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This study, based on a survey with 634 university students from Austria, questions the existing dichotomy between the two trust types. Our results advocate in favour of a third, community determined type of trust. This additional trust dimension is measured by the number of groups the individuals participate in. It changes between particularized and generalized trust, depending on measures of group context, like frequency of interaction or group size.

Thus, the results support hypotheses made in the recent literature about the multidimensionality of trust and quantify the effect of group participation on trust.

Keywords:

Generalized Trust, Networks, Social Capital, Panel Data, Instrumental Variables.

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Bonds and Bridges, and Between: An Empirical Analysis of Group-Based Trust

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Abstract

Social capital is often represented by generalized trust - the degree to which one trusts 'most (unknown) people'. It is assumed to be enhanced by diverse group interactions. In the social capital literature, it is opposed by particularized trust, which represents our mutual confidence in individuals close to us, for example, family members and friends. This study, based on a survey with 634 university students from Austria, questions the existing dichotomy between the two trust types. Our results advocate in favour of a third, community determined type of trust. This additional trust dimension is measured by the number of groups the individuals participate in. It changes between particularized and generalized trust, depending on measures of group context, like frequency of interaction or group size. Thus, the results support hypotheses made in the recent literature about the multidimensionality of trust and quantify the effect of group participation on trust.

JEL classification: C 36, C 93, D 70, Z 13 Keywords: Generalized Trust, Networks, Social Capital, Panel Data, Instrumental Variables.

1. Introduction

The presented work is located in the realm of investigations about social capital. One prominent way, in the past, to approximate social capital is via the concept of generalized trust. At the same time, the idea of measuring the social capacities of individuals or communities through their level of mutual confidence in others is ongoingly debated. The critique aims at two potential weak spots. First, doubts have been expressed about the generalizability of the trust question. Scholars like Delhey et al. (2011) or Reeskens (2012) argue that the question of how much you can trust *most people* might be understood quite differently across and even within cultural boundaries. Secondly, it can be questioned whether generalized trust captures our willingness and capacity for social interaction, which is the parameter researchers are actually interested in. If the responses to the generalized trust question mostly reflect our attitudes towards foreigners or people outside of our everyday communities, as some scholars argue, then generalized trust might not be the right way to measure social capital which leads to beneficial spill-overs like group participation and civic engagement.

The nature of the relationship between trust and social capital is as old as the concept of social capital itself and has been theorized already by Putnam et al. (1993). They suggest that generalized trust could be associated with a type of *bridging social capital*, which allows us to interact and cooperate with strangers. Furthermore, they point out that particularized trust - confidence in the people we know very well - relates to a *bonding type of social capital*, closing and consolidating our existing small circles of social interaction.

This issue has also been addressed by Eric Uslaner (Uslaner, 2001, p. 7) who asserts that "the difference between generalized and particularized trust is similar to the distinction between 'bonding' and 'bridging' social capital. We bond with our friends and people like ourselves. We form bridges with people who are different from ourselves". He goes further on and makes an explicit connection to group activity: "when we only have faith in some people, we are most likely to trust people like ourselves. And particularized trusters are likely to join groups composed of people like themselves - and to shy away from activities that involve people they don't see as part of their moral community".

This quote sets the stage for the analysis presented here. Though the connection between different types of trust and group interaction has been frequently cited and debated on a theoretical level, it has rarely been examined on an empirical basis. The research that goes into this direction suggests a third type of social trust, which is *community based* (Wollebaek et al., 2012). This study analyses the relation between group participation and social trust in more detail by means of a questionnaire distributed to students at Vienna University of Economics and Business. The online survey asks the students about trust in various groups, in order to see, whether there are indications of a connection between trust and group interaction. The survey, thus, provides data which allows to investigate the relationship between the trust dimensions with quantified hypotheses.

Our findings show that trust in family members and friends is strictly different from trust in colleagues and generalized trust. Furthermore, we find evidence for the theory that there is a third type of communitarian trust, which strongly depends on the frequency of interaction with the respective communities and their size. The results do not confirm Uslaner's theory on the relationship between particularized trust and the number of group interactions. Instead, the level of both generalized and particularized trust seems to be highly interdependent and positively affected by the number of group interactions. Additionally, a two-stage least squares estimation (2SLS), employing instrumental variables, provides insights about the main determinates of the

trust dimensions and the relation between them. This regression design allows to isolate the quantitative effect of group participation on generalized trust, which is independent of potential joint determination by other variables.

The remainder of this study is organized as follows: in the next section, a literature review outlines the results of previous investigations on trust and social capital and group participation. In section 3 the data collected with the questionnaire and the methods are presented, while section 4 summarizes the most important results of the analysis. Section 5 concludes.

2. Literature Review

Despite the vast amount of literature published on the topic of trust and social capital¹ it is still worthwhile to investigate the relationship between the different trust components. This is not only relevant because there is still a gap in the literature on this relationship, but also since many influential papers published in the last two decades have employed the concept of trust or mutual confidence as a main determinant fostering beneficial economic or social outcomes.

2.1. Benefits of Trust

For instance and among several other empirical results, it has been shown that trust can be associated with higher rates of economic growth (Knack and Keefer, 1997), (Algan and Cahuc, 2010) and better financial development (Guiso et al., 2000). Additionally, articles have been published which indicate that bureaucracies (Porta et al., 1996) and education systems (Alesina et al., 1997) work better in a high trust environment. In addition to possible associations with desirable economic outcomes, trust appears to be a good proxy for social capital, as described by Robert Putnam. With his work *Making democracy work: Civic traditions in modern Italy* (Putnam et al., 1993) and *Bowling alone* (Putnam, 1995) he revolutionized the way social sciences think about the importance of social capital for civic or political participation and its role in the overall functioning of a society. He convincingly summarizes that "trust is a sentiment linking us to other people, to work cooperatively with them on common projects." (Putnam et al., 1993, p. 170-171).

¹Thomson Reuters' Social Science Citation Index lists more than 1.700 articles on the topic "social capital and trust" published in the last 10 years. Thus, the articles mentioned in this section about the role of trust are inevitably only a small excerpt of all the numerous applications of trust within social science research. However, the selection of topics listed here already emphasises the significant attention trust and social capital have enjoyed recently.

The positive effect of trust has also been found relevant on a regional level as shown by Beugelsdijk and van Schaik (2005) and Forte et al. (2015) with respect to economic growth and to innovation (Schild, 2013).

Another example is the influential study by Moore et al. (2011) that investigates the relation of generalized and particularized trust and health. Self-reported health is positively associated with generalized trust and the degree of diversity of extra-neighbourhood ties. Individuals with high intra-neighbourhood networks are also shown to have core ties, which means, strong relations to other network members.

Trust is not only considered as a key determinant of positive socioeconomic outcomes, but serves also as an explaining factor for the "dark side" of social capital (Iglic, 2010). The author questions the often stated assumption that voluntary associations are always beneficial for the civic society. For the case of Eastern and Central European countries, associations between voluntary involvement and attitudes of social and political tolerance are examined. It is shown that when members of associations develop particularized rather than generalized trust, their previously low levels of social tolerance decrease even more. Negative effects on political tolerance unfold in a similar way. In associations, processes of interpersonal influence and political mobilization take place, which can refer to a process of both civic as well as un-civic orientations.

There are many more examples of articles highlighting the significant role of trust for societies. However, the focus of the study presented here is more on possible influences on how much people trust each other. This issue has also been discussed widely in socio-economic literature in the last 15 years.

2.2. Determinants of Trust

Alesina and La Ferrara (2002), for example, examine individual data from US localities and state that generalized trust is mainly influenced by four factors. First, a personal history of traumatic experiences reduces an individual's level of trust. Secondly, belonging to a minority with a history of discrimination and thirdly, having little economic success in terms of education and income drives levels of trust down. Lastly, living in racially and economically (inequality of income) mixed communities weakens mutual confidence, as well. The effect of racial fragmentation is even amplified for individuals, who are against racial integration. The authors do not find any evidence that the religious background of either the individual itself or the community the person lives in plays any role in how much a person trusts others.

The work by Björnskov (2007), on the other hand, points towards potential influences of religion

on trust. The paper explores determinants of trust in 76 countries around the world and employs only nationally aggregated data. While countries with a history of Protestantism and monarchical systems exhibit significantly higher levels of trust, Muslim and post-communist societies appear to be less trusting. Social polarization, such as fragmentation by income and race, are confirmed to be threads to generalized trust, as well.

Trust has also been related to the diversity of local communities. Putnam et al. (1993) argue that generalized trust, a measure of faith in people likely to be different from ourselves, is lower when we life in diverse environments. Uslaner (2010) is one of the most influential opponents of this theory and hypothesizes that segregation rather than diversity leads to lower levels of trust. In his findings, integrated and diverse neighbourhoods foster high levels of trust. He furthermore argues that mainly people with diverse networks are expected to have higher levels of mutual confidence; the main aspect examined in the present work.

Even though it is widely assumed that informal social ties and trust are positively related, Glanville et al. (2013) are the first researchers, who carry out a longitudinal study on this proposition in the US. With the use of various socio-economic controls as well as lagged values of trust and informal participation, they find that informal social ties, indeed, seem to foster generalized trust.

An institutional perspective is taken by Rothstein and Stolle (2008), who argue that social capital, approximated by levels of generalized trust, is embedded in political and legal institutions. In their cross-national study of 71 countries around the world, they find that "impartiality, efficiency and fairness of street-level political institutions" (Rothstein and Stolle, 2008, p. 8) increase institutional and lastly generalized trust.

Trust is often associated with well-working political institutions. However, cause and effect in this relationship are not entirely clear. Wilson and Eckel (2010) assess the connection between trust and institutions. They conclude with a set of unanswered questions, of which the third one addresses the relationship between social networks and trust. They encourage future research to deal with the question whether high trustees build widespread networks of trust by group interactions - a key motivation of our present work.

Only a few influential studies on the causes of generalized trust cast an eye on Europe. The paper by Hooghe et al. (2009) criticizes the common focus on North America, which, according to the authors is the main explanation for the commonly discovered negative relationship between ethnic diversity and trust. Hence, the study examines 20 European countries and employs refined measurements of ethnic diversity with the use of OECD migration data. While most of the frequently stated individual determinants, such as education and income, are confirmed, the country level indicators for migration and diversity fail to show any relation to generalized trust. The authors advise dissuade from transferring the US-stemming connection between ethnic fragmentation and trust across the Atlantic.

One of the few non-western studies on generalized trust focuses on trust and volunteering in Japan (Taniguchi, 2012). With the example of Japan, a very interesting case is made. The Japanese society is known for its normative emphasis on formal group affiliations and for its tendency to be distrustful of strangers. Data from the Japanese General Social Survey suggests that generalized trust is associated with irregular formal volunteering but not with regular formal volunteering. This leaves the question, whether other kinds of trust, for example particularized trust, might be more important in the case of formal group participation.

2.3. The Problem of Mutual Dependence

When discussing beneficial spillovers and plausible determinants of trust, quickly, the question about mutual effects becomes apparent. In some cases, the direction of cause and effect is debatable. Many scholars argue that civic engagement or economic growth is fostered by generalized trust, though one could easily argue that a working civil society and economic prosperity lay the ground for people trusting each other. In fact, for the case of civic participation and generalized trust, an ongoing reciprocative relation has become the consensus in the literature (van Ingen and Bekkers, 2015). For other features, however, it is much more plausible to argue for a one-sided direction of influence. For the example of religious opinions, it might be true that our denomination has an impact on how much we trust each other, while it is hard to imagine an effect in the opposite direction. The present investigation deals also with the problem of mutual dependence and applies "one-sided" determinants of trust like the religious background in the 2SLS approach to investigate the relation between the trust components. Still, future investigations shall be encouraged to include temporal components so as to allow more determined statements about the cause and effect of generalized trust.

2.4. Trust as a Multi-Dimensional Phenomenon

Lines of distinction between generalized and particularized trust have been drawn from many perspectives. Smith (2010), for example, summarizes the previous findings on race and trust, by describing the connection between ethnicity and mutual confidence across three different types of trust, generalized, particularized and strategic trust. In the concept of strategic trust, actors assume that trustees will act in accordance with their rational interest. The author concludes that, even though generalized trust might be perceived differently according to the ethno-racial context, differences in generalized trust are strongly driven by race. Furthermore, also particularized trust, according to Smith the belief that most people "like me" can be trusted (Smith, 2010, p. 463), is more distinct for some ethnicities than for others.

In contrast, Uslaner (2010) argues in favour of the "classical" dichotomy between generalized trust, which is faith in strangers and particularized trust, as mutual confidence in one's own "ingroup", which needs to be defined from a personal perspective. The definition of an "in-group", however, largely depends on the probability to meet people, who are similar to us. The author links the two trust measures to bridging (generalized trust) and bonding (particularized trust) social capital. Furthermore, Uslaner also theorises about strategic trust, a concept he defines as the trust of person A in person B to accordingly perform a certain task.

The dichotomy of generalized and particularized trust is further enriched by some scholars, like Høyer and Mønness (2016) or Wollebaek et al. (2012). From the results of a factor analysis, stemming from 33 Swedish municipalities, Wollebaek et al. conclude that there exists a third type of confidence, *community trust*. This type of faith is neither completely generalized trust, nor particularized trust, but rather something in-between. Community trust is based on the fact of belonging to a spatially bound community or group. Of all three trust measures, the third trust type is shown to be most vulnerable to economic and ethnic fragmentation.

Other scholars clearly distinguish only between generalized and particularized trust in their work. Welzel (2010), for example, investigates on "self-expression" values in surveys like the World Value Survey or the European Social Survey. In his analysis the author tries to allocate self-expression values according to altruistic and civic dimensions. For the civic dimension, generalized trust is used as a dependent variable and shows to be positively related with particularized trust. With regard to the dimension of altruism, the author concludes that self-expression values might be associated with wide-circle rather than close-circle solidarity, since they are more closely associated with generalized trust than with particularized trust.

Delhey et al. (2011) show that people distinguish at least in two different sets of social interactions and therefore two distinct groups of trust, in-group and out-group trust. In their cross country analysis, they state that "most people" in standard questions most commonly refer to out-groups. They acknowledge the subjectivity of the meaning of "most people", but point out that the variation is driven by cultural differences rather than by individual perception. The radius is quite narrow in Confucian countries, wider in wealthy countries, and - in this particular case - relatively comparable across European societies.

Assuming a fundamentally different understanding of the wording of the trust survey questions, however, would turn comparative trust research into a pointless endeavour. This view is disputed by Freitag and Bauer (2013). The results of their cross-national study argue in favour of a proposed three-dimensional model of trust, which distinguishes trust toward personally known people (particularized trust) from trust in unknown people, including strangers (generalized trust) and identity-based trust, reflected by created identities such as religion or nationality.

The debate about the possible multidimensional character of social trust is related to the socalled "radius problem" of the general trust. What is the radius of social interactions to which those "most people" asked about in the generalized trust question belong to? Surely, interpersonal trust, like human intelligence for example, is a non-tangible concept and approaches to measure it will always have to face some shortcomings. The following considerations underline why the generalized trust question is a valid choice when it comes to catch hold of interpersonal trust.

Torpe and Lolle (2011) challenge the "most people"-question of generalized trust. They group different measurements of trust across five clusters of countries across the world. In their analysis, the authors show that the concepts of generalized trust and particularized trust are complementary and not exclusive. The pool of "most people" should always include those particular people which build a distinct group. In comparative analyses, generalized trust, as a concept of trust in strangers, should be treated with cautiousness according to their findings and should rather be replaced with a new survey question asking about trust in people one is meeting for the first time. Lolle and Torpe (2011), furthermore, take a line against the common consensus that ethnic diversity relates with trust. They do not find any generalizable evidence that ethnic diversity in Europe, neither emerging from western, nor from non-western migration, influences levels of trust.

The work by Gundelach (2014) criticizes the generalized trust question in a similar fashion. Since most papers on trust and ethnic diversity rely on the generalized trust measure, the author critically examines the effect of diversity on out-group trust. Interestingly, Gundelach argues that the generalized trust question is blurred by elements of particularized trust and should rather be replaced by a question asking specifically about explicit out-group trust. This more appropriate measure appears to be positively related with ethnic diversity in the subsequent analysis.

Dinesen (2011) defends the comparability of the generalized trust measure. The value of

generalized trust is often questioned because of the potential lack of validity as a cross-group measure. Based on a Danish survey of two generations of natives and immigrants, the author, tests the measurement invariance of generalized trust across the native and immigrant groups. Dinesen concludes that the generalized trust construct refers to the same phenomenon in both groups and suggests that the measure can be used for further comparative investigations.

In conclusion to the review of the generalized trust question, the answers to the query about "most people" can be justified as the unit of observation in this study, in awareness of its possible limitations. This is legitimate with respect to the results of the cross-cultural study by Torpe and Lolle (2011) showing that there is no strong indication to reject the consistency of the generalized trust question within one common cultural context, as present in our case. However, in light of the findings developed by Wolleback et al. (2012), Lundason and Wolleback (2013) and Stolle (2002), we doubt the strict dichotomy between generalized and particularized trust. According to Freitag and Bauer (2013) trust in 'most people' reflects the attitude towards strangers. Particularized trust represents the attitude towards people one knows personally. Just like the authors, we are furthermore convinced that there is a distinct third type of trust, which is based on the relation towards groups and communities one shares an identity (like the church) or a common cause (like charities or political parties) with.

FIGURE 1 ABOUT HERE

Figure 1 illustrates our idea about the three-dimensional trust types. Since the concepts of mutual confidence are fluent, we argue that there might be a sizeable overlap between the three types of trust. The order of the trust types along the degree of context is clear. With increasing context to the reference group in question, individuals move from strangers (generalized trust) to group and community members (community trust) to friends and family (particularized trust).

It has been argued, on the one hand, that generalized trust can be encouraged by the interaction in diverse networks and groups. The more group interaction, the higher an individual's level of generalized trust.² On the other hand, scholars like Putnam et al. (1993) or Iglic (2010) argue that particularized trust is characterized by a reverse relationship with group interactions. Individuals with singular contacts (in small and distinct groups) are expected to have high faith to the people 'of their own kind' but not in strangers. This hypothesized inverse relation between particularized and generalized trust development across group membership is illustrated in Figure 2. The gap

 $^{^{2}}$ This has been shown on a regional level for the case of Switzerland by Freitag et al. (2009).

between the dichotomous trust measures for small numbers of groups is evident. Since we assume a third type of trust, particularly reflecting faith in groups and communities, we put the the strong gap between generalized and particularized trust into question. However, we still expect generalized trust to be comparably low for individuals with only two or less group memberships.

FIGURE 2 ABOUT HERE

We assume that there is a directed relationship from particularized to generalized trust, mitigated by group participation. Over the life course, we imagine trust to evolve gradually as the communities one trusts in become larger and less socially confined. First, those individuals with high levels of particularized trust in small social circles, such as one's family and friends, are likely to develop a trusting relationship to slightly larger and more abstract communities. Subsequently, the more distinctly different groups an individual is member of, the higher his/her confidence in people in general is going to be. In our theory, generalized trust stems from diverse group interactions, rather than enabling them.

Based on the discussion of the literature about the relation between generalized and particularized trust as well as the connection to group participation, we develop the following hypotheses that should be tested by analysing the survey data:

This work questions the well-established dichotomy between generalized and particularized trust. As shown in figure 1, trust types can be ordered along the degree of social context. We assume that group-specific confidence has distinctly different traits than generalized and particularized trust. H1: There are more than two distinct dimensions of trust. On an intermediate level of social context, mutual confidence in groups and its members builds a distinct third type of trust.

Measurement difficulties and problems of endogeneity have made it cumbersome to empirically assess the relationship and its direction between generalized trust and group participation. We postulate a relationship between the two concepts in hypothesis three. *H3: Generalized trust depends on group participation. Those individuals that participate in more groups exhibit a higher level of generalized trust on average.*

In contrast to generalized trust, we assume group-specific trust to diminish with more group interactions, as illustrated in Figure 2. *H4: The average group trust decreases with the number of groups.*

Context, on the other hand, is assumed to be beneficial for group trust. The higher the degree of social context to a group, the more an individual is likely to have a strong confidence in its members. *H4:* Group trust increases with the context of a group, i. e. an individuals group trust is higher for smaller groups and those with more interactions.

Lastly, we assume a direction in the relationship between the trust types. Generalized trust is built up by particularized trust, rather than vice versa. This process is mitigated by group interaction. A narrative of the relationship is reflected in our last hypothesis. *H5: Particularized trust is a prequesite for group-specific confidence, while participation in many groups subsequently fosters generalized trust.*

3. Data and Method

3.1. Data

The online questionnaire about trust and group participation which we distributed in summer 2015 is oriented at common surveys about trust and social capital and includes those questions that have been found to be important determinants of trust in articles mentioned in the literature review. Besides demographic characteristics, the focus is on the different trust questions (general, colleagues, groups, friends, family) and on the groups the students are participating in. The list of all questions asked in the survey can be found in table 1 in the appendix on page 31. For some demographic variables, summary statistics are provided in table 2.³

TABLE 1 and 2 ABOUT HERE

Slightly more than half of the participants are males (54%), while around two thirds are from Austria (67%, 16% are Germans). Nearly half of the participants have no religion (45%) or are Roman-catholic (42%). The majority of the students lives in a relationship (60%). The median age of the group is 25 and their median disposable monthly income is 900 EUR. These demographics are in accordance with the expectations about such a homogeneous group of people like students at an Austrian business university.⁴ Even if this group is obviously not representative for the whole Austrian society, inferences made from the data of this homogeneous group are still valid. In contrast to a survey with a broader audience, one could assume that the world view of a student group (including their level of trust) is much less variant than that of the overall society. Thus, trust-differences found significant here can be considered as a lower bound and it is very probable that those differences are even more pronounced if the survey audience would have been larger.

Indeed, the descriptive statistics about the level of the different trust questions seem to support this assertion. While the median level of general trust (all trust questions are measured on a zero to ten Likert scale) and colleagues trust is 6, the median average group trust is already 6.75 and the median trust to the students friends (8) and family (9) is even higher.

 $^{^{3}}$ Further information about the survey, the raw data and code from which the results of the analysis have been drawn can be requested from the authors.

⁴The high share of German students is obvious since Vienna is a very popular place to study for German students. With respect to the religion: despite Austrias Roman-catholic history, the share of religious people in the young generation is not very high.

3.2. Sample Population

The subsample of our survey is restricted to mainly university students. With regard to two main demographic characteristics, age and education, this sample does not represent the overall population. However, the focus of this study is to explore the relationship between group participation and different trust types, an exercise which has not been carried out in a quantitative empirical fashion before. We acknowledge the potential limitations, which come with the restriction of our sample size, at the same time we do not suspect them to undermine the robustness of our main empirical findings, as explained in the following.

FIGURE 3 ABOUT HERE

Figure 3 depicts the distribution of generalized trust in three Austrian populations taken from the 2014 European Social Survey. The overall Austrian population, a subsample with at least higher secondary education, and a further, younger (less than 35 years old) subsample with high education are compared according to their levels of generalized trust. The only noticeable difference between the distributions is that the young and well-educated show a slightly higher level of generalized trust on average, which is more densely confined around the upper third of the trust scale. This observation, however, rather underlines the robustness of our results. In statistical inference, a more disperse outcome variable would presumably be associated with findings of even stronger statistical significance. The robust findings within our sample of rather homogenous individuals are a promising starting point for future investigations on a more representative population.

3.3. The 2SLS Approach

One central purpose of this analysis is to clarify the relationship between particularised, groupspecific, and generalised trust. For example, it could be imagined that group-specific trust emerges from generalised trust, since individuals with high levels of confidence in others in general are likely to engage in trusting relationships within smaller subgroups of society. On the other hand, it is possible to argue that our level of generalised trust increases the more we build up trust in different distinct communities. At the same time, all trust concepts are influenced by personal trajectories, such as education, upbringing, or religion. A mutual dependence between the different trust concepts emerges. A stylised image of the possible linkages between the trust components is provided in figure 4.

FIGURE 4 ABOUT HERE

The potential joint-determination of the trust concepts, as well as the mutual dependence circumvent an accurate estimation of coefficients. The results of any inferential model which tries to directly explain one level of trust with another trust concept, can be jeopardised by endogeneity (Antonakis et al., 2014). In order to overcome the problematic issues of endogeneity, a two-stage least-squares (2SLS) regression analysis is carried out separately for each of the three trust types. In doing so, we follow the approach presented by Freitag and Traunmüller (2009) and Wollebaek et al. (2012).⁵ Figure 5 illustrates the procedure for the example of examining the effect of particularised on generalised trust.

FIGURE 5 ABOUT HERE

Here, in a first step, a level of generalised trust is estimated with the use of all possible personal explanatory variables (1). In a second step, the fitted value of particularised trust (PT)is estimated with the use of its individual determinants (2). Lastly, the predicted values, \widehat{PT} , can be used in order to estimate the level of generalised trust together with the previously discovered determinants. A consistent estimation is possible since \widehat{PT} is determined by confounding factors, which are not linked to generalised trust. In the wording of instrumental regressions, particularised trust is instrumented via its unique personal determinants.

In order to be considered as a suitable instrument these characteristics need to fulfil the following three conditions (Antonakis et al., 2014). First, the instruments need to be valid, which means that they cannot be correlated with the error term of the original explanatory equation, in other words it must not suffer from the same problem as particularised trust. Secondly, the instruments must not have any explanatory power in the original equation, which means the only way in which they can effect generalised trust is via particularised trust. Lastly, the instruments should not be weak, which means that they must be correlated with the endogenous explanatory variable generalised trust. The described approach is applied for all three trust measures, estimating the remaining two trust concepts in a 2SLS approach via their determinants on a individual level.

In order to test for the adequacy of the 2SLS approach and the validity of the instruments applied, two different test statistics are consulted. The first statistic is the F-Statistic for the power of the instruments. The null hypothesis of the test assumes that the instruments applied are not strongly enough correlated with the explanatory variables so that the instruments would

 $^{^{5}}$ Apparently, these two studies are the only ones we could find which apply this approach. This is particularly interesting, since there are other articles available that empirically investigate the relationship between the different trust components that do not seem to take the problem of mutual dependence into account, for instance Newton and Zmerli (2011), Delhey and Welzel (2012) or Crepaz et al. (2014).

be weak. Secondly, the Sargan test examines the model for over-identification. Its null hypothesis assumes that the instruments are valid.

4. Results

For the interpretation of our results, a seemingly obvious but reasuring observation shall serve as a starting point.

FIGURE 6 and 7 ABOUT HERE

Figure 6 shows the distribution of levels of trust in family members, friends, groups, colleagues, and people in general. The distributions are all significantly different from each other. While it might appear obvious that individuals have higher trust in family members than strangers, it is worth noticing that trust in groups and colleagues takes a distinct intermediate position, lower than family, but higher than generalized trust, on average. This can be seen as a first indication in favour of the advocates of a third trust dimension, distinct from particularized trust on the one hand, which can be measured by friends and family trust and generalized trust on the other hand. The correlations presented in figure 7 further support this perspective. The correlations show a clear direction from particular to general: while family trust is highest correlated with friends trust, the correlation to groups, colleagues or general trust is significantly lower. In contrast, general trust is highest correlated to colleagues trust. Additionally, figure 8 shows a dimension reduced version of the data in form of its first two principal components.

FIGURE 8 ABOUT HERE

⁶ The red arrows, representing the loading of each variable in the two-dimensional space, confirm the positive association between the trust questions. All of them load high on component 1, but they differ considerably with respect to component 2. In particular family and friends trust are loaded much higher on component 2 than the other dimensions. Besides that, group trust forms a distinct category different from colleagues and general trust. These differences are evident, even the correlation and principal component analysis provide only a first illustration of the data, since they do not control for the effect of mutual dependence (in contrast to the 2SLS

 $^{^{6}}$ The five-dimensional space of all single trust questions is projected into a two-dimensional space: the first dimension or principal component is a linear combination of all variables such that it maximizes the variance of the data and the second component is orthogonal to the first component. Together, both components capture 72.5% of the overall variance.

models described below), i.e. the fact that high trusters exhibit high levels of all trust dimensions simultaneously.

Thus, we conclude our first hypothesis to be confirmed. There is a gradual but significant increase in the average level of trust from general to particular. Moreover, this result is in accordance with the idea of an *identity-based* trust; a form of faith in people that one does not necessarily know personally but who are perceived as more trustful than the general public. This is, for instance, because they study at the same university or participate in the same group.

This result emphasizes the role of group participation for a persons' level of trust. But how does this differ between people who are engaged in many groups compared to those who are member in only one or no groups at all?

FIGURE 9 ABOUT HERE

Figure 9 displays the average level of the trust variables against the number of groups. Interestingly, family and friends trust do not change with the number of groups. They are more or less constant from zero to five groups with a small decline for three groups which is an outlier due to the small number of people who have named three groups. Particularized trust is, thus, insensitive to group participation, since it is high for nearly all individuals in the survey and exhibits low variance. In comparison, group and generalized trust increase with the number of groups.

While the positive relation between group participation and generalized trust is in accordance with hypothesis H_2 and corroborates those scholars who have argued in favour of a positive effect of group interaction on trust (and social capital), the increasing level of group trust surprises. However, the effect is only moderate (and not significant, as shown by the KWallis-test statistic) and it is due to the mutual dependence mentioned earlier. Since high general trusters tend to show high levels of other trust dimensions as well, a potential negative relation between the number of groups and the average level of group trust is covered. Therefore, the average group trust is standardized by the level of generalized trust for each individual and plotted on the same graph. This time, the negative effect becomes obvious. If one controls for general trust, the average level of group trust decreases significantly, as presumed in the third hypothesis.

What do these results tell us? First, those individuals with social interactions to more people, measured by the number of group memberships, show a higher level of mutual confidence. This justifies the importance of group interaction in fostering social capital, as hypothesized by leading social capital researchers. Secondly, those people who have fewer social interactions, i. e. only one group, show a higher relative level of group trust than those individuals that take part in a more diverse social circle. These individuals are the "particularized trusters (who) are likely to join groups composed of people like themselves" Eric Uslaner (Uslaner, 2002, p. 7) thought of.

FIGURE 10 ABOUT HERE

Further insights about the group trust can be gained from the results presented in figure 10. This illustration displays the relation of group trust to the intensity of group participation (left panel) and to the group size (right panel). While the intensity of group interactions, measured by the frequency of participation, has a positive effect on group trust, the level of group trust decreases with group size. This is in accordance with hypothesis H_4 and thus supports the claim that an increased group context leads to more trust to its members. In other words, a narrower group with much interaction leads to more identification with the groups' members and thus to a higher level of identity-based trust.

The results described so far have been gained from the isolated consideration of the relation between single trust components and group participation. Nonetheless, the insights were sufficient to assess most of the research hypotheses formulated in section 2. However, to get a better understanding about the interdependence of particularized and generalized trust and their connection to individual characteristics, it is necessary to deal with the problem of mutual dependence.

As mentioned in section 2 and 3, the inferential modelling to investigate the relation between the trust components is oriented at the instrumental variable approaches conducted in Freitag and Traunmüller (2009) and Wolleback et al. (2012). Thus, we conduct one OLS model for each of the three trust components.⁷However, since family trust is almost invariant we use friends trust instead as approximation for particularized trust, and we perform an additional regression for group trust divided by generalized trust. This leads to four OLS and a 2SLS models where each trust component is first regressed on personal (exogenous) characteristics. In a second step, those covariates that turned out to be significant in the OLS model are employed in the 2SLS model together with the fitted values of the three trust components. In this way it is possible to investigate potential trust spillovers while avoiding endogeneity issues.

TABLE 3 ABOUT HERE

Table 3 summarizes the results of all eight models. Considering the first four models, it turns

⁷Despite the ordinal character of the trust questions on a scale from zero to ten, we did not use regression models designed particularly for ordinal scaled variables, since the question design in form of a Likert scale with labelled endpoints and an unlabeled interval in between is seen as a way to transform an ordinal variable into a quasi-interval scaled variable. For more on this consider the discussion on *Researchgate* (Shapira, 2014), (Bell, 2014).

out that the three trust components share some foundations while others differ. For instance, a catholic background is found to be positively associated with trust in all models. To live in a relationship does also positively effect mutual confidence in all dimensions. However, other classical control variables like age, gender and income do not have a significant effect. This is due to the largely homogeneous sample in which most of the participants are students. There is also no substantial effect of the family background with respect to parents education, the size of the municipality in which an individual grew up and the number of times one has moved into other cities/regions/countries on the trust. While some of these variables are significant for single trust components, the effect is not very robust. Exceptions are a high level of an individuals' own and his or her father's education (master degree), which positively effects group trust.

More interesting than the control variables are those variables that measure social interaction. While the self assessed evaluation on the intensity of social interaction (social) has a positive (but not consistently significant) positive effect on the whole trust spectrum, the participation in larger groups is associated with a lower group trust. Thus, the result derived in figure 10 is robust and hypothesis H_4 about the relationship between group size and group trust is confirmed.

Those variables that have a significant effect in the OLS regressions are, in a second step, used as control variables in another regression on the trust components. This time, the fitted values of the outcome variables from the OLS regressions are added as additional explanatory variables to the model. These fitted values are no longer mutual dependent to other variables in the model, since their relation to the controls has been estimated by the first step regression. Therefore, the second stage regressions allow to investigate a potential trust spillover and to determine the effect of group interaction on trust. The statistics indicate that the respective instruments are both strong and valid, i.e. they do not overidentify the model and have only a limited correlation with the explanatory variables.

In contrast to Freitag and Traunmüller (2009) and Wolleback et al. (2012) we find significant trust spillovers both from particularized (friends) trust to general trust and vice versa. The magnitude of the coefficients suggest that generalized trust is determined by particularized trust, rather than the other way around. There is also a spillover from friends to group trust, however, group trust does not have a significant effect on general trust on top of the influence of particularized trust. However, the results confirm our hypotheses with respect to the number of groups an individual is participating in on the average level of trust. As shown in model 7, the higher the number of groups, the higher is the average level of generalized trust. Additionally, the constructed relative group trust (model 8) decreases with the number of groups. Moreover, bigger groups have a negative effect on group and friends trust as indicated in model 5 and 6, beyond the effect of trust spillovers.

As a consequence, we conclude hypothesis H_5 to be confirmed, as well. On the one hand, group trust is positively linked with particularized trust and not with generalized trust. On the other hand, the more groups and individual participates in, the higher the level of generalized trust. The results about the relationship between group interaction and trust can be summarized as follows: first, there are more than two dimensions of trust. While there are positive associations between the different trust dimensions, the distribution of the responses to the five trust questions that have been asked about in the survey suggest that there is a category of identity-based trust as an additional dimension between generalized trust and particularized trust. Secondly, it is presumed that the participation in different groups is correlated with the average level of general and particularized trust as well as trust in the specific group. This relationship is validated by the data: there is a positive association between the number of groups one is participating in and the average level of general trust. In other words, people with more social interactions are indeed higher trusters. Moreover, the group context affects the level of group trust. Smaller groups in which an individual is participating on a regular basis are trusted more than bigger groups with less interactions. Despite this, the hypothesized negative relation between the number of groups and the average level of particularized trust can not be confirmed by the data. While the effect is negative, it is not significant as shown in model 5. The results indicate that particularized trust (rather than generalized trust) is an important prerequisite for group trust. The number of group interactions, on the other hand, has a positive association with generalized trust. Thus, the effect of group interaction on the different trust components can be detected beyond personal covariates and the inherent effect of trust spillovers.

5. Policy Implications and Conclusion

Generalized trust is believed to be an important element of social capital. However, its internal validity and its power of representing social capacities have been questioned in the past. As an opponent to particularized trust, generalized trust is believed to be associated with interactions in various networks and in mutual dependence with group interaction. Our results do support the assumption that generalized trust increases with the number of groups one feels belonging to and they show that group specific trust is particularly high for individuals with only very few group interactions.

Based on previous investigations (Wolleback et al., 2012), (Freitag and Bauer, 2013), we question the strict dichotomy between particularized and generalized trust and show that a third type of identity-based or community trust needs to be considered. This kind of trust reflects the faith in group members. The concept of community trust overlaps with the previous two trust types. It tends more towards a family/friend-type trust the smaller the respective group is or the more often it interacts. The larger the group, the more community trust coincides with the generalized type of trust in most people.

The new concept of community trust is of particular importance when judging the effects of ethnic fragmentation or social exclusion on mutual confidence. Wolleback et al. (2012) show that it is community trust, which is most likely to suffer from phenomena of ethnic or economic segregation. It could well be that many of the past investigations concerning inequality or ethnic fragmentation and generalized trust, as a representation of social capital, have only captured parts of the diminishing effects segregation actually has on community based trust. The 'new' trust measure should therefore deserve an elevated attention in social monitoring and policy interventions.

However, the study presented here considers only the mere number of group participations. It does not account for potentially varying effects of different group types. While the type of group has been assessed in the survey, the sample of 634 university students, how homogeneous it appears with respect to characteristics like age and income, is still too heterogeneous to immediately investigate the trust differences of single groups. Even if all survey participants are students at the same university, the online questionnaire was distributed to all university members and it was not possible to identify specific groups with enough members to analyse these groups directly.

FIGURE 11 ABOUT HERE

Nonetheless, figure 11 provides a network representation of all groups (gray circles) that could be identified by name and their members (colored circles, membership is indicated by colored arrows). Though this network is only a descriptive illustration of the group participation / trust relationship, it highlights the main idea of the analysis and points to a direction of potential further research.

To ease the interpretation, two individuals (represented by colored nodes) are emphasized in the graph. These nodes represent both types of people who we had in mind when we conducted the survey. The smaller purple node represents a person with relatively low generalized trust and high group trust in the one group the individual is participating. By contrast, the larger light blue node stands for a person with relatively high generalized trust who is member in four groups and has moderate levels of group trust. This association between group activity, group trust and general trust is not mere coincidence but detectable in the whole dataset as it has been shown in the section 4.

The network illustration emphasizes the direction for future research. Investigations on smaller groups of students with identifiable personal interactions could provide insights about the network centrality of individuals, their interaction to concrete groups and the relation to their level of generalized trust. In order to investigate the effect of different group types (charity vs. sport vs. political organization) it would also be worthwhile to a consider larger sample involving more heterogeneous people with diverse group interactions.

References

- Alesina, A., Baqir, R., Easterly, W., 1997. Public goods and ethnic divisions. Tech. rep., National Bureau of Economic Research.
- Alesina, A., La Ferrara, E., 2002. Who trusts others? Journal of public economics 85 (2), 207-234. URL http://www.sciencedirect.com/science/article/pii/S0047272701000846
- Algan, Y., Cahuc, P., 2010. Inherited trust and growth. The American Economic Review, 2060– 2092.
- Antonakis, J., Bendahan, S., Jacquart, P., Lalive, R., 2014. Causality and endogeneity: Problems and solutions. In: The Oxford handbook of leadership and organizations. pp. 93–117.
- Bell, R., 2014. Is a Likert-type scale ordinal or interval data?
- Beugelsdijk, S., van Schaik, T., Jun. 2005. Social capital and growth in European regions: an empirical test. European Journal of Political Economy 21 (2), 301–324.
- Björnskov, C., 2007. Determinants of generalized trust: A cross-country comparison. Public choice 130 (1-2), 1–21.

URL http://link.springer.com/article/10.1007/s11127-006-9069-1

- Crepaz, M. M., Polk, J. T., Bakker, R. S., Singh, S. P., 2014. Trust Matters: The Impact of Ingroup and Outgroup Trust on Nativism and Civicness. Social Science Quarterly 95 (4), 938–959.
- Delhey, J., Newton, K., Welzel, C., 2011. How General Is Trust in "Most People"? Solving the Radius of Trust Problem. American Sociological Review 76 (5), 786–807.

- Delhey, J., Welzel, C., 2012. Generalizing Trust: how outgroup-Trust grows beyond ingroup-trust. World Values Research, WVR 5 (3).
- Dinesen, P. T., 2011. A note on the measurement of generalized trust of immigrants and natives. Social Indicators Research 103 (1), 169–177. URL http://link.springer.com/article/10.1007/s11205-010-9704-6
- Forte, A., Peiro-Palomino, J., Tortosa-Ausina, E., Jul. 2015. Does social capital matter for European regional growth? European Economic Review 77, 47–64.
- Freitag, M., Bauer, P. C., 2013. Testing for measurement equivalence in surveys dimensions of social trust across cultural contexts. Public Opinion Quarterly 77 (S1), 24–44. URL http://poq.oxfordjournals.org/content/77/S1/24.short
- Freitag, M., Grießhaber, N., Traunmüller, R., 2009. Vereine als schulen des vertrauens? Eine empirische analyse zur zivilgesellschaft in der schweiz. Swiss Political Science Review 15, 495– 527.
- Freitag, M., Traunmüller, R., 2009. Spheres of trust: An empirical analysis of the foundations of particularised and generalised trust. European Journal of Political Research 48 (6), 782–803.
- Glanville, J. L., Andersson, M. A., Paxton, P., 2013. Do social connections create trust? An examination using new longitudinal data. Social Forces, sot079. URL http://sf.oxfordjournals.org/content/early/2013/07/02/sf.sot079.short
- Guiso, L., Sapienza, P., Zingales, L., 2000. The role of social capital in financial development. Tech. rep., National bureau of economic research. URL http://www.nber.org/papers/w7563
- Gundelach, B., 2014. In diversity we trust: the positive effect of ethnic diversity on outgroup trust. Political Behavior 36 (1), 125-142. URL http://link.springer.com/article/10.1007/s11109-013-9220-x
- Hooghe, M., Reeskens, T., Stolle, D., Trappers, A., 2009. Ethnic diversity and generalized trust in Europe A cross-national multilevel study. Comparative Political Studies 42 (2), 198-223. URL http://cps.sagepub.com/content/42/2/198.short
- Høyer, H. C., Mønness, E., 2016. Trust in public institutions–spillover and bandwidth. Journal of Trust Research, 1–16.

- Iglic, H., 2010. Voluntary associations and tolerance: An ambiguous relationship. American Behavioral Scientist 53 (5), 717-736. URL http://abs.sagepub.com/content/53/5/717.short
- Knack, S., Keefer, P., 1997. Does social capital have an economic payoff? A cross-country investigation. The Quarterly journal of economics, 1251–1288. URL http://www.jstor.org/stable/2951271
- Lolle, H., Torpe, L., 2011. Growing ethnic diversity and social trust in European societies. Comparative European Politics 9 (2), 191-216. URL http://www.palgrave-journals.com/cep/journal/v9/n2/abs/cep200916a.html
- Lundason, S. W., Wollebaek, D., 2013. Diversity and community trust in Swedish local communities. Journal of Elections, Public Opinion & Parties 23 (3), 299–321.
- Moore, S., Bockenholt, U., Daniel, M., Frohlich, K., Kestens, Y., Richard, L., Mar. 2011. Social capital and core network ties: A validation study of individual-level social capital measures and their association with extra- and intra-neighborhood ties, and self-rated health. Health & Place 17 (2), 536–544.

URL http://www.sciencedirect.com/science/article/pii/S1353829210001887

- Newton, K., Zmerli, S., 2011. Three forms of trust and their association. European Political Science Review 3, 169–200.
- Porta, R. L., Lopez-De-Silane, F., Shleifer, A., Vishny, R. W., 1996. Trust in large organizations. Tech. rep., National Bureau of Economic Research. URL http://www.nber.org/papers/w5864
- Putnam, R. D., 1995. Bowling alone: America's declining social capital. Journal of democracy 6 (1), 65–78.
- Putnam, R. D., Leonardi, R., Nanetti, R. Y., 1993. Making democracy work: Civic traditions in modern Italy. Princeton university press.
- Reeskens, T., Oct. 2012. But Who Are Those "Most People" That Can Be Trusted? Evaluating the Radius of Trust Across 29 European Societies. Social Indicators Research 114 (2), 703–722.

- Rothstein, B., Stolle, D., 2008. The state and social capital: An institutional theory of generalized trust. Comparative politics, 441-459. URL http://www.jstor.org/stable/20434095
- Schild, C.-J., 2013. Generalized trust and regional innovation activity. Tech. Rep. 02-2012, IWQW Discussion Paper Series.
- Shapira, S., 2014. What is the "right" regression model to use when my dependent variable is rated on a 7 point Likert scale?
- Smith, S. S., 2010. Race and trust. Annual Review of Sociology 36, 453-475. URL http://www.annualreviews.org/doi/abs/10.1146/annurev.soc.012809.102526
- Stolle, D., 2002. Trusting strangers—the concept of generalized trust in perspective. Austrian Journal of Political Science 31 (4), 397–412.
- Taniguchi, H., 2012. The influence of generalized trust on volunteering in Japan. Nonprofit and Voluntary Sector Quarterly, 0899764011434554. URL http://nvs.sagepub.com/content/early/2012/02/01/0899764011434554.abstract
- Torpe, L., Lolle, H., 2011. Identifying social trust in cross-country analysis: do we really measure the same? Social Indicators Research 103 (3), 481–500.
- Uslaner, E. M., 2001. Trust as a moral value. The handbook of social capital, 101–121.
- Uslaner, E. M., 2002. The moral foundations of trust. Cambridge University Press.
- Uslaner, E. M., 2010. Segregation, mistrust and minorities. Ethnicities 10 (4), 415-434. URL http://etn.sagepub.com/content/10/4/415.short
- van Ingen, E., Bekkers, R., 2015. Generalized Trust Through Civic Engagement? Evidence from Five National Panel Studies. Political Psychology 36 (3), 277–294.
- Welzel, C., 2010. How selfish are self-expression values? A civicness test. Journal of Cross-Cultural Psychology 41 (2), 152–174.
- Wilson, R. K., Eckel, C. C., 2010. Trust and social exchange.
- Wollebaek, D., Lundason, S. W., Trägardh, L., Dec. 2012. Three Forms of Interpersonal Trust: Evidence from Swedish Municipalities. Scandinavian Political Studies 35 (4), 319–346.

6. Appendix

6.1. Figures



Figure 1: *Three forms of trust*: A third 'overlapping' form of community trust is expected between generalized and particularized trust.



Figure 2: *Trust and group context*: Generalized trust is expected to increase with group count, while group specific trust, on average, decreases.



Figure 3: Validation of population sample: Results from the European Social Survey 2014 show a slightly positive bias of a young, well-educated population subsample.



Figure 4: *Endogeneity and trust measurement*: Inferential models are likely to suffer from endogeneity, forms of trust are interdependent and jointly determined.



Figure 5: Illustration of the Two-stages least squares: A paired two-stage least-squares approach allows for consistent estimation.



Figure 6: *Histogram of different trust measures*: Types of trust are differently distributed according to level of context.



Figure 7: Correlogram of different trust variables: The correlation of a trust variable is highest to its "adjacent" trust dimensions.



Confidence intervals displayed in parentheses.

Figure 8: Score plot of the first two principal components: A principal component analysis confirms the positive association (but non-identity) of the trust dimensions.



Figure 9: Trust and number of groups: Individuals with many group interactions show relatively higher levels of generalized trust.



Figure 10: Intensity of participation and group trust: Group specific trust increases with group interaction and decreases with group size.





of demographic characteristics of the survey participants	SCALE	0 "never"- 4 " four or more"	1 "in paid work", 2 "in education", 3 "other"	0 "never"- 4 " four or more"	0-100	1 "yes", 0 "no"	0 "never"- 4 " four or more"	0 "never"- 4 "four or more"	various	0-10	1 "rural" 2 "urban" 3 "metropolitan"	1 "rural" 2 "urban" 3 "metropolitan"	<16-30+	1 "HS or less", 2 "bachelor", 3 "master", 4 "Phd"	1 "HS or less", 2 "bachelor", 3 "master", 4 "Phd"	1 "HS or less", 2 "bachelor", 3 "master", 4 "Phd"	0 "not on fb", 1 "less than 50", 2 "51-100",, 10 "751-1000", 11 "more than 1000"	0-10	0-10	1 "male" 0 "female"	0-10	0-7	number of years	1 "never" 2 "seldom" 3 "sometimes" 4 "often" 5 "very often"	1 "<10" 2 "10-50" 3 "51-100" 4 "101-500" 5 "501-1000" 6 "1001-5000" 7 "5000+"	0-10	music, $\operatorname{art}/\operatorname{cultural}$, unions, politics, charity, religion, other	in EUR	1 "not living in a rs.", "with partner, not in one HH", 3 "with p. in one HH"	1 "Roman Catholic", 2 "other", 3 "none"	1 "much less than most" 2 "less than most"	3 "about the same" 4 "more than most" 5 "much more	eaking of your family/friends/colleagues or classmates/members of group x/people in 0 means' vou can never be to careful? 10 means '1 can trust them completely'"
Table 1: Summar	ITEM	No of residence changes to other country	Main activity	No of regional residence changes	Age	Ever been living with children	No of residence changes with parents	No of residence changes after cohabitation	Citizenship	Colleague trust ¹	Size of municipality	Size of municipality one is born in	Age of leaving parental home	Own education	Mother's education	Father's education	No of facebook friends	Family trust ¹	Friends $trust^1$	Gender	Generalized trust ¹	No of groups participating in	Duration of group membership	Frequency of participation	No of members in group	Group trust ¹	Type of group	Disposable monthly income	Relationship status	Religion	Social activity (compared to same age friends)		Trust questions are phrased in the following way: "Si <i>general</i> how much do you think they can be trusted?
	CODE	acountry	act	aregion	age	children	chgres1	chgres2	cntry	$\operatorname{coltrust}$	domicile	domkid	domleave	eduown	edumom	edudad	facebook	famtrust	fritrust	gender	gentrust	grpcount	$\operatorname{grpjoin}$	grpmeet	grpmmbr	grptrust	$\operatorname{grptype}$	income	relation	\mathbf{rel}	social		1)

6.2. Tables

31

Participants		634	
Gender			
Male		343	54%
Female		291	46%
Country			
Austria		425	67%
Germany		101	16%
Other		108	17%
Religion			
No religion		288	45%
Roman Catholic		264	42%
Protestant		36	6%
Other		46	7%
Relation			
No relation		258	40%
With a partner, no HH		184	30%
With a partner, same HH		192	30%
Quartiles	25%	50%	75%
Age	23	25	30
Disposable Income	600	900	1500
Generalized trust	4	6	7
Colleagues trust	5	6	7
Group trust	5.67	6.75	7.75
Friends trust	7	8	9
Family trust	8	9	10

 ${\it Table \ 2: \ Summary \ of \ demographic \ characteristics \ of \ the \ survey \ participants}$

Variables	(1) fritrust	(2) OI grptrust	LS (3) gentrust	$^{(4)} m grp/gen$	(5) fritrust	(6) 2S grptrust	LS (7) gentrust	$^{(8)} m grp/gen$
age	ns^+	ns^+	0.046^{***}	-0.013^{**}			0.028^{***}	-0.011^{**}
gender (ref. male)	ns^+	$^{\mathrm{ns}^{+}}$	ns ⁻	ns^+			(0.000)	(0.004)
act: 1 (work)	$^{\mathrm{ns}^{+}}$	1.009^{*}	ns^+	ns^+		0.810^{*}		
act: 2 (study)	ns^+	(0.562) 1.110^{*} (0.565)	ns^+	ns ⁻		(0.490) 1.089^{**} (0.493)		
income (in FUR)	ns ⁻	ns^+	ns ⁻	ns^+		. ,		
relation	0.272^{***}	ns^+	0.360***	-0.121**	0.158*		ns^+	-0.092*
	(0.098)	0 510***	(0.128)	(0.050)	(0.094)		+	(0.053)
rel: 1 (catholic)	0.326^{*}	0.519***	0.365*	ns	ns '		ns '	ns '
(ref. none)	(0.166)	(0.191)	(0.217)					
rel: 2 (other)	ns ⁻	ns^+	ns ⁻	0.193^{*}	ns ⁻		ns ⁻	ns^+
			(0.116)					
eduown: 1-2 (ref. PhD)	ns ⁻	ns^+	ns ⁻	ns^+		ns^+		
eduown: 3	ns^+ (0.347)	0.814**	ns^+	ns^+	(0.284)	0.565^{**}		
edumom 1-3 (ref. PhD)	ns ⁺	ns^+	ns^+	ns^+	()			
edudad 1-2 (ref. PhD)	ns^+	ns^+	ns^+	ns^+		ns^+		
edudad: 3	ns^+	0.514^{*} (0.285)	ns^+	ns^+		0.406^{*} (0.226)		
domicile (rural, urban, met	ns ⁻	ns ⁻	ns ⁻	ns^+				
domkid	ns ⁺	ns ⁻	ns^+	-0.089^{*}				ns ⁻
domleave	ns ⁻	ns^+	ns ⁻	ns ⁺				
chgres1/2	$^{\mathrm{ns}^{+}}$	ns ⁻	ns ⁻	ns ⁻				
(no. of movings w	ith parents	/ adult)						
aregion (lived in other reg	ns ⁺ ion)	ns^+	ns ⁻	ns^+				
acountry	0.125*	ns^+	ns^+	ns ⁻	0.127^{**}			
	(0.076)				(0.051)			
facebook (no. of FB friends	ns⊤ s)	ns^{+}	ns^{+}	ns				
social	0.194^{**}	0.195^{*}	ns^+	ns^+	ns^+	ns^+		
(5 scale)	(0.094)	(0.108)						
grpmmbr	ns ⁻	-0.134***	ns ⁻	ns ⁻	-0.063*	-0.082^{*}	ns^+	ns^{-}
(mean no. or men	ibers)	(0.040)	+		(0.055)	(0.040)	0.105*	0.049*
grpcount	ns	ns '	ns '	ns	ns	ns '	0.105	-0.042
(No. of groups)						0.054	(0.055)	(0.025)
grptrust						(0.366)	$\begin{array}{c} 0.773^{***} \\ (0.278) \\ 0.204 \\ (0.224) \end{array}$	ns
gentrust					0.350^{***} (0.119)	-0.066 (0.230)	()	
Obs	411	411	411	408	411	411	411	408
Adi R2	0 0/36	-111 0 0274	0.0704	0.0465	0.204	0 179	-111 0 247	0 108
Int Steve E Steve	0.0400	0.0374	0.0194	0.0400	1 495	0.173	0.047	1.000
Ist. Stage r-Stat	, ad				1.430	11 10	14 74	16.00
Sargan cni-squar	eu				0.420	11.12	14./4	10.09
	Standar	d errors in pa	arentheses	*** p <	0.01, ** $p < 0$	0.05, * p < 0).1	

Table 3: Inferential model on the different trust components: There is a partial trust spillover from particular to general and vice versa.