

Blume, Lorenz; Sack, Detlef

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Regional Preferences for Hierarchies,
Markets, and Networks:
Exploring Social Capital Data for Germany

von

Lorenz Blume
Detlef Sack

Nr. 85/06

Volkswirtschaftliche Diskussionsbeiträge

Regional Preferences for Hierarchies, Markets, and Networks: Exploring Social Capital Data for Germany[#]

Lorenz Blume*

and

Detlef Sack**

Abstract:

Social capital is often defined as consisting of trust and post materialist values on the one hand, and social networks on the other. From an institutionalist point of view this concept is not convincing. Norms (i.e. informal institutions) can combine with different governance modes, not only with networks. The regional governance literature distinguishes between at least three governance modes, hierarchies, markets, and networks, each having its own advantages. This paper examines how regional preferences for these modes are related to trust and post materialist values. A principle component analysis of 48 social capital indicators for 74 West German regions shows that trust and post materialist 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. These types are different from the well-known Italian patterns described by Robert Putnam in his seminal work. In the period 1995-2002, annual economic growth was on average one percent higher in regions that have combined trust with strong preferences for markets and weak political networks than in opposite regions.

Key words:

Markets, Hierarchies, Networks, Social Capital, Regional Governance

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^{*} Associate Professor; Economics Department, University of Kassel, Nora-Platiel-Str. 4, D-34127 Kassel, Germany; Fon: +49-561-804 2861, Fax: +49-561-804 2818 e-mail: blume@wirtschaft.uni-kassel.de.

^{**} Associate Professor; Political Science Department, University of Kassel, Nora-Platiel-Str. 1, D-34127 Kassel, Germany; Fon: +49-561-804 3163, e-mail: desack@uni-kassel.de.

1 Introduction

Since J.S. Coleman's *Foundations of Social Theory* (1990) a growing body of research concentrates on the effects and causes of differences in regional and national social capital. According to Panebianco (2003), the number of papers in the ISI web of science with the term "social capital" in the title has increased from 6 in 1993 to 148 in 2002. Research in social capital still has to deal with some widely recognised shortcomings. The definition of the concept is still too vague, especially with regard to the relation of its "individual" or "norm" component and its "structural" or "network" component (Portes, 1998, Streeck, 2002). The micro foundation of the concept is just emerging (Fehr et al., 2005) and not yet linked sufficiently to the broader literature. Until now empirical research is concentrated on the beneficial effects of social capital, either in case studies (Ostrom, 1990) or in a cross country frame (Knack and Keefer, 1997). Studies using quantitative methods on the level of regions (Tabellini, 2005) or deal with the determinants of social capital (Glaeser et al., 2001) are still in short supply. Empirical research on every level is confronted with severe operationalization and data problems. This paper addresses some of these shortcomings both from a theoretical and an empirical perspective.

This study looks at the "individual" or "norm" component of social capital and examines the relationship between this component and certain governance modes (hierarchies, markets, networks) as well as their economic outcomes on an aggregate, i.e. regional level. We follow the mainstream definition in characterizing the "individual" or "norm" component of regional social capital as trust and postmaterialist values (i.e. political interest, participation, self-determination). However, most of the mainstream concepts fail to explain reality when they link trust and post materialist values automatically and solely to networks. For example, the definition of Woolcock (2001) defines social capital as "norms and networks that facilitate collective action" (p. 70). From an institutionalist point of view norms (i.e. informal institutions) that facilitate collective action could combine with different governance modes (e.g. markets, hierarchies), not only networks. Reality may therefore show a variety of social capital patterns. The central hypothesis developed in this paper is twofold: (i) Central components of regional social capital such as trust and post materialist values not only combine with networks but also with other governance modes. (ii) Regions vary not only in "bad" and "good" social capital but offer more than one beneficial mix of norms and governance modes with regard to economic development. The empirical part of the paper provides evidence for this hypothesis using a data set of 48 variables representing

trust and post materialist values as well as preferences for hierarchies, markets, and networks. 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 paper is organized as follows. In the next section, our institutionalist view on social capital is presented in more detail. Section three contains a lot more detailed discussion of the data than usual since a new data set for German regions is presented with some variables that were not available on the regional level until the present day. The estimation approach and its results are presented in section four. Section five concludes.

2 Social Capital from an Institutional Perspective

Our research interest derives from the ongoing debate about local and regional differentiation in the age of globalisation (Storper, 1997, Scott, 2001). In assuming that space makes a difference for economic and social development we focus especially on the contributions of shared values and of preferences for governance modes. We propose to look at the “individual” or “norm” component of social capital first and then examine the relationship between this component and different governance modes such as hierarchies, markets and networks. In our institutionalist perspective (Hall and Taylor, 1996, Lowndes, 2002) the “individual” or “norm” component of regional social capital can be interpreted as a shared value, i.e. a synonym for the term “informal institution”. This analytical approach allows us to make use of the well defined theoretical concept of “informal institutions”.

According to North (1990), institutions “are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction. (...) In consequence they structure incentives in human exchange, whether political, social, or economic” (p.3). Institutions can be formal rules such as laws and informal rules such as norms and conventions (i.e. values being shared at least in a certain part of the society). The term institutions should only be used if breaking the rules leads to some form of sanctioning, either by a court of law in the case of formal institutions, or by other members of society in the case of informal institutions (moral suasion, social exclusion etc.). Further on we distinguish between informal institutions as norms and shared values (i.e. the “individual” or “norm” component of social capital), formal institutions, and governance modes as ways of steering. Since formal and informal institutions are widely known rules with the power to enable and constrain often

repeated social or economic interactions, they reduce the uncertainty in day-to-day social and economic life (and therefore the so called transaction costs). The enforcement component of institutions can help to overcome the free-rider problem in prisoners' dilemma situations. Rules that enhance social welfare in the long term (if everyone adheres to them) may not be reliable when the advantages to be had from breaking the rules are higher for individuals in the short term. Sanctions that increase the cost for individuals to break the rules help to realize the long term welfare maximizing equilibrium.

Formal regional institutions, i.e. formal institutions with a relevant variance across regions, are hard to find in reality. Local democracy in Switzerland is one of the rare exceptions. Focusing on efficiency, this phenomenon derives from the concept of formal institutions itself. If formal rules reduce uncertainty of transactions by giving these transactions a certain order there is in general little reason to restrict them geographically. Property rights, contract enforcement, the election system, the separation of power, political rights, civil liberties and federalism are overwhelmingly national or even global public goods. To overcome the free-rider problem states have to ensure that every member of (the national) society sticks to the rules. Since the free-rider problem is hard to overcome in large groups without any formal sanctions (i.e. the conditions for self-interest maximizing *homines oeconomici* are much more favourable), formalization reduces social costs in these cases.

While regional variance in formal institutions is an exception, the opposite may be true for informal institutions. If conventions and norms are heterogeneously spread in a society, there is a great probability that they are scarcely formalized. In small groups that are characterized by reciprocity and a high possibility to meet other members of the group, again, free-riders can be 'sanctioned' informally. In such small groups prisoners' dilemma situations are often repeated and people learn to cooperate and build up reputation (Bolton and Ockenfels, 2000). They often prefer trust as convention to structure social and even sometimes economic transactions (Milgrom et al., 1990, Greif, 1993). If such transactions based on trust and reciprocity become formalized, efficiency is reduced and not enhanced (Fehr and Gächter, 2000).

The empirical findings of Ostrom (1990) and Putnam (1993, 2000) on the regional level support this kind of microeconomic arguments. 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 on statistical proxies representing the civic community, the 'institutional' performance as well as the local government performance. He identifies two types of regions: One in which post materialist values, trust and civic networks are closely linked and the "community values solidarity, civic engagement, cooperation, and honesty" (Putnam, 1993: 115). Because of "horizontal civic bonds" these regions are characterised by a measurable economic strength (Putnam, 1993: 181). On the contrary, some Italian regions are shaped by "personal dependency", "private greed", and corruption (Putnam, 1993: 115). Interestingly, Putnam showed not only the counter-example, he, secondly, introduced a dichotomy in regional differentiation that strongly influenced the debate about regional variance: "Italy's civic split between North and South" (Putnam, 1993: 184), one may assume the 'good' and the 'bad' ones. According to Putnam, social capital in the first kind of regions results in a stable self-enforcing social equilibrium with high levels of collective well being, while the second kind of regions remain locked in a stable but inferior Nash-equilibrium. With regard to regionally shared norms and values that are welfare enhancing, both, Ostrom and Putnam, name trust and post materialist values in the sense of political interest, participation, and self-determination.

These theoretical arguments indicate that the variance of norms not formalized in laws will be more cross regional than cross country. We follow Putnam that regions may separate into two groups with regard to trust and post materialist values. Due to geography, demography or history, people in a region can be relatively trustful or more dominated by post materialist values compared to the national average. However, we question that these norms automatically cluster with preferences for networks. The term social capital, in general, solely refers to collective actions in a non-market and non-state form. It is therefore defined by a norm and a network component. This argument causes two problems. First, it is not systematic, trust and post materialist values can be beneficial in markets, hierarchies and networks as, for example, Greif (1993) shows with regard to trust and markets. Second, the underlying view that non-market and non-state coordination is beneficial in any case and on every level of aggregation is not convincing. Too much "networking" can result in social exclusion and rent-seeking activities. The "social capital" of a well organised interest group will indeed foster the welfare of the members of this group, but may be harmful for non-members and

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

therefore aggregated welfare. The same argument holds true for regions that use their “social capital” for beggar my neighbour policies. To describe possible regional patterns of trust and post materialist 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 recommended.

In general, the concept of governance is used as a counterpart to the classical concept of government that defines policy solely as decision-making on public affairs by the state (Stoker, 1998, Benz, 2004). Various categories are used: Piccioto (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, too 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 (state), markets, and networks.

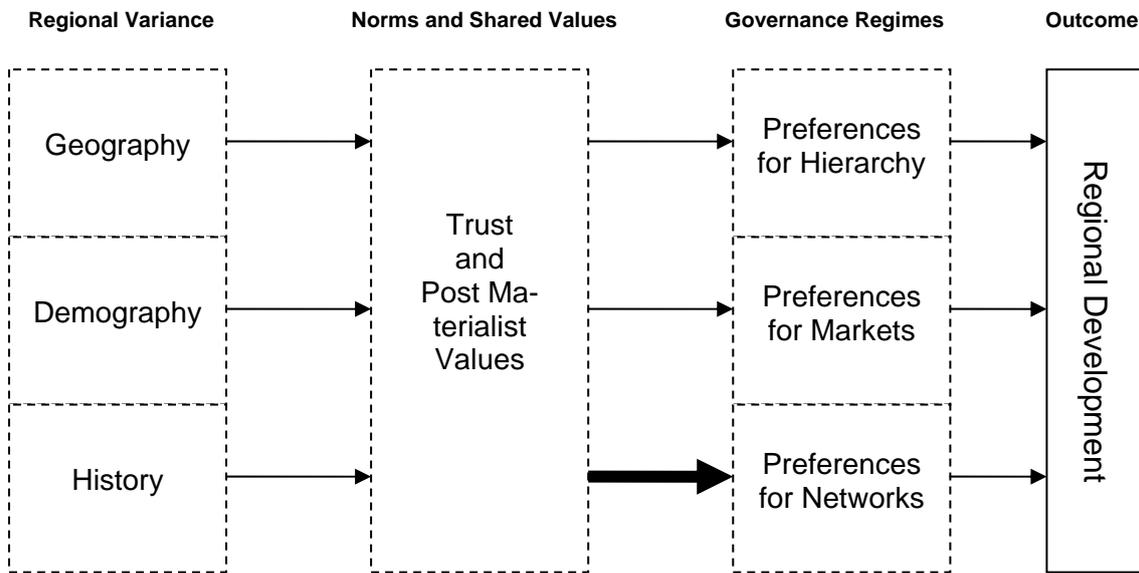
With regard to regional patterns the basic idea purported in this paper is that each of these governance modes produces certain costs and has relative cost advantages depending on the concrete tasks. While the market may produce cost advantages when used to solve allocation problems, hierarchy may be the more appropriate decision-making procedure to solve distribution problems. Empirical research indicates the relevance to think of costs as marginal costs (e.g. Barro, 1997, with regard to democracy). If a country or region still extensively uses hierarchy as decision making procedure, the relative costs of an additional “unit hierarchy” will be higher than in a country or region where hierarchies are weak. One may assume that each governance mode has cost advantages in the production of different goods. Therefore, each region may use most of the modes in a similar way: All or at least most regions will provide building laws by hierarchy (i.e. the public administration), private goods by the market, and club goods such as sport activities by social networks. However, there are also examples where different decision procedures can be used depending on the regional preferences for a certain governance mode. A local swimming pool, for example, can be provided by local authorities, an association, or a private company. Cleaning the streets can be up to the state, the neighbourhood or private firms. There is leeway for at least some variation in the use of hierarchies, markets or networks. Especially the “attitude” of a region towards state interventions may differ from region to region. There may be

regions that prefer to provide most of the local public and club goods by the state while other regions use more deregulated forms such as public-private partnerships.

These theoretical considerations are backed by conceptual proposals that present a typology in which trust, post materialist values, and networks are not automatically linked and, therefore, a more differentiated regional variance is suggested. 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: 377-389). The local arrangements, he suggested, are characterized (1) by a managerial orientation with efficiency-oriented as well as social exclusive values and a market-oriented governance mode, (2) by a corporatist orientation with strong emphasis on values such as distribution and social inclusion with a rather network oriented understanding of guiding and steering, (3) by a growth orientation with strong materialistic values and a governance mode that is interactive, network-oriented with regard to company-state-relations, but exclusive to citizens, and, finally, (4) a regional welfare model with strong emphasis on equity and social inclusion and a state-oriented governance mode. Such a typology (compare also DiGaetano and Strom, 2003) challenges the findings of Putnam 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 of this paper drawing on the theoretical considerations is twofold: (i) regional differences in preferences for hierarchy, markets, and networks combine with trust and post materialist values in various forms and (ii) there are more than two regional types of social capital with beneficial outcomes (figure 1).

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

Figure 1: Possible Regional Patterns of Social Capital

Source: Own illustration. The bold arrow represents the traditional definition of regional social capital.

3 Operationalization of the Theoretical Concept

Since East Germany faced fundamental institutional changes after the German unification 1990 we restricted our analysis to West Germany. Because official statistics hardly provide any useful social capital indicators we rely mostly on survey data. To increase data quality we combine many indicators from different sources. Table 1 describes the main sources used in this paper. The number of cases differs to a great extent. While the “Allgemeine Bevölkerungsumfrage der Sozialwissenschaften” (ALLBUS) and the „Sozioökonomische Panel“ (SOEP) both have slightly above 10.000 cases (for the ALLBUS these are pooled cases over the years 1994, 1996, 2000 and 2002) the telephone survey data of FORSA (“Gesellschaft für Sozialforschung und statistische Analyse”) covers a pooled amount of more than one million people.

Table 1: Survey Data for 74 West German Raumordnungsregionen (ROR)

Name of Survey	Year of Survey	Total Cases	Cases per Region (74 without Berlin)		
			Minimum	Mean	Maximum
ALLBUS	94, 96, 00, 02	12 753*	37	266	424
FORSA	1991-2002	1 421 254*	523	3097	22 972
SOEP	1996-2003	10 458	20	141	555

* Pooled for all available years.

From pure numbers the FORSA data therefore has a clear advantage. On average more than 100 cases per region for ALLBUS and SOEP is, nevertheless, not too bad either. While discussing the indicators used to operationalize our theoretical concept, data quality is examined in more detail. Since we are interested in shared values and not personal values we use aggregate measures (arithmetic mean, percentages) over all available years. Strictly speaking, ordinal scaled measures such as answers on a scale of 1 to 5 are usually treated as metric scaled to avoid loss of information.

For measuring trust ten variables were used, eight dealing more with personal trust and two with institutional trust (table 2). The latter ones could also be interpreted as being part of post materialist values since they do not refer to trust in the sense of personal reciprocity. The eight personal trust indicators (trust1-8) are all taken from the SOEP-survey in 2003.

For measuring post materialist values thirteen variables were used altogether (table 2). The political interest question (pmat1) is regularly asked in all three surveys. Since the cross regional correlations among the three surveys with regard to political interest are high, only the FORSA data is included here. The regional voter turnout (pmat2) and the percentage of divorced persons (pmat8) were taken from official statistics, the housewife quota (pmat10) from the “Nationalatlas Bundesrepublik Deutschland”, published by the “Institut für Länderkunde Leipzig” in 2004 and the Inglehardt-Index, the percentage of single-households as well as the percentage of house owners (pmat 5,9,11), from the so called “Familienatlas”, published by the “Deutsche Jugend Institut” (DJI) in 1993 and 1997. The indicator for the number of manifestations (pmat4) is constructed on basis of a research project called “Protestereignisse in der BRD 1950-1993”. The data is a collection of local, regional and national manifestations that 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 1000 inhabitants in the period 1980-1993. To increase data quality for the price of less information we categorized the data in five quintiles from little manifestations to many manifestations. The left-right scale (pmat6) is also asked by the ALLBUS survey but with regard to lower case numbers the FORSA data was selected. The indicator is highly correlated with the regional attitudes to the German left-wing party PDS and the right-wing party REP also available in the FORSA database. The variable “attitude towards abortion” (pmat7) was selected from a set of four questions in the ALLBUS survey, also asking for the attitude towards homosexuality, cannabis and not paying for public transports. All the variables are

correlated. The variables “personal faith is up to me” (pmat12) and “life is controlled by others” (pmat13) were also selected from a whole battery of questions (altogether 17) with the object to find out, if people think they can determine their lives themselves. All of the variables are again correlated².

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, 1=agree)	2.33	1.95	2.59	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 (% yes)	45.46	28.5	63.7	6.89	SOEP
trust5	People are friendly (% yes)	37.23	17.4	68.8	8.74	SOEP
trust6	Lending things to friends (1-5, 1=often)	3.35	3.06	4.35	0.23	SOEP
trust7	Lending money to friends (1-5, 1=often)	4.28	3.99	4.71	0.15	SOEP
trust8	Unlock the house door (1-5, often)	4.09	2.88	4.71	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, 1=yes)	3.15	3.02	3.27	0.05	FORSA
pmat1	Political interest (1-4, 1=strong)	2.59	2.44	2.76	0.06	FORSA
pmat2	Voter Turnout National Election 1998 %	82.46	73.83	86.83	2.45	Other
pmat3	Following the News (1-4, 1=daily)	1.44	1.33	1.61	0.06	FORSA
pmat4	Manifestations per Inhabitant (1-5, 1=little)	1.83	1.00	5.00	0.86	Other
pmat5	Inglehardt-Index (1-4, 1=postmaterialist)	2.44	1.00	4.00	0.73	Other
pmat6	Left-Right scale (1-10, 1=left)	5.03	4.81	5.28	0.11	FORSA
pmat7	Attitude towards abortion (1-4, 1=against)	2.27	1.58	3.29	0.31	ALLBUS
pmat8	Divorced persons per 100 inhabitants 1987	3.42	1.46	7.14	0.96	Other
pmat9	% of single households	29.80	19.24	46.70	4.70	Other
pmat10	% of housewives per women age 15-65	52.09	32.16	62.76	5.69	Other
pmat11	% of house owners per inhabitant	46.80	17.30	66.54	9.86	Other
pmat12	Personal faith is up to me (1-4, 1=agree)	1.90	1.49	2.21	0.13	SOEP
pmat13	Life is controlled by others (1-4, 1=agree)	3.13	2.42	3.59	0.20	SOEP

² If the four sociodemographic variables pmat8-11, which are used as proxies for preferences here, are excluded from the data set, the results of the empirical analysis presented in this paper do not change significantly.

Since we assume the relative independence of post materialist values and trust on the one hand and preferences for governance modes on the other, we identified available variables from the survey data implying that a preference will lead to factual usage. At first, steering and guiding in representative democracies should be assigned to political parties. The respective membership data is taken from the “Nationalatlas”. 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 rather supposed to be informing since their programs can be linked clearly to specific ways of steering: FDP strongly pro market, the Greens strongly pro networks, PDS strongly pro state. Secondly, the party proxy is supposed to give additional information about the willingness of people to organise in political networks. The membership in catch-all parties indicates a regional inclination to corporatist arrangements (Pierre, 1999: 380-383).

Six additional proxies were selected for the hierarchy preferences. The church attendance rate, as proposed by Putnam, and the attitude towards law and order (hierarch1,2) both measure the preference for hierarchical coordination mechanisms in an abstract form. The “socialism is a good idea” and the “good money for everyone” questions (hierarch3,4) are reflecting preferences for a strong (redistribution) state, but also imply the value of social equity. The “authoritative education” and “women working” variables (hierarch5,6) are proxies for more private hierarchies. The first one is taken from the “Familienatlas”, the second one from official statistics. A special check for data quality was possible with regard to the church attendance rate, since the same indicator is available in the SOEP, the ALLBUS and the “Familienatlas”. The indicators from all sources are significantly correlated with the worst record for the ALLBUS data.

Eight survey indicators (market1-8) 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, the positive take of entrepreneurship, self-interest and privatisation. The latter measure both civic networks (networks1,6) as well as political networks (networks2-5). 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). For party membership, trade union membership, and civic associations membership, indicators

from a second data source were available so data quality could be checked. In sum, the newly combined set of survey data is considered to allow fruitful empirical research on social capital in German regions since it offers variables for post materialist values, trust, and governance preferences.

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	Other
spd	Membership of SPD in %	1.12	0.29	3.48	0.62	Other
green	Membership of Green party in %	0.07	0.03	0.19	0.02	Other
fdp	Membership of FDP in %	0.07	0.03	0.18	0.04	Other
pds	Membership of PDS in %	0.06	0.01	0.12	0.03	Other
hierarch1	Church attendance (1-5, 1=very often)	3.66	2.97	4.13	0.28	FORSA
hierarch2	Importance law and order (1-7, 1=no)	5.67	5.05	6.22	0.24	SOEP
hierarch3	Socialism good idea (1-4, 1=agree)	2.70	2.13	3.48	0.23	ALLBUS
hierarch4	Money for everyone (1-4, 1=agree)	2.39	3.18	1.84	0.26	ALLBUS
hierarch5	Authoritative Education (1-4, 1=no)	2.57	1.00	4.00	0.93	Other
hierarch6	% of women working	40.13	35.27	43.58	1.93	Other
market1	% in favour of less state activity	13.20	2.25	29.60	5.03	SOEP
market2	% in favour of privatising social security	21.15	6.70	52.80	7.14	SOEP
market3	Pay for health services (1-4, 1=agree)	3.21	2.87	3.58	0.14	SOEP
market4	Probability to become an entrepreneur %	10.05	0.00	38.00	7.04	SOEP
market5	Inequality motivates (1-4, 1=agree)	2.27	1.79	2.92	0.19	ALLBUS
market6	Inequality acceptable (1-4, 1=agree)	2.42	2.00	2.84	0.18	ALLBUS
market7	Social differences justified (1-4, 1=agree)	2.70	2.17	3.14	0.19	ALLBUS
market8	Importance self-interest (1-7, 1=low)	4.70	3.65	5.47	0.32	SOEP
network1	Voluntary work (1-4, 1=weekly)	3.45	2.80	3.71	0.17	SOEP
network2	Political associations (1-4, 1=weekly)	3.87	3.66	3.95	0.06	SOEP
network3	Party membership %	2.48	1.07	5.84	0.79	Other
network4	Trade union membership %	24.66	14.77	37.90	4.73	FORSA
network5	Environmental group membership %	4.25	0.00	12.50	2.54	SOEP
network6	Civic associations membership %	39.59	15.70	67.40	9.78	ALLBUS

4 Empirical Results

To test our hypothesis that network preferences and social capital norms are not simultaneously spread among regions, we conducted a principle component analysis with all 48 variables listed in table 2 and 3. The results of the principle component analysis are shown in appendix 1, 2, and 3. To control the interpretation of the components, we correlated the factor values of the most relevant 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 households taken from the “Familienatlas” and the number of patents taken from the “Patentatlas” (Greif 1994), all background data stems from official statistics. Principle component analysis was chosen to identify independent components not correlated among each other but, nevertheless, we conducted a right-angle rotation (Varimax with Kaiser-Normalization) to ease the interpretation of the components. From a mainstream perspective on social capital one should expect from this principle component analysis that all or at least most of the variables in table 2 (trust1-8 and pmat1-13) should cluster with the network variables (network1-6) in one component. However, this result does not show up as we had expected on basis of our conceptual approach.

The first principle component only explains around 17 percent of the variation in the data. Basically, it separates those regions with little post materialist values from those with strong post materialist attitudes. We therefore refer to it as post materialist values further on. All the variables pmat1 to pmat11 have factor loadings of 0.3 and more on this component. The signs of the factor loadings have a direction that causes the component to represent “low post materialist values”. The table in appendix 3 shows the regional variation, Hamburg as the leading region with negative factor values (i.e. strong post materialist values) and Main-Rhön as the leading region with positive values (i.e. little post materialist values). The only two post materialist indicators not strongly connected to this component are pmat12 and pmat13, representing preferences for a self-determined life. Bivariate correlations with other regional characteristics show that the component is highly correlated to geography. Post materialist values in the German population such as political interest, voter turn out, 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 also explains the negative correlation of the component with the “number of single households” and “divorced persons” as well as the positive correlation with the “number of house owners” and

“housewives per women in the age of 15 to 65”. Post materialist values are higher in agglomerated areas, in areas with higher education, with higher income, a small industrial sector and more protestants. The membership of CDU/CSU and the PDS is higher in regions with low post materialist values while the membership of the Greens is on average lower. Altogether six variables not originally designated to the pmat variables set have factor loadings with 0.3 and more on the component. In regions with relatively low post materialist values people lend less money to friends (trust7), have more trust in official institutions (trust9), attend more regularly the church (hierarch1), agree with authoritative education (hierarch5), do more voluntary work (network1) and participate in civic associations (network6). The correlations with the two trust variables are not surprising. The correlation with trust7 is rather low and distrust in institutions such as the church, the public administration and the judiciary (trust9) can also be interpreted as being part of post materialist values as mentioned before. Preferences for hierarchies in the sense of “more state” (hierarch2-4) are not related to the component.

In particular it is striking that the absence of post materialist values is positively related to the participation in civic networks (voluntary work, sports, music, and other cultural associations). This finding is exactly the opposite one would have expected from a social capital definition that treats post materialist values and each form of social networks as one side of the same coin. At least in German regions less post materialist values are related to on average more civic networking. Political networks are, however, not related to the component. With regard to the background variable “percentage of rural population” this finding makes intuitive sense. In rural areas with less post materialist values civic networks may be a substitute for certain cultural infrastructure only available in the agglomerations (concerts, theater, big sport events, nightlife and so on).

The second principle component explains another 9 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 (network3,4). Party membership – especially in the SPD – and trade union membership are closely related to this component but not membership in civic organisations and environmental organisations. The voter turnout is above the average (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 innovative milieus (table 4). The people in these kinds of regions have redistributive preferences (hierarch4, market3) and conservative values with regard to women (pmat10, hierarch6). The Saar region is the

region in West Germany with the strongest political networks, the region Bodensee-Oberschwaben with the weakest. Besides the voter turnout and the housewife quota this component is completely independent of trust and post materialist values, i.e. it could have both high and low values in regions with strong, respectively low social capital norms.

The third principle component explains another 7 percent of the variation in the original data. It separates those regions with little civic networks from those with strong civic networks. The variables network1,2,5 and 6 have factor loadings of 0.3 and more on this component, i.e. it explains the bigger part of the variation in civic networking not explained by the first principle component. Only the traditional political networks represented by the second are not related to this third component. We therefore call it civic networks further on. The signs of the factor loadings have a direction that makes the component represent “little civic networks”. According to this factor the region Donau-Iller has the weakest civic networks in West Germany and the region Oberland the strongest. Contrary to the political networks component this component is not independent of social norms, it is related to distrustful behaviour. The people in regions with little civic networks more often agree to the sentence “one has to be careful with strangers” and rarely lend things as well as money to friends or leave the door unlocked. In spite of the fact that it is not related to any post materialist values this combination of a norm and a network aspect brings this component close to the traditional social capital concept. Little civic networks in the sense of this component are again related to agglomerations and stronger civic networks more to rural areas (table 4).

The fourth principle component explains another 7 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. The signs of the factor loadings have a direction that makes the component represent “distrust”. Not taking a low correlation with little political interest into account none of the other variables are strongly related to this component. This means that a whole 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.

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	Redistribution	Markets	Defeatism
	(-)	(+)	(-)	(-)	(+)	(+)	(+)
Rural Population in %	0.676**	-0.122	-0.226(*)	-0.035	0.001	0.312**	-0.068
Population in agglomerations %	-0.449**	0.058	0.199(*)	0.119	-0.118	0.042	0.085
Population over the age of 65 %	-0.413**	0.081	-0.115	-0.071	0.173	0.242*	-0.046
Tax payers with high income %	-0.545**	-0.119	0.123	0.012	0.030	-0.133	0.260*
Academics in % of population	-0.659**	-0.182	0.028	-0.195(*)	-0.093	-0.075	0.077
Immigrants in % of population	-0.524**	-0.277*	0.291*	0.083	0.002	-0.266*	0.093
Employees in the industrial sector %	0.434**	-0.178	0.166	0.239*	-0.041	-0.341**	0.167
Patents per 10.000 inhabitants '92-94	-0.028	-0.449**	0.003	-0.008	-0.011	-0.223(*)	0.262*
Protestants in % of population	-0.433**	0.193(*)	-0.152	0.088	0.162	-0.085	0.222(*)
Growth of Output per Worker '95-'02	0.186	-0.406**	-0.160	-0.138	-0.046	0.274*	-0.013
Total Factor Productivity 2002	-0.431**	-0.306**	0.192(*)	-0.125	0.015	0.017	0.081
Happiness of people 2000-2003	-0.088	0.134	-0.112	-0.407**	-0.053	-0.155	-0.264*

** , * and (*) show that the Bravais-Pearson Correlation Coefficient is significant on the 1,5 or 10 percent level, respectively. (-) and (+) indicate that the factor loadings are negative/positive with regard to the factor label, i.e. post materialist values (-) means that people in these regions have little post materialist values.

The fifth principle component explains around 6 percent of the variation in the original data. People in regions characterized by this component distrust the official institutions (trust9) and have strong preferences for state hierarchy and markets (hierarch3, market2,5,6,7). Relatively to other regions people assume more often that socialism was a good idea, privatising social security is a bad idea and strong social differences are not acceptable. However, the loadings as well as the double meaning of the items suggest

that this component is rather as a value based in focusing on social equity and redistribution than as a clear indicator for hierarchy. Therefore, we label this component redistribution further on. It is not significantly related to any of the background regional characteristics chosen in table 4. The West German region with the strongest redistributive preferences is Rheinpfalz Ludwigshafen and the region with the weakest preferences Oberpfalz-Nord.

The sixth and seventh principle component both explain around 5 percent of the variation in the original data. The sixth component represents variables that favour markets (market1,2,4). We therefore call this component markets further on. People in the more rural and deindustrialised regions with strong preferences for markets do have on average more materialist values, distrust each other but trust the government, reject law and order and less often participate in civic associations. 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 post materialist values set with regard to self-determination (pmat12,13). Since the signs of the factor loadings indicate a strong feeling that life is determined by others we call this component defeatism further on.

Nearly 60 percent of the variation in the data can be explained by these seven components, which is not too bad taken the data quality of national surveys disaggregated on the regional level into account. We decided to stop interpreting the components even below an eigenvalue of 2 since the loss of “explaining power” between factor 7 and 8 from 5.03 to 3.87 is big. The main insights of the principle component analysis are clear anyway: The selected social capital indicators for trust and post materialist values on the one hand and social networks on the other hand are far from clustering in one single principle component. Post materialist values and trust are at least partially independent components, i.e. they could have both high and low values in regions with strong respectively low social networks. Some of the interregional variations of trust combine with civic networks, but not with political networks. Post materialist values are even negatively related to some form of civic networking such as, e.g. voluntary work. Preferences for networks split into two independent components (political and civic networks). The preferences for private hierarchies are negatively related to the post materialist values component. The value social equity and the preference for state intervention are again clustered in a component independent of the others. All of this provides evidence for the first part of our hypothesis that social

capital norms do in reality not automatically correlate with networks but also with preferences for markets and hierarchies.

In examining the assumption that regional shared norms and preferences for governance modes affect the regional economic and social development, the analysis entails bivariate correlations of the seven components with three welfare indicators: economic growth, total factor productivity and happiness (table 4). The average annual growth rate of output (Bruttowertschöpfung) per worker in the period 1995-2002 is taken from official 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 (2004), 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, one can calculate the level of productivity directly from the production function. Since the influence of the central production factors physical capital and human capital-augmented labor are isolated by this method of decomposition, the remaining productivity residual can be interpreted as 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, regional economic growth is positively correlated with strong preferences for markets and the absence of political networks. Total factor productivity seems to be higher in regions with strong post materialist values and, again, in regions with not so well organised interest groups (i.e. political networks). The small negative correlation with strong civic networks is likely caused by the rural character of this

regions. The correlations with trust indicate only little influence on economic outcomes but a strong 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). We therefore conducted a linear OLS 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 qualification in 1995, the number of patents per inhabitant 1992-1994, and the percentage of inhabitants living in agglomerations. X_i is one of the seven “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 term³.

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 Bastelaer, 2002). Now trust also indicates a positive influence on regional economic development, at least at a ten percent level of significance. Neither post materialist values, nor civic networks show any significant impact on regional economic development contradictory to what could have been expected from the social capital literature. The results are robust to the inclusion of all additional control variables from the Z -vector as well as to an inclusion of all seven X -variables in one specification (the R^2 increases to 0.296 in this case).

³ Since the regions are relatively big, spatial autocorrelation was not controlled for.

Table 5: OLS-Regression on the Annual Growth Rate of Output (Bruttowertschöpfung) per Worker 1995-2002 in West German Regions (n=74)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log output per worker 1995	-7.106* (2.04)	-7.320* (2.19)	-7.127* (2.52)	-6.808(*) (1.85)	-7.163* (2.11)	-6.908* (1.98)	-6.125(*) (1.85)	-7.804* (2.31)
Investment per worker 95-00	0.121(*) (1.81)	0.123(*) (1.89)	0.133* (2.21)	0.117(*) (1.72)	0.126* (2.11)	0.122(*) (1.77)	0.092 (1.34)	0.120* (1.94)
High qualified employees %	0.002 (0.04)	-0.004 (0.06)	0.012 (0.21)	0.001 (0.01)	-0.024 (0.33)	-0.001 (0.01)	0.004 (0.07)	0.002 (0.03)
Patents per inhabitant	0.106* (2.49)	0.110** (2.78)	0.053 (1.24)	0.104* (2.43)	0.115** (2.91)	0.106* (2.47)	0.119** (3.02)	0.120** (3.37)
% urban population	0.005 (1.39)	0.005 (1.33)	0.006(*) (1.88)	0.005 (1.39)	0.007(*) (1.91)	0.005 (1.34)	0.003 (0.72)	0.005 (1.56)
Post materialist values (-)		-0.028 (0.24)						
Political networks (+)			-0.246** (3.29)					
Civic networks (-)				-0.029 (0.43)				
Trust (-)					-0.145(*) (1.60)			
Redistribution (+)						-0.028 (0.36)		
Markets (+)							0.191** (2.54)	
Defeatism (+)								-0.099 (1.09)
Constant	32.90	33.91	32.98	31.55	33.12	31.99	28.60	36.05
\bar{R}^2	0.144	0.132	0.245	0.133	0.177	0.133	0.210	0.152
SER	0.616	0.620	0.578	0.620	0.604	0.620	0.592	0.613
J.-B.	0.258	0.302	0.655	0.302	0.905	0.261	0.130	1.199

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 percent level, respectively. SER is the standard error of the regression, and J.-B. the Jarque-Bera statistic on normality of the residuals.

As a cluster center analysis shows (appendix 3) 41 regions with more or less strong post materialist values, strong political networks, weak civic networks, weak trust, strong redistribution preferences and weak preferences for markets (type A) and 26 exactly oppositional regions (type B). Only seven regions are characterized by different patterns (type C and D). The four regions of type C have very strong trust, market preferences, and defeatism as well as very weak civic networks. Type D marks three regions with very strong trust, post materialist values, and redistribution preferences as well as very weak defeatism. The first two regional types A and B are therefore clearly dominant in numbers⁴. As the bivariate correlations in table 6 show, regions of type A tend to be the more urban regions with a high percentage of rich inhabitants, immigrants and protestants. Type B marks the more rural regions with less rich inhabitants, immigrants, academics and protestants.

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 one percent lower in the period 1995-2002 than in the type B regions such as, for example, Augsburg, Lüneburg and Trier. With regard to happiness and total factor productivity neither type A nor type B shows any significant correlations. Only type D seems to have at least some relevance here.

⁴ We have looked for four regional clusters in the cluster analysis because of the findings of Pierre (1999) mentioned above, who has identified four models of Urban Governance based on case studies. Our finding of two dominant clusters therefore puts a question mark behind his categories.

Table 6: Bivariate Correlations between Regional Clusters (Type A-D) and other Regional Characteristics in West German Regions (n=74)

Regional characteristic	Region Type A	Region Type B	Region Type C	Region Type D
	n=41	n=26	n=4	n=3
Rural Population in %	-0.422**	0.570**	-0.108	-0.191
Population in agglomerations %	0.149	-0.271*	0.084	0.184
Population over the age of 65 %	-0.043	-0.030	-0.061	0.251*
Tax payers with high income %	0.220(*)	-0.284*	0.181	-0.075
Academics in % of population	0.091	-0.231*	0.160	0.148
Immigrants in % of population	0.303**	-0.410**	0.112	0.101
Employees in the industrial sector %	0.182	-0.079	-0.037	-0.224
Patents per 10.000 inhabitants 1992-94	0.059	-0.014	0.049	-0.171
Protestants in % of population	0.260*	-0.261*	-0.078	0.067
Growth of Output per Worker 1995-2002	-0.400**	0.430**	-0.084	0.062
Total Factor Productivity 2002	0.016	-0.131	0.083	0.181
Happiness of people 2000-2003	0.010	-0.045	-0.152	0.259*

The regions were clustered according to their factor values by cluster analysis. Type A marks regions with more or less strong post materialist values, political networks, and redistribution preferences as well as weak civic networks, trust, and preferences for markets. Type B is complementary to type A. Type C marks regions with very strong trust, market preferences, and defeatism as well as very weak civic networks. Type D marks regions with very strong trust, post materialist values, and redistribution preferences as well as very weak defeatism. **, * and (*) show that the Bravais-Pearson Correlation Coefficient is significant on the 1,5 or 10 percent level, respectively.

5 Conclusions

On basis of a new data set for 74 West German regions (Raumordnungsregionen) we were able to provide empirical evidence that trust and post materialist values not only combine with networks but also with other governance modes. In a principle component analysis of a cross-regional data set of 48 social capital variables no dominant component consisting of post materialist values, trust, and networks shows up as one could have expected from traditional social capital concepts. Instead we find seven

independent components that could be interpreted as post materialist values, political networks, civic networks, trust, redistribution preferences, preferences for markets and defeatism. With regard to economic development only trust and preferences for markets seem to have a positive impact, while political networks show a negative impact. The latter finding supports theoretical arguments that some forms of networking could lead to rent-seeking activities and therefore to lower economic growth. Therefore, our first assumption (i) is corroborated: It is fruitful to differentiate analytically the components of post materialist values, trust, and networks that are generally linked within the social capital literature.

The seven components combine in different patterns across West German regions, but two regional types are clearly dominant in numbers. The second part of our central hypothesis (ii) that the regional variance in Germany will offer a far more complex picture than a simple dichotomy is therefore partly falsified. However, the mix of norms and governance modes in both types of regions differs from predictions of the traditional social capital concepts (often based on the findings for Italy). One more welfare and corporatist oriented type is characterised by shared post materialist 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. In contrast, the second more managerial type consists of a shared acceptance of social inequalities and inclinations to competition, privatisation, and civic networks. It is within these latter regions that annual economic growth was on average one percent higher 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 of notable importance.

Further research should (i) extend the analysis to a more disaggregated regional level (i.e. functional urban regions) with a spatial correlation model and (ii) concentrate on geographic, demographic, and historic patterns that may help to explain the variance in social capital patterns. Therefore, the OLS-approach of this paper with regard to economic growth should be extended to an IV-approach. (iii) Since the presented correlations indicate that the impact of West German social capital patterns on happiness and total factor productivity may be different from the impact on economic growth, further research is strongly recommended here. Regional GINI-coefficients as endogenous variable are a very interesting object to look at. Research (iv) beyond the level of German regions (i.e. on the European level) may help to check the robustness of our results. Finally (v), we suggest that analysis of concrete policies based on our map

of regional variances will enhance the knowledge about the causal connections of social norms, preferences for governance modes, and policies.

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Appendix 1: Principle Component Analysis for 74 West German Regions*

Com- ponent	Original Eigenvalues			Rotated Sum of Squared Loadings		
	Total	% of Var.	Cumulated	Total	% of Var.	Cumulated
1	8.479	17.665	17.665	8.069	16.811	16.811
2	4.750	9.896	27.561	4.166	8.679	25.490
3	3.430	7.146	34.707	3.459	7.207	32.696
4	3.171	6.606	41.313	3.319	6.914	39.611
5	2.729	5.686	46.999	2.961	6.168	45.779
6	2.434	5.071	52.070	2.725	5.677	51.456
7	2.414	5.030	57.100	2.709	5.644	57.100
8	1.855	3.865	60.965			
9	1.777	3.702	64.666			
10	1.537	3.201	67.867			
11	1.417	2.951	70.819			
12	1.344	2.801	73.619			
13	1.171	2.439	76.059			
14	1.137	2.368	78.427			
15	0.961	2.003	80.430			
16	0.897	1.868	82.298			
17	0.795	1.657	83.954			
18	0.744	1.550	85.504			
19	0.622	1.380	86.884			
20	0.595	1.240	88.124			
21	0.552	1.150	89.275			
22	0.507	1.056	90.331			
...			
47	0.008	0.016	99.999			
48	0.001	0.001	100			

* 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 > 0.3)*

Name	Comp. 1	Comp. 2	Comp. 3	Comp. 4	Comp. 5	Comp. 6	Comp. 7
trust1				0.740			
trust2				-0.740			
trust3			-0.321	-0.395			0.474
trust4				0.760		0.347	
trust5				-0.656			0.367
trust6			0.640				0.383
trust7	0.359		0.603		0.324		
trust8			0.689				
trust9	0.469				-0.502		
trust10				0.495		-0.359	0.480
pmat1	0.693			0.393			
pmat2	-0.310	0.492				-0.496	
pmat3	0.628						0.407
pmat4	-0.630						
pmat5	0.677					-0.358	
pmat6	0.548						-0.306
pmat7	-0.439						
pmat8	-0.902						
pmat9	-0.877						
pmat10	0.397	0.503					
pmat11	0.832						
pmat12							0.628
pmat13							-0.697
cducsu	0.705						
spd		0.864					
green	-0.347	0.364					
fdp		0.552					
pds	0.661						
hierarch1	-0.819						
hierarch2						-0.635	
hierarch3					-0.366		
hierarch4		-0.400					
hierarch5	0.543	-0.347					
hierarch6		-0.416					0.355
market1						0.657	
market2					-0.339	0.590	
market3		0.450	0.341				-0.300
market4						0.399	
market5					0.757		
market6					0.727		
market7					0.827		
market8							
network1	-0.406		0.597				
network2			0.468				
network3		0.841					
network4		0.686					
network5			-0.763				
network6	0.321		-0.516			-0.358	

* 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

	Postmaterialist Values (-)	Political Networks (+)	Civic Networks (-)	Trust (-)	Redistribution (+)	Markets	Defeatism (+)	Cluster*
Aachen	0,03	0,72	-0,22	0,16	0,02	-0,22	-0,56	A
Allgäu	0,12	-1,66	0,11	0,33	0,18	1,33	-0,94	B
Arnsberg	1,11	0,37	2,11	-1,13	-0,51	-0,44	-1,83	A
Augsburg	0,38	-1,23	0,51	1,11	1,43	1,04	-1,11	B
Bayerischer Untermain	0,39	-1,14	-1,35	0,52	-1,19	-0,57	-0,09	B
Bielefeld	-0,47	0,35	0,38	-0,52	-0,65	-0,90	0,54	A
Bochum/Hagen	-1,05	0,66	1,14	1,06	-0,13	-0,45	-0,17	A
Bodensee-Oberschwaben	0,48	-1,83	-0,52	-0,13	0,45	-0,63	0,45	B
Bonn	-0,93	1,18	1,47	-1,32	-1,71	0,83	0,44	C
Braunschweig	-0,71	0,38	0,27	0,48	-0,32	-0,70	-0,37	A
Bremen	-2,62	-0,27	0,35	-2,58	0,78	0,49	-2,82	D
Bremen-Umland	-0,37	-0,04	-0,07	1,30	-0,12	0,91	0,32	A
Bremerhaven	-0,19	0,97	-0,31	1,20	2,01	-0,66	0,81	A
Donau-Iller	0,61	-1,63	1,13	0,13	0,94	-0,92	0,48	A
Donau-Iller	1,50	-1,10	3,35	-1,02	0,38	1,61	0,44	C
Donau-Wald	1,61	-0,79	0,47	1,36	0,00	1,93	-0,83	B
Dortmund	-1,35	1,30	0,43	0,72	-0,14	-0,33	0,11	A
Duisburg/Essex	-1,30	0,44	1,27	1,27	0,21	-0,25	-0,33	A
Düsseldorf	-1,24	-0,56	0,99	0,77	-0,37	-0,23	-0,12	A
Emscher-Lippe	-0,84	1,56	1,44	2,53	0,32	0,20	-0,31	A
Emsland	1,51	0,18	0,19	-1,38	-1,86	-0,93	-1,15	B
Franken	0,65	-0,47	-0,21	0,24	0,49	-0,62	0,63	A
Göttingen	-0,58	0,50	-1,37	0,46	0,83	-0,66	0,01	A
Hamburg	-3,08	-1,09	0,09	-1,95	0,28	1,27	-2,28	D
Hamburg-Umland-Süd	0,29	-0,07	-0,61	0,00	1,58	0,44	0,02	B
Hannover	-1,52	0,08	-0,39	0,62	0,09	-0,42	-0,78	A
Hildesheim	-0,53	0,65	-0,17	0,74	0,75	-0,96	0,61	A
Hochrhein-Bodensee	0,02	-0,98	-0,07	0,86	1,73	-0,27	0,09	A
Industrieregion Mittelfranken	-1,16	-0,91	-1,34	0,78	-2,70	0,29	0,46	B
Ingolstadt	1,18	-0,18	-1,64	-0,05	1,58	0,35	-0,99	B
Köln	-1,34	0,21	0,17	0,42	-0,65	-0,27	0,41	A
Landshut	1,50	-0,43	0,57	-0,17	0,79	0,98	-0,45	B
Lüneburg	-0,40	0,42	-0,65	-0,42	0,94	2,83	0,32	B
Main-Rhön	1,71	0,29	-0,60	-0,74	-0,08	-0,25	-0,78	B
Mittelhessen	0,24	1,25	-0,47	0,51	0,52	0,15	-0,28	A
Mittelrhein-Westerwald	0,44	0,57	0,54	0,45	-1,25	-0,27	-0,20	A
Mittlerer Oberrhein	-0,30	-0,74	0,58	0,00	-0,11	-0,48	-0,33	A
München	-1,31	-1,40	0,23	-0,50	-0,12	1,15	-0,16	B
Münster	0,42	0,56	-0,45	-0,32	-0,68	-1,23	-0,91	A
Neckar-Alb	-0,37	-1,20	-0,43	0,67	-0,73	-1,04	1,55	A
Nordhessen	-0,32	1,93	-1,24	0,45	-0,48	-0,64	-0,44	A
Nordschwarzwald	-0,07	-1,42	0,98	2,14	0,09	-0,48	0,54	A
Oberfranken-Ost	1,04	-0,41	1,70	-0,41	0,29	-0,72	0,96	A
Oberfranken-West	0,95	-0,59	-0,42	-0,87	-0,18	0,40	1,51	B
Oberland	0,30	-0,32	-3,05	-1,37	0,01	1,95	0,82	B
Oberpfalz-Nord	1,43	1,37	0,06	-0,26	-3,15	1,90	0,65	B
Oldenburg	-0,01	0,15	-0,64	-0,16	-0,51	-0,65	0,17	A
Osnabrück	0,39	-0,02	-0,27	-2,37	-0,35	-1,90	-1,61	D
Ost-Friesland	-0,03	0,72	0,49	0,89	0,34	1,12	0,94	A
Osthessen	0,89	1,18	1,32	0,55	-0,77	1,06	-1,53	A
Ostwürttemberg	0,82	-0,81	-0,01	-0,54	1,79	-2,13	-0,14	A
Paderborn	1,22	0,40	1,10	0,36	-0,78	-1,50	-1,17	A
Regensburg	1,12	-1,22	-0,05	0,09	0,47	1,04	-0,37	B
Rheinessen-Nahe	-0,23	0,88	0,49	0,22	-0,20	-0,88	-0,01	A
Rhein-Main	-1,19	-0,33	0,51	0,45	-0,42	-0,37	-0,81	A
Rheinpfalz Ludwigshafen)	0,85	1,69	0,15	-1,41	2,51	-0,52	0,45	A
Saar	0,16	3,90	-0,83	0,40	0,33	1,26	-0,03	A
Schleswig-Holstein Mitte	-1,37	-0,13	-0,83	-1,36	0,07	-0,95	0,82	A
Schleswig-Holstein Nord	-0,20	-0,07	0,09	0,58	-0,05	2,14	-0,67	B
Schleswig-Holstein Ost	-1,28	-0,23	-1,15	0,06	0,69	1,39	1,75	B
Schleswig-Holstein Süd	-0,47	0,02	-0,69	0,18	0,29	0,14	-0,09	A
Schleswig-Holstein Süd-West	0,18	0,44	-1,38	-1,20	0,13	-0,96	-0,57	B
Schwarzwald-Baar-Heuberg	0,62	-0,94	-0,39	1,37	0,14	-0,84	0,48	A
Siegen	0,93	0,46	-0,38	0,12	0,62	-0,90	0,59	A
Starkenburger	-0,46	0,56	-0,15	0,02	-0,12	-1,17	0,56	A
Stuttgart	-0,94	-0,70	0,39	0,01	-0,68	-0,83	1,07	A
Südheide	-0,11	-0,40	-0,58	0,26	1,11	0,55	0,27	B
Südlicher Oberrhein	-0,50	-0,91	-1,30	-0,44	-0,61	-0,75	0,14	B
Südostoberbayern	0,83	-0,90	-1,06	-0,61	-0,61	0,72	-0,26	B
Trier	1,57	0,70	-0,44	-0,45	0,52	-0,46	-0,80	B
Unterer Neckar	-0,93	-0,40	2,26	-2,66	-0,19	0,04	4,08	C
Westmittelfranken	0,88	-1,12	-1,40	1,06	-2,64	-0,15	0,14	B
Westpfalz	0,61	1,79	0,16	-1,63	0,54	0,64	2,35	C
Würzburg	0,82	-0,18	-0,32	0,07	-1,20	0,32	0,35	B

* The regions were clustered according to their factor values by cluster analysis. Type A marks regions with more or less strong post materialist values, political networks, and redistribution preferences as well as weak civic networks, trust, and preferences for markets. Type B is complementary to type A. Type C marks regions with very strong trust, market preferences, and defeatism as well as very weak civic networks. Type D marks regions with very strong trust, post materialist values, and redistribution preferences as well as very weak defeatism.

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