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Social Capital, Diversity and Giving or Receiving Help Among Neighbours

Fernando Mata · Ravi Pendakur

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Abstract In this paper we look at the links between social capital and helping neighbours or receiving help from neighbours. Our data are drawn from the 2003 and 2008 Canadian General Social Surveys, both of which looked at linkages across social networks. In particular, we examine the relationship between municipal, neighbourhood and individual level ethnicity social capital formation and the level of helping amongst neighbours. Using a combination of factor analysis and random intercept model regressions, we find a strong link between social capital formation and helping, but do not find strong links between diversity, social capital and helping. This suggests that previous research, which found strong links between diversity and social capital, may be overstated.

Keywords Social capital · Immigration · Minorities

1 Introduction

An ongoing theme in the social capital literature has been the link between social capital and diversity, at both individual and contextual levels. Academics from Canada, the United States and Europe have suggested that increased diversity challenges our ability to build social capital. Indeed, some authors have suggested that cities with high proportions of minorities have lower levels of social capital than those that are relatively homogenous (Alesina and La Ferrera 1999, 2000, 2002; Fieldhouse and Cutts 2010; Kesler and Bloemraad 2010; Portes 1998; Putnam 2007). A less studied issue is that of the link between social capital and helping amongst neighbours and the impact of diversity at both the individual and contextual level. In this paper we ask, to what degree is this form of

F. Mata · R. Pendakur (✉)
Graduate School of Public and International Affairs, University of Ottawa, 120 University, Ottawa, ON K1N 6N5, Canada
e-mail: pendakur@uottawa.ca
URL: http://aix1.uottawa.ca/∼pendakur

behaviour associated with social capital and does municipal, neighbourhood or individual level diversity effect the degree to which people help their neighbours or receive help from neighbours? We offer two contributions to the state of the social capital debate. First we further the understanding of how of ethnicity may affect social capital formation and giving and receiving amongst neighbours. Second, we introduce contextual influences within the framework of a random intercept model that addresses methodological concerns related to shared behaviours by community residents. Overall we find a strong link between different dimensions of social capital and giving or receiving help, but do not find strong effects between diversity, social capital and giving or receiving help.

2 Past Research

Social capital concerns the link between trust, interaction, belonging and participation across groups and is linked to collective action. Reimer et al. (2008), for example, describe social capital as "…the social networks and their associated norms that may facilitate various types of collective action" (p. 258). Coleman (1988) describes community social capital as the social relationships that exist among people and the relationships they have with institutions in the community. Bourdieu (1986) views social capital as "…the aggregate of … resources which are linked to possession of a durable network" at both the institutional and personal level (p. 241). Thus, where social capital is defined by function for Coleman and Reimer (i.e.: trust, information and norms), Bordieu concentrates on an individual's access to networks and resources (Torche and Valenzuela 2011: 183).

The linkages between social capital and the act of helping amongst neighbours are complex and mutually reinforcing. However, Stephen Abbott (2008) suggests that these linkages are understudied and lacking in empirical evidence (pp: 874, see also, van der Gaag 2005: 33, Williams et al. 2003: 156). There is a general understanding that the growth of social capital relies on trust, interaction and helping amongst individuals, and involves a combination of bonding (within group) and bridging (group to group) interactions. Bridge (2002) links these actions specifically to those "foster[ing] the development of social networks through interactions in local public space" (p. 2). In this context, the neighbourhood serves as the arena for the formation of social capital. Individuals with higher levels of social capital (e.g. richer in terms of networks, bonding and bridging activities with individuals, groups and institutions) are seen as more likely to support their neighbours through formal and informal networks. Similarly, neighbours may reinforce individual social capital by reciprocating these exchanges. Thus, reciprocal exchanges may increase trust at the individual and collective level.

While the benefits of social capital are related to an individual's willingness to cooperate, the underpinnings of social capital rest on three key constructs—an individual's willingness to trust, to interact with others, and to participate in community organizations (Cheong 2006; Oorschot Arts and Gelissen; Putnam 2007; Ravanera and Rajulton 2010). Others have argued that sense of belonging constitutes a fourth construct as it allows individuals to connect and feel part of the community (Worley 2005). Trust is essentially an attitudinal attribute, that is, individuals hold particular views about people or institutions. Interaction and the act of helping are dominantly behavioural attributes (Torche and Valenzuela 2011). Sense of belonging, is perhaps more complex, constituting an attachment to community or group which Brisson (2009) maintains is essential for ensuring safety, employment, savings and support during family hardships.

Several authors have argued that there has been a decline in social capital in urban centres (Murie and Musterd 2004; Putnam 1995; see also Thomson 2005). Indeed, Murie and Musterd (2004), in their assessment of social capital opportunities in European cities, found that social networks were in decline for most peripheral neighbourhoods and several central-city neighbourhoods. While research has been finding a declining trend in socialization within US neighbourhoods for many years (see Guest and Wierzbicki 1999), it is only recently that this debate has taken a turn away from an account of modernization to one attributing the erosion of social ties to changes in demographic composition. Examination of social capital from this perspective often concludes that neighbourhoods characterized by racial and ethnic heterogeneity experience lower levels of trust, less informal bonding through interactions and less formal bonding through participation in organizations, than homogenous neighbourhoods. In the US, Alesina and La Ferrara (2000, 2002) find that participation in social activities is significantly lower in more racially and ethnically heterogeneous communities, and that more heterogeneous communities display lower levels of trust. Similarly, Costa and Kahn (2003) conclude that more heterogeneous communities experience lower levels of civic engagement (see also Putnam 2007). In Britain, Letki (2008) found that diversity had a negative effect on perceptions and trust in British neighbourhoods. Similarly, in an examination of Dutch neighbourhoods, Lancee and Dronkers (2011) claim a negative relationship between the ethnic diversity of neighbourhoods and generalized trust in the neighbourhood, as well as a lower quality of social interactions.[1]

It would appear then, that diversity (both individual and contextual) results in lower levels of social capital. There, is however some evidence to counter these conclusions. For example, in their study of ethnic Chinese in Southern California, Uslaner and Conley (2003) conclude that higher levels of civic engagement is experienced by those with looser ties to their ethnic communities. While conceding that a higher level of ethnic diversity may lead to lower overall levels of social interconnectedness, Laurence (2011) uses a "contact theory" approach to argue that interactions that do occur, will be more likely to be interethnic, and so contribute to tolerance for diversity. Letki (2008) offers evidence that organizational involvement improves generalized trust at the community level in British neighbourhoods. This claim is supported by Smets (2011) who examines the positive roles of social dining and coffee meetings in Dutch neighbourhoods for bringing about mutual understanding and attitudinal changes. A study of the Detroit area by Marschall and Stolle (2004) conclude that, while citizens in heterogeneous neighbourhoods are no more trusting than those in homogeneous neighbourhoods, social interactions in a racially heterogeneous neighbourhood significantly increased generalized trust of black minorities. A later study by Stolle et al. (2008) on US and Canadian neighbourhoods finds that negative impacts of diversity can be offset with regular interaction between neighbours. In the most positive instance yet, Sturgis et al. (2011) finds that the effects of diversity on generalized trust in British neighbourhoods are exaggerated. Hooghe et al. (2009), comparing levels of trust across Europe do not find a unified pattern across countries. They further suggest that diversity may have an insignificant effect on trust, but acknowledge that the insignificance may be due to small sample size.

While such studies point to the relevance of social capital, it is useful to note that a change in one dimension does not necessarily result in significant change across other dimensions. Patulny and Svendsen (2007) argue, for example, that a decrease in trust or

[1] Concomitantly, Lancee and Dronkers (2011) also argue that the level of diversity in a neighbourhood has no effect on the level of interethnic trust, and that having a minority neighbour can increase trust across ethnic groups (96).

social interaction, at the individual level does not necessarily affected trust in institutions. In the same way, the formation of personal trust, informal interaction and even formal bonding does not guarantee the development of the generalized trust necessary for the creation of neighbourhood solidarity.

The above literature describes social capital as a multidimensional construct comprised of processes related to interactions, membership, trust and belonging. Within this literature, helping and reciprocal arrangements between neighbours is often considered an integral component of social capital. However there are others who view it as an outcome (Kwok et al. 2010; Theurer and Wister 2010). Klein (2011), for example, argues that social capital is developed by individuals to generate a future return (p: 2). From this perspective, while the act of helping neighbours could be viewed as a dimension of social capital, receiving help is reflective of an output of social capital. In a similar fashion, Stone and Hughes (2002) argue that social capital can have individual level outcomes linked to the capacity to get by or get ahead. Viewed this way it is possible to posit questions regarding the various linkages that exist between social capital, diversity (at both individual and contextual levels) and helping neighbours or receiving help from neighbours. In particular we are interested in understanding which aspects of social capital formation are the main predictors of helping amongst neighbours and if individual or contextual diversity impact people's willingness to help or their propensity to receive help.

3 Research Questions, Conceptual Model, Data and Method

Our understanding of the processes described above postulates a basic model linking social capital and diversity characteristics to reciprocity amongst neighbours in both its individual and collective manifestations. Figure 1 describes a model in which giving and receiving help are seen as affected by a combination of both manifest and latent individual level characteristics as well as contextual characteristics at the city and neighbourhood levels. Giving and receiving help from neighbours, the dependent variables, are represented by two separate elements as measured by two distinct indicators. Social capital is represented by a circle (rather than a square) because it is a latent (or unobserved) construct, which can only be approximated by directly observable indicators. Other elements of the model are presented in squares suggesting they are directly observable through a number of selected individual and contextual indicators. Individual characteristics include age, sex, household composition, education, and ethnic/immigrant composition. Contextual characteristics include both municipal and neighbourhood (census tract) level characteristics.

Using this conceptual model we advance the following relationships between our dependent and independent variables. Firstly, positive associations are expected between the two dependent variables—people who help their neighbours are likely to receive help from their neighbours (Kwok et al. 2010; Theurer and Wister 2010). We also expect positive associations between the two dependent variables and independent variables such as education, immigrant status, length of time in Canada (for immigrants), ability to speak an official language (English or French), having children and being employed. Individuals having these characteristics are more likely to have the ability to help than those who do not (Pendakur and Mata 2012). Age and marital status may also be important, but we do not anticipate a direction for the relationship. Putnam (2007) posits that highly diverse cities have lower levels of social capital. At the contextual level, past research also anticipates that levels of reciprocity will be lower in larger and more diverse cities (Bridge 2002; Aizlewood and Pendakur 2005). It is also possible that minorities exhibit lower

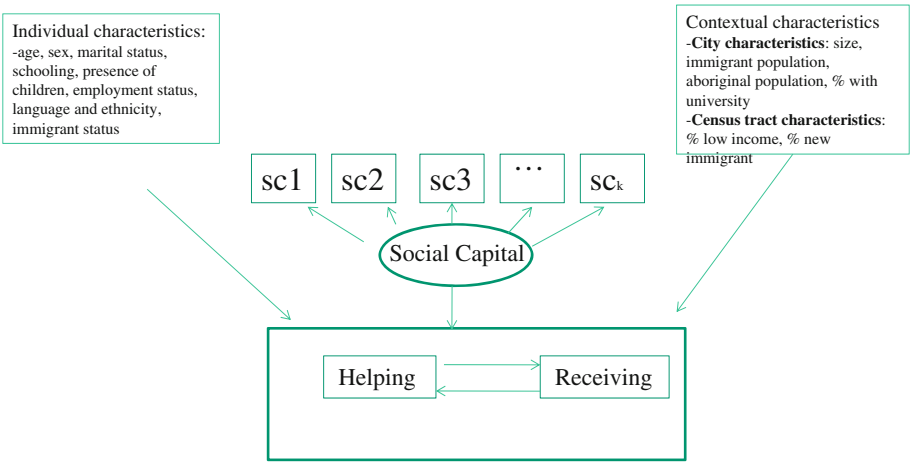

Fig. 1 Model of social capital and helping amongst neighbours

levels of social capital and therefore likely lower levels of reciprocity as compared to majority ethnic individuals (i.e.: British, French or Canadian).

The empirical exploration of the relationship between social capital, diversity and reciprocity is a two-step process. First, similar to Ravanera and Rajulton (2010) and Oorshot et al. (2006) we view social capital as a latent construct. Thus, social capital is approximated using factor analysis to determine the degree to which it is a multi-dimensional construction as compared to a uni-dimensional construct using broad number of indicators related to trust, participation, interactions with others and sense of belonging. Exploratory and confirmatory factor analysis (EFA and CFA) are used to identify and establish the validity of the major social capital dimensions (e.g. factor loadings associated with them as well as validity coefficients) and to estimate the level of social capital lodged in individuals (see for example: Oorschot, Arts and Gelissen 2006).

Second, because contextual characteristics are shared across respondents living in the same city, observations are not necessarily independent of each other. Random intercept models enable us to obtain more statistically efficient estimates of regression coefficients and, by clustering the data (addressing the issue of unobserved heterogeneity), they provide better standard errors, confidence intervals and significance tests than standard ordinary least squares estimates (see Raudenbush and Bryk 2002; see Calvo et al. 2012 for an example comparing countries).[2]

Our data are a pooled sample of Cycle 17 (2003) and Cycle 22 (2008) of Statistics Canada's general social survey (GSS). These datasets tap a wide breadth of information on individual and social capital characteristics. Adding contextual information from the 2001 and 2006 censuses allows us to assess the impact of individual, contextual and social capital characteristics concerning the degree to which respondents help or receive help from neighbours. Our frame consists of all persons 15 years of age and over residing in Canada.[3] Contextual information at the census tract level is available on the GSS surveys. Municipal level data was merged from the 2001 and 2006 Censuses.

[2] We estimate the coefficients for these models using the XTMIXED command in Stata 12.

[3] Residents of the Yukon, Nunavut and Northwest Territories as well as full-time residents of institutions are excluded.

Pooling respondents from the two GSS surveys offers two important advantages for our analysis. First, the larger sample size yields a correspondingly larger minority population thereby increasing the level of confidence in point estimates and decreasing standard errors of population parameters.[4] Second, the higher population counts for particular geographic areas (CMAs and CSD's) allow for a better assessment of contextual (place-based) impacts in social capital formation of individuals.[5]

Merging the 2003 and 2006 GSS's results in a combined dataset with 47,589 individuals (27,195 respondents to the GSS 2003 and 20,394 respondents corresponding to the GSS 2008). This combined sample represented a weighted population of 52.8 million adult Canadians across the two cycles. Respondents are clustered across 3,583 cities with an average number of respondents of 12.4 persons per city.

Our dependent variables are drawn from two questions:

- In the past month, did you get help from… your neighbours? No/Yes (coded as 0 or 1)
- In the past month, have you done a favour for a neighbour? No/Yes (coded as 0 or 1)[6]

We view these two actions as being affected by the combination of social capital, individual and contextual effects.

There are 31 variables that are common across the two datasets, which capture the diverse aspects of social capital identified by the literature. These variables cover the dimensions of trust, interaction, participation and belonging and can be grouped into the following broad categories:

Institutional trust: How much confidence do you have in: (a) The police? (b) The justice system and courts? (c) The health care system? (d) The school system? (e) The welfare system? (coding: 1 = A great deal of confidence, 2 = Quite a lot of confidence, 3 = Not very much confidence).

[4] Pooling the two datasets required identifying all common variables of interest. Key variables present in both cycle questionnaires were identified and isolated from their respective datasets. Variable and geo-coding schemes were contrasted against each other and were standardized to a common coding. The final preparatory activity consisted of comparing the two surveys in terms of their socio-demographic and social capital attributes to determine if there were fundamental differences by cycle. An examination of age, gender and provincial composition of the two GSS cycles revealed remarkable similarities in terms of these general attributes (with discrepancies amounting to <1% percentage points). Separate analysis of the 2003 and 2005 cycles based on the correlation matrices suggested that the direction and magnitude of responses on social capital indicators was roughly similar across the two cycles.

[5] Merging the datasets required a thorough examination of the content, coverage and mode of data collection in surveys (Thomas and Wannell 2009). In terms of weighting strategies, Wendt (2007) proposes simply merging the datasets and dividing the global weights by the number of cycles. However this may not be ideal for two reasons. First, following the micro–macro determinants of social capital logic, it seems important to include contextual (area based) information for the two cycles: information from the 2001 census to describe the place based characteristics of cycle 2003 respondents and information from the 2006 census to describe the same of 2008 cycle respondents. Second, treating the dataset as a single draw on the population could create challenges when taking into account differences across cycles. We argue that it is more appropriate to think of GSS respondents as being drawn from two similar populations (i.e. two identical adult Canadian populations) measured at two points in time keeping intact the original weight assigned to individual respondents representing these populations. This flexible approach permits both Canadian populations and its regions around respondents to evolve over the five-year interval of observations between cycles.

[6] The 2008 wave of the GSS has a roster of questions, which tap the type of assistance received or given. Unfortunately the 2003 wave only asks if help was given or received leaving only a binary or dichotomous variable to be analyzed. We have opted to use the more basic 2003 question in favor of increased sample size, which means we can assess the impact of ethnicity.

Memberships in organizations: In the past 12 months, were you a member or participant in: (a) a political party or group? (b) a sports or recreation organization (such as hockey league, health club, golf club; (c) a cultural, education or hobby organization (such as theatre group, book club or bridge club)? (d) a religious-affiliated group (such as church youth group, choir)? (e) a school group, neighbourhood, civic or community association (such as PTA, alumni, block parents, neighbourhood watch)? (f) a service club or fraternal organization (such as Kiwanis, Knights of Columbus, the Legion)? (coded as: Yes = 1, No = 0).

Bonding activities in institutions: Thinking of all the people you met through these organizations: how many have the same (a) age; (b) education; (c) gender; (d) mother tongue as you? (coding: 1 = All, 2 = Most, 3 = about half, 4 = A few).

Bonding activities in friendship networks: Thinking of all the friends you had contact with in the last 12 months how many have the same (a) age; (b) education; (c) gender; (d) mother tongue as you? (coding: 1 = All, 2 = Most, 3 = about half, 4 = A few).

Generalized trust: Generally speaking, would you say that most people can be trusted or that you cannot be too careful in dealing with people? (coding: 1 = Most people can be trusted, 2 = cannot be too careful in dealing with people).

Focused trust: Using a scale of 1–5 where 1 means 'Cannot be trusted at all' and 5 means 'Can be trusted a lot', how much do you trust each of the following groups of people: (a) people in your family? (b) People you work with or go to school with, (c) strangers.

Lost wallet questions: If you lost a wallet or purse that contained two hundred dollars, how likely is it to be returned with the money in it if it was found: (a) by someone who lives close by? (b) A complete stranger? (coding: 1 = Very likely, 2 = Somewhat likely, 3 = Not at all likely).

Sense of belonging: How would you describe your sense of belonging to you're (a) local community (b) Your province? (c) Canada (coding: 1 = very strong, 2 = somewhat strong 3 = . somewhat weak, 4 = very weak).

Interactions: Frequency of seeing (a) family, (b) close friends and (c) relatives (coding: 1 = Never… 5 = At least two times a week).

3.1 Individual Characteristics

We include eight sets of variables related to personal characteristics: age (5 dummy variables), sex (2 dummy variables), marital status (4 dummy variables)), labour force status (3 dummy variable), level of schooling (5 dummy variables), ethnicity (11 dummy variables), immigrant status (4 dummy variables) and mother tongue (3 dummy variables). These variables are detailed in Table 1.

3.2 Contextual Characteristics

Past research suggests that both municipal and neighbourhood characteristics can have an impact on the overall level of social capital (Putnam 2007). Often primacy is given to neighbourhood characteristics because these are seen as having the most immediate impact on people. We view both as important—neighbourhoods because they have this immediate

Table 1 Weighted descriptive statistics on the proportion of people who help or are helped by neighbours

	Help neighbours	Neighbours help
Total	0.62	0.57
Age		
15–29	0.53	0.50
30–44	0.66	0.61
45–59	0.66	0.61
60–74	0.64	0.58
75+	0.51	0.54
Sex		
Females	0.65	0.58
Males	0.58	0.57
Marital status		
Married/commonlaw	0.66	0.61
Widowed	0.52	0.54
Separated/divorced	0.60	0.54
Single	0.53	0.49
Presence of children		
No children	0.58	0.54
1 child	0.62	0.58
2 children plus	0.70	0.65
Mother tongue		
English	0.66	0.62
French	0.58	0.53
Other	0.55	0.51
Schooling		
> High school	0.57	0.52
High school	0.62	0.57
Postsecondary non university	0.62	0.58
University certificate <BA	0.64	0.59
BA–PhD	0.65	0.61
Employment status		
Na	0.57	0.55
Paid worker	0.62	0.57
Self-employed	0.68	0.62
Immigrant status		
Canadian by birth	0.64	0.59
Immigrant	0.53	0.50
In Canada <10 years	0.51	0.49
In Canada 10–19 years	0.54	0.50
In Canada 20+ years	0.63	0.57
Ethnicity		
British/French/Canadian	0.63	0.58
German	0.65	0.62
Dutch	0.65	0.59
Ukrainian	0.71	0.67

Table 1 continued

	Help neighbours	Neighbours help
Polish	0.61	0.56
Italian	0.61	0.58
Other European	0.60	0.55
Chinese	0.44	0.44
S. Asian	0.54	0.51
Other visible minority	0.56	0.51
Aboriginal	0.66	0.57

impact and municipal characteristics because residents interact and see the diversity of a city through their daily life (going to work, eating in a restaurant, etc.). Thus our contextual variables include both municipal level and census tract (a proxy for neighbourhood) level characteristics. Municipal level characteristics are drawn from the 2001 and 2006 censuses of Canada, with respondents from the 2003 GSS matched to 2001 census data and respondents from the 2008 GSS matched to 2006 census data. Selected census tract level information is available on both cycles of the GSS.

At the municipal level we include the log of the city population, the log of the immigrant population, the percent of municipal population that is Aboriginal (by identity), and the percent of the municipal population with a university degree. At the census tract level we include the percent of the census tract that is low income as defined by the low income cut-off (LICO) and the percent of the census tract population that is comprised of immigrants who have been in Canada for 10 years or less.

There is however, a methodological constraint because contextual effects (i.e.: the size of the city, or the size of the immigrant population within the city) are shared by everyone in that region. Thus, observations are not necessarily independent. Random intercept modelling allows us to control for these shared characteristics by clustering our observations at the municipal level. This allows us to separate individual and municipal effects in a way that controls for the contextual characteristics shared across individuals living in the same city. We do not cluster by neighbourhood largely because given the characteristics of the dataset, there are not a lot of people in any given neighbourhood (generally only one person per neighbourhood, but sometimes as many as three). Thus clustering of observations at a neighbourhood level does not create a methodological problem.

3.3 Descriptive Results

Table 1 shows the weighted percent of people across both waves of the GSS who help their neighbours and receive help from neighbours. Overall, across the two waves of the survey about 62 % of Canadians say that they have helped neighbours in the past month, while 57 % respond that they have received help from a neighbour. Half of respondents reported both helping and being helped by neighbours. Socio-demographic characteristics make a difference. People younger than 30 and older than 74 tend to receive less help and provide less help. Women help more than men (65 % as compared to 58 %) but receive help at about the same rate (58 %). Being married is correlated with both helping and receiving help, while being single is correlated with the lowest level of helping. Having children is also correlated with increased levels of helping. People who speak English have higher rates of helping and receiving help compared to those who speak French or another

language as mother tongue. Having a high school certificate increases the level of helping (as compared to those who have less than this level of education) but having more than this basic level of schooling does not really increase the level of reciprocity. Being employed is correlated with higher levels of helping.

As with speaking another language as mother tongue, being an immigrant is correlated with lower levels of helping. However, immigrants who have been in Canada for 20 years or more report about the same level of helping or being helped by neighbours as those born in Canada. Ethnicity has mixed effects. Sixty-three percent of people reporting majority origins (British, French or Canadian) say they help their neighbours, and 58 % report receiving help from neighbours. Those with Aboriginal or Ukrainian origins both help and receive help more frequently (66 % and 71 % respectively report helping their neighbours). However, those reporting either Chinese or South Asian ethnicity are far less likely to engage in reciprocal activity. Only 44 % of those identifying as Chinese reported helping or receiving help from neighbours. Fifty-four percent of South Asians reported helping their neighbours and just over half reported receiving help from neighbours. Those reporting Italian, Polish as well as other European or other visible minority origins also state lower levels of helping, while those reporting German and Dutch report about the same level of either helping or receiving help from neighbours.

The results above point to some important differences by ethnicity and immigrant status but are uncontrolled—they do not tell us if socio-economic characteristics have a greater impact than ethnicity or if it is the interplay between socio-economic impacts and ethnicity that effect helping. Further they do not control for the impact of social capital or the impact of either the local or municipal area. The following sections build a model of social capital and add these dimensions to the analysis.

4 Measuring Social Capital

As noted previously, there is consensus that social capital is multidimensional (see for example: Coleman 1988, Van Der Gaag and Snijders 2005). Further, there is broad agreement that trust and interaction with others (both bridging and bonding) constitute at least two of these dimensions. Others note that issues related to membership in organizations should be considered separately from other forms of interaction and that belonging is also a key component of social capital (Clayton 2012; Morrow 1999).

At least part of the challenge in identifying these dimensions is the fact that they may be correlated and that measuring one dimension also measures another. Factor analysis offers a possible solution to this methodological issue by identifying latent variables, which are orthogonal to each other. For example, Oorschot et al. (2006) compare levels of social capital across Europe. They use factor analysis to identify three dimensions of social capital (networks, trust and civism). In Canada, Ravanera and Rajulton (2010) identify 6 factors that fall across issues related to trust and networks.

In a similar fashion, we conduct a two-stage factor analysis—exploratory factor analysis (EFA) to identify the best solution or number of dimensions, and confirmatory factor analysis (CFA) to establish the reliability of the factors themselves. EFA yields a restricted number of factors that are correlated with observed variables and summarizes their values. Thirty-one variables related to trust, interaction, participation and belonging were entered simultaneously in the factor extraction. Seven factors were extracted with eigenvalues greater than 1.0 (Kaiser-Guttman criteria) suggesting that each of these factors has a strength of more than a single variable. Based on analysis of both orthogonal and oblique

rotations with different number of factor solutions, we selected a five-factor solution as the most plausible.[7] EFA identified 23 variables clustered across 5 factors (specifically, individual trust, institutional trust, linguistic bonding, membership in organizations and interaction with others).[8]

Table 2 shows results from a CFA used to verify our EFA results . CFA confirms the validity of these five major constructs underlying the correlations between indicators. Indicators of trust in institutions, particularly on the justice system and schools (loadings = 0.64 and 0.60), trust in the health system, welfare and the police are also significant variables representing this construct (loadings higher than 0.50). A second construct, reflects memberships in several types of organizations such as cultural and neighbourhood groups (loadings of 0.53 and 0.49 respectively). Linguistic homogeneity of networks, the third construct, includes two variables related to the respondent's linguistic similarities to their institutional and friendship network (loadings of 0.75 and 0.59 respectively). The fourth construct taps an overall dimension of trust in individuals such as neighbours, colleagues and strangers as well as the belief that certain groups would return a lost wallet. Trust in neighbours (loading = 0.72) in particular is illustrative in this respect. The final construct taps sense of belonging to three different social and geographical entities such as the province, Canada and the neighbourhood. The highest loading for this construct reflects belonging to the province (loading = 0.76).

Table 3 shows average factor scores by ethnic origin.[9] Results from this table speak to the degree to which stocks of social capital differ by ethnic group and thus the degree to which ethnicity may be important in determining social capital outcomes. Looking first at trust in institutions, the differences across ethnic groups are minimal with the exception of Polish and Aboriginal persons who report lower average scores (−0.07 and −0.08 respectively). Those reporting South Asian have higher than average scores (0.07 standard deviations above the mean). All groups report similar factor scores for membership, suggesting that overall, people's willingness to join organizations is not necessarily driven by ethnic origin

Trust in individuals shows some sharp contrasts between groups that display both higher and lower than average factor scores. The majority, German, Dutch and Ukrainian groups have higher than average factor scores (0.05, 0.11, 0.17, 0.09 respectively). Lower than average scores are observed for Aboriginal and other visible minorities (both with a score of −0.30), as well as South Asians (−0.17) Italian (−0.11) and Chinese (−0.10). Scores for the final dimension, that of belonging, are fairly close to the mean with the exception of Chinese (−0.12) and Aboriginal persons (−0.10).

In summary the factor analytical stage of analysis reveals that social capital to be a super-construct comprising multiple dimension of institutional trust, membership in organizations, linguistic bonding, individual trust and sense of belonging. There are differences in the level of social capital scores across ethnic groups, with non-European origin groups often displaying lower levels of individual trust. However scores across the other

[7] The EFA produced following sequence of RMSE values was obtained: k(1) = 0.0834, k(2) = 0.0643, k(3) = 0.0555, k (4) = 0.0447, k(5) = 0.0376,k(6) = 0.0315, k(7) = 0.0255 and k(8) = 0.0196.

[8] The MIMIC model produced a significant X^2 ($p < 0.01$) of 14,221.3, df = 154. The goodness of fit statistics (see Browne and Cudeck 1993) corresponding for this model suggested a relatively good model fit: RMSEA = 0.044, CFI = 0.838 and TLI = 0.898 The TLI (Tucker Lewis) and CFI (Comparative Fit) indices are additional measures of model fit are additional goodness of fit measures and values close to 1 reveal a close fit.

[9] Factor scores are standardized and have a mean of zero and a standard deviation of one.

Table 2 Confirmatory factor analysis, 5 factor solution

	Latent variables					
	Trust in institutions	Membership in organizations	Bonding	Trust in individuals	Belonging	Proportion of variance explained by factor
Trust in institutions						
Schools	0.60					0.36
Police	0.55					0.30
Justice	0.64					0.41
Health system	0.59					0.34
Welfare system	0.56					0.31
Membership in						
Cultural org		0.53				0.28
Political party		0.23				0.05
Recreational group		0.39				0.15
Religious org		0.33				0.11
Neighbourhood assoc		0.49				0.24
Service org		0.24				0.06
Bonding						
Member in org using same mother tongue			0.75			0.56
Friends share same mother tongue			0.59			0.34
Trust in individuals						
Neighbours				0.72		0.52
Generalized trust in individuals				0.56		0.31
Family members				0.35		0.12
Colleagues				0.52		0.27
Stranger				0.64		0.40
Wallet returned by neighbour				0.51		0.26
Wallet returned by stranger				0.39		0.15
Sense of belonging						
To province					0.76	0.57
To neighbourhood					0.52	0.27
To Canada					0.57	0.32

All coefficients are significant at the 0.000 level

dimensions of social capital are not as easy to decipher. The following section combines individual characteristics described in in Table 1 with the social capital constructs and the contextual characteristics with a goal toward creating a predictive model of giving and receiving help.

Table 3 Average social capital scores by ethnicity

	Count	Trust in institutions	Membership	Linguistic bonding	Trust in individuals	Belonging
Majority	29,222	0.01	0.00	0.12	0.05	0.02
German	2,821	−0.04	0.03	−0.01	0.11	0.01
Dutch	937	−0.02	0.04	−0.11	0.17	0.02
Ukrainian	1,185	−0.05	0.02	−0.09	0.09	0.00
Polish	722	−0.07	0.02	−0.21	−0.06	−0.06
Italian	1,191	−0.04	−0.01	−0.21	−0.11	−0.04
Other Europe	3,806	−0.03	0.01	−0.20	0.00	−0.05
Chinese	1,100	0.02	−0.03	−0.27	−0.10	−0.12
S. Asian	929	0.07	−0.01	−0.30	−0.17	0.03
Other visible minority	1,904	0.05	−0.02	−0.35	−0.30	−0.05
Aboriginal	1,354	−0.08	−0.02	0.04	−0.30	−0.10

5 Prediction Models of Helping and Receiving Help: Individual, Social Capital and Contextual effects

As suggested above, a challenge to models that include contextual (local) effects is that respondents from the same area share the same contextual characteristics—for example, in this case people from Toronto share the same city size. This breaks one of the assumptions of regression models, which requires that observations be independent of one another. A common solution to this is to simply ignore the issue and assume that the coefficients will be accurately measured. However standard errors and therefore *t* values can be affected. We have chosen to use multilevel random intercept models which incorporate both individual and contextual effects in a single regression equation. This multivariate tool offers two main advantages. Firstly, unlike traditional OLS regression, fixed and random effects are estimated simultaneously taking into consideration the potential unobserved heterogeneity (i.e. clustering of individual characteristics of respondents within cities). Secondly, random intercept models provide a simpler representation of effects compared to more complex models, which may incorporate both random intercept and random slope effects.

The following describes a formula for a random intercept model with 'receiving help' as the dependent variable, controlling for a series of individual main effects, latent effects and contextual effects (Rabe-Hesketh and Skrondall 2005):

$$Y_{ij} = \left(\beta_1 + \varsigma_j\right) + \beta_2 x_{ij} + \ldots + \beta_p x_{pij} + \mathcal{E}_{ij}$$

where Y_{ij} is the probability of an individual $_i$ in cluster $_j$ to receive help from a neighbour.β_1 is an overall constant; ς_j is a cluster specific random intercept; β_2 through β_p are fixed parameters related to individual and contextual characteristics *x* including social capital indicators; ε_{ij} is a residual.

Results of the two weighted random intercept regressions—one for giving help to neighbours and another from receiving help from neighbours are presented in Table 4. Given that the dependent variables are binary in nature, the coefficients of the regression equations should be interpreted as predicted probability changes (%) for a one-unit change in the independent variable (dummies and/or continuous variables) net from other

predictors. The regressions reflect the conceptual model elaborated in the previous section whereby this type of behavior is a function of helping or receiving help, social capital characteristics of individuals, diversity related traits, socio-demographic traits and characteristics of the places where this behavior takes place.

The intraclass correlation coefficients (ICC's) describe the proportion of variance that is common to clusters (in our case, cities) compared to the total variance, that is, cluster variance plus individual variance (Heck et al. 2010). The ICC for helping neighbours is 0.88 and for receiving help is 0.23. This suggests that particularly for the case of helping neighbours, people in any given city are very likely to act similarly.

For both models, the strongest effects can be attributed to individual level variables. Results of the random intercept models suggest, that net of other influences, those who receive help from neighbours in the past month are 54 % more likely to help their neighbours compared to those who have not. Conversely, those who help neighbours are 57 % more likely to receive help from neighbours compared to those who do not. The high magnitude of these regression coefficients and its high statistical significance reveals a strong pattern of reciprocity in both directions and most likely reflects an amplification of social capital outcomes in the communities of residence. Socio-demographic influences in the propensity to give and receive from neighbours are also noticeable in the regression results. While males are 5 % more likely to give to neighbours compared to females, males are a little less likely to have been assisted by neighbours in the last month (−3 %) compared to females. With respect to age, the curvilinear pattern initially observed holds up with younger and older groups being less likely to help neighbours, but people 45–74 are more likely to help their neighbours. However the pattern is reversed when looking at receiving help from neighbours, with people 45–74 years old less likely to receive help.

In terms of educational attainment, the effect of higher education seems to be "wiped out" by other factors in both models. Being married or in a common-law relationship is positively related to both giving and receiving help from neighbours (e.g. about 3 % higher compared to single individuals). The presence of 2 or more children in the household also has a positive effect on the propensity to both give and receive from neighbours. No effect of employment status related indicators is visible in the first model, however people who are self-employed are 2 % less likely to receive help from neighbours.

Having a non-English or French mother tongue is correlated with lower levels of helping and receiving help (−2 and −3 % respectively). Related to this, recent immigrants are less likely to help neighbours as compared to those who are Canadian by birth. However immigrants who have been in Canada for 20 years or more appear to have comparable likelihoods of both helping and receiving help as people who are born in Canada. Turning to the ethnic categories we see that after controlling for all other factors, Aboriginal peoples are more likely to help their neighbours as compared to those reporting majority origins (British, French or Canadian). On the other hand, people reporting Chinese ethnic origin are 7 % less likely to help their neighbours. For all other ethnic groups, the effects are either very small or insignificant suggesting that membership in these groups does not affect the level of helping neighbours. Turning to the second model we see that those reporting German, Ukrainian and Italian are more likely to receive help from neighbours as compared to the majority. Other groups display the same level of helping or receiving help with respect to the majority.

The social capital predictors provide some of the most interesting facets in the analysis. Of note is the fact that in the first model, all the social capital predictors are statistically significant, however the direction of the relationship is not always positive. Being a member in an organization has a strong positive effect (21 % increase for every standard

Table 4 Results from 2 Random intercept regressions estimating the propensity to help neighbours or receive help from neighbours

	Comparison group	Variable	Regression 1 Help neighbours Coef sig	Regression 2 Receive help from neighbours Coef sig
Model summary		Observations	44,434	44,434
		Ave obs/grp	12.4	12.4
		Sig	0	0
		Log pseudolikelihood	−21,973,708.00	−23,205,233.00
		Intraclass corrrelation	0.88***	0.23
Reciprocity		Receive help from neighbours	0.54***	
Sex	Females	Help neighbours		0.57***
Age	15–29	Males	0.06***	−0.03***
		30–44	0.03***	0.00
		45–59	0.03***	−0.02**
		60–74	0.03***	−0.04***
		75+	−0.04***	0.00
Schooling	<High school	High school	0.00	0.01
		Post secondary (non univ)	0.00	0.01
		University certificate	0.01	0.01
		University degree	−0.01	0.01
Marital status	Married/ common law	Single	−0.04***	−0.03***
		Separated/divorced	−0.01	−0.03***
		Widowed	−0.04***	0.01
Children	No children	1 child	0.01	0.00
		2+ children	0.03***	0.02**
Employment status	Not working	Working for pay	0.00	−0.01
		Self-employed	0.01	−0.02**
Mother tongue	English	French	0.00	−0.01
		Other language	−0.02**	−0.03***
Immigrant status	Canadian by birth	Recent immigrant	−0.04***	0.02
		Immigrant (arrived 10–19 years ago)	−0.03***	0.01
		Immigrant (arrived 20+ years ago)	−0.01	0.01
Ethnicity	Majority (Br, Fr, Can)	German	−0.01	0.02**
		Dutch	0.00	−0.01
		Ukrainian	0.02	0.05***
		Polish	0.00	0.00
		Italian	−0.02*	0.03***
		Other European	−0.01	0.00
		Chinese	−0.07***	0.01
		S. Asian	−0.03*	0.00
		Other vm	−0.01	0.00
		Aboriginal	0.04**	−0.01

Table 4 continued

	Comparison group	Variable	Regression 1 Help neighbours Coef sig	Regression 2 Receive help from neighbours Coef sig
Social capital factors		Trust in individuals	0.01**	0.06***
		Trust in institutions	−0.05***	−0.02
		Membership in organizations	0.21***	0.12***
		Bonding	−0.02***	0.01***
		Belonging	0.03***	0.03
Contextual characteristics	City level	Log of city size	−0.01	−0.01*
		Log of immigrant population	0.00	0.00
		Percent aboriginal population	0.00	0.00
	Census tract	Percent with university schooling	0.00	0.00
		Percent low income	0.00**	0.00

Significance:* 0.10, ** 0.05, *** 0.01

deviation increase along the scale) on the likelihood of helping neighbours. Belonging also has a positive effect on both giving and receiving, but the magnitude is much smaller (3 % for every one standard deviation increase). Trust in individuals has a minor positive effect for helping but a substantial effect for receiving help (1 and 6 % respectively). The remaining two constructs (trust in institutions and linguistic bonding) have a negative effect on helping neighbours (−5 and −2 % respectively) but little impact for receiving help. It appears therefore that being a member of an organization, trusting others and feeling part of the community are correlated with high rates of helping in both directions, but the impacts of other factors are either negative or insignificant.

Turning, finally to the contextual variables we see that the effects are minimal or insignificant. Save for log of city size on receiving help from neighbours (which shows a marginally significant negative impact of −1 % per log unit) all other impacts are insignificant. As specified above, our model recognizes that individuals in any given city share municipal characteristics. Thus, the contextual effects should be understood within the context of high clustering observed within our overall models.

6 Conclusions

The study of the individual and contextual correlates of neighbor-oriented behavior is central to understanding how one dimension of interaction amongst neighbours operates across communities. The intent of our study has been to assess how the interplay between social capital, individual and contextual characteristics affect helping and being helped by neighbours. We assess this relationship by first determining the dimensions of social capital using confirmatory factor analysis and then using random intercept models to establish the relationship between these sets of independent variables and helping or receiving help from neighbours.

Turning to our analysis of giving and receiving neighbour's help, we find mixed effects. First and foremost, it appears that help is often reciprocal in nature—people who give also receive. However, the dimensions of social capital are very important suggesting that people who can mobilize resources effectively are also more likely to engage in such behaviour (Klein 2011). Within the roster of social capital constructs, membership in organizations deserves special attention. Being active in an organization has a strong positive effect on both giving help and receiving help. Why is this so essential? Participation in institutions exposes people to new groups and collectivities and contributes to the community. It is not surprising then, that those who are more engaged in institutions are also more responsive to the needs of neighbours. Individuals who do not trust institutions are also more likely to help and receive help from neighbours however, it may be because they do not trust the state to provide necessary aide.

The characteristics of the city that people live in are also important. The interclass correlation suggests a strong pattern of reciprocity across the same cluster, but the characteristics of the cities in addition to that are not significant. Neighbourhood characteristics (the proportion of people below the low income cutoff and the proportion of new immigrants in a census tract) appear to not have a significant impact.

Turning to issues related to ethnicity we see that while recent immigrants are less likely to help their neighbours, this difference disappears with time in the country. With few exceptions, ethnic origin is not found to have a negative influence on helping or receiving help. Only Chinese ethnicity is correlated with helping less than the majority. Being an Aboriginal person is correlated with helping more. On the receiving side, Germans, Ukrainians and Italians are able to marshal greater resources in terms of receiving help from neighbours. It appears then, that diversity, either at an individual or contextual level may not have a substantive impact on the level of giving or receiving help. Certainly more recent immigrants are less likely to help their neighbours, but more importantly, the effect diminishes with time in the country. Immigrants who have been in Canada for a long period of time are just as likely to be as neighbour-oriented as the majority. Thus, while newer immigrants display lower levels of reciprocity this could be a result of the time it takes to make contacts and become part of the community. These finds offer some respite to those of researchers who find negative correlations between social capital and minority status (see for example: Alesina and La Ferrara 2002; Letki 2008; Putnam 2007, etc.) and build on the finds of researchers who do not find negative consequences to diversity (see for example: Hooghe et al. 2009, etc.).

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