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PATTERNS OF SOCIAL CAPITAL IN WEST GERMAN REGIONS



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Abstract

Social capital is often defined as consisting of trust and postmaterialist values on the one hand, and social networks on the other hand. This article examines how different governance modes such as networks, markets, and hierarchies are related to trust and postmaterialist values in 74 West German regions. A principle component analysis of 40 social capital indicators shows that trust and postmaterialist values do not solely combine with networks but also with preferences for markets and hierarchies. A cluster analysis identifies two dominant types of regional social capital

in West German regions. These types are different from the well-known Italian patterns described by Robert Putnam in his seminal work. In the period 1995–2002, the annual economic growth in regions which have combined trust with preferences for strong markets and weak political networks was on average 1 percent higher than in regions with inverted preferences.

KEY WORDS ★ hierarchies ★ markets ★ networks
★ regional governance ★ social capital

Introduction

Since J.S. Coleman's *Foundations of Social Theory* (1990), a growing body of research has concentrated on the effects and causes of differences in regional and national social capital. According to Beugelsdijk and van Schaik (2005) the number of hits on 'social capital' in the Social Science Citation Index has increased from 10 in 1994 to 223 in 2004 (p. 1054). Within this expanding scientific literature this article is aimed at contributing to comparative studies on social capital and its effects at the subnational level (Panebianco, 2003; Tabellini, 2005). Taking up distinctions made in the debate referring to the seminal work by R. Putnam (1993), we differentiate a 'governance component' of social capital which encompasses the structural aspects of collective interactions such as networks, markets, and hierarchies on the one hand, and a 'norm component' entailing its collective cultural aspects such as trust and postmaterialist values on the other hand (van Deth, 2003: 79–80; see also Portes, 1998; Streeten, 2002). Differentiating both components means disentangling the dense interrelation between 'trust, norms, and networks' which became

established in the aftermath of Putnam's seminal work (Woolcock, 2001: 70). The article questions the traditional view that reciprocal norms solely combine with network activities, and advocates a more open-ended exploration of different forms of regional social capital.

At the centre of the article is the empirical description of: (a) the relationship between trust and postmaterialist values on the one hand and certain governance modes (hierarchies, markets, networks) on the other hand; as well as (b) the effects of these social-capital patterns on economic development in West German regions. The empirical part of the article uses a more encompassing data set than is usually available for respective analyses of 40 variables. The data set combines both survey and official data from the 1980s and 1990s for 74 West German regions ('Raumordnungsregionen') in a cross-section frame.

The rest of the article is organized as follows. In the next section, our theoretical view on social capital and its impact on regional economic development is presented in more detail. The third section contains a fine-grained discussion of the data since a new data set for German regions is used with

some variables which were not available on the regional level until the present day. The estimation approach and its results are presented in the fourth section, followed by the Conclusions.

Social norms, governance, and regional economic development

Disentangling the traditional social capital concept

Our research interest derives from the ongoing debate about local and regional development in the age of globalization (Storper, 1997; Scott, 2001). With regard to the territorial embeddedness of economic life, it is often argued that regions with dense networks of associations and a collective norm of reciprocity are better off because of reduced transaction costs (Beugelsdijk and van Schaik, 2005: 1055). This approach is substantially supported – among others – by the seminal empirical studies of Ostrom (1990) and Putnam (1993; 2000). Ostrom shows in various case-studies (e.g. on the use of alms in Switzerland, irrigation systems in Spain, and fishing rights in Turkey) how people find cooperative solutions to overcome the ‘tragedy of the commons’.¹ She points out that social capital differs from physical capital in not wearing out with use but rather with disuse. Putnam explains the differences in regional development by looking at statistical proxies representing the civic community, the ‘institutional’ performance and the local government performance. His pivotal research question concerns how formal institutions, having been set up to solve dilemmas of collective actions, are socially embedded. He assumes that a specific kind of embeddedness supports effective governing and economic wealth: ‘Voluntary cooperation is easier in a community that has inherited a substantial stock of social capital, in the form of norms of reciprocity and networks of civic engagement’ (Putnam, 1993: 167). The short definition of social capital as ‘trust, norms, and networks’, repeatedly used by Putnam, hints to the two components interwoven in his understanding of social capital. On the one hand, there are norms of reciprocity and postmaterialist values in the sense of political interest, participation, and self-determination. On the other hand, there are

preferences for networking and voluntary cooperation; that is, for specific ways of organizing social, political, and economic interactions. In his empirical work on Italy, Putnam identifies two types of regions: one in which postmaterialist values, trust, and civic networks are closely connected and the ‘community values solidarity, civic engagement, cooperation, and honesty’; and in contrast, regions that are shaped by ‘personal dependency’, ‘private greed’, and corruption (Putnam, 1993: 115). Thus, Putnam introduced a dichotomy in regional differentiation that strongly influenced the debate about regional patterns of social capital: ‘Italy’s civic split between North and South’ (Putnam, 1993: 184), one could also say the ‘good’ and the ‘bad’ ones. According to Putnam, social capital in the first kind of region results in a stable self-enforcing social equilibrium with high levels of collective well-being, while the second kind of region remains locked in a stable but inferior Nash-equilibrium.

We follow Putnam in that regions may be separated into two groups with regard to trust and postmaterialist values. Due to geography, demography or history, people in a region can be relatively trustful or more dominated by postmaterialist values compared to the national average. However, we question whether these norms automatically cluster with preferences for networks. The traditional concept of social capital solely refers to collective actions in a non-market and non-state form. It is therefore defined by a norm and a network component. From a theoretical point of view, this concept is not convincing. Trust and postmaterialist values can be beneficial in markets, hierarchies and networks as, for example, Milgrom et al. (1990), Greif (1993), Bolton and Ockenfels (2000), and Fehr and Gächter (2000) show with regard to reciprocity norms and markets (see also Newton, 2001).

In addition, the ongoing debate on ‘governance’ shows that all its modes have their shortcomings and that governance modes are linked with different norms (Rhodes, 1997; Stoker, 1998; Pierre and Peters, 2000; Crouch, 2005: 20–2). Within this debate, typologies of urban and regional governance have been presented in which norms and modes of coordination are combined in regionally different ways (Pierre, 1999; DiGaetano and Strom, 2003). Jon Pierre, for example, presents four models of urban governance with different policy objectives and

styles, natures of exchange between local actors and patterns of subordination, instruments, and values (Pierre, 1999: 377–89). The local arrangements, he suggests, are characterized by: (a) a managerial orientation with efficiency-oriented as well as socially exclusive values and a market-oriented governance mode; (b) a corporatist orientation with strong emphasis on values such as distribution and social inclusion with a rather network-oriented understanding of guiding and steering; (c) a growth-orientation with strong materialistic values and a governance mode which is interactive, network-oriented with regard to company–state relations, but exclusive to citizens; (d) a regional welfare model with strong emphasis on equity and social inclusion and a state-oriented governance mode.

These arguments help to disentangle the mainstream combination of ‘trusts, norms, and networks’ for purposes of analytical research. Against the background of the governance debate, the specific character of regional social capital and its respective combination of norms and governance components becomes a phenomenon to be explored. We therefore propose to look at the norm component of social capital (trust, postmaterialist values) separately and examine the relationship between this component and different governance modes such as hierarchies, markets, and networks.²

Social capital patterns and regional development

With regard to the norm component of social capital, most of the empirical studies show a positive influence on regional development. Knack and Keefer (1997), La Porta et al. (1997) and Zak and Knack (2001) show, for cross-country samples with World Value Survey Data, that differences in trust – measured by the item ‘Generally speaking, would you say that most people can be trusted or that you can’t be too careful in dealing with people?’ – have a significant impact on national growth rates. Beugelsdijk and van Schaik (2005) as well as Tabellini (2005) have presented similar results for the economic growth of European regions. Tabellini uses additional variables which are related to postmaterialist values and also finds a positive relationship with regional growth.

The empirical results with regard to the governance component are, however, much more mixed. Already in the early 1990s Miegel (1991) showed that in 26 German counties the prospering ones were characterized by a mix of preferences for success and the readiness for competition, whereas the others showed stronger support for the traditional welfare state. Baumann and Schneider (1999) do not find any relevant impact of the traditional social capital concept on economic growth at all. Panebianco (2003) replicated a study carried out by Helliwell and Putnam (1995) for Italian regions, using indicators for German regions such as voter turnout, preferences for parties, number of civic associations etc. He proved that trust and density of civic associations correlate positively with regional economic success whereas preferences for rather corporatist networks show a converse correlation. These findings challenge the underlying view of the traditional social capital concept that non-market and non-state coordination is beneficial in any case and on every level of aggregation. Too much ‘networking’ can result in social exclusion and rent-seeking activities. The ‘social capital’ of a well-organized interest group will indeed foster the welfare of the members of this group, but may be harmful for non-members and therefore aggregated welfare. The same argument holds true for regions that use their ‘social capital’ for beggar-my-neighbour policies. To identify welfare-enhancing regional patterns of trust and postmaterialist values on the one side and governance modes on the other side, a closer look at different governance modes with a certain regional variance is therefore recommended. Also, the debate on governance argues that mixtures of different modes of coordination could enhance governing effectiveness more than the choice for one. Such a notion challenges the traditional concept of social capital and suggests that a strong dichotomy between ‘good’ and ‘bad’ regions does not sufficiently grasp the spatial variance of welfare-enhancing patterns of social capital.

In sum, the central hypothesis guiding the following research is twofold: (a) regional differences in preferences for hierarchy, markets, and networks (governance component of social capital) combine with trust and postmaterialist values (norm component) in various forms; and (b) there are more than two regional types of social capital with beneficial economic outcomes (Figure 1).

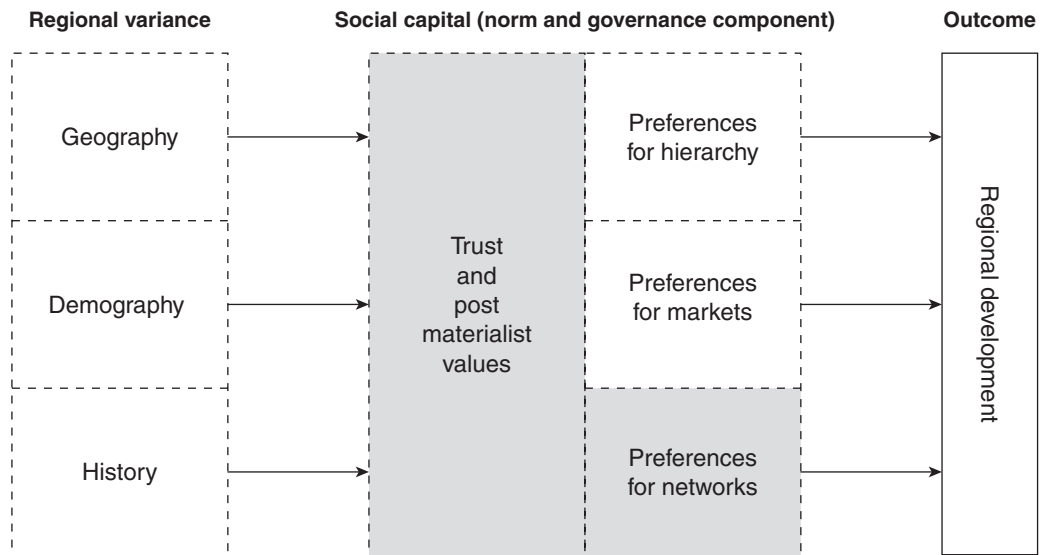


Figure 1 Possible regional patterns of social capital

Note: Shading represents the traditional concept of regional social capital.

Source: Own illustration.

Figure 1 sums up our concept for the empirical research. It visualizes that the regional variance of norms and governance regimes itself may be caused by regional variance in geography (e.g. agglomerations versus rural areas), demography (e.g. the number of people above 65) or history (e.g. religion). Therefore, we will control for these regional characteristics and their impact.

Operationalization of the theoretical concept

The empirical design: overview

Since we are interested in the regional variation of *shared values* we will use aggregated survey data on the regional level to test our hypotheses. There is an ongoing debate whether to use aggregated national, aggregated regional or micro data when dealing with social capital (e.g. Glaeser et al. 2001; van Deth, 2003). As explained in the theoretical part, our notion of social capital is an extended version of Putnam's definition. This means that on the one hand we treat personal beliefs as social capital as long as they are not shared by a larger group (and have the power to structure day-to-day life). The usage of micro data

would therefore not be adequate for our purpose.³ On the other hand, we think that the explanatory power of cross-section analyses at the national level (e.g. with data of the World Value Survey) is limited with regard to social capital. Shared values at the national level are usually expressed in constitutions, laws and institutional arrangements (North, 1990); comparative institutional analysis interested in national variations could therefore concentrate on these formalized institutions. Values that are shared on the regional but not on the national level are most of the time not formalized at all, the social capital concept with its focus on norms and governance modes therefore has its greatest explanatory power at the subnational level.

Because of data availability and quality we restrict our research to West German 'Raumordnungsregionen', which are 74 regions altogether. This restriction allows us to use a much broader data set than is available at the European Level (e.g. via the European Social Survey) or a more disaggregated level (e.g. city regions) and to go back in time. The usage of older data from the late 1980s and 1990s is necessary when we ask for the economic consequences of social capital variations; this is also why we had to exclude the East German regions and Berlin from the sample. Our empirical

analysis combines two steps (in analogy to our two research questions outlined in the previous sections). In a first step we will look at the correlations among 40 social capital indicators selected to represent regional variations in trust, postmaterialist values and preferences for certain governance modes (hierarchy, markets, and networks) with a principle component and a cluster analysis. In a second step we conduct a regression analysis with regional growth in the period 1995–2002 as dependent variable and the social capital components identified in the first step as well as a battery of traditional determinants of regional growth as independent variables. Since exogeneity of the social capital components might be questionable, we use a two-stage regression approach with variations in geography, demography, and history as instruments for regional variations in social capital (see Figure 1 for this chain of causality).

Description of the data used

Because official statistics hardly provide any useful social capital indicators we rely mostly on survey data. To increase data quality we combine indicators from different sources. Table 1 describes the main sources used in this article: the ‘Allgemeine Bevölkerungsumfrage der Sozialwissenschaften’ (ALLBUS); the official statistics from the ‘Bundesamt für Bauwesen und Raumordnung’ (BBR); the so-called ‘Familienatlas’, published by the Deutsche Jugend Institut (DJI); the ‘Nationalatlas Bundesrepublik Deutschland’, published by the Institut für Länderkunde Leipzig (IFL); the ‘Sozioökonomische Panel’ (SOEP); and

the telephone survey data of FORSA (‘Gesellschaft für Sozialforschung und statistische Analyse’).

Of the surveys, the FORSA data has the highest quality with regard to pure numbers. On average more than 100 cases per region for ALLBUS and SOEP is, nevertheless, not too bad either (cross-country studies often rely on some hundred cases per country). As mentioned, we use aggregate measures (arithmetic means, percentages) over all available years. Strictly speaking, ordinally scaled measures, such as answers on a scale of 1 to 5, are usually treated as metrically scaled to avoid loss of information.

For measuring *trust*, ten variables were used (Table 2), the first eight dealing with (inter)personal trust (trust1–8) and the last two with institutional trust (trust9–10). It could be questioned whether the last two variables should have been included at all, since the Putnam concept of social capital mainly refers to personal trust as the driving force for social networks. Moreover, institutional trust could also be interpreted as being part of other categories (preferences for hierarchies or even markets) since it refers to the status quo of institutional arrangements. We nevertheless decided to include these two variables because of the simple fact that our statistical method corrects for selection problems. The principle component will reveal if institutional trust in West German regions is correlated with personal trust or other aspects of social capital (and this is an interesting question).

For measuring *postmaterialist values* a total of nine variables was used (Table 2). The selection of the first five variables (pmat1–5) is directly influenced by the Putnam research, since they all reflect civil society values (political interest, voter turnout, awareness of news, number of

Table 1 Data sources used

Name of source	Years available	Total cases	Cases per region (74 without Berlin) ^b		
			Min.	Mean	Max.
ALLBUS-Survey	94, 96, 00, 02	12,753 ^a	37	266	424
BBR	1980–2004	ALL	253,500	798,400	2,835,500
DJI-Familienatlas	1993, 1997	ALL/varies	varies	varies	varies
FORSA-Survey	1991–2002	1,421,254 ^a	523	3,097	22,972
IFL-Nationalatlas	2004	ALL	253,500	798,400	2,835,500
SOEP-Survey	1996–2003	10,458	20	141	555

Notes: ^a Pooled for all available years. ^b If total cases is ‘all’, number of inhabitants is taken for the year 1987.

Table 2 Data on trust and postmaterialist values for 74 West German regions

Name	Description of the variable	Mean	Min.	Max.	SD	Source
trust1	People can be trusted (1–4, 4 = agree)	2.67	2.41	3.05	0.12	SOEP
trust2	Nobody can be trusted (1–4, 1 = agree)	2.63	2.37	3.03	0.13	SOEP
trust3	Careful with strangers (1–4, 1 = agree)	1.71	1.41	2.13	0.14	SOEP
trust4	People cheat you (% no)	54.54	36.3	71.5	6.94	SOEP
trust5	People are friendly (% yes)	37.23	17.4	68.8	8.74	SOEP
trust6	Lending things to friends (1–5, 5 = often)	2.65	1.65	2.94	0.23	SOEP
trust7	Lending money to friends (1–5, 5 = often)	1.72	1.29	2.01	0.15	SOEP
trust8	Leave house door unlocked (1–5, 5 = often)	1.91	1.29	3.12	0.29	SOEP
trust9	Mean of trust in church, public administration and the judiciary (1–7, 1 = no)	3.90	3.11	4.65	0.29	ALLBUS
trust10	Trust in government (1–4, 4 = yes)	1.86	1.73	2.00	0.05	FORSA
pmat1	Political interest (1–4, 4 = strong)	2.42	2.24	3.00	0.11	FORSA
pmat2	Voter Turnout National Election 1998 %	82.46	73.83	86.83	2.45	BBR
pmat3	Following the news (1–4, 4 = daily)	3.57	3.39	4.00	0.09	FORSA
pmat4	Manifestations per inhabitant (1–5, 1 = few)	1.83	1.00	5.00	0.86	Other
pmat5	Inglehardt-Index (1–4, 4 = postmaterialist)	2.56	1.00	4.00	0.73	DJI
pmat6	Left–Right scale (1–10, 10 = left)	5.97	5.72	6.18	0.11	FORSA
pmat7	Attitude towards abortion (1–4, 1 = against)	2.27	1.58	3.29	0.31	ALLBUS
pmat8	Personal faith is up to me (1–4, 4 = agree)	3.26	2.81	3.50	0.14	SOEP
pmat9	Life is controlled by others (1–4, 1 = agree)	3.13	2.42	3.59	0.20	SOEP

manifestations,⁴ Inglehardt-index). The other four variables (pmat6–9) were added because of post-Putnam research which has stressed the importance of progressive attitudes and preferences for a self-determined life as part of postmaterialist values (e.g. Tabellini, 2005). Again, since the principle component analysis is able to identify the variables which represent the same (latent) concept, it is better to start with too many rather than too few variables.

For measuring the preferences for certain governance modes,⁵ we start with party preferences (Table 3), since steering and guiding in representative democracies should be assigned to political parties. Membership data was selected because it reflects stronger party preferences than election outcomes, but both are highly correlated anyway. The party proxy is considered as a tentative variable to control preferences for governance modes. However, in Germany especially, the big parties (CDU/CSU, SPD) each stand for heterogeneous respective preferences. The membership in small parties is supposed to be more informative since their programmes can be linked clearly to specific ways of steering: FDP strongly pro-market, the Greens strongly pro-networks, PDS strongly pro-state. Additionally, the party proxy is

supposed to give additional information about the willingness of people to organize in political networks. The membership in catch-all parties indicates a regional inclination towards corporatist arrangements (Pierre, 1999: 380–3).

Three additional proxies were selected for the *hierarchy preferences*: the church attendance rate, as proposed by Putnam; the attitude towards law and order; and the attitude towards authoritative education (hierarch1–3). All three measure slightly different aspects of preferences for hierarchy. While the first one is related to the church as a hierarchical institution, the second one refers to a strong repressive state and the third to more private hierarchies. What they have in common is that they all reflect a certain attitude towards mechanisms of vertical coordination. However, they also represent conservative values, which makes them not the best (pure) proxies for hierarchy preferences. But in the absence of better alternatives we have to rely on these second-best indicators. Seven additional survey indicators (market1–7) were selected as evident proxies for regional *market preferences* and six indicators (network1–6) as proxies for *network preferences*. The first entail the acceptance of social inequalities as well as the positive understanding of entrepreneurship and privatization. The latter

Table 3 Data on hierarchy, markets, and networks for 74 West German regions

Name	Description of the variable	Mean	Min.	Max.	SD	Source
CDUCSU	Membership of CDU/CSU in %	1.24	0.48	2.52	0.44	IFL
SPD	Membership of SPD in %	1.12	0.29	3.48	0.62	IFL
Green	Membership of Green party in %	0.07	0.03	0.19	0.02	IFL
FDP	Membership of FDP in %	0.07	0.03	0.18	0.04	IFL
PDS	Membership of PDS in %	0.06	0.01	0.12	0.03	IFL
hierarch1	Church attendance (1–5, 5 = very often)	2.34	1.98	3.03	0.28	FORSA
hierarch2	Importance law and order (1–7, 1 = no)	5.67	5.05	6.22	0.24	SOEP
hierarch3	Authoritative education (1–4, 1 = no)	2.57	1.00	4.00	0.93	DJI
market1	% in favour of less state activity	13.20	2.25	29.60	5.03	SOEP
market2	% in favour of privatizing social security	21.15	6.70	52.80	7.14	SOEP
market3	Pay for health services (1–4, 4 = agree)	1.79	1.42	2.13	0.14	SOEP
market4	Probability to become an entrepreneur %	10.05	0.00	38.00	7.04	SOEP
market5	Inequality motivates (1–4, 4 = agree)	2.73	2.08	3.21	0.19	ALLBUS
market6	Inequality acceptable (1–4, 4 = agree)	2.58	2.16	3.00	0.18	ALLBUS
market7	Social differences justified (1–4, 4 = agree)	2.30	1.86	2.83	0.19	ALLBUS
network1	Voluntary work (1–4, 4 = weekly)	1.55	1.29	2.20	0.17	SOEP
network2	Political associations (1–4, 4 = weekly)	1.13	1.05	1.34	0.06	SOEP
network3	Environmental group membership %	4.25	0.00	12.50	2.54	SOEP
network4	Civic associations membership %	39.59	15.70	67.40	9.78	ALLBUS
network5	Party membership %	2.48	1.07	5.84	0.79	IFL
network6	Trade union membership %	24.66	14.77	37.90	4.73	FORSA

measure both civic networks (networks1–4) as well as political networks (network5–6). This is of particular importance, since Pierre suggests that it may be utile to differentiate between participative civic-oriented public–private exchanges and state-oriented networks (Pierre, 1999: 388). The selected data on networks refers both to the intensity of networks (e.g. voluntary work on a scale of 1–4) and the quantity (membership in associations). It therefore allows us to differentiate between the breadth and the depth of networks. In sum, the newly combined set of survey data is considered to allow fruitful empirical research on our extended social capital concept (see Figure 1) since it offers a broad set of proxies for trust, postmaterialist values, and governance preferences.

Empirical results

Spatial patterns of social capital in Germany

To test our hypothesis that network preferences and social capital norms are not homogeneously spread among regions, we conducted a *principle component*

analysis with all 40 variables listed in Tables 2 and 3. The principle component analysis was chosen to identify independent components not correlated among each other and we conducted a right-angle rotation (Varimax with Kaiser–Normalization) to ease the interpretation of the components. The results of the principle component analysis are shown in Appendices 1 and 2. As one can see in Appendix 1, the 40 social capital variables selected are highly correlated, only six components explain nearly 60 percent of the variation in the data. Since additional explanatory power between the sixth and seventh component significantly decreases from 6.4 to 4.3 percent, we decided to stop interpreting the components below an eigenvalue of 2. A first glance at the factor loadings on these six components (Appendix 2) shows that there is no single component which combines trust, postmaterialist values, and preferences for networks as would have been suggested by the traditional Putnam–style social capital concept. The variables trust1–8, pmat1–9 and network1–6 do not cluster in one component. Our first hypothesis, that the norm component of social capital does not solely combine with networking, is therefore confirmed at least for West German regions in the 1990s.

To support the interpretation of the components, we correlated the factor values of the six components with other regional characteristics, such as the percentage of rural population, the percentage of employees in the industrial sector and the number of Protestants (Table 4). Besides the percentage of high-income and single households taken from DJI, all background data stems from official statistics (BBR).

The first principle component explains around 15 percent of the variation in the data. Basically, it separates those regions with few postmaterialist values from those with strong postmaterialist attitudes. We therefore refer to it as *postmaterialist values* further on. All the variables pmat1 to pmat7, representing civil society values such as political interest and participation, have positive factor loadings of 0.4 and more on this component; only the variables pmat8–9, representing individualism and preferences for a self-determined life, do not cluster with this component. The table in Appendix 3 shows the regional variation; Bremen is the region with the strongest postmaterialist values and Donau-Wald the region with the weakest postmaterialist values. Bivariate correlations with other regional characteristics show that the component is highly correlated to geography. Postmaterialist values in the German population – such as political interest, voter turnout, awareness of the news, tolerance with regard to abortion, and the number of manifestations per inhabitant – are especially low in rural areas (Table 4). This geographical characteristic might also account for a large part of the positive correlations of the component with the percentages of single households, higher educated, elderly, immigrant and high-income households (which are all higher in agglomerations). Apart from this, postmaterialist values seem to be stronger in scarcely industrialized and more Protestant regions. It is very interesting that a total of five variables not originally designated to the pmat variables set have strong negative factor loadings with 0.4 and more on the component: institutional trust (trust9), the church attendance rate (hierarch1), preferences for authoritative education (hierarch3), CDU/CSU and PDS membership. All these variables have in common that they to some extent reflect preferences for hierarchical coordination mechanisms (as well as conservative values). Preferences for hierarchies (as we tried to measure them) therefore seem to be not

an independent component but a part of postmaterialist values in the sense that strong postmaterialist values oppose extended hierarchies as a governance mode.

The second principle component explains another 10 percent of the variation in the original data. Those variables related to the membership in traditional political networks have high factor loadings on this component (network5–6). Party membership – especially in the SPD – and trade union membership are closely related to this component, but not membership in civic and environmental organizations. The component represents regions with an above-average voter turnout (pmat2). We therefore call this component *political networks* further on. The factor values of the component are on average stronger in Protestant regions and regions with little migration and industry (Table 4). The Saar region is the region in West Germany with the strongest political networks, the region Donau-Iller with the weakest. Apart from voter turnout, this component is completely independent of trust and postmaterialist values; that is, it can have both high and low values in regions with strong, respectively low social capital norms.

The third principle component explains another 9 percent of the variation in the original data. It separates those regions with few civic networks from those with strong civic networks. The variables network1–4 have factor loadings of 0.4 and more on this component. Only the traditional political networks represented by the second component are not related to this third component. We therefore call it *civic networks* further on. According to this factor, the region Oberland has the strongest civic networks in West Germany and the region Donau-Iller the weakest. Contrary to the political networks component, this component is not independent of social norms, it is related to trustful behaviour with regard to friends and neighbours. The people in regions with strong civic networks often lend things as well as money to friends and leave the door unlocked. In spite of the fact that it is not related to any postmaterialist values, this combination of a norm and a network aspect brings this component close to the traditional social capital concept. Strong civic networks in the sense of this component are related to more rural areas with few immigrants (Table 4).

Table 4 Bivariate correlations between social capital components and other regional characteristics in West German regions (n = 74)

Regional characteristic	Postmaterialist values	Political networks	Civic networks	Trust	Markets	Individualism
Rural population in %	-0.680**	-0.108	0.219(*)	0.009	0.235*	0.078
Single households in % of all households	0.753**	-0.075	-0.076	0.172	0.136	0.031
Population over the age of 65 %	0.289*	0.173	0.098	0.091	0.236*	0.105
Taxpayers with high income %	0.550**	-0.138	-0.136	0.021	-0.071	-0.240*
Academics in % of population	0.616**	-0.161	-0.046	0.230*	-0.018	-0.037
Immigrants in % of population	0.506**	-0.283*	-0.260*	-0.062	-0.192(*)	-0.129
Employees in the industrial sector %	-0.382**	-0.197(*)	-0.099	-2.272*	-0.356**	-0.253*
Protestants in % of population	0.495**	0.198(*)	0.085	-0.074	-0.028	-0.136
Dummy southern states Bayern/Baden-Würt. = 1	-0.414**	-0.626**	0.104	-0.042	0.092	-0.275*
Patents per 10,000 inhabitants (1992–94)	0.016	-0.437**	0.043	0.005	-0.210(*)	-0.302**
Total factor productivity 2002	0.373**	-0.284*	-0.166	0.136	0.067	-0.107
Growth of output per worker (1995–2002)	-0.240*	-0.370**	0.208(*)	0.120	0.267*	-0.044
Happiness of people (2000–03)	0.047	0.154	0.114	0.415**	-0.175	0.267*

Note: '**', '*', or '(*)' show that the estimated parameter is significantly different from zero on the 1, 5, or 10% level, respectively.

The fourth principle component explains another 9 percent of the variation in the original data. Most of the personal trust variables (trust1–5) as well as one of the institutional trust variables (trust10) have high factor loadings on this component. We therefore call this component *trust* further on. Not taking a low correlation with political interest (pmat1) into account, none of the other variables is strongly related to this component. This means that a significant part of the interregional variation in personal trust is spread independently of preferences for a certain governance mode over the German regions. As Table 4 shows, this variation may be partially caused by the education level and the size of the industrial sector. According to this factor, trust is especially high in the region Unterer Neckar and distrust in Emscher-Lippe.

The fifth and sixth principle components each explain around 7 percent of the variation in the original data. The sixth component represents variables which favour markets as governance mode (market1–2,4–7). We therefore call this component *markets* further on. People with such strong preferences for markets mostly live in rural and de-industrialized regions (Table 4). They trust institutions (trust9), oppose a strong law-and-order state (hierarch2) and show little enthusiasm for elections (pmat2). According to this factor, market preferences are especially strong in the region

Lüneburg and especially weak in the region Ostwürttemberg. The seventh component basically represents the two variables of the postmaterialist values set with regard to individualism and self-determination (pmat8–9). We call this last component, which is of only minor importance with regard to our research questions, *individualism* further on.

To sum up the main insights of the principle component analysis: the selected social capital indicators for trust and postmaterialist values on the one hand, and networks on the other hand, are far from clustering in one single principle component. The selected network indicators clearly split up into two different forms of networks: political and civic networks. Postmaterialist values and trust are to a great extent independent components; that is, they can have both high and low values in regions with strong or weak networks respectively. Some of the interregional variations of trust nevertheless combine with civic networks, but not with political networks. Preferences for hierarchies are negatively related to the postmaterialist values component and do not themselves form a component. Preferences for markets as a governance mode are again clustered in a component independent of the others. While all this provides evidence for our first hypothesis (that social capital norms do not automatically correlate with networks but also with preferences for markets and hierarchies), it is useful

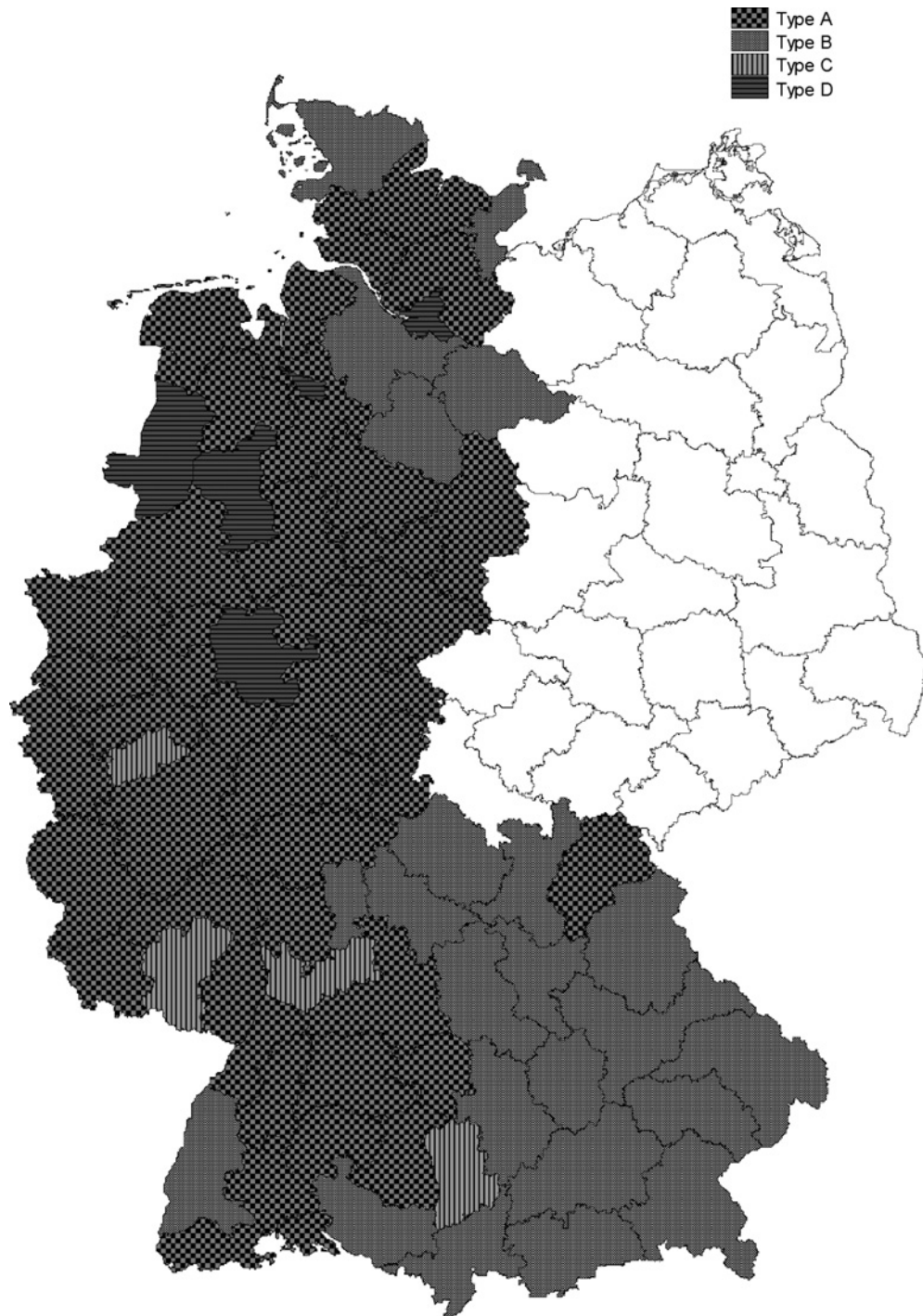


Figure 2 Patterns of social capital in West German regions

to confirm this conclusion by a cluster analysis. In spite of the fact that the six identified components show high correlations 'inside' and low correlations among each other, there could be dominant spatial patterns. A cluster centre analysis is the adequate statistical tool to reveal such patterns. As a starting point, we have looked for four regional clusters – because of the findings of Pierre (1999), mentioned above, who has identified four models of urban governance based on case-studies – and were somewhat surprised by the results since, of the high number of possible combinations among the six identified components, only two dominant clusters show up. This result is robust to variations in the design of the cluster analysis.

As Appendix 3 shows, 42 regions are characterized by a combination of strong postmaterialist values, strong political networks, weak civic networks, weak trust, and weak preferences for markets (type A). The exact opposite – i.e. weak postmaterialist values and political networks as well as strong civic networks, trust, and preferences for markets (type B) – occurred in 23 regions. Only nine regions are characterized by different patterns (type C and D). The four regions of type C have very strong trust and market preferences, as well as weak civic networks and individualism. Type D marks five regions with very strong trust, postmaterialist values, and individualism. The first two regional types, A and B, are therefore clearly dominant in numbers. As the map (Figure 2) indicates (and correlations which we do not show here confirm), regions of type A tend to be more urban regions with a high percentage of immigrants as well as Protestant regions. Type B marks the more rural regions with less rich inhabitants, fewer immigrants, and academics as well as the more Catholic regions.

What is also visible is a North–South division, which superficially resembles the Putnam work for Italy. However, the clusters identified here are very different from the clusters identified by Putnam for Italy. In German regions the *absence* of postmaterialist values is positively related to the participation in civic networks (voluntary work, sports, music, and other cultural associations). This finding is the exact opposite of what one would have expected from a social capital definition that treats postmaterialist values and civic networks as two sides of the same coin. At least in German regions,

strong postmaterialist values are only related to political networking but not to civic networking. With regard to the background variable 'percentage of rural population', this finding makes intuitive sense. In rural areas with less postmaterialist values, civic networks may be a substitute for certain cultural infrastructure only available in the agglomerations (concerts, theatre, major sport events, nightlife, and so on). Trust often clusters with civic networking as would have been predicted by the traditional concept of social capital, but also with market preferences which is not in line with the traditional view. After providing some insights into the patterns of social capital in Germany on the basis of our extended social capital approach, we now ask, in a second step, what the effects of these patterns are with regard to regional development.

The economic effects of social capital patterns in Germany

In examining the assumption that regional norms and preferences for governance modes affect regional development, we start by looking at the bivariate correlations between our six social capital components and different development indicators: the number of patents per inhabitant; total factor productivity; economic growth in the period 1995–2002 and happiness (Table 4). The number of patents is taken from Greif (1998) and the average annual growth rate of output ('Bruttowertschöpfung') per worker in the period 1995–2002 from the official BBR statistics. To measure total factor productivity, we decompose differences in output per worker across regions into differences in inputs and differences in productivity in analogy to Hall and Jones (1999). We assume that output Y in region i is produced according to

$$Y_i = K_i^\alpha (A_i H_i)^{1-\alpha}$$

where K_i denotes the stock of capital in 2002, as estimated by Eckey and Türck (2005), and H_i is the amount of human capital-augmented labour used in production in 2000. The augmentation was conducted by using a 6.8 percent rate of return for each year of education after secondary school (high school, training on the job, university). The

percentages of regional employees according to their education are available in official statistics and the rate of return per year of education is taken from Hall and Jones (1999). A_i is a labour-augmenting measure of productivity (the so-called Solow residual). With this data on output, capital, and human capital-augmented labour, and an assumed α of 1/3 which is broadly consistent with national income accounts data for developed countries, the level of productivity can be calculated directly from the production function. Since the influence of the central production factors physical capital and human capital-augmented labour are isolated by this method of decomposition, the remaining productivity residual can be interpreted as being mainly influenced by technology and institutions. The regional happiness data on a scale from 0 = completely unhappy with life in general to 10 = completely happy was taken from the SOEP survey.

As Table 4 shows, the number of patents is higher in regions with weak political networks, market preferences, and individualism. Total factor productivity seems to be higher in regions with strong postmaterialist values and, again, in regions with less well-organized interest groups (i.e. political networks). Since total factor productivity accounts for both institutional quality and technical progress, and the number of patents is only a proxy for innovation and technical progress, the differences are plausible: postmaterialist values may be favourable for good institutions and governance but not for innovative milieus; strong market preferences and individualism could be a barrier for knowledge networks but not for institutional quality. Regional economic growth as the broadest measure of economic development not only accounts for productivity growth but also for human and physical capital accumulation. It is positively correlated with strong preferences for markets and civic networks as well as the absence of political networks and postmaterialist values. This seems to imply that market preferences and civic networks have positive consequences for investments in human and physical capital (since they show no significant impact on productivity), and postmaterialist values have strong negative impacts on these investments (since they show a positive correlation with productivity). That economic development is not everything is shown by the correlations with happiness. None of the social capital indicators that are related to growth is

significantly related to happiness. Instead, trust and individualism seem to have a positive impact on happiness. Analysis beyond the level of simple correlations is, however, strongly recommended here, since the result at least partially contradicts findings on the cross-country level which usually show a positive impact of trust on economic development (Zak and Knack, 2001; Tabellini, 2005). The next step is therefore a regression analysis. While it would be interesting to have a closer look at all four endogenous variables, patents, productivity, growth, and happiness (and even some others such as e.g. income distribution or investments) this would make the article explode. We decided to concentrate on economic growth, since it is the broadest measure of economic development and leave the closer look at transmission channels (patents, productivity, investments) for further research. By making this restriction, it is important to notice that we are only looking at *economic* development here; happiness of people as a different (or even broader) welfare indicator might show different results as the correlations discussed above seem to indicate. Economic growth could, for example, lead to social fractionalization and polarization and therefore negatively affect the happiness of people. While keeping this in mind, we conducted a linear regression analysis of the form

$$\Delta Y_i = \alpha + \beta M_i + \chi X_i + \delta Z_i + \varepsilon_i$$

where ΔY_i is the average annual growth rate of output ('Bruttowertschöpfung') per worker of region i between the years 1995 and 2002 and M_i is a vector of standard explanatory variables of economic growth. These are the level of logged initial output per worker (in our sample 'initial' is 1995), the investment per worker averaged over the period 1995–2000, the percentage of regional employees with high qualifications in 1995, the number of patents per inhabitant 1992–94, and the percentage of inhabitants living in agglomerations. X_i is one of the six 'social capital' components extracted in our principle component analysis. Z_i is a vector of all the additional explanatory variables in Table 4 (not yet included in vector M_i) that are introduced to check the robustness of the baseline model, and ε_i is an error term. Since the regions are relatively large, spatial autocorrelation was not controlled for.

Table 5 TSLS and OLS-regressions on the annual growth rate of output per worker (1995–2002) in West German regions (n = 74)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	TSLS	TSLS	TSLS	TSLS	TSLS	TSLS	TSLS	OLS
Log output per worker 1995	-7.106* (2.04)	-6.695(*) (1.89)	-7.537** (2.58)	-6.541(*) (1.78)	-7.198* (2.13)	-6.414* (1.99)	-7.567* (2.21)	-5.863(*) (1.78)
Investment per worker 95–00	0.121(*) (1.81)	0.117(*) (1.77)	0.132* (2.21)	0.114(*) (1.68)	0.126* (2.09)	0.094 (1.41)	0.121(*) (1.89)	0.096(*) (1.78)
Highly qualified employees %	0.002 (0.04)	0.012 (0.17)	0.016 (0.27)	0.001 (0.01)	-0.024 (0.34)	0.001 (0.02)	0.001 (0.02)	0.001 (0.01)
Patents per inhabitant	0.106* (2.49)	0.098* (2.33)	0.059 (1.36)	0.102* (2.36)	0.116** (2.92)	0.122** (3.21)	0.117** (3.23)	0.078(*) (1.65)
% urban population	0.005 (1.39)	0.005 (1.38)	0.007* (2.02)	0.005 (1.36)	0.007(*) (1.87)	0.003 (0.76)	0.005 (1.51)	0.006(*) (1.69)
Postmaterialist values		-0.045 (0.43)						-0.067 (0.59)
Political networks			-0.222** (2.86)					-0.199** (2.63)
Civic networks				0.051 (0.74)				0.073 (1.11)
Trust					-0.143(*) (1.60)			-0.145(*) (1.59)
Markets						0.198** (2.51)		0.170* (2.06)
Individualism							0.068 (0.78)	0.042 (0.55)
Constant	32.90	30.99	34.82	30.35	33.28	29.94	34.97	27.29
R ²	0.144	0.134	0.223	0.137	0.174	0.218	0.141	0.289
SER	0.616	0.620	0.587	0.618	0.605	0.589	0.617	0.561
J-B	0.258	0.206	0.438	0.366	0.858	0.209	0.678	0.704

Notes: The table shows the β -coefficients of the regression, the numbers in parentheses are the absolute values of the estimated t-statistics, based on the White heteroscedasticity-consistent standard errors. ***, **, or (*) show that the estimated parameter is significantly different from zero on the 1, 5, or 10% level, respectively. SER is the standard error of the regression, and J-B the Jarque-Bera statistic on normality of the residuals. The instruments in the TSLS-regressions are % of rural population, % of employees in the industrial sector, % protestants in % of population, immigrants in % of population, single households in % of all households, and a dummy for the southern states Bayern and Baden-Württemberg.

Because of concerns that the six identified social capital components are not really exogenous, we conducted two-stage least squares (TSLS) regressions in addition to ordinary least squares (OLS). In TSLS-regressions the X-vector variables are predicted values of a first-stage regression with really exogenous variables called instruments. These instruments have to be highly correlated with the considered variables

(in our case they have to be determinants of spatial variations in social capital) and uncorrelated with the residual of the second-stage regression. In analogy to Figure 1, we selected six instruments: the percentage of rural population as a proxy for geography; the percentages of industrial employment; Protestants; immigrants and single households as socio-demographic proxies; and a dummy for the

southern states Bayern and Baden-Württemberg as a proxy for history (see above). All these variables have proved to be valid instruments for the variation across West German regions in postmaterialist values, trust, individualism, and preferences for networks and markets. Because OLS and TSLS estimates are very similar, we decided to present them in only one table and not two (i.e. Columns 1–7 in Table 5 are very similar to OLS).

Table 5 shows that – controlled for other determinants of regional economic development – political networks had a negative impact on regional growth in the period 1995–2002 and positive attitudes towards markets had a positive impact. An interpretation of the first relationship may be that too much political networking leads to rent-seeking activities and, therefore, to lower economic growth, an argument brought forward in the newer social capital literature (e.g. Grootaert and van Bastelaer, 2002). Now trust also indicates a positive influence on regional economic development, at least at a 10 percent level of significance. Neither postmaterialist values nor civic networks show any significant impact on regional economic development, contradictory to what could have been expected from social capital literature. The results are robust to the inclusion of all additional control variables from the Z-vector.

A regression on economic growth with the cluster types A and B shows similar results. In the German regions of type A such as, for example, Bremerhaven, Dortmund and Siegen that combine strong political networks with distrust and weak market preferences, annual economic growth was on average 1 percent lower in the period 1995–2002 than in the type B regions such as, for example, Augsburg, Lüneburg and Trier. The influence of social capital patterns on economic development in West German regions is therefore not only statistically but also economically significant. The regions with a more ‘welfare and corporatist’-oriented social capital, characterized by strong political networks and weak market preferences, have lower growth rates than the more ‘managerialist’ regions with strong market preferences and weak political networks (compare Pierre, 1999).⁶

Conclusions

If we sum up the results of the growth regressions against the background of the principal component and cluster analysis, we find empirical evidence for both hypotheses outlined in the theoretical part. On the basis of a data set for 74 West German regions (‘Raumordnungsregionen’), we were able to confirm our first hypothesis that trust and postmaterialist values not only combine with preferences for networks but also with other governance modes. In a principle component analysis of a cross-regional data set of 40 social capital variables, no dominant component consisting of postmaterialist values, trust, and networks shows up, as would have been expected from traditional social capital concepts. Instead we find six components that can be interpreted as postmaterialist values, political networks, civic networks, trust, preferences for markets, and individualism. Therefore, we consider disentangling the governance and norm component of social capital as a useful heuristic for respective statistical analysis.

With regard to regional economic development, only trust and preferences for markets seem to have a positive impact, while corporatist political networks show a negative impact. The latter finding supports theoretical arguments that some forms of networking can lead to rent-seeking activities and therefore to lower economic growth. While the assumption that it is fruitful to analytically differentiate the components of postmaterialist values, trust, and governance modes is backed by the estimations, with regard to regional economic development the second hypothesis is not corroborated entirely: the six components combine in two dominant patterns across West German regions, one of them positively related to economic growth, the other negatively. These patterns are different from the predictions based on the traditional social capital concept. The growth-enhancing, more managerial type consists of strong preferences for markets which include a shared acceptance of social inequalities and inclinations to competition and privatization, but also some trust and preferences for civic networks. In contrast, the second more

welfare and corporatist-oriented type is characterized by shared postmaterialist values as well as a strong regional inclination for social equity, the preferred governance modes are state intervention (i.e. hierarchy) as well as corporatist political networks. It is within these latter regions that annual economic growth was on average 1 percent lower in the period 1995–2002 than in the first type. At least for the economic development of a region, the mix of values and governance preferences is therefore of notable importance.

Further research should: (a) extend the analysis to a more disaggregated regional level (i.e. functional urban regions) with a spatial correlation

model; (b) go beyond the level of German regions (i.e. on the European level) to check the robustness of our results; and, importantly (c) investigate why the presented correlations indicate that the impact of West German social capital patterns on happiness may be different from the impact on economic growth. Regional GINI-coefficients as an endogenous variable may also be a very interesting object to look at. Finally, we suggest that an analysis of concrete policies based on our map of regional patterns of social capital will enhance the knowledge about the causal relationships of social norms, preferences for governance modes, and policies.

Appendix

Appendix 1 Principle component analysis for 74 West German regions^a

Component	Original Eigenvalues			Rotated sum of squared loadings		
	Total	% of Var.	Cumulated	Total	% of Var.	Cumulated
1	6.208	17.244	17.244	5.421	15.060	15.060
2	3.756	10.432	27.676	3.497	9.715	24.775
3	3.371	9.364	37.040	3.396	9.435	34.209
4	2.674	7.429	44.469	3.276	9.099	43.308
5	2.592	7.200	51.669	2.708	7.522	50.830
6	2.294	6.374	58.042	2.597	7.213	58.042
7	1.538	4.273	62.315			
8	1.463	4.064	66.380			
9	1.343	3.730	70.109			
10	1.167	3.241	73.351			
11	1.028	2.855	76.205			
12	0.982	2.727	78.932			
13	0.782	2.171	81.103			
14	0.709	1.968	83.072			
15	0.678	1.884	84.955			
16	0.624	1.732	86.688			
17	0.562	1.560	88.248			
18	0.511	1.419	89.666			
19	0.477	1.324	90.990			
20	0.399	1.108	92.098			
...			
39	0.030	0.070	99.998			
40	0.001	0.002	100			

^a Rotation with Varimax and Kaiser–Normalization. The rotation converged after 134 iterations. Factors with Eigenvalue < 2 are neglected.

Appendix 2 Rotated matrix of components (factor loadings > 0.4)*

Name	Comp. 1	Comp. 2	Comp. 3	Comp. 4	Comp. 5	Comp. 6
trust1				0.735		
trust2				0.755		
trust3				0.402		-0.496
trust4				0.765		
trust5				0.667		
trust6			0.631			
trust7			0.602			
trust8			0.693			
trust9	-0.456				0.505	
trust10				0.486		0.462
pmat1	0.620			0.425		
pmat2	0.407	0.455			-0.451	0.414
pmat3	0.618					
pmat4	0.609					
pmat5	0.570					
pmat6	0.548					
pmat7	0.480					
pmat8						0.638
pmat9						0.731
CDUCSU	-0.754					
SPD		0.889				
Green		0.402				
FDP		0.545				
PDS	-0.696					
hierarch1	-0.840					
hierarch2					-0.642	
hierarch3	-0.551					
market1					0.581	
market2					0.460	
market3		-0.448				
market4					0.430	
market5					0.767	
market6					0.741	
market7					0.818	
network1			0.604			
network2			0.495			
network3			0.771			
network4			0.539			
network5		0.868				
network6		0.656				

* Principle component analysis with Varimax and Kaiser-Normalization for 74 West German regions.

Appendix 3 Factor values and cluster type for 74 West German regions

	Post-materialist values	Political networks	Civic networks	Trust	Markets	Individualism	Cluster ^a
Aachen	0.03	0.49	0.19	-0.14	-0.21	0.53	A
Allgäu	-0.38	-1.62	-0.15	-0.24	1.28	1.05	B
Arnsberg	-1.25	0.31	-2.21	1.12	-0.69	1.93	D
Augsburg	-0.48	-1.19	-0.47	-1.11	1.06	1.09	B
Bayerischer Untermain	0.00	-1.34	1.39	-0.49	-0.43	-0.05	B
Bielefeld	0.63	0.39	-0.45	0.51	-0.81	-0.44	A
Bochum/Hagen	1.04	0.56	-1.01	-0.97	-0.29	0.03	A
Bodensee-Oberschwaben	-0.57	-1.46	0.76	0.01	-0.60	-0.59	B
Bonn	0.72	1.27	-1.68	1.41	0.74	-0.16	C
Braunschweig	0.66	0.45	-0.19	-0.47	-0.65	0.29	A
Bremen	2.44	-0.22	-0.34	2.59	0.90	2.68	D
Bremen-Umland	1.05	-0.44	-0.29	-1.29	1.28	-0.05	A
Bremerhaven	0.14	1.07	0.25	-1.15	-0.83	-0.57	A
Donau-Iller	-0.35	-1.72	-1.09	-0.21	-0.78	-0.55	A
Donau-Iller	-1.81	-1.13	-3.33	0.99	1.41	-0.47	C
Donau-Wald	-1.91	-0.71	-0.34	-1.41	1.69	0.68	B
Dortmund	1.45	1.19	-0.26	-0.62	-0.09	-0.40	A
Duisburg/Essen	1.41	0.19	-1.18	-1.15	0.00	0.16	A
Düsseldorf	1.08	-0.57	-0.95	-0.70	-0.14	0.10	A
Emscher-Lippe	0.90	1.32	-1.28	-2.43	0.35	0.00	A
Emsland	-0.91	-0.27	-0.14	1.27	-0.84	0.75	D
Franken	-0.48	-0.50	0.24	-0.33	-0.62	-0.67	A
Göttingen	0.63	0.67	1.35	-0.45	-0.55	0.12	A
Hamburg	2.42	-0.83	-0.10	2.08	1.52	2.31	D
Hamburg-Umland-Süd	0.12	-0.35	0.29	0.05	0.57	0.30	B
Hannover	1.39	0.25	0.38	-0.56	-0.34	0.87	A
Hildesheim	0.48	0.90	0.05	-0.71	-1.05	-0.31	A
Hochrhein-Bodensee	-0.10	-1.02	0.05	-0.81	-0.30	0.02	A
Industrieregion Mittelfranken	1.02	-0.75	1.47	-0.75	0.41	-0.61	B
Ingolstadt	-1.00	-0.38	1.91	-0.06	0.50	0.52	B
Köln	1.33	0.07	-0.05	-0.34	-0.12	-0.59	A
Landshut	-1.55	-0.43	-0.53	0.09	0.87	0.37	B
Lüneburg	0.18	0.56	0.40	0.46	2.90	0.06	B
Main-Rhön	-1.86	0.39	0.76	0.63	-0.50	0.62	B
Mittelhessen	-0.21	1.28	0.43	-0.56	0.11	0.36	A
Mittelrhein-Westerwald	-0.28	0.48	-0.62	-0.47	-0.38	0.21	A
Mittlerer Oberrhein	0.19	-0.64	-0.64	0.00	-0.49	0.49	A
München	0.81	-1.23	-0.16	0.58	1.17	0.15	B
Münster	-0.13	0.41	0.39	0.32	-1.22	0.93	A
Neckar-Alb	0.73	-1.22	0.30	-0.66	-0.91	-1.36	A
Nordhessen	0.39	2.05	1.21	-0.50	-0.65	0.51	A
Nordschwarzwald	0.18	-1.37	-1.13	-2.11	-0.53	-0.25	A
Oberfranken-Ost	-1.50	0.06	-1.60	0.33	-1.13	-0.88	A
Oberfranken-West	-0.99	-0.41	0.49	0.79	0.35	-1.53	B
Oberland	-0.72	-0.22	3.12	1.51	1.76	-0.80	B
Oberpfalz-Nord	-1.81	1.59	0.18	0.19	1.58	-0.96	B
Oldenburg	0.29	0.13	0.39	0.20	-0.67	0.16	A

(continued)

Appendix 3 (continued)

	Post-materialist values	Political networks	Civic networks	Trust	Markets	Individualism	Cluster ^a
Osnabrück	-0.17	-0.12	0.16	2.40	-1.90	1.70	D
Ost-Friesland	0.45	0.45	-0.60	-0.94	1.37	-0.99	A
Osthessen	-0.98	1.20	-1.21	-0.70	1.04	1.29	A
Ostwürttemberg	-0.51	-0.94	0.10	0.48	-2.07	0.02	A
Paderborn	-1.30	0.35	-1.01	-0.40	-1.82	1.05	A
Regensburg	-1.19	-1.24	0.12	-0.13	1.03	0.30	B
Rheinhausen-Nahe	0.28	0.97	-0.69	-0.24	-1.00	0.32	A
Rhein-Main	0.94	-0.17	-0.51	-0.42	-0.36	0.88	A
Rheinpfalz Ludwigshafen	-1.06	1.75	-0.12	1.35	-0.80	-0.42	A
Saar	-0.30	4.09	0.78	-0.56	1.14	0.10	A
Schleswig-Holstein Mitte	1.41	-0.13	0.75	1.48	-0.87	-0.65	A
Schleswig-Holstein Nord	-0.11	0.08	-0.25	-0.52	2.03	0.92	B
Schleswig-Holstein Ost	0.96	0.01	1.19	-0.01	1.39	-1.74	B
Schleswig-Holstein Süd	0.59	-0.12	0.47	-0.09	0.14	0.35	A
Schleswig-Holstein Süd-West	0.09	0.26	1.24	1.22	-0.98	0.64	A
Schwarzwald-Baar-Heuberg	-0.63	-0.83	0.47	-1.43	-0.98	-0.48	A
Siegen	-0.68	0.22	0.64	-0.25	-0.84	-1.03	A
Starkenburger	0.82	0.33	0.10	-0.04	-1.02	-0.60	A
Stuttgart	1.19	-0.83	-0.31	-0.03	-0.55	-1.23	A
Südheide	0.25	-0.45	0.53	-0.24	0.63	-0.25	B
Südlicher Oberrhein	0.57	-0.86	1.32	0.54	-0.69	-0.08	B
Südostoberbayern	-1.15	-0.86	1.17	0.66	0.49	0.17	B
Trier	-1.66	0.72	0.44	0.40	-0.83	0.81	A
Unterer Neckar	1.00	-0.51	-2.13	2.67	0.28	-4.31	C
Westmittelfranken	-0.61	-1.17	1.32	-1.10	-0.16	-0.08	B
Westpfalz	-0.62	1.79	-0.27	1.57	0.52	-2.22	C
Würzburg	-1.02	-0.05	0.48	-0.10	0.16	-0.49	B

Note: ^aThe regions were clustered according to their factor values by cluster analysis. Type A marks regions with strong postmaterialist values and political and networks as well as weak civic networks, trust, and preferences for markets. Type B is complementary to Type A. Type C marks regions with strong trust, market preferences, and political networks as well as weak civic networks and individualism. Type D marks regions with very strong trust, postmaterialist values, and individualism.

Notes

¹ Ostrom's work triggered a whole number of similar case-studies in different countries and on different policy fields. Grootart and van Bastelaer (2002), for example, is a collection of different studies.

² Various categories are used: Picciotto (1997), for example, distinguishes between hierarchy (loyalty), markets (exit), and participation (voice); and Hollingsworth (2000) between associations, private hierarchies, state, market, communities, and networks. Since we measure regional preferences for governance modes in the following section with survey data, overly sophisticated categories would not be helpful. Habitual language usually links governance automatically to certain sectors: competition to free

market, hierarchy to bureaucratic states, and cooperation to civic networks. Therefore, we decided to distinguish only between three governance modes: hierarchy, markets, and networks (cf. Pierre and Peters, 2000: 14–22).

³ This does not mean that micro data are not useful in social capital research. If we are, for example, interested in the determinants of personal beliefs (which might then become shared values), micro data have to be used.

⁴ The indicator for the number of manifestations (pmat4) is constructed on the basis of a research project called 'Protestereignisse in der BRD 1950–1993'. The data are a collection of local, regional, and national manifestations which were published in the leading newspapers in Germany. To avoid bias with regard to national manifestations mostly taking place in the capital or other

central cities, we concentrated on local and regional manifestations per 1,000 inhabitants in the period 1980–93. To increase data quality at the cost of less information, we categorized the data in five quintiles from few manifestations to many manifestations.

- ⁵ To what extent regional decisionmakers indeed follow these preferences in the population for certain governance modes is an open question. Public choice theory would be more optimistic here, regulation theory more pessimistic. Since we do not have quantitative data on the real usage of governance modes, we have to use preferences as a second-best proxy anyway.
- ⁶ This distinction seems to be important only with regard to economic development; with regard to happiness, the two groups show no significant differences.

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