Exploring the role of network diversity and resources in relationship to generalized trust in Norway

Several studies suggest a positive relationship between social capital and generalized trust. Employing a network understanding of social capital (Lin, 2001), this study questions which aspects of social networks may be linked with generalized trust. It investigates whether the diversity of social networks and the socio-economic status of one's contacts are linked with generalized trust in the Norwegian, egalitarian context. The analyses examine these patterns in relationship to both kin and non-kin contacts. The study employs data from the first Norwegian survey that includes the position generator (PG). The empirical analyses show that extensive social networks are indeed linked to higher levels of generalized trust, but that this relationship is limited to non-kin contacts. Concerning the link between network resources and generalized trust, there is evidence of a more general association with generalized trust that holds when considering both kin and non-kin contacts. These results are a first step in developing a more nuanced discussion of the mechanisms associated with generalized trust and highlight the importance of employing measures that account for the homophily of networks when investigating their relationship to trust.

Introduction

Social capital is important partly due to its influence on collective decision making and trust at the societal level. If social capital has the potential to be a "social good", we would expect it to be associated with the level of trust individuals place in their fellow citizens. The present study relies on a network understanding of social capital (Lin, 2001) and

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investigates whether social networks' extensivity and prestige may be linked to generalized trust. This type of trust, labelled social or generalized trust informs of "a belief in the benevolence of human nature in general" (Yamagishi and Yamagishi, 1994, 139), is fundamental to the well-being of society (Coleman, 1988) and political life (Alesina and La Ferrara, 2002; Knack and Keefer, 1997). Generalized trust, is argued to be essential for social cohesion in modern multicultural societies under pressure from rapid social changes (Uslaner, 2018) as it promotes donations to charity (Sønderskov, 2010; Uslaner, 2002), tax payment (Scholz and Lubell, 1998), and increases contributions to the provision of public goods (Thöni et al., 2012).

There are several theoretical approaches aimed at explaining generalized trust. One set of approaches situates generalized trust at the society-level and investigates how affluence, inequality and the quality of institutions, culture and values influence generalized trust (Delhey and Newton, 2004; Dinesen, 2011; Rothstein and Stolle, 2003; Sønderskov and Dinesen, 2016; Uslaner, 2002). Another strand of scholarship – which locates generalized trust at the individual level – focuses on the role of demographic characteristics, attitudes and individual civic engagement (Glanville et al., 2013; Putnam, 2000). According to scholars in this tradition, social capital is an important correlate of generalized trust, also at the individual level (Brehm and Rahn, 1997; Li et al., 2005; Putnam, 2000). While some scholars conceptualize generalized trust as a largely stable attitude formed in childhood (Uslaner, 2002), newer evidence shows that generalized trust is malleable and also shaped by experiences and contact with others also in adulthood (Glanville et al., 2013; Glanville and Paxton, 2007).

This study focuses on which aspects of social capital may be related to generalized trust. Specifically, it discusses whether and, if so, how the pattern of social ties the individual has is related to generalized trust. Broadly, approaches to the study of social capital consider social capital either as a collective resource or an individual one. Scholars such as Coleman and Putnam are amongst the most prominent in this former approach, while the network approach developed by Lin and colleagues mainly focuses on the influence of individual level social capital on primarily social mobility. This present study combines elements from both perspectives. However, to maintain theoretical and

methodological coherence, the study follows Lin's (2001) network-based understanding of social capital, where it is defined as the sum of individual-level resources (information, monetary resources) that individuals can access through their social networks and mobilize to further their goals (Lin, 2001). This network-based approach to social capital enables scholars to investigate *how* social networks are linked with generalized trust. The extant scholarship shows the relevance of these indicators on related outcomes, such as tolerance (Côté and Erickson, 2009). Yet, with few exceptions (Glanville, 2016a; Li et al., 2008), *how* one's social network is associated with generalized trust is, however, is often overlooked. It is particularly unclear if the relationship between social network and generalized trust depends on the contacts' prestige, or on their diversity or both?

The findings in the extant literature indicate that the robustness of this relationships might depend on whether we account for one's kinship to their ties (Ermisch and Gambetta, 2010; Glanville, 2016b). However, the distinction between kin and non-kin ties has received insufficient attention in the extant literature. Having extensive non-kin contact may both mean being acquainted with individuals from different walks of life and indicate less homophilous networks (Ermisch and Gambetta, 2010). I, therefore, investigate whether non-kin relationships are more robustly linked to increased generalized trust than kin ties. This study contributes to the literature on generalized trust by distinguishing between the number of contacts in a network and the prestige of these contacts. While both factors may be expected to increase generalized trust, previous research has not established their relative importance. Furthermore, by employing the network measures based on the position generator, this study contributes to the extant literature by shifting the focus from which activities might be conducive of generalized trust (such as participation in voluntary associations), to a more nuanced discussed of which network characteristics may be linked with generalized trust, irrespective of the activities individuals engage in. It draws attention to two network characteristics: the network's occupational diversity and the average prestige of one's contacts.

Empirically, I focus on Norway, which is a particularly intriguing case, as it is often regarded as an outlier in terms of equality. The data used in this study are the first to implement the position generator in Norway. Norway is a social-democratic society with

strong egalitarian sentiments and with historically high levels of trust (Delhey and Newton, 2004; Esping-Andersen, 2015). Corruption and favoritism, two of the main macro-level correlates of generalized trust, occur very seldom in the Norwegian public sector (Inglehart, 1990; Rothstein, 2013). Norwegians view their society as one where most people are located "in the middle" and a substantially lower proportion consider their personal network important for attaining goals compared to other European countries (Hjellbrekke & Korsnes, 2012). These subjective beliefs make Norway a distinctive case, where we could expect that social capital is less consequential in relationship to trust. Especially, as the state has partly taken over some of the responsibilities of the family and close friends by providing universal and extensive welfare systems (Esping-Andersen, 2015). However, this setting also provides an intriguing puzzle, as class inequalities are rising (Hansen, 2014) and there is a strong inter-generational reproduction of the upper classes (Flemmen et al., 2017), which may suggest that social networks becoming more exclusive, reducing their ability to foster trust.

Contact diversity and generalized trust

The beneficial consequences of interactions with others different from oneself is one of the most prominent links between social capital and generalized trust (Putnam, 2000). Several studies argue that individuals who participate in voluntary organizations and engage in informal social contact have higher levels of generalized trust (Glanville et al., 2013; Putnam, 2000). Putnam (2000) discusses these differences in terms of bridging and bonding social capital. Bonding social capital forms in homogenous groups within tightly knit networks of interaction, such as families or circles of close friends. Bridging social capital, stems from interactions between individuals from heterogeneous backgrounds and is most likely to foster trust, as individuals are exposed to opinions and ideas different from their own when interacting with people of diverse status and occupations (Putnam, 2000).

In terms of mechanisms much the extant literature draws attention to the importance of contact with individuals who are somehow different. However, this

mechanism is articulated in different ways. For instance, contact with individuals who are somehow different contributes to sharing norms, rules and interpretations of the world with others, generating thus circumstances which are conductive of trust (Brehm and Rahn, 1997; Burt and Knez, 1995; Putnam, 2000; Zucker, 1986). An alternative articulation of these mechanisms is linked with a generalized form of the classical contact hypothesis: that interactions with individuals who are in some way different may foster positive outlooks towards outgroups, or strangers (Pettigrew et al., 2011) . The relevance of this mechanism is shown in relationship to tolerance (Côté and Erickson, 2009).

However, empirical findings concerning the positive role of diversity are somewhat mixed. Delhey and Newton (2003) find a positive association between informal social networks, measured as having close friends and meeting them frequently, and generalized trust. Glanville et al. (2013) and Freitag and Traunmüller (2009) show that in the U.S. and Germany, respectively, informal social connections are positively correlated with generalized trust also when accounting for previous trust levels and individual heterogeneity.[1] However, Li et al., (2008) do not find a relationship between the number of occupationally diverse contacts and social trust in the UK, yet Li et al. (2005) find that having contacts outside the household who are willing to help is associated with higher levels of trust. While these differences may be due to the context of study, they also indicate a need to harmonize the measurement of social networks and have an increased focus on which characteristics of networks might be linked with trust.

However, the way in which network heterogeneity has, or has not been accounted for, may explain these diverging findings. Social networks, conceptualized either, as informal ties, or membership in voluntary associations tend to be homophilous (DiPrete et al., 2011; Hofstra et al., 2017; McPherson et al., 2001). However, homophilous interactions are unlikely to contribute to increased trust towards strangers and may function as echo-chambers (Levi, 1996; Uslaner, 2002). Although relevant and highly informative, the standard indicators measuring the number of social ties capture mainly social isolation

[1] Glanville et al. (2013) measured how often respondents engage in socializing with friends, relatives and neighbors; Freitag and Traunmüller (2009) measure both how frequently individuals meet socially with relatives, friends and neighbors and how often they help them.

and engagement in social networks. Such measures, on their own, seldom offer a measure of similarity to the contacts, and they may capture what Putnam (2000) labeled as bonding social capital.

Arguably, the "emancipation of trust" theory offers some guidance in overcoming such issues by focusing on the relationship between the individual and their contacts. One of the key implications of this theory is that "strong relations such as family ties promote a sense of security within these relations but endanger trust that extends beyond these relations" (Yamagishi et al., 1998, 166). Hence, trust in strangers and commitments become alternative solutions to risking exploitation in social interactions (Yamagishi et al., 1998; Yamagishi and Yamagishi, 1994). An implication of this perspective on trust is that individuals relying on family contacts are both more reluctant to interact with strangers and have less experience with it. They are, thus more likely to misjudge the character of others and trust strangers less. This perspective also suggests that individuals with networks mainly composed of non-kin ties tend to be more trustful towards strangers, as interactions with the community and friends contribute to form an idea that most people will be helpful and can be relied upon, thus enhancing trust (Welch et al., 2007). Having experience with dealing with individuals outside the family makes them more adept at assessing the degree to which their trust would be reciprocated and at reading signs of untrustworthiness (Yamagishi et al., 1998).

Ermisch and Gambetta (2010: 375) develop this framework further and conclude that "trust is positively affected by any factor that promotes the experience of the behaviour of others beyond one's family circle". They show that reliance on family ties hampers the development of generalized trust (Ermisch and Gambetta, 2010). Similarly, Alesina and Giuliano, (2011) find that family may function as a substitute for trusting strangers. These studies suggest that family ties could be considered immaterial and that mere exposure to non-family members may be positively associated with generalized trust. However, the perspective provides limited leverage over what other characteristics contacts outside the family should have, if they are to be conducive of trust.

Combining these insights with Putnam's (2000) seminal work suggests that having contacts who are both non-kin and somehow diverse is linked with higher levels of

generalized trust. However, only a couple of studies have investigated the relative importance of these two factors. For instance, Glanville (2016) finds that individuals who have at least one friend belonging to various groups (manual workers, individuals with different religions or ethnic background) in their network have higher levels of trust. While (Li et al., 2005)) do not explicitly focus on the kinship relations of contacts, they show having contacts outside the household which could provide some support is sometimes linked with higher levels of generalized trust. Hence, the analyses will account for this difference.

Network resources and generalized trust

Another relevant characteristic of networks in relationship to trust might be the resources the individual may access through their contacts. The extant scholarship finds a positive association between the individual's own resources, such as of economic and cultural capital, and trust (Delhey and Newton, 2005; Mewes, 2014; Van Lange et al., 2017). Findings show that those structurally disadvantaged express lower levels of trust (Smith, 1997), that educational attainment is followed by an increase in trust (Sturgis et al., 2009), and that the unemployed tend to be less trustful (Glanville et al., 2013; Mewes, 2014). Overall, one's social position and resources are linked with life chances and may influence one's level of generalized trust. However, the relationship between social class and generalized trust is only robust in wealthy societies (Hamamura, 2011).

This section draws attention to a potential generalization of the resources hypothesis by shifting focus from one's individual resources, to resources which can be accessed through networks. Two partly complementary perspectives seek to explain these patterns: one focusing on mitigating the risks of trusting strangers, another on the role of homophily in social network formation. It is argued that the relative risk difference in trusting strangers between those in relatively privileged positions, compared to those relatively deprived is so great that only relatively privileged individuals adopt trusting attitudes (Delhey and Newton, 2003; Simmel, 1950). Individuals in relatively privileged positions are better integrated in society (have a stable income, savings, less dependent on social welfare, navigate law enforcement and welfare systems more competently),

hence buffering the risk of encountering "cheaters" who betray their trust (Hamamura, 2011; Simmel, 1950).

The other perspective is closely related to the principle of homophily – that individuals tend form social relations with those similar to themselves, either due to preferences, or structural factors, such as the place of residence. Hence, individuals with comparatively less resources tend to form friendships with other relatively deprived individuals who in turn may (also) possess distrusting beliefs about others (Woolcock, 1998). Such distrusting beliefs might be rooted in competition, for instance in the labor market, leading to less cooperative interactions and more negative view towards others (Allport, 1954). Similarly, individuals in the upper echelons of society are more likely to form connections with others who also have similar resources – comparatively higher level of education, social class or income – which are all associated with increased level of trust.

An omission in this research concerns whether resources accessed through networks are also linked with higher levels of trust. While the number of contacts may be similar across social groups, the status of the contacts may differ considerably between individuals (Halpern, 2005, pp. 22–24). Differences in the types and levels of resources individuals access through their networks are linked with marked differences in emotional and material support, thus affecting one's health, general well-being and trust in others (Halpern, 2005: 73–113). Hence, individuals who access more resources through their social networks might have higher levels of generalized trust, as they can rely on their networks for support in cases where their trust is breached. This association is likely to be positive for all socio-economic groups only when there are comparatively low levels of homophily and a low level of structural inequalities. Socio-economic resources accessed through networks may create structural advantages, or disadvantages, which have received very limited attention in the extant scholarship on generalized trust. However, unlike the role of diversity, there is little reason to believe that the kin/non-kin dimension is of consequence, as this perspective focuses on the overall sum of resources accessed by the individual. Yet, it is important to investigate empirically whether network resources are only positive for individuals in higher social positions.

Accessing social capital

The mechanisms previously discussed rely on the assumption that individuals have, at least partly, the possibility to access both diverse and prestigious contacts. However, the sociological literature discussing the formation and access to social capital questions whether social capital is equitably distributed in society, as access to social capital is closely intertwined with the broader stratification processes existing in society (Bourdieu, 1986; Lin, 2001; Putnam, 2016). Hence, one's social position is an important control when studying this association. Moreover, social networks may have an exclusionary power and sustain class inequality, even in circumstances where individuals do not have an explicit goal to gain undue influence over their peers (Bourdieu, 1986).

The different socio-economic standing of individuals in society gives them different opportunities to meet and interact with others (Bottero, 2004; Halpern, 2005). As previously discussed, the homophily principle suggest that individuals tend to interact with others with similar characteristics (McPherson et al., 2001). As meeting opportunities may both change throughout life and be influenced by one's background it is important to account for mobility trajectories, rather than one's current position. Evidence from the UK demonstrates the importance of accounting for stratification processes as the stable upper class has access to both more diverse and prestigious contacts compared to the stable working class and that one's mobility is also linked with social trust (Li et al., 2008). While no studies have explicitly investigated whether access to social capital is classed in Norway, the inter-generational reproduction of the upper classes (Flemmen et al., 2017) may suggest that networks may also be at least partly exclusive. Highlighting the importance of accounting for mobility trajectories, alongside other socio-demographic factors which may influence access to social networks.

Data and methods

The analyses employ a Norwegian survey carried out in October-November of 2015. The electronic survey was sent to a probability sample that is representative of the adult (18-80 years) Norwegian population in terms of age, gender, education and geography, without an opt-in option. The survey is a unique data source as it combines several social background and demographic indicators, standard generalized trust variables and is the first to incorporate the position generator in Norway. The response rate was 41%, totaling 4007 respondents.[2] The sample used in this study is restricted to individuals aged between 29 and 81 as over 50% of the younger respondents are in education, and thus lack a labor market position which is necessary for the construction of the social class variables. Thus, resulting in a total sample of 3488 respondents.

Analyses of the drop-out and response rates show that the group with the highest non-response rate was composed of males under 30 from the eastern part of Norway. Post-sampling weights have been calculated to adjust for this and other standard socio-demographic characteristics.[3] The analyses are estimated on the weighted data, however, even without the weights, the distribution of socioeconomic characteristics is comparable to that of the population, although the unweighted data slightly over-represent the proportion of immigrants with higher education and slightly under-represent individuals who have only completed the mandatory education.

Generalized trust

The dependent variable, generalized trust is operationalized as an index, measured using the standard three-item scale. Respondents chose a score on a scale from 1 (low) to 10 (high) on the following questions: (1) "Would you say that most of the time people try to be helpful, or that they are mostly just looking out for themselves?" where the low value represents the answer alternative "People mostly look out for themselves" and the high

[2] Similar level to other electronic surveys carried out in Norway (Norwegian Citizen Panel 2015: doi:10.18712/NSD-NSD2343-V3).

[3] Age, gender, education and region of residence.

"People mostly try to be helpful", (2): "Do you think most people would try to take advantage of you if they got a chance, or would they try to be fair?", where the low category is "Most people try to take advantage of me" and high category is represented by "Most people try to be fair" and (3) "Generally speaking, would you say that most people can be trusted or that you cannot be too careful in life?", where the low value represents the answer alternative "You can't be too careful" and the high value is "Most people can be trusted". The index is constructed by averaging these three items. These three items have strong internal coherence in the data, with a Cronbach's α score of 0.84 and a mean value of 6.3 (SD 1.8). This operationalization reflects the individuals' views of out-groups and is generally considered a valid measure of general trust in unfamiliar others (Delhey et al., 2011). At the national level it is correlated with other outcomes related with generalized trust, such as wallet return (Bjørnskov, 2012), violent crime (Lederman et al., 2002) and corruption (Rothstein, 2013).

Position generator

Social capital is measured using an adaptation of the position generator developed by Lin and Dumin (1986). The position generator is an established instrument in research focusing on social mobility and social capital (Benton, 2016; Son and Lin, 2008). The respondents are asked whether they know someone in a series of occupations, and thereafter they indicate whether that person is an "acquaintance", "friend", or "family".

Occupations have a powerful structuring effect on modern societies and related to many important dimensions of stratification, hence providing an effective way of capturing the diversity of contacts (Côté and Erickson, 2009). To ensure this, the choice of the 34 occupations included in the PG was informed by previous implementations (Hällsten et al., 2015; Lin, 2001) and was adapted to the Norwegian context. The occupational groups included (i) have a substantial number of employees, (ii) have varied gender dominance, (iii) require different levels of education, (iv) encompass both new and traditional occupations, and (v) range from low to high occupational prestige.

The position generator is an effective measure of social capital in relationship to generalized trust. In comparison to the name generator, it minimizes the impact of strong

ties and redundancy (Pena-López and Sánchez-Santos, 2017). Unlike measures relying on macro-level contact diversity, the position generator has the potential to capture contact between groups (Hewstone, 2015). Furthermore, by choosing only the contact respondents consider closest to them, the risk of capturing redundant ties is mitigated. Limiting redundancy is also important from a theoretical perspective. Granovetter's (1973) strength of weak ties hypothesis suggests that weak ties, or ties outside the family are decisive as they are an effective way to extend the scope of resources which an individual can access, beyond those already possessed in their family. From a redundancy point of view, this implies that if an individual already has a kin contact within one of the occupations, they are less likely to access or mobilize the contact outside of the family (Burt, 1992). Nevertheless, this also informs of one of the limitations of the present study – that the estimates presented in the paper might underestimate the relationship between non-kin ties and generalized trust, as respondents with diverse and extensive family ties appear to have limited non-kin contacts.

The prestige was determined by mapping each occupation to their Standard International Occupational Prestige Scale score (SIOPS) (Ganzeboom and Treiman, 1996). Occupational prestige appears to indicate a reliable and powerful characteristic of individuals due to its temporal stability and substantial correlation with other social and economic variables (Hauser and Warren, 1997). Rather than using prestige as a criterion, Ganzeboom and Treiman (1996) explicitly constructed a set of scores that accounts for the correlation between educational qualifications and occupational income. However, the relative importance of a specific value is only meaningful in comparison with other occupations on the same scale. Hence, the results inform of relative differences rather than absolute ones. It remains disputed whether the resources of different types of occupations reasonably align on a continuous scale, such as SIOPS. Additional analyses were estimated with fractional polynomials, which did not improve the fit of the model. Hence, a linear approximation was preferred.

The following individual level indicators of social capital were computed: *extensivity* (total number of occupational contacts, ranging from 0 to 34) (Lin, 2001) and the *average prestige* (average accessed prestige) (Van der Gaag et al., 2008). Each indicator was

calculated separately for kin (family) and non-kin ties (acquaintances and friends). Respondents with zero or one contact were dropped from the distance measures. Table 1 shows the descriptive statistics these variables.

The extensivity is used as a proxy for network diversity, while the average prestige as an indicator of the resources accessed through networks (Lin, 2001; Tindall et al., 2012; Van der Gaag et al., 2008). The measures are advantageous because they inform about the objective characteristics of contacts, thus allowing one to differentiate between different ways in which contacts may influence trust. Alternative indicators capturing the most prestigious contact (upper reachability) and the prestige range (distance between the most and least prestigious contact) were also tested, yielding similar results (available upon request). However, these analyses have some limitations. The upper reachability and prestige range are sensitive to individuals having the most prestigious and respectively least prestigious contacts in the exact occupations included in the PG. However, both extensivity and the average accessed prestige are more robust to this issue.

Table 1: Descriptive statistics for the main variables.

	Mean	Std.Dev	Min.	Max
Generalized trust	6.37	1.78	1	10
Extensivity non-kin	14.84	6.41	0	33
Avg. prestige non-kin	49.68	5.61	27	75.5
Extensivity kin	5.02	3.21	0	29
Avg. prestige kin	50.09	8.07	22	78
Age in 2016	54.42	13.25	29	81
Observations	3167			

Network *extensivity* reflects both social isolation, while offering a measure of occupational diversity (Tindall et al., 2012). By encompassing varied occupations (in their prestige, share of women, immigrants and educational requirements) the extensivity indicator is an effective way of capturing the socio-economic diversity of networks. However, a limitation of the PG indicators is their inability to capture directly what type of information is transferred between the individual and their contacts. Nevertheless,

since preferences and attitudes, ranging from educational choices to voting, follow the socio-economic divides in society (Evans, 2000; Hansen, 2014), they can function as a proxy of being exposed to different ideas, or environments. Extensivity gives an advantage to individuals with contacts in diverse occupations, while those with many contacts in the same occupational group appear, by design, with less diverse networks. For example, individuals with many contacts in high status occupations with a high degree of mobility closure, such as lawyers or medicine (Strømme and Hansen, 2017), appear to have less diverse networks. However, by capturing the socio-economic diversity of the network, the extensivity indicator, alongside the prestige range is likely to capture exposure to ideas and behaviors that differ from oneself.

Social mobility indicators

Cross mapping the parents' social class, with that of the respondents, constructs the mobility trajectory of the respondents. The Erikson-Goldthorpe scheme (EGP) is used to ascertain the social class position (Erikson et al., 1979). The scheme is collapsed into service, intermediate and working-class occupations for both parents and respondents. The highest-ranking occupation of either parent is used in the construction of the parents' EGP position. Individuals in the unknown category were not significantly different in terms of income, or educational attainment to the other groups, however they are included in the analyses. Given the relatively high percentage of missing on the occupation variables (around 12% for both mobility), a multiple imputation approach was used as an additional robustness check. Multiple imputations allow for uncertainty about the missing data by creating several different plausible imputed data sets (here: 1000) (Honaker et al., 2011; Rubin, 2004) and has yielded substantially equivalent results.

The cross-classification includes the following categories: (1) Stable Service class; (2) Stable intermediate; (3) Stable Working class; (4) Working class to Service; (5) Working class to Intermediate; (6) Intermediate to Service class; (7) Intermediate to working class; (8) Service to intermediate, (9) Service to working class and (10) Unknown mobility. The unknown category consists of individuals who either did not know their parents'

occupation, or who did not answer the questions pertaining to own and parents' occupation. Additional model specifications have also included the individual's focal position, approximated with the individual's level of education, income and SIOPS score. These estimations, presented in the supplementary material, yield highly similar results in terms of the PG-indicators and their association with generalized trust.

Control variables

The following demographic controls are included in the regressions: gender, immigration background, whether the respondent has a partner and age. Controls for the centrality of the residence municipality are included in the regressions, to condition on local labor market effects. The models also control for civic engagement – an important correlate of both generalized trust (Putnam, 2000) and social capital (Benton, 2016). Membership in voluntary associations is measured by differentiating between those who have never been members (33%), those who are former members (22%) and those who are current members: active (22%) and passive participants (23%). Those who have never been members represent the baseline in the models.

Estimation strategy

The relationship between generalized trust and the PG based indicators of social capital is approximated with the help of weighted generalized linear regressions. The main results, presented in table 2, show the unstandardized regressions coefficients and their standard errors. However, to better gauge the magnitude of these results, the standardized regression coefficients are also discussed in text.

The data is cross-sectional which makes homogeneity bias plausible, i.e. that a part of the correlation between network characteristics and generalized trust is due to a common but neglected factor. The strategy to control for selection is to condition the estimates on a rich set of standard confounders. As the comparison is between individuals sharing similar life trajectories it can be assumed that some of the heterogeneity linked to

network formation is accounted for. As with most studies relying on cross-sectional data, the possibility of unobserved differences between individuals limit the potential for causal inference. Hence, this design cannot establish whether social capital leads to more trust, or whether it might be that people with higher levels of trust are more likely to develop more diverse social ties. Nevertheless, these data provide a useful opportunity to study the distribution of generalized trust and its connection with some of the facets of social capital.

The robustness of the results was assessed in several ways (available upon request). First, the position generator may be sensitive to the occupations included (further described by Hällsten et al., 2015). To ensure that the findings were not driven by the inclusion of a specific occupation in the PG, analogous regressions were estimate where each PG the occupation was excluded one at a time. This did not alter the substantial interpretation of the presented findings. Secondly, the PG-indicators were estimated as second-degree polynomials to relax the assumption of a linear correlation between social capital and trust. These analyses reveal that a linear approximation is adequate.

Results

Table 2 presents the regression coefficients for generalized trust regressed against the PG-derived indicators of social capital and the remainder of the controls. Model 1 shows that both the extensivity of non-kin ties and their average prestige are independently associated with generalized trust. These results are in line with the theoretical perspectives previously presented. Model 2 further investigates the role of kinship in relationship to generalized trust. It includes both indicators of diversity (extensivity) and resources accessed (average prestige) for kin and non-kin contacts.[4] The results show that the coefficient for kin extensivity does not reach statistical significance. Although, the average prestige of kin ties reaches statistical significance, the magnitude of this association is small (β = 0.01). The coefficients capturing the socio-economic resources

[4] The average VIF score in model 2 is 2.79, which is reasonable for these data and does not indicate any problems of multicollinearity in the models.

and diversity of non-kin contacts retain their magnitude and significance levels.[5] These findings illustrate the importance of distinguishing between kin and non-kin contacts when investigating the link between generalized trust and network characteristics.

The regression models also show that one's mobility trajectory is linked with generalized trust. The largest difference is between the stable working class and the stable service class in terms of their level of generalized trust.[6] The results in model 2 show that upwards mobility to the service class, either from working class or intermediate, is associated with an increased level of generalized trust. However, there are no statistically significant differences between the stable working class and individuals experiencing downwards mobility.

In terms of voluntary associations, only active membership in voluntary associations reaches statistical significance in terms of its correlation with generalized trust. This finding is in line with the extant Norwegian scholarship (Wollebæk and Selle, 2003; Wollebæk and Strømsnes, 2007). The results also show that women and individuals with a partner are more likely to have higher levels of generalized trust. The models indicate no statistically significant differences between the majority and individuals with an immigration background. The individuals in the immigrant subsample are fluent in Norwegian, the language of the survey, and have on average slightly higher educational levels than the immigrant population in Norway and most of them have a European/Western heritage.

[5] Switching to the other indicators of diversity (prestige range - the range between highest and lowest accessed prestige), or network resources (upper reachability - the highest accessed prestige) does not alter the substantial findings (available upon request). Hence, showing that the results are not dependent on the PG indicator chosen.

[6] Interactions between social mobility and social capital indicators were not statistically significant.

Table 2: Social capital, mobility and demographic indicators regressed on generalized trust. Weighted models, unstandardized coefficients, standard errors in parenthesis.

	(1) Generalized trust		(2) Generalized trust	
Extensivity non-kin	0.020***	(0.004)	0.022***	(0.005)
Avg. prestige non-kin	0.027***	(0.005)	0.022***	(0.005)
Extensivity kin			0.017	(0.010)
Avg. prestige kin			0.011**	(0.004)
Stable Working	Baseline		Baseline	
Stable Service	0.474***	(0.143)	0.351*	(0.159)
Stable intermediate	0.487**	(0.150)	0.444**	(0.160)
Working to Service	0.416**	(0.151)	0.355*	(0.159)
Working to Intermediate	0.326	(0.166)	0.329	(0.178)
Intermediate to service	0.421**	(0.141)	0.340*	(0.152)
Service to intermediate	0.487**	(0.166)	0.331	(0.187)
Service to working	0.116	(0.185)	0.115	(0.200)
Intermediate to working	0.338*	(0.160)	0.316	(0.172)
Unknown mobility	-0.0272	(0.137)	-0.132	(0.157)
Voluntary associations: Never member	Baseline		Baseline	
Former member	0.102	(0.080)	0.077	(0.091)
Passive member	0.208*	(0.081)	0.173	(0.092)
Active member	0.428***	(0.082)	0.390***	(0.087)
Age: Under 30	Baseline		Baseline	
30-44	-0.0752	(0.098)	-0.0267	(0.244)
45-59	0.302**	(0.101)	0.310	(0.245)
60 or older	0.479***	(0.103)	0.471	(0.246)
Male	-0.318***	(0.059)	-0.256***	(0.066)
Married/Partner	0.218***	(0.065)	0.270***	(0.076)
Immigrant background	0.065	(0.097)	0.0360	(0.111)
Central municipality	-0.116	(0.066)	-0.114	(0.071)
Constant	4.059***	(0.294)	3.621***	(0.453)
Observations	3403		3136	
Root MSE	1.72		1.72	

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

To better gauge the magnitude of the associations, Figure 1, shows the predicted levels of generalized trust for each of the social capital indicators, simulated when the other covariates are held at the mean for the continuous variables, and mode for the

discrete variables: for individuals who are upwardly mobile, passive members in voluntary associations, male, live in central areas and are between 40 and 50 years old. Simulating the quantities of interest allows us to take full advantage of the parameter estimates and their uncertainty (King et al., 2000).

The association between non-kin extensivity and generalized trust is statistically significant (β = 0.02, p < 0.001). However, this association is relatively modest in size, as illustrated in the left panel of figure 1. More specifically, a one contact increase is associated with .083 standard deviation increase in the level of generalized trust. While the association is modest, it offers some support to the hypothesis that that contact diversity is linked with generalized trust.

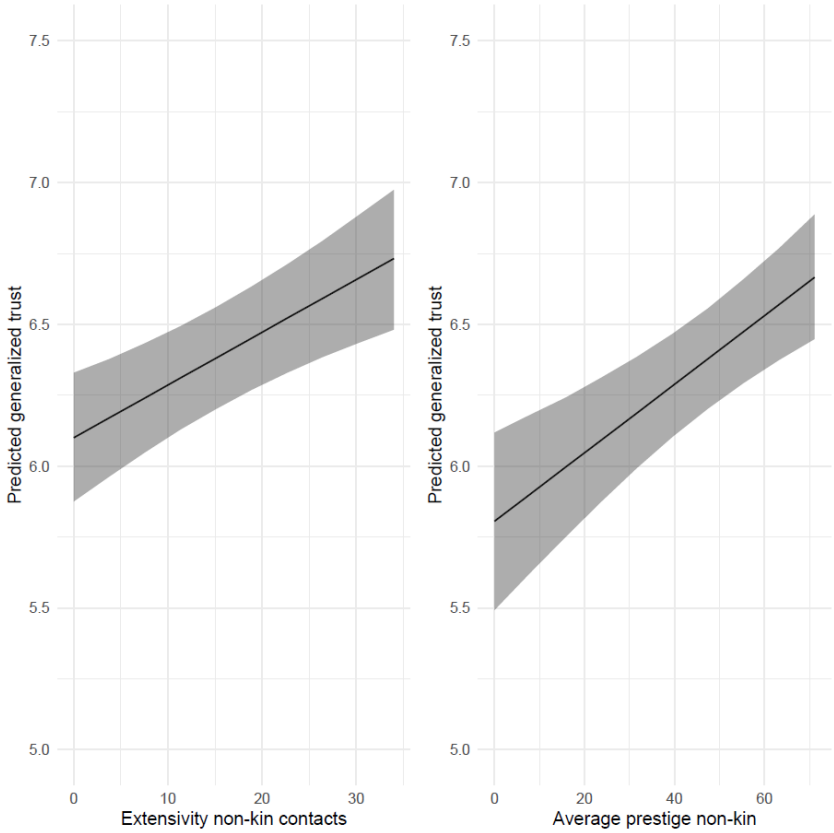

Figure 1: Predicted level of generalized trust in relationship to network characteristics adjusted for the full set of control variables with 95% confidence intervals.

The right panel of figure 1 shows the positive association between generalized trust and the average prestige of non-kin contacts. The magnitude of this correlation is more

sizeable. Making usage of standardized coefficients, the findings inform that having on average contacts in occupations requiring higher education, compared to having contacts in occupations not having such requirements (around 20-point increase in SIOPS) is associated with approximately 1.2 standard deviation higher levels of generalized trust, accounting for the remainder of the controls. A 20-point SIOPS increase for kin contacts is associated with a 0.8 standard deviation higher level of trust. In terms of magnitude, both correlations are somewhat modest, yet highlight a positive and independent associations between extensivity of non-kin contacts, their average resources and generalized trust. The findings partly corroborate those of Li et al. (2008) from the UK, with regards to the average prestige of contact. However, they differ in terms of the importance of the network extensivity, which unlike their study, reaches statistical significance in the present case. While this difference may be driven by the modelling strategy and implementation of the PG, they might also inform that the mechanisms through which social capital may be linked with generalized trust vary across contexts further discussed in the next section.

Discussion and concluding remarks

This paper has studied the link between social capital and generalized trust. The study is located in the egalitarian Norwegian context, where individuals attribute less importance to their social ties and social differences are downplayed in social encounters (Gullestad, 1992; Jarness, 2017). These country characteristics may initially suggest that social capital is likely to be non-consequential in relationship to generalized trust. However, the findings presented here indicate that the association between social capital and trust is present, although it has a relatively moderate magnitude. More specifically, the results show that while kin contacts are immaterial for generalized trust, having diverse and socio-economically prestigious non-kin contacts are positively linked with generalized trust. Furthermore, the findings also show that generalized trust is linked to movements to and from the service class and working class. How can these patterns be explained?

In relationship to social trust, the common dictum has been that bringing together individuals who are in some ways different allows for the development of both formal and

informal institutions, common norms and trust (Knack and Keefer, 1997; Woolcock, 1998). The results presented in this paper support this hypothesis. More specifically, the findings show that only occupationally diverse non-kin contacts are associated with higher levels of generalized trust. These findings echo those of Ermisch and Gambetta (2010) and are in line with the theory forwarded by Yamagishi and Yamagishi (1994) which suggests that having non-kin contacts is conducive of trust in strangers. However, as discussed, the measure of occupationally diverse contacts has some limitations as it is restrictive, since individuals choose only the contact which they consider closest to them, whether this was kin or non-kin. Hence, it cannot fully distinguish between kin and non-kin social capital. Future research could include more encompassing measures of occupationally different contacts and investigate alternative ways to better capture the distinction between kin and non-kin contacts in order to evaluate the robustness of the relationship.

The analyses show that socio-economic resources accessed through networks (both via kin and non-kin contacts) are positively correlated with generalized trust. Theoretically, these results suggest that the resource hypothesis is more general in nature and encompasses resources accessed through networks, in addition to the individual's own socio-economic resources. Empirically, an implication of these findings is that social contact may have a positive association with generalized trust also for individuals who are in relatively less privileged socio-economic positions, but who can access socio-economic resources via their non-kin networks. Future research could investigate what types of changes in the composition of networks influence trust in others. As this finding has received little previous empirical scrutiny, future research could focus on investigating its validity across contexts and measurements.

The presented results corroborate the importance of one's mobility trajectory and that of the average prestige of contacts in relationship to generalized trust, first shown by Li et al. (2008) in the UK. Nevertheless, as the average prestige measures of occupations are relative and occupations may access different types of resources, more research is needed to understand what types of resources (economic, emotional support) can be

consequential for trust, similarly such research could inform of the consequences of mobilizing prestigious contacts, rather than solely accessing them.

While Li et al. (2008) do not find an association between the extensivity of contacts in the UK, the findings in this study indicate that this association is present in Norway. In part this difference may be explained by their decision to include family contacts in the extensivity measure. As discussed, studies focusing on resources outside the family have similar findings across contexts and show the importance of contact diversity. However, more focus on identifying which contacts may foster trust and how these vary across contexts is needed. Although the extensivity indicators are informative of the diversity of the network, they do not explicitly account for the information being transferred between the individual and contact. Individuals may not be aware of the preferences, such as the political orientations, of their peers (DiPrete et al., 2011). Future research could explore the role of indicators capturing differences in opinions within networks and their relationship to generalized trust.

It has been argued that facilitating arenas where individuals from different walks of life may meet is unlikely to contribute to increased trust, as access to networks is intrinsically linked to one's social position (Li et al., 2008), the results of the present study suggest that such arenas may do so. These results are consistent with a model of generalized trust in which informal and/or domain-specific contacts can influence or revise one's estimate of the general trustworthiness of others (Freitag and Traunmüller, 2009; Glanville et al., 2013). However, such a correlation is expected to be positive only if: i) such arenas include individuals from diverse backgrounds, or ii) with different resources and iii) the nature of the interactions is generally positive. Therefore, it can be argued that measures aimed at decreasing social inequalities, may also be positively associated with higher levels of social trust. For instance, if inequality reducing measures succeed in fostering contact between diverse groups.

In sum, this study contributes to the literature on generalized trust by drawing attention to the importance of direct network associations and how networks can, under certain circumstances, be conducive of trust also for individuals, who otherwise have relatively limited resources. Nevertheless, as the results suggest, social capital is only one

of the factors that is linked with generalized trust and this association is modest in Norway. As shown by the extant literature, at the macro-level, institutional quality, universal welfare policies, reduced income inequality among other factors are of high importance for the overall level of generalized trust (Rothstein and Stolle, 2003).

The present study rests on a theoretical framework which suggests that social capital influences trust. However, the data employed are cross-sectional – hence, the present study cannot establish the temporal order between social capital and generalized trust. It may be that generalized trust influences social capital, or that there is a reciprocal feedback relationship between the two, or that individuals who are more trustful are also more likely to have higher levels of social capital. By developing longitudinal panels, future research could investigate the causal and temporal order between trust and social capital more closely.

Despite these limitations, given the nature of extant data on the characteristics of social networks, and trust, the present analysis is a useful step in understanding the nature of the relationship between social networks and trust. This study contributes to the existing literature by dis-aggregating three components of social capital and discussing their association with generalized trust. This is a first step in developing a more nuanced discussion of the mechanisms associated with generalized trust. In sum, the results suggest that some facets of social capital are indicative of a reinforcing web of advantage for some groups in relationship to generalized trust.

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