

# Are East- and West- Germany (Still) Two Different Social Capital Regimes?

A FACTOR ANALYSIS

- First Substantive Essay -

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## ABSTRACT

Germany reunified 25 years ago. In recent days, the appearance of violent xenophobic resentments in eastern parts of the country has fuelled the debate about the social differences that might still remain between east and west. The present analysis focuses on regional disparities in social capital, between East- and West-Germany. Scholars describe this gap as a result of the non-democratic past of the six *Bundesländer* formally belonging to the 'German Democratic Republic' (GDR), which lasted for 41 years. In order to compare levels of social capital, a comprehensive set of indicators from the seven waves (2002-2015) of the European Social Survey (ESS), is analysed over time and compounding determinants are investigated in a factor analysis. The results show that the east (still) lacks behind the west with respect to most, but not all, of the measures of social capital. While this gap appears to be persistent over time, a promising jointly upward trend, in recent years, can be noticed for both regions.

**Keywords:** Factor Analysis, Germany, Generalized Trust, Social Capital.

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## 1 Introduction

The case of German reunification can be perceived as a ‘natural experiment’ in social science. From one day to the other, two fundamentally different societies, a communist regime and a liberal capitalistic state, were merged together. Since this event, during the last 25 years, much effort has been put into the alignment of social and economic standards of the east to the west. Still, in terms of economic prosperity and employment, the *Neue Länder* (former GDR federal states) are lacking behind. More alarmingly, recent expressions of hostility towards foreigners, such as Anti-Islam protests, like the PEGIDA<sup>1</sup> movement [Noack, 2015] and acts of xenophobic violence [Dillon, 2015] have been occurring most dominantly in eastern parts of Germany. These disturbing observations might be an indicator that the ‘two German societies’ are still very unlike in their civil capabilities. Social capital, is believed to explain distortions of civil society Fukuyama [2001] and has been linked to radicalisation and extremism, once lacking [Putnam, 1995]. This work therefore aims to deliver an empirical comparison of a comprehensive set of indicators of social capital between East- and West-Germany.

At the same time, the study addresses the shortcomings that are associated with the ambiguous use of different social capital measures. The investigation whether Germany is (still) divided into two social capital regimes, along the borderline of the former GDR, requires a diligent consideration of the many-sided nature of social capital. A factor analysis is applied to similarities and differences between various indicators of social capital.

The work, first, reflects on the history of the two German states with respect to their social capital, then, it elaborates on the current debate about adequate empirical measurements of social capital. Secondly, the ESS data source is presented and factor analysis and other methods applied are explained. Thirdly, empirical findings are presented. The last section concludes. Results show that the selection of indicators can ideally be grouped by two factors. Furthermore, western regions out-perform eastern parts of the country with respect to most of the social capital indicators. Even though this gap is persistent over time, for many measures of social capital, a joint upward trend can be observed.

### 1.1 Germany’s Two Social Capital Regimes

The example of Germany is particularly interesting for social capital research, with the possibility to examine the impact of a change in political and economic spheres on social behaviour. With German reunification, almost sixteen million citizens of a communist system spontaneously and unexpectedly needed to integrate into a capitalistic state. More interestingly, since it has been shown that there is no evidence for a contextual difference between Eastern and Western Germans before the Second World War [Alesina and Schuendeln, 2005], the German reunification allows an investigation on how social values and social capital develop after political and economic change.

Before the merger of FRG and GDR, several facets of social capital have developed differently in the two parts of the today unified country. Open political discourse, for example, as practiced in Western democracies was absent under the GDR regime. Forms of political engagement in

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<sup>1</sup>[Wikipedia, 2015]

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society have shown to be less developed in eastern Germany than in the rest of the country [Howard, 2002].

*Generalized* or *interpersonal trust* is one of the key drivers of social capital. Völker and Flap [2001] describe how the communist regime of the GDR, with an apparatus of surveillance and mistrustful supervision among citizens, has damaged *interpersonal trust* and personal ties. They argue that until the present day this defect strongly influences generations, which have been entirely socialized in the environment. The effects of the destruction should therefore still be present today.

Only a few studies performed empirical assessments of the convergence of societal values between the two former countries. In their analysis of values of solidarity between East and West Germany, Brosig-Koch et al. [2011] find that there has been only little convergence between the two parts of the country since 1990. In light of closing gap in terms of political values, the authors furthermore argue that social behaviour changes more slowly than political opinions.

Scholars perceive the 'natural experiment' of German reunification as an excellent possibility to examine the impact of a change in political and economic spheres on social behaviour. Some research has been conducted on the investigation of societal norms and political preferences between east and west. However, in order to define an adequate set of comprehensive indicators of social capital, further reflection about the definition of social capital is required.

## 1.2 How Do We Define Social Capital?

Since its debut in modern sociology [Bourdieu, 1986], the concept of social capital has gained increasing attention when Robert Putnam introduced it to explain differences in governmental and economic performance of Italian regions in the publication *Making Democracy Work* [Putnam et al., 1993], and even more with the article *Bowling Alone* [Putnam, 1995] where Putnam claims that the social capital in the U.S. is declining. In his analysis, Putnam identifies the level of participation in group activities as an indicator of social capital. Accordingly, a decreasing participation rate in group activities signals a low level of social capital. This interpretation of the concept has led to a lively discussion in the literature about the meaning of social capital. Its weak definition turned out to be the most important argument of the critics.

For instance, Sobel [2002] lists different possible reasons why group participation in the U.S. might have fallen, but which are unrelated to social capital or economic performance. In particular, new communication technologies have influenced the way people interact with their social environment. The telephone, for example, allows to maintain social relationships on long distances and, thus, decreases the need for interacting with others in clubs or social organizations.

Other scholars have criticized the conceptual ambiguity. Durlauf, (1999, p. 2), for instance, asks "whether social capital is defined in terms of its effects or in terms of its characteristics". If social capital is present whenever good socioeconomic outcomes are observed, the concept is threatened to become tautological due to circular reasoning: "a successful group succeeded because it has social capital, but the evidence that the group has social capital is its success." [Sobel, 2002, p. 146].

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There are, indeed, many different understandings of the concept. For instance, Bourdieu [1986] defines social capital as "the aggregate of the actual or potential resources which are linked to possession of a durable network ... or, in other words, to membership of a group". This definition points, similar to Putnam's, to positive network effects of group memberships, an idea associated with Mark Granovetter's *The Strength of Weak Ties* [Granovetter, 1973]. Another definition is provided by Glaeser et al. [2002]. They define "individual social capital as a person's social characteristics – including social skills, charisma, and the size of his Rolodex – which enables him to reap market and non-market returns from interactions with others." [Glaeser et al., 2002, p. F438]. And Bowles [1999] suggests even to rename the concept: "*Community* better captures the aspects of good governance that explain the popularity of social capital, because it focuses attention on what *groups do* rather than what *individuals have*" [Bowles, 1999, p. 6].

This ambiguous characterization of social capital sets the stage for criticizing its empirical content. If it were not possible to find adequate measurements that allow to empirically investigate social capital, then the concept would not be more than a "buzzword" [Solow, 1995] in [Knack and Keefer, 1997, p. 1255].

In order to deal with this critique, many different empirical measures of social capital have been constructed. Of all these conceptualizations *generalized trust* (to other people in the society) has enjoyed most attention. This measure was proposed by Putnam himself who theorized about the effects of *generalized* and *particularized trust* and transferred those concepts to *bridging* and *bonding* social capital. Likewise, Knack and Keefer [1997] have applied the concept of *generalized trust* in order to give the idea of social capital a name. Trust, in this respect, has been used to approximate social capital on an empirical basis. However, there are many contributions in the social capital research that employ other indicators.

In each study, the choice of the concrete social capital measure, which is chosen from the set of all possible indicators, seems to be somewhat arbitrary. There is no consistent classification of the different measures that would explain the relation between them. For instance, does the statement "Generally speaking, most people can be trusted or you can't be too careful" capture the same thing as "Most people would try to take advantage of you, or try to be fair"?

For this purpose, a factor analysis is performed. This method allows to identify important *latent* factors behind the socioeconomic variables which are typically used to measure social capital. These factors capture much of the variation of the social capital variables and, thus, help to find a measure of social capital that reflects the multidimensionality of the concept.

### 1.3 Factor Analysis and Social Capital

Factor analysis is a mean to identify latent unobserved variables that might explain the variation of a larger number of distinct observable variables, which made it an attractive method in the empirical social capital research. Studies that aimed to address the multidimensionality of social capital, outlined in the following, employed factor analyses to identify the common features of the different social capital measures.

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For instance Onyx and Bullen [2000] investigate potential elements of social capital by means of a factor analysis, somewhat similar to the approach of the study presented here. They analyse questionnaires containing 68 potential social capital indicators of 1,200 individuals in five Australian communities. The factor analysis identifies 36 variables of the 68 potential indicators that are important in explaining the overall variation. These 36 variables are grouped into 8 specific factors covering different aspects of social capital: (a) *participation in the local community*, (b) *proactivity in a social context*, (c) *feelings of trust and safety*, (d) *neighbourhood*, (e) *friends and family connections*, (f) *tolerance of diversity*, (g) *value of life*, and (h) *work connections*.

From these factors, which are mainly related to social activities and interpersonal relations, one general social capital factor is derived. The results of the factor analysis are compared in the subsets of the five communities where the questionnaires were collected. Differences in the responses between rural and metropolitan regions lead the authors to the conclusion that the distinction between bonding and bridging social capital needs to be emphasized.

In addition, indicators concerning political engagement, which is identified as one important indicator of civic participation and, thus, social capital, are not taken into account in the Onyx and Bullen [2000] paper. This is due to the pre-selection process of the factor analysis where all political engagement activity variables are removed. Hence, one important dimension of social capital is not considered in this study. Furthermore, the eight factors identified in this study capture about the half of the total variation. In contrast, the analysis presented here, which includes all potential relevant social capital indicators of the ESS, is able to explain more than 90% of the overall variation of the social capital measures.

In another more recent study, by Parts Parts [2013], the author uses a factor analysis to combine different questions from the European Value Survey to approximate some conceptualizations of social capital: *generalized trust*, *institutional trust*, *formal networks* and *social norms*. Whereas the political dimension of social capital is captured in this study under the notion of *institutionalized trust*, the factor analysis differs, nonetheless, substantially from the study presented here. The four conceptualizations of social capital trust, networks and social norms are presumed to be the latent factors of social capital and the factor analysis is build around this presumption [Parts, 2013, p. 11].

## 2 Data and Methods

### 2.1 Data

The European Social Survey is a multi-country survey which aims to monitor and interpret the political attitudes and values of citizens from over 30 European countries and tries to develop European social indicators [ESS7, 2014]. In sum, more than 54,000 individuals are interviewed for the survey in the last round. For the case of Germany, the seven waves of the ESS rely on the responses of 20,490 individuals. More than 620 variables concerning demographic, economic, social and political topics are collected by questionnaires and hour-long face-to-face interviews. Because of this, the survey is well suited to investigate the social capital in Europe. It captures many of the indicators that have been used to measure social capital in recent studies (see table 1)

Table 1: ESS Indicators of Social Capital

Variable	Variable Label	Scale
ppltrst	Most people can be trusted or you can't be too careful	0-10
pplfair	Most people try to take advantage of you, or try to be fair	0-10
pplhlp	Most of the time people helpful or looking out for themselves	0-10
vote	Voted last national election	0 (no)/ 1 (yes)
trstprl	Trust in country's parliament	0-10
trstlgl	Trust in the legal system	0-10
trstplc	Trust in the police	0-10
trstplt	Trust in politicians	0-10
trstep	Trust in the European Parliament	0-10
trstun	Trust in the United Nations	0-10
contplt	Contacted politician or government official last 12 months	0 (no)/ 1 (yes)
wrkprty	Worked in political party or action group last 12 months	0 (no)/ 1 (yes)
wrkorg	Worked in another organisation or association last 12 months	0 (no)/ 1 (yes)
badge	Worn or displayed campaign badge/sticker last 12 months	0 (no)/ 1 (yes)
sgnptit	Signed petition last 12 months	0 (no)/ 1 (yes)
pblmnn	Taken part in lawful public demonstration last 12 months	0 (no)/ 1 (yes)
bctprd	Boycotted certain products last 12 months	0 (no)/ 1 (yes)
scmeet	How often socially meet with friends, relatives or colleagues	1 (Never) - 7 (Every day)
slact	Take part in social activities compared to others of same age	1 (Much less) - 5 (Much more)
mbtru	Member of trade union or similar organisation	0 (no)/ 1 (yes)

Source: ESS 1-7

## 2.2 Method

The comparison between social capital measures in East- and West-Germany is carried out in three steps. Initially, all social capital indicators available in the ESS waves one to seven are implemented in a factor analysis. Here, the joint variability of the measures is tested and possible compounding, unobservable variables are identified. Two concepts of social capital emerge from the analysis. Secondly, the mean values of social capital indicators for each of the two regions are calculated at the point of the last wave of the ESS in 2014 and 2015. These values are compared with each other and tested for statistical difference with the use of a t-test. Thirdly, the regional averages of the social capital indicators and the newly aggregated factors are compared over time across the seven waves.

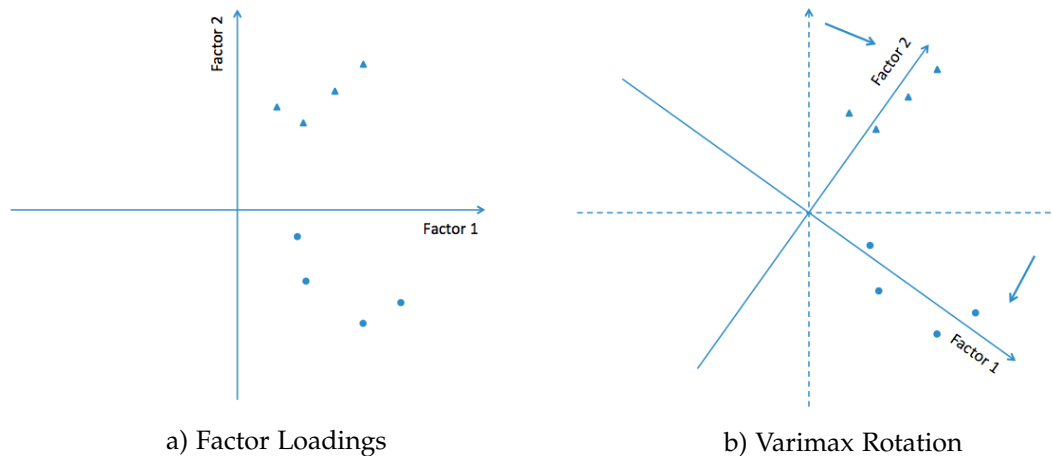
## 2.3 Factor Analysis

Factor analysis is a method used to explain the variability among a set of potentially correlated variables with the expression of a smaller number of measures, called factors. In our example, it can be assumed that the variations of the measures of social capital mainly reflect the variations of some or even only one unobserved variable. What factor analysis does is that it looks for joint variations in response to unobserved latent variables, while the potential factors are modelled as linear combinations of the observed measures.

In the first step of the factor analysis, several possible factors, with different factor loadings, are compared by their *eigenvalue*. In a second step, in order to distribute the factor loadings of each variable more distinctively among the factors and thereby identify each variable more precisely with one factor, a *varimax rotation* method is applied. This method is an orthogonal rotation of the factor axes, in order to maximize the variance of the squared loadings of a factor on all variables in a factor matrix [Russell, 2002]. Each factor will either show small or large loadings with one variable. Figures 1 a) and b) explain the procedure in a simplified way.

Each observable variable contributes to the linear combination with a weight, the so called *factor loading*. The interdependencies of observed variables can be used to reduce the set of measures to a couple or even only one common factor. Technically, a factor analysis is similar to a low-rank approximation of the matrix of observable variables.

Figure 1: Factor Analysis Explained

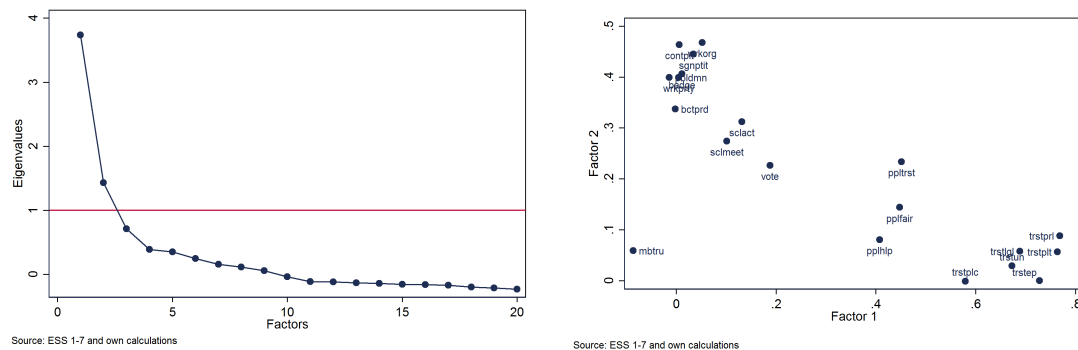


### 3 Results

#### 3.1 Two Types of Social Capital

The main findings of the factor analysis are displayed in figure 2 a) and b). A detailed description of the factor analysis' results can be found in table 2. Figure 2 a) depicts the *eigenvalues* of the initially considered factors. The *Kaiser criterion* in factor analysis recommends to use only factors with an *eigenvalue* of higher than one. Accordingly, two factors are taken into consideration. The high *eigenvalue* of factor one already exhibits that this factor, as a linear combination of the underlying measures, explains to a large extent the overall variation of the social capital measures. Indeed, 65.58 percent of the variables variation is explained by factor one and 28.20 percent by factor two (see table 2).

Figure 2: Factor Analysis Results



a) Factor Analysis - Screeplot

b) Factor Analysis - Factor Loadings

After the varimax rotation, table 2 displays the different factor loadings for values higher than 0.3. The KMO (Kaiser-Meyer-Olkin) criterion, describes if the variables should be used for a factor analysis. Values above 0.6 suggest that the variables or set of variables can be used in the analysis, with an overall KMO score of 0.8279, it can be assumed that the sample is adequate for a factor analysis. It can be seen that the size of the factor loadings clearly attribute the social capital measures to either one or the other factor. Figure 2 b) displays the loadings after rotation in a plot. Clearly, two groups of variables can be identified with each factor. A performance of the factor analysis carried out separately for East- and West-Germany yielded almost identical results.

Interestingly, the two groups of variables exhibit conceptual communalities. While the variables attributed to factor one all refer to a context of *political engagement*, such as *contacting a politician, signing a petition, working for a political party* etc., the measures identified with factor two address *communitarian values*, like *trusting institutions or people and taking part in social activities*. This leads to the conclusion, that, for the case of Germany, researchers looking for a multi-faceted measure of social capital are well-advised to distinguish at least between two concepts revealed by the factor analysis. They are named *political social capital* and *communitarian social capital* for further analysis. While a clear distinction becomes obvious between factors based on political activity and factors based on communitarian values, future research should have an eye on measures which load on both factors, such as *scimeet* and *sclact* which focus more on the network component of social capital mentioned above.

Three other observations are worth further consideration. The density of indicators attributed to factor two is slightly lower than of those variables attributed to factor two. While loadings of indicators of political social capital are closely gathered, indicators of social trust are more dispersedly distributed along factor one. Contextually, it can clearly be seen that opinions about *trust in institutions* are more similar than *trust in people* or their *fairness* or *helpfulness*. Still, the factor analysis (see table 2) distinguishes quite clearly between the two factors. The indicator of *trade union membership* does not fit into the two factor realm, with very low loadings on both compounding indicators.



Table 2: Loadings of the Different Variables in the Factor Analysis

Code	Variable	Factor Loadings (>0.30)		KMO
		Factor 1 (65.58%)	Factor 2 (28.20%)	
		Percentage of overall variation captured:		
ppltrst	Generally speaking most people can be trusted	0.4515	.	0.8634
pplfair	Most people would try to take advantage of you	0.4479	.	0.8338
pplhlp	Most of the time people try to be helpful	0.4079	.	0.8267
vote	Voted in the last national elections	.	.	0.8778
trstprl	Trust in parliament	0.7685	.	0.8664
trstlgl	Trust in legal system	0.6884	.	0.8519
trstplc	Trust in police	0.5793	.	0.8238
trstprl	Trust in politicians	0.7641	.	0.8597
trstprl	Trust in european parliament	0.7283	.	0.8408
trstprl	Trust in united nations	0.6725	.	0.8609
contplt	Ever contacted a politician in the last 12 months	.	0.4636	0.7483
wrkprty	Worked for a political party in the last 12 months	.	0.3994	0.7156
wrkorg	Worked in another political organization in the last 12 months	.	0.4678	0.8026
badge	Worn a badge or sign for campaign in last 12 months	.	0.4062	0.7424
sgnptit	Signed a petition in the last 12 months	.	0.4448	0.7794
pblmnm	Participated in a lawful demonstration in the last 12 months	.	0.3992	0.7437
bctprd	Boycotted a product in the last 12 months	.	0.3370	0.7522
scmeet	How often socially meet with friends, relatives or colleagues	.	.	0.6530
slact	How much do you take part in social activities	0.3122	.	0.7072
mbtru	Member of a union	.	.	0.5983
Overall				0.8279

### 3.2 Comparison Between East and West

In the second part of the analysis, the focus rests on the level of indicators of social capital at the time of the last and seventh survey wave of the ESS (see table 3). The average levels for those indicators in East- and West-Germany are tested with a T-test comparison of means. In case of statistically significant results, the higher value is marked in bold. In most of the cases, levels in the west are significantly higher.

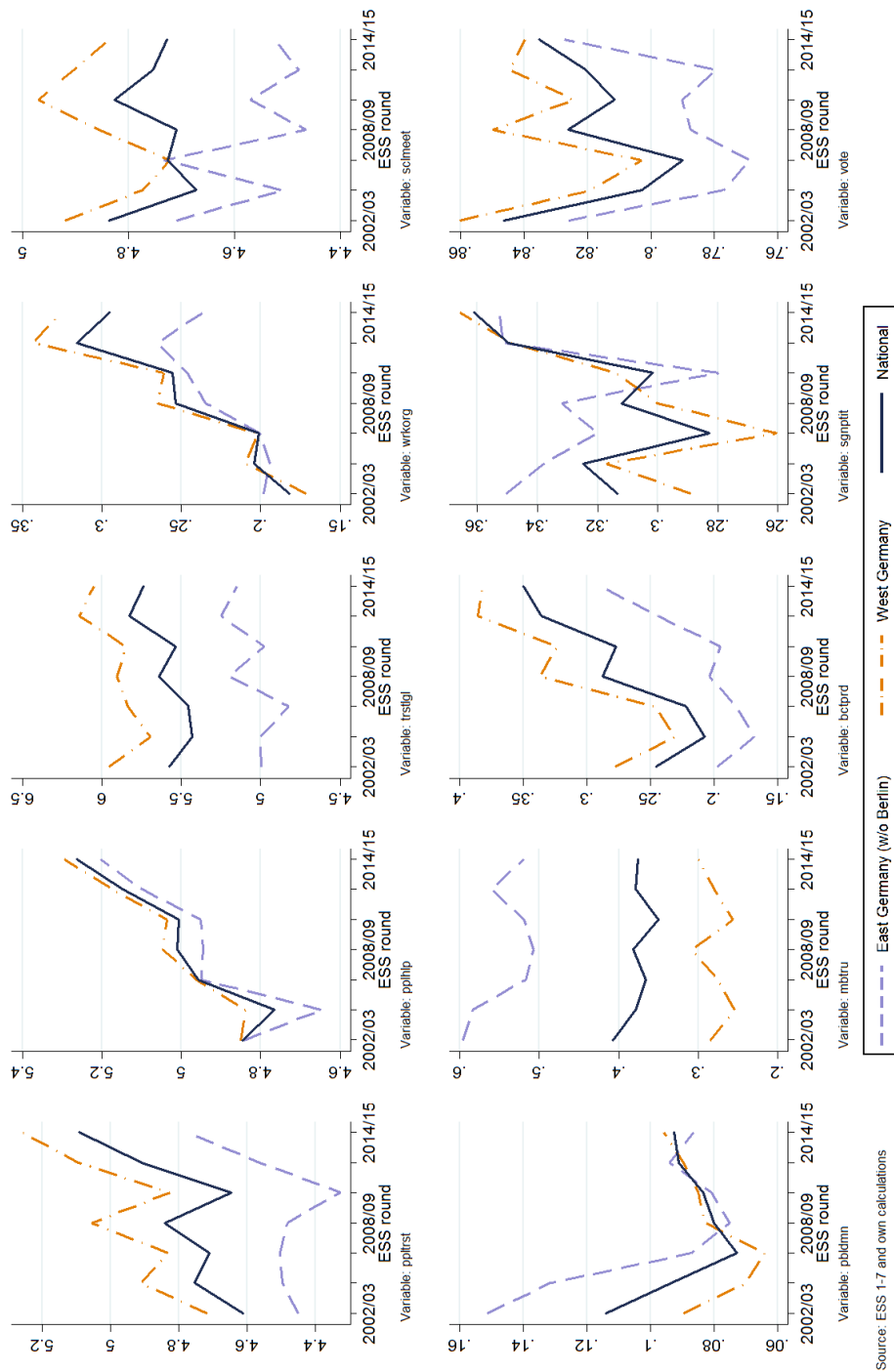
Table 3: *T-tests: Comparison of Social Capital Indicators in 2014/15*

Indicator	West	East	SD_West	SD_East	Test value
ppltrst	<b>5.287</b>	4.668	2.110	2.330	6.531***
pplfair	<b>6.121</b>	5.674	1.975	2.142	5.074***
pplhlp	5.277	5.160	1.908	2.135	1.351
vote	0.846	0.825	0.361	0.380	1.322
trstprl	<b>5.278</b>	4.378	2.266	2.546	8.785***
trstlgl	<b>6.046</b>	5.044	2.336	2.660	9.436***
trstpfc	<b>6.967</b>	6.193	2.069	2.375	8.206***
trstplt	<b>3.999</b>	3.396	2.080	2.324	6.423***
trstep	<b>4.096</b>	3.445	2.334	2.465	6.302***
trstun	<b>4.817</b>	4.242	2.309	2.508	5.577***
contplt	0.193	0.167	0.395	0.373	1.540
wrkprty	0.050	0.036	0.218	0.187	1.519
wrkorg	<b>0.333</b>	0.252	0.471	0.435	4.025***
badge	<b>0.070</b>	0.041	0.255	0.199	2.724***
sgnptit	<b>0.383</b>	0.326	0.486	0.469	2.743***
pbldmn	0.092	0.075	0.289	0.264	1.408
bctprd	<b>0.402</b>	0.265	0.490	0.442	6.608***
scmeet	<b>4.770</b>	4.479	1.360	1.417	4.867***
sclact	2.738	2.708	0.892	0.945	0.771
mbtru	0.318	<b>0.550</b>	0.466	0.498	-11.177***
factor 1	<b>0.216</b>	-0.170	0.886	1.063	9.373***
factor 2	<b>0.142</b>	-0.032	0.841	0.770	4.889***

Years 2014/15; Obs (West): 1,979; Obs (East): 881;

Source: ESS 1-7 and own calculations.

For *generalized trust*, one of the most frequently applied indicators in empirical social capital research, levels in West-Germany are significantly higher than in the east of the country. Similar observations can be made for most of the other social capital indicators, such as *trust in institutions*, *social interaction*, *membership in organisations*, or the *boycott of products*. For the *believe in the helpfulness of most people*, *national voting rates*, *contacting a politician*, *working for political parties*, the *participation in public demonstrations* or the rates of *signing a petition*, east and west do not show distinct differences. For the case of membership in trade unions, east Germans appear to be more engaged than their west German counterparts.

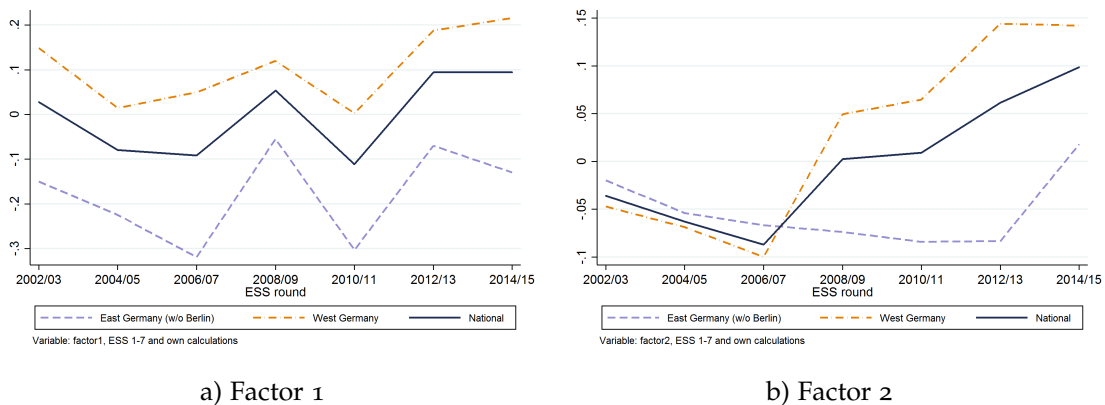


Source: ESS 1-7 and own calculations

Figure 3: Ten Measures of Social Capital: East and West

The picture becomes somewhat more complex when looking at the development of these indicators over time. Figure 3 shows the development of ten selected indicators of social capital in both parts of the country over time<sup>2</sup>. Some measures, such as *generalized trust*, *trust in the legal system*, *social activity* or *boycotting*, show a persistent gap between west (high) and east (low) over time. In the case of *generalized trust*, a clear upward movement for both regions is visible. The same holds true for the belief that *most people are helpful*, however, with this respect, east and west Germans have not been very different in the past. For other indicators, like *participating in demonstrations*, *signing petitions* or *voting*, a convergence is visible. The indicator of *working in non-political organisations* shows an upward trend for both parts of the country, but with diverging means in favour of western Germany.

Figure 4: Factor 1 and 2 in East and West-Germany (2002-2015)



The development of the two factors of *communitarian* (factor one) and *political social capital* (factor two) over time is represented in figure 4 a) and b). Similar to the development of generalized trust, figure 4 shows a fairly persistent gap in *communitarian social capital* between west and east. For *political social capital*, on the other hand, the gap between the two regions appears to have widened in the last decade. Unlike, factor one, a increase in social capital in both regions is visible for factor two.

## 4 Conclusion

Four main conclusions can be made on the basis of the presented results. First, (still) today, there are clear differences between East- and West-Germany, in terms of their levels of social capital. With respect to the most commonly used indicators of social capital, the responses in the last wave of the ESS indicate that social capital in western Germany today is higher than in the territory of the former GDR. The reasons for that might root in the long non-democratic past of the eastern states and in its relatively poor economic development. Further investigations of the roots of these differences could reveal some of the determinants of this gap. Secondly, for

<sup>2</sup>From top left to bottom right: *Trust in people*, *people are helpful*, *trust in legal system*, *worked for organisation*, *socially meeting others*, *participated in demonstration*, *member of a union*, *boycotted product*, *signed a petition*, *voted in last national elections*.

some of the social capital measures; the believe in the *helpfulness of people, voting, participating in lawful demonstrations, or social activity*, both parts of the country do not exhibit any noticeable differences. *Membership rates in trade unions* are even higher in eastern regions than in western parts of the country, which can be explained by the long tradition of labour organisation in the communist system. Thirdly, over the last decade, indicators have developed differently. While examples of convergence are rare, some measures in east and west consolidated on a stable level, such as *trust in the legal system*. For other measures, like *generalized trust* or *product boycott* a clear rise in levels is visible for both regions. Lastly, the two factors, aggregated by the factor analysis, indicate that while *communitarian social capital* is marked by an enduring gap between west and east, values of *political social capital* have just started to diverge a decade ago. Still, at the same time, both in West- and East-Germany, a joint improvement of *political social capital* is noticeable.

Results clearly underline the multi-dimensional nature of social capital and advise a more refined use and deliberate comparison of indicators in empirical analyses. With regard to the initial question of this work, East- and West-Germany, still, have different social capital regimes. For several indicators, western regions show higher levels of social capital than eastern parts of the country. However, while the west performs better for both communitarian values and measures of political engagement, a promising rising trend can be noticed for many features that are important to a sound civil society. Future investigations could examine the drivers of this upward trend and see if the discrepancy between the two regions diminishes as younger cohorts, who have been socialized in a reunited Germany, enter the stage.

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