Firth} = \sum_{j=1}^{p} w_j \cdot (-1) \cdot ln[1 - z_{ij}(1 - e^{-\lambda})] \qquad \forall i. \tag{3.2}$$

It is a generalized and slightly modified form of a formula Firth (2002) attributes to Blalock (1982)[1]:

$$M_i^{Blalock} = \sum_{j=1}^{p} w_j \cdot ln(1 - z_{ij}) \qquad \forall i. \tag{3.3}$$

As above, z_{ij} is the value of item j for respondent i. However, here, $0 \leq z_{ij} < 1$ applies. p gives the total number of items. w_j is the weight allocated to item j. In equation 3.2, λ is a parameter that is used to indicate the substitutability between different items. What is used here is a logarithmized exponential function where, because the values of the items are bound between 0 and 1 by definition, they are subtracted from one to achieve that higher rather than lower numbers are spread out more. This is the feature of the exponential distribution function that is useful here: that it gives more weight to outliers on one end of the spectre. The application for the English Index of Deprivation is that if an area fares good in one category and bad in another, this should not simply cancel out.

For the English Index of Deprivation, a more precise specification of cancellation properties was deemed necessary. Thus, the generalized formula 3.2 is used with $\lambda = 100/23$ [Smith et al. (2015), Noble et al. (2006)]. This value implies imperfect substitutability between the different items. The argument put forward by Noble et al. to justify this value is that thus no more than 10 % of areas included in the Index, which are ranked before being standardized to a bound between 0 and 1, achieve more than 50 % of the possible maximum depreviation score.

The clear advantage of the formula 3.1 proposed by Decancq, Decoster, and Schokkaert (2009) is that the way it works and its parameters are more easily accessible to interpretation by economists. This is mainly due to its closeness to the CES utility function. A parameter value like $\lambda = 100/23$ in the formula by Firth (2002) is undoubtedly much more difficult to interpret. Moreover, formula 3.1 is technically easier to use since it is not dependent on values lying between 0 and 1.

[1] This formula cannot be found in Blalock (1982) exactly as Firth (2002) represents it.

3.2 Systematization and Categorization of Resources

For every approach to measure something, the condicio sine qua non is a precise definition and a working operationalization of that definition. This also holds true for social capital, and this is also where the difficulties start: As has been shown in chapter 2, social capital is a term that is interpreted in different ways by different scholars. Thus, the same term has come to describe different concepts. The basic intuition these concepts share is described by Fernandez and Castilla (2001) as "networks have value" (p. 85)[2]. Two important questions arise from this phrase: What is meant by *value*? And to whom does this value accrue?

As presented on page 49 of this thesis, the definition employed, namely that "[t]he 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 the relationships" [Van Der Gaag and Snijders (2005)], is clearly oriented towards relational capital. Value is of course what yields individual's utility, but what precisely this is may be pinned down by capturing it using a wide definition of resources.

Even for relational capital, the question regarding how to measure social capital is at best non-trivial. As already observed by Bourdieu (1983), there are some resources which can only be acquired using social capital. It is unclear what their value in units of economic capital would be since there is no possibility to buy them using economic capital. Thus, simply adding up the market prices of the resources an individual has access to via his social capital is impossible[3].

Moreover, even if it were possible to simply add up market prices, the open question in any case is which concrete resources can actually be accessed via an individual's social capital? It needs to be clear what has to be assessed to convincingly measure social capital. An additional question is how these resources can be systematized and categorized. These points will be investigated in the following section.

In the literature, even when only dealing with relational capital, the examples for resources an individual can access via social capital are numerous. Sometimes, these are broadly categorized, sometimes only the categories are given without any specific examples and sometimes the examples just stand for themselves. To streamline the presentation, firstly, the categories will be presented and then the subcategories with the specific examples.

[2]Even this is actually too precise: Fukuyama (1995a, 1995b) argues that social capital is not networks that have value, but that trust in the generalized other which is rooted deep in a nation's culture has value. But for the point that is to be made here, "networks have value" is sufficiently vague.

[3]Although Sobel (2002) argues that while it is not the precise services that can be, as he calls it, "formalized" (p. 147), their function can in many cases be transferred to a normal market service. His example is that of the owner of a delicatessen who acted as a "custodian for apartment keys" (ibid.) for people he knew. The delicatessen is now closed, and the apartment blocks in the area have a doorman. Thus, as economic development proceeds, the resources that can be exclusively accessed via social capital and that thus have no market equivalent may be declining. As a consequence, adding up market prices may become a more viable way to measure the value of an individual's social capital in the future.

Economic Resources

The possibility to access other agents' economic resources, meaning access to economic capital, is frequently mentioned as a social capital resource. While some authors do not go into further detail what specifically this access to economic resources entails, as e.g. Daly and Silver (2008), Kan (2007) or Bourdieu (1983), others give more concrete examples. These can be readily categorized into three categories as follows:

Firstly, an often-mentioned example for an economic resource that can be accessed via an individual's social capital is the ability to borrow money informally, i.e. without the involvement of a bank, from another individual [e.g. Ellison et al. (2014), Adler and Kwon (2002), Fine (2001), Lin (2001) or Paldam and Svendson (2001)]. This is typically assumed to be associated with thick ties between borrower and creditor. Portes (1998) adds that the loan the individual can get via his social capital may also be subsidized, i.e. come at better conditions than those the agents would be offered by a bank[4]. A further special case is mentioned by Lee et al. (2011), Wouter and Tom (2008), Davidsson and Honig (2003), Putnam (2000) and Portes and Sensenbrenner (1993), who give the example of start-up financing as a social capital resource. Related to the possibility to borrow money is the possibility to borrow objects, such as a car [Astone et al. (1999)] or, on a much smaller scale, food [Kadushin (2004)].

Secondly, economic resources that can be accessed via an individual's social capital can also entail gifts given to the individual by other agents. While exchange of symbolic gifts is a part of social capital creation for Bourdieu (1983), gifts may also be given unidirectionally and have real economic value. Astone et al. (1999) give the downpayment on a house and money for school fees as examples.

Thirdly, an individual's access to other agents' economic resources can also embody itself in informal insurance. This is a resource mentioned especially in the context of developing countries, where formal insurance markets are still underdeveloped [Daly and Silver (2008)] or state-run social security systems are inexisting or insufficient to cater for the needs of the population [Di Falco and Bulte (2015)]. Nonetheless, this can also be a relevant resource in developed countries [Coleman (1988)], especially in the case of emergencies not covered by the social security system or other insurances [Kan (2007)].

The access to economic resources is based on thick ties between agents, the more, the higher the value of the economic resource involved. The reason is as follows: Typically, there is a risk involved with the repayment. There are two possibilities: Firstly, the creditor expects full repayment. This creates a moral hazard situation since the borrower cannot continuously monitor the lender's actions. Thus, the creditor needs to trust the borrower sufficiently that he undertakes whatever he can to repay the dept.

[4] The informal lending and borrowing of money may create an economic win-win-situation: While the borrower may get money at better conditions than at a bank (or at all), the creditor may have better information on the borrower relative to the bank and may thus be able to offer better conditions to him. However, this is a side aspect: Money may be lent as a social capital resource even if it is not economically beneficial for one of the parties.

Trust is associated with thick ties. Secondly, the creditor does not expect full repayment. Then, he is actually willing to give a part of the money as a gift to the borrower. Of course, an individual would not give away money to someone he does not know very well and towards whom he does not feel a strong attachment. So, again, thick ties are involved.

Human Capital Resources

Besides the access to economic capital, social capital can also entail access to other individual's human (or cultural) capital or simply labor time. While labor time and human capital are two quite distinct things at first sight, they are not completely separable either: Every use of human capital requires some labor time. On the reverse, every (productive) use of labor time requires employing some skills, and thus there is always some human capital involved. As with economic resources, some authors [e.g. Portes (1998) and Bourdieu (1983)] do not specify what concrete examples they think of when arguing that human (or cultural) capital is a social capital resource. The existing examples can be divided into two broad categories:

Firstly, an individual may have access to other agents' human capital resources in the private sphere. The examples differ markedly in their time horizon: Some require relatively little time, i.e. receiving advice [Adler and Kwon (2002)], help in repairing things [Kadushin (2004)], hunting or gardening [both Astone et al. (1999)]. Sobel's (2002) custodian for apartment keys would also fall into this category. Other services may be more time intensive, i.e. the caring for elderly parents by their children, an example by Astone et al. (1999), or helping parents in their childrens' education, an example by Coleman (1988). All these examples may also differ in the skill level (and thus the amount of human capital) they require. Advice e.g. on financial matters may be more human capital intensive than help with weeding the garden.

Secondly, his social capital may give an individual access to human capital resources that help him advance in the job sphere. Lancee (2010) and Davidsson and Honig (2003) argue that the access to unpaid labor by family members may be a valuable resource for entrepreneurs. Advice may be a valuable asset not only in the private sphere, but also if it is work-related [Adler and Kwon (2002)]. Again with a focus on entrepreneurs, Lee et al. (2011) give the specific examples of "marketing advice, knowledge and referrals" (p. 1056) and "business strategy advice" (p. 1061). Adler and Kwon (2014) point to Renzulli and Aldrich (2005), who add advice in legal, financial and loan-related matters.

Whether the access to human capital is based on thick ties or thin ties depends on the effort the agents that grant access to their human capital have to make. This is analogous to economic capital, where the access to larger resources requires thicker ties. However, since repayment is typically not expected to be in kind, the requirement on the level of trust between agents may be relatively lower.

Preferred Access Resources

Preferred Access Resources are resources where the individual has an advantage over others in reaching his goals because of his social connections. This includes access to information and access to desired objects. The two aspects will be discussed in turn:

The access to information features very prominently as an example for social capital resources in the literature. The economic benefit is that the individual can save on transaction cost, especially search cost. As with economic and human capital, some authors are unspecific when using the term information, such as Gedajlovic et al. (2013), Esser (2008) or, with some minor exceptions, Burt (2000). However, Burt (ibid.), as already pointed out in chapter 2.1.3, makes an often-cited argument that new, non-redundant information is best accessed via ties that span structural holes, i.e. bridging ties. These are ties that connect the individual with other agents that are hitherto unconnected by his network. However, the larger part of the authors have very clear ideas on the social capital resources that can be subsumed as access to information:

The by far most often named aspect is that of information on jobs [e.g. Lancee (2010), Daly and Silver (2008), Kaasa and Parts (2008), Garip (2008), Smith (2005), Kadushin (2004), Adler and Kwon (2002), Putnam (2000) and Lin (1999)]. Very often, there is a reference to Granovetter's (1973) work included who investigated "job changers living in a Boston suburb" (p. 1371) and found that many of them found their job through information passed on by other individuals they are connected to (c.f. page 19 of this thesis).

However, there are also other fields where the access to information on certain matters represents a social capital resource. Kadushin (2004) gives the example of a recipe for baking, whereas Sobel (2002) and Lin (2001) point to information that is helpful in finding a babysitter. The latter example can ultimately be traced to Coleman (1990), who also gives the example of information on fashion trends. For the world of business, Adler and Kwon (2002) refer to information on innovations, while Burt (2000) describes information about markets, i.e. goods, sellers, buyers and prices.

Related to the access to information, the access to the desired objects the information is about is also a regularly cited social capital resource, e.g. by Kan (2007), Putnam (2007), Smith (2005), Sobel (2002), Lin (2001), Astone et al. (1999) and Portes (1998). It may be even more valuable to know not only that there exists some opportunity, but also to actually have a choice on whether to take it or not. As with information, economically, the benefit is that the individual can save on transaction cost, besides search cost especially application cost.

Again, the most prominent example is with jobs [Kan (2007), Putnam (2007), Sobel (2002), Astone et al. (1999) and Portes (1998)]. Lin (2001) and Portes (1998) give the example of access to a job not for the individual A an individual B has a tie to, but for that individual A's child. Compared to the proliferation of information in a network, it is even more unlikely that actually giving access to jobs will take place via thin ties: Smith

(2005) puts the argument that individuals may be reluctant to recommend other agents for jobs as they are afraid that a bad performance by the individual they recommend may damage their own reputation.

Besides jobs, there are other aspects where access can be valuable: Astone et al. (1999) gives the example of housing. For the world of business, Portes (1998) elaborates on the access to protected markets. Following Bourdieu (1983), the possibility to get to know new people that exhibit the degree of similarity, i.e.homogeneity in his words, necessary to create a relationship that can include social capital would also fall into this category.

Emotional Resources

Social capital is not only about access to resources with a more or less obvious economic value. An important aspect of social capital that is often referred to in the literature, are *emotional resources*. Although it goes by different names, e.g. "emotional support" [Kan (2007), p. 437, Astone et al. (1999), p. 9], "social support" [Kadushin (2004), p. 76], "moral support" [Adler and Kwon (2002), p. 17] or "companionship" [Putnam (2000), p. 20; Astone et al. (1999), p. 9], the baseline is always the same: it may be a valuable resource for an individual to know another individual who listens to his sorrows or problems and does something, however small it is, to make him feel better. This action does not need to remove the original problem, but maybe just puts it into perspective, as Kadushin (2004) points out. Emotional resources are clearly associated with thick ties: an individual who talks about his sorrows makes himself vulnerable. Typically, he would be expected to do that only with people he knows well and whom he trusts.

However, emotional resources do not need to be limited to those called on in times of need. Having people that spending time with is enjoyable may also constitute an emotional resource. Astone et al. (1999) refer to Granovetter (1973), who points to the "emotional intensity [and] intimacy" (p. 1381) connected with thick ties.

Business Resources

Moreover, there exist a number of resources that cannot be classified into one of the categories outlined above. They share that they primarily affect businessmen or at least people that are employed.

Resources for businessmen include the loyalty of customers, which may be a resource for owners of businesses [e.g. Sobel (2002), Coleman (1988)]. Another resource that can be valuable for businessmen is the possibility to hire people that can be trusted to be reliable employees [Putnam (2000)]. Both is, according to Portes (1998), especially true in ethnic communities that exhibit closure. However, especially the latter point can be a double-edged sword: those agents that can be trusted to be reliable employees may have as a resource that they can be expected to be hired, even if the entrepreneur cannot afford their salary.

For employees, the possibility to advance faster in their careers due to their social ties is a resource [Lancee (2010), Westlund and Adam (2010)]. This can specifically lead to higher income [Kaasa and Parts (2008), Lin (2001, 1999)] and, closely connected to that, job promotions [Lin (2001)].

3.3 Existing Measures of Social Capital

The attempts to measure social capital have been numerous. As has been shown in chapter 2, different scholars understand the term in very different ways. Consequently, the instruments and indicators that have been developed to measure social capital measure very different aspects. In the following section, a number of approaches to measure social capital will briefly be introduced. A focus has been put on those measures that also aim, at least to some extent, at measuring relational capital, i.e. individual level social capital. Moreover, it will be analyzed how fit they are to measure social capital as given by the resource-oriented definition from Van Der Gaag and Snijders (2005) recapitulated in section 2.3.4. To do so, they should of course either measure the resources an individual has access to, or at least a convincing proxy for that.

In general, three types of indicators can be differentiated: Firstly, indicators that aim at assessing the respondent's social capital with just one single question. Obviously, whatever this question asks for must be a very convincing proxy for an individual's social capital. Moreover, when using such an indicator, it is impossible to further differentiate the respondent's social capital, e.g. into different types or dimensions. Secondly, indicators may use indirect measures that aim at assessing a respondent's potential access to resources by investigating into the general resourcefulness of his network and his position within that network. The problem with this kind of indicators is that they potentially fail to assess a network's resourcefulness, as will be explained below in more detail. The name generator and the position generator, two of the three most prominent measures to assess relational capital [see e.g. Carrillo Álvarez and Riera Romaní (2017) or Pena-López and Sánchez-Santos (2017)], but also the Personal Social Capital Scale fall into this category. Thirdly, indicators may use direct measures that aim at assessing an individual's access to resources directly. The resource generator as the third prominent measure to assess relational capital belongs into this category. The problem with direct measures is that they require an explicit collection of resources the respondent can be faced with, which may not cover the entire width of his social capital.

3.3.1 One Question Measures

There are two often-used one question indicators to assess social capital. They have become popular because they have been included in surveys for many decades and are thus readily available for relatively large time horizons. The fundamental problem with them is, of course, that it is impossible to measure a construct with many aspects,

like individual level social capital, with just one item. Nonetheless, these measures are worth looking at due to their popularity, which is partly due to their inclusion in the World Values Survey and hence easy availability for researchers. One indicator is a question clearly geared towards Esser's (2008) *system capital*. There are variants of it, one example for it is: "Generally speaking, would you say that most people can be trusted, or that you can't be too careful in your dealings with other people?" [Grootaert et al. (2004), p. 32]. Westlund and Adam (2010) give an overview about studies using either this measure, the membership in associations-measure presented in the next paragraph or both. It is obvious that this question, which aims at Putnam's (2000) *thin trust*, is not geared towards the resources an individual has access to and is thus insufficient to measure individual level social capital as defined above.

The second indicator is the number of organizations an individual is a member of. This indicator goes back to Putnam (1993), who, as pointed out in section 2.1.5, argues that membership in organizations is a good proxy for regular interaction with other people. Since regular interaction with others helps to create credit slips, membership in organizations and access to resources might well be correlated for an individual. This measure has been widely picked up in the literature [e.g. by Fidrmuc and Gërxhani (2008), Glaeser, Laibson, and Sacerdote (2002)], sometimes together with the trust-question given above [e.g. Xu and Wang (2015), van Oorschot and Finsveen (2010), Kaasa and Parts (2008)] or pooled with other data about civic engagement such as voting [e.g. Rupasingha, Goetz, and Freshwater (2006)].

However, it is far from being a good measure: firstly, although the literature strongly suggests it, it is by no means a priori clear whether group membership does really ensure an individual's access to other individual's resources. Secondly, groups and organizations are highly heterogenous: while some groups may meet only every few months for a couple of hours, others may meet for several hours a week and pursue common projects. Moreover, in some groups, individuals meet who are rich in resources. Their acquaintance may constitute more social capital than the acquaintances that can be made in groups where the individuals who meet are not as rich in social capital. When only asking for the number of groups the respondent is a member of, this factor is typically not taken into account. Thirdly, for the case of Germany, about two thirds of its inhabitants are not a member of any organization or club that meets regularly [Krimmer and Priemer (2013)]. However, most of these people surely have some kind of social capital. Fourthly, as pointed out on page 64 in detail, it is not convincing to argue that membership in more groups does automatically mean more social capital.

Due to the apparent weaknesses of the two most popular one question measures for social capital, it is worthwhile to look at more sophisticated measurement instruments. There are three types of measures for individual level social capital: Indirect and direct measurement instruments as well as mixed measures that combine elements from both.

3.3.2 Indirect Measures

In this section, indirect measures like the name generator, the position generator and the personal social capital scale are further investigated. Looking at the name generator is interesting as its use prefigures modern social capital definitions. Thus, when extracting a social capital measure from the name generator, investigations how social capital developed across time can be made. Moreover, looking at the name generator is worthwhile as the position generator has been developed based on it. The latter measures social capital without explicitly naming resources, thus aiming at being independent of the culture and point of time it is used in. Finally, a look is taken at the personal social capital scale, which takes a slightly different approach: it does not look at the position of the respondent's contacts, but rather how well these contacts are embedded in different types of networks.

The Name Generator

According to Van Der Gaag and Webber (2008), the name generator is the "oldest measurement tool for individual social capital" (p. 38), originating in the 1960s [5]. It was not developed in connection with social capital research, but stems from the research on social networks (ibid.). Its aim is to generate an overview over the total sum of connections a respondent has and their characteristics. Moreover, it asks for the structure of the network the respondent is a part of.

A name generator survey consists of two or three steps [Van Der Gaag and Webber (ibid.)]: Firstly, the respondent is asked to list the names of people he knows. This is typically differentiated for social contexts, such as "role or content (neighbors, important family or work matters) to closeness (confidences, intimacy, etc.), geographic limits, or for specific periods of time" [Lin, Fu, and Hsung (2001), p. 62]. The respondent may be faced with up to a dozen different contexts [Varekamp et al. (2015)]. Moreover, the number of contacts listed may, but need not be limited (ibid.). To reduce interview time, some scholars even reduce the number of possible contacts for each context to one. The problem is that this reduced version no longer generates reliable estimates of network measures that can otherwise be obtained using the name generator [Marin and Hampton (2007)]. Secondly, the respondent is asked to provide additional information on the people he listed in the first step. This step is sometimes called "name interpreter" [Marin and Hampton (ibid.), p. 164]. A possible third step asks for connections between the individuals listed.

There are several ways how the data created by a name generator survey can be used to measure an individual's social capital [Lin, Fu, and Hsung (2001)]: Firstly, if an individual's social capital is connected to the structure of the network he is situated in and his position in that network, as postulated by Burt (1992, 2000, 2007), the overview generated by the name generator can be a helpful tool to assess his social capital as it

[5] Lin, Fu, and Hsung (2001) point to a study by Laumann (1966).

can e.g. be used to identify structural holes that the respondent bridges. However, this is only possible if the optional third step of the name generator survey has been conducted, i.e. if the connections between the different individuals an agent is connected to have also been assessed. Secondly, the information gathered on the contacts of the respondent can be used to create a measure of the resourcefulness, understood as "education, occupational prestige, or income" [Lin, Fu, and Hsung (2001), p. 62] of his environment. The idea is that contacts more resourceful in human or economic capital or in more prestigious positions can also provide the respondent with a higher level of access to resources and thus constitute higher social capital. It is possible to take as indicators both the mean resourcefulness of contacts as well as the highest level [Lin, Fu, and Hsung (ibid.)]. Thus, the name generator is an indirect measure for social capital.

Numerous points of critique are connected with the name generator: Firstly, Lin, Fu, and Hsung (ibid.) and Batjargal (2003) argue that respondents often give the names of people they have strong ties to but not the ones they are only weakly connected with. When some resources, such as job resources, are often accessed via weak ties [Granovetter (1973)], this becomes a problem because then their social capital is underestimated by the indicator created through the name generator. The same is true for the bridging of structural holes: Even if the respondent is asked to indicate connections between his contacts, it is by no means clear whether he is really bridging a structural hole between two of them when he states that they have no connection. There may well be yet another actor unknown to him who creates this connection. Secondly, the names generated are dependent on the social contexts the respondent is faced with and these may be set more or less arbitrarily by the researcher, thus influencing the results [Lin, Fu, and Hsung (2001)]. Moreover, respondents might interpret terms and thus contexts differently, Marin and Hampton (2007) give the example of the interpretation of "friends" and "close" (both p. 167). Thirdly, Van Der Gaag and Webber (2008) point out that the name generator is an instrument that is very time-consuming to use, especially when many contexts are included, as a large number of names is thus generated and further information has to be collected on them. Marin and Hampton (2007) add that the use of the name generator also puts a large cognitive burden on the respondent. A final point they make is that respondents may have privacy concerns giving the full name of their contacts and further details about them. Summing up, while Lin, Fu, and Hsung (2001) state in 2001 that "the name generator is the more common methodology" (p. 62), Peigang et al. (2014) more recently point out that a "further review [...] indicated that the Name Generator was no longer in use for research" (p. 1134).

The Position Generator

The position generator is a tool to assess social capital originally proposed by Lin and Dumin (1986). Lin, Fu, and Hsung (2001) and Van Der Gaag, Snijders, and Flap (2008) further elaborate on it. According to Verhaeghe, Van de Putte, and Roose (2012), it is

a popular tool as they list 78 studies that have made use of it between 1985 and 2012. It has been developed to overcome the mentioned weaknesses of the name generator. The idea behind it is the following: The resources accessed by an individual via social capital are embedded in the social structure. If that structure has a hierarchical order, the hierarchy level the respondent has connections to tells something about his access to resources: Someone who is connected to a large number of persons with a high social status should be able to access more valuable resources using these connections than someone only connected to persons with low social status. Thus, an individual's "network location [is] a precursor of social capital, [i.e.] the social resources accessed" (ibid. p. 76). Moreover, the position generator aims to capture the possibility to assess resources before they are actually accessed. Hällsten, Edling, and Rydgren (2015) make this point, arguing that social capital is valuable for the possibility it offers to access resources, although many of these resources are rarely used. This basic idea is relatively similar to the measure of resourcefulness that can be created using the name generator. However, the position generator is specifically designed to generate these data, while its creation from the name generator is associated with the generation of much superfluous data. Moreover, it may even be incomplete, due to the name generators bias towards strong ties.

In practice, the instrument works as follows: Respondents are faced with a list of "ordered structural positions salient in a society" [Lin, Fu, and Hsung (2001), p. 63], where positions can be "occupations, authorities, work units, class or sector" (ibid.). The researcher thus a priori assigns a hierarchical position to each of these positions. The number of positions asked differs amongst different questionnaires: Lin, Fu, and Hsung (ibid.) include 15 positions, Lin and Dumin (1986) include 20 positions. Van Der Gaag and Webber (2008) claim that position generators include between 10 and 30 positions. Hällsten, Edling, and Rydgren (2015) use 40 positions. Verhaeghe, Van de Putte, and Roose (2012) criticize that not only the number, but also the selection of positions is not standardized and mostly left to the researcher. The respondent is asked, for each position, whether he knows someone occupying this position on a first-name basis. An exemplary position generator given by Lin, Fu, and Hsung (2001) consists of four questions: "Among your relatives, friends or acquaintances, are there people who have the following jobs? If so, what is his/her relationship to you? If you don't know anyone with these jobs, and if you need to find such a person for private help or to ask about some problems, whom among those you know would you go through to find such a person? Who would he/she be to you? What job does he/she do?" (ibid., p. 66).

The resulting dataset can then be used to obtain a number of measures. Lin, Fu, and Hsung (ibid.) propose three measures: Firstly the "distance between the highest and the lowest accessed positions" (ibid., p. 63) or "*range*" (ibid., emphasis in original), secondly the "number of positions accessed" (ibid.) or "*extensity* or heterogeneity" (ibid., emphasis in original) and thirdly the "status of the highest position accessed" (ibid.) or "*upper reachability*" (ibid., emphasis as in original) of a person's contacts. Moreover,

Lin, Fu, and Hsung (2001) suggest that it is possible to ask for further informations about the contacts involved e.g. to gather information about the "strength of ties" (p. 63). Finally, these measures can be used to construct a single variable measuring a person's social capital [Hällsten, Edling, and Rydgren (2015)]. However, there are additional measures in use that can be constructed using the data generated by position generator. Verhaeghe, Van de Putte, and Roose (2012)] propose the "*volume of network resources*" (p. 167, emphasis in original), which simply adds up the total number of contacts the respondents give irrespective of their position in the social hierarchy. This last measure leads the idea of the position generator to tell something about the position of the respondent in the social hierarchy ad absurdum.

The position generator does not ask for the access to specific resources. It is thus, as Van Der Gaag and Webber (2008) point out, an indirect and not a direct measure of social capital understood as access to resources. This is no coincidence: The position generator itself is supposed to be "content free and role/location neutral" [Lin (1999), p. 88]. Access to specific resources shall "present itself in the data" [Lin, Fu, and Hsung (2001), p. 64]. For example, Lin, Fu, and Hsung (ibid.) use job prestige and income as dependent variables and find that social capital as assessed by the position generator helps individuals to obtain both higher income and access to higher degrees. Job prestige and income would thus be the resources accessed by the respondents via his or her social capital. It is easily imaginable how this can be extended to other resources. However, the apparent endogeneity problem is not discussed by Lin, Fu, and Hsung (ibid.): Someone who has high job prestige should find it easier to get to know someone who also has high job prestige, firstly because he is a more attractive person to know, an argument originally presented by Bourdieu (1983), and, secondly, because he will meet people with high job prestige naturally as colleagues and business partners. Moreover, the position generator is not as neutral as it claims to be: There is an ongoing discussion in the literature whether the specific choice of positions influences the results [e.g. Hällsten, Edling, and Rydgren (2015)]. An interesting result is the one by Fu (2008), who finds that respondents tend to name contacts of the same sex more often than it could be expected by their total network of contacts. Moreover, Van Der Gaag and Webber (2008) argue that respondents might wrongly state that they know someone although they only have a professional relation with that person, e.g. their physician. Thus, while the position generator might not have the problem of the name generator in oversampling thick ties, it might have a tendency to generate information on ties that are actually very thin.

A final point made by Van Der Gaag, Snijders, and Flap (2008) is that even contacts that do not represent any prestigious position may still offer important resources to an individual. To underpin this point, they introduce a differentiation between *instrumental* and *expressive* actions going back to Lin (2001). Instrumental actions are associated with "gaining resources" [Van Der Gaag, Snijders, and Flap (2008), p. 27], such as "finding a better job, house, and so on" (ibid.). Expressive actions are associated with "maintaining resources" (ibid.), such as "personal support and the sharing

of sentiments" (ibid., p. 28). They argue that the networks measured by the position generator, i.e. "access to higher occupational prestiges and access to diverse networks" (ibid., p. 27) are helpful in supporting instrumental, but not expressive actions. On the contrary, they claim that "support in the form of practical assistance may come especially from network members in lower positions" (ibid., p. 28). The differentiation between expressive and instrumental resources is also picked up by Pena-López and Sánchez-Santos (2017).

The Personal Social Capital Scale

A further instrument that has been developed to measure social capital at the individual level is the *Personal Social Capital Scale* by Chen et al. (2009) and Archuleta and Miller (2011). Peigang et al. (2014) argue that measures such as the position and the name generator are problematic because they use "a listing approach to quantify the amount of social capital" (p. 1134), i.e. confront the respondent with lists of different positions or resources. According to Peigang et al. (ibid.), "it is incredibly difficult [...] to exhaust all positions and resources in a survey" (ibid.) and thus to fully assess the respondent's social capital. Moreover, as already pointed out above, in different cultural settings the same occupation may represent a different position in the social hierarchy and the relevant resources may be different, too. Thus, the results from studies using the position and resource generator, which will be discussed below, may exhibit only a limited comparability across cultures. The Personal Social Capital Scale instead aims at measuring "how well a person is embedded within their various networks of different types of peoples [...] or organizations [ibid., p. 1135].

Scale #	Scale	Item
Bonding Social Capital		
1	How do you rate the number of people in each of the following six categories?	a. Your family members b. Your relatives c. People in the neighborhood d. Your friends e. Your coworkers / fellows f. Your country fellows / old classmates
2	With how many of people in each of the following categories do you keep a routine contact?	a. Your family members b. Your relatives c. People in the neighborhood d. Your friends e. Your coworkers / fellows f. Your country fellows / old classmates

Scale #	Scale	Item
3	Among the people in each of the following six categories, how many can you trust?	a. Your family members b. Your relatives c. People in the neighborhood d. Your friends e. Your coworkers / fellows f. Your country fellows / old classmates
4	Among people in each of the following six categories, how many will definitely help you upon your request?	a. Your family members b. Your relatives c. People in the neighborhood d. Your friends e. Your coworkers / fellows f. Your country fellows / old classmates
5	When people in all the six categories are considered, how many possess the following assets/resources?	a. Certain political power b. Wealth or owners of an enterprise or company c. Broad connections with others d. High reputation / influential e. With high school or more education f. With a professional job
Bridging Social Capital		
6	How do you rate the number of the following two types of groups/organizations in your community?	a. Governmental, political, economic and social groups/organizations (political parties, women's groups, village committees, trade union, cooperate associations, volunteer groups, etc) b. Cultural, recreational and leisure groups/organizations (religious, country fellows, alumni, sport, music, dances, crafts, games, etc)
7	Do you participate in activities for how many of each of these two types of groups and organizations?	a. Governmental, political, economic and social groups/organizations (political parties, women's groups, village committees, trade union, cooperate associations, volunteer groups, etc) b. Cultural, recreational and leisure groups/organizations (religious, country fellows, alumni, sport, music, dances, crafts, games, etc)

Scale #	Scale	Item
8	Among each of the two types of groups and organizations, how many represent your rights and interests?	a. Governmental, political, economic and social groups/organizations (political parties, women's groups, village committees, trade union, cooperate associations, volunteer groups, etc) b. Cultural, recreational and leisure groups/organizations (religious, country fellows, alumni, sport, music, dances, crafts, games, etc)
9	Among each of the two types of groups and organizations, how many will help you upon your request?	a. Governmental, political, economic and social groups/organizations (political parties, women's groups, village committees, trade union, cooperate associations, volunteer groups, etc) b. Cultural, recreational and leisure groups/organizations (religious, country fellows, alumni, sport, music, dances, crafts, games, etc)
10	When all groups and organizations in the two categories are considered, how many possess the following assets / resources?	a. Significant power for decision making b. Solid financial basis c. Broad social connections d. Great social influence

Table 3.1: Items in the Personal Social Capital Scale, *Source: Own representation of Chen et al. (2009), Appendix 1*

The instrument consists of 10 scales, which consist of a total of 2 to 6 items each, totalling 42 items. The entire instrument is constructed as a psychometric indicator. Five scales are supposed to assess bonding social capital and five scales aim at bridging social capital. A detailed overview is given in table 3.1. Each item is assessed using a five point Likert scale. Response options range from *A lot* (5 points) to *A few* (1 point) for items 1 and 6 and from *All* (5 points) to *None* (1 point) for the other items. To generate the score of a scale, the score of the items assigned to it is added up and then divided by the number of items. The generation of a respondent's total score for bonding and bridging social capital works analogously. It is created by adding up the scores of the five respective scales supposed to measure them. Finally, the total social capital score is calculated by adding up the bridging and the bonding social capital scores. A reduced version consisting only of 16 items has been proposed by Peigang et al. (2014).

For bonding social capital, the items are the same for the first four scales. The items ask for different categories of people from "your family members" [Chen et al. (2009), p. 315] to "your country fellows / old classmates" (ibid.). The fifth scale asks for certain resources or assets possessed by the entirety of these people. Thus, for

bonding social capital, only scale four, that asks about the availability of help, and five ask about resources while the other scales investigate into the size of the network and the amount of thick ties. The resources listed in the items that form scale five include human and economic capital as well as a general type of power or influence.

Regarding bridging social capital, analogously to the case of bonding social capital, the items are in principle the same for the first four scales aiming to assess it. The difference between the items is that they are asking for either one of two types of organizations in the respondent's community, namely "[g]overnmental, political, economic and social groups / organizations" (ibid., p. 316) and "[c]ultural, recreational and leisure groups / organizations" (ibid.). Again, the fifth scale asks for certain resources possessed by these groups. These are macro level resources, asking for the, for want of a better word, *power* of the groups.

The Personal Social Capital Scale thus seems to combine indirect and direct aspects of social capital measurement: On the one hand, the idea of the position generator is picked up that a respondent's access to resources is directly connected to the types of people he is connected to. However, the position generator's idea that people of a higher prestige automatically mean more social capital has been dropped. In principle, as pointed out above, there may be good arguments for this. The resulting problem that it is now unclear how helpful the respondent's contacts might be is counteracted by asking for the existence of specific resources in questions 5 and 10.

However, while the general idea of the Personal Social Capital Scale might look appealing, there are some problems connected to it. It is by no means clear that the respondent has access to the resources his contacts control. This is especially true for the bridging part of the Personal Social Capital Scale, which appears to be heavily orientated towards the idea that membership in organizations is a good indicator for an individual's social capital as proposed by Putnam (2000). The question is: why should the respondent's contacts grant him access to all the resources they have, instead of just using some (or even none) of them? And, moreover, why does it increase the respondent's social capital when e.g. his old classmates or the local political parties are especially resourceful, but he has no contact to them at all? In the bonding part, it would seem intuitive that scale four, which aims at the availability of general support to the respondent, independent of the concrete resources involved, is a prerequisite for the usefulness of the resources listed in scale five for the respondent. That the answers to the two scales are assessed independently from each other by simple summation when calculating the score for bonding social capital does not take this point into account, but rather leads to the problem described above. Generally, the fact that answers to the different items are simply added is questionable: having routine contact to a family member might represent a contact of much higher intensity and quality than having routine contact to an old classmate.

Moreover, what the scales measure is not bonding or bridging social capital. Bonding social capital is about interconnectedness of social groups, i.e. closure. The bonding part of the instrument rather measures thick ties to other individuals, at least if

frequency of interaction is a good proxy for this. The same problem exists for the apparently assumed connection between association membership with bridging social capital. Of course, groups may bring together very heterogeneous people that do not meet in other contexts, creating bridging social capital. However, they may also serve to bring together people that know each other from other contexts already, thus helping to create bonding social capital. So, what we measure here is group related social capital, which may well be social capital embodied in thick ties as also measured by scales 1 to 5 in the bonding part. Moreover, as can be seen from table 3.1, especially scale nine is quite difficult from the perspective of methodological individualism as it presumes that the groups and organizations themselves help the individual. Of course, it will always be other individuals within a group who will come to help an individual A, which makes this scale redundant to scale four. Besides the problematic scale nine, it is not at all clear what the individual's conceptually different benefit from his affiliation to groups, as asked for in scales six to eight, rather than individuals, as asked for in scales one to three, is supposed to be.

A further point is that the attempt to make the Personal Social Capital Scale independent of the cultural context it is used in weakens its explanatory power. Resources like *certain political power* or *broad connections with others* may be valuable in most cultures. However, in the same culture, different people may understand very different concepts by these terms: Does a certain political power mean that you need to know the mayor of a town, or is it enough knowing a councillor, who may have very limited de facto influence? Or is it already sufficient to be in contact with someone who knows a councillor and may tell him about your needs? A comparable case could be made for most of the resources included in the Personal Social Capital Scale.

A final point of critique that needs to be made is about the implemented weighting scheme. The scores regarding the size of the personal network are simply added up across all relevant items, making up three fifth of the total score for bonding social capital. The resourcefulness of the respondent's contacts only accounts for one fifth of the total score. The final fifth is made up by the respondent's possibility to actually receive some support from his network. This weighting seems to be quite arbitrary, as well as the simple addition of what the authors call bonding and bridging social capital to form total social capital. However, Chen et al. (2009) point to high values of internal consistency they have achieved in applications of the Personal Social Capital Scale, which might mitigate this issue. However, the high value of internal consistency can be questioned in the light of the high level of redundancy between the instrument's bridging and bonding part pointed out above since including redundant questions is known to boost internal consistency ratings.

Summing up, the Personal Social Capital Scale measures thick ties and the overall resourcefulness of the respondent's environment, which need not be identical to his network. It thus constitutes an indirect measure for social capital since the respondent's access to resources, potential or actual, is not directly assessed. If looked at the scale from the theoretical perspective developed in this thesis, it does not really measure

what it claims to measure. Hence, its usability is limited.

3.3.3 Direct Measures

In this section, measures are presented that directly assess the resources an individual can access via his social capital. The appealing central aspect they are having is that the way from the definition outlined above to the measure is short. However, the apparent problem is the selection of the resources, which may or may not be relevant for the entirety of the respondents. Specifically, the resource generator and the internet social capital scale will be looked at. While the former asks for access to a broad variety of resources, the latter includes a more condensed set.

The Resource Generator

The resource generator is a tool to measure social capital that has been proposed by Van Der Gaag and Snijders (2005) and Van Der Gaag and Webber (2008). The basic idea is simple: The resource generator directly asks for the resources the individual can access via its connections to other individuals. It is thus a more direct measure compared to the name generator or the position generator. Van Der Gaag and Webber (ibid.) argue that directly asking for the resources available to the respondent via his social network is "the most obvious indicator [...] for the concept of social capital" (p. 35). The resource generator does not have an apparent bias towards thick or thin ties, but rather looks at whether specific ties are giving access to resources or not.

Van Der Gaag and Snijders (2005) highlight the need for clarification on a number of points that come up when asking a respondent about the resources he has access to: Firstly, the question is whether the researcher should ask for potential access to resources or actual use of resources. Asking for potential access to resources might be difficult due to the hypothetical nature of the question as it means asking for access to unused resources. For some resources, the respondent might simply not know whether they would be available to him. Accordingly, some people might overestimate the access they have while others might underestimate it. Van Der Gaag and Webber (2008) also point out that there might be problems of social desirability involved: the respondent might state to have access to more resources than he actually does to avoid to appear as a "social loser[...]" (p. 36)[6]. Nevertheless, Van Der Gaag and Snijders (2005) argue that the alternative to asking for actual use is even more problematic as it is correlated with a respondent's lifetime and thus with age: The longer a respondent is alive, the higher is the chance that he has actually used a resource via his social capital. The solution to this would be, according to Van Der Gaag and Webber (2008), the use of a specific time frame, e.g. one year. Then, however, the result might be influenced by systematic differences in a respondent's propensity to access other individuals' resources: In the same situation where two persons have the possibility, one

[6]This is a problem shared by all the measurement tools presented in this chapter. The name generator may be least affected by it.

might do so while another might find a different solution because he shies away from putting a burden on another person. Also, individual factors like wealth or "individual need for help in general" [Van Der Gaag and Webber (2008), p. 38] might influence an individual's actual use of other individuals' resources.

Secondly, there is the question which resources should be included in such an instrument. To do so, Van Der Gaag and Snijders (2005) propose to identify different domains "potentially important for goal attainment" (p.3). The resources attainable via social capital, which they call "social resources" (p. 3), should then be selected in such a way that all domains are covered. The dimensions used to identify these resources, and hence the items of the questionnaire, were adopted from a study by Bruggen (2001) on goal attainment in the Netherlands. He identifies six domains: "(1) private productive activities, (2) personal relationships, (3) private discretional or recreational activities, (4) public productive activities, (5) public relationships and (6) public non-institutionalised interactions" [Van Der Gaag and Snijders (2005), p. 5]. Van Der Gaag and Snijders (ibid.) leave out the last dimension because it refers to interactions with individuals unknown to the respondent.

In practice, the resource generator asks, for a given list of concrete resources, whether the respondent knows someone who can provide him with access to it[7]. Refering to item response theory, Van Der Gaag and Snijders (ibid.) argue that the domains are the latent variables that are measured while the items only serve as a proxy for measurement of these latent variables. Consequently, the resource generator is not one, but several psychometric scales, meaning the responses to items that aim at a certain dimension can be added up to yield the total score of each dimension. Calculating scores for the dimensions is what the resource generator aims at. Constructing a measure of the respondent's total social capital is thus not the aim of the questionnaire, although Van Der Gaag and Snijders (ibid.) do it at some point by simply adding up all item response values. The original questionnaire used by Van Der Gaag and Snijders (ibid.) consisted of "33 social resource items, for each of which it was both expected that members of the general population of The Netherlands would consider its contents useful social resources, as well as find it acceptable to exchange or ask for these resources with people they knew" (p. 10). Originally, Van Der Gaag and Snijders (ibid.) differentiated for tie strength in access to the resource. This was done by asking the respondents to indicate whether access was via an acquaintance, a friend or a member of kin, but they later drop this in their investigations. They justify this by arguing that some resources are best accessed using weak ties. Here, they generally refer to the "social capital literature" in general without giving more details. However, they apparently relate to the work of Granovetter (1973). Van Der Gaag and Webber (2008) discuss the related topic whether measuring the number of other individuals giving access adds extra value. They claim that it is not important how often the resources are

[7]This is not clear from the formulation of the items as depicted in table 3.2, but according to Van Der Gaag and Snijders (2005), when a resource generator study is conducted, respondents are informed by the interviewer that knowing someone who has a certain resource also means that this person would grant him, i.e. the respondent, access to it.

available in a social network, but whether they are available at all. Although they admit that multiple alters giving access to a resource may be seen as a kind of insurance, they argue that the usefulness of multiple alters for access to the same resource shows at least diminishing returns. Accordingly, Van Der Gaag and Webber (2008) argue that reducing the data to a binary format, i.e. whether the respondent has access to the resource at all or not, is not associated with a great loss of information.

Van Der Gaag and Snijders (2005) also include some resources that are not relevant for certain groups of the population despite their claim to use resources that "members of the general population [...] would consider useful" (p. 10). An example is item 33 ("Do you know someone who can babysit for your children", p. 13), which is obviously not applicable for respondents who do not have children. The same is true for item 16 ("Do you know someone who is sometimes in the opportunity to hire people", p. 12), which is not relevant for people not active in the labor market, as is true for item 22 ("Do you know anyone who can give advice concerning a conflict at work") (p. 12). While Van Der Gaag and Snijders (ibid.) recognize this problem, they claim that excluding these items does not cause major differences in the results.

To group the items into dimensions, Van Der Gaag and Webber (2008) argue that it is either possible to do this based on theoretical ideas or based on the empirical data available. The obvious first possibility is to use the domains by Bruggen (2001), which served to construct the resource generator, as dimensions. Following the second approach, i.e. to construct the dimensions using their empirical data, Van Der Gaag and Snijders (2005) use Loevinger's (1947) H-Coefficent as proposed by Mokken (1996), which is a homogeneity measure. Their "exploratory cumulative scaling procedure" [Van Der Gaag and Snijders (2005), p. 15] results in four dimensions with a reasonably high degree in homogeneity that "appear meaningful in content" (ibid.). These four ex post dimensions have a higher degree of homogeneity than those identified by them ex ante. They label the ex post dimensions as follows: "Prestige and education related social capital" (ibid.), which includes access to people highly educated, rich in economic capital or with good contacts to media, "political and financial skills social capital" (ibid.), which includes access to people politically active or who are knowledgeable about the legal system or financial matters, "personal skills social capital" (ibid.), which includes both access to a car but also the ability to speak a foreign language and readership of a professional journal and "personal support social capital" (ibid.), which is about advice in the private and work sphere, but also about help when moving house (see table 3.2 for details). It is not at all apparent that these ex post dimensions are, as Van Der Gaag and Snijders (ibid.) claim, "meaningful in content" (ibid.). For example, the fact that speaking a foreign language and knowledge of literature are in two distinct categories seems illogical, as is true for owning a car and owning a holiday home. The same problem exists for the internal consistency of the ex post dimensions: The relationship between knowing someone who owns a car and someone who has the ability to speak a foreign language is unclear, as is the connection between knowing someone with completed secondary education and contacts to media. However, Van Der

Gaag and Snijders (ibid.) do not interpret the dimensions they find in their data any further. The fact that Van Der Gaag and Webber (2008) find quite different dimensions for an application of the resource generator for the United Kingdom ("domestic resource scale", "expert advice scale", "personal skills scale" and "problem solving resources scale", all p. 43) highlights the problems of an ex post allocation of the items to the dimensions. To give an example, here, the items 17 and 18 from the study by Van Der Gaag and Snijders (2005) ("Do you know anyone who knows a lot about governmental regulations" and "Do you know anyone who has good contacts with a newspaper, radio or tv station") both fall into the same dimension in the study by Van Der Gaag and Webber (2008), namely the *expert advice scale*, whereas they are allocated to different ex post dimensions in Van Der Gaag and Snijders (2005). The problem of this inconsistent creation of the dimensions across datasets is that new interpretations for the dimensions have to be found for each application. This makes a generalization with respect to the question into which dimensions social capital can actually be subdivided virtually impossible.

Item Number	**Item ("Do you know anyone who...")**	**Access in %**
Dimension: Prestige and education related social capital		
7	has knowledge of literature	70
8	has senior high school (VWO)[8] education	87
9	has a higher vocational (HBO)[9] education	94
14	earns more than Dfl. 5000[10] monthly	76
15	owns a holiday home abroad	41
18	has good contacts with a newspaper, radio or tv station	32
Dimension: Political and financial skills social capital		
11	is active in a political party	34
17	knows a lot about governmental regulations	69
20	has knowledge about financial matters (taxes, subsidies)	81
Dimension: Personal skills social capital		
2	owns a car	87
4	can speak and write a foreign language	87
5	can work with a personal computer	90
10	reads a professional journal	78
Dimension: Personal support social capital		
22	can give advice concerning a conflict at work	73
23	can help when moving house (packing, lifting)	95
29	can give advice concerning a conflict with family members	83
32	can give a good reference when applying for a job	64

[8] equivalent to 14 years of education starting at the age of 4
[9] equivalent to 13 years of education starting at the age of 4
[10] One Dutch guilder equals 0.453780 Euros according to the final exchange rate from December 31, 1998.

Item Number	Item ("Do you know anyone who...")	Access in %
Items not allocated to a dimension		
1	can repair a car, bike, etc.	83
3	is handy repairing household equipment	72
6	can play an instrument	79
12	owns shares for at least Dfl. 10,000	54
13	works at the town hall	42
16	is sometimes in the opportunity to hire people	65
19	knows about soccer	80
21	can find a holiday job for a family member	61
24	can help with small jobs around the house (carpenting, painting)	91
25	can do your shopping when you (and your household members) are ill	96
26	can give medical advice when you are dissatisfied with your doctor	56
27	can borrow you a large sum of money (Dfl. 10,000)	60
28	can provide a place to stay for a week if you have to leave your house temporarily	95
30	can discuss what political party you are going to vote for	65
31	can give advice on matters of law (problems with landlord, boss, municipality)	65
33	can babysit for your children	57
34	you can pay social visits to[11]	93
35	can discuss intimate matters with you[12]	86
36	can do small jobs around the house[13]	86
37	keeps a spare key to your house[14]	80

Table 3.2: Dimensions, items and access to them in the resource generator by Van Der Gaag and Snijders (2005), *Source: Own representation based on Van Der Gaag and Snijders (ibid.), tables 2 and 3*

There are several points of critique directed towards the resource generator: Firstly, as Van Der Gaag and Webber (2008) point out, the selection of the concrete resources to include into the questionnaire is always to some extent arbitrary, or, as they put it, "difficult to achieve with any theoretical rigor" (p. 41). Moreover, the resources need to be "potentially productive, exchangeable, acceptable to ask for, and memorable for the respondent" (ibid.). The perception which resources fulfil these criteria is, as Van Der Gaag and Webber (ibid.) state, "culturally dependent" (ibid.). Thus, the resource generator needs to be adapted for the specific population under investigation. However, this is also true for the position generator, as the same occupation might be connected to a different position in the social hierarchy in different countries and cultures. Thus,

[11] Item from the name generator included in the same survey
[12] see footnote 11
[13] see footnote 11
[14] see footnote 11

both indicators exhibit, as Peigang et al. (2014) put it, a limited "cross-cultural utility". Connected to this is the issue that some items might not have the same significance at different points in time: for example, knowing someone who can use a personal computer might be a rarer resource in the early 2000s than in the late 2010s.

A second point is that the aim of the resource generator is to ask for concrete resources the respondent may or may not have access to. However, it is unclear which resources are aimed at when the respondent is, e.g., asked whether he knows anyone active in a political party [Van Der Gaag and Snijders (2005), item 11] or who works in a city hall [Foster and Maas (2014), item 5]. Is the resource aimed at getting the respondent a job in the public sector? Or is it about getting some official paperwork done quicker or with less problems? Arguments into that same direction could also be made about other items included in the resource generator.

A third point, as Van Der Gaag and Webber (2008) put it, is that the "popularity of the items" is rather high, meaning the high degree of affirmative answers typical for the resource generator. In Van Der Gaag and Snijders (2005), an average of 76% of respondents claimed to have access to any given resource. The number is even higher in the application by Foster and Maas (2014) in the United States, where it is over 83%. Even in the socially deprived sample of long-term welfare recipients used by Varekamp et al. (2015), the average agreement rate to the items is at about 58%. This is of course a weakness: What is the explanatory power of an indicator where the vast majority of respondents says *yes* for the vast majority of items? Do the remaining differences really yield a significant amount of explanatory power regarding the respondent's social capital understood as access to resources, especially given the fact, as pointed out above, that these differences are often clustered in items with an unclear resource association, such as knowing someone who works in the city hall or is active in a political party? A final point connected to this is that the ex post allocation of the items to scales using *Loevingers H-Coefficient* as done by Van Der Gaag and Snijders (2005) and Van Der Gaag and Webber (2008) might result in social capital dimensions that are quite arbitrary. This may well be a statistical artefact as the procedure simply focusses on the items where there are significant differences between the respondents at all.

The Internet Social Capital Scale

A further scale to measure social capital is the Internet Social Capital Scale developed by Williams (2006) and Ellison, Steinfield, and Lampe (2007). Both contributions refer to neither the name generator nor the position generator nor the resource generator, all of which have been developed earlier. Instead, their main reference is the work by Putnam (2000), which is interesting insofar as Putnam (ibid.) does not design a questionnaire himself, but rather uses data created for other purposes for his study. The Internet Social Capital Scale is divided into two parts: one is supposed to measure bridging, the other to measures bonding social capital. While the former, as will be shown, aims at system capital, the latter part is interesting to look at as it offers dif-

ferent, more general formulations to assess resources relative to Van Der Gaag and Snijders (2005) and Van Der Gaag and Webber (2008).

Williams' (2006) subject of investigation is whether there is an effect of internet use on the respondent's social capital. Measuring social capital is a necessary prerequisite to answer his research question. In order to do so, he employs four subscales. Each of the four subscales consists of ten items, which are measured by five-point Likert scales. Each subscale aims to measure one out of two specific types of social capital in one out of two specific environments, respectively: Social capital is differentiated along the lines of bridging and bonding capital, while the environment is differentiated between online and offline, i.e. Williams (ibid.) aims at differentiating between social connections maintained online and offline. Consequently, in the Internet Social Capital Scale, there are two different groups of questions aiming at assessing bridging and bonding social capital. The difference in the two inventories for the online- and the offline case is merely a replacement of the word online by offline, however. A reduced version of this scale, which only uses five questions for the bridging and bonding subscales and drops the differentiation between online and offline has been proposed by Ellison, Steinfield, and Lampe (2007). According to Appel et al. (2014), this is the version most widely used in research. A summary of the subscales is given in table 3.3. Since there is de facto no difference between the batteries investigating the online- and offline case, the main interesting aspect about the Internet Social Capital Scale is looking into the question batteries assessing bridging and bonding social capital in detail.

As pointed out above Williams (2006) is heavily influenced in his social capital concept by Putnam (2000). This is especially notable when looking at the scale that aims at measuring bridging social capital: They are supposed to measure four aspects. The first is whether the respondent is "outward looking" [Williams (2006), p. 600], i.e. "open minded, and more comfortable challenging [his] precepts" (ibid.). This aspect looks at whether the respondent is interacting with "people outside [his] local area" (ibid.), but also whether he is "curious about differences in others and different parts of the world" (ibid.). A second aspect is whether the respondent is in "contact with a broad range of people" (ibid.), meaning "people of different backgrounds" (ibid.). Although these two points do not measure the individual's access to resources directly, it is imaginable that being open-minded and interacting with people of different backgrounds might be advantageous in accessing informational resources and also, following Granovetter (1973), in gaining preferred access, e.g. on the labor market. The possibility to get to know new people, which is assessed by item nine, may actually constitute a social capital resource. The third aspect Williams (2006) aims at measuring in his bridging scale is whether the respondent sees himself "as part of a broader group" (p. 600), which means a "larger community" (ibid.) or a "feeling as if everyone in the world is connected" (ibid.). The final aspect is "diffuse reciprocity with a broader community" (ibid.), where "helping strangers" (ibid.) is the example given by Williams (ibid.). The influence of Putnam (2000) is especially visible in the third and fourth aspect of Williams questionnaire, which aim at thin trust and generalized reciprocity, respectively. Especially in

these latter points, the connection of the aspects measured to the resources accessed by the individual via his connections becomes feeble. Moreover, the first two points in the Internet Social Capital Scale are not directed at resource use, but rather aim at what interaction with different people does to the respondent's mindset: Questions like "[t]alking with other people online/offline makes me curious about other places in the world" [Williams (2006), p. 602] and "[i]nteracting with people online/offline makes me interested in what people unlike me are thinking" (ibid.) rather aim at a very lofty idea of the general benefits of interacting with others. This fits with Putnam's (2000) ideas of generalized reciprocity and thin trust but has little to do with bridging social capital in the sense of Burt (1992, 2000, 2007), which is about spanning structural holes in order to get preferred access to valuable information.

Item #	**Item**	**Included in Ellison, Steinfield, and Lampe (2007)**
Bridging Subscale		
1	Interacting with people online/offline makes me interested in things that happen outside of my town.	no
2	Interacting with people online/offline makes me want to try new things.	yes
3	Interacting with people online/offline makes me interested in what people unlike me are thinking.	no
4	Talking with people online/offline makes me curious about other places in the world.	no
5	Interacting with people online/offline makes me feel like part of a larger community.	yes
6	Interacting with people online/offline makes me feel connected to the bigger picture.	no
7	Interacting with people online/offline reminds me that everyone in the world is connected.	yes
8	I am willing to spend time to support general online/offline community activities.	yes
9	Interacting with people online/offline gives me new people to talk to.	no
10	Online/Offline, I come in contact with new people all the time.	yes
Bonding Subscale		
1	There are several people online/offline I trust to help solve my problems.	yes
2	There is someone online/offline I can turn to for advice about making very important decisions.	yes
3	There is no one online/offline that I feel comfortable talking to about intimate personal problems.	no
4	When I feel lonely, there are several people online/offline I can talk to.	no

Item #	Item	Included in Ellison, Steinfield, and Lampe (2007)
5	If I needed an emergency loan of USD 500, I know someone online/offline I can turn to.	yes
6	The people I interact with online/offline would put their reputation on the line for me.	no
7	The people I interact with online/offline would be good job references for me.	yes
8	The people I interact with online/offline would share their last dollar with me.	no
9	I do not know people online/offline well enough to get them to do anything important.	yes
10	The people I interact with online/offline would help me fight an injustice.	no

Table 3.3: Subscales in the Internet Social Capital Scale, *Source: Own representation of Williams (2006), table 1, and Ellison, Steinfield, and Lampe (2007), table 5*

Consequently, especially the last two aspects of the bridging scale aim at a different concept of social capital than the one employed in this thesis, namely system capital. Thus, for any measure of relational capital, they would need to be excluded.

The orientation at Putnam's (2000) concept of social capital is less apparent when looking at the scale that is supposed to measure bonding social capital. Instead, a number of items (1,2,3 and 5) have been adapted from Cohen and Hoberman's (1983) Interpersonal Support Evaluation List. Again, as in the case of bridging social capital, they were originally supposed to measure four aspects: Firstly, whether the respondent has access to "emotional support" [Williams (2006), p. 601], i.e. has "someone to turn to for advice, and ha[s] someone to go to with intimate personal problems or to alleviate loneliness" (ibid.). This aspect clearly adresses emotional resources. The second aspect is intended to capture "access to scarce or limited resources" (ibid.), i.e. "something that is valuable both to the person giving and to the person receiving" (ibid.), either "tangible, such as money" (ibid.), or intangible, such as reputation. Here, it is also clear that resources are involved, either economic or other, depending on the precise situation. The third aspect is the "ability to mobilize solidarity" (ibid.). Although Williams (ibid.) agrees that this is, at least in larger groups, typically achieved through "second-order networks", e.g. by having friends who help the respondent "fight an injustice" at some cost to them, "even if it is only time" (ibid.), it is a sign of bonding social capital. Here, again, resources are accessed, namely human capital resources if time is involved. The final aspect brought up by Williams (ibid.) is "Out-Group Antagonism", i.e. whether the respondent is "connecting with people who share similar beliefs and interests" (p. 602). This is the only point that does not directly capture resources. However, it can be interpreted as an aspect implying the "minimum of objective ho-

mogeneity" [Bourdieu (1986), p. 249] postulated by Bourdieu (1983) to be necessary for social capital to work. So, while the first three aspects more or less directly aim at access to resources by the respondent, the proposed final aspect asks for a precondition to social capital formation. Consequently, Williams (2006) admits himself that this fourth aspect did not load onto the same factors as the other questions in the bonding scale in the empirical tests of his instrument. Thus, this final aspect was eventually deleted from the scale, reducing it to measure three aspects. However, while the bonding measure of the Internet Social Capital Scale may put a focus on thick ties, it is by no means clear why it should be measuring bonding ties. Conceptually, as the remaining items all measure resources, the bonding scale of the Internet Social Capital Scale is comparable to the resource generator as a direct measure, but with a much reduced set of items. However, these items are of a much more general nature than the items used in the Ressource Generator. Thus, the part that is called the bonding part can be categorized to be a direct measure for social capital.

The Internet Social Capital Scale has been criticized by Appel et al. (2014). Their main point of criticism is that the convergent validity of the Internet Social Capital Scale is low. To measure this, they compare the results from the bonding-scale to a measure generated from the name generator, while they compare the results from the bridging-scale to a measure generated from the position and the resource generator. All of this seems somewhat misguided: Of the three tools, the name generator is the only one that is able to create information on bridging and bonding ties, but the bonding scale of the Internet Social Capital Scale is actually, as pointed out, about thick ties. However, as the name generator also tends to oversample thick ties, the comparison might be in order. The position generator may tend to produce more information on thin ties than the name generator, but it does not say anything about bridging ties. This is also true for the resource generator: it that may generate information on both thick and thin ties that may be bridging or bonding ties. Thus, the claim by Appel et al. (ibid.) of low convergent validity of the Internet Social Capital Scale might be caused by comparing apples and oranges.

Nonetheless, the Internet Social Capital Scale cannot be used as it is in this thesis: Firstly, it does not measure what it claims to measure. The inventory aiming at bridging social capital rather measures Putnam's (2000) thin trust and moreover some vague idea of self-improvement through contact with others. It is thus not a helpful tool to measure social capital as understood in this thesis. The inventory intended to grasp bonding social capital rather measures thick ties. Secondly, there is no systematic coverage of resource types in the scale that aims at bonding social capital. Emotional, economic and human capital are covered, but preferred access is left out. Thirdly, the items may not be comparable across members of a population as different respondents may interpret them differently: For example, item 2 ("There is someone online / offline that I feel comfortable talking to about intimate personal problems") may, for some people, mean advice in personal matters, e.g. on starting or ending a relationship. For others, it might mean advice in financial or legal matters or advice how to

advance their career. These points represent very different forms of advice and might, but need not coincide. Thus, two people who completely agree here might still have access to very different resources. A comparable argument could be made for items 1, 9 and 10. Other items, however, might be suited to assess access to certain resources, such as items 5 or 7. Thus, while direct measurement tools may provide a straightforward way to measure social capital, the Internet Social Capital Scale has fundamental weaknesses that inhibit its direct application.

3.3.4 Mixed Measures

There are some measures that use both direct and indirect items to assess a respondent's social capital. Not all of them can be discussed here in detail. Instead, only two measures, namely those proposed by the World Bank and the one included in the German Socioeconomic Panel, are presented for illustrative purposes. The first one is included due to its huge popularity, the second one as it is explicitly designed for the cultural setting of Germany, which is where the survey discussed below was undertaken.

The World Bank Approach

In the early 2000s, the World Bank was interested in social capital as a possible concept to use in development aid [Woolcock (2010)] and ran a website on the concept [Adler and Kwon (2002)]. However, the World Bank's interest on social capital has been on its helpfulness to increase "community participation" [Woolcock (2010), p. 475] in development projects. Consequently, the understanding of social capital developed by the World Bank is, in Esser's (2008) words, one of system capital. Nonetheless, it is worthwhile to look at the indicator developed at the World Bank by Grootaert et al. (2004), the so-called "Integrated Questionnaire for the Measurement of Social Capital" (p. vii) since they also accept that *relational capital* is a part of social capital. It is interesting to see whether some parts of it may be useful to measure individual level social capital.

Grootaert et al. (ibid.) identify six different dimensions of social capital that they attempt to measure using their questionnaire: "Groups and Networks", "Trust and Solidarity", "Collective Action and Cooperation", "Information and Communication", "Social Cohesion and Inclusion" and "Empowerment and Political Action" (all p. 5). Grootaert et al. (ibid.) argue that the dimension *Trust and Solidarity* aims at *cognitive* social capital, i.e. *system capital* and that the dimension *Social Cohesion and Exclusion* looks at these aspects solely at the community level. Moreover, the dimension *Collective Action and Cooperation* is exclusively restricted to aspects of the community's ability for collective action, which has no connection to the resources available to the individual. The final dimension *Empowerment and Political Action* is solely concerned with the perception of the political system by the respondent. However, the other dimensions are worth looking at in more detail:

Concerning the dimension *Groups and Networks*, the questionnaire poses a number of questions on group membership. It lists 19 different types of organizations and asks the respondent if he is a member in orgnizations that belong to any of these types. Moreover, it is asked how active he is in these groups. Additionally, the questionnaire inquires into the details of the two groups most relevant to the respondent, e.g. how to become a member of them and how their internal organization works. As discussed in section 2.5.3, group membership alone may be helpful in creating social capital, but using group membership as a proxy for social capital may well be problematic. In addition to group membership, the questionnaire also directly asks for the resources an individual can access due to his group membership. It thus constitutes a mixed measure for social capital. To do so, it lists a number of broad resource categories and asks whether membership in said groups helps the household to gain access to them (Question 1.9, p. 29). Specifically, these are: "Education or Training", "Health Services", "Water Supply or Sanitation", "Credit or Savings", "Agricultural input or Technology", "Irrigation" and "Other". While some of these resources are obviously only relevant in the context of developing countries the questionnaire was developed for, others, like "Credit or Savings" may well be suitable for use in developed countries as well. Question 1.26 asks "If you suddenly needed a small amount of money [...], how many people beyond your immediate household could you turn to who would be willing to provide this money?" (p. 31) and question 1.27 continues to ask how many of them were actually able to provide this money. Question 1.29 asks the respondent the following: "If you suddenly had to go away for a day or two, could you count on your neighbors to take care of your children?". Although it surely assesses access to a resource, it is an unfortunately selected one since it requires the respondent to actually have children that need to be taken care of, an assumption definitely not sensible in developed countries with low birth rates. Finally, question 1.30 asks, in analogy to question 1.26, for willingness of others to help the respondent in case of a long-term emergency such as the loss of the breadwinner. Question 1.31 consequently asks how many of these people were actually able to help.

The dimension *Information and Communication* investigates into the possibilities of the respondent to access sources of information. The first couple of questions ask for very basic things, such as access to a postoffice, telephone or newspaper. Then, the questionnaire goes on to ask how the respondent receives access to information about government dealings and market proceedings (questions 4.7 and 4.8). Besides formal sources of informations, such as newspapers or the television, there are also informal sources that would constitute social capital resources listed, such as "[r]elatives, friends and neighbors" and "[b]usiness and work associations" (both p. 36).

Grootaert et al. (2004) provide only very vague instructions for the aggregation of the different items. Regarding the items that aim at assessing access to resources discussed above, i.e. 1.26, 1.27 and 1.29, they propose to calculate a "mutual support score" (p. 12) from them. Unfortunately, they do not go into more detail on this. Such a measure would actually be a direct measure. However, they propose to combine it

with information on the respondent's network size and diversity, thus creating a mixed measure that combines direct and indirect aspects.

Summing up, while the World Bank questionnaire features a large number of questions on system capital, it includes only a few questions to assess the respondent's individual access to certain resources of other agents, both directly and indirectly. Namely, these questions aim at the respondent's access to money, help with childcare and information. Money and information are two resource categories also found in the literature, as pointed out above. Childcare may be a human capital resource, but it is not a very good indicator since many respondents, especially in western countries, might not have children that require childcare at all. Preferred access is completely missing. Moreover, the whole questionnaire is clearly geared towards use in developing countries. Thus, the inspiration that can be drawn from this questionnaire for this thesis is limited to the few aspects dealing with relational capital that are relevant in the context of a developed country.

Social Capital as Measured in the Socio-Economic Panel

The German Socio-Economic Panel [SOEP, TNS Infratest Sozialforschung (2011)] also has a section that aims at measuring social capital. It was last included in the SOEP questionnaire in 2011. The section starts by asking for membership in various organizations like churches, unions and NGOs. It then goes on to ask respondents how many close friends they have. Since close friendship is obviously connected with having thick ties to other agents, and thick ties are, as pointed out, a sine qua non-condition for access to most of the resources listed above, it may be a good proxy for an individual's access to resources. However, the potential weakness associated with it is that close friends of different people might differ in the resources they can offer: A bank manager as a close friend can be more helpful in advising investment strategies compared to someone who is untrained and unemployed.

In question 125, the SOEP [TNS Infratest Sozialforschung (ibid.)] also directly asks for access to resources. Hence, like the questionnaire by the World Bank, it constitutes a mixed measure for individual level social capital that combines direct and indirect assessment tools for access to resources. To assess the access to resources, the SOEP questionnaire names a specific resource and then asks the respondent to fill in up to five categories of people who would provide this resource, e.g. their spouses, parents, children, other relatives, co-workers, people they know from their associational activities and others. An overview over the questions is given in table 3.4.

Items a), d) and e) clearly aim at emotional resources, although item d) does so indirectly: As with asking about close friends, the idea is that if a conflict with someone weighs an individual down, then this individual will have a thick tie on an emotional level with him. Item b) is intended to grasp access to human capital and business resources at the same time: While access to human capital is helpful for advancing in one's education, help in advancing one's career is a business resource. Since these

are two quite different resources, it is unclear whether asking for them in the same question is convincing: E.g. knowing a school teacher might be very helpful to advance in education, but, once this is finished, it will typically be of relatively little help in advancing one's career. Finally, item c) also asks for access to human capital. This is clearly a problematic part of the question: The situation mentioned is quite hypothetic for many people, and asking someone to care for you is very much to ask for. A priori, it is unclear how people react and thus whether access to this resource really exists as presumed.

Item #	Item
a	With whom do you share personal thoughts and feelings or talk about things that you would not share with everyone?[15]
b	Who supports you in advancing in your career or education and helps you to move on?[16]
c	A hypothetical question: Whom would you turn to if you would be in long-term need of care, e.g. after an accident [17]
d	With whom do you occasionally have conflicts that weigh you down?[18]
e	Who can tell you inconvenient truths? [19]

Table 3.4: Question 125 in TNS Infratest Sozialforschung (2011), *Source: Own representation and translation of TNS Infratest Sozialforschung (ibid.), p. 29*

Summing up, question 125 can be characterized as the short version of an enhanced resource generator: short, because it only comprises five items, enhanced, because it does not only ask whether a given resource is available, but also, who would give the respondent access to it.

The section on social networks in the SOEP [TNS Infratest Sozialforschung (ibid.)] concludes by asking about job and other details of three people very close to the respondent. This last section can be interpreted as a reduced version of the second step of a name generator survey. Moreover, the existence of a number of family members and how far away they live is asked for.

The part of the SOEP [TNS Infratest Sozialforschung (ibid.)] relevant for social capital is thus heavily oriented at the three generators described above, namely the name generator, the position generator and the resource generators. In the documentation for the questionnaire [TNS Infratest Sozialforschung (2012)], it is also explicitly pointed out that the items in the section of the SOEP are generator questions. Although, due to the nature of the SOEP, no explicit instructions on how to aggregate the data are given,

[15] The German original is: "Mit wem teilen Sie persönliche Gedanken und Gefühle oder sprechen über Dinge, die Sie nicht jedem erzählen würden"

[16] The German original is: "Wer unterstützt Sie in Ihrem beruflichen Fortkommen oder Ihrer Ausbildung und hilft Ihnen, dass Sie vorankommen"

[17] The German original is: "Nur einmal hypothetisch gefragt: Wie wäre es bei einer langfristigen Pflegebedürftigkeit, z.B. nach einem schweren Unfall: Wen würden Sie um Hilfe bitten?"

[18] The German original is: "Mit wem haben Sie gelegentlich Streit oder Konflikte, die belastend für Sie sind?"

[19] The German original is: "Wer kann Ihnen auch mal unangenehme Wahrheiten sagen?"

the most obvious way to do this is in a way similar to those proposed for the name, the position or the resource generator.

Concluding, while the SOEP [TNS Infratest Sozialforschung (2011)] provides a useful tool to measure access to human capital, emotional and business resources, it does not ask about the respondent's access to economic resources, access to information and preferred access to desired objects. On the other hand, it provides additional information on how the access to the resources covered works, especially by whom it is provided.

Summary

Individual level social capital is measured in numerous ways. An overview over the different measures discussed in this chapter can be found in table 3.5.

Indicator	Type	Number of Items	Number of Dimensions
General Trust in Others	one-question measure	1	1
Number of Associations	one-question measure	1	1
Name Generator	Indirect measure	up to 12	typically 1 or 2
Position Generator	Indirect measure	between 10 and 40	typically 1
Personal Social Capital Scale	indirect measure	either 10 or 42	1
Resource Generator	Direct measure	up to 37	about 4
Internet Social Capital Scale	bridging: indirect measure, bonding: direct measure	either 10 to 20	2
World Bank Approach	Direct measurement of some resources	8 about resources	6
German Socioeconomic Panel	Elements of direct and indirect measures	12	unclear

Table 3.5: Summary of the Social Capital Measures discussed in this Chapter

Especially the early measures have been adapted from other purposes to measure social capital. The number of organisations he is connected to is a very rough proxy for a person's social capital, popular mainly for it's availability in time series going back much further than the empirical investigation into social capital that started in the 1990s. The name generator can be used to construct very detailed representations of a respondent's personal network. If e.g. applied to entire communities, it can be

a powerful tool to assess not only thick and thin, but also bridging and bonding ties. However, data collection is extremely time-consuming and puts a high mental burden on both interviewee and interviewer.

Later measures such as the position and the resource generator have been developed to overcome especially this shortcoming of the name generator. The position generator aims at measuring the resourcefulness of the respondent's network by using the social status of his contacts as a proxy. However, two large problems remain: Firstly, it is not always clear whether the respondent knows someone in a certain position personally or due to a professional contact, e.g. if the latter is a physician. Secondly, the selection of positions given to the respondents might well influence the result of the study. Thirdly, even contacts that do not have a high social status can provide valuable resources to the respondent. This is especially true for expressive actions, e.g. emotional resources.

The resource generator, in contrast, directly asks for the resources available to an individual. While this overcomes the problem that resources valuable to a respondent need not always be entangled with the respondent's contact's status, it creates new problems: The collection and categorization of items needs to be undertaken carefully. An additional problem is that the resource generator has a large number of items, which may lead to respondent fatigue. Additionally, the items are only assessed on a binary basis (access or no access) and typically have very high availability rates. This effectively bases the differences in social capital between different respondents on a number of items where there are significant differences in responses independent of their relevance. Due to all these points, the resource generator as proposed by Van Der Gaag and Snijders (2005), Van Der Gaag and Webber (2008) and Varekamp et al. (2015) can be improved on. Moreover, it shares with the position generator that it is bound to a specific cultural context.

The Internet Social Capital Scale and the Personal Social Capital Scale have been developed to overcome these shortcomings: They aim especially at the problem that the selection of positions or resources is always up to a certain point arbitrary and that the use of the instrument is dependent on the cultural context. Technically, both scales intend to measure bonding and bridging social capital separately, and both share the property that the measure for bridging social capital they propose does certainly not measure bridging social capital, while their measure for bonding social capital is rather one for thick ties. The Personal Social Capital Scale follows the principally attractive idea to combine direct and indirect social capital measures. However, its assessment of resources is so vague that it de facto constitutes a purely indirect measure.

Finally, a brief investigation has been conducted into the approaches to measure social capital proposed by the World Bank and the German Socio-Economic Panel. The first approach mainly aims at *system capital* and only includes a small number of items that cover access to resources. However, the selection of resources is unsuitable to measure social capital as defined in this thesis because it is limited to help with childcare and access to economic resources. The same is true for the battery included in

the SOEP, which presents an interesting mixture of a name generator and a resource generator survey, which can be seen in the Personal Social Capital Scale's tradition of aiming at combining direct and indirect measures. Probably in order to reduce the cognitive burden on the respondent, both elements have been heavily reduced: The second stage name generator is only applied for two people, and the resource generator is only applied for five items. Same as with the Internet Social Capital Scale and the Personal Social Capital Scale, a problem is that the access to resources is assessed unsystematically: In the SOEP battery, access to economic resources, access to information and priviliged access are missing.

3.4 A New Proposal to Measure Individual Level Social Capital

As has been pointed out, all of the measures discussed above have notable weaknesses when trying to assess individual level social capital as defined in this thesis. In the following section, a new measure will thus be proposed. In a first part, some methodical considerations will briefly be presented. In a second part, a discussion of the concrete dimensions and items of the measure will take place.

3.4.1 Methodical Considerations

Firstly, a number of criteria that the new measure should meet will be introduced. Then, a specific structure for the measure will be proposed.

Criteria for a Measure for Individual Level Social Capital

Theoretical constructs can, as Zeller and Carmines (1980) point out, "be neither directly observed nor measured" (p. 3). Indicators are thus "intended to approximate and locate concepts empirically" (ibid.). The indicators that are combined to form a measure are thus necessarily "only a small subset of an almost infinite number" (ibid.) of indicators and indicator combinations imaginable for any given theoretical concept. Consequently, the task of selecting indicators and their combination is always up to a certain extent arbitrary. In the realm of measurement construction, two criteria to assess the quality of a measure have been established: *validity* and *reliability*. Reliability is seen as a prerequisite to validity. As will be shown below, some aspects of these two criteria can only be assessed after the measure has been used, and others only even after it has been used repeatedly. However, looking at how an indicator needs to be constructed to increase its chance to fulfill these aspects may serve as an ex ante guideline.

Reliability is defined by Zeller and Carmines (ibid.) as the ability of a measure to produces "repeatable [... and] consistent results" (p. 6). Drost (2011) sums up that reliability can be separated into three different criteria: stability over time, equivalence and internal consistency. All three can only be evaluated ex post. Stability over time

asks whether the instrument reproduces its results when used again at a later point in time. Equivalence can be seen as a weaker form in that it asks that at least the correlation to alternative instruments to measure the same construct stays constant over time. Finally, internal consistency aims at the question whether the indicator concepts aim at measuring the same concept. This is, apparently, only true for psychometric measures as discussed in section 3.1 of this thesis. Internal validity will be tested for in section 4.2 of this thesis.

Three recommendations are given by Drost to increase the reliability of an empirical survey.

Firstly, items should be clearly formulated so that they can be understood by everyone. To account for this point, in the instrument proposed in this thesis, items will be formulated as concrete as possible so that respondents understand the same when thinking about them. This is, for example, not the case in the Internet Social Capital Scale and the Personal Social Capital Scale.

Secondly, test instructions should be formulated such that all respondents understand what they should do. This has not been identified as a problem in the measures for social capital discussed above and care is taken that this is also not a problem in the measure proposed in this thesis. It has been pre-tested extensively to account for this and the above point.

Thirdly, Drost points to a trade-off in length: Too few items limit the validity of a measure, but too many items quickly lead to respondent fatigue. To account for this latter point, in the measure proposed in this thesis, lists of 30 and more items, as can be found in e.g. in the position generator, the resource generator or the Personal Social Capital Scale, will be avoided. The same is true for very detailed questions on a possibly large number of people, which may happen in the name generator.

The criterium of validity is defined by Zeller and Carmines (1980) as follows: “if a set of indicants were perfectly valid, it would represent the intended [...] concept” (p. 7). Drost enumerates four types of validity.

Firstly, statistical conclusion validity aims at the question whether a causal relationship between the variables under investigation exists. This can be solved by either convincing theoretical arguments or through a natural experiment. When looking at the resource generator, it becomes clear that there might be a problem here: All the items have very high rates of agreement and thus their explanatory power for the respondent’s social capital might be affected. Thus, in the instrument to measure social capital proposed in this thesis, care will be taken that the answers to the different items can actually be used to differentiate between the respondents.

Secondly, internal validity asks whether there are confounding factors in the study. Drost gives the example of a sampling bias. The instrument developed in this thesis is validated using data from an internet survey, which might be a cause of bias. This is discussed in more detail in section 4.1 of this thesis.

Thirdly, construct validity aims at “how well [the researcher] translated or transformed a [...] construct [...] into an operationalisation” [Drost (2011), p. 116]. This can either

be measured in comparison to outside measures or looked at in reference to the theoretical definition set up by the researcher. The indicators should "thoroughly cover its domains and dimensions" (ibid., p. 118). Thus, in the measure proposed in this thesis, all the types of resources associated with social capital in the literature will be included. These have been described in more detail in section 3.2. Especially, the measure will not be systematically blind towards one type of resources as e.g. the position generator is towards emotional resources.

Fourthly, external validity asks whether the construct is generalizable across persons, settings and times. In the context of social capital research, as has been explained earlier, this is difficult to achieve for different cultures and times. However, the empirical study presented in the following part of this thesis should at least be generalizable within the target population, which is represented by a representative drawing. Hence the items included were selected with great care to be, at least in principle, relevant for everyone.

Structure of a Measure for Individual Level Social Capital

As a consequence of the considerations outlined before, for the new instrument to measure social capital the following structure is proposed: The instrument is related to the resource generator insofar as each of the items but one asks the respondent about access to a concrete resource. It is thus predominantly a direct measure for social capital. This differentiates it from the measure proposed by Pena-López and Sánchez-Santos (2017), who combine 14 measures from the resource and 14 measures from the position generator and thus obtain a measure that is half-direct and half-indirect. The approach followed in this thesis, i.e. to mostly assess access to resources directly, seems appropriate due to the problems associated with indirect measures outlined above, e.g. the oversampling of very thin ties and the problems associated with assessing emotional resources. As proposed by Van Der Gaag and Webber (2008), the measure proposed in this thesis will ask about potential and not about actual access. The aim is to generate an accurate picture about the respondent's possibility to access other people's resources, not his necessity to actually do so. Each item is supposed to represent access to a type of resource as given in section 3.2.

It comprises of ten items, that fall into two dimensions. In the spirit of the position generator, the respondent will be asked for eight out of ten items how many people he knows that will grant him access to the specific resource. Asking the respondent about the number of people he knows that would grant him access aims at two things: Firstly it aims at assessing the quality of access to the resources. Secondly, it aims at solving a methodical problem connected to only assessing a narrow range of representative resources: a typical problem is that no information is generated on the multitude of concrete other resources that are of the same type. However, if the respondent knows a high number of people that supply him with access to a certain resource, chances are that there will be someone among them who can also supply him with access to

similar resources of the same type.

The major advantage of only using a relatively small number of items, as pointed out above, is that the cognitive burden put on respondents when using the measure is reduced. Moreover, less time is needed to answer to a measure with only 10 items relative to sometimes more than 30, as is the case in a number of measures used in the past. Thus, the measure developed here can also be used in settings where individual level social capital is not the main variable of interest, but rather an explanatory factor among others.

There is also one major disadvantage of using such a short measure vis-à-vis longer measures that is worth pointing out: The diversity of information collected is of course reduced when using a shorter measure. While, for example, the resource generator often asks for resources that are relatively close to each other, i.e. that cover more or less the same type of resource, the items are necessarily quite distinct when only using ten items. Here, each type of resource is only assessed with one or two items. The problem connected to that is apparent: a short measure is not as resistant to special cases as a longer measure. When an item is not relevant for a respondent, he might not have access to it and thus his access to a certain resource type, and consequently his individual level social capital, might be underestimated. This is because there are no, or maybe just one, alternative item(s) that assess(es) his access to a certain resource type. The same is true the other way around: when a respondent knows very many people that can provide him with one special resource for some reason, and this is precisely the resource asked for in the measure, his access to social capital might be overestimated. There is no first-best solution to this problem. Finding resources that are equally relevant for every respondent is very difficult. In order to reduce this problem, great care has been taken regarding the selection of the items in the measure proposed in this thesis, which have been selected following extensive pre-testing and a thorough literature research.

3.4.2 Dimensions and Items

In this section, the different dimensions to measure social capital and the items supposed to measure them will be introduced. It will be differentiated between social capital in the private sphere and, for those respondents where it is relevant, the job sphere. This differentiation is necessary since not everyone is active in the labour market, but for those who are, social capital may be an important asset which should not be left aside. In the private sphere, the distinction of resources into those useful for instrumental and those useful for expressive actions as proposed by Lin (2001) in the interpretation of Van Der Gaag, Snijders, and Flap (2008) will be picked up. As already pointed out on page 91, instrumental actions are associated with gaining resources. Examples include “finding a better job, house, and so on” [Van Der Gaag, Snijders, and Flap (ibid.), p. 27]. Expressive actions are associated with maintaining resources. Examples include “personal support and the sharing of sentiments” (ibid., p.

28). The aim of introducing this distinction is to better assess these two distinct sides of a resource category, at least for those cases where both instrumental and expressive action resources exist.

Social Capital in the Private Sphere

In this section, firstly, an introduction will take place of the expressive action resources that are relevant for social capital in the private sphere. Afterwards, an investigation into the instrumental resources in this field will be conducted.

Expressive Action Ressources

Four items fall into this category, that cover emotional, human capital and economic capital resources. These four items will be introduced and discussed in turn.

Firstly, emotional resources are typically understood in two ways. On the one hand, it is the possibility of the respondent to share his feelings and sorrows with others, which is clearly associated with thick ties. Examples of questions that assess access to this type of resource in other questionnaires include the following: ”Is there anyone who you can really count on to listen when you need to talk?” [Essex (2003), p. 187], “Do you know anyone who is there to talk about the day” [Foster and Maas (2014), p.7] “With whom do you share personal thoughts and feelings or talk about things that you would not share with everyone?[20] [TNS Infratest Sozialforschung (2011), p. 29], “Having someone who really cares no matter what” [Nieminen et al. (2008), p. 411],“There is no one online/offline that I feel comfortable talking to about intimate personal problems” [Williams (2006), p. 602], “When I feel lonely, there are several people online/offline I can talk to” (ibid.), and “Do you know anyone who can discuss intimate matters with you” [Van Der Gaag and Snijders (2005), p. 13].

To assess this kind of emotional resources which is about sharing feelings and sorrows with others, the following item is proposed: *How many people do you know that you can call anytime if you need someone to talk to?*[21]. This item is not significantly different from the other items used in the literature to assess this type of resource.

On the other hand, emotional resources are also understood to mean the concrete assistance of others in situations of emotional turmoil. This can go well beyond simply listening to the respondent’s sorrows or feelings. Situations of emotional turmoil can have many reasons. However, they are often associated with fights with people that are important to an individual. For example, in the TNS Infratest Sozialforschung (2011), there is the following question included: “With whom do you occasionally have conflicts

[20] The German original is: “Mit wem teilen Sie persönliche Gedanken und Gefühle oder sprechen über Dinge, die Sie nicht jedem erzählen würden”

[21] The German original is: *Wie viele Personen kennen Sie, die Sie jederzeit anrufen können, wenn Sie jemanden zum Reden brauchen?*

that weigh you down?"[22] (p. 29). While this item only aims at finding out who is close enough to the individual to cause emotional turmoil more in the spirit of the name generator, the item by Van Der Gaag and Snijders (2005), goes one step further: "Do you know anyone who can give advice concerning a conflict with family members?" (p. 12). This question does not only include that the respondent has a thick tie to the person he asks, but also that there is some degree of closure in his network, i.e. it also assesses the individual's bonding social capital: In order to give good advice, the person the respondent asks would ideally know the family members the respondent is in conflict with. However, the weakness of this question is that it is limited to family members, which may or may not be emotionally important contacts for the individual.

To assess the kind of emotional resource that is about concrete assistance in situations of emotional turmoil, the following item is proposed: *Think about a person that is important to you (e.g. your partner, your parents, your children, a close friend). How many persons do you know who would put in a good word for you with that person, e.g. after a bad fight?*[23] Relative to the item by Van Der Gaag and Snijders (ibid.), this item is more open in the choice of the respondent to whom he is emotionally close to. Moreover, it is more direct in assessing the bonding resource also present in the items by Van Der Gaag and Snijders (ibid.) because it explicitly requires the two other persons involved to know each other (otherwise, putting in a good word typically makes little sense). The item is thus also an indicator for the bonding ties in the respondent's personal network.

Secondly, human capital resources can also constitute expressive action resources. This is especially so if they do not help the respondent to achieve major goals, but only to solve everyday problems. Here, the human capital accessed is typically not highly specialized. Rather, it is the type of human capital people amass more or less by coincidence in their free time. Consequently, solving problems with technical equipment in the household or help with DIY[24] tasks are consistently associated with this kind of resource. Numerous examples can be found in the literature: "Do you know anyone who can give advice on using a personal computer" [Foster and Maas (2014), p. 7], "Do you know anyone who can help with small household jobs" (ibid.), "Having someone to get practical help when needed" [Nieminen et al. (2008), p. 411], "Do you know anyone who knows how to fix problems with computers" [Van Der Gaag and Webber (2008), p. 37], "Who from outside your home has recently helped you with tasks around the home, such as painting, moving furniture, cooking, cleaning, or major or minor repairs" [Marin and Hampton (2007), p. 171], "Do you know anyone who can help with small jobs around the house (carpeting, painting)" [Van Der Gaag and Snijders (2005), p. 12], and "Do you know anyone who is handy repairing household equipment?" (ibid.)

[22] The German original is: "Mit wem haben Sie gelegentlich Streit oder Konflikte, die belastend für Sie sind?"

[23] The German original is: *Denken Sie kurz an eine Ihnen wichtige Person (z.B. Ihren Partner, Ihre Eltern, Ihre Kinder, einen engen Freund oder eine enge Freundin). Wie viele Personen kennen Sie, die bei dieser Person ein gutes Wort für Sie einlegen würden, z.B. nach einem heftigen Streit?*

[24] Do it yourself

are examples.

To assess the kind of human capital resource that is about solving everyday problems, the following item is proposed: *How many people do you know that help you with small jobs in your household, e.g. if you're having problems with technical equipment (TV, computer, phone), without a financial reward?*[25]. It can be seen as an aggregation of the items listed above as it aims at practical everyday problems in general, but specifically highlights technical issues. The assumption behind this is that technical problems are faced by the majority of people at least occasionally. DIY tasks like painting or carpeting, which have been proposed by Marin and Hampton (2007) and Van Der Gaag and Snijders (2005), respectively, have been left out since this kind of major refurbishment can also be seen as an instrumental action. Moreover, it is possible that people that live for rent, which is popular in Germany, are not faced with this kind of problems at all as repairs are commissioned by their landlord.

Thirdly, economic capital resources can constitute expressive action resources. This is especially so if access to economic capital resources is used to solve occasional shortages of economic goods of minor value. Two scenarios are common: Firstly, that the economic good in question is borrowed by the respondent and returned at a later point in time or, secondly, that the economic good is de facto given as a gift since its economic value is negligible. This kind of resource has been explicitly mentioned as a social capital resource by Kadushin (2004), who gives the example of borrowing a missing ingredient for baking a cake. Examples of the inclusion of this kind of resource into questionnaires to assess social inclusion are: "I borrow things and exchange favours with my neighbours" [Essex (2003), p. 99], "Suppose you need to borrow some small thing like a tool or a cup of sugar, from whom outside your household would you like to borrow it?" [Marin and Hampton (2007), p. 171] and small amounts of money: "Do you know anyone who can lend you a small amount of money?" [Van Der Gaag and Webber (2008), p. 12].

To assess this kind of economic capital resources that is about solving occasional shortages, the following item is proposed: *How many people do you know who would lend you groceries on a sunday?*[26]. In this item, the relevant economic capital resource has explicitly been limited to groceries. The other examples included by Marin and Hampton (2007) and Van Der Gaag and Webber (2008) are problematic for the following reasons: Concerning tools, firstly, not everyone is able to use tools. Secondly, not everyone is in need of borrowing tools: Tools are a long-lasting good and some people are very well equipped. Concerning money, many people do not get into the situation to be in need of borrowing even small amounts of money as ATMs are widespread and payment with debit cards is widely accepted in Germany. Moreover, many people find borrowing even small amounts of money shameful and will go to great lengths to avoid

[25]The German original is: *Wie viele Personen kennen Sie, die Ihnen ohne finanzielle Gegenleistung bei kleineren Arbeiten in Ihrem Haushalt helfen würden, z.B. wenn Sie Probleme mit der Technik haben (Fernseher, Computer, Telefon)?*

[26]The German original is: *Wie viele Personen kennen Sie, bei denen Sie sich sonntags Lebensmittel leihen können?*

it. This is different with groceries: Everyone is in need of eating, and even respondents with full pantrys may occasionally come into the situation where one specific ingredient is missing. In a country like Germany, where shops are closed on Sundays, asking an acquaintance for this specific ingredient is a socially acceptable thing to do.

Summing up, the proposal is to include four specific items to assess expressive action resources into a new measure for individual level social capital. These include two items that aim at emotional resources, one that is intended to capture human capital resources and one that targets economic capital resources. While emotional resources are typically expressive action resources, the two latter items are characterized by the relatively low level of capital involved because a higher level of capital involvement would characterize them as instrumental action resources.

Instrumental Action Resources

Three items fall into this category. They cover human capital and economic capital resources as well as preferred access resources in the broadest sense of the word. All these resources are primarily looked at in the private sphere. The three items will be introduced and discussed in turn.

Firstly, human capital can also be instrumental action resources in the private sphere. This is especially so if specialized human capital is accessed in order to achieve specific goals the respondent is pursuing. This kind of resource has theoretically been described by Renzulli and Aldrich (2005). In the literature, two types of items have been used to assess this kind of resource: Firstly, there are items that aim at receiving help with financial matters, e.g.: "Do you know anyone who can give advice about money problems?" [Foster and Maas (2014), p. 7], or "Do you know anyone who has knowledge about financial matters (taxes, subsidies)" [Van Der Gaag and Snijders (2005), p. 12]. Secondly, there are items that aim at help with legal matters, such as: "Do you know anyone who can give you sound legal advice" [Van Der Gaag and Snijders (ibid.), p. 37].

To assess a person's access to this kind of human capital resource that is about specialized human capital to achieve specific goals, the following item is proposed: *How many people, besides your bank advisor, do you know who know a lot about financial matters and on whose advice in these things you can rely on?*[27]. Asking for advice in financial matters has been chosen as this is something almost everyone has to deal with relatively regularly: Even people who do not have significant wealth may get into the situation of taking a small loan or may think about a savings plan for their retirement. Most people are aware that their bank advisor has his own interests in selling them certain products and that asking for neutral advice may be helpful. This is different for legal matters: People may only very rarely get in contact with the legal system and, if so, instantly rely on professional help, i.e. paid lawyers.

[27] The German original is: *Wie viele Personen außer Ihrem Bankberater kennen Sie, die sich gut mit Geldangelegenheiten auskennen und auf deren Rat in diesen Dingen Sie sich verlassen können?*

Secondly, economic capital can constitute an instrumental action resource in the private sphere. This may especially be the case if larger amounts of money are involved, or economic goods of higher value. In theoretical contributions, it is often the informal access to money which is given as an example, e.g. in Ellison et al. (2014), Adler and Kwon (2002), Fine (2001), Lin (2001), Paldam and Svendson (2001) and Portes (1998). This kind of resource is consequently routinely found as an item in surveys to assess social capital: "Do you know anyone who can lend a large sum of money?" [Foster and Maas (2014), p. 7], "In the last five years have you received any amount such as several hundred dollars from either a friend or relative?" [Kan (2007), p. 441], "If you need to borrow a large sum of money, say $1000, whom would you ask for help" [Marin and Hampton (2007), p. 171], "If I needed an emergency loan of USD 500, I know someone online/offline I can turn to" [Williams (2006), p. 602] and "Do you know anyone who can borrow you a large sum of money?" [Van Der Gaag and Snijders (2005), p. 12] are examples.

To assess access to this kind of economic capital, the following item is proposed: *What is the maximum amount of money you could borrow from other persons if you would get into a financial emergency on short notice. Assume you had no access to your own funds*[28]. This item is geared towards money as the economic resource in question. This is because for non-trivial amounts of money, it is difficult to find a good that most people, at least in principle, could be in need of borrowing: A car comes readily into mind, but a significant number of people does not even have a driving license: As of 2008, only 84% of adults in Germany possessed a driving license [statista (2016)]. Different from the other items discussed so far, this item does not ask how many people the respondent knows that could supply him with a certain amount of money, but rather directly asks for the amount of money available. The reason is that the total amount of money available is a more direct indicator for the quality of access to the resource in question than the number of people that would supply any fixed amount. It is easy to notice that this item reads as though it is geared towards an expressive action understood as personal support by others in case of an emergency. However, this is an artefact of the following problem: Typically, in Germany, the normal thing to do if you needed to get a large amount of money is to ask for a credit at the bank. Thus, respondents might find it problematic if they were simply asked what the maximum amount of money would be they could borrow from others. This is because they would wonder why they should borrow it from others instead of taking a regular credit with their bank. Some respondents might have enough wealth so that they are independent of the need to take any form of credit. Lastly, the willingness of others to lend money might depend on the use the money is put to: A relatively riskless investment might lead to a higher willingness to lend compared to a risky or morally dubious investment. Consequently, a scenario was necessary where it would be clear

[28] The German original is: *Wie hoch ist der maximale Geldbetrag, den Sie sich insgesamt von anderen Personen leihen könnten, wenn Sie kurzfristig in eine finanzielle Notlage geraten würden? Gehen Sie davon aus, dass Sie auf Ihre eigenen Mittel keinen Zugriff hätten.*

for everyone that they needed to borrow money, that asking the bank was not an option and where the purpose was at least approximately described. The item described above is formulated as it is in order to meet this criteria. Moreover, it is theoretically clear that lending a larger amount of money is an instrumental action resource, not an expressive action resource.

Thirdly, preferred access can constitute an instrumental action resource in the private sphere. As pointed out on page 84, most examples for this kind of resource refer to the work sphere, e.g. access to or information on jobs. However, it may also be a valuable resource outside the world of work. Astone et al. (1999) give the example of access to housing. Sobel (2002) and Lin (2001) give the example of finding a babysitter. Following Bourdieu (1983), a minimum of homogeneity between agents is necessary for social capital to develop. The possibility to get to know new people who exhibit this minimal degree of homogeneity such that one can create a relationship to them could also constitute a resource that would fall into this category. Such a relationship can be beneficial for two reasons: Firstly, it may generate new access to resources. Secondly, it might help the respondent to have a good time. Williams (2006) aims at this in item 9 of the bridging scale in his Internet Social Capital Scale: "Interacting with people online/offline gives me new people to talk to" (p. 608). However, getting to know new people does not necessarily constitute bridging social capital: It depends on the degree of connectedness of these new contacts to other contacts in the individual's network.

To assess this kind of resource that is about preferred access in the private sphere, the following item is proposed: *How many people do you know where, each time you get invited, you get to know new people that you find likable?*[29]. This item is formulated in the spirit of item 9 from the bridging scale of the Internet Social Capital Scale by Williams (ibid.). The other examples proposed in the literature are quite specific: Respondents who own a house will most probably not need access to housing, and respondents who do not have children hardly need a babysitter. Moreover, access to a babysitter in many situations constitutes an expressive action resource rather than an instrumental action resource. As the item by Williams (ibid.), this item does not assess bridging social capital. On the contrary, it asks for the possibility to create bonding social capital. It presumes that the respondent and the person he gets to know both share a third contact, namely the person that invited the two of them.

Summing up, the proposal is to include three specific items to assess instrumental action resources in the private sphere: Firstly, an item to assess access to human capital resources, secondly an item to assess access to economic capital resources and thirdly an item to assess preferred access resources. The first two items differ from those used to assess expressive action resources insofar as the amount of human and economic capital involved is relatively high.

Thus, all in all, seven items will be used to create the indicator for social capital in the

[29]The German original is: *Wie viele Personen kennen Sie, bei denen Sie, immer wenn Sie eingeladen werden, Menschen kennenlernen, die Sie sympathisch finden?*

private sphere. Four of these assess expressive action resources, while three assess instrumental action resources.

Social Capital in the Work Sphere

Three items fall into this category, which aim at social capital in the work sphere. Here, only instrumental action resources are relevant. While one item aims at access to things, the other two items intend to measure business resources. As access to resources in the work sphere is of course only relevant for those active in the work sphere, the following items have only been shown to respondents that are active in the work sphere or could potentially be active there. Consequently, housewives and househusbands have been included, but pensioners have been excluded.

Firstly, preferred access in the work sphere means information about and access to jobs. This has already been pointed out on page 3.2. This item is included in a number of questionnaires that aim at assessing personal support: "If you need help finding a job for yourself or a family member" [Essex (2003), p. 187], "Do you know anyone who can sometimes employ people?" [Foster and Maas (2014), p. 7] and "Do you know anyone who is sometimes in the opportunity to hire people" [Van Der Gaag and Snijders (2005), p. 12] are examples. In the literature, this kind of resource is typically associated with thin ties, although, as pointed out, especially access to sensible information might well be connected to thick bridging ties.

To assess this kind of resource which is about preferred access in the work sphere, the following item is proposed: *How many people do you know who could place you in a job that fits your qualification?*[30]. This item aims at jobs, which is simply the number one example in the literature for this kind of resource. However, it has been abstained from including family members in the description since not everyone has family members he might need access to a job for. Moreover, this would limit the comparability between respondents since it is a matter of simple stochastic that those respondents who have a larger family are more likely to also know someone who might be able to place some member of that family into a fitting job. Moreover, it has been defined that the job is not just some job, but a job which fits the qualification of the respondent. The contact that can supply this kind of job is probably active in the same professional field as the respondent. Thus, the question can also be used to assess the respondent's professional network outside his present company. Together with the assumption that information on and access to jobs is, following Burt (1992, 2000, 2007), often associated with bridging ties, this item also assesses the respondent's bridging ties in the work sphere.

Secondly, access to business resources can also be an instrumental action resource in the work sphere. There are many concrete examples imaginable that help a respondent to advance or solve problems in his job. However, most of them, like attracting

[30]The German original is: *Wie viele Personen kennen Sie, die Ihnen einen Ihrer Qualifikation angemessenen Arbeitsplatz vermitteln würden?*

customers, gaining access to markets or getting good conditions with subcontractors, are only useful for a certain type of employee. The alternative typically used in questionnaires that intend to measure social capital is to formulate a relatively open item: "Who supports you in advancing in your career or education and helps you to move on?"[31] [TNS Infratest Sozialforschung (2011), p. 29] or "Do you currently know anyone who would give you sound advice on problems at work?" [Webber and Huxley (2007), p. 488]. The item from the SOEP is not only directed towards the work sphere, but also at education in general. Here, however, it is human capital that is involved as a resource. The same is, strictly speaking, true for the item by Webber and Huxley (ibid.): This is not about concrete help on problems in the work sphere, but about advice, which is a human capital resource.

To assess this kind of business resource, the following item is proposed: *How many people do you know who would put in a good word for you with your boss, e.g. to support your promotion/tenure or to prevent a written warning?*[32] This item aims at both the advancement of the respondent's career with his current employer and his ability of solving problems at work, since the two points are closely connected. The key is in both cases the relevant network within the respondent's current firm. Thus, this measure also serves to assess the respondent's bonding ties in the work sphere and the access to resources connected to them. A restriction of this item is that it is not relevant for respondents that are active in the work sphere, but who do not have a superior, e.g. because they are self-employed or temporarily unemployed.

A problem of the two items introduced above is that, while they assess two resources relevant for most people in the job sphere, they also leave out access to relevant business resources, especially those that help the individual to do a better job. However, as explained above, these resources vary considerably across different professional fields and different industries. To assess this kind of access to resources, the item *I have a wide network of professional contacts at my command*[33] was included in the questionnaire. The respondents could answer to this item using a five-point Likert scale, where the answers ranged from *fully applies* to *does not apply at all*. Thus, the quality of access is not assessed by asking how many people the individual knows that provide him with something specific, which is nonsensical if no concrete resource is involved. Instead, the points on the Likert scale reflect the individual's estimation of his quality of access.

Summing up, three items are proposed to measure social capital in the work sphere. Firstly, one item assesses preferred access resources in the work sphere which mainly aims at the respondent's access to jobs and thus the breadth of his professional network. Secondly, two items to measure business resources: One item measures those

[31] The German original is: "Wer unterstützt Sie in Ihrem beruflichen Fortkommen oder Ihrer Ausbildung und hilft Ihnen, dass Sie vorankommen"

[32] The German original is: *Wie viele Personen kennen Sie, die bei Ihrem Chef ein gutes Wort für Sie einlegen würden, wenn es z.B. um Ihre Beförderung/Entfristung geht oder darum, eine Abmahnung zu verhindern?*

[33] The German original is: *Ich verfüge über ein ausgeprägtes Netzwerk an beruflichen Kontakten.*

resources that support the respondent in his advancement within his current company and one item covers those resources that help him do a better job. Divergent from the other items this last item does not include a specific resource as the variety of resources that fulfil the requirement is quite different for different professional fields and industries.

#	Item	Kind of Resource
Social Capital in the Private Sphere		
1	How many people do you know that you can call anytime if you need someone to talk to?	Expressive Action Emotional Resource
2	Think about a person that is important to you (e.g. your partner, your parents, your children, a close friend). How many people do you know who would put in a good word for you with that person, e.g. after a bad fight?	Expressive Action Emotional Resource, Bonding Social Capital
3	How many people do you know that help you with small jobs around in your household, e.g. if you're having problems with technical equipment (TV, computer, phone), without a financial reward?	Expressive Action Human Capital Resource
4	How many people do you know that would lend you groceries on a Sunday?	Expressive Action Economic Capital Resource
5	How many people, besides your bank advisor, do you know that know a lot about financial matters and on whose advice in these things you can rely on?	Instrumental Action Human Capital Resource
6	What is the maximum amount of money you could borrow from other persons if you would get into a financial emergency on short notice. Assume you had no access to your own funds	Instrumental Action Economic Capital Resource
7	How many people do you know where, each time you get invited, you get to know new people that you find likable?	Instrumental Action Preferred Access Resource
Social Capital in the Work Sphere		
8	How many people do you know who could place you in a job that fits your qualification?	Preferred Access Resource, Bridging Social Capital
9	How many people do you know who would put in a good word for you with your boss, e.g. to support your promotion/tenure or to prevent a written warning?	Business Resource, Bonding Social Capital
10	I have a wide network of professional contacts at my command	Business Resource

Table 3.6: Dimensions and Items proposed for a New Measure for Individual Social Capital, *Source: Own representation*

Concluding, the new instrument that is proposed to measure individual level social capital consists of ten items. A summary can be seen in table 3.6. The advantage of this new inventory over the resource generator is that it does not only measure access to certain ressouces, but also the quality of access. Nine of the ten measure access to concrete representative resources, while one measures access indirectly by asking for the quality of the respondent's network in the professional realm. The ten items fall into two dimensions, i.e. one that measures social capital in the private sphere and one that measures social capital in the work sphere.

It is apparent that not all items proposed by this measure are relevant for everyone. Especially, the items that measure the respondent's social capital in the work sphere are not relevant for people that are not or no longer active there. Thus, since no data can be generated for all items for everyone, it is not possible to calculate a value for both dimensions for everyone.

3.5 Summary

In this chapter, the resources that are accessed as an individual's social capital were systematized in a first step. To do so, a thorough investigation into the literature was conducted. It was found that five types of resources exist: economic resources, human capital resources, preferred access resources, emotional resources and business resources. Economic resources describe the possibilities of an individual to access other individual's economic capital. Human capital resources describe the possibilities to access other individuals' knowledge and time. Preferred access resources describe an individual's ability to gain access to economic goods or information that are of limited availability, using his social contacts. Emotional resources describe an individual's possibility to rely on the emotional support of other individuals when needed. Business resources exist in those cases, where an individual can use his social network to advance in his job or field of business.

In a second step, existing measures of social capital have been investigated. Especially, seven measures that are, at least in part, utilizable to measure individual level social capital have been introduced. These can be grouped into three categories. Firstly, some measures, like the name generator, the position generator and the Personal Social Capital Scale, measure the respondent's social capital indirectly. They all have specific weaknesses, especially the high cognitive burden connected to all of them due to a large number of questions (in the case of the Personal Social Capital Scale and some variants of the position generator) or a very time consuming data collection procedure (in the case of the name generator). Moreover, they do not assess the resources an individual has access to directly, but only indirectly. Secondly, other measures, like the resource generator and the Internet Social Capital Scale, measure social capital directly. While the main weakness of the resources generator is the very large number of items included, which, moreover, typically receive very high acceptance rates, the problem of the Internet Social Capital Scale is its unsystematic

assessment of resources. Thirdly, there are some mixed measures that combine elements from both the direct and the indirect measures. Here, again, resources are only unsystematically assessed and a high focus is put on the problematic indirect proxy of group membership.

Thus, in a third step, a new measurement tool for individual level social capital has been introduced. This includes ten items in total, out of which seven aim at measuring social capital in the private sphere while three are intended to measure social capital in the work sphere. It is, with the exception of one item, a direct measurement tool that aims at systematically assessing the resource types that can also be found in the theory. In the next chapter, the empirical results of an internet survey representative for the German adult resident population using the new measurement tool will be presented.

4 Empirical Evidence

Having developed a tool to measure social capital, the logical next step is to apply it in a quantitative survey. An empirical application can be used to test the measurement tool developed in chapter 3 as well as the hypotheses on the predictors of social capital derived in chapter 2. In this chapter, firstly, the internet survey will be introduced that was conducted to use the developed social capital measure. In a second section, the results of the measurement tool for social capital will be presented. In a third section, the indicators will be developed that will be used to test the different hypotheses on the predictors of social capital. This section also includes the testing of these hypotheses.

4.1 A Short Presentation of the Internet Survey

To test the presented social capital measurement tool and the hypotheses on determinants and effects, an internet based survey has been conducted. The survey has been set up with the Questback Enterprise Feedback Suite (EFS) using the University of Hohenheim's Unipark licence. A pretest of the survey, using a preliminary version of the questionnaire, took place in August 2015. Insights gained during the pretest have been used to improve the questionnaire. The actual survey has taken place between October 14, 2015 and October 26, 2015. To recruit participants who are representative for the German adult resident population with respect to gender, age, income and educational attainment, the online panel provider *consumerfieldwork* has been contracted. Participants in the survey received a small incentive worth less than 2 Euros to participate in the survey. Thus, a dataset with 1001 participants has been created. An overview over the characteristics of the respondents is given in table 4.1.

Menegaki, Olsen, and Konstantinos (2016) list a number of advantages of web-surveys vis-à-vis more classical face-to-face or mail surveys. Firstly, they are much cheaper. Secondly, a well-programmed online questionnaire has a greater possible richness in design. Thirdly, respondents may find it easier to answer intimate questions when there is no interviewer around. The anonymous atmosphere of internet surveys should also reduce problems of social desirability in responding. Fourthly, web survey data are available to the researcher immediately after the end of the survey, i.e. there is no need to transfer the data from a paper questionnaire to a database. This is not only convenient, but it also eliminates a possible source of error.

Value	Quota	Actual Share
Share of male and female respondents, quotas as of 31.12.2013		
male	48.52%	48.95%
female	51.48%	51.05%
Share of respondents of different age groups, quotas as of 31.12.2013		
18-29 years	16.64%	16.78%
30-39 years	14.35%	14.29%
40-49 years	18.30%	18.38%
50-59 years	18.32%	18.28%
60-69 years	13.27%	13.19%
more than 70 years	19.07%	19.08%
Share of respondents with highest educational degree, quotas as of 2014		
no degree	3.78%	1.40%
secondary degree with 8 or 9 school years	35.14%	37.66%
secondary degree with 10 school years	30.77%	30.67%
secondary degree with 12 or 13 school years	13.40%	13.29%
tertiary degree	16.53%	16.98%
Share of respondents in certain income groups, quotas as of 2012, net income		
1300 Euro or less	18.99%	18.98%
1301 - 2600 Euro	31.06%	31.07%
2601 - 3600 Euro	18.61%	18.68%
3600 - 5000 Euro	16.11%	15.98%
5001 Euro or more	15.23%	15.29%

Table 4.1: Representativeness of the survey sample for the the German adult resident population, *Source: partly based on Statistisches Bundesamt (2015b), Statistisches Bundesamt (2015a) and Statistisches Bundesamt (2014)*

Moreover, Menegaki, Olsen, and Konstantinos (2016) list three major disadvantages of internet surveys: Firstly, they point to a lacking representativeness of internet surveys. They find that participants in internet surveys are more likely to be female and to be younger than should be expected given the composition of the population. However, with a rising share of the population using the internet, and the use of quotas to ensure the respondent's representativeness for the German adult population, this should not be as problematic as it was maybe in earlier years. Nonetheless, this point is still relevant with respect to the respondents' age: The contracted online panel provider was the only one among the several panel providers contacted who was able to guarantee that a quota of 19.07% of people above 70 years among the respondents could be fulfilled. Nonetheless, it is probable that the distribution of the respondents above 70 years is skewed when compared to the German adult resident population, i.e. that the number of respondents just above 70 years is too high in the sample, while the number of respondents who are much older than 70 is too low. The online panel provider has additionally been unable to guarantee that 3.78% of respondents have not finished any form of secondary education. In fact, only 1.4% of respondents have not finished

any type of schooling. The remaining quota has been filled up with people who have finished secondary education with the lowest possible degree[1] , i.e. the degree which can be achieved with only eight or nine years school years. Menegaki, Olsen, and Konstantinos (2016) further list the relatively low response rate among participants as a second problem of internet surveys. The third problem they bring up is that they claim that there might be a problem with self selection. These two last problems go hand in hand: If people are not interested in the topic of a survey they might chose to not participate. In an internet survey, there is much less social pressure to participate compared to a situation where the respondent is face to face with an interviewer or talking to a person on the phone. Still, self selection is only problematic if there is a group that systematically decides to not participate in the survey. The reason for this is that systematic non-participation of a specific group would lead to non-representativeness of the sample in an unobserved dimension and thus to skewed results. This survey was announced under the title "Friendship and Social Networks"[2]. It is not apparent which group would systematically chose not to participate in such a survey.

The survey consisted of 83 questions[3]. However, since not all questions were relevant for all participants, filters were used at some points so that not all participants were confronted with all questions. Usable data for the time needed to finish the questionnaire is available for 976 participants. One participant took more than 6:39 hours to finish the questionnaire, which is more than 7 times as long as the next slowest participants, who took 54:06 minutes. Closer examination of this participant yields that it took her already 6:29 hours to finish the first page of the questionnaire, which consisted only of four questions. The plausible explanation for the very long duration is thus that she opened the questionnaire, but then did not start to answer it for a couple of hours. For 24 further participants, no data on the time they needed has been reported by EFS. The remaining participants took between 3:17 minutes and, as already mentioned, 54:06 minutes. For these participants, the mean duration needed for completing the questionnaire was 13:29 minutes while the median duration was 11:49 minutes. This might seem short, but Menegaki, Olsen, and Konstantinos (ibid.) also find that respondents are typically quicker in internet surveys than in other survey modes.

It is always important to check whether there was a problem with the questionnaire that might lead to erroneous results or protest responses. The first indicator is the number of people who do not finish to answer the survey. In total, 57 respondents, i.e. 5.38% of those respondents who started the survey, did not finish it. This is a low dropout rate. Hoerger (2010) finds higher dropout rates of up to 30% in internet surveys. The second indicator is whether respondents complain about the survey in the comment box provided on the last page of the survey. Here, two respondents

[1] Due to the fact that education in Germany is organized by the *Länder* and that it was organized quite differently in the former GDR, there is no universal name for this type of degree in Germany. Possible names include *Volksschulabschluss*, *Hauptschulabschluss* and *Polytechnische Oberschule mit Abschluss 8. oder 9. Klasse*.

[2] The German title was "Freundschaft und soziale Netzwerke".

[3] The complete questionnaire can be found in the Appendix.

remarked that they found the questions that asked for their wealth too intimate. Seven respondents remarked that they were required to answer a question concerning their job life although they are in pension now. This was due to an error in the set-up of a filter in the questionnaire. Besides that, no further negative comments concerning the questionnaire have been made. Thus, the conclusion that can be drawn is that there were no major problems with the questionnaire that might lead to data quality problems.

4.2 Results for the Social Capital Measurement Tool

In this section, firstly, a brief descriptive overview will be given over the results of the questions included in the questionnaire to assess individual level social capital. In a second part, the construction of the two social capital measures, i.e. one for social capital in the private sphere and one for social capital in the work sphere, will be elaborated on.

Descriptive Results of the Social Capital Questions

The social capital measurement tool developed in section 3.4 consists of ten items. Of these, seven items measure social capital in the private sphere while three items measure social capital in the work sphere. Of the ten items, eight were constructed such that they start with “How many persons do you know...”. To reduce the cognitive burden, the respondents were presented seven response options for this type of question. Of the remaining two items, one aims at assessing the maximum amount of money a respondent can borrow from other persons in case of an emergency. This questions starts with “What is the maximum amount...”. Consequently, the nine response options here do not include numbers of people, but amounts of money. The response options to these two types of questions were created based on the experience from the pre-test, where open questions had been used. Finally, the question that aims at assessing the professional network of the respondents, which starts with “I have a wide network...”, is formulated as a statement to which respondents could agree or not agree. Here, response options that create a five point Likert scale were presented to the respondents.

It is easy to note that, for each item, the next higher category often encompasses a wider range of people. In contrast, in the creation of the indicators that will be described later on, the category number will be used instead of the number of people it stands for. The idea behind this is that the marginal gain in access to resources is decreasing with the number of people increasing. Knowing ten instead of nine people who provide a resource might be helpful, but the gain in utility is maybe not as big as when knowing two people instead of one. This gain in utility might be better reflected by the difference between knowing ten people instead of seven. The same argument holds for the money that can be borrowed: Its marginal utility is decreasing as the amount borrowed grows.

Code	How many people do you know...	What is the maximum amount...	I have a wide network...
1	0 persons	0 Euro	strongly disagree[4]
2	1 person	100 Euro	somewhat disagree
3	2 persons	500 Euro	neither agree nor disagree
4	3 to 4 persons	1 000 Euro	somewhat agree
5	5 to 7 persons	5 000 Euro	strongly agree
6	8 to 10 persons	10 000 Euro	
7	more than 10 persons	20 000 Euro	
8		50 000 Euro	
9		more than 50 000 Euro	

Table 4.2: Response options to the social capital items

Not all social capital items were presented to all respondents since not all items are relevant to all respondents. While all 1001 respondents answered the questions concerning social capital in the private sphere, this is not true for the questions that aim at assessing social capital in the work sphere. The question on getting help with a new job was only posed to respondents who had answered that they were not in pension already. 695 respondents answered these questions. The question on having someone put in a good word with one's boss was only posed to respondents who were not in pension, not unemployed, not self-employed or housewife / househusband, i.e. those that actually had a boss when answering the questionnaire. Only 476 respondents answered this question. Of these, further 17 stated that they did not have a boss, so that 459 valid answers remain. Due to a programming error, all respondents were faced with the question asking for the size of their job network. However, only the answers will be considered who are from those respondents that are not in pension already, leading to 691 valid answers for this question.

The results for the different items show some interesting features that are worth elaborating on. In the private sphere, in general, the answer patterns to the different items are such that the median is typically at 3-4 persons and less than or around 10% of respondents do not know anyone who can provide the requested resource to them. In the case of lending money, the share of respondents who do not have any access to that resource is comparable. The most notable exception is the question how many people the respondents know who could give them sound advice in financial matters. Here, the median is only one person, and more than a third of respondents do not know anyone who could provide them with this resource. This reflects that financial matters can be highly complex. Thus, this item measures, as intended, access to a specialized and thus rare resource. Another item where the answer pattern is remarkable is the item that asks the respondents how many people they know where they get to know new likable people when they are invited. Here, more than 15 % of respondents do not

[4] In German, these response options were: *trifft überhaupt nicht zu*, *trifft eher nicht zu*, *weder zutreffend noch unzutreffend*, *trifft eher zu* and *trifft voll und ganz zu*, respectively.

know anyone who can provide them with this kind of resource. This is an indicator that quite a number of respondents live in networks which exhibit a relatively high degree of closure.

#	Item	Mean	Median	Std. Dev.	zero or strongly disagree
Social Capital in the Private Sphere					
1	... you can call anytime if you need someone to talk to?[5]	3.73	3-4 persons	1.38	5.29%
2	... would put in a good word for you with that person, e.g. after a bad fight?	3.51	2 persons	1.35	6.99%
3	... help you with small jobs around in your household [...] without a financial reward?	3.74	3-4 persons	1.56	8.19%
4	... borrow you groceries on a Sunday?	3.58	3-4 persons	1.58	11.29%
5	... that knows a lot about financial matters and on whose advice in these things you can rely on?	2.12	1 person	1.08	35.66%
6	... maximum amount of money you could borrow [...]?	3.81	1 000 Euro	1.84	9.69%
7	... each time you get invited, you get to know new people that you find likable?	3.45	3-4 persons	1.58	15.38%
Social Capital in the Work Sphere					
8	... place you in a job that fits to your qualification?	2.48	1 person	1.51	37.12%
9	.. would put in a good word for you with your boss[...]?	3.13	2 persons	1.55	15.90%
10	I have a wide network of professional contacts at my command.	2.62	neither agree nor disagree	1.18	22.43%

Table 4.3: Answer pattern for the different social capital items; mean and std. deviation coded as presented in table 4.2

In the work sphere, for the two items which are about knowing people, the median number of people indicated is lower than for most items in the private sphere. The median number of people respondents know who could place them in a new job appropriate for their qualification is just one. The median number of people who could put in a good word with their boss for them is two. Moreover, in the work sphere, not having access to the two resources is quite prevalent: 37.12% of respondents do not know anyone who could place them in a new job, and 15.90% of respondents do not know anyone who would put in a good word for them with their boss. The median answer to

[5]The original German versions of these items can be found in chapter 3.4.

the item that asks about the scope of network of professional contacts is “neither agree nor disagree”. However, 22.43% of respondents completely disagree, thus claiming that they do not have any significant professional connections. These results indicate that respondents possibly find it easier to access social capital in the private sphere relative to social capital in the work sphere.

One speciality has to be regarded concerning the item that asks for the maximum amount of money the respondent can borrow in an emergency situation. For this item, a case can be made that, in order to assess the value of the connection, it is more meaningful to not look at the absolute value of money that an individual can borrow. The reason is that this absolute value does not only depend on the strength of the connection between the individuals involved and the resources the lender has, but also on the resources of the borrower: If someone is rich in economic resources, the lender will deem it more likely that he will be able to repay the money. It can thus be argued that borrowing the same amount of money constitutes more social capital for someone with little economic resources of his own. The straightforward way is thus to divide the amount of money that can be borrowed by an indicator for the financial standing of the borrower. Both income and wealth as well as a combination of the two could be used. Since the data on income is of better quality, income will be used.

A technical question that arises here originates from the fact that for income, intervals have been given as response options. As a straightforward solution, the midpoints of the intervals will be used in the calculation. For the highest intervals, which is open ended for both items, the lowest value included will be used as a conservative estimate. For the lowest income interval, 1 000 Euro has been taken as a value instead of the midpoint, 650 Euro. This is done because the distribution in this interval is likely to be skewed towards the higher end of the interval since there is a minimum income that is necessary for survival. This minimum income is significantly greater than zero in Germany and de facto provided by the welfare state. The 1 000 Euro can be seen as the midpoint between the subsistence level determined by the German federal government, which was at 8 472 Euro per year or approximately 700 Euro per month in 2015 [Bundesfinanzministerium (2015)], and the upper bound of the interval at 1 300 Euro.

Construction of the Social Capital Measures

As explained in section 3.4, the items in the two spheres are supposed to be aggregated to create two meaningful measures for individual level social capital: One for social capital in the private sphere and one for social capital in the work sphere. As pointed out in section 3.1, all weightings should be made explicit in scale construction. This point is especially relevant for composite scales. An implicit weighting is not as problematic for psychometric scales which aim at measuring the same latent construct: If all items, at least in principle, are a proxy for the same latent construct, it is not as relevant how precisely the resulting measure is composed from them. Nonetheless, implicit weightings should be avoided here too, if possible. Moreover, since there is

no objective reason why the resource measured by any one item should be more or less important than that measured by any other item, weighting all items equally is the obvious weighting decision when constructing the two social capital measures.

The social capital measures that are created here do not aim at measuring any absolute quantity of social capital. What would be the purpose of such a measure? Would it be meaningful that some respondent has, for example, a 4.3 in private social capital and a 2.1 in work social capital? The answer is, of course, no. As already pointed out by Coleman (1990), social capital has no currency. What is more interesting is the following question: Who has relatively much social capital and who has relatively little social capital, compared to the rest of the population. In this investigation, the rest of the population is approximated by the rest of the sample, which is, as pointed out, representative for the German resident adult population.

To answer this question, information on whether a respondent scores relatively high or relatively low in the answer to a specific question is sufficient. The absolute value of his answer can be left aside. It is more meaningful to know whether, in a standardized measure, a respondent indicates that he knows more (or less) people than the category average.

The straightforward way to create such a standardized measure is to normalize the variables such that their mean is zero and their standard deviation is one. This procedure is known as *standardization* in statistics. According to Schira (2005), it works as follows:

$$z_{ij} = \frac{x_{ij} - \bar{x_j}}{\sigma(x_j)} \qquad \forall i, j. \tag{4.1}$$

Here, z_{ij} is the standardized value of the variable j for respondent i, x_{ij} is the non-standardized value of that variable for respondent i, $\bar{x_j}$ is the mean of that non-standardized variable j and $\sigma(x_j)$ is the standard deviation of that variable across all respondents in the sample. Thus standardizing the variables has the additional advantage of avoiding to implicitly weigh those items higher where a higher average score is achieved, i.e. which tend to be accessed more easily. This would conflict with the aim of weighting all items equally, which was explained above.

After standardizing all items, they can simply be summed up to form a psychometric measure or they can be combined, e.g. as proposed by Decancq, Decoster, and Schokkaert (2009), to form a compositional measure. In the private sphere, although all seven items measure different aspects, the differences between the respective items are not too big: It is plausible that someone who, e.g., knows people that help him with small jobs around the house also knows people where he gets to know likable people when he is invited. Thus, constructing a psychometric measure might be appropriate here. In the work sphere, the three items measure quite different aspects. It is well possible that someone who has worked in the same firm for many decades knows quite a number of people who would put in a good word for him with his boss, but maybe he knows no one outside the firm who could place him in an appropriate job elsewhere.

Nonetheless, such a person might have valuable connections to certain customers and thus claim to have a good professional network at his command. Here, constructing a psychometric measure seems less likely to be appropriate.

To see whether the constructed psychometric measure does consistently measure a latent construct, the standard procedure is to test its internal consistency. A commonly used tool for this endeavour is *Cronbach's Alpha*. This can also be seen as an instrument to assess an instrument's reliability as discussed in section 3.4.1 of this thesis. Döring and Bortz (2016) give the following formula for the calculation of Cronbach's Alpha:

$$\alpha_{Cronbach} = \frac{p}{p-1} \cdot \left(1 - \frac{\sum_{j=1}^{p} \sigma^2(x_j)}{\sigma^2(x)}\right) \tag{4.2}$$

p gives the number of variables under investigation. As above, $\sigma(x_j)$ gives a variable j's standard deviation and $\sigma(x)$ gives the joint standard deviation of all variables under consideration. Of course, $\sigma^2(\cdot)$ gives the variance as the square of the standard deviation of the variables under consideration. Cronbach's Alpha is higher, the higher the inter-correlation between the items is relative to the sum of their internal variances. This inter-correlation is hidden in the formula for their joint variance. For example, in the two-variable-case, the formula for the joint variance of the sum of two variables x_j and x_k is

$$\sigma^2(x_j + x_k) = \sigma^2(x_j) + \sigma^2(x_k) + \rho(x_j x_k) \tag{4.3}$$

where $\rho(x_j x_k)$ gives the covariance of the two variable as a measure for their inter-correlation. Using the formula for the sum of variables is appropriate here since a psychometric index is typically constructed by summing up items.

By construction, Cronbach's Alpha lies between 0 and 1. The higher it is, the higher is the internal consistency of the scale under investigation assumed to be. However, as is easy to see, Cronbach's Alpha is, ceteris paribus, increasing in the number of variables under consideration. Shrout and Yager (1989) investigate into this effect by drawing random samples from a fixed number of items. For their sample, Cronbach's Alpha drops heavily when less than ten items are used for the construction of a scale. This effect has nothing to do with the true consistency of the scale, but is rather an artefact of the construction of Cronbach's Alpha. Schmidt-Atzert and Amelang (2012) propose to use the Spearman-Brown-Formula to extrapolate the value of Cronbachs Alpha to a desired higher number of items. The formula is given by equation 4.4:

$$\alpha_{Cronbach}^{corrected} = \frac{m \cdot \alpha_{Cronbach}}{1 + (m-1) \cdot \alpha_{Cronbach}} \tag{4.4}$$

In this equation, m represents the fraction of the desired and the actual number of items. In the case of 7 actual items and 10 desired items, m would be 10/7. In the case of 3 actual items and 10 desired items, it would be 10/3.

In the literature, several thresholds for Cronbach's Alpha for which a scale is still as-

sumed to have an acceptable internal consistency are discussed. The most commonly listed value is 0.8 [e.g. Schnell, Hill, and Esser (2013), Schermelleh-Engel and Werner (2012), Brosius (2008), Switzer et al. (1999)]. However, sometimes lower values are also said to be acceptable. Brosius (2008) says that in some cases, a value of 0.7 for Cronbach's Alpha might be acceptable, too. Unfortunately, he does not specify for which cases the lower value of Cronbach's Alpha would be acceptable. Switzer et al. (1999) go even further and argue that a value for Cronbach's Alpha between 0.5 and 0.8 is acceptable for "research in the early stages" (p. 402).

The value for Cronbach's Alpha that can be derived from the seven standardized items in the private sphere is 0.8042. Given the low number of items, this is a relatively high value. If corrected by the Spearman-Brown-Formula to match the ten items found as a lower bound by Shrout and Yager (1989), the corrected Cronbach's Alpha is 0.8544. This shows that constructing a psychometric scale by simple summing up of the seven standardized items for social capital in the private sphere is an appropriate approach. Döring and Bortz (2016) recommend to test whether any one item does not fit into the scale by testing the robustness of Cronbach's Alpha for the removal of single items. As can be seen from table 4.4, removing single items does not lead to large changes in Cronbach's Alpha. Thus, there is no immediate hint that the removal of certain items from the scale would be necessary.

The measure that results from adding up all seven standardized items for social capital in the private sphere has a mean of $<$0.0013 and a standard deviation of 0.6781.

#	Item	$\alpha_{Cronbach}$
1	... you can call anytime if you need someone to talk to?	0.7652
2	... would put in a good word for you with that person, e.g. after a bad fight?	0.7585
3	... help you with small jobs around in your household [...] without a financial reward?	0.7704
4	... borrow you groceries on a Sunday?	0.7593
5	... know a lot about financial matters and on whose advice in these things you can rely on?	0.7929
6	... maximum amount of money you could borrow [...]?	0.8259
7	... each time you get invited, you get to know new people that you find likable?	0.7702

Table 4.4: Robustness of Cronbach's Alpha for the removal of items for social capital in the private sphere

For the indicator for the work sphere, a further issue arises: All three items are only relevant for respondents who are not yet in pension. This is a point ignored by all users of the resource generator and its derivates, including Pena-López and Sánchez-Santos (2017). However, as pointed out above, the question that asks whether the respondent knows someone who would put him a good word for him with his boss is not relevant for respondents that do not have a boss, e.g. because they are self-employed, unem-

ployed or students. In the sample, there are 267 respondents for which meaningful data is only available for two out of three questions that assess social capital in the work sphere. The problem of leaving these people out of the measure is that all data on social capital in the work sphere is lost for self-employed and non-employed people. The alternative solution is to compensate the missing item that assesses the intra-firm social capital of the self- and non-employed respondents by giving a higher weight to the two remaining items. The problem with this approach is that effects and determinants that are systematically connected to this kind of intra-firm social capital might no longer be mirrored by the constructed measure. Since there is no first-best solution to this problem, the approach followed in this thesis is to test the robustness of the results for both the indicator that leaves out the self- and non-employed respondents and the indicator that includes these respondents and gives a higher weight to the two items they answered. The first indicator will be called the *employed respondents' indicator*, while the second indicator will be called the *non-retired respondents' indicator*. For the employed respondents' indicator, data is available for 424 respondents, while for the non-retired respondents' indicator, data is available for 681 respondents.

The value for Cronbach's Alpha that can be derived from the three standardized items in the work sphere is 0.6266 for the employed respondents' indicator. Using the Spearman-Brown-Formula to extrapolate to 10 items gives a corrected Cronbach's Alpha of 0.8483. Testing whether one item does not fit into the scale for the employed respondents' indicator yields that removing the question that asks for the respondents job network leads to an almost unchanged Cronbach's Alpha of 0.6379. For the non-retired respondents' indicator, Cronbach's Alpha is still 0.5242. Using the Spearman-Brown-Formula to simulate 10 items gives a corrected Cronbach's Alpha of 0.8464.

If not corrected using the Spearman-Brown-Formula, Cronbach's Alpha for the measures that deal with social capital in the work sphere is significantly lower than the Cronbach's Alpha for the measure that deals with social capital in the private sphere discussed above. Given the different thresholds, the Cronbach's Alpha lies only within that defined by Switzer et al. (1999) for research in an early stage. Given that this is the first empirical application of this newly developed indicator to assess social capital, it could be argued that this is actually research in an early stage. It would thus be appropriate to construct psychometric scales for the two indicators for social capital in the work sphere. This is especially true when looking at the values for the corrected Cronbach's Alpha calculated with the Spearman-Brown-Formular, which are much higher.

For the compositional measure, a formula as given by Decancq, Decoster, and Schokkaert (2009) can be used. This formula has been discussed in detail in chapter 3. It is analogous to a Constant Elasticity of Substitution (CES) utility function. It is given by

$$M_i = \left(\sum_{j=1}^{p} w_j z_{ij}^{\left(\frac{\beta-1}{\beta}\right)} \right)^{\left(\frac{\beta}{\beta-1}\right)} \qquad \forall i. \tag{4.5}$$

As in equations 4.1 and 4.2, z_{ij} is the value of item j for respondent i. p gives the total number of items. w_j is the weight allocated to item j. In the employed respondents' indicator, to achieve equal weighting, this would be one third for all three items that assess social capital in the work sphere. In the non-retired respondents' indicator, this would be one third for all three items for those respondents where data for all three items is available. For the remaining 232 respondents that are self- or non-employed, this would be one half for the two items on which data is available. Finally, β gives the constant elasticity of substitution between the items. For $\beta \to \infty$, i.e. for an infinite elasticity of substitution, the case of simple summing up of items as in the construction of a psychometric indicator is replicated. However, as already pointed out in chapter 3, the choice of the elasticity of substitution is non-trivial. Since the items are clearly substitutes and not complements, an elasticity of substitution smaller than zero is clearly not appropriate. Since the extreme case of a very high elasticity of substitution will be created in any case as it is the psychometric measure, a relatively low elasticity of substitution of e.g. $\beta = 2$, arbitrary as it is, might be a value that yields additional insights on the robustness of the results if a compositional measure instead of a psychometric measure is used.

As can be seen from table 4.5, the summary statistics for the four thus created indicators do not show a great deal of variation. When testing hypotheses in section 4.3, the number of observations is reduced by a small amount due to missing data entries for some respondents.

Measure	**Observations**	**Mean**	**Std. Dev.**
Employed respondents' indicator, Psychometric	424	0.17	0.74
Employed respondents' indicator, Compositional	424	0.12	0.65
Non-retired respondents' indicator, Psychometric	691	0.05	0.78
Non-retired respondents' indicator, Compositional	691	0.11	0.70

Table 4.5: Summary statistics of the four measures for social capital in the work sphere

There may be good arguments for both using a psychometric or a compositional measure for social capital in the work sphere. The high degree of internal consistency of the psychometric measure on the one hand and the necessary degree of arbitrariness when selecting the elasticity of substitution for the compositional measure give a slight edge to using a psychometric measure. Moreover, it has to be noted that the two techniques yield remarkably similar results. Thus, to streamline presentation and to make it consistent with the measure of social capital in the private sphere, the results for the psychometric measure for work-related social capital will be given in the text, while the results for the compositional measure can be found in the Appendix.

4.3 Testing the Hypotheses on Determinants and Effects of Social Capital

In section 2.5, a number of hypotheses concerning the predictors of individual level social capital possession have been developed on a theoretical level. The aim of this section is to test these hypotheses empirically using the social capital measures described above. The proceeding in this section will be as follows: Firstly, the structure used in section 2.5 will be picked up and the hypotheses concerning the different variables that were developed there will be restated. Then, it will be explained how the variables under consideration have been assessed in the questionnaire. In a final step, the empirical result will be presented. Not all numerical results will be presented here but only a selected number. Technically, a baseline model is used which can be found in the appendix. Not all possible predictors are included in this baseline model, but only those which turn out to be significant at one point or which need to be included for technical reasons, e.g. when a variable is split into several dummies and no sensible baseline category would result otherwise.

Although it is probable for a number of variables under investigation that they represent both determinants and effects of social capital simultaneously, i.e. that the two are cross-determining each other, a simple ordinary least squares (OLS) regression can be used. The reason is that this econometric method only measures whether there is a correlation between any two variables. No detailed information on the direction of the effect is needed. A weakness of OLS is that it treats the dependent variables as continuous. However, the results are largely robust when using ordered logit regression instead. Thus, OLS is used. As is standard practice, dummies have been created for the different levels of an independent variable when treating it as continuous did not seem reasonable.

When testing hypotheses using empirical data, an important question is when a hypothesis is accepted or rejected. When the null hypothesis is that there is no effect as measured by the variable's coefficient, the p-value gives the probability that the true coefficient includes zero, i.e. one minus the p-value is the size of the confidence interval that does not include zero. The maximum significance level set by the researcher gives the value of the p-value for which any effect is deemed present, i.e. where the null hypothesis is rejected and thus the accompanying hypothesis is accepted. In the social sciences using data not from a laboratory, a 10% significance level is customary. Thus, throughout this thesis, any effect which has a p-value smaller than or equal to 0.10 will be deemed significantly different from zero, i.e. a 10% significance level will be used.

As already mentioned, the short article by Pena-López and Sánchez-Santos (2017) is the study closest to the research endeavour pursued in this thesis. Unfortunately, there is little transparency on the items they use to assess predictors of social capital possession in their publication. Moreover, they consider a much smaller set of possible predictors. However, where there is an overlap with the predictors also used by Pena-

López and Sánchez-Santos (ibid.), it will be pointed out whether the results found in this thesis and the results found by Pena-López and Sánchez-Santos (2017) in Spain coincide.

4.3.1 Demographic Variables

As section 2.5.1, this subsection will deal with the effects of a respondent's age and gender on his or her stock of individual level social capital. The two topics will be discussed in turn.

Age Effects

The argument presented in section 2.5.1 was that social capital is in principle increasing with increasing age as respondents have more time to interact with other individuals and thus create social capital. However, this effect is mediated by the fact that the available time is typically decreasing when individuals hold full-time jobs and start a family. Moreover, as people grow old, many of the persons they hold social capital relations to die and they themselves become unattractive people to form a social capital relationship with as their remaining lifespan, and thus the payoff that can be expected from a relationship to them, is relatively low, thus reducing their social capital. The research hypothesis would thus be that social capital is decreasing especially in old age.

Age was directly measured in the questionnaire. The respondents were given seven response options when asked for their age. Thus, more information was extracted than was necessary to check whether the population was representative for the German adult resident population as depicted in table 4.1, where six categories sufficed. The distribution of the different age groups for seven categories is as follows:

Age group	**Share of Respondents**
18-23 years	6.29%
23-29 years	10.49%
30-39 years	14.29%
40-49 years	18.38%
50-59 years	18.28%
60-69 years	13.19%
more than 70 years	19.08%

Table 4.6: Distribution of the respondents in different age groups

When treating age as a continuous variable, no age related effects can be found in the data. It is, however, worthwhile to create three additional dummies: One for young respondents, i.e. those with less than 30 years of age, one for respondents between 50 and 70 years of age and one for old respondents with more than 70 years of age.

Even with those dummies, there is no significant age effect on the stock of social

capital in the private realm in the baseline model. This is a direct consequence of also including whether people are retired in the model. 89.51% of the respondents who are retired are older than 60 years. However, there is a highly significant negative effect of being retired on a respondent's social capital in the private realm (Coefficient: -0.24, p-value $<$0.001). This can easily be interpreted as an age effect.

In the work sphere, there is no effect for young respondents, i.e. those under 30 years of age. However, there is a negative age effect for those respondents between 50 and 70 years in all indicators: Apparently, individuals find it difficult to maintain their job-related network as they grow older. This finding of course fits with the fact that people above 50 face more difficulties on the labor market, e.g. when trying to reenter after a job loss [Wanberg et al. (2016)]. The results can be seen in table 4.7. The dummy for respondents over 70 years of age has not been used in connection with work related social capital as 181 out of 191 respondents over 70 years of age are retired and thus not active in the work sphere.

Measure	**Coefficient**	**p-value**
Employed respondents' indicator	-0.15[6]	0.046
Non-retired respondents' indicator	-0.11	0.056

Table 4.7: Effects for the age group 50-70 in the work-related social capital measures

What can be seen is that, as has been expected from theoretical considerations and also found by Pena-López and Sánchez-Santos (2017), the stock of social capital is declining from a certain age onwards. This effect sets in earlier in the work sphere than in the private sphere. This is consistent with the theory insofar as a respondent's involvement in the work life typically ends before his death.

Gender Effects

The research hypothesis developed in section 2.5.1 was that there should be no gender effect per se. Rather, what should be expected is that women who live the traditional role model might have either more or less social capital: more social capital because housewives should have more time to interact with others and thus build social capital and less social capital because the workplace is a good place to get to know and interact with people. Of course, this reasoning should in principle also be true for househusbands. Finally, women who are active in the work sphere but also have household duties should have either more or less social capital: more, because they do not have the potential disadvantage of housewives of not having colleagues in the workplace and less, because these women potentially have very little free time in which they could build social capital.

[6] The coefficients given throughout this chapter should not be interpreted beyond their algebraic sign as no interpretation of the absolute values of the social capital indicators takes place for the reasons outline on page 136.

Gender was directly measured in the questionnaire. As stated in table 4.1, 51.05% of respondents were female. Moreover, respondents were asked for their occupation. 6.09% of the respondents stated that they were either househusband or housewife. Of these, 7.02%, i.e. 0.40% of the total survey sample, are male. Finally, an indicator for employed women with other duties has been constructed: It encompasses women who are either employed, self-employed or on maternity leave and who live in a household with more people than just their partner. This is, of course, a rough measure. The assumption behind this is that the other people in the household are either a child or an elderly parent who needs care and that this care is done by the women. 11.59% of respondents have thus been identified as employed women with other duties.

As expected and also found by Pena-López and Sánchez-Santos (2017), there is no significant effect of being female in any indicator. Moreover, there is no effect of being an employed women with other duties instead of simply checking for being female in any measure. However, there is a negative effect of being a housewife or househusband on the stock of social capital in the private sphere. There is also a negative effect on social capital in the work sphere in the two indicators where housewives and househusbands are included, i.e. the non-retired respondents' indicators. This can be seen in table 4.8

Measure	**Coefficient**	**p-value**
Social Capital in the Private Sphere	-0.2116	0.007
Social Capital in the Work Sphere		
Non-retired respondents' indicator	-0.20	0.035

Table 4.8: Effects of being a housewife or househusband on the different social capital measures

The conclusion would thus be that Putnam's (2000) argument that the role of the housewife can be socially isolating is correct. Although there is a strong theoretical and, as will be shown below, empirically plausible argument that time is important in creating social capital, housewives and househusbands apparently lack the access to resourceful contacts to use the time they potentially have, because of their lack of involvement in the labor market, to create social capital.

4.3.2 The Capital Analogy

Based on section 2.5.2, this section will discuss the effects of a respondent's stock of other capital, his investment behaviour and his attitude towards a norm of reciprocity on his stock of social capital.

The Stock of Other Capital

In section 2.5.2, no clear-cut research hypothesis on the effects of the stock of a respondent's human or economic capital on his stock of social capital has been formulated. Two positions have been put forward. In favor of a complementarity between social capital and other capital, it can be argued that having a higher stock of other capital makes a respondent a more attractive person to know. This makes it easier for him to build social ties and thus, ceteris paribus, increases his stock of social capital. In favor of a substitutability between social capital and other capital, it can be argued that having a higher stock of other capital lowers the respondent's dependency on social capital. The reason is that he can do more things himself or buy them on the market. Moreover, especially a higher level of human capital increases his opportunity cost of time, which is an important factor in social capital creation, as will be shown below.

To simplify things, when investigating into the empirical evidence, it will firstly be looked at human capital and afterwards at economic capital.

To measure the respondents' human capital, their educational status has been assessed in the questionnaire. In addition to the five categories already presented in table 4.1 used to ensure the representativeness of the survey, a sixth category has been assessed: In Germany, after 12 or 13 years of schooling, two types of degrees can be achieved: A higher one, the *Abitur*, which in principle allows a pupil to study any subject at any university, and a lower one, the *Fachabitur*. The latter only allows a pupil to study a certain range of subjects, often only at universities of applied sciences. The accordingly differentiated participant data can be seen in table 4.9.

Educational Attainment	**Share of Respondents**
No degree	1.40%
Secondary degree with 8 or 9 school years	37.66%
Secondary degree with 10 school years	30.67%
Secondary degree with 12 or 13 school years (*Fachabitur*)	4.30%
Secondary degree with 12 or 13 school years (*Abitur*)	8.99%
Tertiary degree	16.98%

Table 4.9: Share of respondents by highest educational degree

Of course, it can be argued that human capital accumulation continues after the end of formal education, e.g. through work experience. However, since work experience is typically highly correlated with age and involvement in the labor market, two factors which have an influence on the stock of social capital on their own, only formal education has been used as a proxy for human capital in this thesis.

There is a highly significant and positive effect of a respondent's human capital, if measured as formal education, on his stock of social capital. This can be seen in table 4.10. This effect is robust with respect to the exact specification of the variable, i.e.

whether education is measured as a continuous variable or whether e.g. two dummies, one for tertiary education and one for less than 10 years of schooling, are used.

Measure	**Coefficient**	**p-value**
Social Capital in the Private Sphere	0.07	<0.001
Social Capital in the Work Sphere		
Employed respondents' indicator	0.10	<0.001
Non-retired respondents' indicator	0.08	<0.001

Table 4.10: Effects of education on the different social capital measures

The conclusion concerning human capital would thus be that Bourdieu (1983) is correct in his argument that individuals who possess more resources are more attractive people to know and hence find it easier to create social capital. Apparently, the increased opportunity costs of time that come with a higher level of human capital do not outweigh these benefits. This empirical result is also in line with that by Pena-López and Sánchez-Santos (2017).

To measure the respondents' economic capital, the straightforward way would be to assess their wealth. To do so, three questions have been included in the questionnaire: Firstly, respondents were asked whether they possess real estate and what the approximate value of this real estate is. Secondly, respondents were asked whether they possess financial assets and what their approximate value is. Thirdly, respondents were asked whether they have debts. Since talking about financial assets and liabilities is considered a no-go in parts of the German population, each question included a response option that stated that the respondent has real estate, financial assets or debts, but does not know how much they are worth. The aim was to give respondents who did not want to talk about their wealth an option to skip this answer without lying or aborting the entire questionnaire.

Response Option	**Real Estate**	**Financial Assets**	**Debts**
no real estate / no debts	55.34%	n.a.	57.54%
less than 2 000 Euro	n.a.	33.17%	6.29 %
2 000 - 19 999 Euro	n.a.	27.67 %	14.09%
20 000 - 79 999 Euro	4.90%[7]	18.28%	9.69%
80 000 - 249 999 Euro	19.58%	8.09%	7.09%
250 000 - 599 999 Euro	13.89%	1.90%	1.50%
600 000 - 999 999 Euro	1.20%	0.70 %	0.00%
1 000 000 Euro and more	0.70%	0.50%	0.00%
Cannot estimate the value	4.40%	9.69%	3.80%

Table 4.11: Wealth of the respondents

[7] for real estate, the category was *less than 80 000 Euro*

Thus, what can be created without making too many assumptions or loosing too many observations is a variable that states whether a respondent has any wealth or not. This is the case either if his combined wealth from real estate and financial assets is larger than his debts or if he has either any financial assets or any real estate and no debts at all. This definition of having any wealth nicely splits the sample into two halves: 50.35% of respondents have any wealth according to this definition.

There is a highly significant positive effect of wealth possession on social capital in the private sphere. There is, however, no comparable effect on social capital in the work sphere in any of the four measures.

To rule out that this is an effect of the measure used, data on the respondent's income has been used to test for the robustness of this finding. The distribution of income of respondents has been given in table 4.1. In addition to the data requirements needed to test for the representativeness of the sample, respondents with more than 5 000 Euro net income per month have been asked whether they also earn more than 10 000 Euro. 3.60% of all respondents stated that they earn more than 10 000 Euro.

In principle, using income instead of wealth as a measure for a respondent's economic capital is problematic since income is a flow measure and does not measure a capital stock. However, the assumption would be that there is a positive correlation between income and the access to economic capital. The advantage of using income instead of wealth is that the income measure is of higher quality since respondents did not have the option to de facto not answer the question, i.e. there is information on different levels of access to economic capital available. However, it should be kept in mind that something different than wealth is measured.

When using income as a continuous variable instead of the dummy variable whether there is any wealth present, there is a significant and positive effect on a respondent's social capital in the work sphere for the employed respondents's indicator.

Measure	**Any Wealth**		**Income**	
	Coefficient	p-value	Coefficient	p-value
Social Capital in the Private Sphere	0.08	0.029	0.03	0.033
Social Capital in the Work Sphere				
Employed respondents' indicator	0.02	0.778	0.06	0.026
Non-retired respondents' indicator	0.01	0.829	0.03	0.115

Table 4.12: Effects of different measures for economic capital

As can be seen, it is unambiguous that there is a positive effect of economic capital possession on private level social capital. For work level social capital, such an effect can only be found when looking at employed respondents and when using income as a

proxy. Here, however, two things have to be kept in mind: Firstly, it is possible that the story is the other way around: It is not economic capital, that would be measured by wealth possession, that triggers social capital in the job sphere, but rather social capital in the job sphere that leads to higher incomes, independent of the respondent's wealth. Secondly, income is also a measure for occupational status, i.e. for a respondent with high income, it is not only the respondent's economic capital that makes him an attractive person to build a social capital relationship to. It is also the fact that he probably occupies a relatively high position.

Summing up, there is an effect of occupational status on a respondent's social capital since a person higher up in the hierarchy is a more attractive person to have a social capital relationship with. Moreover, if there is an effect of income, it is probable that the causality is such that respondents who have a large stock of work-related social capital can use this stock to increase their income. There is no effect of possessing any wealth on the respondents work-related social capital. Such an effect is only present for private level social capital. Pena-López and Sánchez-Santos (2017), who do not differentiate between private and work related social capital, also find a positive income effect in most of their models, but do not test for wealth.

Investment Behavior

The hypothesis developed in chapter 2.5.2 was that little open investment behaviour in social capital takes place as it is socially condemned, especially in the private sphere. If there is such behaviour, then it should be expected in the work sphere where it is deemed to be more acceptable. If people purposefully invest in social capital in the private sphere, this investment may be unconscious or well-concealed.

Two variables have been created to assess whether people consciously or unconsciously invest in social capital. To test for unconscious investment, respondents have been asked two questions: firstly, whether they sometimes deliberately look for new friends or contact old friends to which they had lost contact and, secondly, whether they sometimes contact people so that they do not lose contact. These two variables have been used as to create a psychometric measure for unconscious investment. To test for conscious investment, two further questions have been used. One asked whether the respondent sometimes stays in contact with people because it might be helpful to know them and the second question asked whether the respondent has actually tried to become friends with another person because it might one day be helpful to know him. These two variables have been used to create a psychometric measure for conscious investment. The answer pattern to these questions is given in table 4.13. What can already be seen from the descriptive data is that there is indeed a strong taboo on trying to befriend a person because it might be useful: almost half of the respondent said that they had never done this in the past.

Value	Look for new friends or contact old friends	Contact people to stay in touch	Stay in contact because person might be useful	Try to befriend because person might be useful
very often	3.40%	5.89%	2.80%	1.90%
often	11.19%	18.98%	8.69%	4.70 %
sometimes	40.36%	50.45%	29.67%	15.78%
rarely	33.07%	17.98%	32.87%	28.27%
never	11.59%	5.69%	25.57%	48.75%

Table 4.13: Investment behaviour of respondents in social capital

In the data, the following effects were found: In the private sphere, there is a negative effect of conscious investment, i.e. the purposeful creation of social capital by keeping contact with other people because it might be useful to know them does not actually help to create social capital. There is, however, a positive effect of unconscious investment, i.e. people who care for keeping up their contacts without explicitly stating that they do so because it might be useful have more social capital in the private sphere. This finding is consistent with the argument by Esser (2008) that having friends because it might be useful one day is socially unacceptable.

Measure	Unconscious Investment		Conscious Investment	
	Coefficient	p-value	Coefficient	p-value
Social Capital in the Private Sphere	0.02	0.092	-0.04	0.063
Social Capital in the Work Sphere				
Employed respondents' indicator	0.03	0.205	0.12	0.002
Non-retired respondents' indicator	0.04	0.046	0.12	$<$0.001

Table 4.14: Effect of conscious and unconscious investment

In the work sphere, the effect of unconscious investment is still positive when looking at all respondents who are not in pension. When looking only at employed respondents, i.e. excluding non- and self-employed respondents, the effect is no longer significant. What is more interesting is that the effect of conscious investment is positive and highly significant here. Apparently, it is more acceptable in the world of work to keep contacts purely for utility reasons. This is in line with the expectations of Coleman (1990) and Kadushin (2004).

Summing up, it is apparent that investment in social capital takes place. While unconscious investment has a positive effect on both kinds of social capital, conscious investment is only helpful when it comes to social capital in the work sphere. In the private sphere, its effect is negative. This is probably because it is socially unacceptable to befriend people because they might be useful. This is not to say that it does not take place and might not work out. However, people who openly talk about doing this in a questionnaire might also fail to conceal their intentions on other occasions, thus violating the condition put up by Esser (2008) on making friends because they might be useful: if it is done, it must be very well concealed.

The Norm of Reciprocity

In section 2.5.2, the hypothesis developed was that the effects of a respondent's agreement to two different forms of reciprocity are as follows: For continuation reciprocity, i.e. reciprocity that aims at the continuation of a relationship where favors are not balanced immediately, a positive effect on the social capital stock was expected. For balanced reciprocity, i.e. reciprocity that aims at the immediate annihilation of outstanding favors, no or a negative effect on the social capital stock was expected.

To measure the attitude of the respondents towards the two forms of reciprocity, two items have been used: To assess continuation reciprocity, the respondents were confronted with the statement that friendship is a give and take. The response options represented a five-point Likert scale that ranged from "completely agree" to "completely disagree". Kövecses (1995) interprets this statement in everyday use to signify the reciprocal basis of friendships. Since friendships are social relationships that are made to last, agreeing to this statement is interpreted to signify that the respondent believes in continuation reciprocity in social relationships.

For balanced reciprocity, the item that has been used to assess the attitude of the respondents is a statement that one has the feeling of being indebted after receiving a favor. This question aims at assessing the feeling of guilt adherents of balanced reciprocity feel after receiving a favor. In order to free themselves from this feeling of guilt, they try to immediately balance their account of credit slips by redeeming the favor. This, together with the feeling of guilt, is of course not helpful in creating long-lasting obligations.

Value	Continuation Reciprocity	Balanced Reciprocity
strongly agree	57.04%	17.28%
somewhat agree	31.27%	36.46%
neither agree nor disagree	8.89%	23.68%
somewhat disagree	1.70%	15.08%
strongly disagree	0.70%	7.19%

Table 4.15: Attitudes towards different forms of reciprocity, Missing to 100%: No answer

What can be seen from descriptive statistics already is that there is a very strong adherence to continuation reciprocity among respondents. Almost 90% of respondents agree to the statement used to assess it. Agreement is more mixed towards balanced reciprocity.

In the data, there is no significant effect of continuation reciprocity as can be seen from table 4.16. There is a negative effect of balanced reciprocity on a respondent's social capital in the private sphere. This effect is also present in the work sphere for the non-retired respondent's indicator when the compositional measure is used, this being the only noticeable difference in the results between using a psychometric and a compositional measure. In both cases, the variable created is a dummy that is one only if respondents strongly agree to the statement. If a continuous variable is used instead of the dummy, the nature of the results does not change.

Measure	**Continuation Reciprocity**		**Balanced Reciprocity**	
	Coefficient	p-value	Coefficient	p-value
Social Capital in the Private Sphere	0.05	0.203	-0.12	0.014
Social Capital in the Work Sphere				
Employed respondents' indicator	0.05	0.425	-0.05	0.512
Non-retired respondents' indicator	0.03	0.533	-0.07	0.230

Table 4.16: Effect of adhering to different types of reciprocity

Summing up, the expected negative effect of balanced reciprocity can be found, at least up to a certain extent. That no positive effect of continuation reciprocity is found might very well be due to the skewness of the answers to this item. If almost everyone adheres to continuation reciprocity, it may be difficult to find a significant statistical effect due to missing differences among respondents with respect to this point.

4.3.3 Social Networks

This section picks up the topics from section 2.5.3 and tests the hypotheses developed there. Specifically, it will be looked at the role of the private social network, workplace effects, effects of group membership and the effects of social network sites in turn.

Role of Time Spent in the Private Social Network

The hypothesis developed in section 2.5.3 was that respondents who spend more time with their social network, i.e. their family and friends, have more social capital. The idea is simply that time is a very important factor in social capital production. The reasoning

is that social capital is mostly based on thick ties between individuals and that these do not develop quickly.

Value	Relatives	Friends
0 hours	17.28%	10.39%
1 hour	27.87%	21.58%
2 hours	22.68%	21.88%
3 - 4 hours	16.68%	24.78%
5 - 7 hours	7.69%	11.79%
8 - 10 hours	3.40%	5.79%
more than 10 hours	4.40%	3.80%

Table 4.17: Time spent with relatives and friends in an average week

To measure this aspect, two items have been used. A first item asks for the time the respondent spends in an average week with meeting, writing or calling his relatives. A second item asks the same question for the respondent's friends. The descriptive statistics for the items are given in table 4.17. In the end, it is not relevant whether the respondent rather spends his time with his family or his friends, but the total time he spends with his social contacts, irrespective of being related to them or not. The variable to measure this time spent with social contacts has been constructed as follows: The time spent with relatives and with friends in an average week is added up. For intervals, midpoints have been used, i.e. 3.5 hours if the respondent used the response option "3 - 4 hours". For the highest response option, i.e. more than 10 hours, 10 hours have been used as a conservative estimate. The results are robust to using conservative, i.e. lower bound, estimates throughout.

Measure	Coefficient	p-value
Social Capital in the Private Sphere	0.04	<0.001
Social Capital in the Work Sphere		
Employed respondents' indicator	0.03	<0.001
Non-retired respondents' indicator	0.03	<0.001

Table 4.18: Effects of time spent with relatives and friends on the different social capital measures

The time spent with friends and relatives is, as theory predicts, a highly significant predictor for the respondent's stock of social capital. This is true for social capital in the private sphere as well as in the work sphere. The results can be seen in table 4.18

The conclusion would be that, just as Bourdieu (1983) predicts, time is a highly important factor in social capital creation.

Workplace Effects

The hypothesis developed in chapter 2.5.3 about workplace effects on social capital in the work sphere is clear: A lack of such social capital may actually be the cause for unemployment. No clear hypothesis was developed in chapter 2.5.3 concerning workplace effects on private level social capital. While some authors argue that the workplace is a good place to get to know people and to maintain social contacts and thus to build social capital, the opposite argument would be that the unemployed have more free time to build social capital and would need social capital as a substitute for dwindling economic capital.

To measure employment effects, respondents have been asked for their occupational status. The results of this item are given in table 4.19. Originally, 5.00% of respondents reported that they have an "other" type of occupation. After controlling for their answer in the associated text box, 80% could be assigned to one of the other 10 categories. For 1.00% of the sample, a new category "unable to work" has been created due to their answers in said text box.

Occupational Status	**Share of Respondents**
Self-employed with not more than one employee	5.49%
Self-employed with two or more employees	1.30%
Employee in the public sector or civil servant	8.99%
Employee in the private sector	35.26%
In education or study	5.79%
Registered as unemployed	4.50%
In pension / retired	30.77%
On maternity leave	0.70%
In military or voluntary service	0.00%
Housewife / househusband	6.19%
Unable to work	1.00%

Table 4.19: Share of respondents by occupational status

The effects of being outside the labor force as a housewife or househusband have already been investigated in section 4.3.1. The effects of being a pensioner have already been investigated in section 4.3.1 in connection with age effects since the correlation coefficient between the highest age category and being a pensioner is very high (0.6766). Thus, what remains is looking at the self-employed, the unemployed and those in education or study.

Concerning the self-employed, what can be found is that, vis-à-vis the employed, there is no significant difference in private level social capital for them, but they have a higher work-related social capital. This is not a surprising result as especially their network can be expected to help them to recruit customers. What can be seen in table 4.20 is that unemployed respondents have less social capital vis-à-vis employed

respondents in both the private and the work sphere. In the private sphere, the conclusion would be that the social contacts made in the workplace and the resources acquired there, which are both lacking for the unemployed, outweigh their benefits of having more free time to build social capital and their higher dependency on it. The effect has been expected in the work sphere: Had the unemployed respondents more social capital here, i.e. someone who could place them in a job, they would possibly not be unemployed. For students, a similar effect can be observed regarding social capital in the works sphere. It is probable that they lack access to social capital in the work sphere because they have never or only marginally been involved in it. The finding that respondents active in the work sphere have a higher level of social capital is also found by Pena-López and Sánchez-Santos (2017).

Measure	**Self-employed**		**Unemployed**		**Education or Study**	
	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
Social Capital in the Private Sphere	-0.12	0.117	-0.17	0.061	-0.13	0.139
Social Capital in the Work Sphere						
NRRI[8]	0.16	0.042	-0.24	0.042	-0.43	$<$0.001

Table 4.20: Effects of being self-employed, unemployed or in education or study vis-à-vis being employed on the different social capital measures

Effects of Group and Organization Membership

The hypothesis developed in section 2.5.3 was that there should be a positive influence of group membership on social capital and that this should be especially true for certain groups that are rumoured to be particularly rich in social capital. However, it was also argued that group membership alone is not a good tool to measure social capital, although this is e.g. done by Putnam or Glaeser, Laibson, and Sacerdote (2002).

To measure group membership, three items have been used: Firstly, individuals have been asked in how many organisations they are an active member. The term active was not precisely defined in the questionnaire, but it aimed at excluding organisations from the list where respondent's do not do more than paying their membership fees. Respondents were given a number of examples what is meant by the term organizations, namely organizations that people belong to for leisure time endeavours: Leisure time clubs such as sport clubs, music clubs, shooting clubs or heritage societies, citizen action committies, parents' associations, the local council, their church or voluntary

[8]Non-Retired Respondents' Indicator

fire fighters. Secondly, individuals were asked in how many of these organisations they have a function, e.g. in youth work, as a trainer, as an officer, by collection donations or by doing publicity work. The idea was that individuals who accept this responsability have a higher commitment with their organisations and the people within and thus have better access to social capital. The summary statistics for the responses to these questions can be found in table 4.21. What can already be seen is that membership in organizations is a difficult measure for social capital as almost two thirds of respondents are not an active member in any organization and thus no information that could be used to differentiate between these non-members' respective social capital stocks would be available.

Value	**Membership**	**Function**
0 organizations	63.54%	77.02%
1 organization	20.28%	18.08%
2 organizations	11.69%	4.00%
3 - 4 organizations	4.00%	0.90%
5 or more organizations	0.50%	0.00%

Table 4.21: Membership and function in organizations

Thirdly, individuals were confronted with a number of types of special organisations which are supposedly especially helpful in creating social capital and were asked whether they are a member of any of them. The list included student fraternities, Rotary- and Lions Clubs and similar charity organisations, soldiers- and veterans clubs, parties and political organisations and organizations that can only be joined by invitation. Additionally, respondents were asked whether they had been awarded a scholarship during their studies. The organizations that provide these scholarships typically also invest in connecting their scholarship holders, thus creating resourceful networks. All in all, 17.78% of respondents are members of at least one such a special organization or received a scholarship. The distribution of membership in the specific organization types can be seen in table 4.22.

Type of Organization	**Share of Respondents**
Fraternity	1.60%
Rotary- or Lions Club or similar charity organization	3.30%
Soldiers- and veterans club	1.20%
Party or political organization	6.49%
Organization that can only be joined by invitation	7.89%
Received a scholarship	1.90%

Table 4.22: Share of respondents with membership in certain special types of organizations

When investigating into the data, there is little sense of looking at active membership in organizations and holding a function in organizations separately as they are highly correlated with a correlation coefficient of 0.7162. Thus, only one of the two items, namely active membership in organizations, will be used to measure organizational membership effects as it is closer to the measure proposed by Putnam (2000).

What can be seen is that there is a positive effect of membership in organizaions on a respondent's social capital in the private sphere, but not in the work sphere. On the other hand, there is a positive effect of special type organizations in the work sphere, but not in the private sphere.

Measure	**Membership in Organizations**		**Member in a Special Organization**	
	Coefficient	p-value	Coefficient	p-value
Social Capital in the Private Sphere	0.07	0.003	0.01	0.864
Social Capital in the Work Sphere				
Employed respondents' indicator, Psy.	-0.01	0.859	0.22	0.012
Employed respondents' indicator, Comp.	-0.03	0.402	0.18	0.019
Non-retired respondents' indicator, Psy.	0.04	0.217	0.24	$<$0.001
Non-retired respondents' indicator, Comp.	0.03	0.312	0.21	0.001

Table 4.23: Effect membership in organizations and special organizations vis-à-vis non-membership on the social capital stock

The conclusion would be that organizations that individuals join in their leisure time to pursue their hobbies help them to create social capital in the private sphere. They are not particularly helpful when it comes to creating social capital in the work sphere. Apparently, there is too little overlap between the two realms. On the other hand, while special type organizations apparently do not create relationships that are especially helpful in the private sphere, membership in these organizations is very helpful in the work sphere. It seems that, here, people come together who, although they mean nothing special to each other on a personal level, are homogeneous and resourceful enough to help out each other in the work sphere very effectively. A positive effect of associational membership, which is also broadly expected by theory, is also found by Pena-López and Sánchez-Santos (2017), although they do not differentiate between leisure time and special organizations.

Social Network Sites

The hypothesis developed in section 2.5.3 was that, if any, social network sites should have a positive effect on a respondent's social capital.

There are two types of social networks: Firstly, private social networks, like *Facebook*, *tumblr* and *Instagram*, where people connect with their friends primarily for private reasons. Secondly, there are work-oriented social networks like *Xing* or *LinkedIn*. Respondents were asked whether they are a member of such a network. While 66.53% of the respondents were a member of a private social network, only 19.28% were a member of a work-oriented social network.

Measure	**Coefficient**	**p-value**
Social Capital in the Private Sphere	0.08	0.035
Social Capital in the Work Sphere		
Employed respondents' indicator	0.10	0.176
Non-retired respondents' indicator	0.08	0.194

Table 4.24: Effects of membership in social network sites on the different social capital measures

Of course, the idea would be that membership in a private social network helps to create private level social capital, while membership in a work-related social network facilitates building work level social capital. Looking at the data, while there is a significant effect of private social network site membership in the private realm, there is no significant effect of membership in work-related social network sites on the stock work level social capital. The results can be seen in table 4.24

Response Option	**Affirmative Answers**
Private Social Network Sites	
I wanted to find new friends	17.87%
I wanted to find old friends that I had lost contact to	59.16%
I wanted to stay in touch with my current friends	62.01%
I wanted to have the possibility to participate in other people's lives	28.83%
Other	11.86%
Work Related Social Network Sites	
I wanted to find a new job	43.01%
I wanted to increase my income	17.62%
I wanted to acquire new orders for my company	18.13%
I wanted to find new possibilities for cooperation	50.25%
I wanted to find a new employee	11.40%
Other	12.44%

Table 4.25: Motivation of joining of social network members

More insights can be gained when looking at the motives of membership in social

networks. For both types of social networks, respondents who answered that they were a member were asked for their motive for joining. The results are given in table 4.25

From these items, two variables have been created: Firstly a variable was created for respondents who joined a private social network site with a motive of maintaining or increasing their social network, i.e. who answered affirmatively to one of the first three questions given in table 4.25. Moreover, respondents who answered other and stated a reason that fits to one of these three motives were included. All in all, 57.34% of total respondents or 86.19% of respondents who are member of a private social network site fall into this category. Secondly, a variable was created for respondents who joined a work related social network site and who answered affirmatively to any of the motives listed (i.e. one of the lower five items starting with *I wanted*) or stated something equivalent in the *other*-category. All in all, 17.48% of total respondents or 90.67% of respondents that are member of a private job network fall into this category.

Looking at the data, having such a motive when joining a social network site increases a respondent's stock of social capital in the private sphere and in the work sphere. The results can be found in table 4.26

Measure	**Coefficient**	**p-value**
Social Capital in the Private Sphere	0.10	0.007
Social Capital in the Work Sphere		
Employed respondents' indicator	0.14	0.073
Non-retired respondents' indicator	0.12	0.046

Table 4.26: Effects of investment motive of social network site membership on the different social capital measures

The conclusion would be that it is not mainly membership in social network sites alone that helps to increase a respondent's social capital (although this is also helpful in the private sphere), but what he aims at using them for, i.e. if he wants to use it to increase or maintain his social network. There is a close relationship to the investment motives discussed above: People, although maybe unknowingly, invest in social capital and this investment may well be effective. It is, however, not certain whether it is the membership in social network sites which helps those people create social capital, or whether it is their attitude towards increasing and maintaining their social networks also in other parts of their life which is just reflected in their motive for joining a social network site.

4.3.4 Geographical Effects

Referring to section 2.5.4, this section will pick up several effects that are, in the widest sense of the word, geographical effects. This includes the effects of individual mobility, migration effects, effects of originating from or living in eastern Germany and effects of town size and centrality. All four aspects will be looked at in turn.

Mobility

The hypothesis developed in section 2.5.4 was that there should be a negative effect of individual mobility on the respondent's stock of social capital: Moving away makes staying in touch with people more difficult, especially if people move away over a greater distance.

To assess their individual degree of mobility, respondents were asked three questions: Firstly, whether they still live in the same place where they visited their elementary school, i.e. where they are probably rooted since the days of their childhood. 36.56% of respondents still live in the same place where they visited their elementary school at. Secondly, respondents were asked whether they moved to their current place of residence from another village or town in the last five years. 24.08% of respondents affirmed this. Thirdly, respondents were asked how far their last place of residence was away. The results are given in table 4.27.

Answer	**Share of Respondents**
Has never lived at another place	21.38%
1 - 20 kilometres	32.67%
21 - 100 kilometres	21.88%
more than 100 kilometres	24.08%

Table 4.27: Distance to their last place of residence

In the data, there is no effect whether someone never lived elsewhere or already went to the elementary school in the same town. There is also no effect when someone moved to his current place of residence in the last five years on private level social capital. There is a slight negative effect, as would be expected, when looking at work sphere social capital for the indicator that only looks at workers. The results can be seen in table 4.28. The results are robust for looking at the effect of moving more than 20 kilometres in the last five years, which is true for 15.28 percent of the respondents.

Measure	**Coefficient**	**p-value**
Social Capital in the Private Sphere	0.00	0.975
Social Capital in the Work Sphere		
Employed respondents' indicator	-0.12	0.079
Non-retired respondents' indicator	-0.05	0.334

Table 4.28: Effects of moving in the last five years on the different social capital measures

Summing up, there is a slight negative effect of moving in the work sphere for employed persons, but not in the private sphere. This may be because moving is often also associated with a new employer, where old intra-firm ties often loose their value.

This is also what separates the group in this indicator for work-related social capital from the respondents included in the other work related social capital measure where there are respondents included that have no intra-firm ties that can be lost.

Things are apparently different for private level ties, which either build up quicker or do not get lost as abruptly in the first place. Here, new communication technologies not imagined by Putnam (2000) or Glaeser, Laibson, and Sacerdote (2002) at the beginnings of the 2000s and the generally smaller distances in Germany compared to the US, where they undertook their research, might play a role. Pena-López and Sánchez-Santos (2017) even find a positive effect of mobility. However, they are themselves surprised by this finding and struggle to make up an explanation.

Migration Effects

In section 2.5.4, no clear-cut hypothesis on migration effects could be formulated. In any case, effects are expected to be limited to ethnic communities that exhibit a high degree of closure. Here, resource rich communities can be a source of social capital for the migrants included in them, while communities poor in resources can be detrimental to the respondent's social capital stock.

Answer	Share of Respondents
Yes, I	5.59%
Yes, my mother	7.09%
Yes, my father	8.09%

Table 4.29: Migration background of respondents

To measure their migration background, each respondents was asked whether he or any of his parents have or had in the past a different nationality than German. The answer to this question can be found in table 4.29. In total, 10.39% of respondents have a migrations background. If late repatriates[9] are added, which, together with their descendants, comprise 5.99% of the sample, the share of people with migration background rises to 13.79%. Late repatriates sometimes deny the non-German part of their background but are assumed to have a migration background by definition of the German Federal Statistical Office. What can be noticed is that the share of respondents with migration background in the sample is lower than in the actual population, where it was 21.0% in 2015 according to Statistisches Bundesamt (2016).

Moreover, the respondents who answered affirmatively to any of the items above were asked which other nationality they have or had in the past. Since the absolute numbers are often very small, it seems sensible to sort the respondents into five groups: firstly, respondents with an origin from a German speaking country or with German roots, i.e. late repatriates. Secondly, respondents with a western European

[9] Late repatriates are people of German descent that were not expelled after World War II and migrated to Germany from Eastern Europe after 1945.

origin, including Greece. Thirdly, respondents with an eastern European origin and from successor countries of the former Soviet Union, also including late repatriates. Thus, late repatriates are included in two categories, which is appropriate given that they do have German roots, but are often heavily influenced by the eastern European countries they or their predecessors lived in. Fourthly, people from Turkey. Fifthly, people from elsewhere in the World.

Answer	**Share of Respondents**
German	10.29%
Western Europe, including Greece	2.50%
Eastern Europe and former USSR	8.09%
Turkey	0.90%
Rest of World	1.50%
Undisclosed	0.10%

Table 4.30: Migration Background of the Respondents by Origin

In the data, there is virtually no effect of having a migration background on any sort of social capital. This is true for looking at having a migration background in general as well as having a specific migration background. The results for the latter are given in table 4.31.

Measure	**German**		**Western Europe**		**Eastern Europe**	
	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
SCPS[10]	-0.14	0.130	-0.08	0.522	0.12	0.218
Social Capital in the Work Sphere						
ERI	-0.09	0.488	-0.14	0.412	0.06	0.683
NRRI	0.04	0.691	0.02	0.875	-0.07	0.561

Measure	**Turkey**		**Other**	
SCPS[11]	0.09	0.625	0.18	0.299
Social Capital in the Work Sphere				
ERI	0.50	0.088	0.23	0.410
NRRI	0.29	0.201	-0.11	0.551

Table 4.31: Effect of migration background on the stock of social capital

The sole exception is a Turkish migration background in the form of work-related social capital where only employed persons are investigated, where a just significantly positive effect is present. However, given that there are only six employed respondents

[10] SCPS: Social Capital in the Private Sphere, ERI: Employed respondents' indicator, NRRI: Non-retired respondents' indicator

[11] SCPS: Social Capital in the Private Sphere, ERI: Employed respondents' indicator, NRRI: Non-retired respondents' indicator,

with a Turkish migration background in the sample, it is questionable whether this effect is really more than a statistical anomaly. Pena-López and Sánchez-Santos (2017) find a positive effect of nationality, however, they regretably do not explain what they measure under this label, i.e. whether it is Spanish or foreign nationality.

There are three possible explanations for this: Firstly, maybe the members of close-knit ethnic communities do not participate in an online questionnaire in German, i.e. are not included in the sample. This could be due to a language barrier. Secondly, maybe they do participate in the sample but their absolute numbers are so small that they are not grasped by the relatively rough categorization into regions of origin. Thirdly, maybe the benefits and disadvantages of being a member of such a community simply cancel out and thus no significant effect results.

The Berlin Wall Experiment

The hypothesis developed in section 2.5.4 was that if there is an effect of the communist reign in eastern Europe, it should be that those people subject to these regimes have fewer ties all in all, but thicker ties. Since the measure of social capital used here measures resources that are preferably accessed via thick ties, the hypothesis is thus that people from such countries should have more social capital. Germany is unique in the sense that the area of the former GDR in the eastern parts of today's Germany formerly was a communist country, while the western regions were a liberal style democracy.

To assess the county in which people live, they were asked for a specific identifying part of the licence plates issued there. Thus, respondents were sorted into 16 states, which could then again be used to assess whether they live in eastern or western Germany. Respondents from Berlin were assumed to live in western Germany. With this measure, 14.97% of respondents come from east Germany. Since Germany is a reunified country since 1990, it was also important to assess whether there is an effect of being socialized in the GDR. Thus, an indicator was formed for people that were older than 40 years, live in the GDR and claim that they never lived elsewhere was created. This holds true for 2.60% of respondents. Of course, this indicator only grasps a small fraction of those respondents that were socialized in the GDR. It should, however, capture the effect aimed for.

In the data, no significant effects can be found for being socialized in the GDR. There is a positive effect for employed respondents' work-related social capital that is just significant. The results can be seen in table 4.32.

Measure	Living in the East		Socialized in the GDR	
	Coefficient	p-value	Coefficient	p-value
Social Capital in the Private Sphere	0.03	0.527	-0.02	0.886
Social Capital in the Work Sphere				
Employed respondents' indicator	0.15	0.097	-0.35	0.169
Non-retired respondents' indicator	0.09	0.194	-0.20	0.254

Table 4.32: Effect of living or originating in eastern Germany

Apparently, almost one generation after the German reunification, the differences between eastern and western Germany are no longer as big, at least if it comes to social capital possession. If there has been an effect of communist dictatorship on the social capital people build, it has waned so far, and people have moved from east to west and vice versa so much, that it is no longer measurable. That employed respondents in eastern Germany have a higher level of work-related social capital may be due to the inferior job market situation in these parts of the country: Maybe, in order to actually become employed, a higher level of work-related social capital is necessary in the first place.

Differences between City and Countryside

In section 2.5.4, the hypothesis developed was that networks with closure were more likely to develop in smaller towns and that, thus, social capital should be higher in small villages.

Two items were used to gather data on this question. Firstly, respondents were asked how big the town they live in is. The results are given in table 4.33.

Answer	Share of Respondents
Less than 2 000 inhabitants	9.59%
2 000 - 4 999 inhabitants	12.99%
5 000 - 19 999 inhabitants	21.38%
20 000 - 100 000 inhabitants	23.88%
More than 100 000 inhabitants	32.17%

Table 4.33: Distribution of the respondents by town size

Moreover, respondents were, as already mentioned above in connection with respondents form eastern Germany, asked for the part of their licence plate that identifies their county. Thus, the classification into structural area types by the Federal Institute for Research on Building, Urban Affairs and Spatial Development could be

used [Bundesinstitut für Bau-, Stadt- und Raumforschung (2014)]. The classification sorts counties into four types: Cities that form a county of itself, urbanized counties, counties with urbanized parts and rural counties. The respondents live in counties that group into these four county types as depicted by table 4.34.

County Type	**Share of Respondents**
Cities that form a county	11.16%
Urbanized county	17.69%
County with urbanized parts	37.39%
Rural county	33.77%

Table 4.34: Distribution of the respondents by town size

In the data, there is no linear effect of living in an urbanized or a rural county, where a higher value means a more rural county. Also, there is no linear effect of town size, where town size is increasing in the indicator. Additionally, it has been checked for living in a large city with more than 500 000 inhabitants, which applies for 15.98% of respondents. Here, there is also no effect. This is also true for living in a small town with less than 5 000 inhabitants, which holds true for 43.96% of respondents. All these results can be seen in table 4.35. Pena-López and Sánchez-Santos (2017) do find a positive effect of town size for instrumental and a negative effect for expressive action resources, which they assess separately.

Measure	**Area Type**		**Town Size**		**Large City**		**Small Town**	
	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
SCPS[12]	-0.01	0.560	-0.00	0.700	0.05	0.364	0.01	0.771
Social Capital in the Work Sphere								
ERI, P	-0.01	0.843	0.00	0.841	0.05	0.573	0.03	0.710
NRRI, P	-0.02	0.323	-0.01	0.742	0.01	0.890	0.08	0.150

Table 4.35: Effect of town size and area type on the stock of social capital

Summing up, there is no effect of town size on a respondent's social capital stock. This may be due to the reasons already outlined in section 2.5.4: Many small towns constitute mere suburbs and people living there de facto lead a life as though they live in a big city, with their social contacts spread around a larger area. Moreover, the size differences between small and big towns are not as pronounced in Germany as in many other countries in the world: Less than a sixth of the sample lives in towns with

[12] SCPS: Social Capital in the Private Sphere, ERI: employed respondents' indicator, NRRI: non-retired respondents' indicator

more than 500 000 inhabitants, which is still a relatively small city by non-European standards.

4.3.5 Intrinsic Reasons

The final set of variables is analyzed with respect to the effects of traits inherent in the respondent on his social capital stock. As in section 2.5.5, it will firstly be looked at the role of specific character traits before investigating into the role of life satisfaction.

Character Traits

In section 2.5.5, two hypotheses were formulated: Firstly, respondents who have a preference for being with others should have more social capital. Secondly, there should be a character effect, where certain character traits, namely extraversion, agreeableness and openness are supposed to be helpful in building social capital. The two aspects will be discussed in turn.

To measure the preference for contact with others, two items have been included in the questionnaire. For the private sphere, respondents were asked whether they like to spend their leisure time together with others. For the work sphere, respondents were asked whether they come into contact with many different people in their job. The idea behind this last item is that the choice of the job also depends on the preference for having contact with different people. Respondents who do not have such a preference should more likely be found in a job where they do not have as much contact with others. Due to an error in the questionnaire, this item was presented to all respondents instead of only those respondents active in the work sphere. The summary statistic for this item includes only the 695 respondents active in the work sphere. The summary statistics for the answers to these two questions can be found in table 4.36.

Like to spent leisure time with others	**Agreement**	**Come into contact with different people in the job**	**Agreement**
Completely agree	5.21%	very often	9.21 %
Somewhat agree	15.43%	often	6.33%
Neither agree nor disagree	37.78%	sometimes	16.26%
Somewhat disagree	31.66%	rarely	27.05%
Completely disagree	9.92%	very rarely	41.15%

Table 4.36: Preference for contact with others

What can be seen in the data is that there is a positive and highly significant effect of the preference for contact with others on a respondent's social capital stock. This is true both for using the preference to spend leisure time with others in the private sphere as a variable to determine private level social capital as well as for using the

preference for a job where one gets in contact with many different people as a variable for work related social capital.

Measure	Coefficient	p-value
Social Capital in the Private Sphere	0.09	<0.001
Social Capital in the Work Sphere		
Employed respondents' indicator	0.15	<0.001
Non-retired respondents' indicator	0.11	<0.001

Table 4.37: Effects of respective preference preference for contact with others on the different social capital measures

Regarding the character traits extraversion, agreeableness and openness, which can be measured using the the Big Five personality inventory, items were taken from the German version of the *Ten Item Personality Inventory* by Muck, Hell, and Gosling (2007), which is based on the English version by Gosling, Rentfrow, and Swann Jr. (2003). The items to assess extraversion were, in Gosling, Rentfrow, and Swann Jr.'s (ibid.), "Extraverted, enthusiastic[13]" (p. 519) and "Reserved, quiet[14]" (ibid.). The items to assess agreeableness were "Sympathetic, warm[15]" (ibid.) and "critical, quarrelsome[16]" (ibid.). The items to assess openness were "Open to new experiences, complex[17]" (ibid.) and "conventional, uncreative[18]" (ibid.). Respondents were asked whether they see themselves as described by the respective adjectives.

All items were assessed using a seven-point Likert scale that ranged from "completely agree", which was coded as one, to "completely disagree", which was coded as seven. The total score for both items was created reverse coding the first item for each character trait and then adding them up and dividing them by two. Thus, a higher value represents a higher score for this character trait. Summary statistics for the three character traits under investigation can be found in table 4.38.

Variable	Mean	Standard Deviation
Extraversion	4.08	1.30
Agreeableness	5.17	1.06
Openness	5.14	1.05

Table 4.38: Summary statistics for selected Big Five character traits

In the data, a positive and highly significant effect of extraversion can be found on all social capital measures. The positive and significant effect of agreeableness can

[13]Muck, Hell, and Gosling (2007) translate this as "extravertiert, begeistert" (p. 170).
[14]Muck, Hell, and Gosling (ibid.) translate this as "zurückhaltend, still" (p. 170).
[15]Muck, Hell, and Gosling (ibid.) translate this as "verständnisvoll, warmherzig" (p. 170).
[16]Muck, Hell, and Gosling (ibid.) translate this as "kritisch, streitsüchtig" (p. 170).
[17]Muck, Hell, and Gosling (ibid.) translate this as "offen für neue Erfahrungen, vielschichtig" (p. 170).
[18]Muck, Hell, and Gosling (ibid.) translate this as "konventionell, unkreativ" (p. 170).

only be found in the private sphere. This character trait does not seem to help much in the work sphere, where a negative effect can be found that is significant when only employed respondent's are looked at and just no longer significant if all respondents active in the work sphere are considered. There is no significant effect of openness on any social capital measure. The results can be found in table 4.39.

Measure	**Extraversion**		**Agreeableness**		**Openness**	
	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
SCPS[19]	0.04	0.01	0.06	0.001	0.00	0.996
Social Capital in the Work Sphere						
ERI	0.05	0.057	-0.06	0.063	-0.02	0.617
NRRI	0.04	0.025	-0.03	0.121	-0.01	0.758

Table 4.39: Effect of selected Big Five character traits on the respondent's social capital stock

Summing up, it is apparent that there is a strong relationship between a respondent's preference for contact with others and his social capital stock. Regarding the effects of the different Big Five character traits, there is only a significantly positive effect of extraversion on all measures for social capital. The effect of agreeableness is mixed, with a positive effect in the private sphere, but a negative effect on work related social capital. Maybe this is because being a compassionate person, which is described by that character trait, may make a person a valuable friend, but being critical and less open may be a more fruitful trait at the workplace.

Life Satisfaction

In section 2.5.5, the hypothesis was that there is a positive effect of life satisfaction on a respondent's social capital stock. It is just nicer to be in contact with happy people.

Response Option	**Private Life Satisfaction**	**Job Satisfaction**
Completely dissatisfied	0.90%	4.83%
Rather dissatisfied	8.09%	13.62%
Neither satisfied nor dissatisfied	14.49%	26.79
Rather satisfied	46.05%	35.43%
Completely satisfied	30.47%	19.33

Table 4.40: Private life and job satisfaction of the respondents

[19]SCPS: Social Capital in the Private Sphere, ERI: employed respondents' indicator, NRRI: non-retired respondents' indicator

The question there was more about the direction of the effect: Does being happy make you a more attractive person to know, or is it the other way around?

To test this point, respondents were asked how satisfied they are with their life in the private sphere and with their job. The latter item was erroneously presented to all respondents. The answer is, of course, only purposeful for the 683 respondents who were not in pension or unable to work. The answer pattern for these items can be found in table 4.40. What can be seen is that most respondents were quite satisfied with their private life. Respondents were, on average, less satisfied with their job.

Measure	**Coefficient**	**p-value**
Social Capital in the Private Sphere	0.10	$<$0.001
Social Capital in the Work Sphere		
Employed respondents' indicator	0.12	$<$0.001
Non-retired respondents' indicator	0.12	$<$0.001

Table 4.41: Effects of private life satisfaction and job satisfaction on the respective social capital measures

Looking at the data, private life satisfaction is a highly significant and positive predictor for social capital in the private sphere and job satisfaction is a highly significant positive predictor for all measures of work related social capital. The specific results can be seen in table 4.41. Pena-López and Sánchez-Santos (2017) also find a positive effect of life satisfaction on a respondent's social capital.

4.4 Summary

In this chapter, the results of the empirical study have been presented. Firstly, some descriptive data concerning the internet study has been presented. Then, the construction of the different indicators for social capital has been discussed in detail. As a consequence of the nature of the data and a low Cronbachs Alpha of the items to assess social capital in the work sphere, a compositional and a psychometric measure for both respondents who are employed and respondents who are not in pension have been created. However, the results between them hardly differ, so that only the results of the psychometric measure were included in the text while the results of the compositional measure can be found in the Appendix. For social capital in the private sphere, only one psychometric indicator for all respondents has been constructed.

When investigating into the determinants, there are almost no differences between the two different measures in the work sphere: The main difference appeared when looking at the effects of individual mobility: Moving seems to have a greater effect on employed respondents.

All in all, a high number of significant predictors for social capital have been found. Most of them are in accordance with what would be expected from theory. This can be

interpreted as a good sign for the validity of the measures developed and counteracts internal consistency doubts on the work related social capital scales. Where the theory has been ambiguous, the data often gives a clear answer which effect is stronger: Social capital and other forms of capital are complements, not substitutes, and the additional leisure time unemployed have does not outweigh the difficulties they have in creating social capital because they lack the contacts from the workplace and the economic resource gathered there.

5 Conclusion

Three contributions to the social capital literature are presented in this thesis: Firstly, a concept of social capital that is compatible with the individual perspective prominent in neoclassical economics has been identified. Secondly, a new tool to measure individual social capital has been developed and applied. Thirdly, results on the distributional effects of a great number of predictors on individual level social capital have been obtained for a representative sample of the German resident population. Hence, an answer has been worked out to the two research questions specified in the introduction, namely how individual level social capital can be assessed and which predictors can be found for an individual's social capital possession theoretically and empirically.

Identifying a concept of social capital that is compatible with an individual perspective is not only important because the individual perspective is a cornerstone of neoclassical economic theory. As Udehn (2001) points out, the individual perspective also follows from the idea of "individual humanism." (p. 340). With this specific focus, the five most prominent social capital concepts by Bourdieu (1983), Burt (1992, 2000, 2005), Coleman (1988, 1990), Putnam (1993, 2000) and Fukuyama (1995, 1995) were investigated. Moreover, applications of social capital by economists, namely those by Becker (1974), Glaeser, Laibson, and Sacerdote (2002) and Chou (2006) were looked at. Reducing these authors' understanding of the term *social capital* to a common denominator, the result would be that "social networks have value" [Putnam (2000), p. 19]. Thus, a deeper analysis of the different concepts turned out to be necessary.

Given this thesis' focus on the individual perspective, it was swiftly identified that the concepts mainly differ in their level of analysis, i.e. the question whether social capital is an asset for individuals or a property of larger entities as e.g. larger groups or even entire societies. The approach by Burt is, without any doubt, the most individualistic concept of social capital. Burt goes as far as recommending his readers which kinds of relationships they should invest into to maximize their individual social capital. On the other end of the spectrum, the concept of Fukuyama is the most holistic one. Here, the benefits that accrue to an individual from his social connections are not under the focus of investigation. Social capital is rather seen as an element of a society's culture, which is exogenous to individual behavior. The other three authors' concepts are positioned between these two extremes. Especially Bourdieu thoroughly investigates into individual level social capital creation and the consequences of its possession. Coleman also identifies this individual level aspect of social capital. However, on top of that, he claims that norms at the macro level of the society can be seen as social capital. Putnam puts even more focus on this latter aspect. The contributions by economists that were investigated share that they restrain themselves to embedding some inter-

pretation of social capital into existing economic models, irrespective of whether it is thoroughly compatible with an individual perspective.

The contributions that focus on macro level aspects of social capital are problematic from an individual perspective: The issue at stake is whether they can be derived from the individual level using a convincing micro to macro transition. It has been shown in this thesis that such a connection between individual level social capital and norms as a form of social capital at the macro level, which is convincing from a perspective of methodological individualism, has neither been formulated by Coleman nor by Putnam. Accordingly, Esser (2008) proposes to split social capital analytically into a micro level component that he calls *relational capital* and a macro level component that he calls *system capital*. The concept of relational capital was found to be plausible from an individual perspective in the thesis. Thus, the following social capital definition by Van Der Gaag and Snijders (2004), which focuses on individual level social capital, was adopted: "The 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 the relationships" (p. 155). In 2.4, it has been investigated whether such a concept of social capital can also serve as a form of *capital* in economic theory. This was confirmed, although it is different from economic capital in a number of ways. This mainly concerned the question whether purposeful investment into it actually takes place and the facts that it is not as easily alienable as economic capital (but this point also exists for human capital), that its fungibility is limited and, since it is not protected by the legal system, that its value depends on its being honored by others.

A second major focus of this thesis was to develop a new measure how individual level social capital can be assessed. To do so, a thorough look has been taken at indicator construction, specifically at psychometric and compositional measures, and a list of resources that are identified as social capital resources in the literature has been created. Building on these preconsiderations, a number of existing social capital measures has been analyzed. These included the three most prominent measures, namely the name, the position and the resource generator, but also a number of further measures. All these measures share that they are imperfectly suited to assess social capital as defined in this thesis. Specifically, the main weaknesses are: they systematically over- or underestimate some specific form of ties, such as the position generator does for weak ties, they put a very high cognitive burden on the respondent such as the name generator and, up to a certain extent, the resource generator, or they do not assess resources systematically such as the Internet Social Capital Scale, the Personal Social Capital Scale, the World Bank Indicator and the Indicator included in the German Socio-Economic Panel.

Taking the strengths of the different approaches, a new tool to measure individual level social capital has been proposed in section 3.4. This tool has been designed in order to create a measurement instrument that does not put a too high cognitive burden on the respondent, does not take too much time to answer and yet systematically assesses all kinds of resources commonly identified as social capital resources

of individuals in the literature. It consists of ten items, of which nine directly measure access to some resource that stands for a class of resources relevant for a person's individual level social capital. Of these ten items, seven aim at social capital in the private sphere and three are directed towards social capital in the work sphere. Out of this stock, one indicator for social capital in the private sphere and two indicators for social capital in the work sphere have been created. In an empirical application of the tool in an online survey with a sample representative for the German adult resident population, all indicators show their validity through a number of factors, especially by exhibiting a high level of internal consistency and by delivering plausible results in line with the theoretical considerations presented in this thesis.

Moreover, as a third major focus, an investigation into the distributional effects of a diverse set of predictors on individual level social capital has taken place. In section 2.5, a number of theoretical hypotheses on the effect of certain predictors was formulated drawing on arguments from the literature and own considerations. In some cases, clear-cut hypotheses could be stated. In other cases, the arguments presented only allow for contradictory hypotheses. The empirical results of testing the hypotheses developed in this thesis can hence be divided into two groups. Firstly, concerning the predictors where a clear-cut research hypothesis has been formulated, these research hypotheses have mostly been confirmed. Secondly, for those predictors where no clear-cut research hypothesis has been formulated, the survey results indicate which of the contradicting arguments dominates empirically.

The research hypotheses concerning the following predictors could be confirmed: Individual level social capital declines with old age, and housewives and househusbands have less social capital. People who spend more time with other people also have more social capital, as predicted, and this is also true for group membership. When looking at social network sites, the expected consistent positive effect can be found in the private sphere. In the work sphere, this is only true if membership is connected to an investment motive. A negative effect of mobility can only be found for employed respondents' work sphere related social capital. When looking at the big five character traits, the hypothesized positive effect can only be shown for extraversion in both spheres and for agreeableness in the private sphere. However, as expected, life satisfaction and a preference for sociability are positive predictors for individual level social capital possession.

A small number of hypotheses could not be confirmed. This is most notably the hypothesis that there is a negative effect of residential mobility on social capital which could not be confirmed in the private sphere, as is true for other studies [Pena-López and Sánchez-Santos (2017)]. Moreover, the hypothesis that living in a smaller town leads to more social capital could not be confirmed. It should be noted there is no effect of the big five character trait openness on individual level social capital and even a negative effect of agreeableness in the work sphere. This latter result especially highlights that differentiating between private sphere and work sphere is worthwhile.

When looking at the predictors where no clear-cut hypothesis could be derived theo-

retically, the following results: Possessing other types of capital is clearly helpful in the private sphere, supporting the hypothesis that possessing resources facilitates accumulating social capital since it makes a person more attractive to be acquainted with. This result still holds true for human capital in the work sphere, but no such effect can be found in the work sphere for economic capital[1]. Behaviour that can be identified as unconscious investment behaviour takes place and this also helps social capital creation. Conscious investment behaviour is only rarely admitted, and it is only helpful in the work sphere, while it reduces social capital in the private sphere, probably because it is considered socially unacceptable. There is a positive effect of being employed on social capital, i.e. the effect of meeting people at the workplace outweighs the time cost of working. Moreover, no migration effects could be found. Also, no consistently significant effect showed up for living in or originating from eastern Germany. If there has been an effect in the past, it has possibly faded 25 years after the German reunification.

Summing up, the concept of individual level social capital is a theoretically fruitful and, from the perspective of methodological individualism, coherent concept to grasp the resources an individual has access to via his social connections. It is thus a valuable addition to the well-established concepts of economic and human capital. The indicator developed in this thesis leads to plausible results in its investigation in both an individual's private and his work sphere. Moreover, when looking at the predictors of individual level social capital possession, evidence concerning the direction and existence of a number of effects disputed in the literature could be gathered: This is especially true for the question whether individual level social capital is a complement or a substitute for other forms of capital (the former) and whether investment in social capital takes place (it does, but its incomplete concealment is only accepted in the work sphere).

The tool to measure individual level social capital developed in this thesis may, moreover, be helpful for researches who want to use this concept as an explanatory variable in other contexts. Consisting of only ten items, the tool is short enough to be included in research questionnaires. Moreover, the calculation of the indicators follows a simple to use procedure.

Building on this thesis, numerous research endeavours can be followed. Firstly, as has been repeatedly discussed in this thesis, it would be interesting to find out for a number of predictor variables whether they help in creating social capital, whether the relationship is rather the other way around or whether they co-influence each other simultaneously. However, such analysis can only take place with time-series data, ideally with a natural experiment involved, which were not available for this thesis.

Secondly, the topic how social capital possession helps individuals to achieve certain ends or how it changes their behavior in certain situations has not been discussed in detail in this thesis. However, in economics, interesting questions abound: Are individuals with a high level of individual level social capital more likely to be risk-taking

[1] A positive effect can be found when taking income as a proxy for wealth and only looking at employed respondent's work related social capital.

in those fields where their social capital may serve as an informal insurance? Do individuals with a high level of social capital buy different goods and services because they could substitute them with resources they access via their social network? Is the investment into social capital in the work sphere rational, i.e. can its rate of return be estimated and, if so, how does it compare to the return on human and economic capital?

Finally, further research also needs to be done to find a link, if there is any, between individual level social capital possession and the macro level of norms and societal trust postulated by Coleman (1988, 1990) and Putnam (1993, 2000) that is satisfactory from a perspective of methodological individualism. Maybe the theoretical considerations laid out and the indicator developed in this thesis can be used to theoretically construct and empirically test such a link in a convincing manner.

List of Tables

Bibliography

Adger, N. W. (2010). “Social Capital, Collective Action, and Adaption to Climate Change”. In: *Der Klimawandel*. Ed. by M. Voss. Wiesbaden, 327–346.

Adler, P. S. and S.-W. Kwon (2002). “Social Capital: Prospects for a new concept”. In: *Academy of Management Review* 27.1, 17–40.

Adler, P. S. and S.-W. Kwon (2014). “Social Capital: Maturation of a Field of Research”. In: *Academy of Management Journal* 39.4, 412–422.

Ahlheim, M. and J. Schneider (1996). “Altruismus und die Bewertung öffentlicher Güter: Ein Beitrag zur Kontroverse um die Kontingente Evaluierungsmethode”. In: *Jahrbücher für Nationalökonomie und Statistik* 215.5, 598–611.

Ahn, T. and E. Ostrom (2008). “Social Capital and Collective Action”. In: *The Handbook of Social Capital*. Ed. by D. Castiglione, J. W. van Deth, and G. Wolleb. Oxford, 70–100.

Akçomak, I. S. and B. ter Weel (2009). “Social capital, innovation and growth: Evidence from Europe”. In: *European Economic Review* 53, 544–567.

Alesina, A., Y. Algan, P. Cahuc, and P. Giuliano (2015). “Family Values and the Regulation of Labor”. In: *Journal of the European Economic Association* 13.4, 599–630.

Andrews, R. and G. A. Brewer (2012). “Social Capital, Management Capacity and Public Service Performance”. In: *Public Management Review* 15.1, 19–42.

Appel, L., P. Dadlani, M. Dwyer, K. N. Hampton, V. Kitzie, Z. A Matni, P. Moore, and R. Teodoro (2014). “Testing the validity of social capital measures in the study of information and communication technologies”. In: *Information, Communication and Society* 17.4, 398–416.

Archuleta, A. J. and C. R. Miller (2011). “Validity Evidence for the Translated Version of the Personal Social Capital Scale Among People of Mexican Descent”. In: *Journal of the Society for Social Work and Research* 2.2, 39–53.

Arrow, K. J. (1999). “Observations on Social Capital”. In: *Social Capital: A Multifaceted Perspective*. Ed. by P. Dasgutpa and I. Serageldin. Washington DC, 3–5.

Astone, N. M., C. A. Nathanson, R. Schoen, and Y. J. Kim (1999). “Family Demography, Social Theory, and Investment in Social Capital”. In: *Population and Development Review* 25.1, 1–31.

Axelrod, R. (2009). *The Evolution of Cooperation*. Online Edition. New York.

Bartolini, S. and L. Bonatti (2008). “Endogenous growth, decline in social capital and expansion of market activities”. In: *Journal of Economic Behavior and Organization* 67.3-4, 917–926.

Batjargal, B. (2003). “Social Capital and Entrepreneurial Performance in Russia: A Longitudinal Study”. In: *Organization Studies* 24.4, 535–556.

Becchetti, L., A. Pelloni, and F. Rossetti (2008). “Rational Goods, Sociability and Happiness”. In: *KYKLOS* 61.3, 343–363.

Becker, G. S. (1964). *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*. New York.

Becker, G. S. (1974). “A Theory of Social Interactions”. In: *Journal of Political Economy* 82.6, 1063–1093.

Becker, G. S. (1981). *A Treatise on the Family*. Cambridge, MA.

Benjamin, D. J., O. Heffetz, M. S. Kimball, and N. Szembrot (2014). “Beyond Happiness and Satisfaction: Toward Well-Being Indices Based on Stated Preference”. In: *American Economic Review* 104.9, 2698–2735.

Bernhard, S. (2008). “Netzwerkanalyse und Feldtheorie. Grundriss einer Integration im Rahmen von Bourdieus Sozialtheorie”. In: *Netzwerkanalyse und Netzwerktheorie*. Ed. by C. Stegbauer. Wiesbaden, 121–130.

Blalock, H. M. (1982). *Conceptualization and Measurement in the Social Sciences*. Beverly Hills, CA.

Boenisch, P. and L. Schneider (2013). “The social capital legacy of communism – results from the Berlin Wall experiment”. In: *European Journal of Political Economy* 32, 391–411.

Bourdieu, P. (1972). *Esquisse d’une théorie de la Pratique, précedé de trois études d’ethnologie kabyle*. Geneva.

Bourdieu, P. (1976). *Entwurf einer Theorie der Praxis*. Frankfurt a.M.

Bourdieu, P. (1979). *La distinction*. Paris.

Bourdieu, P. (1980). “Le capital social”. In: *Actes de la recherche en sciences sociales* 31, 2–3.

Bourdieu, P. (1983). “Ökonomisches Kapital, kulturelles Kapital, soziales Kapital”. In: *Soziale Ungleichheiten. Soziale Welt, Sonderband 2*. Ed. by R. Kreckel. Göttingen, 183–198.

Bourdieu, P. (1986). “The Forms of Capital”. In: *Handbook of Theory and Research for the Sociology of Education*. Ed. by J. G. Richardson. New York, 241–258.

Bourdieu, P. (2008). *Die feinen Unterschiede: Kritik der gesellschaftlichen Urteilskraft*. 19. Auflage. Frankfurt a.M.

Bowles, S. and H. Gintis (2002). “Social Capital and Community Governance”. In: *The Economic Journal* 112, F419–F436.

Brosius, F. (2008). *SPSS 16 Das mitp-Standardwerk*. Heidelberg.

Browne-Yung, K., A. Ziersch, and F. Baum (2013). “‘Faking til you make it’: Social capital accumulation of individuals on low incomes living in contrasting socio-economic neighbourhoods and its implications for health and wellbeing”. In: *Social Science and Medicine* 85, 9–17.

Bruggen, A. van (2001). *Individual production of social well-being: an exploratory study*. Amsterdam.

Bundesfinanzministerium (2015). *Bericht über die Höhe des steuerfrei zu stellenden Existenzminimums von Erwachsenen und Kindern für das Jahr 2016*. Report.

Bundesinstitut für Bau-, Stadt- und Raumforschung (2014). *Siedlungsstrukturelle Kreistypen*. Report.

Burchardi, K. B. and T. A. Hassan (2013). “The Economic Impact of Social Ties: Evidence from German Reunification”. In: *Quarterly Journal of Economics* 128.3, 1219–1271.

Burt, R. S. (1992). *Structural Holes The Social Structure of Competition*. Cambridge, MA.

Burt, R. S. (2000). “The network structure of social capital”. In: *Research in Organizational Behavior* 22, 345–423.

Burt, R. S. (2005). *Brokerage and Closure An Introduction to Social Capital*. Oxford.

Burt, R. S. (2007). “Secondhand brokerage: evidence on the importance of local structure for managers, bankers, and analysts”. In: *Academy of Management Journal* 50.1, 119–148.

Burt, R. S. and M. Knez (1996). “Trust and Third-Party Gossip”. In: *Trust in organizations*. Ed. by R. M. Kramer and T. R. Tyler. Thousand Oaks, CA., 68–89.

Carrillo Álvarez, E. and J. Riera Romaní (2017). “Measuring social capital: further insights”. In: *Gaceta Sanitaria* 31.1, 57–61.

Cavapozzi, D., W. Han, and R. Miniaci (2015). “Alternative weighting structures for multidimensional poverty assessment”. In: *Journal of Economic Inequality* 13, 425–447.

Chen, X., B. Stanton, J. Gong, X. Fang, and X Li (2009). “Personal Social Capital Scale: an instrument for health and behavioral research”. In: *Health and Education Research* 24.2, 306–317.

Chou, Y. K. (2006). “Three simple models of social capital and economic growth”. In: *The Journal of Socio-Economics* 35.5, 889–912.

Cohen, S and H. Hoberman (1983). “Positive events and social supports as buffers of life change stress”. In: *Journal of Applied Social Psychology* 13.2, 99–125.

Coleman, J. S. (1988). “Social Capital in the Creation of Human Capital”. In: *American Journal of Sociology* 94.Supplement, S95–S120.

Coleman, J. S. (1990). *Foundations of social theory*. Cambridge, MA.

Corrado, C., C. Hulten, and D. Sichel (2009). “Intangible Capital and U.S. Economic Growth”. In: *The Review of Income and Wealth* 55.3, 661–685.

Costanza, R. and H. E. Daly (1992). “Natural Capital and Sustainable Development”. In: *Conservation Biology* 6.1, 37–46.

Dahrendorf, R. (2006). *Homo Sociologicus: Ein Versuch zur Geschichte, Bedeutung und Kritik der Kategorie der sozialen Rolle*. Wiesbaden.

Daly, M. and H. Silver (2008). “Social exclusion and social capital: A comparison and critique”. In: *Theory and Society* 37, 537–566.

Dasgutpa, P. (2005). “Economics of Social Capital”. In: *Economic Record* 81.s1, S2–S21.

David, Q., A. Janiak, and E. Wasmer (2010). “Local social capital and geographical mobility”. In: *Journal of Urban Economics* 68, 191–204.

Davidsson, P. and B. Honig (2003). “The role of social and human capital among nascent entrepreneurs”. In: *Journal of Business Venturing* 18.3, 301–331.

Decancq, K., A. Decoster, and E. Schokkaert (2009). “The Evolution of World Inequality in Well-being”. In: *World Development* 37.1, 11–25.

Decancq, K. and M. A. Lugo (2013). “Weights in Multidimensional Indices of Wellbeing: An Overview”. In: *Econometric Reviews* 32.1, 7–34.

Di Falco, S. and E. Bulte (2015). “Does social capital affect investment in human capital? Family ties and schooling decisions”. In: *Applied Economics* 47.2, 195–205.

Dinda, S. (2008). “Social capital in the creation of human capital and economic growth: A productive consumption approach”. In: *The Journal of Socio-Economics* 37.5, 2020–2033.

Donath, J. and D. Boyd (2004). “Public displays of connection”. In: *BT Technology Journal* 22.4, 71–82.

Drost, E. (2011). “Validity and Reliability in Social Science Research”. In: *Education Research and Perspectives* 38.1, 105–123.

Dynan, K. E., J. Skinner, and S. P. Zeldes (2002). “The Importance of Bequests and Life-Cycle Saving in Capital Accumulation: A New Answer”. In: *American Economic Review* 92.2, 274–278.

Döblin, A. (2002). *Berlin Alexanderplatz*. 42nd ed. München.

Döring, N. and J. Bortz (2016). *Forschungsmethoden und Evaluation in den Sozial- und Humanwissenschaften*. 5th Edition. Berlin.

Ellison, N. B., C. Steinfield, and C. Lampe (2007). “The Benefits of Facebook “Friends:” Social Capital and College Students’ Use of Online Social Network Sites”. In: *Journal of Computer-Mediated Communication* 12, 1143–1168.

Ellison, N. B., J. Vitak, R. Gray, and C. Lampe (2014). “Cultivating Social Resources on Social Network Sites: Facebook Relationship Maintenance Behaviors and Their Role in Social Capital Processes”. In: *Journal of Computer-Mediated Communication* 19, 855–870.

Esser, H. (2000). *Soziologie Spezielle Grundlagen Band 4: Opportunitäten und Restriktionen*. Frankfurt a.M.

Esser, H. (2008). “The Two Meanings of Social Capital”. In: *The Handbook of Social Capital*. Ed. by D. Castiglione, J. W. van Deth, and G. Wolleb. Oxford, 22–49.

Essex, U. of (2003). *British Household Panel Survey Wave 13 Questionnaire*. Colchester.

Fayers, P. M. and D. J. Hand (2002). “Causal variables, indicator variables and measurement scales: an example from quality of life”. In: *Journal of the Royal Statistical Society A* 162, 233–231.

Feinstein, A. R. (1987). “Climimetric Perspectives”. In: *Journal of Chronical Diseases* 40.6, 635–640.

Fellmeth, A. X. (1996). “Social Capital in the United States and Taiwan: Trust or Rule of Law?” In: *Development Policy Review* 14.2, 151–171.

Fernandez, R. M. and E. J. Castilla (2001). “How Much Is That Network Worth? Social Capital in Employee Referral Networks”. In: *Social Capital Theory and Research*. Ed. by N. Lin, K. Cook, and R. S. Burt. New York, 85–104.

Fidrmuc, J. and K. Gërxhani (2008). “Mind the gap! Social capital, East and West”. In: *Journal of Comparative Economics* 36, 264–286.

Fine, B. (1999). “The Developmental State Is Dead – Long Live Social Capital?” In: *Development and Change* 30.1, 1–19.

Fine, B. (2001). *Social Capital versus Social Theory*. London.

Firth, D. (2002). “Discussion on the Paper by Fayers and Hand”. In: *Journal of the Royal Statistical Society A* 165.2, 252–261.

Foster, K. A. and C. D. Maas (2014). “An Exploratory Factor Analysis of the Resource Generator - United States: A Social Capital Measure”. In: *British Journal of Social Work Advance Access*, 1–19.

Friedman, M. (1975). *There’s no such thing as a free lunch*. La Salle, IL.

Fu, Y.-C. (2008). “Position Generator and Actual Networks in Everyday Life: An Evaluation with Contact Diary”. In: *Social Capital An International Research Program*. Ed. by N. Lin and B. H. Erickson. Oxford, 49–64.

Fuchs-Heinritz Werner; König, A. (2011). *Pierre Bourdieu*. 2. Auflage. Konstanz.

Fukuyama, F. (1992). *The end of history and the last man*. New York.

Fukuyama, F. (1995a). “Social Capital and the Global Economy”. In: *Foreign Affairs* 74.5, 89–103.

Fukuyama, F. (1995b). *Trust: The social virtues and the creation of prosperity*. New York.

Gallie, D., S. Paugam, and S. Jacobs (2003). “Unemployment, poverty and social isolation – Is there a vicious circle of social exclusion?” In: *European Societies* 5.1, 1–32.

Garip, F. (2008). “Social Capital and Migration: How Do Similar Resources Lead to Divergent Outcomes?” In: *Demography* 45.3, 591–617.

Gedajlovic, E., B. Honig, C. B. Moore, G. T. Paye, and M. Wright (2013). “Social Capital and Entrepreneurship: A Schema and Research Agenda”. In: *Entrepreneurship Theory and Practice* 37.3, 455–478.

Glaeser, E. L., D. Laibson, and B. Sacerdote (2002). “An Economic Approach to Social Capital”. In: *The Economic Journal* 112, F437–F458.

Gosling, S. D., P. J. Rentfrow, and W. B. Swann Jr. (2003). “A very brief measure of the Big-Five personality domains”. In: *Journal of Research in Personality* 37, 504–528.

Granovetter, M. S. (1973). “The Strength of Weak Ties”. In: *American Journal of Sociology* 78.6, 1360–1380.

Granovetter, M. S. (1985). “Economic Action and Social Structure: The Problem of Embeddedness”. In: *American Journal of Sociology* 91.3, 481–510.

Grootaert, C., D. Narayan, V. Nyhan Jones, and M. Woolcock (2004). *Measuring Social Capital An Integrated Questionnaire*. Washington D.C.

Guiso, L., P. Sapieza, and L. Zingales (2004). “The Role of Social Capital in Financial Development”. In: *The American Economic Review* 94.3, 526–556.

Hanifan, L. J. (1916). “The Rural School Community Center”. In: *Annals of the American Academy of Political and Social Science* 67, 130–138.

Helliwell, J. F. and R. D. Putnam (2004). “The Social Context of Well-Being”. In: *Philosophical Transactions: Biological Sciences* 359, 1435–1446.

Hoerger, M. (2010). “Participant Dropout as a Function of Survey Length in Internet-Mediated University Studies: Implications for Study Design and Voluntary Participation in Psychological Research”. In: *Cyberpsychology, Behavior, And Social Networking* 13.6, 697–700.

Homans, G. C. (1961). *Social Behavior: Its Elementary Forms*. New York.

Hällsten, M., C. Edling, and J. Rydgren (2015). “The effects of specific occupations in position generator measures of social capital”. In: *Social Networks* 40, 55–63.

Häuberer, J. (2011). *Social Capital Theory Towards a Methodological Foundation*. Wiesbaden.

Häuberer, J. (2014). “Social Capital in Voluntary Associations”. In: *European Societies* 16.4, 570–593.

Inglehart, R. (1990). *Culture shift in advanced industrial society*. Princeton, NJ.

Jackson, M. O. (2008). *Social and Economic Networks*. Princeton, NJ.

Jackson, M. O. (2014). “Networks in the Understanding of Economic Behaviors”. In: *Journal of Economic Perspectives* 28.4, 3–22.

John, O. P. and S. Srivastava (1999). “The Big Five Trait Taxonomy: History, Measurement and Theoretical Perspectives”. In: *Handbook of Personality: Theory and Research*. Ed. by L. A. Pervin and O. P. John. 2nd ed. New York, 102–138.

Jordana, J. (1999). “Collective action theory and the analysis of social capital”. In: *Social Capital and European Democracy*. Ed. by J. W. van Deth, M. Maraffi, K. Newton, and P. F. Whiteley. London, 45–71.

Kaasa, A. and E. Parts (2008). “Individual-Level Determinants of Social Capital in Europe”. In: *Acta Sociologica* 51.2, 145–169.

Kadushin, C. (2004). “Too Much Investment in Social Capital”. In: *Social Networks* 26, 75–90.

Kan, K. (2007). “Residential mobility and social capital”. In: *Journal of Urban Economics* 61, 436–457.

King, J. (2012). *The Microfoundations Delusion*. Cheltenham, UK.

Kolm, S.-C. (2006). “Reciprocity: Its Scope, Rationales, and Consequences”. In: *Handbook of the Economics of Giving, Altruism and Reciprocity*. Ed. by S.-C. Kolm and Y. J. Mercier. Vol. 1. Amsterdam, 371–541.

Krimmer, H. and J. Priemer (2013). *ZiviZ-Survey 2012 Zivilgesellschaft verstehen*. Berlin.

Kövecses, Z. (1995). “American Friendship and the scope of methaphor”. In: *Cognitive Linguistics* 6.4, 315–346.

Lancee, B. (2010). “The Economic Returns of Immigrants’ Bonding and Bridging Social Capital: The Case of the Netherlands”. In: *International Migration Review* 44.1, 202–226.

Laumann, E. O. (1966). *Prestige and Association in an Urban Community*. Indianapolis.

Lee, R., H. Tüselmann, D. Jayawarna, and J. Rouse (2011). “Investigating the social capital and resource acquisition of entrepreneurs residing in deprived areas of England”. In: *Environment and Planning c: Government and Policy* 29, 1054–1072.

Lelieveldt, H. (2008). “Neighbourhood Politics”. In: *The Handbook of Social Capital*. Ed. by D. Castiglione, J. W. van Deth, and G. Wolleb. Oxford, 327–348.

Lenger, A. (2013). “Ökonomie der Praxis, ökonomische Anthropologie und ökonomisches Feld: Bedeutung und Potenziale des Habituskonzepts in den Wirtschaftswissenschaften”. In: *Pierre Bourdieus Konzeption des Habitus*. Ed. by A. Lenger, C. Schneickert, and F. Schumacher. Wiesbaden, 221–246.

Lenger, A., C. Schneickert, and F. Schumacher (2013). “Pierre Bourdieus Konzeption des Habitus”. In: *Pierre Bourdieus Konzeption des Habitus*. Ed. by A. Lenger, C. Schneickert, and F. Schumacher. Wiesbaden, 13–41.

Lin, N. (1999). “Building a Network Theory of Social Capital”. In: *Connections* 22.1, 28–51.

Lin, N. (2001). *Social Capital A Theory of Social Structure and Action*. Cambridge, UK.

Lin, N. and M. Dumin (1986). “Access to Occupations through Social Ties”. In: *Social Networks* 8.4, 165–185.

Lin, N. and B. H. Erickson (2008). “Theory, Measurement and the Research Enterprise on Social Capital”. In: *Social Capital An International Research Program*. Ed. by N. Lin and B. H. Erickson. Oxford, 1–26.

Lin, N., Y.-C. Fu, and R.-M. Hsung (2001). “The Position Generator: Measurement Techniques for Investigations of Social Capital”. In: *Social Capital Theory and Research*. Ed. by N. Lin, K. Cook, and R. S. Burt. New York, 57–81.

Loevinger, J. (1947). “A systematic approach to the construction and evaluation of test of ability”. In: *Psychological Monographs* 61.4, i–49.

Loury, G. C. (1977). “A Dynamic Theory of Racial Income Difference”. In: *Women, minorities, and employment discrimination*. Ed. by P. A. Wallace and A. M. LaMond. Lexington, MA, 153–186.

Loury, G. C. (1987). “Why Should We Care about Group Inequality?” In: *Social Philosophy and Policy* 5.01, 249–271.

Lucas, R. E. (1988). “On the mechanics of economic development”. In: *Journal of Monetary Economics* 22.1, 3–42.

Marin, A. (2012). “Don’t mention it: Why people don’t share job information, when they do, and why it matters”. In: *Social Networks* 34, 181–192.

Marin, A. and K. N. Hampton (2007). “Simplifying the Personal Network Name Generator: Alternatives to Traditional Multiple and Single Name Generators”. In: *Field Methods* 19.2, 163–193.

Marx, K. (1957). “Das Kapital”. In: *Das Kapital*. Ed. by B. Kautsky. Stuttgart, 1–734.

Mas-Colell, A., M. D. Whinston, and J. R. Green (1995). *Microeconomic Theory*. New York.

Mayer, S. E. and C. Jencks (1989). “Growing up in Poor Neighborhoods: How Much Does It Matter?” In: *Science, New Series* 243.4897, 1441–1445.

Menegaki, A. N., S. B. Olsen, and P. T. Konstantinos (2016). “Towards a commom standard - A reporting checklist for web-based stated preference valuation surveys and a critique for mode surveys”. In: *The Journal of Choice Modelling* 18, 18–50.

Mischke, J. and C. Wingerter (2012). *Frauen und Männer auf dem Arbeitsmarkt*. Report. German Federal Statistical Office.

Mokken, R. J. (1996). “Nonparametric models for dichotomous responses.” In: *Handbook of Modern Item Response Theory*. Ed. by W. Van Der Linden and R. Hambleton. New York, 351–367.

Muck, P. M., B. Hell, and S. D. Gosling (2007). “Construct Validation of a Short Five-Factor Model Instrument A Self-Peer Study on the German Adaptation of the Ten-Item Personality Inventory (TIPI-G)”. In: *European Journal of Psychological Assessment* 23.3, 166–175.

Munshi, K. (2014). “Community Networks and the Process of Development”. In: *Journal of Economic Perspectives* 28.4, 49–76.

Nash, J. R. (1950). “The Bargaining Problem”. In: *Econometrica* 18.2, 155–162.

Neuman, J. von and O. Morgenstern (1944). *Theory of Games and Economic Behavior*. Princeton, NJ.

Neves, B. B. (2013). “Social Capital and Internet Use: The Irrelevant, the Bad, and the Good”. In: *Sociology Compass* 7/8, 599–611.

Newman, L. and A. Dale (2005). “The Role of Agency in Sustainable Local Community Development”. In: *Local Environment* 10.5, 477–486.

Newton, K. (2001). “Trust, Social Capital, Civil Society, and Democracy”. In: *International Political Science Review* 22.2, 201–214.

Nie, N. H. (2001). “Sociability, Interpersonal Relations and the Internet”. In: *American Behavrioual Scientist* 45.3, 420–435.

Nieminen, T., T. Martelin, S. Koskinen, J. Simpura, E. Alanen, T. Härkänen, and A. Aromaa (2008). “Measurement and socio-demographic variation of social capital in a large population-based survey”. In: *Social Indicators Research* 85, 405–423.

Noble, M., G. Wright, G. Smith, and C. Dibben (2006). “Measuring multiple deprivation at the small-area level”. In: *Environment and Planning A* 38, 169–185.

Osborne, M. J. (2004). *An Introduction to Game Theory*. New York.

Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge, UK: Cambridge university press.

Ostrom, E. (1994). “Constituting Social Capital and Collective Action”. In: *Journal of Theoretical Politics* 6.4, 527–562.

Paldam, M. and G. T. Svendson (2001). “Missing Social Capital and the Transition in Eastern Europe”. In: *Journal for Institutional Innovation, Development and Transition* 5, 21–33.

Peigang, W., X. Chen, J. Gong, and A. J. Jacques-Tiura (2014). “Reliability and Validity of the Personal Social Capital Scale 16 and Personal Social Capital Scale 8: Two Short Instruments for Survey Studies”. In: *Social Indicators Research* 119, 1133–1148.

Pena-López, J. A. and J. M. Sánchez-Santos (2017). “Individual social capital: Accessibility and mobilization of resources embedded in social networks”. In: *Social Networks* 49, 1–11.

Pin, T. W. (2014). “Psychometric Properties of 2-Minute Walk Test: A Systematic Review”. In: *Archives of Physical Medicine and Rehabilitation* 95, 1759–75.

Portes, A. (1998). “Social Capital: Its Originis and Applications in Modern Sociology”. In: *Annual Review of Sociology* 24, 1–24.

Portes, A. and J. Sensenbrenner (1993). “Embeddedness and Immigration: Notes on the Social Determinants of Economic Action”. In: *American Journal of Sociology* 98.6, 1320–1350.

Proud, E. L., K. J. Miller, B. Bilney, S. Balachandran, J. L. McGinley, and M. E. Morris (2015). “Evaluation of Measures of Upper Limb Functioning and Disability in People With Parkinson Disease: A Systematic Review”. In: *Archives of Physical Medicine and Rehabilitation* 96, 540–51.

Putnam, R. D. (1993). *Making democracy work: Civic traditions in modern Italy*. Princeton, NJ.

Putnam, R. D. (2000). *Bowling Alone*. Paperback. New York.

Putnam, R. D. (2007). “E Pluribus Unum: Diversity and Community in the Twenty-first Century The 2006 Johan Skytte Prize Lecture”. In: *Scandinavian Political Studies* 30.2, 137–174.

Rehbein, B. (2011). *Die Soziologie Pierre Bourdieus*. 2. Auflage. Konstanz.

Renzulli, L. A. and H. Aldrich (2005). “Who Can You Turn To? Tie Activation within Core Business Discussion Networks”. In: *Social Forces* 84.1, 323–341.

Robison, L. J., A. A. Schmid, and M. E. Siles (2002). “Is Social Capital Really Capital?” In: *Review of Social Economy* 60.1, 1–21.

Rossteutscher, S. (2008). “Social Capital and Civic Engagement: A Comparative Perspective”. In: *The Handbook of Social Capital*. Ed. by D. Castiglione, J. W. van Deth, and G. Wolleb. Oxford, 208–240.

Rupasingha, A., S. J. Goetz, and D. Freshwater (2006). “The production of social capital in US counties”. In: *The Journal of Socio-Economics* 35.1, 83–101.

Rydin, Y. and M. Pennington (2000). “Public Participation and Local Environmental Planning: The collective action problem and the potential of social capital”. In: *Local Environment* 5.2, 153–169.

Samuelson, P. A. and W. D. Nordhaus (1987). *Volkswirtschaftslehre*. 8. Auflage. Köln.

Samuelson, P. A. and W. D. Nordhaus (2001). *Economics*. 17th international edition. New York.

Schermelleh-Engel, K. and C. S. Werner (2012). “Methoden der Reliabilitätsbestimmung”. In: *Testtheorie und Fragebogenkonstruktion*. Ed. by H. Moosbrugger and A. Kelava. Berlin, 119–141.

Schira, J. (2005). *Statistische Methoden der VWL und BWL: Theorie und Praxis*. München.

Schmidt-Atzert, L. and M. Amelang (2012). *Psychologische Diagnostik*. 5th edition. Berlin.

Schnell, R., P. Hill, and E. Esser (2013). *Methoden der empirischen Sozialforschung*. München.

Schwingel, M. (1995). *Pierre Bourdieu zur Einführung*. Hamburg.

Sequeira, T. N. and A. Ferreira-Lopes (2011). “An Endogenous Growth Model with Human and Social Capital Interactions”. In: *Review of Social Economy* 69.4, 465–493.

Shrout, P. E. and T. J. Yager (1989). “Reliability and Validity of Screening Scales: Effect of Reducing Scale Length”. In: *Journal of Clinical Epidemiology* 42.1, 69–78.

Silberberg, E. (1990). *The Structure of Economics: A Mathematical Analysis*. 2nd Edition. New York.

Simmel, G. (1995). “Die Großstädte und das Geistesleben”. In: *Aufsätze und Abhandlungen 1901-1908 Band 1*. Ed. by R. Kramme, A. Rammstedt, and O. Rammstedt. Frankfurt a.M., 116–131.

Smith, S. S. (2005). ““Don’t put my name on it”: Social Capital Activation and Job-Finding Assistance among the Black Urban Poor”. In: *American Journal of Sociology* 111.1, 1–57.

Smith, T., M. Noble, S. Noble, G. Wright, D. McLennan, and E. Plunkett (2015). *The English Indices of Deprivation 2015 Technical Report*. Report.

Sobel, J. (2002). “Can We Trust Social Capital?” In: *Journal of Economic Literature* 40.1, 139–154.

Solow, R. (1999). “Notes on social capital and economic performance”. In: *Social capital: a multifaceted perspective*. Ed. by P. Dasgutpa and I. Serageldin. Washington DC, 6–12.

statista (2016). *Prozentualer Anteil der Führerscheinbesitzer in ausgewählten weltweiten Ländern im Jahr 2012*. Report.

Statistisches Bundesamt (2014). *Einkommen, Einnahmen und Ausgaben*. Report.

Statistisches Bundesamt (2015a). *Bevölkerung am 31.12.2014 nach Alters- und Geburtsjahren - Ergebnisse auf Grundlage des Zensus 2011*. Report.

Statistisches Bundesamt (2015b). *Bildungsstand der Bevölkerung*. Report.

Statistisches Bundesamt (2016). *Bevölkerung und Erwerbstätigkeit Bevölkerung mit Migrationshintergrund - Ergebnisse des Mikrozensus 2015*. Report.

Steinfield, C., N. B. Ellison, and C. Lampe (2008). “Social capital, self-esteem, and use of online social network sites: A longitudinal analysis”. In: *Journal of Applied Developmental Psychology* 29, 434–445.

Switzer, G., S. Wisniewski, S. Belle, M. Dew, and R. Schultz (1999). “Selecting, developing and evaluating research instruments”. In: *Social Psychatry and Psychiatric Eipdemiology* 34, 399–409.

TNS Infratest Sozialforschung (2011). *Leben in Deutschland Befragung 2011 zur sozialen Lage*. München.

TNS Infratest Sozialforschung (2012). "SOEP 2011 - Methodenbericht zum Befragungsjahr 2011 (Welle 28) des Sozio-oekonomischen Panels". In: *SOEP Survey Papers* 108.Series B.

Udehn, L. (2001). *Methodological Individualism Background, history and meaning*. London.

United Nations Development Program (2015). *Human Development Report 2015 Technical Note 1*. New York.

Valenzuela, S., N. Park, and K. F. Kee (2009). "Is There Social Capital in a Social Network Site?: Facebook Use and College Students' Life Satisfaction, Trust, and Participation". In: *Journal of Computer-Mediated Communication* 14, 875–901.

Van Der Gaag, M. and T. A. Snijders (2004). "Proposals for the measurement of individual level social capital". In: *Creation and Returns of Social Capital*. Ed. by H. Flap and B. Völker. London, 154–173.

Van Der Gaag, M. and T. A. Snijders (2005). "The Resource Generator: social capital quantification with concrete items". In: *Social Networks* 27, 1–29.

Van Der Gaag, M., T. A. Snijders, and H. Flap (2008). "Position Generator Measures and Their Relationship to Other Social Capital Measures". In: *Social Capital An International Research Program*. Ed. by N. Lin and B. H. Erickson. Oxford, 27–48.

Van Der Gaag, M. and M. Webber (2008). "Measurement of Individual Social Capital". In: *Social Capital and Health*. Ed. by I. Kawachi, S. Subramanian, and D. Kim. New York, 29–49.

van Oorschot, W. and E. Finsveen (2010). "Does the welfare state reduce inequalities in people's social capital?" In: *International Journal of Sociology and Social Policy* 30.3/4, 182–193.

Varekamp, I., T. Knijn, M. Van Der Gaag, and P. Bos (2015). "Social capital and job search behaviour of long-term welfare recipients". In: *International Journal of Sociology and Social Policy* 35.11/12, 738–755.

Verhaeghe, P.-P., B. Van de Putte, and H. Roose (2012). "Reliability of Position Generator Measures across Different Occupational Lists: A Parallel Test Experiment". In: *Field Methods* 35.3, 238–261.

Wanberg, C. R., R. Kanfer, D. J. Hamann, and Z. Zhang (2016). "Age and Reemployment Success After Job Loss: An Integrative Model and Meta-Analysis". In: *Psychological Bulletin* 142.4, 400–426.

Watson, D., L. A. Clark, and A. Tellegen (1988). “Development and Validation of Brief Measures of Positive and Negative Affect: The PANAS Scales”. In: *Journal of Personality and Social Psychology* 54.6, 1063–1070.

Webber, M. and P. J. Huxley (2007). “Measuring access to social capital: The validity and reliability of the Resource Generator-UK and its assoiciation with common mental disorder”. In: *Social Science and Medicine* 65, 481–492.

Weber, M. (2013). *Die protestantische Ethik und der Geist des Kapitalismus*. Vol. 4. Auflage. München.

Westlund, H. and F. Adam (2010). “Social Capital and Economic Performance: A Meta-Analysis of 65 Studies”. In: *European Planning Studies* 18.6, 893–919.

Westlund, H. and R. Bolton (2003). “Local Social Capital and Entrepreneurship”. In: *Small Business Economics* 21.77-113.

Williams, B. (1988). “Formal Structures and Social Reality”. In: *Making and breaking cooperative relations*. Ed. by D. Gambetta. New York, 3–13.

Williams, D. (2006). “On and Off the ’Net: Scales for Social Capital in an Online Era”. In: *Journal of Computer-Mediated Communication* 11, 593–628.

Wolff, H.-G. and S. Kim (2012). “The relationship between networking behaviors and the Big Five personality dimensions”. In: *Career Development International* 17.1, 43–66.

Woolcock, M. (2010). “The Rise and Routinization of Social Capital, 1988–2008”. In: *Annual Review of Political Science* 13.1, 469–487.

Woolcock, M. and D. Narayan (2000). “Social Capital: Implications for Development Theory, Research, and Policy”. In: *The World Bank Research Observer* 15.2, 225–249.

Wouter, S. and E. Tom (2008). “Entrepeneurial Orientation and New Venture Performance: The Moderating Role of Intra- and Extraindustrial Social Capital”. In: *The Academy of Management Journal* 51.1, 97–111.

Xu, M.-N. and M.-L. Wang (2015). “Individual perception of accessible social capital and attitude to thrift”. In: *Review of Economics of the Household* 13, 487–500.

Zeller, R. A. and E. G. Carmines (1980). *Measurement in the social sciences*. Cambridge, UK.

Zuzanek, J. and B. J. Smale (1999). “Life-Cycle and Across-the-Week Allocation of Time to Daily Activities”. In: *Time Use Research in the Social Sciences*. Ed. by W. E. Pentland, A. S. Harvey, M. P. Lawton, and M. A. McColl. New York, 127–153.

Appendix

The regression tables for the baseline models from section 4.3 are presented here.

Social Capital in the Private Sphere		
Number of Observations = 961		
R-squared = 0.3572		
F (23, 945) = 22.83		
Predictor	**Coefficient**	**p-value**
Aged 50-70	-0.29	0.548
Housewife/-man	-0.21	0.007
Student	-0.13	0.139
Unemployed	-0.17	0.061
Pensioneer	-0.24	<0.001
Unable to Work	-0.03	0.869
Selfemployed	-0.12	0.117
Any Wealth	0.08	0.029
Highest Degree	0.07	<0.001
Conscious Investment	-0.04	0.063
Unconscious Investment	0.02	0.092
Investment Motive on SNS	0.10	0.007
Balanced Reciprocity	-0.12	0.014
Time Spent with Friends/Family	0.04	<0.001
Membership in Organizations	0.07	0.003
Membership in a Special Organization	0.01	0.864
Lives in Small Village	0.01	0.771
Lives in Eastern Germany	0.03	0.527
Moved in the last Five Years	0.00	0.975
Preference to spent Leisure Time with Others	0.09	<0.001
Extraversion	0.04	0.010
Agreeableness	0.06	0.001
Private Life Satisfaction	0.10	<0.001
Intercept	-1.65	<0.001

Table 5.1: Base Model for Social Capital in the Private Sphere

Employed Respondent's Indicator, Psychometric		
Number of Observations = 415		
R-squared = 0.3637		
F (17, 397) = 13.35		
Predictor	**Coefficient**	**p-value**
Aged 50-70	-0.15	0.046
Any Wealth	0.02	0.778
Highest Degree	0.10	$<$0.001
Conscious Investment	0.12	0.002
Unconscious Investment	0.03	0.205
Investment Motive on Work-Related SNS	0.14	0.073
Balanced Reciprocity	-0.05	0.512
Time Spent with Friends/Family	0.03	$<$0.001
Membership in Organizations	-0.01	0.859
Membership in a Special Organization	0.22	0.012
Lives in Small Village	0.03	0.710
Lives in Eastern Germany	0.15	0.097
Moved in the last Five Years	-0.12	0.079
Preference to get into Contact with Others at Work	0.15	$<$0.001
Extraversion	0.05	0.057
Agreeableness	-0.06	0.063
Work Life Satisfaction	0.12	$<$0.001
Intercept	-1.82	$<$0.001

Table 5.2: Base Model for Social Capital in the Work Sphere, Employed Respondent's Indicator, Psychometric

Employed Respondent's Indicator, Compositional		
Number of Observations = 415		
R-squared = 0.3322		
F (17, 397) = 11.62		
Predictor	**Coefficient**	**p-value**
Aged 50-70	-0.12	0.076
Any Wealth	0.02	0.776
Highest Degree	0.10	$<$0.001
Conscious Investment	0.10	0.004
Unconscious Investment	0.03	0.233
Investment Motive on Work-Related SNS	0.12	0.072
Balanced Reciprocity	-0.10	0.178
Time Spent with Friends/Family	0.03	$<$0.001
Membership in Organizations	-0.03	0.402
Membership in a Special Organization	0.18	0.019
Lives in Small Village	0.03	0.583
Lives in Eastern Germany	0.13	0.102
Moved in the last Five Years	-0.13	0.036
Preference to get into Contact with Others at Work	0.14	$<$0.001
Extraversion	0.04	0.048
Agreeableness	-0.05	0.052
Work Life Satisfaction	0.07	0.008
Intercept	-1.82	$<$0.001

Table 5.3: Base Model for Social Capital in the Work Sphere, Employed Respondent's Indicator, Compositional

Non-Retired Respondent's Indicator, Psychometric

Number of Observations = 665
R-squared = 0.4452
F (21, 643) = 24.57

Predictor	**Coefficient**	**p-value**
Aged 50-70	-0.11	0.056
Housewife/-man	-0.20	0.035
Student	-0.43	$<$0.001
Unemployed	-0.24	0.023
Selfemployed	0.16	0.042
Any Wealth	0.01	0.829
Highest Degree	0.08	$<$0.001
Conscious Investment	0.12	$<$0.001
Unconscious Investment	0.04	0.046
Investment Motive on Work-Related SNS	0.12	0.046
Balanced Reciprocity	-0.07	0.230
Time Spent with Friends/Family	0.03	$<$0.001
Membership in Organizations	0.04	0.217
Membership in a Special Organization	0.24	$<$0.001
Lives in Small Village	0.08	0.150
Lives in Eastern Germany	0.09	0.194
Moved in the last Five Years	-0.05	0.334
Preference to get into Contact with Others at Work	0.11	$<$0.001
Extraversion	0.04	0.025
Agreeableness	-0.03	0.121
Work Life Satisfaction	0.12	$<$0.001
Intercept	-1.74	$<$0.001

Table 5.4: Base Model for Social Capital in the Work Sphere, Non-Retired Respondent's Indicator, Psychometric

Non-Retired Respondent's Indicator, Compositional		
Number of Observations = 665		
R-squared = 0.4321		
F (21, 643) = 23.30		
Predictor	**Coefficient**	**p-value**
Aged 50-70	-0.10	0.057
Housewife/-man	-0.19	0.029
Student	-0.36	$<$0.001
Unemployed	-0.25	0.010
Selfemployed	0.15	0.038
Any Wealth	0.01	0.744
Highest Degree	0.07	$<$0.001
Conscious Investment	0.11	$<$0.001
Unconscious Investment	0.03	0.053
Investment Motive on Work-Related SNS	0.11	0.039
Balanced Reciprocity	-0.11	0.044
Time Spent with Friends/Family	0.03	$<$0.001
Membership in Organizations	0.03	0.312
Membership in a Special Organization	0.21	0.001
Lives in Small Village	0.07	0.148
Lives in Eastern Germany	0.07	0.251
Moved in the last Five Years	-0.05	0.344
Preference to get into Contact with Others at Work	0.09	$<$0.001
Extraversion	0.04	0.014
Agreeableness	-0.03	0.102
Work Life Satisfaction	0.10	$<$0.001
Intercept	-1.53	$<$0.001

Table 5.5: Base Model for Social Capital in the Work Sphere, Non-Retired Respondent's Indicator, Compositional

The print version of the questionnaire used in the empirical survey is included on the next pages.

Druckversion

Fragebogen

1 Einstieg

Sehr geehrte Umfrageteilnehmerin, sehr geehrter Umfrageteilnehmer,

wir alle haben regelmäßig Kontakt zu anderen Menschen. Einige Menschen treffen wir immer wieder, so dass wir sie mit der Zeit kennen lernen und sie uns. So entwickeln sich Bekanntschaften und Freundschaften, aber auch berufliche Netzwerke.

Mit diesem Fragebogen möchte ich im Rahmen meiner Doktorarbeit an der Universität Hohenheim untersuchen, zu welchen Menschen wir dauerhafte Verbindungen knüpfen, warum wir dies tun und worin wir uns dabei unterscheiden.

Die Beantwortung des Fragebogens dauert ca. 15 Minuten. Bitte nehmen Sie sich die Zeit, die Fragen gründlich zu lesen und wahrheitsgemäß zu beantworten. Ihre Daten werden selbstverständlich nur anonymisiert gespeichert und vertraulich behandelt.

Ich freue mich über Anregungen und Kritik, dafür steht Ihnen am Ende der Umfrage ein Kommentarfeld zur Verfügung.

Für Ihre Teilnahme an dieser Umfrage möchte ich mich bereits jetzt sehr herzlich bedanken!

Mit freundlichen Grüßen
Jan Neidhardt
Lehrstuhl für VWL, insbes. Umweltökonomie sowie Ordnungs-, Struktur- und Verbraucherpolitiik (Prof. Dr. Michael Ahlheim)
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2 AlterGeschlecht

Zunächst möchte ich Ihnen einige Fragen stellen, die mir bei der statistischen Auswertung dieser Befragung helfen.

Sie sind...

- ○ weiblich
- ○ männlich

Ihr Alter?

- ○ 18 bis 23 Jahre
- ○ 24 bis 29 Jahre
- ○ 30 bis 39 Jahre
- ○ 40 bis 49 Jahre
- ○ 50 bis 59 Jahre
- ○ 60 bis 69 Jahre
- ○ 70 Jahre und älter

3 Schulabschluss

Was ist Ihr höchster Schulabschluss bzw. Ihr höchster im Ausland erzielter vergleichbarer Schulabschluss?

- ○ Hochschul-/ Fachhochschulabschluss
- ○ Abitur bzw. Erweiterte Oberschule mit Abschluss 12. Klasse (Hochschulreife)
- ○ Fachhochschulreife (Abschluss einer Fachoberschule etc.)
- ○ Realschulabschluss / Mittlere Reife / Polytechnische Oberschule mit Abschluss 10. Klasse
- ○ Volks-/ Hauptschulabschluss bzw. Polytechnische Oberschule mit Abschluss 8. oder 9. Klasse
- ○ Schule beendet ohne Abschluss

4 Einkommen

Wie hoch war das monatliche Nettoeinkommen Ihres Haushalts (Summe aller Einkünfte) im letzten Jahr?

Das Nettoeinkommen setzt sich wie folgt zusammen:

Einkünfte aus Erwerbstätigkeit aller in Ihrem Haushalt lebenden Personen

+ Verdienste aus Nebenjobs
+ Bezüge aus Renten oder Pensionen
+ sonstige öffentliche Zahlungen (z.B. Kindergeld)
+ weitere Einkünfte und Einnahmen (z.B. Kapitalerträge, Stipendien, Zuwendungen von Verwandten, etc.)
- abzüglich gesetzlicher Steuern
- abzüglich Sozialversicherungsbeiträge (auch Grundbeträge zur privaten Krankenversicherung) o.Ä.

- bis 1.300€
- 1.300€ bis unter 2.600€
- 2.600€ bis unter 3.600€
- 3.600€ bis unter 5.000€
- 5.000€ bis unter 10.000€
- über 10.000€

5.1 Endseite Quota Full

6 Beruf

Sind Sie...

- selbstständig tätig und beschäftigen nicht mehr als einen Arbeitnehmer?
- selbstständig tätig mit zwei und mehr Arbeitnehmern?
- Arbeitnehmer im öffentlichen Dienst oder Beamter?
- Arbeitnehmer außerhalb des öffentlichen Diensts?
- in Ausbildung / Studium?
- arbeitslos gemeldet?
- in Rente / Pension oder Vorruhestand?
- in Mutterschutz / Erziehungsurlaub / Elternzeit?
- einen Freiwilligendienst oder Wehrdienst absolvierend?
- Hausfrau / Hausmann?
- Sonstiges, und zwar: ...

7.1 Filter

Haben Sie eine leitende Funktion inne und Personalverantwortung für zwei und mehr Personen?

- ja
- nein

8.1 Filter

Hatten Sie während Ihrer Berufstätigkeit eine leitende Funktion inne und Personalverantwortung für zwei und mehr Personen?

- ja
- nein

9.1 Filter

Hatten Sie vor Ihrem Mutterschutz/Erziehungsurlaub bzw. Ihrer Elternzeit eine leitende Funktion inne und Personalverantwortung für zwei und mehr Personen?

- ja
- nein

10 Engste Beziehungen

Bitte beantworten Sie mir im Folgenden einige Fragen zu Ihrem Privatleben:

Wie viele Personen leben aktuell bei Ihnen im Haushalt?

Haben Sie derzeit eine feste Partnerschaft?

- ja
- nein

Wie stehen Sie zu folgenden Aussagen?

	trifft voll und ganz zu	trifft eher zu	weder zutreffend noch unzutreffend	trifft eher nicht zu	trifft überhaupt nicht zu	Diese Verwandten habe ich nicht (mehr).
Zu meinen Geschwistern stehe ich in einem engen Verhältnis.						
Zu meinen Kindern stehe ich in einem engen Verhältnis.						
Zu meinen Eltern stehe ich in einem engen Verhältnis.						

11 Wohnort

Bitte beantworten Sie mir im Folgenden einige Fragen zu Ihrem Wohnort (Erstwohnsitz) und Ihrem Verhältnis zu diesem Ort:

Welches KFZ-Kennzeichen wird für Ihren Wohnort ausgegeben?

Unterscheidungskennzeichen, z.B. "B" für Berlin, "HH" für Hamburg.
Wenn für Ihren Wohnort mehrere Unterscheidungskennzeichen ausgegeben werden, geben Sie bitte nur eins davon an.

Wie viele Einwohner hat Ihr Wohnort?

- unter 2.000 Einwohner
- 2.000 bis unter 5.000 Einwohner
- 5.000 bis unter 20.000 Einwohner
- 20.000 bis unter 100.000 Einwohner
- mehr als 100.000 Einwohner

Haben Sie bereits an Ihrem aktuellen Wohnort gewohnt, als Sie die Grund-/ Volksschule besucht haben?

- ja
- nein

Sind Sie in den letzten fünf Jahren aus einem anderen Ort an Ihren aktuellen Wohnort umgezogen?

- ja
- nein

Wie weit lag ihr letzter Wohnort vom jetzigen Wohnort entfernt?

- Ich habe noch nie an einem anderen Ort gewohnt.
- 1 bis 20 Kilometer
- 20 bis 100 Kilometer
- mehr als 100 Kilometer

12 Migration

Bitte beantworten Sie mir im Folgenden einige Fragen zu Ihrer Familiengeschichte.

Haben bzw. hatten Sie oder mindestens ein Elternteil von Ihnen eine andere Staatsangehörigkeit als die deutsche?

Bitte kreuzen Sie alle zutreffenden Antwortmöglichkeiten an.

- ja, ich
- ja, meine Mutter
- ja, mein Vater
- nein

Sind Sie bzw. Vorfahren von Ihnen in Folge des 2. Weltkriegs als Vertriebene auf das jetzige Gebiet Deutschlands gekommen?

- ja
- nein

Sind Sie bzw. Vorfahren von Ihnen als Spätaussiedler, d.h. als deutschstämmige Personen aus osteuropäischen Staaten, nach Deutschland gekommen?

- ja
- nein

13.1 ich ausländer

Sie haben angegeben, dass Sie eine andere Staatsangehörigkeit als die deutsche besitzen bzw. in der Vergangenheit besaßen. Um welche handelt es sich dabei?

Bulgarien
Griechenland
Italien
Kosovo
Kroatien
Polen
Rumänien
Russland
Serbien
Türkei
Sonstiges, und zwar:

Sonstiges, und zwar: _____

14.1 ich ausländer

Sie haben angegeben, dass Ihre Mutter eine andere Staatsangehörigkeit als die deutsche besitzt bzw. in der Vergangenheit besaß. Um welche handelt es sich dabei?

Bulgarien
Griechenland
Italien
Kosovo
Kroatien
Polen
Rumänien
Russland
Serbien
Türkei
Sonstiges, und zwar:

Sonstiges, und zwar: _____

15.1 ich ausländer

Sie haben angegeben, dass Ihr Vater eine andere Staatsangehörigkeit als die deutsche besitzt bzw. in der Vergangenheit besaß. Um welche handelt es sich dabei?

Bulgarien
Griechenland
Italien
Kosovo
Kroatien
Polen
Rumänien
Russland
Serbien
Türkei
Sonstiges, und zwar:

Sonstiges, und zwar: _____

16 Sozialkapital 1

Ich bin daran interessiert, ob Sie jemanden kennen, der Sie bei den folgenden Dingen unterstützen würde. Denken Sie dabei an Ihre Freunde und Bekannten, aber auch an Ihre Verwandten und ggf. Ihre Kinder und Ihren Partner.

Wie viele Personen kennen Sie, die Ihnen ohne finanzielle Gegenleistung bei kleineren Arbeiten in Ihrem Haushalt helfen würden, z.B. wenn Sie Probleme mit der Technik haben (Fernseher, Computer, Telefon)?

- 0 Personen

- 1 Person
- 2 Personen
- 3 bis 4 Personen
- 5 bis 7 Personen
- 8 bis 10 Personen
- mehr als 10 Personen

Wie viele dieser Personen leben in Ihrem Haushalt?

- 0 Personen
- 1 Person
- 2 oder mehr Personen

Wie viele Personen außer Ihrem Bankberater kennen Sie, die sich gut mit Geldangelegenheiten auskennen und auf deren Rat in diesen Dingen Sie sich verlassen können?

- 0 Personen
- 1 Person
- 2 Personen
- 3 bis 4 Personen
- 5 bis 7 Personen
- 8 bis 10 Personen
- mehr als 10 Personen

Wie viele dieser Personen leben in Ihrem Haushalt?

- 0 Personen
- 1 Person
- 2 oder mehr Personen

Wie viele Personen kennen Sie, die Sie jederzeit anrufen können, wenn Sie jemanden zum Reden brauchen?

- 0 Personen
- 1 Person
- 2 Personen
- 3 bis 4 Personen
- 5 bis 7 Personen
- 8 bis 10 Personen
- mehr als 10 Personen

Denken Sie kurz an eine Ihnen wichtige Person (z.B. Ihren Partner, Ihre Eltern, Ihre Kinder, einen engen Freund oder eine enge Freundin).

Wie viele Personen kennen Sie, die bei dieser Person ein gutes Wort für Sie einlegen würden, z.B. nach einem heftigen Streit?

- 0 Personen
- 1 Person
- 2 Personen
- 3 bis 4 Personen

- 5 bis 7 Personen
- 8 bis 10 Personen
- mehr als 10 Personen

Wie viele Personen kennen Sie, bei denen Sie, immer wenn Sie eingeladen werden, Menschen kennenlernen, die Sie sympathisch finden.

- 0 Personen
- 1 Person
- 2 Personen
- 3 bis 4 Personen
- 5 bis 7 Personen
- 8 bis 10 Personen
- mehr als 10 Personen

Wie viele Personen kennen Sie, bei denen Sie sich sonntags Lebensmittel leihen können?

- 0 Personen
- 1 Person
- 2 Personen
- 3 bis 4 Personen
- 5 bis 7 Personen
- 8 bis 10 Personen
- mehr als 10 Personen

17.1 Filter Arbeitsleben

Wie viele Personen kennen Sie, die bei Ihrem Chef ein gutes Wort für Sie einlegen würden, wenn es z.B. um Ihre Beförderung/Entfristung geht oder darum, eine Abmahnung zu verhindern

- 0 Personen
- 1 Person
- 2 Personen
- 3 bis 4 Personen
- 5 bis 7 Personen
- 8 bis 10 Personen
- mehr als 10 Personen
- Ich habe keinen Chef.

Wie viele Personen kennen Sie, die Ihnen einen Ihrer Qualifikation angemessenen Arbeitsplatz vermitteln würden?

- 0 Personen
- 1 Person

- 2 Personen
- 3 bis 4 Personen
- 5 bis 7 Personen
- 8 bis 10 Personen
- mehr als 10 Personen

18 Sozialkapital 2

Wie hoch ist der maximale Geldbetrag, den Sie sich insgesamt von anderen Personen leihen könnten, wenn Sie kurzfristig in eine finanzielle Notlage geraten würden? Gehen Sie davon aus, dass Sie auf Ihre eigenen Mittel keinen Zugriff hätten.

- 0€
- 100€
- 500€
- 1.000€
- 5.000€
- 10.000€
- 20.000€
- 50.000€
- mehr als 50.000€

Sind Sie mit den meisten Menschen, die Ihnen Geld leihen würden, verwandt?

- ja
- ungefähr mit der Hälfte
- nein

19 Organisationen

Im Rahmen dieser Umfrage möchte ich Ihnen nun noch einige allgemeine Fragen stellen, die für die Auswertung der Befragungsergebnisse von wissenschaftlicher Bedeutung sind.

Menschen engagieren sich in Deutschland in vielfältigen Formen und Organisationen, z.B. in Vereinen (u.a. Sportvereine, Musikvereine, Schützenvereine, Heimatvereine, etc.), Bürgerinitiativen, Beiräten (z.B. Elternbeiräten, Gemeinderäten), einer Kirchen- oder Moscheegemeinde, der freiwilligen Feuerwehr, etc.

In wie vielen dieser Organisationen sind Sie aktives Mitglied?

- 0 Organisationen
- 1 Organisation
- 2 Organisationen
- 3 bis 4 Organisationen
- 5 oder mehr Organisationen

Wie viele Stunden sind Sie in einer durchschnittlichen Woche insgesamt bei diesen Organisationen aktiv?

- 0 Stunden
- 1 bis 2 Stunden
- 3 bis 5 Stunden
- 6 bis 10 Stunden
- mehr als 10 Stunden

In wie vielen dieser Organisationen engagieren Sie sich über die bloße Teilnahme an Angeboten der Organisation (z.B. dem Training eines Sportvereins) hinaus, z.B. als Übungs- oder Gruppenleiter, in der Jungendarbeit, der Öffentlichkeitsarbeit oder der allgemeinen Organisationarbeit, als Spendensammler oder Vorstandsmitglied?

- ○ 0 Organisationen
- ○ 1 Organisation
- ○ 2 Organisationen
- ○ 3 bis 4 Organisationen
- ○ 5 oder mehr Organisationen

Haben Sie schon einmal eine solche Organsation mit gegründet?

- ○ ja, schon einmal
- ○ ja, schon zweimal
- ○ ja, schon drei- oder viermal
- ○ ja, schon fünfmal oder öfter
- ○ nein

Haben Sie schon einmal gemeinsam mit anderen ein Straßen-, Dorf-, Stadtteil-, Vereins- oder Feuerwehrfest oder eine ähnliche Veranstaltung organisiert?

- ○ ja, schon ein- oder zweimal
- ○ ja, schon drei- bis fünfmal
- ○ ja, schon sechs- bis zehnmal
- ○ ja, schon zehnmal oder öfter
- ○ nein

Haben Sie schon einmal gemeinsam mit anderen ein Unternehmen gegründet?

- ○ ja, schon einmal
- ○ ja, schon zwei- oder dreimal
- ○ ja, schon viermal oder öfter
- ○ nein

20 Vitamin B clubs

Sind Sie Mitglied in einer der folgenden Organisationen?

- ☐ einer Studentenverbindung
- ☐ einem Rotary- oder Lionsclub oder einem vergleichbaren Wohltätigkeitsclub
- ☐ einem Soldaten- oder Veteranenverein
- ☐ einer Partei oder politischen Vereinigung
- ☐ einem Berufsverband (Gewerkschaften sind hier nicht gemeint)

Sind Sie während Ihres Studiums von einem Begabtenförderungswerk (z.B. Studienstiftung des deutschen Volkes, Friedrich-Ebert-Stiftung, etc.) mit einem Stipendium ausgestattet worden?

- ○ ja
- ○ nein

Sind Sie Mitglied in einem sozialen Netzwerk für private Kontakte (z.B. Facebook, tumblr, instagram, etc.)?

- ○ ja
- ○ nein

Sind Sie Mitglied in einem sozialen Netzwerk für berufliche Kontakte (z.B. LinkedIn, Xing, etc.)?

- ○ ja
- ○ nein

Sind Sie Mitglied in einer Organisation, deren Mitgliedschaft man nur auf Einladung bzw. Empfehlung von Mitgliedern erlangen kann?

- ja
- nein

21.1 Filter Facebook

Sie haben angegeben, dass Sie Mitglied in einem sozialen Netzwerk für private Kontakte sind. Mit welchem Ziel haben Sie sich bei einem solchen Netzwerk angemeldet?

Bitte kreuzen Sie alle zutreffenden Antworten an.

- [ ] Ich wollte neue Freunde finden.
- [ ] Ich wollte alte Freunde, zu denen ich den Kontakt verloren hatte, wiederfinden.
- [ ] Ich wollte so den Kontakt zu meinen bestehenden Freunden erhalten.
- [ ] Ich wollte die Möglichkeit haben, am Leben anderer Menschen teilzunehmen.
- [ ] Sonstiges, und zwar: _____

22.1 Filter Facebook

Sie haben angegeben, dass Sie Mitglied in einem sozialen Netzwerk für berufliche Kontakte sind. Mit welchem Ziel haben Sie sich bei einem solchen Netzwerk angemeldet?

Bitte kreuzen Sie alle zutreffenden Antwortmöglichkeiten an.

- [ ] Ich wollte einen neuen Job finden.
- [ ] Ich wollte mein Einkommen steigern.
- [ ] Ich wollte dadurch Aufträge für meine Firma akquirieren.
- [ ] Ich wollte dadurch Möglichkeiten zur beruflichen Kooperation finden.
- [ ] Ich wollte dadurch einen neuen Mitarbeiter finden.
- [ ] sonstiges, und zwar: _____

23 Verwandtschaft

Einen möglichen sozialen Bezugspunkt stellt die eigene Verwandtschaft dar. Mit Verwandtschaft meine ich Menschen, mit denen Sie verwandt oder verschwägert sind, **nicht** jedoch Ihren Partner/Ihre Partnerin und Ihre bei Ihnen daheim lebenden Kinder.

Wie stehen Sie zu folgender Aussage:
"Meine Verwandtschaft ist mir wichtig"?

- trifft voll und ganz zu
- trifft eher zu
- weder zutreffend noch unzutreffend
- trifft eher nicht zu
- trifft überhaupt nicht zu
- Außer den oben genannten habe ich keine weiteren Verwandten (mehr).

Wie viele Stunden verbringen Sie in einer durchschnittlichen Woche damit, Ihre Verwanden persönlich zu treffen, mit ihnen zu telefonieren oder ihnen zu schreiben?

- 0 Stunden
- 1 Stunde
- 2 Stunden
- 3 bis 4 Stunden
- 5 bis 7 Stunden
- 8 bis 10 Stunden
- mehr als 10 Stunden

Was würden Sie sagen: Zu wie vielen Ihrer Verwandten haben Sie eine enge Beziehung?

- 0 Personen
- 1 Person
- 2 Personen
- 3 bis 4 Personen
- 5 bis 7 Personen
- 8 bis 10 Personen
- mehr als 10 Personen

24 Freundschaft

Neben der Beziehung zu den eigenen Verwandten stellen Freundschaften mit anderen Menschen oft wichtige soziale Bezugspunkte dar.

Wie stehen Sie zu folgender Aussage: "In meiner Freizeit verbringe ich gerne Zeit mit meinen Freunden"?

- trifft voll und ganz zu
- trifft eher zu
- weder zutreffend noch unzutreffend
- trifft eher nicht zu
- trifft überhaupt nicht zu

Wie viele Stunden verbringen Sie in einer durchschnittlichen Woche damit, Ihre Freunde persönlich zu treffen, mit Ihnen zu telefonieren oder Ihnen zu schreiben?

- 0 Stunden
- 1 Stunde
- 2 Stunden
- 3 bis 4 Stunden
- 5 bis 7 Stunden
- 8 bis 10 Stunden
- mehr als 10 Stunden

Was würden Sie sagen: Wie viele enge Freunde haben Sie?

- 0 Personen
- 1 Person
- 2 Personen
- 3 bis 4 Personen
- 5 bis 7 Personen
- 8 bis 10 Personen
- mehr als 10 Personen

25 Investition

Wie stehen Sie zu folgenden Aussagen?

	trifft voll und ganz zu	trifft eher zu	weder zutreffend noch unzutreffend	trifft eher nicht zu	trifft überhaupt nicht zu
Wenn mir einer meiner Freunde oder Verwandten einen größeren Gefallen tut, dann habe ich das Gefühl, dafür in seiner Schuld zu stehen.	○	○	○	○	○
Freundschaft ist ein Geben und ein Nehmen.	○	○	○	○	○

Es kann auf Dauer nicht gut gehen, wenn jemand immer nur um Gefallen bittet und nie Gefallen erbringt.	○	○	○	○	○
Ich bin stets dafür offen, neue Menschen kennenzulernen.	○	○	○	○	○

	Sehr häufig	häufig	manchmal	selten	nie
Ich sehe mich manchmal bewusst nach neuen Freunden um oder kontaktiere alte Freunde, zu denen der Kontakt eingeschlafen war.	○	○	○	○	○
Ich halte zu manchen Menschen vor allem deshalb Kontakt, weil es manchmal nützlich sein kann, sie zu kennen.	○	○	○	○	○
Ich habe schon versucht, mich mit einem Menschen anzufreunden, weil ich dachte, dass es einmal nützlich sein kann, ihn zu kennen.	○	○	○	○	○
Zu manchen Menschen, die ich kenne, nehme ich hin und wieder Kontakt auf, damit die Beziehung zu Ihnen nicht einschläft.	○	○	○	○	○

	sehr häufig	häufig	manchmal	selten	sehr selten
Bei meiner Arbeit komme ich mit unterschiedlichen Menschen in Kontakt.	○	○	○	○	○

	trifft voll und ganz zu	trifft eher zu	weder zutreffend noch unzutreffend	trifft eher nicht zu	trifft überhaupt nicht zu
Meine Freizeit verbringe ich am liebsten gemeinsam mit anderen.	○	○	○	○	○
Ich verfüge über ein ausgeprägtes Netzwerk an beruflichen Kontakten.	○	○	○	○	○
Ich verfüge über ein ausgeprägtes Netzwerk an privaten Kontakten.	○	○	○	○	○

26 Glücklich

Bitte beantworten Sie mir zuletzt noch einige Fragen dazu, wie Sie sich selbst und Ihre aktuelle Lebenssituation einschätzen.

	vollkommen zufrieden	eher zufrieden	weder zufrieden noch unzufrieden	eher unzufrieden	vollkommen unzufrieden
Wie zufrieden sind Sie mit Ihrem Privatleben?	○	○	○	○	○
Wie zufrieden sind Sie mit Ihrer Arbeit?	○	○	○	○	○
Wie zufrieden sind Sie mit Ihrem Leben insgesamt?	○	○	○	○	○

Ich sehe mich selbst als...

	trifft voll und ganz zu	trifft größtenteils zu	trifft eher zu	weder zutreffend noch unzutreffend	trifft eher nicht zu	trifft größtenteils nicht zu	trifft überhaupt nicht zu
extrovertiert, begeistert	○	○	○	○	○	○	○
kritisch,streitsüchtig	○	○	○	○	○	○	○
zuverlässig, selbstdiszipliniert	○	○	○	○	○	○	○
ängstlich, leicht aus der Fassung zu bringen	○	○	○	○	○	○	○
offen für neue Erfahrungen, vielschichtig	○	○	○	○	○	○	○
zurückhaltend, still	○	○	○	○	○	○	○
verständnisvoll, warmherzig	○	○	○	○	○	○	○
unorganisiert, achtlos	○	○	○	○	○	○	○
gelassen, emotional stabil	○	○	○	○	○	○	○
konventionell, unkreativ	○	○	○	○	○	○	○

27 Vermoegen

Abschließend möchte ich Ihnen noch einige Fragen zu Ihren Vermögensverhältnissen stellen. Diese sind für die Auswertung der Daten

sehr wichtig, weshalb ich Sie bitten möchte, sie wahrheitsgemäß zu beantworten.

Wie groß ist der Wert Ihres Immobilien- (Wohnung oder Haus) und Grundstückbesitzes ungefähr?

- ○ Ich besitze keine Immobilien und keine Grundstücke
- ○ bis 80.000€
- ○ 80.000€ bis unter 250.000€
- ○ 250.000€ bis unter 600.000€
- ○ 600.000€ bis unter 1.000.000€
- ○ über 1.000.000€
- ○ Ich besitze Immobilien oder Grundstücke, kann aber den Wert nicht einschätzen.

28 Finanzvermögen

Wie groß ist Ihr Finanzvermögen ungefähr?

inklusive
- Geld auf Bankkonten
- Aktienbesitz
- Unternehmensanteilen
- Guthaben bei Bausparkassen
- Guthaben bei Kapitallebens- und privaten Rentenversicherungen

ohne Immobilien und Grundstücke?

- ○ unter 2.000€
- ○ 2.000€ bis unter 20.000€
- ○ 20.000€ bis unter 80.000€
- ○ 80.000€ bis unter 250.000€
- ○ 250.000€ bis unter 600.000€
- ○ 600.000€ bis unter 1.000.000€
- ○ über 1.000.000€
- ○ Ich besitze Finanzvermögen, kann den Wert aber nicht einschätzen.

29 Schulden

Haben Sie Schulden (z.B. aus dem Erwerb einer Immobilie oder eines Autos) und, wenn ja, in welcher Höhe?

- ○ Ich habe keine Schulden
- ○ unter 2.000€
- ○ 2.000€ bis unter 20.000€
- ○ 20.000€ bis unter 80.000€
- ○ 80.000€ bis unter 250.000€
- ○ 250.000€ bis unter 600.000€
- ○ 600.000€ bis unter 1.000.000€
- ○ über 1.000.000€
- ○ Ich habe Schulden, kann den Wert aber nicht abschätzen.

30 Feedback

Haben Sie noch Anregungen zur Umfrage?

31 Endseite

Vielen Dank für Ihre Teilnahme!