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TITLE: Social Capital and Health in Multiple Communities: A
Mixed Methods Study

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Abstract

This dissertation explores the assertion that social capital has migrated from the neighbourhood to the workplace, and if so, investigates how this relocation may influence health. Data from a large survey of residents of four neighbourhoods (n=1,504) demonstrated that the more time participants spent in the workplace, the less likely they were to report social capital in their neighbourhoods. Furthermore, participants who were employed reported better physical health than participants who were not employed. Even when significant, employment status, neighbourhood of residence, and social capital did were unable to explain much of the variance in health between the neighbourhoods.

In-depth interviews (n=24) of residents in two of the four neighbourhoods provided information on social capital in both the neighbourhood and the workplace simultaneously to determine if this migration took place. Residents reported access to social capital in both their neighbourhood and workplace demonstrating that social capital is not a restricted resource that can only be accessed in one community at a time, but is a fluid resource that can be accessed in multiple communities simultaneously. Further investigation found that residents accessed social capital in multiple communities as well as their neighbourhood and workplace. There was considerable intersection between these communities reinforcing the contention that social capital should not be

measured in isolation. Until all the sources of social capital can be considered, the association between social capital and health would not be fully realized.

This study highlighted many methodological limitations. The lack of a clear definition and the resulting measurement challenges need to be addressed. Given the complexities of measuring social capital in multiple communities, restrictive research methods may prove inadequate. Future studies should look in the direction of qualitative research methods to manage these complexities successfully.

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1. INTRODUCTION

1.1 Foreword

The first empirical study of social capital was reported in 1993. Robert Putnam, a political scientist from the United States, conducted a 20-year study of six regions in Italy. He found that social capital, described as “features of social organization, such as trust, norms, and networks”, (Putnam, 1995, p. 167) “may be even more important than physical or human capital” for “political stability, for government effectiveness, and even for economic progress” (Putnam, 1995, p. 183). In 1999, the first major studies on possible links between social capital and health were initiated. Kawachi, et al. analysed data from the General Social Survey representing 39 states in the United States and found an association between social capital, as measured by trust and reciprocity, and health (Kawachi, Kennedy, & Glass, 1999; Kawachi et al., 1999; Kawachi, Kennedy, Lochner, & Prothrow-Stith, 1997). Since that time, governments in many industrialized countries, as well as international organizations such as the World Bank and World Health Organization, have been devoting significant amounts of resources, either to studying or attempting to increase social capital where people live (Putnam, 2000) or to “co-opting social capital to justify reducing public spending on critical social services under the misguided assumption that the overburdened private community service sector can suffice” (Perkins & Long, 2002, p. 292).

In his recent studies, Robert Putnam raised concern that social capital was on the decline in the United States (Putnam, 2000). At the same time, others assert that social capital was not on the decline but had migrated from where people lived to where people worked (Edwards, 2004; Bettertogether Saguaro Seminar, 2000; Wolf, 1998). This dissertation investigates the contention that social capital has migrated from the neighbourhood to the workplace, and considers the influence on physical and emotional health that may have brought about by this relocation.

This dissertation is divided into five major sections. The first section is the Introduction. The objectives, research questions, rationale of the study, definitions, and a review of the current literature on social capital and health were presented. As well, the history of Hamilton, the city the study took place in, was portrayed. Section 2 describes in detail the methods employed in the two phases of this study. Quantitative research methods were utilized in Phase 1 to explore the hypothesis that social capital may have migrated from the neighbourhood to the workplace. Qualitative research methods were used in Phase 2 to explore this hypothesis further by gathering information on social capital in the neighbourhood and the workplace simultaneously. Additionally, social capital was explored in other social communities to gain information on where social capital is accumulated in day-to-day life. The Methods Section provides details of the sampling strategy, measurement tool design, data analysis and interpretation,

and approaches taken to increase rigor and trustworthiness for Phase 1 and Phase 2. Section 3 outlines the steps that were taken to obtain ethics approval. Section 4 presents the results of Phase 1 and Phase 2. The associations between social capital, employment, and health outcomes were compared for the four neighbourhoods and then further investigated in two neighbourhoods that were shown to be diverse in relevant determinants of health, including social capital. This section also compared and contrasted the research methods used in Phase 1 and Phase 2. Finally, the last section examines and interprets the results, and presents the methodological and policy implications, contributions, and future research directions.

1.2 Rationale for Study

Social capital has been credited with increasing civic participation and the success of democracy (Putnam, 2000; Putnam, 1995), “keep[ing] bad things from happening to good kids” (Putnam, 2000, p. 296), encouraging safe and productive neighborhoods, promoting health and happiness (Putnam, 2000), and improving labour market outcomes (Stone, Gray, & Hughes, 2003; Stone, Gray, & Hughes, 2003). For these reasons, if social capital has declined where people live (Putnam, 2000), it would be beneficial for governments to devote time and resources to studying and increasing social capital in the neighbourhood. If social capital is not on the decline but merely changed or migrated to where people

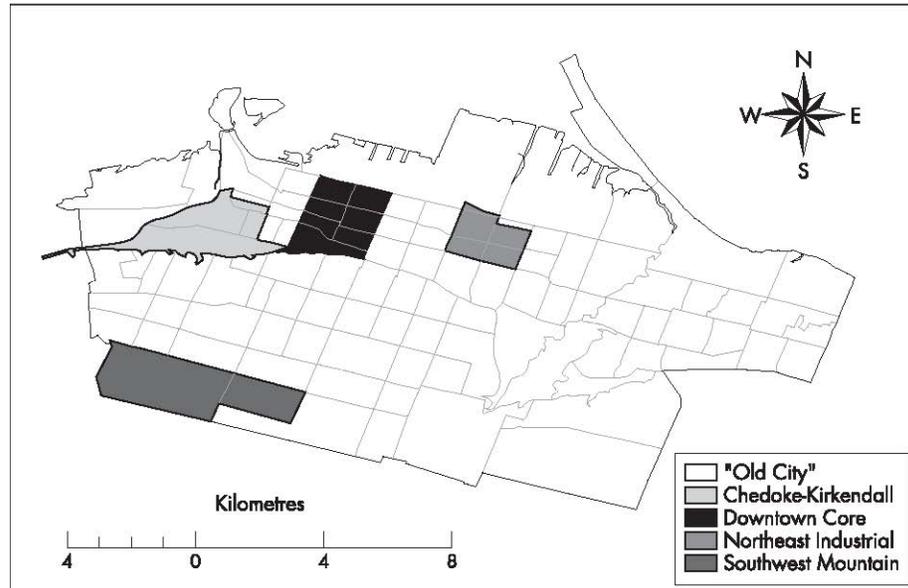
work (Edwards, 2004; Wolf, 1998), it would be more useful to study and increase social capital in the workplace.

1.3 Background

This dissertation is part of the Deconstructing the Determinants of Health at the Local Level (DECON) Project. The objective of the DECON Project was to “enhance our understanding of the determinants of health at the local level in policy-informed and relevant ways” (Eyles, 1999). A combination of multivariate, spatial statistical techniques and geographic information systems were used to select four unique neighbourhoods (Figure 1) (Luginaah et al., 2001). These four neighbourhoods became the sampling frame for two telephone surveys containing questions on selected social determinants of health, social conditions, use, and access of health services, and health status and behaviours. The first phase of this dissertation made use of the data from the telephone surveys to investigate the influence of employment-related variables on social capital and health.

Figure 1

Map of Study Area



1.4 Objectives

This dissertation had three objectives. The first objective was to investigate whether social capital has migrated from where people live to where people work, and if so, how this relocation may have influenced physical and emotional health. Putnam contends that social capital can both be a public and a private good. Not only can social capital benefit the individual, social capital can benefit bystanders (Putnam, 1995). The second objective was to consider social capital in the context of neighbourhood. Do individuals living in a neighbourhood with high social capital also benefit? Traditionally, studies on social capital were conducted where people live. This was usually carried out in a geographic context such as country, province, city, or neighbourhood. Recently, this arena has grown to

include where people work. Participation in other social networks was sometimes considered but only as an indicator of social capital, not as a source of social capital. Robert Putnam, in his book *Bowling Alone*, discussed the decline in bowling leagues in America as representing a decline in social capital. He did not examine bowling leagues as a source of social capital (Putnam, 1995). The third objective of this dissertation was to explore other social environments where social capital may be accessed.

1.5 Research Questions

To satisfy the three objectives, the following research questions were considered within the context of the four neighbourhoods selected in the Deconstructing the Determinants of Health Project. The first four questions pertain specifically to social capital, employment, and health. The fifth question allows for the opportunity to compare and contrast the results of the research methods utilized in the first four questions and highlights some of the methodological considerations that should be taken into account when studying a complex concept such as social capital.

- 1. Is there an association between neighbourhood, social capital, and employment?*

2. *Is there an association between neighbourhood, social capital, employment-status, and health?*
3. *Is there an association between social capital in the neighbourhood, social capital in the workplace, and physical and emotional health?*
4. *How do residents negotiate social capital in the many different social communities of their lives?*
5. *How do the qualitative results aid in the understanding of the quantitative results, specifically, social capital, employment status, and health?*

1.5.1 Rationale of Research Questions

Phase 1 made use of a substantial amount of data from the Deconstructing the Determinants of Health Project. The surveys gathered information on the determinants of health, including social capital, employment-related variables, physical and emotional health, and demographic information from residents (n=1,500) of four neighbourhoods. Previous analysis of the data demonstrated that self-rated health, emotional distress, body-mass index, and social capital varied significantly by neighbourhood (Veenstra et al., 2005; Wilson et al., 2004).

The rationale for the first two research questions;

1. *Is there an association between neighbourhood, social capital, and employment?*

2. *Is there an association between neighbourhood, social capital, employment-status, and health outcomes?*

was to broaden this existing research to include employment-related variables and to explore the influence these variables have on social capital and health. If employment-related variables were shown to influence social capital and health, a further investigation into social capital in the workplace would be reasonable.

The quantitative survey examined social capital and health outcomes at the neighbourhood level. The rationale for the third question,

3. *Is there an association between social capital in the neighbourhood, social capital in the workplace, and health?*

was to consider social capital in both the neighbourhood and the workplace simultaneously. If working individuals access social capital in their workplace as an alternative to their neighbourhood, the argument that social capital has migrated from the neighbourhood to the workplace has credence. As well, comparing the association of social capital and health in both the neighbourhood and workplace will garner further awareness that social capital may not be a static concept.

The fourth research question,

4. How do residents negotiate social capital in the many different social communities of their lives?

allowed for a broader examination of the individual's experiences of social capital. Individuals were given the opportunity to convey and put into perspective the social communities beyond their neighbourhood and workplace they considered a source of social capital. Because the research community has given preference to studying social capital in geographic contexts and the workplace, the influence of social capital accessed in other social communities on health has rarely been taken into account.

The rationale for the last question,

5. How do the qualitative results aid understanding of the quantitative results, specifically social capital, employment status and physical and emotional health?

was to compare and contrast the results of the quantitative research methods used in Questions 1 and 2 to the results of the qualitative research methods used in Questions 3 and 4 and to contribute to the knowledge of working concepts of social capital for future studies whether they are quantitative or qualitative.

1.6 Setting

The four neighbourhoods addressed in the research questions developed their distinct characteristics early in the history of the City of Hamilton. Also known as the “Birmingham of Canada, the Lunch Bucket City, the Pittsburgh of Canada, Steel Town”, (Williams, Kitchen, DeMiglio, Eyles, & Newbold, 2010, p. 908) Hamilton’s identity was shaped by its industrial heritage (Williams et al., 2010). The reconstruction of the Welland Canal, the enactment of legislation to protect national business from foreign competition, and the proximity to the United States’ border created an ideal opportunity for locating industry and manufacturing in Hamilton. From 1900 to 1915 industrial investment nearly tripled, employment grew by over 100%, and the city grew almost 2.5 times its physical size. Major industries built their factories along the bay to the northeast of the downtown core. To accommodate this new workforce ‘working class’ homes were constructed close to the heavy industry (Wood, 1987). During this period in Hamilton’s history the population almost doubled growing from 51,561 to 100,808 (Freeman, 2001). The majority of this population “were working class, and the workers remained poor, ill-housed, and unhealthy” (Wood, 1987, p. 127). The onset of World War I brought an expansion to the two main steel industries that became the largest employers in the city. There was little development to the west until 1923 when the city donated a parcel of land to McMaster University. This donation resulted in record growth of “high-class residential development” (Wood, 1987, p. 129) to that area. There was also little development to the area

on top of the escarpment known as the Mountain. The onset of the automobile and the building of an access route allowed for some residential areas but many of these lacked basic services, sewers, and water. The conditions of the housing on the Mountain at that time were considered “deplorable and unprecedented” (Wood, 1987, p. 129). Development in the City of Hamilton came to a halt with the Great Depression. Hamilton was hit hard with many of the industries failing or coming close to bankruptcy resulting in an increase in the existing division between the rich areas to the west and the poorer areas to the east. The Second World War brought the city out of the depression. An increase in demand for steel created an increase in demand for workers. In six years (1939-1945) the population grew from 155,276 to 175,364 (Freeman, 2001). The inability of the city to keep up to the demand created a housing situation that was described as “‘deplorable’, attributing the spread of various infections diseases to the overcrowded and unsanitary conditions”, (Wood, 1987, p. 133). As an emergency measure, prefabricated houses intended to be temporary accommodation were quickly erected in the northeast and on the Mountain. By 1945 one third of the houses on the Mountain were these temporary ‘war time’ houses. The Second World War also brought new bargaining powers to the steelworkers who succeeded in winning higher wages and benefits that allowed them to afford better accommodation. Expansion in the form of “comfortable bungalows” (Wood, 1987, p. 134) took place to the east and the Mountain. By the 1950s, the city realized that future expansion would have to be on the Mountain. More access

routes were built as well as the necessary infrastructure (Wood, 1987). The characteristics of the areas were decided. The downtown core was the center of commerce and government, the northeast area was mainly industry and working-class residential, the southwest became predominantly university and high-class residential, and the Mountain developed into higher income and working-class residential. The next few decades saw the economic status of the Mountain increase to well above average and the downtown core to decline to below average (Taylor, 1987). Employment in the manufacturing and industrial sectors experienced a “catastrophic decline” (Webber & Fincher, 1987, p. 340) in the 1980s. Almost one quarter of what was once well-paid industrial and manufacturing jobs were lost (Webber & Fincher, 1987). Many of these workers found new jobs but in lower paying and less secure sectors. The loss of thousands of well-paid manufacturing and industrial jobs brought about a decline to the city’s standard of living. Many neighbourhoods in the downtown and eastern cores of the city became home to “high levels of poverty and disadvantage” (Williams et al., 2010, p. 909). As the manufacturing and industrial sectors declined to the east, the health care, education, research and technological innovation sectors increased to the west to where “McMaster University alone employs about the same number of people as those working in the steel industry” (Williams et al., 2010, p. 909). This diversification in the economic base of the city further increased the divide between the rich and poor (Williams et al., 2010) that had been evident since the beginning of the city. Thus,

it was no surprise that the four neighbourhoods chosen for their distinct characteristics originated from these four areas.

1.7 Social Capital

1.7.1 Definition

The concept of social capital has yet to be defined and remains under-developed (Shortt, 2004; Carlson & Chamberlain, 2003; Adam & Roncevic, 2003). Social capital has been confused and conflated with related concepts such as social cohesion (U.S.Department of Health and Human Services, 2010; Shortt, 2004; Lavis & Stoddart, 1999; De Silva, McKenzie, Harpham, & Huttly, 2005; De Silva, Huttly, Harpham, & Kenward, 2007) psychological sense of community (Perkins & Long, 2002; U.S.Department of Health and Human Services, 2010; De Silva et al., 2005; De Silva et al., 2007), a sense of community, collective efficacy, community competence, and community capacity (Shortt, 2004). As well as confusion between related concepts, confusion exists within the definition of social capital. Currently, there are three key definitions for social capital – that of Pierre Bourdieu, James Coleman, and Robert Putnam.

In a 1983 article Bourdieu defined social capital as, “the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition – or in other words, to membership in a group” (Bourdieu, 1986).

Individuals join groups and develop social networks for the benefit of accruing social capital. These groups and networks require an intentional investment of the other two forms of capital, economic and cultural. In turn, social capital is traded for economic capital such as subsidized loans, investment tips (Portes, 1998), jobs (Stone et al., 2003) or for cultural capital such as contacts with experts or institutions that award valued credits so that the individual could be successful in a capitalist society (Portes, 1998).

Coleman developed his definition of social capital in the field of education of children (Coleman, 1988). Much like Bourdieu's definition, Coleman was interested in how social capital benefits the individual (Winter, 2000). Unlike Bourdieu's definition, Coleman placed the value of social capital not in its possession, but in the structure that can realize social capital. Relations within the family and the social structures that facilitate success are paramount. Social capital is potentially facilitated in all social relations and structures. In Coleman's definition, these relations and structures are only of value when they are 'closed' so that norms can be developed and reinforced. A closed relationship takes place if a child's parents communicate with teachers and other children's parents. By communicating, the parents are able to arrive at a consensus over standards and sanctions for their children. This in turn improves the success of their children at school. If the relationship was not closed, the parent would not communicate with parents of other children or teachers. The parent would not know what is

expected of their child nor would they know how their child is behaving, which could be detrimental to their child's success at school (Coleman, 1988).

The third and most recent definition is that of Robert Putnam. Putnam's definition is the most popular definition and has been used almost exclusively to date (Carpiano, 2007; Carpiano, 2008). Putnam defines social capital as "features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit" (Putnam, 1995, p. 66). These features are further refined into two forms, bonding social capital and bridging social capital. Bonding social capital is considered "inward looking and tend[s] to reinforce exclusive identities and homogeneous groups" (Putnam, 2000, p. 22). An example of bonding social capital is participation in networks with individuals of the same ethnicity, religion, or political views. Bridging social capital is considered "outward looking and encompass[es] people across diverse social cleavages" such as participation in "civil rights movement, many youth service groups, and ecumenical religious organizations" (Putnam, 2000, p. 22). Recently, the definition for bridging social capital has been amended to consist of networks of people "who know they are not alike in some socio-demographic (or social identity) sense (differing by age, ethnic group, class, etc.)" but are "equal in terms of their status and power" (Szreter & Woolcock, 2004, p. 655). A third form, linking social capital, has been introduced. Linking social capital is defined as "norms of respect and networks of trusting relationships between people who are

interacting across explicit, formal or institutionalized power or authority gradients in society” (Szreter & Woolcock, 2004, p. 655). Linking social capital allows for access to institutional representatives delivering key services such as health care or neighbourhood improvements (Szreter & Woolcock, 2004). Recent studies on social capital have begun to look at how these three forms of social capital influence health differently (Kim, Subramanian, & Kawachi, 2006; Stafford, De, Stansfeld, & Marmot, 2008). Like Bourdieu’s definition, social capital can be a private good, but with Putnam’s definition, social capital can also be public good benefiting bystanders. For example, all the residents of a neighbourhood could benefit with a neighbourhood organization that was able to procure playground equipment even if they were themselves were not part of that organization (Putnam, 2000). This difference in beneficiary is cited as the reason why respective literatures have moved in different directions (Portes & Landolt, 2000).

The definitions put forward by Bourdieu, Cole, and Putnam have been compared and contrasted extensively (see for example, Shortt, 2004; Szreter & Woolcock, 2004; Kawachi, Kim, Coutts, & Subramanian, 2004; Adams & White, 2003; Winter, 2000; Portes, 2000). The definition of social capital employed in this dissertation is that of Putnam’s, for two reasons. First, current research has relied almost exclusively upon the social capital theory put forth by Putnam (Carpiano, 2008). Using the same definition allows for the comparison of the results of this dissertation to previously published results. Second, Putnam’s

definition “implies that the ‘collective level’ is most appropriate for investigation” (Giordano, Ohlsson, & Lindstrom, 2011, p. 946). The data used in the first phase of this dissertation aggregated individual data on social capital at the neighbourhood level. Following Putnam’s definition allows for a comparison of residents in neighbourhoods with a high stock of social capital to residents in neighbourhoods with a low stock of social capital in order to validate, or not, Putnam’s claim that social capital can also be a public good.

1.8 Review of the Literature

A review of the literature revealed no studies examining the influence of social capital on health in more than one social community simultaneously. Although social capital is associated with numerous social communities, social capital appears to be measured in only one social community at a time. If another social community was included in an analysis, it was as an outcome measure only. Putnam reported a decline in social capital at the national level as represented by a decline in church attendance, community involvement, union membership, etc. (Putnam, 2000). He did not measure social capital in these communities. To demonstrate the necessity for awareness of the influences of social capital from multiple social communities, this dissertation explored social capital in the neighbourhood and workplace primarily and was sensitive to social capital accessed in other social communities such as places of worship, cultural organizations, and family.

The following literature examines social capital and health by geographical setting and provides an overview of the concept of social capital, social capital's influence on health in specific social communities, and measurement issues. First, the findings of a systematic review are considered. This systematic review incorporated cross-country and within country studies and stratified them on the country's degree of economic egalitarianism. Second, studies that compare social capital and health across countries are reviewed. Third, recent studies not included in the systematic review, measuring social capital at the state/provincial, city, and neighbourhood levels, are presented by their degree of economic egalitarianism consistent with the systematic review. Fourth, studies on social capital and health in the workplace are examined. Fifth, studies on social capital and health in social communities outside a geographical setting or the workplace are examined. Finally, a summary of these studies is provided.

To be included in this review of the literature, the definition of social capital must be consistent with one of the definitions described in Section 1.7 Social Capital and the outcomes of interest included an objective or subjective measure of health. Only studies that included adults were considered relevant given the different measurements of variables and outcomes for children (Harpham, 2002). The definition of social capital and the significant elements of social capital found to be associated with health are reported below for each relevant study.

1.8.1 Social Capital in a Geographical Setting

The emphasis of a systematic review conducted by Islam et al. was to investigate whether the economic egalitarianism of a country confounds the association between social capital and health. Social capital was defined as cognitive social capital and structural social capital. Cognitive social capital consists of norms, values, attitudes, and beliefs. Structural social capital consisted of density of social networks and civic engagement. The review did not provide details of the measurement tools or specific elements of social capital that influence health. Economic egalitarianism was based on the country-level Gini coefficients and the share of public social expenditure by percentage of gross domestic product. Health outcomes of the studies in the systematic review included physical health, mental health, mortality, life expectancy, low birth-weight, sexually transmitted diseases, tuberculosis, and suicide in populations of children, teenagers, and adults. The units of analysis ranged from the individual to neighbourhood, state, and country. The systematic review included five cross-country studies. Four cross-country studies (16 countries, 19 countries, 18 countries, 3 countries) analyzed data from the World Value Survey and found no association between country level social capital and health outcomes overall. One study (49 countries) analyzed data from the World Value Survey plus two national data sets and found a strong association between country level social capital and subjective well-being. This study only considered physical health as an influence on well-being (Helliwell & Putnam, 2004).

Country-specific studies were stratified by their level of economic egalitarianism. Finland, Norway, Sweden, Netherlands, and Germany were regarded as egalitarian countries, Australia, Canada, Ireland, the UK, and Hungary were regarded as moderately egalitarian countries, and the United States and Russia were regarded as not egalitarian countries. In the stratum considered egalitarian countries, six studies (Finland x 2, Sweden x 3, and Germany x 1) demonstrated a strong association between social capital and health and two studies demonstrated a weak association (Norway x 1, Sweden x 1). One multi-level¹ study (Sweden) found an association between social capital and self-reported health at the neighbourhood level but did not find a contextual effect. In the moderately egalitarian strata, six studies (Australia x 1, Canada x 1, Ireland x 1, Hungary x 2, United Kingdom x 1) demonstrated a strong association between social capital and health, three studies (Australia x 2, Canada x 1) demonstrated a weak association, and one study (Canada) failed to demonstrate an association between social capital and health. Of the two multi-level studies, one study (Canada) found a contextual effect for social capital and depressive symptoms but not for social capital and long-term illness or self-rated health. The second study (United Kingdom) found no association between social capital at the electoral ward level and survival. Classified as not egalitarian countries, seven studies (United States x 5, Russia x 2) demonstrated a strong association and one study (United States) demonstrated no association between social

¹ Multi-level studies estimate the variance in the outcome measure between two or more levels. In this case the variance is estimated between individuals and between the state/neighbourhood/community they live in.

capital and health outcomes. Six of the seven multi-level studies in this stratum (United States x 7) demonstrated a contextual effect between social capital and a health outcome at the neighbourhood and state levels. A summary of the single-level studies included in the review found a significant relationship between social capital and health. In particular, the United States, a not egalitarian country, demonstrated a very strong association between social capital and health, whereas Canada and Australia, moderately egalitarian countries, demonstrated weak and inconsistent associations between social capital and health. A summary of the multi-level studies demonstrated, irrespective of the degree of egalitarianism of the country, a contextual effect (fixed-effect) for social capital and health. The summary also demonstrated a greater variation in the association between social capital and health (random effect) in not egalitarian countries compared to egalitarian countries. The authors of the systematic review 'tentatively' concluded that there was a positive association between social capital and better health irrespective of the degree of egalitarianism of the country (Islam et al., 2006).

Two studies published more recently than the systematic review investigated the effects of social capital and health between multiple countries (Mansyur, Amick, Harrist, & Franzini, 2008; Islam et al., 2006; von dem Knesebeck, Dragano, & Siegrist, 2005). Mansyur et al. conducted a multi-level (individual and country) study utilizing data from the World Values Survey, the

European Values Survey, and economic indicators from the World Bank to examine social capital, income inequality, and self-rated health in 45 countries. The concept of social capital was conceived as structural social capital and cognitive social capital. Social network density was used to measure structural social capital, or “what people ‘do’...in terms of social relations” and social ties was used to measure cognitive social capital, or “what people ‘feel’ in terms of social relations” (Harpham, Grant, & Thomas, 2002, p. 106). Depending on the subset of countries analyzed, the compositional effects (differences due to the characteristics of the individuals in the groups) between structural and cognitive social capital on perceived health varied and the contextual effects (differences at the group-level after controlling for individual-level characteristics) of these variables on self-rated health were inconsistent and in some subsets the reverse correlation occurred. Additionally, the contextual measures were shown to diminish the compositional effects of social capital on self-rated health. The authors of the review hypothesized that the inconsistent contextual effects may be an indication that country-specific characteristics, such as cultural values and norms, influence the relationship between social capital and health (Mansyur et al., 2008).

The second cross-country study analysed data from the European Social Survey for 21 European countries. Social capital was measured as social trust, participation in organizations, and volunteering. The results of the review

demonstrated that countries differed substantially in participation in organizations, voluntary work, social trust, and health. At the aggregate level (all countries combined), there was an inverse correlation between involvement and social trust to fair or poor health. At the country level, social trust was significantly related to self-rated health in 18 of the 21 countries and involvement was significantly related to self-rated health in 6 of 19 countries. Income, measured as the household's total net income divided by household members, was shown to substantially reduce the associations between involvement and health (from 15 countries to 7 countries overall). European countries in the west and north, that would be considered similar to the culture of Canada, showed a stronger association between social capital and health than European countries to the east and south (von dem Knesebeck et al., 2005).

The previous systematic review (Islam et al., 2006) and cross-country studies (Mansyur et al., 2008; von dem Knesebeck et al., 2005) found varying strengths of association between social capital and self-rated health. These studies demonstrated that cultural variations such as an inherent lack of social trust (von dem Knesebeck et al., 2005), political systems, material deprivation, low sense of control (Mansyur et al., 2008), economic egalitarianism (Islam et al., 2006) and household income (von dem Knesebeck et al., 2005) influenced this association. Because of this discovery, only the studies of social capital and health in countries with similar “features of social organization such as networks,

norms, and social trust” (Putnam, 1995, p. 66) to that of Canada’s are presented. Countries considered to have similar features to Canada are Australia, United Kingdom, Ireland, France, Denmark, Finland, Norway, Sweden, Switzerland, and the United States. Studies are organized by economic egalitarianism as in the review to illustrate further the influence of economic egalitarianism if one exists.

Two studies on social capital and health were conducted in what is considered the most egalitarian countries. The first study used survey data shown to represent the general Norwegian population to investigate the effects of social capital on self-perceived health and long-standing illness. Social capital was measured as bonding, bridging, and linking social capital. Only neighbourhood satisfaction, an element of bridging social capital, and generalized trust, an element of linking social capital, were associated with self-perceived health. No social capital elements were associated with longstanding illness. Additionally, social capital did not mediate the relationship between socioeconomic position and health. The authors concluded that the lack of association between social capital and health may be attributed to less variability in the distribution of social capital due to the social support system in Norway (Dahl & Malmberg-Heimonen, 2010). The second study was conducted in Finland and made use of data from the Health Examination Survey. Self-rated health and psychological health were rated using the General Health Questionnaire (GHQ) - 12. Social capital was measured as social support, social participation, networks,

trust, and reciprocity. Social participation, networks, trust, and reciprocity significantly influenced self-rated health and psychological well-being. Social support failed to do so (Nieminen et al., 2010).

Seven studies were conducted in moderately egalitarian countries. Three studies were conducted in Canada. The 2008 Montreal Neighbourhood Networks and Healthy Aging Study data were analysed to examine social capital inside the neighbourhood, social capital outside the neighbourhood, and self-reported health. Neighbourhoods were determined by census tract data stratified into high, medium, and low-income areas. Social capital was measured as social networks outside the neighbourhood, social networks inside the neighbourhood, generalized trust, particularized trust, social participation inside the neighbourhood, social participation outside the neighbourhood, and social cohesion. Social cohesion consisted of relationship with neighbours, people in the neighbourhood willing to help each other, people in the neighbourhood that know you, and neighbourhood cleanliness. More residents who reported generalized trust, neighbourhood social participation, a favourable perception of their neighbourhood, and a greater diversity in social networks outside the neighbourhood reported very good to excellent self-reported health than residents who did not report these elements. There were no associations between the remaining elements and self-rated health (Moore et al., 2011). The second Canadian study took place in Ontario and used the same data as this

dissertation. The study examined the associations between social capital and self-rated health, emotional health, number of chronic diseases, and body-mass-index. Social capital was measured as breadth and depth of involvement in voluntary associations. Social capital was found to be associated with a lower body-mass-index in the general survey but not by neighbourhood (Veenstra et al., 2005). The third Canadian study investigated the association between social capital and self-reported health in Saskatchewan. Social capital was measured as overall civic participation, political trust, trust in neighbours, trust in people from respondent's community, trust in people from respondent's part of province, and trust in general. There were no associations between the social capital elements and self-rated health (Veenstra, 2002; Veenstra, 2000; Veenstra & Lomas, 1999). One study was conducted in Australia. Data from two ethnically diverse suburbs were analysed to consider the associations between social capital, access to social capital, and health. The author conceptualized social capital as social capital infrastructure and social capital resources. Social capital infrastructure consisted of what has been termed cognitive (trust and reciprocity) and structural (networks) social capital. Social capital resources consisted of social support, social cohesion, and civic activities. Physical health and mental health were measured using the Short Form Survey (SF-12). Only informal networks and access to help were found to be positively associated with mental health (Ziersch, 2005). Three studies were conducted in the United Kingdom. The first study analysed data from the Health Survey for England and the Scottish

Health Survey to investigate the relationships between neighbourhood social capital and common mental disorders as measured by the GHQ. Social capital was measured as structural social capital (family and friendship ties, membership associations, and integration into wider society) and cognitive social capital (trust, attachment to neighbourhood, tolerance to others, and reciprocity). No associations between social capital and common mental disorders were found in general however, they were found in deprived neighbourhoods. For people living in the deprived neighbourhoods, friendship ties and tolerance reduced the odds of common mental disorders while attachment to the neighbourhood increased the odds of common mental disorders (Stafford et al., 2008). The second study analyzed the British Household Panel Survey to investigate social capital and self-rated health. Social capital was measured by social trust, and civic participation. Only living in a high trust postcodes as compared to a low trust postcodes had a positive effect on health (Snelgrove, Pikhart, & Stafford, 2009). The third study analyzed the Health Survey and investigated social capital and health as measured by the single question on self-rated health and the standardized health measurement developed by the EQ-5F, a generic health-related quality of life instrument. Social capital was measured as trust, reciprocity, social support from friends and family, and civic participation. Trust and reciprocity were further broken down to whether the individual felt that people could be trusted, people were helpful most of the time, and if people would take advantage of them if they had the chance. A lack of trust in others, the perception

that others look out for themselves most of the time, that others would take advantage of them if they could, lack of social support, and a reduction in at least one civic organization reduced the likelihood of reporting good health. The authors also modeled a best and worst case scenario for social capital. They found that that a population with the lowest measures of social capital were 29.0% less likely to report good health than a population with the highest measures of social capital (Petrou & Kupek, 2008).

Of the not egalitarian countries, three single-level studies were conducted in the United States. The first study analysed the Social Capital Community Benchmark Survey to examine the influence of bridging social capital, as measured by participation, and bonding social capital, as measured by trust with respect to the individuals' race/ethnicity, and diversity, as participation and trust outside their own ethnicity, on health at the community level. The authors found an inverse relationship between bonding and bridging social capital at the community level and health. These results varied by race/ethnicity. The inverse relationship between bonding social capital and fair/poor health was weaker among Black persons and persons in the "other" racial/ethnic category compared to White persons (Kim et al., 2006). The second study utilized the Behavioral Risk Factor Surveillance System survey to analyze social capital as measured by bonding social capital (trust) and bridging social capital (participation) and health. Living in a state in the middle or highest tertile of bonding or bridging social

capital as compared to the lowest tertile lowered the odds of reporting self-rated individual fair/poor health. As in the previous study, this relationship was not consistent among the race/ethnicities studied. Hispanics with high bonding social capital were more likely to report fair/poor health compared to Whites with high bonding social capital and Blacks with high linking social capital were more likely to report fair/poor health compared to Whites with high linking social capital. An inverse relationship between bonding social capital and health was also found with age. High bonding social capital among those >65 years of age was associated with fewer days off due to poor physical health and a greater number of days off for those 18-29 years of age (Kim & Kawachi, 2007). The third study conducted in the United States analyzed data from the Social Capital Community Survey in Minnesota and Wisconsin and investigated the associations between social capital and self-rated health. The variables used to measure social capital were social trust, involvement in associations, interactions with organized groups, informal social interactions, social support, and volunteering. Only social support was not found to be significant. They found that an increase in the index of all significant social capital measures resulted in an increase of 10% in the probability of being healthy (Schultz, O'Brien, & Tadesse, 2008).

1.8.2 Social Capital in the Workplace

Changes in work-life roles of men and especially women since the 1960s may add substance to the assertion that social capital has migrated from where people live to where people work. In the 1960s, there was a definite divide between neighbourhood and work. Men worked and women stayed home (Wolf, 1998). Women spent their time raising children and volunteering in the community (Putnam, 2006). That is no longer the case. As of 2000, almost 60% of women who live in Ontario are employed outside the home (Statistics Canada, 2006). Fifty-three percent of children aged six months to five years are being cared for by someone other than a parent (Statistics Canada, 2005). As well, the separation between neighbourhood and work is becoming less and less defined in other ways. The Canadian Changing Employment Relationship Survey reports that 27% of employees do at least one hour of paid work at home in a typical week and 14% do more than six hours of work at home in a week (Lowe & Schellenberg, 2001). In addition, the family structure has gone through some dramatic changes since the 1960s. People divorce more often, marry later and more people live alone. Many people consider the workplace their main source of social engagement (Putnam, 2006). The General Social Survey in the United States reported that 50% of respondents had a co-worker as a close friend and 29% reported two or more co-workers as close friends (Marks, 1994). Another change that has become evident is the time spent in the workplace. People in the traditional nuclear family structure are spending more time at the workplace,

sometimes considering it a sanctuary from the stresses and strains of home life. The number of Canadians working greater than 50 hours per week has increased from 11% in 1976 to 14% in 2000 (Canadian Policy Research Networks, 2004). One third of Canadians between the ages of 25 and 55 consider themselves workaholics (Statistics Canada, 1999). If social capital occurs where time is spent, it is reasonable to assume social capital is accessed in the workplace.

There has already been an extensive amount of research looking into psychosocial work conditions and their effects on health, well-being, and productivity. Psychosocial work condition measurements most often consist of the Demand-Control-Support model. Previous studies using this measure have found that low job decision latitude and high psychological demands are risk factors for cardiovascular mortality. These studies also found that the lack of social support, as measured by co-worker interaction in the workplace and outside the workplace, increased these risks (Theorell & Karasek, 1996; Loscocco & Spitze, 1990; Johnson & Hall, 1988). Using Canadian data, Helliwell found that trust in the workplace, which is not measured in the Karasek-Theorell Model, was the strongest of the three domains in predicting well-being (Helliwell & Huang, 2005). A recent study on worker health demonstrated that social capital was a better predictor of quality of life at work than the individual characteristics of the worker, the characteristics of the organization, or the work environment. Further analysis using the Analysis of Moment Structures software

found that the impact of social capital on job satisfaction was 24 times higher than the impact of job satisfaction on social capital (Requena, 2003).

Two dimensions of social capital exist at the workplace level: social capital external to the enterprise and social capital internal to the enterprise. Social capital external to the workplace consists of links, relations, and networks with suppliers, customers, etc. Social capital internal to the workplace consists of employer-employee, and employee-employee relations (Westlund & Nilsson, 2003). Most often, studies on workplace social capital have more to do with the economic prosperity of the organization. Only recently have studies on workplace social capital internal to the enterprise considered health as an outcome (Sapp, Kawachi, Sorensen, LaMontagne, & Subramanian, 2010; Oksanen, Kouvonen, Vahtera, Virtanen, & Kivimaki, 2009; Vaananen et al., 2009; Oksanen et al., 2008; Kouvonen et al., 2006; Helliwell & Huang, 2005; Liukkonen, Virtanen, Kivimaki, Pentti, & Vahtera, 2004).

The only Canadian workplace study (Helliwell & Huang, 2005) analysed three large Canadian surveys (ESC survey, 2002 Ethnic Diversity Survey, and the 2003 General Social Survey) to investigate social capital in the workplace and well-being. Social capital, measured as workplace trust only, was found to be a strong determinant of well-being to the point that the “compensating differentials estimated for the quality of workplace social capital are so large as to suggest

that they do not reflect full equilibrium” (Helliwell & Huang, 2005, p. 1435). An American study investigated social capital in the workplace and its ability to buffer the association between smoking status and job stress. Data on social capital was collected by interviewer-administered questionnaires from employees and supervisors in 26 manufacturing firms. The questionnaires were based on a similar construct as the interview template measuring social capital in the workplace in this dissertation. The authors found that social capital buffered the association between high job demands and smoking but not job stress and smoking. Only one measurement of trust, worker trust in managers, buffered the association between job stress and smoking (Sapp et al., 2010).

The most extensive study on workplace social capital and health is a longitudinal, multilevel study being conducted in Finland (Kouvonen et al., 2006; Oksanen et al., 2009; Vaananen et al., 2009; Oksanen et al., 2008; Kouvonen et al., 2006; Liukkonen et al., 2004). A cohort of up to 33,500 public sector employees from 10 towns has been followed since 1997. This study looks specifically at workplace social capital and health, depression, and lifestyle risk factors. The tool used for measuring workplace social capital provided the framework for the tool measuring workplace social capital in this dissertation. So far, the authors found physician-diagnosed depression and antidepressant treatment 30-50% higher (Oksanen et al., 2009; Kouvonen et al., 2008), the odds of having two or more lifestyle risk factors 1.3 times higher (Vaananen et al.,

2009), and the odds of having health impairment 1.2 times higher (Oksanen et al., 2008) in employees who work in a low social capital workplace compared to a high social capital workplace. The contextual effects of the workplace were calculated by taking into consideration basic workplace characteristics such as size of the work unit, mean age of employees, the total working hours, the number of manual workers or temporary workers, and the mean levels of social capital of the employees in that unit. No contextual effects have been shown for depression (Kouvonen et al., 2008) or lifestyle risk factors (Vaananen et al., 2009); however, contextual effects have been shown for self-rated health (Oksanen et al., 2008). The authors are finding that social capital significantly influences self-rated health only in workplaces where there is low social capital created by a high proportion of manual workers. In concluding the analysis to date, the authors suggest that “the effects of low social capital might not be similar in all work units or other groups of different socioeconomic structure”, (Oksanen et al., 2008, p. 647). (Oksanen et al., 2008, p. 647).

1.8.3 Social Capital in Other Communities

Neighbourhoods and workplaces are not only spaces in the geographic sense but are also social places or communities where people live out their lives (Kearns & Joseph, 1993). In recent literature looking at the psychological sense of community (PSOC), Brodsky et al. expanded the definition of community to show that “individuals are simultaneous members of multiple communities

including both distinct territorial and relational communities and nested macro and sub communities” (Brodsky, Loomis, & Marx, 2006). They give the example of an individual living in a neighbourhood with geographic boundaries, working or going to school in another geographic neighbourhood and having relational neighbourhoods that do not share the geographic boundaries of each other or where they live or work (Brodsky et al., 2006). Given this definition, it is intuitive that social capital may exist in any and possibly all of these communities simultaneously. Although intuitive, no relevant studies on social capital and health in social communities other than geographic areas or workplace were located. If such studies had been found, there would be the concern that the benefits of social capital may not be consistent. Others have recognized that, “social capital will vary by network type and social scale. A dimension of social capital in one network may not correspond with a different dimension of social capital in another network, or with outcomes which may or may not be measured on a different scale again” (Stone & Hughes, 2002, p. 3). For example, places of worship are purported to build and sustain more social capital than any other institution, contributing to almost half of the supply in social capital (Statistics Canada, 2004). Although places of worship sustain more social capital, a recent study suggested that the moral behaviour of youths had more to do with social capital accessed through the “trusting interaction with adults, friends, and parents who share similar views of the world”, than with the religious doctrine of their house of worship (Ebstyne-King & Furrow, 2004), demonstrating the importance of family.

1.8.4 Literature Review Summary

The review of the literature did little to shed light on the influence of social capital on health outcomes and the definition and measurement of social capital. The systematic review and inter-national studies found that cultural variations such as an inherent lack of social trust, political systems, material deprivation, low sense of control, economic egalitarianism, and household income influence the associations between social capital and self-rated health making generalizability from one country to the next difficult. The national studies that considered social capital and health relative to race, age, or income found that these three variables not only influenced social capital and health, these variables reversed the relationship in some cases making an overall statement on the association between social capital and health within populations difficult. The national studies also revealed that when social capital was determined to influence health, that not all the elements of social capital considered in the concept of the study did so.

While studies on social capital and health in the workplace are limited, they appeared to be following the same direction as social capital and health in a geographic context. The concept of social capital was imagined differently in each of the three studies resulting in inconsistencies in measurement. One study compared social capital and health in multiple occupational classifications and different industrial sectors. As in the studies in geographical settings, the

association of social capital and health were not similar in all settings or occupations. No relevant literature on social capital in other social communities and health was found so an observation could not be made.

2. METHODOLOGY

The purpose of this dissertation is to utilize an accepted concept of social capital and to construct measurement instruments based on tools validated or used extensively in previous studies. The intent, justification, and methodology are given in detail so that the reader can evaluate the results and contrast the results to comparable studies.

2.1 Mixed- methods

As an alternative to using quantitative or qualitative methods only, mixed-methods were chosen as the most appropriate method considering the data that is already available, the depth of the questions that need to be further explored, and the need to integrate the results of both (Tashakkori & Creswell, 2007). The definition of mixed methods adopted for this dissertation is where “the investigator collects and analyzes data, integrates the findings, and draws inferences using both qualitative and quantitative approaches or methods in a single study or a program of inquiry” (Tashakkori & Creswell, 2007, p. 4). Although the term is still under developed, there has been a marked increase in

interest in mixed methods research. Mixed methods research has nearly doubled in the past decade increasing from 17% in the mid-1990s to 30% of health services research in England in the early 2000s. There are now books and journals solely dedicated to mixed methods research and methods (O'Cathain, 2009).

Like social capital, there are major issues and controversies in the field of mixed methods research (Cresswell, 2009). Still considered in its infancy, a recent mapping of the field of mixed methods research illustrated the still ongoing discussion in defining the field, creating a language, and how it should be used with other designs and methodologies (Cresswell, 2009). Not only are there challenges between the mixed methods proponents and other communities, specifically the quantitative and qualitative research communities, there are challenges and disagreements within the mixed methods community. These differences have reached a point where it has become a major concern in teaching and learning mixed methods research methodology (Tashakkori, 2009).

In the case of this dissertation, a combination of quantitative and qualitative methods allows for the exploration of the interactions of social capital and health at the neighbourhood level, at the individual level, and in multiple communities. The quantitative component makes use of a substantial amount of data that already exists. Two household surveys gathered information on demographics,

the determinants of health, and health status from a significant number of residents in four neighbourhoods in the City of Hamilton. For ethical reasons, the quantitative data was not linked to the individual. The study was concerned with aggregating data and reporting at the neighbourhood level and was designed to provide information at that level only. This data was sufficient for the first objective of this dissertation, to investigate the impact of employment-related variables on social capital and health at the neighbourhood level and to illuminate divergent qualities in the neighbourhoods of study to become the basis of the sample frame for the qualitative component of this study. This data does not allow for further exploration of social capital and health in other communities or at the individual level.

Quantitative methods work best when data can be reduced to small discrete variables to answer a specific question and quantified (Cresswell, 2003). In the case of the first two objectives, looking at the interactions of three discrete variables, social capital, employment, and health, it is likely to work well. The next two objectives require a broader examination of individual experiences of social capital. To capture the experiences of individuals, a qualitative approach was deemed the most suitable. Whereas a quantitative approach reduces data to small discrete variables to answer a specific question, a qualitative approach considers broadening and deepening respondents' conversations to convey their experiences in their life settings (Cresswell, 2003) and to help understand the

underlying dynamics of social constructs such as social capital and how they evolve and are acted upon (Bartunek & Seo, 2002).

2.2 Theoretical Approach

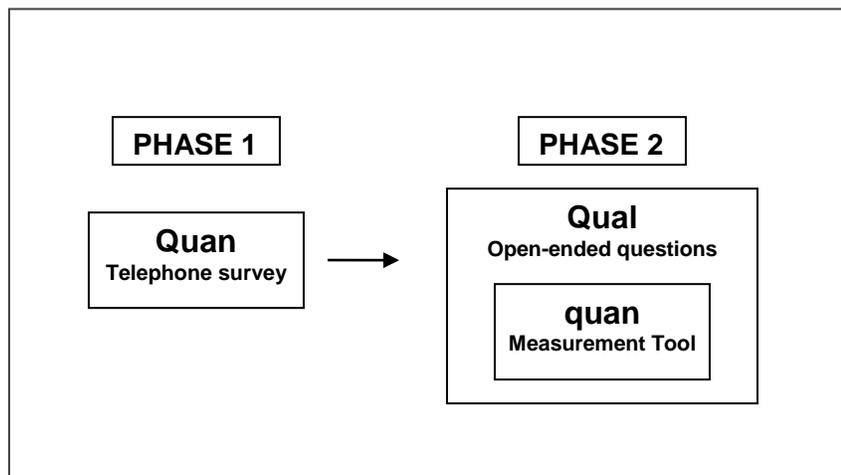
This dissertation adopts a pragmatic approach in choosing mixed methods for collecting information and utilizing the appropriate tools to find answers to the research questions. Considered the foundation for mixed methods research (Cresswell & Tashakkori, 2007), pragmatism is more concerned with what works in the ‘real world’ (Feilzer, 2010) than a commitment to any one philosophy (Cresswell, 2003; Cherryholmes, 1992). The researcher is “free to choose the methods, techniques, and procedures of research that best meet their needs and purposes” (Cresswell, 2003, p. 12). This does not suggest that the assumptions underlying the research methods are to be ignored. Bazeley cautions that “a wise mixed methods researcher knows what assumptions underlie the methods of analysis being used, understands the implications of not fully meeting those assumptions, and takes that into account in drawing and presenting conclusions” (Bazeley, 2004, p. 7).

2.3 Study Design

A two-phase, sequential, concurrent nested design (Cresswell & Plano-Clark, 2007; Cresswell, Plano-Clark, Gutmann, & Hanson, 2003; Morse, 2003) was chosen as the most suitable study design because it accommodates the

existing large data set and allows for exploration of social capital in the neighbourhood and the workplace.

Figure 2
Study Design



There are two intended functions for the sequential component of this design, development, and complementarity. First, the data on the relationship of social capital and employment from the telephone survey informs the development of a sample framework for the face-to-face interviews. Second, the data from the interviews “enhance[s] the interpretability of assessments of a single phenomenon” (Greene, Caracelli, & Graham, 1989, p. 257), social capital at the neighbourhood level, by providing an alternate level of analysis, social capital at the individual level (Greene et al., 1989). Moreover, the interviews further complement the survey by revealing other social communities where social capital may exist, “yielding an enriched, elaborated understanding of that

phenomenon” (Greene et al., 1989, p. 258). The units of analysis (neighbourhood, individual) and social communities (neighbourhood, workplace) have equal priority giving both the quantitative and qualitative phases equal priority (Tashakkori, 2009). The concurrent nested design incorporates both quantitative and qualitative data collected in the same sample simultaneously.

The first phase uses existing data. Two household telephone surveys were conducted in 2000 and 2003. The surveys gathered information on the determinants of health, demographic variables, health status and several employment variables from a significant number of residents and aggregated this data to the neighbourhood level. This data were used to respond to the first two questions

1. *Is there an association between neighbourhood, social capital, and employment?*

2. *Is there an association between neighbourhood, social capital, employment-status, and health?*

relating to the neighbourhood as a whole. Data were also used to inform the sampling frame for Phase 2 in which two neighbourhoods that demonstrated the maximum variation in the variables of interest were selected.

The purpose of Phase 2 is to return to the neighbourhoods surveyed in Phase 1 and collect information on social capital in the neighbourhood and workplace at the individual level. Up to this point, data on social capital were collected by closed-ended questions. Surveys ranging from national population health surveys to local surveys are the tools used most frequently to measure social capital (Stone, 2001). Surveys prove sufficient for identifying the structural elements of social capital, but can soon become less useful when there is a need to look deeper and measure the norms of trust and reciprocity within those social relations (Stone, 2001). In many cases, the indicators for social capital are made to fit the tool instead of the other way around (van Kemenade, 2003). For example, in the case of the first telephone survey, a resident was said to have social capital if they belonged to organizations such as sports, religious, or professional associations. The network may exist in these organizations; however, there may be no opportunity for trust and reciprocity to exist. In the definition of social capital used in this dissertation, trust and reciprocity are necessary elements of social capital. The ideas of trust and reciprocity are complex and are best addressed outside the constraints of this survey. Another possible weakness of close-ended questions is that information may be “constrained by any preconceptions held by the researchers” (Johnson & Turner, 2003, p. 304). The next phase considers broadening and deepening residents’ conversations to convey their experiences in their life settings (Cresswell et al., 2003). Participants of Phase 2 are referred to as residents to not dehumanize

them as merely subjects (Sandelowski, 2007), and to emphasize their place in a social community that is the central point of this research.

Phase 1 measures social capital in the neighbourhood. As was stated previously, social capital may also exist in other communities such as the family (Coleman, 1988; Winter, 2000), religious institutions (Ebstyne-King & Furrow, 2004; Bettertogether, Saguaro Seminar, 2000), and the workplace (Edwards, 2004; Bettertogether, Saguaro Seminar, 2000; Wolf, 1998). To examine social capital in other social communities and to obtain individual levels of social capital and health status, face-to-face interviews were conducted with residents in two of the four neighbourhoods found to demonstrate maximum variation in the variables of interest.

Phase 2 follows a qualitative description (QD) approach as described by Sandelowski (Sandelowski, 2010; Sandelowski, 2010; Neergaard, Olesen, Andersen, & Sondergaard, 2009; Sandelowski, 2000). QD does not necessarily follow a particular methodological viewpoint, such as phenomenology, grounded theory, or ethnography, but focuses “on understanding an experience or an event” (Caelli, Ray, & Mill, 2003, p. 2) and “should be the method of choice only when a description of a phenomenon is desired” (Neergaard et al., 2009). Consistent with QD design, a combination of sampling methods including purposeful sampling took place. Also in accordance with QD, data were collected

with minimally to moderately structured, open-ended questions (Neergaard et al., 2009; Sandelowski, 2000).

The nested quantitative component of Phase 2 consists of the administration of validated quantitative measurement tools for physical and emotional health. These measurement tools are the same tools used in Phase 1. Health information was obtained by quantitative measurement tools to reduce the level of bias that might be perceived in interpreting a subjective account of health status and to facilitate cross-validation with Phase 1. As well, a quantitative instrument developed by this researcher, was used to capture in what other social communities social capital might exist and what proportion of social capital exists in them.

The next two questions

3. Is there an association between social capital in the neighbourhood, social capital in the workplace, and physical and emotional health?

4. How do residents negotiate social capital in the many different social communities of their lives?

are addressed in this phase. Interview data was summarized numerically and compared to reveal any relationships that may exist. Positive responses to the elements of social capital were totalled to establish the existence of social capital

in the neighbourhood and workplace. Although “the least interpretive of the qualitative analysis approaches”, (Sandelowski, 2000, p. 338) converting the verbal data to numeric data permitted comparisons between the qualitative and quantitative data.

Integrating the results on the quantitative component with the qualitative component allowed for the comparison of social capital across two units of analysis, the neighbourhood and the individual in that neighbourhood, to investigate Putnam’s claim that social capital may also be a public good benefiting bystanders (Putnam, 2000). Data integration distinguishes mixed methods research over quasi-mixed methods (Cresswell & Plano-Clark, 2007). Integration is defined as:

“Quantitative and qualitative components can be considered “integrated” to the extent that these components are explicitly related to each other within a single study and in such a way as to be mutually illuminating, thereby producing findings that are greater than the sum of the parts.” (Woolley, 2009, p. 7).

The final question

5. How do the qualitative results aid the understanding of the quantitative results, specifically social capital, employment status and physical and emotional health?

is addressed by comparing and contrasting the qualitative results with the quantitative results. Because data on the same concept was obtained by two different methods; 1) a quantitative survey, neighbourhood as unit of analysis, close-ended questions, and 2) a qualitative interview, individual as unit of analysis, open-ended questions, whether they confirm, enrich, contradict, or offer a different perspective offers further insight into the concept of social capital.

2.4 Phase 1

2.4.1 Sampling Strategy

Phase 1 is part of a larger study, the Deconstructing the Determinants of Health Project carried out in Hamilton, Ontario. A combination of multivariate, spatial statistical techniques and geographic information systems were used to select unique neighbourhoods (Luginaah et al., 2001). Variables were selected from Census Tract-level data based on their "potential theoretical importance as socioeconomic determinants of health" (Luginaah et al., 2001). Two telephone surveys were conducted. The first telephone survey consisted of a random sample of households from the four unique neighbourhoods and a representation from the City of Hamilton. A double random method was utilized to ensure equal gender representation and was stratified based on neighbourhood (Veenstra et al., 2005). The sampling frame for the second telephone survey consisted of participants from the first telephone survey, excluding the sample from the city as a whole, who agreed to be contacted again.

2.4.2 Measurement Tool Design

The quantitative tool in Phase 1 was developed by an interdisciplinary team of academics from McMaster University, representatives of public health agencies, private business, and consultations with residents of the neighbourhoods. A population health perspective provided the framework for examining health, social conditions, and determinants of health (Veenstra et al., 2005).

2.4.3 Data Collection

The telephone surveys were conducted by the Institute for Social Research, York University, Toronto, Ontario. The measurement for social capital in the telephone survey was based on the participant's participation in groups. Participants were asked if they belonged to any groups or voluntary organizations and how involved they were in these groups. Participants were considered to possess social capital if they belonged to at least one group (Veenstra et al., 2005). Physical health status was measured using the General Self-rated Health measure (GSRH). The GSRH consists of a single-question, *Compared to others your age, how would you rate your health?* The GSRH has been shown to be "highly valid" (Idler & Benyamini, 1997), showing good reproducibility and reliability (DeSalvo et al., 2009; DeSalvo et al., 2006). Emotional health was assessed using the General Health Questionnaire (GHQ-20). The GHQ-20 has been validated as a screening method for a possible psychiatric case detection

(Penninkilampi-Kerola, Miettunen, & Ebeling, 2006; Goldberg, McDowell, & Newell, 1996).

2.4.4 Data Analysis and Interpretation

The information from the two telephone surveys provided the data for the current analysis. Descriptive statistics were used to examine the one-on-one relationships between social capital and employment-related variables at the neighbourhood level and in each of the four neighbourhoods. The results of these analyses were compared to establish the consistency of the relationships given the characteristics of the four neighbourhoods. Subsequently, single-level logistic regression analyses were used to examine the associations of neighbourhood, social capital, and employment-related variables and physical health, emotional health, and number of chronic diseases. Although multilevel logistic regression analysis allows for the investigation of contextual effects at the neighbourhood level a minimum sample size of 50 at that level is necessary for an accurate estimation (Moineddin, Matheson, & Glazier, 2007; Maas & Hox, 2005). In the case of the Deconstructing the Determinants of Health Project, the sample size was four neighbourhoods and the city as a whole. Furthermore, as was discussed by Veenstra et al., multi-level logistic regression may not always be appropriate when investigating a neighbourhood area that is not “a fixed, quantifiable spatial hierarchy that uniformly affects those lodged within it” (Veenstra et al., 2005, p. 2802). The regression models were constructed by

incorporating the four thematic blocks of neighbourhood, demographics shown to influence health outcomes, social capital, and employment status. These blocks were added sequentially and regressed on the most favourable outcomes of physical health, emotional health, chronic conditions, and the variables contributing to the most favourable outcomes. McFadden's rho-squared was used to determine how well the model predicts the variability of the health outcome of interest. A rho-squared of 0.25 indicates that the variables included in the model predict 25% of the variance in that outcome. A rho-squared of 0.2 to 0.4 was considered a good fit (Wrigley, 1985).

2.4.5 Data Re-presentation

Associations between social capital and employment-related variables and between social capital, physical health, emotional health, and employment-related variables are presented for all four neighbourhoods. These associations are presented in text and table form to facilitate comparisons and an understanding of the characteristics of the neighbourhoods.

2.4.6 Rigour

In the initial study, the social determinants of health variables were selected "based on potential theoretical importance" (Luginaah et al., 2001, p. 138). Details of the multivariate, spatial statistical techniques and geographic information methods used to distinguish neighbourhoods can be found elsewhere

(Luginaah et al., 2001). The sample was shown to be representative of the population of interest. The property assessment role, which is the basis of the sample frame, included owners and renters of single-family homes and apartments. Albeit people that do not have phones would not be included in this study, they represent less than 1.2 percent of the population (Statistics Canada, 2011). To increase participation rates potential participants were sent introduction letters outlining the study. Potential participants were phoned six times at different times in the day to increase the ability of everyone to participate. The sample was stratified by gender to detect any differences in an association of social capital and health by gender. The power was calculated to be “large enough to examine the relationships between heterogeneities in health status and in a variety of determinants (e.g. income, social capital) and to comment on what “produces” health and illness (Eyles, 1999). The telephone survey was conducted by experienced interviewers at the Institute for Social Research at York University. Variables were categorized or dichotomized to maintain a sample size large enough to show a difference if one existed (Veenstra et al., 2005).

2.5 Phase 2

2.5.1 Sampling Strategy

Sampling for Phase 2 occurred first by neighbourhood and then by individual within each neighbourhood. Although the surveys were carried out in

2000 and 2003, an assumption was made that the data were still current.

“[S]ociologists have long noted how the social character of neighbourhoods generally remains stable over decades, even though the population is continually changing” (Aldridge, Halpern, & Fitzpatrick, 2002, p. 40). The sample frame for the selected neighbourhood was defined by the level of social capital, employment-related variables, and variables that potentially influence social capital. Consistent with qualitative description, purposive sampling techniques were employed to gain maximum variation in the central themes of social capital and significant employment-related variables (Sandelowski, 2000; Neergaard et al., 2009). The intent of purposive sampling is to select participants, “that will best help the researcher understand the problem and the research question” (Cresswell, 2003, p. 185). The sample frame for selecting residents to interview was the two neighbourhoods that showed the greatest variation in the variables of interest.

For individuals, the second telephone survey sample from Phase 1 was used as the sample frame. The participants from this survey gave their permission to be contacted again for future research. Only the phone number, address, age, and gender of the participants were available from the survey contact information. Given it had been greater than five years since any communication with the participants of Phase 1, a ‘reverse lookup feature’ of an electronic telephone book (www.canada411.ca) was used to ensure that the

resident who was previously interviewed still lived at the address stated. To be as effective as possible, only residents whose phone numbers matched the address were contacted.

Three methods were used to select residents to participate in face-to-face interviews. First, probability sampling was utilized to gain the initial neighbourhood sample. A random number generator strategy was used on a list of residents who participated in the first and second telephone surveys. This sample was stratified by neighbourhood and gender. The goal was to acquire half the initial sample using this method. Second, a form of purposeful sampling, criterion sampling, was introduced. Representation from two groups, neighbourhood community councils and union staff, was targeted. It was expected that individuals who volunteered their time to such organizations might exemplify an extreme case of social capital in the neighbourhood or workplace (Sandelowski, 2000). The City of Hamilton Neighbourhood Association Directory (<http://www.hamilton.ca>) was used to identify neighbourhood community councils that exist in the neighbourhoods of study. Contact was made with a union executive representing steelworkers, the largest blue-collar union in the city. Third, once the initial group was recruited a snowball strategy was used to gain access to residents who shared the same communities, such as workplace, neighbourhood block, family, or other variables that become apparent (Berg, 2009).

The inclusion criteria comprised of English speaking, full-time workers, greater than 25 and less than 60 years of age. The researcher conducting the interviews was only able to communicate in English. The restriction to full-time workers was implemented to ensure sufficient hours in the workplace as compared to hours in the neighbourhood, to be able to detect a move of social capital if one existed. The restriction of age was implemented to take into account career stage and increase the probability that the worker was stable in their job and had time to develop social capital in their workplace. Before 25 years of age, career development is in the Exploration Stage with many workers experiencing trial jobs. After the age of 60 workers are going through the Disengagement Stage by generally looking at retirement or part-time work (Wrobel, Raskin, Maranzano, Leibholz-Frankel, & Beacom, 2003; Super, 1980). Career stage and workplace social capital have not yet been examined; however, it would be reasonable to assume that being employed in 'trial jobs' or 'disengaging' from work reduces the likelihood of developing social capital in the workplace. The restriction of 25 years of age also increases the potential for having bought a house and establishing social capital in a neighbourhood (Glaeser, Laibson, & Sacerdote, 2002). The goal was to recruit an equal number of men and women in each of the neighbourhoods to capture possible differences that might relate to gender (Timberlake, 2005; Borrell, Muntaner, Benach, & Artazcoz, 2004; Vaananen et al., 2003; Theorell & Karasek, 1996). The intention was to interview ten men and ten women in each of the two neighbourhoods.

Residents were phoned to assess their eligibility. Four attempts were made to contact potential participants. To enhance response rates, phone call attempts were made during the day, evening, and weekend to ensure that all potential participants had an equal chance in participating. A message script (Appendix 2) was developed to leave on answering machines. If the resident met the selection criteria, they were invited to participate in a face-to-face interview. To comply with the McMaster Research and Ethics Board, residents who were contacted and agreed to proceed were sent an Information Letter (Appendix 4). The Information Letter included a detailed description of the project and the participant's role and rights. The Information Letter was mailed or e-mailed to residents who agreed to participate at the first telephone contact. The residents were contacted again approximately two weeks after the Information Letter was mailed to them to ask them if they would still like to participate. If they agreed to participate, an interview time and place was scheduled. Reminder phone calls were made one week and the day before the scheduled interview to increase the likelihood of the interview being carried out.

2.5.2 Measurement Tool Design

Interview Template

A qualitative interview template, consisting of open-ended questions (Neergaard et al., 2009) and prompts, was designed to provide structure to the interview. A template “ensure[s] the investigator covers all the terrain in the same order for

each respondent”, “schedule[ing] of the prompts necessary to manufacture distance”, “establish[es] channels for the direction and scope of discourse”, and “allow[s] the investigator to give all his or her attention to the informant’s testimony” (McCracken, 1988, p. 24). The two questions, whether the resident felt social capital existed in their neighbourhood or existed in their workplace, were central to the interview template. Prompts for neighbourhood social capital were based on the Social Capital Community Benchmark Survey short form (SCCBS) (QualityMetric Incorporated, 2006). The SCCBS is a quantitative phone survey that was developed to measure social capital in the community. The SCCBS is used extensively in the United States. This tool was modified for this study to fit a qualitative format and to be appropriate to the population that resides in Hamilton, Ontario. Questions specific to the ethnic diversity in the United States that is not present in Hamilton were excluded. In the original tool, respondents were asked to respond to specific questions in the format of a Likert-type scale. These specific questions provided the basis for the prompts that would encourage the respondents own words and experiences in the qualitative tool. Prompts to measure social capital in the workplace were based on the eight-item measure of social capital at the workplace. This tool has been psychometrically tested and validated in the public sector population in Finland (Kouvonen et al., 2008; Kouvonen et al., 2006). There are two notable differences between the concept and measurement of social capital in the neighbourhood and in the workplace. First, linking social capital was included in the measurement of social capital in

the workplace. Linking social capital takes into account the “explicit, formal or institutionalized power or authority gradients in society” (Szreter & Woolcock, 2004, p. 655). This gradient is evident in a workplace but does not normally exist in a neighbourhood. Second, the element, participation in networks, was not considered in the concept of social capital in the workplace. Participation in networks was measured in Phase 2 for the purpose of comparing the results to Phase 1. The qualitative tool was designed specifically to allow for the numerical translation of the data to either being present or absent (Sandelowski, Voils, & Knaf, 2009). The templates were reviewed for face validity by the supervisory committee who are familiar with the concept of social capital. Health was measured in the imbedded component. Physical health status was measured by the single-question GSRH and emotional health by the GHQ-12.

A quantitative instrument, the Social Capital Context Tool, was designed to capture in what other communities social capital is accessed. Residents were asked to name the social community and assign the percent of social capital they access in that social community. These social communities included the neighbourhood and workplace. The Social Capital Context Tool was administered at the end of the interview to increase the likelihood that the resident understood the concept of social capital when they were completing the tool.

2.5.3 Data Collection

Phase 2 data were collected in face-to-face interviews that were held in the home or workplace of the resident. The goal was to collect 10 interviews each from men and women in the two neighbourhoods. It was anticipated that interviews would take approximately 60 minutes so the time demand for the interview would not be too great on the resident. This period included the introduction, and administering the consent form, open-ended questions, Social Capital Context Tool, and physical and emotional health tools. The interviews were recorded and transcribed into NVivo8. A diary/log trail was used to document changes or thoughts. The physical and emotional health tools were completed by the resident in private and sealed in an envelope.

2.5.4 Data Analysis and Interpretation

Results of the interviews were transcribed verbatim. The data were first read in its entirety to acquire a general sense of the information (Cresswell, 2003). The data were then coded for neighbourhood of residence, demographic attributes, and employment-related variables (Richards, 2005) and categorized by the predefined themes represented in the open-ended questions and prompts that constituted the interview template. Coding and categorizing was assisted by the data management software NVivo Version 8 (QSR International Pty. Ltd., 2012).

The qualitative data were quantitized as the theme or category representing the social capital element being present or absent. Quantitizing “refers to the process of assigning numerical...values to data conceived as not numerical” (Sandelowski et al., 2009, pp. 209-210), and has become a principal component of mixed methods research (Sandelowski et al., 2009). For social capital to exist in the neighbourhood, examples of involvement in networks, trust, reciprocity, and a feeling of local identity, (Putnam, 2000) were conveyed by the resident. For social capital to exist in the workplace, examples of beliefs, attitudes and values (e.g. solidarity, trust, reciprocity), co-operative relationships, support for getting ahead as a group, and trusting relationships between people of different authority levels were conveyed by the resident (Kouvonen et al., 2008; Kouvonen et al., 2006). The GSRH and the GHQ-12 were scored according to their specific protocols. The GSRH was used to determine self-rated health as excellent/good or fair/poor (Idler & Benyamini, 1997). The GHQ was scored according to the GHQ method advocated by the author of the scale (Goldberg et al., 1997; Goldberg, 1972). A threshold value of 4 was assigned denoting that a score exceeding 4 would represent a potential psychiatric case (Goldberg et al., 1997) as was practiced in preceding studies of the same data (Veenstra et al., 2005; Wilson et al., 2004).

Social capital in the neighbourhood and workplace were compared to the GSRH and GHQ-12 results for possible relationships. The Social Capital Context

Tool score was presented as the proportion of social capital a resident had in the social community (neighbourhood, workplace, place of worship, etc.) they accessed social capital totalling 100%. As well, the results of the Social Capital Context Tool were compared to the interview results, the GSRH and the GHQ-12 to identify associations between social capital in the neighbourhood, workplace, other communities, and health. All individual-level data were analysed with regard to whether the resident resided in the neighbourhood with a high stock of social capital or low stock of social capital.

2.5.5 Data re-presentation

Counts and patterns comparing relevant variables for the two neighbourhoods as a whole and by selected demographic variables within those neighbourhoods are presented. The elements of social capital are presented as “[D]etailed excerpts from relevant statements (messages) that document the researcher[‘s] interpretations” (Berg, 2009, p. 344) and features of the speaker so that, “the reader gets a better sense of who is saying what” (Berg, 2009, p. 344). Quotes are presented under a fictitious name and any information contained in the quote that might reveal the resident’s identity was altered. The neighbourhood of residence is included with the quotation to demonstrate a possible variation in responses due to living in a high or low social capital neighbourhood. Given relatively small sample sizes for each variable, percentages are not presented (Bazeley, 2004). The results of the tools

measuring physical and emotional health are compared with the counts of the elements of social capital to examine the relationships between social capital and physical or emotional health. Lastly, the results of the Social Capital Context Tool are compared to the counts of social capital and the tools measuring physical and emotional health. The individual data on the social communities social capital was accessed (from interviews and responses to the Social Capital Context Tool), and on physical and emotional health (from the interviews), are presented respective of the resident dwelling in the high or low social capital neighbourhood. This is done to determine whether there is a bystander benefit to living in a neighbourhood with a high stock of social capital (Putnam, 2000).

2.5.6 Trustworthiness

There has been considerable discussion on establishing trustworthiness (Guba & Lincoln, 1981) in qualitative research in general (Morse, Barrett, Mayan, Olson, & Spiers, 2002; Whitemore, Chase, & Mandle, 2001), qualitative research in social geography (Baxter & Eyles, 1997), and in qualitative description (QD) specifically (Caelli et al., 2003). Four strategies have been suggested to enhance rigour in QD; authenticity, credibility, criticality, and integrity (Milne & Oberle, 2005; Neergaard et al., 2009). Authenticity requires that the participants are free to speak, their voices heard, and their perceptions are accurately represented. Credibility is how believable these results are. Criticality refers to the critical consideration of all decisions made throughout the process where integrity

demands that the researcher be self-reflective and self-critical throughout the study (Milne & Oberle, 2005; Whitemore et al., 2001).

Techniques incorporated in this dissertation to enhance authenticity and credibility are flexible sampling, accurate transcription, and content analysis (Neergaard et al., 2009). Purposeful, random, and snowball sampling strategies were utilized to seek information rich cases and to contrast and compare residents sharing the same circumstances such as neighbourhood block, workplace, or family. To promote accurate transcription, interviews were mechanically recorded and transcribed verbatim. In doing so, the opportunity to confirm responses including the intonation and milieu of the response is present. To enhance consistency, the same researcher conducted, transcribed, and coded all the interviews. This familiarity with the resident also enables the researcher to recall aspects of the interviews that would not have been known by someone who was not present at the interview and enable effective coding. Interviews were analysed using content analysis with themes being the unit of analysis. The presence of a theme was counted if it existed anywhere in the interview. Magnitude was not a factor in the analysis; just whether the theme existed or not (Berg, 2009). Counting assures that all the data are accounted for and not discounted (Sandelowski, 2001). Counting also avoids some of the major pitfalls in presenting qualitative data such as: “overweighting dramatic or vivid accounts of events; ...underweighting data that do not conform to the pattern the

researcher wants to find; ...and regressing to the mean...cleaning up the contradictions and messiness of human accounts and lives” (Sandelowski, 2001, p. 234).

Although coding and categorizing are not driving the data (Neergaard et al., 2009) the data are being driven by two validated tools. Both of these tools provided the framework for a directed approach to the content analysis (Hsieh & Shannon, 2005). To ensure that the themes are accurately interpreted, the units of analysis were kept large enough to capture and demonstrate the milieu of the conversation. Albeit codes were imposed on the data in the form of open-ended questions, residents were encouraged to respond to the questions in their voice and were encouraged to expand on their responses (Sandelowski, 2000; Neergaard et al., 2009). Quotations from multiple residents are presented to demonstrate this researcher’s interpretations (Berg, 2009).

It has been shown that the views and biases of the researcher can dramatically shape the outcome of qualitative research (Muntaner & Gomez, 2003). Criticality and integrity is provided in an autobiography of the author. The autobiography includes background, training, experiences, and the situation during the study (Patton, 1999) (Appendix 1). In the final report this researcher’s biases are clarified to “create[s] an open and honest narrative” (Cresswell, 2003, p. 196). A diary/log trail containing reflections, changes and discoveries was

filled in after each interview and during the coding (Richards, 2005). The log contained communications including e-mails and meeting notes. Physical and emotional health questions were not analysed by the researcher until the qualitative data had been analysed to reduce the potential for bias.

Further strategies to enhance the integrity of the qualitative findings included peer debriefing to “enhance the accuracy of the account” (Cresswell, 2003, p. 196) and the use of expert external auditors to review the project throughout the research and at the end of the study to increase the accuracy and completeness (Cresswell, 2003). Both these positions were provided by the thesis supervisor and graduate committee who have expertise in the methods or content of this dissertation. Additionally, the final product was examined by and defended in front of the supervisor, supervisory committee, an external auditor, and peers.

Triangulation of the results took place in the form of multiple sources and methods triangulation (Patton, 1999). The results of the qualitative phase are compared to the results of the quantitative phase. The results of the qualitative and quantitative phases are then compared to the results of a previous study (Veenstra et al., 2005) performed on the same data set and with the literature in general. Although generalizability is not a goal of this research, limited transferability is. Transferability is achieved through purposeful sampling,

extensively describing the setting of the study, and the methods that were used (Baxter & Eyles, 1997).

There is not a great quantity of research on the rigour and trustworthiness of integration in mixed methods research. Yin discusses maintaining “the integrity of the single study, compared to inadvertently permitting the study to decompose into two or more parallel studies”, (Yin, 2006, p. 41). He puts forward five requirements that are necessary for an integrated single study over two or more parallel studies. The first requirement is that there is a single set of research questions. The first two questions of this dissertation are isolated but they provide the necessary data to allow for the integration of the next two questions. Questions #3 and #4 look at the individual-levels of social capital, employment-variables and health outcomes within the distinct neighbourhoods established in the quantitative phase. The second requirement of integration is that the units of analysis are appointed so that “each method can reach into the realm of the other, to produce a single mixed methods study” (Yin, 2006, p. 44). The unit of analysis in the first phase, the neighbourhood, is an integral part of the second phase. This allows for the comparison of the same concept in the same setting but at different units of analysis (aggregate neighbourhood social capital and individual neighbourhood social capital). This also allows for the comparison of the same concept in different communities but at different units of analysis (aggregate neighbourhood social capital and individual workplace social capital and social capital in other communities). Requirement three is that the sample

frame consists of samples “nested within that of the other” (Yin, 2006, p. 44). The sample frame for the qualitative interviews is residents from two of the neighbourhoods that show the greatest divergence in the variables of interest from the first phase. The fourth requirement is that there is overlap in the instrumentation and data collection. The same tools to measure physical and emotional health are used in both the quantitative and qualitative phases. As well, involvement, the measurement for social capital in the first phase, is included in the second phase. The final requirement for integration is that ““counterpart” analyses” (Yin, 2006, p. 45) is conducted. Examples of counterpart analysis are when the quantitative and qualitative data investigates the relationships between the same dependent and independent variables, the dependent or independent variables are described on their own merit, or like typologies of the topic of interest are suggested (Yin, 2006). Counterpart analysis takes place in this dissertation by investigating the same relationships between social capital, employment-related variables and physical and emotional health through both phases. Counterpart analysis also takes place in investigating the same topic, social capital in the neighbourhood, at the aggregate level in the first phase and social capital in the neighbourhood, workplace, and other communities at the individual level in the second phase.

3. ETHICS

Consent, confidentiality, and data storage were in accordance with the McMaster University Research Ethics Board (MREB) Guidelines, which can be found at <http://www.mcmaster.ca/ors/ethics/>. In compliance with procedure, application to conduct this study was made to the MREB.

The initial protocol was revised to accommodate the following conditions. Because of the length of time since last contact with residents, the MREB requested that a refresher of the previous studies be provided to the residents. The telephone script was revised to remind residents of the previous studies. So that the resident would be making an informed decision, residents were contacted twice. The first telephone contact was made to determine the residents' eligibility and introduce the study. The second telephone contact was made to obtain a verbal consent to participate in an interview. The Letter of Information was revised so it could be sent after the first telephone contact to introduce the study and inform the residents of their rights and responsibilities.

There was a concern of potential psychological risks from answering questions about health and lack of social capital in the neighbourhood or workplace. A list of community resources was provided to each resident at the conclusion of their interview.

After revisions, the following final materials were submitted for final approval.

- Telephone message script (Appendix 2)
- Telephone script to introduce study and determine eligibility (Appendix 3)
- Letter of Information including Purpose, Procedures involved in the research, Potential harms, risks or discomforts, Potential benefits, Payment or reimbursement information, Confidentiality statement, Participation rights, Information about study results, and Contact information (Appendix 4).
- Telephone script to obtain verbal consent to participate and arrange an interview date (Appendix 5)
- Consent to be interviewed and audio taped (Appendix 6)
- Interview template (Appendix 7)
- Social Capital Context Tool (Appendix 8)
- Physical and emotional health measurement tools (Appendix 9)
- Thank-you letter (Appendix 10)
- Community Resources (Appendix 11)

The Certificate of Ethics Clearance to Involve Human Participants in Research (Project #2007 145) was issued before contacting residents.

4 RESULTS

4.1 Phase 1 – Social Capital in the Neighbourhood

There is evidence showing that employment-related variables such as employment status and long hours away from the home have a negative impact on neighbourhood social capital (Putnam, 2000; Putnam, 1995). The first research question,

- 1. Is there an association between neighbourhood, social capital, and employment?*

examined the data from the surveys to determine whether there was merit in this claim. The quantitative section of this dissertation explored whether employment-related variables modified the association between social capital and health outcomes. Quantitative methods were used to demonstrate the one-to-one relationships between social capital and employment-related variables, first in the survey sample as a whole and second, in the four distinct neighbourhoods. These analyses were further expanded to examine the relationships between social capital, employment status, and physical and emotional health at the aggregate level and among the four neighbourhoods.

4.1.1 DECON Project Review

The four distinct neighbourhoods “with characteristics likely to be associated with health status” were selected in a previous study (Luginaah et al., 2001, p. 142). A summary of the characteristics of each neighbourhood and the

City of Hamilton below demonstrates that the downtown neighbourhood (DTN) is a “socially diverse and low income neighbourhood”, the northeast neighbourhood (NEN) a “low social diversity and low income” neighbourhood, the southwest neighbourhood (SWN) a “moderate social diversity and high income” neighbourhood, and the mountain neighbourhood (MTN) an “ethnic (second or third generation), but not economic divers[e]” neighbourhood (Luginaah et al., 2001, pp. 142,144) (Table 1). Further details of the characteristics and photographs of these neighbourhoods can be found in the reports of each neighbourhood’s profile (Ehrlich, Herring, Justice, Moffat, & Warry, 2001; Ehrlich, Herring, Justice, Moffat, & Warry, 2001; Ehrlich, Herring, Justice, Moffat, & Warry, 2001; Ehrlich, Herring, Justice, Moffat, & Warry, 2001).

Table 1
Summary of Neighbourhood Characteristics

Characteristics	Neighbourhood				
	City of Hamilton	Downtown (DTN)	Northeast (NEN)	Southwest (SWN)	Mountain (MTN)
Married (%)	46.2	33.0	43.5	38.6	54.3
Recent immigration <5 years (%)	3.9	9.2	1.9	3.4	2.9
One-year mobility status (%)	15.5	24.3	16.2	20.0	12.4
High school education or less (%)	50.2	62.6	60.5	33.1	41.5
Statistics Canada low income classification (%)	23.9	53.7	29.1	19.5	21.1

Characteristics	Neighbourhood				
	City of Hamilton	Downtown (DTN)	Northeast (NEN)	Southwest (SWN)	Mountain (MTN)
Unemployment rate (%)	10.9	20.6	12.3	8.5	9.5
Non-English/French speaking (%)	2.3	8.6	1.8	1.1	1.1
Visible minority (%)	10.8	23.0	6.3	9.0	15.0
Income inequality (Gini coefficient)	0.4	0.4	0.4	0.4	0.3

(Luginaah et al., 2001)

Two telephone surveys were previously administered to a random sample of residents in the four neighbourhoods. The response rate for the first telephone survey was 60%. Data were available for 300 residents in each of the four neighbourhoods. A second telephone survey was administered to approximately 700 (35%) participants of the first telephone survey who agreed to be contacted again. The second telephone survey did not include employment-related data therefore only the data from the first telephone survey could be used for these analyses.

4.1.2 Neighbourhood and Employment

As was previously reported in Chapter 2.4.1, Sampling Strategy, one of the variables used to differentiate the four neighbourhoods was employment. Because of this, it was not surprising to find a statistically significant association

between neighbourhood and employment-related variables. Employment status, employment type, and occupation code were significantly different in each of the four neighbourhoods (Table 2).

The difference in employment status revealed that the telephone survey sample might not be fully representative of the neighbourhoods as determined by the data used in the spatial analysis to select the neighbourhoods (Luginaah et al., 2001). The survey data (Table 2) showed that the DTN (8.7%) and the NEN (6.8%) had a higher percentage of individuals who were unemployed and the SWN (2.4%) and MTN (3.7%) had a lower percentage of individuals who were unemployed as in the spatial analysis; however, the percentage unemployed was considerably higher in the spatial analysis (DTN=20.6, NEN=12.3, SWN=8.5, MTN=9.5) (Table 1). This discrepancy may be attributed to the different sources of information for the two tables. The data for Table 1 originated from census data and the data for Table 2 originated from municipal property assessment records. Furthermore, the survey response rate was 60%. More individuals who were unemployed may not have responded to the telephone survey. The category not in the workforce was the highest in the DTN and MTN, but for different reasons. The DTN had a higher percentage of students and individuals on sick leave, maternity leave, disability, or strike, whereas the MTN had a higher percentage of individuals who were homemakers. These results are consistent with the character of the areas as discussed in 1.6 Setting. The downtown area

became home to “*high levels of poverty and disadvantage*” (Williams et al., 2010, p. 909), therefore, students and individuals on limited income would be able to afford accommodation. The MTN developed into a higher income and working-class residential area with an economic status well above average (Taylor, 1987) which would support a parent remaining in the home to raise a family. The occupation code of individuals was markedly different between the high and low social capital neighborhoods again consistent with the character of the areas. The two neighbourhoods with the lowest percentage unemployed (SWN and MTN) were primarily employed in the health and people category. The two neighbourhoods with the highest percentage of unemployed (NEN and DTN) were primarily employed in the machines and manufacturing occupation category which have gone through a drastic decline.

Table 2
Neighbourhood and Employment-related Variables

Employment-related Variable	All 4 Neighbourhoods	Individual Neighbourhood			
		DTN	NEN	SWN	MTN
Employment status	p< 0.001				
-unemployed	37.4	47.2	66.8	28.7	41.4
-employed	62.6	52.8	33.2	71.3	58.6
Employment status	0.000				
-unemployed	5.3	8.7	6.8	2.4	3.7
-not in the workforce (retired, student, homemaker, sick leave)	32.1	38.5	26.5	26.2	37.7
-employed (full-time, part-time, self-employed)	62.6	52.8	66.8	71.3	58.6
Employment type	p< 0.001				
-full-time	50.0	41.5	54.3	53.7	49.1
-part-time/contract	10.0	8.7	8.9	14.3	8.1
-unemployed	5.3	8.7	6.8	2.4	3.7
-sick leave/maternity/disability/strike	3.9	7.9	3.2	2.1	3.1
-retired	16.1	18.2	13.1	13.2	19.9
-homemaker	5.9	2.8	6.4	5.2	8.4
-student	6.0	9.5	3.8	5.6	5.9
-self-employed	2.5	2.8	2.9	3.1	1.2
Statistics Canada occupation code	p< 0.001				
-0-management	8.0	4.1	8.2	12.0	6.5
-1-business and finance	15.1	16.3	11.7	15.2	17.7
-2-natural and applied sciences	4.7	3.3	4.1	3.1	8.1
-3-health occupations	8.6	5.7	8.7	9.9	9.1
-4-social science, education, government, religious	12.6	11.4	5.1	20.4	13.4
-5-art, culture, recreation, sports	2.7	2.4	0	7.3	1.1
-6-sales and service	22.4	22.0	23.0	23.0	21.5
-7-trades, transport, equipment operations	17.2	6.3	24.5	6.3	18.3
-8-primary industry	0.3	0.5	0	0.5	0
-9-processing, manufacturing, utilities	8.2	13.0	14.8	2.1	4.3
Statistics Canada occupation code (4 categories)	p< 0.001				
-machines/manufacturing (StatsCan 8-9)	25.7	35.0	39.1	8.9	22.6
-sales and service (StatsCan 7)	22.4	22.0	22.8	23.0	21.5
-health and people (StatsCan 3-6)	28.7	22.8	17.8	40.8	31.7
-mgmt/business (StatsCan 0-2)	23.2	21.5	20.3	27.2	24.2

4.1.3 Social Capital and Employment

Associations between social capital and employment-related variables by gender were not considered because gender was not found to be significant in recently completed studies on social capital and health in the workplace (Oksanen et al., 2009; Oksanen et al., 2008; Vaananen et al., 2009). Examining social capital by gender would have further reduced the numbers of participants in categories, some of which were already low. The associations between neighbourhood, social capital, and employment-related variables were examined first for the overall sample (Table 3).

The intention of this analysis is to determine if there is an association between time spent at work and social capital. Neighbourhood social capital, as measured by involvement in at least one group, was reported by a higher percentage of participants who were not in the workforce (35.0%) than those in the workforce (32.4%). The category, not in the workforce, was further divided to not in the workforce voluntarily (retired, homemaker, student, etc.) and unemployed. Almost twice the percentage of participants who were not in the workforce voluntarily (38.0%) reported social capital than participants who were unemployed (17.5%). An explanation for this variation may be that unemployed is a temporary state and individuals unemployed, as far as social capital is concerned, may behave more like individuals who are employed. Employment status was further divided to determine whether neighbourhood social capital was

related to time spent in the neighbourhood. That was shown to be the case with a higher percentage of participants working part-time (44.4%) reporting social capital than participants working full-time (30.0%). Furthermore, social capital was more likely to be reported by participants who were retired (47.3%), than homemakers (29.0%), students (28.6%), or participants on maternity or sick leave (28.3%).

The telephone survey reported the tenure of the participant in their current position and the occupation category of the participant and their partner if they were employed. This information was also examined to explore a possible association between these employment-related variables and social capital. Although years in current occupation did not significantly influence the level of social capital in the overall sample, the level of social capital reported increased with years in current occupation for up to 30 years then started to decrease (1-5 years at 28.0%, 6-10 years at 34.4%, 11-15 years at 31.3%, 16-20 years at 37.8%, 21-25 years at 37.5%, 26-30 years at 40.0% and 31+ years at 28.6%). It is difficult to determine if this was entirely due to tenure or was influenced by the age of the participant. A previous study demonstrated that the relationship between social capital, as measured by membership in groups, and age resulted in an inverted u-shape curve with individuals between 40-50 years old belonging to more organizations than individuals aged 20-35 or 60 to 90 (Glaeser et al., 2002). Many of the occupation categories contained few or no participants. The

Human Resources and Skills Development National Occupation Code (Human Resources and Skills Development Canada, 2011) was condensed into four categories to allow for comparison (Appendix 12). A higher percentage of participants who were in the health/people sectors reported social capital (44.5%) than the management/business sectors (38.9%), sales and service sectors (27.1%), or machines/manufacturing sectors (19.0%). These results are consistent with the limited research on social capital and occupation status that found that manual workers have the least amount of social capital compared to other occupation statuses (Oksanen et al., 2009). The employment status of the participant's partner had no measurable influence on the participant's level of social capital but if their partners did work, their occupation classification was relevant. Social capital was reported by a higher percentage of participants whose partners worked in the health/people (43.7%) and the business/management (34.4%) than the sales and service (27.9%), or manufacturing (26.2%) occupation sectors, consistent with the relationship between occupation sector and social capital of the participant.

Table 3

Association between Social Capital, Gender, and Employment

		Neighbourhood			
		DTN n=73	NEN n=73	SWN n=123	MTN n=122
% with Social Capital	Over-all n=391				
Participants with Social Capital	33.3	29.0	23.4	42.9	37.9
Participants with Social Capital by gender	<i>NS</i>	<i>NS</i>	<i>NS</i>	<i>NS</i>	<i>NS</i>
-female	34.3	30.6	23.8	45.1	36.8
-male	32.2	27.3	23.0	40.3	39.2
Employment status	<i>NS</i>	<i>NS</i>	<i>NS</i>	<i>NS</i>	<i>NS</i>
- unemployed/not in the workforce	35.0	34.2	23.1	48.8	36.8
- in the workforce	32.4	24.8	23.7	40.2	39.0
Employment status	**	<i>NS</i>	<i>NS</i>	<i>NS</i>	<i>NS</i>
-unemployed	17.5	22.7	04.8	28.6	23.1
-not in the workforce	38.0	36.5	28.0	50.7	38.3
-employed	32.4	24.8	23.7	40.2	39.0
Employment type	***	<i>NS</i>	<i>NS</i>	*	*
-full-time job	30.0	23.8	21.2	36.8	36.9
-part-time job	44.4	22.7	35.7	56.1	50.0
-sick leave/maternity/disability/strike	28.3	20.0	20.0	100	10.0
-unemployed	17.5	22.7	04.8	28.6	23.1
-retired	47.3	47.8	34.1	52.6	52.3
-homemaker	29.0	28.6	15.0	42.9	33.3
-student	28.6	29.2	41.7	31.3	15.8
-self-employed	31.0	42.9	30.0	22.2	50.0
Categorized Occupation Code	***	<i>NS</i>	*	<i>NS</i>	<i>NS</i>
-machines/mfg (StatsCan 7-9)	19.0	18.6	14.1	17.6	28.6

		Neighbourhood			
	Over-all	DTN	NEN	SWN	MTN
% with Social Capital	n=391	n=73	n=73	n=123	n=122
-sales and service (StatsCan 6)	27.1	18.5	22.7	36.4	27.5
-health and people (StatsCan 2-5)	44.5	35.7	38.9	51.3	44.1
-mgmt/business (StatsCan 0-1)	38.9	28.0	28.2	40.4	51.1
Years in Current Occupation	<i>NS</i>	<i>NS</i>	<i>NS</i>	<i>NS</i>	<i>NS</i>
-<1 year	35.3	45.5	33.3	37.5	25.0
-1-5 years	28.0	17.6	27.3	36.7	27.8
-6-10 years	34.4	19.0	18.9	53.3	43.2
-11-15 years	31.3	12.5	17.9	47.2	36.8
-16-20 years	37.8	25.0	18.8	38.5	51.7
-21-25 years	37.5	33.3	20.0	41.7	44.0
-26-30 years	40.0	50.0	33.3	37.5	42.9
-31+ years	28.6	25.0	25.0	33.3	33.3
Partner's Employment Status	<i>NS</i>	<i>NS</i>	<i>NS</i>	*	<i>NS</i>
-unemployed	42.4	40.0	--	77.8	50.0
-not in the workforce	34.9	33.3	23.7	33.3	45.8
-employed	34.9	19.2	26.4	50.4	36.1
Partner's Categorized Occupation Code	*	<i>NS</i>	*	<i>NS</i>	<i>NS</i>
-machines/mfg (StatsCan 8-10)	27.9	20.8	24.6	47.4	33.3
-sales and service (StatsCan 7)	26.2	22.2	14.3	35.3	29.6
-health and people (StatsCan 3-6)	43.7	28.6	22.2	59.5	51.9
-mgmt/business (StatsCan 1-2)	34.4	--	50.0	40.0	36.2
<i>NS</i> = not significant, * $p \leq 0.05$, ** $p \leq 0.005$, *** $p \leq 0.0005$					

4.1.4 Social Capital and Employment by Neighbourhood

The analysis for the sample as a whole was repeated for each neighbourhood (Table 3). The level of social capital differed significantly in each of the four neighbourhoods with 29.0% of participants in the downtown neighbourhood (DTN), 23.4% of participants in the northeast neighbourhood (NEN), 42.9% in participants in the southwest neighbourhood (SWN), and 37.9% of participants in the mountain neighbourhood (MTN) reporting social capital in their neighbourhood. Although not statistically significant, the results of the analyses by neighbourhood demonstrated many of the same trends as the study sample as a whole. The more time spent in the workplace and the corollary, the less time spent in the neighbourhood, the less social capital was reported. For the study sample as a whole, 391 participants reported having social capital. When this number was analysed by neighbourhood (DTN=73, NEN=73, SWN=123 and MTN=122), and then by variables with multiple categories within the neighbourhood, the sample became quite small and results may be due to chance. For this reason, employment status is discussed as employed, unemployed, and not in the workforce only.

A higher percentage of unemployed/not in the workforce participants reported social capital than participants who were employed in the DTN (34.2% vs. 24.8%) and the SWN (48.8% vs. 40.2%). The percentage was comparable for the NEN (23.1% vs. 23.7%) and the MTN (36.8% vs. 39.0%). Once unemployed

and not in the workforce were considered separately, a higher percentage of participants who were not in the workforce reported social capital than participants who were unemployed in all four neighbourhoods (DTN=36.5% vs. 22.7%, NEN=28.0% vs. 4.8%, SWN=50.7% vs. 28.6%, MTN=38.3% vs. 23.1%). Participants who worked part-time were more likely to report social capital in three of the four neighbourhoods than participants who work full-time (NEN=35.7% vs. 21.2%, SWN=56.1% vs. 36.8%, MTN=50.0% vs. 36.9%). The percentage was comparable in the DTN (22.7% vs. 23.8%).

Neither years in current occupation, nor partner's occupation status demonstrated the same trend as the sample as a whole. Both categories contained small samples and the results may be due to chance. The associations between occupation code and social capital followed the same trend as the overall sample in three of the four neighbourhoods. A higher percentage of participants working in the health/people sector reported social capital in the DTN (35.7%), NEN (38.9%), and SWN (51.3%). The second highest percentage reported were participants working in the management/business sector (DTN=28.0%, NEN=28.2%, and SWN= 40.4%). In the MTN, social capital was reported more often by participants working in the management/business sector (51.1%) than participants working in the health/people sectors (44.1%). Participants working in the sales/service sector reported less social capital and participants in the manufacturing sector reported the least amount of social

capital for the NEN (22.7%, 14.1%) and SWN (36.4%, 17.6%). Participants in the manufacturing sector reported less and participants in the sales/services sector reported the least amount in the DTN (18.6%, 18.5%) and MTN (28.6%, 27.5%). Although partner's occupation status was not associated with the participant's social capital, the partner's occupation code was. In three of the four neighbourhoods the percentage of social capital reported was the highest in participants whose partners were employed in the health/people sector (DTN=28.6%, SWN=59.5%, MTN=51.9%) consistent with the association between occupation code and social capital in the sample as a whole.

4.1.5 Social Capital, Employment, and Health Outcomes

The descriptive statistics allowed for the examination of the one-to-one relationships between neighbourhood social capital and employment-related variables. Most employment-related variables were significantly associated with social capital at the sample level but the significance was not found at the neighbourhood level. Again, in many cases the sample size became quite small and there may not have been enough power to detect a difference if one did exist. To further examine the assertion that social capital has migrated from the neighbourhood to the workplace, and how this move may have influenced health the next question:

- 3. Is there an association between social capital in the neighbourhood, social capital in the workplace, and physical and emotional health?*

broadened the scope of the previous question by introducing health as an outcome. By utilizing logistic regression analyses the relationships between neighbourhood, social capital, and employment-related variables on physical health, emotional health, and chronic disease were investigated.

The MTN was chosen as the reference neighbourhood for the reason that it had the highest percentage of participants in the favourable outcome measures of health, social capital and the employment status conducive to high rates of social capital as shown in Table 4. Although the SWN was higher in some of the outcome measures it was by a small margin. The determining factor for choosing the MTN over the SWN was the difference in the employment status, not in the workforce. This status was shown in the descriptive results to contribute to social capital.

Table 4

Health, Social Capital, and Employment Status Summary

Factors	Neighbourhood			
	DTN	NEN	SWN	MTN
Good Physical Health (%)	80.4	77.8	89.9	89.9
Good Emotional Health (%)	85.2	86.8	90.6	92.6
No Chronic Conditions (%)	45.8	43.7	45.4	44.8
Social Capital (%)	29.2	23.5	42.7	38.1
Not in the Workforce (%)	30.5	23.1	23.9	34.2

The reference categories for the demographics were those that contribute to favourable health outcomes shown in previous research. For physical health (Table 5), participants in the DTN (OR=0.499, $p<0.01$), the NEN (OR=0.377, $p<0.001$), and to a much lesser extent the SWN (OR=0.794, $p=NS$) were less likely to report good physical health compared to the MTN after controlling for demographics, social capital and employment status. Two of the four demographic variables had an influence on physical health. Participants with less than grade 12 education were less likely to report good physical health than participants with greater than a grade 12 education (OR=0.605, $p<0.05$) and participants with an income less than \$30,000 were less likely to report good physical health than participants with an income greater than \$30,000 (OR=0.577, $p<0.001$). Gender and age were not significant. When employment status was added to the model, participants who were employed were more likely to report good health compared to participants who were not in the workforce (1.787, $p<0.01$). As was stated in 2.4.4 Data Analysis and Interpretation, a rho-squared of 0.2 to 0.4 indicates a good fit of a model to predict the variance in the outcome. This model did not explain much of the variance in physical health with neighbourhood predicting approximately 3%, neighbourhood and demographics 7%, neighbourhood, demographics and social capital 7%, and neighbourhood, demographics, social capital, and employment status 8% of the variance in physical health.

Table 5
Good Physical Health

	Neighbourhood Odds Ratio (CI)	Demographics Odds Ratio (CI)	Social Capital Odds Ratio (CI)	Employment Status Odds Ratio (CI)
Neighbourhood	P<0.001	P<0.001	P<0.001	P<0.001
SWN rather than MTN	0.886 (0.516;1.522)	0.852 (0.491;1.477)	0.851 (0.491;1.475)	0.794 (0.456;1.382)
DTN rather than MTN	0.411 (0.251;0.674)***	0.493 (0.295;0.826)**	0.495 (0.295;0.829)**	0.499 (0.297;0.839)**
NEN rather than MTN	0.364 (0.228;0.583)***	0.397 (0.244;0.646)***	0.400 (0.245;0.652)***	0.377 (0.230;0.617)***
Gender - female rather than male		1.004 (0.712;1.415)	1.005 (0.713;1.416)	0.946 (0.667;1.341)
Education - < grade 12 rather than > grade 12		0.562 (0.379;0.834)**	0.567 (0.381;0.843)**	0.605 (0.405;0.902)*
Income - <\$30,000 rather than >\$30,000		0.502 (0.346;0.727)***	0.503 (0.346;0.729)***	0.577 (0.393;0.847)***
Age – older rather than younger		0.992 (0.981;1.003)	0.992 (0.981;1.003)	0.996 (0.985;1.007)
Social Capital rather than no Social Capital			0.943 (0.649;1.371)	0.920 (0.631;1.343)
Employment Status				P=0.010
Unemployed rather than Not in Workforce				0.952 (0.475;1.905)
Employed rather than Not in Workforce				1.787 (1.186;2.692)**
-2 log likelihood	938.086	897.680	897.585	888.591
p ² (initial -2LL: 966.774)	0.02967	0.07147	0.07157	0.08087
Hosmer and Lemeshow Test	1.000	0.135	0.288	0.703
*p<0.05, **p<0.01, ***p<0.001				

Table 6

Good Emotional Health

	Neighbourhood Odds Ratio (CI)	Demographics Odds Ratio (CI)	Social Capital Odds Ratio (CI)	Employment Status Odds Ratio (CI)
Neighbourhood	P=0.020	NS	NS	NS
SWN rather than MTN	0.785 (0.442;1.396)	0.828 (0.463;1.481)	0.800 (0.447;1.435)	0.777 (0.432;1.398)
DTN rather than MTN	0.462 (0.268;0.796)**	0.574 (0.326;1.011)	0.583 (0.330;1.029)	0.583 (0.330;1.031)
NEN rather than MTN	0.535 (0.314;0.912)*	0.612 (0.354;1.056)	0.632 (0.366;1.093)	0.615 (0.354;1.066)
Gender - female rather than male		1.477 (1.002;2.177)*	1.489 (1.009;2.196)*	1.443 (0.973;2.139)
Education - < grade 12 rather than > grade 12		1.109 (0.663;1.857)	1.170 (0.696;1.966)	1.211 (0.718;2.043)
Income - <\$30,000 rather than >\$30,000		0.485 (0.319;0.737)***	0.485 (0.319;0.738)***	0.511 (0.332;0.786)**
Age – older rather than younger		1.025 (1.013;1.038)***	1.024 (1.011;1.037)***	1.025 (1.012;1.038)***
Social Capital rather than no Social Capital			0.661 (0.426;1.028)	0.655 (0.420;1.020)
Employment Status				NS
Unemployed rather than Not in Workforce				1.091 (0.496;2.399)
Employed rather than Not in Workforce				1.268 (0.811;1.982)
-2 log likelihood	794.916	764.666	761.134	760.031
p ² (Initial -2LL=805.140)	0.0127	0.05027	0.05466	0.05603
Hosmer and Lemeshow Test	1.000	0.284	0.015	0.716
*p<0.05, **p<0.01, ***p<0.001				

Table 7

No Chronic Conditions

	Neighbourhood Odds Ratio (CI)	Demographics Odds Ratio (CI)	Social Capital Odds Ratio (CI)	Employment Status Odds Ratio (CI)
Neighbourhood	NS	NS	NS	NS
SWN rather than MTN	0.989 (0.716;1.367)	0.967 (0.683;1.369)	0.990 (0.698;1.404)	0.948 (0.666;1.349)
DTN rather than SWN	0.974 (0.696;1.363)	0.946 (0.650;1.375)	0.923 (0.633;1.345)	0.949 (0.650;1.387)
NEN rather than SWN	0.911 (0.662;1.253)	0.869 (0.613;1.230)	0.832 (0.586;1.182)	0.816 (0.573;1.164)
Gender - female rather than male		1.439 (1.116;1.857)**	1.434 (1.110;1.851)**	1.398 (1.078;1.814)*
Education - < grade 12 rather than > grade 12		0.544 (0.380;0.781)***	0.513 (0.357;0.739)***	0.543 (0.376;0.785)***
Income - <\$30,000 rather than >\$30,000		1.015 (0.742;1.387)	1.003 (0.733;1.372)	1.142 (0.823;1.585)
Age – older rather than younger		0.957 (0.949;0.966)***	0.959 (0.950;0.967)***	0.959 (0.950;0.968)***
Social Capital rather than no Social Capital			1.507 (1.145;1.984)**	1.525 (1.156;2.011)**
Employment Status				P=0.002
Unemployed rather than Not in Workforce				0.577 (0.310;1.073)
Employed rather than Not in Workforce				1.433 (1.041;1.973)*
-2 log likelihood	1568.834	1405.274	1396.644	1383.970
p ² (initial -2LL = 1569.223)	0.00025	0.10448	0.10998	0.11805
Hosmer and Lemeshow Test	1.000	0.435	0.707	0.890
*p<0.05, **p<0.01, ***p<0.001				

For emotional health (Table 6) the DTN (OR=0.462, $p<0.01$) and NEN (OR=0.535, $p<0.05$) were less likely to report good emotional health compared to the MTN. Neighbourhood was no longer a significant factor when demographics were introduced. Age and income remained significant factors after controlling for all other variables. As participants got older (in 1 year increments) they were more likely to report good emotional health (OR 1.025, $p<0.001$). Participants earning $< \$30,000$ rather than $> \$30,000$ were less likely to report good emotional health (OR 0.511 $p<0.01$). Neither social capital nor employment status had an influence on emotional health. As in physical health, this model did not explain much of the variance in emotional health with neighbourhood predicting approximately 1%, neighbourhood and demographics 5%, neighbourhood, demographics and social capital 5.5%, and neighbourhood, demographics, social capital, and employment status 6% of the variance in emotional health.

There was no variance for number of chronic conditions between neighbourhoods (Table 7). Gender, being female rather than male (OR=1.398, $p<0.05$), having less than grade 12 compared to greater than grade 12 (OR=0.543, $p<0.001$) and being older rather than younger (OR=0.959, $p<0.001$) significantly influenced the number of chronic diseases. Participants reporting social capital compared to not reporting social capital (OR=1.525, $p<0.01$) and reporting being employed rather than not in the workforce (OR=1.433, $p<0.05$) were less likely to report chronic diseases. Again, this model did not explain

much of the variance in number of chronic diseases with neighbourhood predicting approximately 0%, neighbourhood and demographics 10%, neighbourhood, demographics and social capital 11%, and neighbourhood, demographics, social capital, and employment status 12% of the variance in number of chronic diseases.

4.1.6 Phase 1 –Summary

These results demonstrate that the more participants worked, the less likely they were to report social capital in their neighbourhood. Unlike the results of the survey sample as a whole, the associations between social capital and employment status did not reach significance at the neighbourhood level. That being said, many of the same trends were observed. These trends were not influenced by neighbourhood characteristics including whether or not the neighbourhood was considered a high social capital neighbourhood (SWN, MTN) or low social capital neighbourhood (DTN, NEN). Of the employment-related variables that were considered, the association between occupation category and social capital was notable. A higher percentage of participants in the health/people or management/business sectors or who have partners in these sectors reported social capital as compared to participants in the sales/service or machine/manufacturing sectors. Years in current occupation or partner's occupation status were unrelated.

With respect to social capital and health, participants living in the two low social capital neighbourhoods (DTN, NEN) were 50% and 60% less likely to report good physical health than participants living in the neighbourhood with the highest level of social capital (MTN) after controlling for demographics, social capital and employment status. In addition, participants who were employed were 79% more likely to report good physical health than participants who were not in the workforce. Even when significant, neighbourhood, demographics, social capital, and employment status did little to explain the variance in physical health. Although significantly fewer participants reported good emotional health in the two low social capital neighbourhoods (DTN, NEN) compared to the MTN, those differences disappeared when demographic variables were entered into the model. Income and age were the dominant predictors with social capital and employment status both unrelated to emotional health. There were no differences in number of chronic conditions between the neighbourhoods but participants in general who reported social capital and were employed had significantly less chronic diseases than participants who did not report social capital or were not in the workforce.

These inconsistencies, especially with respect to physical health, demonstrate that the variable or variables responsible for the variance in health outcomes between the high and low social capital neighbourhoods and between

participants who were employed or not in the workforce were not captured in the survey.

4.2 PHASE 2

The first phase demonstrated that the more participants worked, the less likely they were to report social capital in their neighbourhood; however, participants who worked reported better physical health and less chronic conditions than participants who were not in the workforce. The goal of Phase 2 is to understand the dynamics of social capital, where it was accessed, and how it was integrated into the lives of people who divide their time between their home and their workplace.

4.2.1 Sample Frame - Neighbourhood

A subset of residents who were employed and between the ages of 25 and 60 were targeted for face-to-face interviews. The residents were selected from two neighbourhoods that would give the maximum variation in the variables of interest were selected. Social capital, physical and emotional health, chronic diseases, demographic variables, employment variables, and variables that could potentially have influenced social capital were compared across the neighbourhoods (Table 8). To ensure the characteristics of the subset were consistent with the characteristics of the sample as a whole, the descriptive

statistics were repeated for the subset and found to represent the sample (data not shown). The NEN and MTN offered the greatest variation.

Table 8

Neighbourhood Variables (% unless otherwise stated)

Variables	Neighbourhood			
	DTN	NEN	SWN	MTN
Social Capital				
Involved	29.1	23.3	42.8	37.9
Not involved	70.9	76.7	57.2	62.1
Demographics				
Gender				
male	50.7	48.7	43.4	46.0
Age Distribution				
Mean age	44.91	44.58	46.16	47.08
Median age	44.5	45.0	43.00	43.00
18-24	17.3	9.8	9.3	10.0
25-44	32.0	39.0	42.5	42.1
45-64	34.4	38.7	32.5	28.2
65 and above	14.8	11.5	15.6	17.9
Marital Status				
% married or living with a partner	45.4	61.7	64.8	70.6
Education				
% with less than high school	26.0	27.7	13.8	15.5
% completed high school	57.7	62.0	45.6	59.0
% completed university	15.5	8.0	39.9	23.6
Household income				

Variables	Neighbourhood			
	DTN	NEN	SWN	MTN
< \$30,000/year	43.7	29.8	20.0	19.7
\$30-59,999	31.9	44.3	32.9	30.2
>\$60,000	23.5	23.5	46.3	48.0
Health Status				
Self-reported health				
Excellent	19.4	15.7	28.5	24.4
Very good	34.8	29.7	34.5	42.3
Good	25.6	31.0	25.8	23.2
Fair	10.3	13.7	8.3	7.4
Poor	9.3	8.5	1.8	2.7
Satisfaction with health				
Very satisfied	39.2	32.2	42.5	48.1
Somewhat satisfied	40.6	47.8	44.3	38.1
Somewhat dissatisfied	12.0	12.5	10.5	9.8
Very dissatisfied	6.4	5.0	2.0	1.6
Chronic conditions				
No chronic conditions	45.8	43.7	45.4	44.8
1-2 chronic conditions	37.7	42.2	43.0	43.5
3+ chronic conditions	16.5	14.2	11.6	11.6
GHQ				
<4 (very good)	85.2	86.8	90.6	92.6
Employment status				
Full-time job	41.4	54.3	53.9	48.9
Part-time job/contract/semi-retired	8.7	9.0	14.3	8.1
Sick leave/maternity leave/ disability/strike	7.8	3.2	2.2	3.2

Variables	Neighbourhood			
	DTN	NEN	SWN	MTN
Unemployed	8.9	6.8	2.4	3.9
Retired	18.1	13.0	13.2	20.0
Homemaker	2.9	6.3	5.1	8.4
Student	9.5	3.8	5.6	5.8
Self-employed	2.7	3.0	3.1	1.3
Occupation (includes previous if unemployed)				
Machines/manufacturing	24.5	33.2	8.3	16.3
Sales	17.1	18.8	18.1	16.0
Health/working with people	16.1	12.0	31.9	27.3
Business/management	14.6	18.2	22.5	20.2
Homemakers/students (not working)	12.4	10.2	10.7	14.2
Years in occupation				
0-5	24.7	26.8	24	19.2
6-10	8.0	11.8	10.5	11.6
11-25	11.9	17	25.4	22.7
>26	5.5	7.5	6.9	5.6
Not applicable	41.0	33.2	29.6	38.7
Spouse or partner work				
Yes (full-time/part-time)	26.8	39	44.4	44.5
No	17.9	22.2	20.3	25.4
Not applicable	54.6	38.3	35.2	29.4
Household Characteristics				
Age of home (years)				
Mean	59.91	69.30	77.35	15.59

Variables	Neighbourhood			
	DTN	NEN	SWN	MTN
Median	51.00	71.0	81.00	13.00
Length of residence in current dwelling (years)				
Mean	8.58	13.15	13.36	10.12
Median	6.00	9.00	7.00	9.00
Live at current address <10 years	75	56	58	58
Number of people per household				
Mean	2.54	2.95	2.79	3.39
Median	2.00	3.00	3.00	3.00
Own home	40.8	87.8	83.3	86.8
Ethnicity				
% not born in Canada	37.9	20.2	22.0	30.6
Ethnic or cultural group				
Canadian	19.2	27.0	26.3	22.1
UK	30.5	33.7	39.4	28.5
Western Europe	20.8	14.0	13.1	29.7
Eastern Europe	9.3	11.5	6.7	5.8
Asia (including Middle East)	6.6	2.8	3.8	7.7
Other (including mixed ethnicity)	12.4	8.7	10.3	3.9

4.2.2 Sample Frame - Resident

The results of recruiting using the randomization of the telephone survey participants were disappointing. Of the first 50 men and 50 women randomly selected in the NEN, only four men and no women agreed to be interviewed. In

the case of NEN men, 15 telephone numbers no longer matched the addresses and 15 telephone numbers were now unlisted. Of the 20 men whose phone number and address matched 15 men were eventually contacted, 3 men did not remember participating, 1 phone was out of service, 1 man was not eligible because he did not speak English, 5 men declined to participate, 6 men agreed to participate on first contact, 4 men agreed to participate after receiving Information letter and agreed to participate in the interview. Of the NEN women, 9 telephone numbers no longer matched the addresses and 21 phone numbers were unlisted. Of the 21 women whose phone number and address matched 17 women were eventually contacted, 1 woman did not remember previously participating, 3 women were not eligible because they did not work, 5 women declined to participate, 8 women agreed to participate on first contact and no women agreed to participate after receiving the Information letter. The same procedure was initiated to acquire the MTN sample. For the MTN men 21 of the first 50 phone numbers were either unlisted or the address and phone number did not match. It was becoming apparent that recruiting from the telephone survey was not as effective as anticipated in achieving the sample required. Because of the low success rate and the extended period of time recruiting from the telephone survey, convenience sampling was introduced to increase the number of residents to participate. In convenience sampling people who are easily accessible are approached to participate (Berg, 2009).

For the purposive sampling strategy, three neighbourhood community councils were identified. One community council responded to communications. The president of that community council agreed to participate. As well, a member and employee of the local steelworkers' union were sought. After numerous communications with the president of the local steelworkers' union, they were unable to assist because their priority became addressing the concerns of their members during the sale of the steel company. It was considered highly likely that this event could influence the workplace social capital of a union staff member. It was decided not to pursue this group. During interviewing, it became apparent that many residents considered their religious organization as a source of social capital. A third group, a strong religious affiliation, was added. A church with a known reputation for community participation in each of the two neighbourhoods was approached for the name of a parishioner who was involved in the church, worked in the church, and met the inclusion criteria. One of the church administrations replied and an employee of the church who lived in the area under study agreed to participate. A snowball sampling strategy was initiated last to recruit residents who share the same close proximity in their neighbourhood or workplace. This final strategy was successful at recruiting residents that shared family (3 x 2 siblings), workplace (3 x 1 workplace, 2 x 1 workplace), and neighbourhood block (4 x 2 close neighbours). Nonprobability sampling techniques in general, and snowball sampling in particular, do have limitations. One disadvantage is homophily bias (Heckathorn, 2002). Put simply,

“similarity breeds connection” (McPherson, Smith-Lovin, & Cook, 2001, p. 415). Residents were asked to refer other residents to participate in the survey. Naturally, they would refer people from their personal networks and these people would have “many sociodemographic, behavioural, and intrapersonal characteristics” (McPherson et al., 2001, p. 415) similar to themselves. Another disadvantage is that nonprobability sampling reduces the generalizability of the results (Kemper, Stringfeld, & Teddlie, 2003). Given the limited sample for the qualitative interviews, snowball sampling was thought to be the most efficient technique that would provide access to informants who shared common communities that may not have been selected in a probability sampling technique.

After one year, recruitment was halted at 24 residents (Table 9). Five men and six women from the NEN and five men and eight women from the MTN agreed to participate. Nineteen residents were interviewed in their home and five residents were interviewed at their workplace. Although previous research showed that the site of the interview can influence the information conveyed (Sin, 2003), priority was given to the convenience of the resident and safety of the interviewer.

Table 9
Results of Recruiting Strategies

Neighbourhood - Gender	Sampling Strategy				Total Recruited
	Random Sampling	Purposeful Sampling	Convenience Sampling	Snowball Sampling	
MTN - WOMEN	1	1	2	4	8
MTN - MEN	0	0	2	3	5
NEN - WOMEN	0	1	1	4	6
NEN - MEN	4	0	0	1	5
Total	5	2	5	12	24

4.2.3 Resident Attributes

Interview times, not including the introduction, consent, administration of the table and health questionnaire, ranged from 16 to 72 minutes. Demographic attributes were collected to allow for comparison of individual level data to neighbourhood level data, NEN to MTN residents, men to women, and to examine possible attributes that influence the association between social capital and health. When demographic attributes were compared by neighbourhood (Table 10), more residents interviewed in the NEN are <45 years of age, divorced, and have children <16 years of age. When demographic attributes are

compared by gender, more female residents than male residents interviewed are >45 years of age, divorced, with lower levels of education, and have children >16 years of age. When neighbourhood attributes were examined all but one resident owns their own home. Length of time in the home was consistent between neighbourhoods and gender. More residents in the NEN had family living near them and more residents of the MTN had friends living near them. When workplace attributes were examined, more women than men in both neighbourhoods worked in companies with greater than 100 employees. The MTN residents interviewed had slightly more tenure in their workplace than the residents who lived in the NEN. Men had slightly more tenure in their workplace than women. Only three men, two who lived in the NEN and one who lived in the MTN, worked with hazards. Most men and women from both neighbourhoods worked a standard workweek and had less than a one-hour commute. More residents who lived in the MTN and more men than women worked in a supervisory role. Only women in the NEN worked with family members. Residents with professions (controller/accountant, teacher, researcher, IT specialist) were evenly distributed over neighbourhood and gender (MTN women=2, MTN men=2, NEN women=2, NEN men=2). Three MTN men and one NEN woman owned and/or managed a company.

Table 10

Resident Attributes – Demographic and Neighbourhood

	Income >\$30,000	Marital Status	Age >45	Language spoken in home	Education	Children >16	Lived in Hamilton	Dwelling	Own home	Lived in nbrhd	Family in nbrhd	Friends in nbrhd
MTN-WOMEN												
Amy	yes	yes	yes	English	high school	yes	life	house	yes	>20	yes	yes
Annetta	yes	yes	yes	English +	high school	yes	life	house	yes	>20	no	yes
Barbara	yes	divorced	yes	English	high school	yes	life	house	yes	<5	yes	yes
Donata	yes	yes	no	English +	high school	no	childhood	town house	yes	10 to 19	no	no
June	yes	yes	yes	English	college	yes	life	town house	yes	<5	no	no
Linda	yes	divorced	yes	English	high school	yes	life	town house	yes	5 to 9	no	no
Lisa	yes	yes	yes	English +	high school	yes	life	house	yes	>20	yes	no
Nora	yes	yes	no	English +	undergraduate +	no	life	house	yes	5 to 9	no	yes
MTN-MEN												
Celino	yes	yes	yes	English +	technical	yes	childhood	house	yes	>20	no	yes
Enzio	yes	yes	no	English +	undergraduate +	yes	life	house	yes	10 to 19	yes	no
Greg	yes	yes	yes	English	undergraduate +	yes	adulthood	house	yes	10 to 19	yes	yes
Naldo	yes	yes	yes	English +	technical	yes	life	house	yes	>20	yes	no
Pino	yes	yes	no	English +	undergraduate +	no	life	house	yes	10 to 19	yes	yes

Table 10 - cont'd

Resident Attributes – Demographic and Neighbourhood

NEN-WOMEN												
Emma	no	divorced	no	English	high school	no	adulthood	house	no	<5	no	no
Elena	yes	yes	no	English	undergraduate +	no	life	house	yes	10 to 19	yes	yes
Julita	yes	divorced	yes	English +	high school	yes	childhood	house	yes	5 to 9	yes	no
Karen	yes	yes	yes	English	post graduate	NA	adulthood	house	yes	>20	yes	no
Renee	yes	yes	yes	English	high school	yes	life	house	yes	>20	yes	yes
Pam	yes	divorced	yes	English	high school	NA	<5 yrs	house	yes	<5	yes	no
NEN-MEN												
Brian	yes	yes	no	English	undergraduate	no	adulthood	house	yes	<5	no	no
Jeffery	yes	divorced	yes	English +	high school	yes	childhood	house	yes	5 to 9	yes	no
John	yes	yes	no	English	technical	no	life	house	yes	>20	yes	no
Michael	yes	yes	yes	English	high school	yes	life	house	yes	>20	no	no
Peter	yes	yes	no	English	technical	no	life	house	yes	10 to 19	no	no

Table 11

Resident Attributes – Workplace

RESIDENT	Job title	Company size	StatsCan Occupation Code	Company type	Supervise	Tenure in years	Work hours	Work with Family	Commute	Hazards
MTN - WOMEN										
Amy	server	5-9	3	food service	no	1-4	regular	no	<1 hr	no
Annetta	administrator	>100	1	university	no	15-24	regular	no	<1 hr	no
Barbara	adjuster	>100	1	insurance co.	no	10-14	regular	no	<1 hr	no
Donata	dept. manager	>100	1	food retail	yes	15-24	regular	no	<1 hr	no
June	controller	>100	1	food retail	yes	5-9	regular	no	<1 hr	no
Linda	administrator	5-9	1	law firm	no	1-4	regular	no	<1 hr	no
Lisa	administrator	>100	1	bank	yes	>25	regular	no	<1 hr	no
Nora	primary school teacher	>100	2	school	no	5-9	regular	no	<1 hr	no
MTN - MEN										
Celino	co-owner/manager	<5	4	steel fabricating co.	yes	15-24	regular	no	<1 hr	yes
Enzio	accountant	50-100	1	pharmacy retailer	yes	10-14	regular	no	<1 hr	no
Greg	manager	50-100	1	large tooling mfg	yes	>25	>40 hrs	no	<1 hr	no
Naldo	owner	<5	4	electronic	no	>25	regular	no	<1 hr	no
Pino	high school teacher	>100	2	school	yes	5-9	regular	no	<1 hr	no

Table 11 – cont'd

Resident Attributes – Workplace

NEN -WOMEN										
Emma	administrator	<5	1	church	no	1-4	regular	no	<1 hr	no
Elena	accountant	>100	1	engineering co.	yes	10-14	regular	no	<1 hr	no
Julita	teacher assistant	10-24	3	public school board	no	5-9	regular	no	<1 hr	no
Karen	researcher	>100	2	university	yes	15-24	regular	yes	<1 hr	no
Renee	co-owner/manager	<5	3	cleaning business	no	5-9	regular	yes	<1 hr	no
Pam G	research assistant	>100	2	university	no	1-4	regular	yes	<1 hr	no
NEN -MEN										
Brian	primary school teacher	5-9	2	private school	no	5-9	regular	no	<1 hr	no
Jeffery	cook	>100	3	food production	no	<1	shift	no	<1 hr	yes
John	tradesman	10-24	4	construction & repair	no	10-14	on-call	no	<1 hr	no
Michael	truck driver	10-24	4	lumber supplier	no	15-24	regular	no	<1 hr	yes
Peter	IT security specialist	25-49	1	research company	yes	<1	regular	no	>1 hr	no

To satisfy the next question,

Q3. Is there a relationship between social capital in the neighbourhood, social capital in the workplace, and physical and emotional health?

the presence of social capital in the neighbourhood, social capital in the workplace, and physical and emotional health were contrasted.

Most residents were not able to respond to the two general questions, *In your experience, is social capital evident in your neighbourhood?* and *In your experience, is social capital evident in your workplace?* Social capital had been defined in lay terms and examples given until residents acknowledged that they understood the meaning of social capital before the interview started. To demonstrate this understanding was limited, the responses to the general question on social capital in the neighbourhood were coded in its entirety and compared to the elements of social capital that make up the definition used in this dissertation. Few residents mentioned the element. These numbers include residents who reported they did not have the element (Table 12).

Table 12

Social Capital Elements Reported in General Question

Element of Social Capital In Neighbourhood Social Capital	# Residents Mentioning Element in General Question
Identity	3
Solidarity	2
Participate in neighbourhood networks	4
Trust	4
Help	2
Reciprocity	2

Because the majority of residents were not able to respond to the general questions on social capital in the neighbourhood and workplace, the prompts on the interview template quickly transformed to broad discussions with concepts that were more familiar to the resident. It was in fact intended during the interview to determine first if social capital existed in the neighbourhood or workplace and second whether or not the resident was able to access it (Poortinga, 2006; Carpiano, 2008). Most residents were not able to speak for the neighbourhood as a whole, only from their own personal experiences.

Residents often answered yes or no without an explanation. To give residents as much opportunity as possible to convey their feelings, probes were used to explore opinions as fully as possible. Often residents elaborated on

previous questions or deviated from the template and discussed other elements of social capital. Many of the elements of social capital overlap, such as help and reciprocity, and responses and conversations reflect that.

4.2.4 Social Capital in the Neighbourhood

Two forms of social capital were captured for the neighbourhood. Bonding social capital was captured in the elements identity, solidarity, trust, help, and reciprocity. Bridging social capital was captured in the element, participation in networks.

Identity

Question: Do people in your neighbourhood have a feeling of local identity?

“Identity is a person’s sense of who they are based on their group membership(s)” (Mcleod, 2008). Few residents (4 MTN, 1 NEN) believed that they had a feeling of local identity with their neighbourhood. Two residents (MTN) reported that the identity of their neighbourhood was the name of their subdivision. They were unable to describe characteristics of their neighbourhood with which they could identify with other than the name of their subdivision that was on a sign at the entrance. These residents were not considered to have identity with their neighbourhood. Three residents identified with their neighbourhood. Two of the three residents living within a block of each other in the MTN conveyed a positive identity.

I know a lot of people who actually have who actually have said I heard a lot of good things about that neighbourhood. I am looking for a house in that neighbourhood let us know when a house comes up for sale. There is actually a couple who moved across the street. They had been looking in our neighbourhood for a house for a long time and because they really wanted in because they knew what a great neighbourhood. (Nora-MTN)

I've never lived anywhere...well I lived in a lot of places since I've been an adult I've never lived in a community like our community. It's almost freakish. It's so good... It's like Knott's Landing without the sex! (Pino-MTN)

One resident thought her neighbourhood had a negative identity.

Yeah, lower income. (Emma- NEN)

Solidarity

Question: Do people in your neighbourhood have a sense of solidarity and equality with their neighbours?

Solidarity was defined as the “unity (as of a group or class) that produces or is based on community of interests, objectives, and standards

(<http://www.merriam-webster.com/dictionary/solidarity>). The previous question asked the resident if their neighbourhood had an identity where this question probes further whether or not the resident identified with their neighbourhood. A sense of solidarity and equality was strongly conveyed by the two residents (MTN) who thought their neighbourhood had a positive identity. Nora had a young family similar to others in her neighbourhood. To her “everyone [was] kind

of at the same place in their life” and shared many of the same interests and values that mostly revolved around family.

There are a lot of young families in the neighbourhood with young kids so everyone is kind of at the same place in their life and even amongst the kids the kids are all very close. Their best friends are in the neighbourhood. Our best friends are in the neighbourhood. In terms of even when your kids are out playing you know that there are eyes on them from all over the place making sure that everybody is safe, which is really important. We actually had a community organization. Every family would chip in about \$20 we would have fireworks.... The one time we did a party to celebrate the opening of our park because actually when our park came in we had to do fund-raising for it. The City would only match us for whatever we gave so we did all kinds of fund raising for it. After the park went in we had a big Canada Day celebration. We had cotton candy, bouncy castles and the whole bit so when we do we can really pull things together. This summer we had a street party where we invited... went around each block everybody in the neighbourhood sort of thing. We had roasted pig and we had the whole the whole street closed off. (Nora-MTN)

Pino had many relatives living near him. He had a strong sense of solidarity and it was difficult to differentiate how much of this was due to his proximity to relatives, friends, or neighbours.

It's a community inside itself for sure. I've never lived anywhere...well I lived in a lot of places since I've been an adult I've never lived in a community like our community. It's almost freakish. It's so good. My neighbours beside me are some of my best friends. My mother-in-law lives directly beside me. We share a property line. My brother-in-law lives 4 houses away. His aunt and uncle live around the corner from them. We have cousins living around the corner from us. We have family all over the place. Now that we have this soccer team going on, it's like we're all best buddies, it's really weird, it's great! I can't step outside without talking to people for 15 minutes. It's wonderful! If you were a private person it would be terrible but since I'm not, it's great. It's a superb neighbourhood to live for sure. (Pino-MTN)

Participation in Networks

Question: What networks, such as block parent, church organizations, cultural organizations, etc. exist in your neighbourhood? Are you involved in any of these networks?

Network participation was determined by both the residents' responses during the interview and the mention of network involvement in the Social Capital Context Tool. Half of the residents (7 MTN, 5 NEN) participated in one or more networks. Neighbourhood networks included sports clubs, local political affiliations, cultural clubs, neighbourhood organizations, religious institutions, school-based organizations, and community organizations. Amy (MTN) not only participated in but was *the president, vice-president, secretary and treasurer ... fund raiser...contact person* for a neighbourhood association she started many years ago when her children were young.

The whole thing started up with wanting to get a park. Every block has a park in the center of it. Getting equipment and stuff in there so an organization that was formed to do some fundraising because the city wants a certain amount of money before they put some equipment in there. So that is basically how it started and we decided to continue and to a neighbourhood organization going. (Amy-MTN)

She continues to manage the neighbourhood association but the goals of the organization have evolved over the years.

Originally it was for the kids. The park is done. It is done. We've continued and we now have put an adult section in with like a fitness equipment - outdoor stuff - balance beam and uneven bars and now we have another \$25,000 in the bank which we have to sit down and decide what to do with. (Amy-MTN)

Pino's networks revolved mainly around sports.

We have our soccer. We have 6 players from our team out of 20 are from our neighbourhood alone. The other 20 some odd on our team is connected to one of us. The gentlemen that just walked through here, two guys from my school, are on my soccer team too. Now they are on the mountain so they are part of our 35 and older. This is an adult soccer team. So this is an adult league. Men's soccer league which is called Old Timers is a terrible term but, apropos I guess apropos. It's the largest adult league in North America. There are 40 teams. We're one of the 40 teams and we might be putting together a 2nd team. That's how popular Sons of Italy is in the city. They really want our team to keep going. It is really nice. There is a big poker group in our area. A huge poker group. (Pino-MTN)

Elena has young children and her networks revolve around their education.

I am new at the networking but the one I know because I am involved at the school with the parent block. I volunteer with the school. On my days off I volunteer at the school. Not in my son's class but in another class. In terms of helping students read those that require one-on-one. So I will help them with that. (Elena-NEN)

Emma is a single-mother with a limited income. She lives in a poorer area of the NEN in housing sponsored by the Lion's Club. Emma was aware of and participated in many networks in her neighbourhood. The networks she participated in offered support for her and her daughter and allowed her to help neighbours that she felt were worse off than she was.

Yes. I'd say so because there is a lot of... there are little community groups, and there are various churches, and there are different centers and things, for seniors, for people with disabilities, for native Indians....With City Kids I am involved and with Pinky. I do whatever I can now. I was involved with the Bug Busters which is a health group from the Health Board clinic for head lice... Church groups I am involved. For Ryerson and United... They have games night for kids. And then UCW is like a unit for the women that are in the church. I usually go there. There is like a little luncheon and they have like a ...we had a gentleman from Hamilton Historic Society come down to give a presentation. The ladies have had

the rummage sale and the garage sales and we have like various things at our church that I am involved in. I do volunteer work there and at my daughter's school. I do basic volunteering. (Emma-NEN)

Trust

Question: Do people in your neighbourhood trust their neighbours and feel that if they needed help and support their neighbours would be there for them?

Like social capital, trust is a multi-faceted concept. In many cases, the type of trust measured in surveys determining social capital is generalized trust.

Generalized trust is based on the belief that other people, including strangers, are from the same moral community. This moral community shares a similar set of values and beliefs. The trust measured by this question is particularized trust.

Particularized trust “depends on information and experience” (Uslaner, 2003, p.

2) with specific persons (Nannestad, 2008; Uslaner, 2008). In this case the

persons are neighbours. Most residents trusted their neighbours (13 MTN, 8

NEN). When examples of trust were conveyed they were in reference to

residents who lived in close proximity, either next door, or directly across the

street. Many residents gave examples of trusting neighbours to look after their

home when they were away.

Definitely across the street. Very good friends of ours like our best friends. Our immediate neighbour has keys to our house. We have keys to their house. Both sides fully trust them with everything. They always look out for you. If we go away and the kids are home... they are older but still it is nice to have them if they needed anything tell him to call us. They invite them over for dinner if we are gone for a week. (Annetta-MTN)

Specific reference again, was when I went away to Europe for a month. The bill came in just after we left. They cut our hydro off in week three because we were gone so long. We now know better and we prepay. That aside, our neighbours next door had the key to the house and came in and plugged his hydro with an extension cord to keep my freezer from thawing out and losing all my meat... which was brilliant. The rest of it I can care less. There's nothing else. He took a few things out of the fridge but it was pretty much empty anyways because we knew we'd be gone for a month. That proved a few things and saved us a lot of money. That reaffirmed our belief that we knew he was honest. (Peter-NEN)

Three residents trusted their neighbours to look out after their children.

Absolutely I can cross the street and go to Mrs. Davies. My kids will know to go there. They are actually listed as an emergency if I am not home and they are at school and need to evacuate. They are at the Davies' house. They know to go to the Davies' house. (Elena-NEN)

Yeah, every time a neighbor 2 doors leaves she comes over and she says Hi I'm leaving my daughter here for 15 minutes I'm going for a drive, she knows to come over if anything, and keep an eye on her. (Peter-NEN)

I know that there have been nights that my husband has had to work. They are implementing something and he is working and I know that in a second I could call anybody... There is always somebody home. Some work shift work and all that. There is always some adult around so when my daughter is ready for that I will have the peace of mind that my kids are not alone. For me I am lucky because it will be a matter of a few minutes to half an hour by the time I get home. And I am home for the summer and March break and all that stuff. But yes that to me is a lot less stress just knowing that. There was one grandmother who was picking up her granddaughter from the bus stop and she was late for whatever reason. She got off the bus – came to my house – no big deal. She came down the street okay, who has my granddaughter she wasn't even worried. She knew that we were there and that one of us would have taken her... So it is kind of nice that you have that. It is almost like it is not just you and your kids that if you need help with whatever there is somebody there babysitting. Everybody gives it back. (Nora-MTN)

Other residents reported that they thought they could trust their neighbours should the need arrive.

Our immediate neighbours I would say yeah. Because we know everybody here I would say. Two, three, four, five houses. Not much farther than that. But we see them all the time in the summer. (Celino-MTN)

Yeah. I would trust her. There are a couple. There is one to the left of her side. I would trust her as well. I mean you get to know people. (Donata-MTN)

Yes, we all look after each other's houses. Most people on the street know their immediate left right neighbours so when you go on holidays you let your neighbour know that you are not here so they just take it on themselves to pick up your paper, pick up your mail, make sure is there anyone weird going around. License plates are written down on this street. (Karen-NEN)

Help

Prompt: Do people in your neighbourhood feel that if they needed help and support their neighbours would be there for them?

Most residents (11 MTN, 9 NEN) felt that at least one of their neighbours would help and support them. Many residents had an expertise that they could share with their neighbours.

My neighbor and I always help each other. If he needs to build a fence or something I'm there. And it's like come on over and do this. The back water valve that I put in, the two of us our drains are combined on his drive way so when we both got flooded out and there was a third time we both got sewage water in our basements...move everything, throw out stuff that got soaked to the point enough is enough. Three times that is it. I told him I could get a backwater valves and we can dig up the basement and put them in. It wouldn't be a whole lot of work. We can start on his. We can come over and do mine on the Sunday. The whole weekend was shot just digging and moving and mudding and moving stuff. (John-NEN)

My husband right now he has a renovation business. So the neighbours are always calling on him. He does. He goes into so many houses around here and does things for people. Lots of time for nothing. He will do it for free. My self, you know as you said listening to people. I have an elderly woman across the street who is going through a rough time. I'm always

there talking to her. I used to have an elderly lady next door. Lived alone and I was there every day helping her getting her meals, cutting her hair, doing all kinds of things. Yeah this is a really good neighbourhood for that. (Renee-NEN)

Snow removal was often used as an example of helping each other.

I would shovel my own snow my section. Sometimes I would shovel the people next door. Other than that basically everybody is on their own so to speak... There is nobody that is not in good enough shape to be self-sufficient... We kind of semi look after each other but a lot of time you are on your own... I am sure that if somebody had a broken arm and broken leg I am sure that I would not leave them on their own... If I had a snow blower here I would probably keep going to whatever but when I have to do it by hand unfortunately it is a little tougher. (Michael-NEN)

Absolutely, you know in the winter somebody whoever has a snow blower you will see them doing about 10 driveways. We had one neighbour who was out in that huge snow storm. He was out that entire day. He did everybody's driveways, sidewalks and bailed people out that were stuck. (Pino-MTN)

Reciprocity

In many cases the response to the element reciprocity was included with the previous element on helping and supporting each other. If a response was not forthcoming, the resident was prompted, “would you do that for them” and “would they do that for you”. Seventeen residents (9 MTN, 9 NEN) thought their actions and the actions of their neighbours would be reciprocated. All residents who reported reciprocity existed reported that if they needed help and support their neighbours would be there for them.

So it is kind of nice that you have that. It is almost like it is not just you and your kids that if you need help with whatever there is somebody there babysitting. Everybody gives it back. (Nora-MTN)

So I could rely on their children to babysit... She relies on me to walk the kids to school on days or babysit one another type of thing so it has been pretty good. (Elena-NEN)

...feeling good is when the older lady across the street who doesn't have any grandchildren gets to hold my girls for a while and then gives me tomatoes from her garden. (Brian-NEN)

And it's the same with all the neighbors. He did our carpets. He did the flooring for one of the guys across the street. The guy across the street is a renovator. He's helped our neighbour two doors down do all of her work. Next door here, he helped her do her flooring and her walls and work on some other stuff. A neighbour is a lock smith. So whenever we get locked out we're good. Another neighbour...the man across the street is retired is an electrician. So anybody who needs electrical work we just go hit him up. (Peter-NEN)

Summary - Neighbourhood Social Capital

Social capital elements by gender and neighbourhood are summarized in Table 13. There were no noticeable differences in social capital elements reported by gender. The element trust was reported the most often (n=21) followed by help and support (n=20), reciprocity (n=18), and participation in networks (12). Identity (n=3) and solidarity (n=2) were the elements reported the least. Elements of social capital were not independent and responses from one element were likely to be associated with the response from another element. Solidarity was reported where identity was reported, or where identity was reported as negative. All residents reporting reciprocity exists reported help and support existed.

Only the element trust varied between neighbourhoods. Trust was reported less often in the NEN (8 of 11) than the MTN (13 of 13). Trust was described by occasions when neighbours demonstrated trust and in the confidence that trust would be demonstrated if an occasion arose. The three residents who did not report trust in their neighbourhood experienced a negative event that brought about this distrust.

Then we have had a few different incidents over the years. Like people selling illicit drugs. There are certain things going on around here ... well the fellow next to me – used to live there years ago maybe we are talking maybe 16 or 17 years he set the house across the road on fire. He set the guy's front porch on fire. He didn't know the fellow or anything. That is what came out in the newspaper article. But he had a problem with drinking. An alcohol problem but what his problem was. All of a sudden he just went over there and all of a sudden we see this guy's porch – there are flames shooting up the side of it. The police came the fire department came and they talked to him. He said he didn't know what happened they told him to put his clothes on and they dragged him out of there. There is this incidents like the lady across the street from me here. I think she had a mental illness may be drug and alcohol problem. She was doing some fairly bizarre things. (Michael-NEN)

And of course one year we had, you might have heard about it, 3 or 4 years, maybe 5 now, up the street there the son stabbed his father with a screwdriver. Killed him. It's funny, well it wasn't funny. I was kind of taken aback because I was putting the garbage out. The boys actually went out that day. I drove them to their mother's for supper, so I ate early, and I put out the garbage, it was around suppertime, and I had seen this kid that I remembered seeing at the house, maybe 8 house up the street. And this kid came running full tilt and he was a fairly heavy set kid, and I kind of found it unusual and I looked up and I recognized him from that house there, and I know that he had some issues because Thomas went to school with his sister. And I think that he had kind of a schizophrenic tendencies and stuff. So, he was just let out of where ever he was staying and his Mom went get the medication and he didn't take the medication so he got into a fight with his dad and it was just like you know. (Jeffery-NEN)

I have a key for their house and they have watched our house. I have ...was reaching out very much in helping another of our neighbors...but unfortunately there has been a lot of negativity and it was an abusive situation and I got

involved because the person asked for help and now that person has gone back to an abusive situation. They have 3 children and these children are not coming around. It is not healthy for Emma or myself. We went away and when we came back someone had tried to break into the house. (Emma-NEN)

Two residents (1 MTN female, 1 MTN male) felt that their neighbourhood contained all six elements of social capital. These residents lived across the street from one another. Six residents (1 MTN female, 2 MTN male, 1 NEN female, 2 NEN males) reported that they participated in networks, and their neighbourhoods contained the elements of trust, help and reciprocity. These residents were also considered to have social capital in their neighbourhood. The residents who reported all the relevant elements of social capital in their neighbourhood are highlighted below (Table 13).

Table 13

Social capital in the Neighbourhood

	Social Capital Elements					
	Identity	Solidarity	Participate in networks	Trust	Help	Reciprocity
MTN-women						
Amy	-	-	+	+	+	-
Annetta	-	-	-	+	+	+
Barbara	-	-	-	+	+	+
Donata	-	-	-	+	-	-
June	-	-	-	+	+	+
Linda	-	-	-	+	+	+
Lisa	-	-	+	+	+	+
Nora	+	+	+	+	+	+
Subtotal	1	1	3	8	7	6
MTN-men						
Celino	-	-	+	+	+	-
Enzio	-	-	-	+	-	-
Greg	-	-	+	+	+	+
Naldo	-	-	+	+	+	+
Pino	+	+	+	+	+	+
Subtotal	1	1	4	5	4	3
NEN-women						
Emma	+	-	+	-	+	+
Elena	-	-	+	+	+	+
Julita	-	-	-	+	-	-
Karen	-	-	-	+	+	+
Renee	-	-	-	+	+	+
Pam	-	-	-	-	-	-
Subtotal	1	0	2	4	4	4
NEN-men						
Brian	-	-	+	+	+	+
Jeffery	-	-	-	+	+	+
John	-	-	-	+	+	+
Michael	-	-	+	-	+	+
Peter	-	-	+	+	+	+
Subtotal	0	0	3	4	5	5
Total	3	2	12	21	20	18

4.2.5 Social Capital in the Workplace

As was stated previously, social capital exists in multiple communities (Baum & Ziersch, 2003; Uslaner, 2003). The following conversations explored social capital at the workplace. Given social capital “may vary between and within communities” (Baum & Ziersch, 2003, p. 321) some questions asked about neighbourhood social capital were modified to be consistent with the workplace and new elements were introduced. The first three questions measuring whether the resident felt there was solidarity, they were understood and accepted by co-workers, and they were kept informed in the workplace were intended to explore bonding social capital. In the workplace, bonding social capital was considered to be the relationships between similar individuals with the similar occupational status. The fourth question, do coworkers cooperate with each other, expanded these relationships to include connections between people with different occupational statuses and may have included people from different races, ages, etc. or bridging social capital. The last two questions measuring respect and trust were considered linking social capital, which took into account the relationships between individuals who had different power statuses (Kouvonen et al., 2006). The questions on social capital in the workplace were not applicable to one resident (MTN) who owned his own business with no employees.

Solidarity

Question: Do people in your workplace have a together attitude - that you are all on the same side?

Half of the residents (6 MTN, 6 NEN) commented that that the people in their workplaces had a sense of solidarity and worked together for a common goal. Residents who worked in non-supervisory roles described solidarity within their peer group as a physical action, that a peer would step in and help them for the common good of the workplace. Barbara worked as an adjuster in a large insurance company and described how her coworkers would step in and help her when she was busy.

Yeah, definitely...yeah, everybody works as a team and if I'm really busy....or I'm swamped....someone else...like one of my co-workers will take it and call it out.....and say the adjuster is handling the claim but I'm calling it out for her....get the details....stuff like that. (Barbara-MTN)

Enzio, on the other hand, was the accountant for two local stores of a large pharmacy retail chain. He did not have peers locally and considered his workplace to include the corporate office that was located in another city. Enzio's response to the question was understood as solidarity between the stores and corporate office. To him and to others in supervisory roles, solidarity was more of a mindset than a physical action.

Yeah we try to work together. Yeah I think everybody's mentality is there. We all want to thrive. (Enzio-MTN)

Peter was also in management but in an independent, mid-sized company. Like Enzo he talked about solidarity as a mindset.

We have a shared goal for personal and corporate reasons that the better the corporation does the better we are going to do. The better we do the better the corporation does. It is the mentality that we bring to the table fosters the mentality the corporation wants which fosters the type of people. It is circular. (Peter-NEN)

Understanding and Acceptance by Co-workers

Question: Do people in your workplace feel like they are understood and accepted by the people they work with?

The majority of residents (9 MTN, 8 NEN) felt that they were understood and accepted by their colleagues. In most cases, residents' responses included a specific issue of their personal life or work life that they felt might have been a reason to be excluded. Brian was a new teacher and felt apprehensive when he went to his first teaching position.

Just going there the first couple of years you get a sense of being respected as a new teacher and just welcomed. Right, here I was right out of college and just wow...respected you know and welcomed. It was just wonderful. (Brian-NEN)

Nora was worried that trying to juggle work and a young family would cause her not to be accepted at the workplace.

...you make me being a mother three at the time possible to go to work and still be a mother of three...we cover each other off for appointments because we do have a very high pregnancy rate at our school...with all the young women... we probably average about three a year. In our area too there was a lot of turnover for that. We would just cover off for each other... (Nora-MTN)

Peter was a manager in a research company with great diversity. He spoke of being understood and accepted as an overall attitude of his workplace.

... nobody looks at someone and goes it's because you're from here or you are this background or this religion. (Peter-NEN)

Informing Co-workers

Question: Do people in your workplace keep each other informed about work-related issues or is information hidden from one another?

Two-thirds of the residents (8 MTN, 8 NEN) reported that people in their workplace kept each other informed about work-related issues. E-mail and the internet were mentioned as the most common vehicle for sharing information. Electronic communication ranged from informal intra-office e-mail to formal programs that facilitated communication between multi-national companies in different countries.

Elena worked for a large, multi-national company and discussed how they strove to include everyone in spite of the bureaucracy that comes with working for such a large company.

But it has now become again a culture where communication has really part of. People just don't say this is the group that I am going to communicate with, etc. You can tell by the e-mails. If I miss someone pass it on. You could see that. No one is trying to miss anybody (Elena-NEN).

Jeffery also worked for a large multi-national company. E-mail was the channel used to share information between companies, and town hall meetings the channel within their company. He spoke very highly of how information was not

only communicated between companies but also between employees of different ranks.

It's a big company. We even get their email from Chicago and Westchester and Wisconsin. Yeah, so we get all their emails all the employees are able to see what jobs are. So it's a great community. So, if you have something to improve you can just email it to your supervisor or you can send it out to all the supervision and the managers and even the maintenance people will see it... We just had a town hall meeting there (Gregn-MTN).

... absolutely informed. Yes and I'm usually the informant... Via email, meetings, sales meetings. Like if there are best practices in our department. No one keeps a best practice to themselves if it is brought out for the good of the team. Everything is shared... best practices, new technology, ideas, anything like that is shared (Lisa-MTN).

Cooperation

Question: Do people in your workplace cooperate with each other to develop and apply new ideas?

Where bonding social capital referred to the connectedness and cooperation between individuals who are similar and in the case of the workplace have the same occupation level, bridging social capital expanded this network to individuals who may have been of a different race, age, socio-economic status, or a different occupation level. Just over half of the residents (7 MTN, 7 NEN) reported that their workplace facilitated a cooperative atmosphere for employees to develop and apply new ideas. In smaller companies the sharing of information was informal.

We are constantly relying on each other to bounce ideas off of as far as where we should go and what kind of pricing structures we have to make. How to be competitive? How to be more efficient? What we have to cut

*what we don't have to cut? Where we could get away with certain things?
(Celino-MTN)*

In larger companies there was usually a formal program to encourage the sharing of information.

...There is even a program that allows us to express our ideas. Going up the chain. And sometimes when they get implemented there is rewards for that ...They encourage feedback from front line (Elena-NEN).

Yeah. Exactly. So, you put down okay ... you know this formula, because a lot of time it's got to do about making a formula easier, right? You know, cuz a lot of times we'd do something and then, like the head cook, he's been there for many years, he used to be in charge of like the formulas and stuff, so he put it right there, then next somebody would send, and anybody will see it, and say, yeah okay that's a great idea, but you should add this and that whatever. So, it just gets boom boom boom (Jeffery-NEN).

Respect

Question: Do you feel that supervisors/organization treat people with consideration and respect?

Linking social capital referred to the relations between people of different power or status and in the case of the workplace different degrees of institutional power (Kouvonen et al., 2006). Of the 15 residents with a non-supervisory role in their workplace, most (8 MTN, 5 NEN) felt that their supervisors treated them with consideration and respect. This respect was usually conveyed by examples of how their supervisor would support them.

It is good. Honestly this foreman we have now ... he is a straight shooter he has a difficult job. And the management we have he is good. I think that if there is an issue I need to address they definitely will deal with it they just won't blow it off and say yeah right (Michael-NEN).

They did surprise things like inspections and things and they could complain and say they didn't like the way the girl was doing that or that and she would actually defend us. She would always defend us (Amy-MTN).

Respect was also conveyed in examples of how their supervisor would remove the power differential to help staff in a time of need.

Even when my youngest son broke his collar bone... he was jumping on the bed and fell off. My mother took him to the doctor and he just said go. Don't even go back to your classroom, just go I will be there and he would be there in a second to cover you off... and even with you know you are pregnant you have a lot of doctors' appointments ... I usually try to book it over lunch or whatever but sometimes there was a half hour you would be gone. So the principal is taking my class for half hour for story time so no problem ... we would just cover off for each other and he was awesome with that too... he tries to make everybody feel important (Nora-MTN).

This question was modified for the residents who had supervisory or co-ownership roles in the workplace (MTN=5, NEN=3). These residents were asked what they did to gain the respect of their staff. Supervisors spoke of how they removed the power differential to gain respect from their staff.

When they get busy we change. We go right from the office. We go right down to the shop. We change. We are right with the guys. We are handling the steel. We will buy the guys lunch because we expect them to push the product a little faster. Take an extra 15 minutes for lunch on Friday... instead of finishing at 3:00 when 12:00 comes punch out and we will pay you until 3:00. So you know you have that working understanding that you know you are out there slugging with them and they appreciate it. But it goes back and forth. You reciprocate. You are on the same level that they are in. You are not any better because you know you are the owner. You are down there slugging the same way and they understand that if you are down there and you are doing something with them you know you are not just standing upstairs. You are not just talking on the phone to somebody. All at once you are at their level now (Celino-MTN).

If you are at management level you have to set an example. You have to treat your employees just like how you would want to be treated.

Respecting that you shouldn't want to do what your staff wouldn't want to do either. To get respect you have to be one of them. If there is a buggy out in the parking lot and I am management I don't have to pick it up. You know what...if I am out there and I am getting some coffee and I see three buggies. I will pick them up and bring them into the store. They see me do it and they say he doesn't really have to do that. But doing it is helping us out (Enzio-MTN).

Trust

Question: Do people in your workplace trust their supervisor/staff?

The question about workplace trust was directed at the immediate supervisor, and in the case of upper level supervisors and owners at trust in their staff. Two-thirds of the residents interviewed (8 MTN and 8 NEN) felt that trust between supervisors and staff existed in their workplace.

Between those two fellows (owners of company) ... they may be a couple of young kids but they are serious for their age and all... I feel that these two guys I could trust. (Michael-NEN)

[We] think highly of him (principal). We trust him. He is very supportive of us. I know I have heard stories from other staff members of other schools and other principals where they are not that supportive they don't stand behind they're staff if something happens and that can be very difficult. The last two principals we had were excellent. If the teachers are having difficulties with the parents or anything they are always there and they are always there to support them. (Julita-NEN)

I mean if you don't have the trust or respect of the other person [partner and staff] then it is almost impossible to function. It is not as if you have a larger structure, more people, because there is only a few of us. If you have a disagreement or something or you say no that is incorrect this should be like this and this is the reason why and then you just go on from there. You trust that person not only because they are maybe right and correcting you but you know if they are wrong you are correcting them. (Celino-MTN)

Summary – Social Capital in the Workplace

For social capital in the workplace (Table 14) the element understood and accepted was observed the most (n=17), followed by keep each other informed (n=16), trust (n=15), co-operation (n=14), respect (n=13), and have a together attitude (n=12). There were no noticeable differences in the social capital elements reported between gender and high and low social capital neighbourhoods. As in neighbourhood social capital, when trust did not exist in the workplace it was because of a negative event.

In the organization there is no trust whatsoever...to that level...and good reason. None of us have any trust. But there is no trust the other way either... (June-MTN)

That I know in my last 22 years being in research is some people will take credit when it is not their credit ... it just happens in some social situations where the person in charge of the job has been given it but really doesn't have the background or knowledge to accomplish it comes to me I give them well to this do this talk to this talk to this and they do a marvellous job at the end and they are given full credit and they never divulge that they couldn't have done it with my help ... (Karen-NEN)

One element that was not included in the concept of social capital in the neighbourhood behaved the same as the element trust. Residents who reported respect did not exist in their workplace did so because of a negative experience.

That's how they [supervisors] think. That they [staff] are only bitching because they're PMSing and that's why we're complaining. Not because there is anything wrong...or what they're doing....or how the place is running...or anything like that. (June-MTN)

NO. Very easily I can say that. They don't put their money where their mouth is at all... There are so many politics that are involved all from the top down. As much as I can understand it just being a teacher, and schools and what that capital means, I don't have the big picture, I hinted

about this character building big push, they should be walking the walk and if it's character building is the biggest thing then they should be putting their money into make their kids whatever they feel is this 'character building' push to be the best they can do, I don't think they do that... This building needs major work. I don't think the board makes in any massive hierarchy for lack of a better political metaphor too many chiefs not enough Indians. Too many people trying to make decisions and no decisions are made. Too many beliefs and so things don't get done. (Pino-MTN)

Eight residents (3 MTN females, 1 MTN male, 1 NEN male, 2 NEN females, 2 NEN males) felt that their workplace contained all the elements of social capital. These residents are highlighted below (Table 14).

Table 14

Interview Results - Social Capital in the Workplace

	Social Capital Elements					
	Solidarity	Understood and Accepted	Informed	Cooperate	Respect	Trust
MTN-WOMEN						
Amy	-	+	+	-	+	+
Annetta	-	-	-	-	-	-
Barbara	+	+	+	+	+	+
Donata	+	+	+	-	-	-
June	-	-	-	-	-	-
Linda	-	+	+	+	+	+
Lisa	+	+	+	+	+	+
Nora	+	+	+	+	+	+
Subtotal	4	6	6	4	5	5
MTN-MEN						
Celino	+	+	+	+	+	+
Enzio	+	+	-	-	+	+
Greg	-	+	-	+	+	+

Naldo	NA	NA	NA	NA	NA	NA
Pino	-	-	+	+	-	-
Subtotal	2	3	2	3	3	3
NEN-WOMEN						
Emma	+	+	+	+	+	+
Elena	+	+	+	+	+	+
Julita	+	+	+	+	-	-
Karen	-	+	-	-	-	-
Renee	-	+	+	+	-	-
Pam	-	-	-	-	-	-
Subtotal	3	5	4	4	2	2
NEN-MEN						
Brian	+	+	+	+	+	+
Jeffery	-	-	+	+	-	+
John	+	+	+	-	-	+
Michael	-	-	-	-	+	+
Peter	+	+	+	+	+	+
Subtotal	3	3	4	3	3	5
Total	12	17	16	14	13	15

4.2.6 Social Capital in the Neighbourhood and Workplace

A similar number of residents reported social capital in both neighbourhoods. Of 13 residents who live in the MTN, three residents reported social capital in their neighbourhood only, two in their workplace only, and two in both their neighbourhood and workplace. Out of 11 residents who live in the NEN, one resident reported social capital in their neighbourhood only, and three residents reported social capital in both their neighbourhood and workplace.

There appear to be no trends in four of the five similar elements across neighbourhood and workplace (trust, neighbourhood help and workplace informed, understood and respected, neighbourhood respect and workplace co-

operate) (Tables 13 and 14). For example, if a resident trusted their neighbours, they did not necessarily trust their peers in the workplace. The fifth element, solidarity was reported by 2 of 24 residents for neighbourhood and 12 of 23 residents for the workplace. The small number of residents who could respond to this question demonstrated that there was some confusion. The concepts identity and solidarity were understood by the residents: but, possibly not in the geographical scale of neighbourhood.

Profile of residents with social capital

The general profile of an individual with social capital in their neighbourhood or neighbourhood and workplace was male or female, married, <45 years of age, had children <16 years of age, lived in Hamilton their entire lives, worked regular hours, and they or their partners worked in the health/people or business/management occupation sectors. There only distinguishing attributes of residents who reported social capital in their workplace was that they or their partner worked in the health/people or business/management sectors.

It was not possible to determine a profile of residents who do not have access to social capital given the many attributes and the small sample although one observation can be made. None of the residents who were divorced reported social capital in their neighbourhood (MTN females=2, NEN females=3, NEN

males=1). As there were no distinguishing attributes of a resident with social capital only in the workplace, there were no distinguishing attributes of those who did not have social capital in the workplace. A brief description of each resident can be found in Appendix 13. The intent of these portrayals is to provide background information to the reader so that they can understand the circumstances that might have influenced their responses.

There were notable similarities in residents who lived in close proximity or worked in close proximity to another resident who was interviewed (Table 15). Four sets of residents lived on the same neighbourhood block. If one resident had social capital in their neighbourhood, the other resident did as well in all cases but one (Amy-MTN). In Amy's case, she conveyed all the elements of neighbourhood social capital except reciprocity. Amy was the president, vice president, secretary and treasurer, fund raiser, and contact person for a successful neighbourhood organization and contributed a great amount of her time and energy to her neighbourhood. She felt her efforts were not reciprocated by her neighbours who she could not get to attend a yearly meeting. Residents who shared the same proximity in the workplace did not necessarily share the same job descriptions or workplace attributes, such as reporting arrangements or tenure. Of the two sets of residents who worked in close proximity, Karen, Pam, and Annetta shared most of the same elements of social capital. Karen felt she was understood and respected, and Annetta and Pam did not. Karen was a

senior project manager with a postgraduate education. Annetta and Pam had a high school education and were limited to support roles at work. Karen has worked for the same group of researchers for 20 years, where Annetta worked for the researchers for nine years and Pam for less than four years. Donata and June worked in close proximity to each other but shared few similarities. Donata felt that workplace solidarity existed, that she was understood and accepted, and informed. June did not. Donata was a long time employee and June had worked the company for approximately five years. Donata was the department manager in one of the stores and based her responses at the store level where June was the controller of the company and based her responses at the corporate level. As well, Donata shared the same ethnic background as the owners of the company and many of the employees and was able to communicate in Italian where June could not. The similarities in social capital elements were not comparable in the community they did not share.

Table 15
Residents in a Similar Context

Resident	Neighbourhood Social Capital						Workplace Social Capital						
	Identity	Solidarity	Participate in networks	Trust	Help	Reciprocity	Solidarity	Understood and Accepted	informed	Cooperate	Respect	Trust	
Close Neighbours													
Nora	+	+	+	+	+	+		+	+	+	+	+	+
Pino	+	+	+	+	+	+		-	-	+	+	-	-
Amy	-	-	+	+	+	-		-	+	+	-	+	+
Greg	-	-	+	+	+	+		-	+	-	+	+	+
Lisa	-	-	+	+	+	+		+	+	+	+	+	+
Naldo	-	-	+	+	+	+		NA	NA	NA	NA	NA	NA
Renee	-	-	-	+	+	+		-	+	+	+	-	-
Jeffery	-	-	-	+	+	+		-	-	+	+	-	+
Same Workplace													
Karen	-	-	-	+	+	+		-	+	-	-	-	-
Pam	-	-	-	-	-	-		-	-	-	-	-	-
Annetta	-	-	-	+	+	+		-	-	-	-	-	-
Donata	-	-	-	+	-	-		+	+	+	-	-	-
June	-	-	-	+	+	+		-	-	-	-	-	-
	=social capital in the community												

4.2.7 Social Capital, Physical Health, and Emotional Health

There were few differences in physical or emotional health reported by neighbourhood or gender (Table 16). All but four residents (2 MTN women, 1 NEN woman, and 1 NEN man) reported good to excellent physical health.

Emotional health scores range from 1 to 11 of a possible score of 12. Seven of the 24 residents scored equal to or below the threshold of a possible psychiatric

case (3 MTN women, 2 MTN men, 1 NEN woman, and 1 NEN man) (Table 16). The number of residents who scored below the threshold in the GHQ-12 was unusually low for a normal population. A possible explanation may be that the act of conducting the survey heightened emotional awareness of underlying difficulties or was considered to be an invasion of privacy to the resident (for more information go to <http://www.pre.ethics.gc.ca/eng/policy-politique/initiatives/tcps2-eptc2/Default/>). Another possible explanation is that the sample was not representative of the general population. The sample size was small and was mostly obtained by nonprobability sampling techniques that have their limitations as previously described. As well, the GHQ-12 has been previously recognized as not being the most appropriate instrument for measuring mental well-being in a neighbourhood. Other studies suggested that instruments specifically designed for measuring depression and anxiety may be more appropriate in the neighbourhood setting (Stafford et al., 2008).

Table 16
Physical Health, Emotional Health, and Social Capital

Resident	Physical Health					GHQ Below 4	Social Capital	
	Excellent	Very good	Good	Fair	Poor		Neighbourhood	Workplace
MTN-WOMEN								
Amy				x		☺		
Annetta		x						
Barbara		x						
Donata		x						
June					x			
Linda		x						
Lisa		x				☺		
Nora	x					☺		
MTN-MEN								
Celino			x					
Enzio		x				☺		
Greg			x					
Naldo	x							
Pino	x					☺		
NEN-WOMEN								
Emma			x			☺		
Elena		x						
Julita			x					
Karen	x							
Renee	x							
Pam				x				
NEN-MEN								
Brian		x						
Jeffery				x				
John		x						
Michael	x							
Peter	x					☺		

There were no apparent associations between emotional health, physical health, social capital, or neighbourhood. All residents with social capital reported good to excellent physical health. Two residents from each neighbourhood reported fair or poor physical health. Those who reported fair or poor physical health did not report social capital in their neighbourhood or workplace. Although the result of the emotional health tool was high, trends or patterns between emotional health and social capital were sought out. The relationship between social capital and emotional health was also inconsistent.

Previous studies have demonstrated that certain elements of social capital, considered bonding social capital, influence health more than elements that constitute bridging or linking social capital (Stafford et al., 2008; Kim et al., 2006). To investigate this possibility, the physical and emotional health of residents with or without trust, help and reciprocity for neighbourhood social capital and solidarity, understood and accepted, and informed for workplace social capital were examined. Six residents who were not considered to have social capital in their neighbourhood possessed all the elements of bonding social capital (Table 13). No residents had bonding social capital only in their workplace (Table 14). The association between social capital and physical or emotional health did not change when the six residents with bonding social capital were considered.

4.2.8 Social Capital in Other Communities

To explain the inconsistencies in social capital in the neighbourhood, workplace, and health, other social communities where social capital may be accessed were explored. The next question

Q4 How do residents negotiate social capital in the many different social communities of their lives?

looked at how residents prioritize the community they feel they have social capital. Residents were asked to complete the Social Capital Context Tool after the questions on social capital in the neighbourhood and workplace. By that time residents were thought to have a good understanding of the meaning of social capital. The results of the Social Capital Context Tool demonstrate that as well as neighbourhood (n=19) and workplace (n=23), residents reported that they accessed social capital from family (n=21), friends (n=9), religious institutions (n=4), ethnic community (n=2), sports teams (n=2), gym (n=2), spouse's workplace (n=2), previous workplace (n=1), neighbourhood bar (n=1), and a hunting group (n=1) (Table 17). That being said, there may be a considerable amount of intersection between these communities. Of the residents reporting social capital in the neighbourhood, 7 residents had family living in their neighbourhood. As well, 3 residents worked with family, 1 resident worked with friends, 2 residents played on sports teams with family and neighbours and 1 resident went to the gym with a family member.

Residents reported access to social capital in 2 to 6 communities (Table 17). The average number of communities reported was 3.80. There were few differences in number of communities reported by residents between the two neighbourhoods (NEN 3.82, MTN 3.78) or gender (MTN women 3.75, NEN women 3.83, MTN men and NEN men 3.80). Residents who had no social capital or social capital in their neighbourhood only reported the least number of communities (average of 3.50 communities). Residents with social capital in their workplace reported an average of 4.33 communities and residents with social capital in both their neighbourhood and workplace reported an average of 4.40 communities. When the Social Capital Context Tool (Table 17) was compared to health outcomes (Table 16), the amount the resident apportioned to the particular community had little effect on physical or emotional health.

The social communities themselves were examined. It was expected that residents who had social capital in their neighbourhood or workplace would give those communities a higher priority than residents who did not. That was not the case. For example, Lisa accessed social capital in both her neighbourhood and workplace yet attributed 0% to her neighbourhood and 30% to her workplace. Brian also accessed social capital in both his neighbourhood and workplace. He attributed 5% to his neighbourhood and 15% to his workplace. In both cases and other cases, other communities, family in particular, were given a greater priority. As well, residents who did not access social capital in their neighbourhood or

workplace assigned greater priority to them. Donata and John did not report social capital in their workplace yet Donata assigned her workplace 75% and John his workplace 80%.

There were no obvious associations between physical or emotional health and the proportion of social capital attributed to neighbourhood, workplace, or other communities or number of communities.

Table 17
Social Capital Context Tool Results

	Social Community																	
	Neighborhood	Workplace	Workplace #2	Family	Friends	Church	Ethnic Community	Sports teams	Gym	Spouse's Workplace	Previous Workplace	Neighborhood Bar	Hunting Group	Total # Contexts	No Social Capital	Neighborhood SC Only	Workplace SC Only	Neighborhood & Workplace SC
MTN-WOMEN																		
Amy	50	30		10	10									4	4			
Annetta	15	5		50						30				4	4			
Barbara		40		30	30									3			3	
Donata		75		25										3	3			
June	10	10		45						35				4	4			
Linda	10	10		50	30									4	4			
Lisa		30		40			20							4				4
Nora	50	20		20				10						4				4
Average														3.8				
MTN-MEN																		
Celino	10	10		40	20	20							10	6			6	
Enzio		25		50	25									3	3			

	Social Community																	
	Neighborhood	Workplace	Workplace #2	Family	Friends	Church	Ethnic Community	Sports teams	Gym	Spouse's Workplace	Previous Workplace	Neighborhood Bar	Hunting Group	Total # Contexts	No Social Capital	Neighborhood SC Only	Workplace SC Only	Neighborhood & Workplace SC
Greg	85	10		15										3		3		
Naldo	5			70			25							3		3		
Pino	20	30						30	20					4		4		
Average														3.8				
NEN-WOMEN																		
Emma	30	30			25	15								4			4	
Elena	25	25		25	13	12								5				5
Julita	10	20	20	50										4	4			
Karen	10	50		30					15			10		5	5			
Renee	10	10		80										3	3			
Pam	50	50												2	2			
Average														3.8				
NEN-MEN																		
Brian	5	15		30		50								4				4
Jeffery	10	60		30										3	3			
John		80		10	10									4	4			
Michael	10	70		20										3	3			
Peter	10	15		45	15						15			5				5
Average														3.8				
Total Average														3.8	3.5	3.5	4.3	4.4

4.3 Comparison of the Qualitative and Quantitative Results

To answer the final question,

Q5 How do the qualitative results aid understanding of the quantitative results, specifically social capital, employment status, and physical and emotional health?

the results of Phase 1 and Phase 2 were compared. Although this was limited because the quantitative data did not include information on workplace social capital and only residents who were employed were interviewed, observations could still be made. The quantitative survey measured social capital as involvement in groups and the qualitative interviews measured social capital as a multi-element concept. The qualitative results demonstrated that the elements of social capital varied considerably with trust, helping neighbours and reciprocity being reported the most, and participating in networks less often. One-third (4 of 12) of residents participating in networks did not report all the elements of social capital and were considered not to possess social capital (Table 13).

Occupation classification was one of the few variables that were available in both the quantitative and qualitative phases. The quantitative phase found that a higher percentage of participants who were employed or had partners employed in the health/people or management/business occupation classifications reported neighbourhood social capital than participants in the sales/service or machine/manufacturing occupation classifications. This tendency

was also apparent in the qualitative phase. Working in the health/people or management/business occupation classifications was a common characteristic of residents who had social capital in their neighbourhood or neighbourhood and workplace. Employment in these occupation sectors was the only common characteristic of residents with social capital in their workplace only. This outcome is consistent with a still ongoing longitudinal study that is finding that manual workers have a significantly lower level of social capital than workers in other occupations (Oksanen et al., 2008). Because occupation classification categories are so broadly defined and only household income data was gathered in both phases, it is not possible to determine if this result was due to a difference in wages between the occupation classifications, the characteristics of the occupation classifications, or the characteristics of the people employed in these occupations. One opinion is that job stress traits of specific jobs influence social capital. If job stress traits were found to influence social capital, then reviewing and modifying job characteristics might be appropriate to increase social capital. A study examining workplace social capital and health in the manufacturing industry measured job stress, psychosocial, and working conditions. This study did not specifically look for, nor did they find this relationship (Sapp et al., 2010). One study examining the individual investment in the formation of social capital found that, “individuals in relatively social occupations acquire more social capital” (Glaeser et al., 2002, p. F450). To arrive at their conclusion, social capital, measured as social skills, charisma, and the size of their Rolodex, was

compared to the sociability of occupations. They found that individuals varied in their ability to be sociable. Individuals who do not find it easy to be sociable do not seek out occupations that require a high level of sociability and vice versa (Glaeser et al., 2002). If this were the circumstance, then examining the characteristics of the occupations would not be pertinent. It would be more relevant to examine the personal characteristics of the people in the occupations.

Regarding the possible comparisons within the qualitative phase, there are no obvious associations between the Social Capital Context Tool and the interview results. Whether the resident had social capital in their neighbourhood or workplace made little difference in the social communities, or proportion allotted to those social communities, including the neighbourhood and workplace, reported in the Social Capital Context Tool. Social capital from family, which is marginalized in most research, repeatedly ranked above neighbourhood and workplace social capital.

5 DISCUSSION AND CONCLUSION

5.1 Discussion

The first objective of this dissertation was to investigate the assumption that social capital has migrated from where people live to where people work and if so, how this relocation may influence health. Phase 1 of this study suggests that this migration may have taken place. The more time participants spent in the workplace, the less likely they were to report social capital in their neighbourhood. When logistic regression analysis was applied to investigate the associations between neighbourhood, social capital, and health outcomes, only physical health was found to be significantly different in each of the four neighbourhoods. Participants living in the two low social capital neighbourhoods were significantly less likely to report good physical health than participants living in the two high social capital neighbourhoods. Although more residents reported good to excellent physical health in the neighbourhoods with higher social capital, social capital was not found to influence physical health. These results are consistent with previous studies (Giordano, Ohlsson, & Lindstrom, 2011; Kim & Kawachi, 2006; Kim, Subramanian, Gortmaker, & Kawachi, 2006; Human Resources and Skills Development Canada, 2011; Islam et al., 2006; Veenstra et al., 2005) that found neighbourhoods differentiated by stock of social capital “play a negligible role in explaining health variation in egalitarian countries [such as Canada], even if it was found to be significantly associated with health” (Islam et al., 2006, p. 24).

Employment variables were introduced to explore the possibility that there was an association between social capital accessed in the workplace and health. More participants who were employed reported better physical health than participants who were not employed. When multiple regression was utilized, even when significant, employment status, neighbourhood of residence, demographic variables, and neighbourhood social capital did little to explain the variance in the three health outcomes, indicating that the models used were not a good fit and that the variables that would explain the variance in the health outcomes were not included.

To explore the possibility that social capital accessed in the workplace would explain the variance in health outcomes, further investigation was required. The data from the Deconstructing the Determinants of Health Project did not contain information on social capital in the workplace. As stated by Edwards, “if social capital researchers look through traditional lenses and in traditional places for social capital, they will not be able to see its new forms” (Edwards, 2004, p. 84). Qualitative research methods were chosen as the most suitable method to capture information on social capital accessed in the workplace and in the neighbourhood simultaneously. Face-to-face interviews were conducted with residents of the two neighbourhoods that were shown to be diverse in the determinants of health, including social capital. Because this dissertation was

primarily interested in the migration of social capital from the neighbourhood to the workplace, only residents who were employed full-time were interviewed. Unlike Phase 1, the concept of social capital utilized in Phase 2 was comprised of multiple elements. To be considered to have social capital, residents had to report experiences with all the elements.

Of the 24 residents interviewed, one third of the residents reported all the elements of social capital in their neighbourhood and one third of the residents reported all the elements of social capital in their workplace. Half of these residents reported all the elements of social capital in both their neighbourhood and workplace. This result suggests that social capital is not a restricted resource that can only be accessed in one community at a time, but is a fluid resource that can be accessed in multiple communities simultaneously. Nonetheless, no differences in physical or emotional health between residents with or without social capital were found.

There are three possible explanations for an absence of an association between social capital and health. First, in studies examining the elements of social capital individually, participation in networks, as social capital was conceptualized in Phase 1, was found to influence physical and emotional health differently than trust, help, and reciprocity, three fundamental elements considered in Putnam's definition of social capital. The contribution of social

capital to physical health in Phase 1 may be understated given that trust, help, and reciprocity contribute to health more so than participation in networks (Ferlander & Makinen, 2009; Stafford, De, Stansfeld, & Marmot, 2008; Kim, Subramanian, & Kawachi, 2006; Araya et al., 2006). When the results of Phase 1 were compared to the results of Phase 2, one third of the residents considered accessing social capital in their neighbourhood in Phase 1 did not report the additional elements of the multi-faceted concept that was applied in Phase 2 and did not appear to access social capital in their neighbourhood. It is plausible that the two phases of this research were not measuring the same concept or at the very least were measuring it differently. Not only would this lack of a consistent measure influence the level of social capital attributed to a certain neighbourhood, it would influence the association between social capital and the health outcome being measured. In the case of the current data, the residents who participated in networks, but were not considered to have social capital in Phase 2, were distributed evenly in the two neighbourhoods. Given the small sample, it cannot be assumed that the distribution over a larger sample would be equal.

Second, Canada is considered a moderately egalitarian country where income and wealth is distributed relatively equally and social and primary health care programs are available. Considering that neighbourhood social capital has been found to play a lesser role with respect to health, it would be plausible to

find that other social communities play a lesser role with respect to health. The role of workplace social capital and health outcomes between countries with different levels of egalitarianism has not yet been studied. Assuming that employment standards would be more extensive in egalitarian countries than non-egalitarian countries, workplace social capital may also play a lesser role in health.

Third, only residents who were employed were interviewed. All residents interviewed earned an annual income over \$30,000. Studies show that people earning greater than \$30,000 consider themselves healthier in self-reported health questionnaires than people who earn less than \$30,000. The results of these studies were affirmed in the regression analysis conducted in Phase 1. Participants with an annual income of less than \$30,000 were 58% less likely to report good to excellent physical health than participants with an annual income of greater than \$30,000. This “income-related health status” was again affirmed recently in a 2009 survey of Canadians that is included in the 2012 National Report Card on Canada’s health care system (CBC News, 2012).

The second objective, to investigate whether social capital can both be a private and public good that also benefits bystanders, was not demonstrated for neighbourhood social capital and physical health. Phase 1 established that more participants in the two high social capital neighbourhoods reported better physical

health than participants in the two low social capital neighbourhoods; however, social capital, as measured by participation in networks, did little to explain the variance in physical health between the neighbourhoods. This result was not unexpected given that neighbourhood social capital played a lesser role with respect to health outcomes as a private good. This result was reinforced in Phase 2 where the absence of a difference in physical health between working residents who live in the high and low social capital neighbourhoods was demonstrated. The inability to demonstrate social capital in the neighbourhood as a public good may also be the result of an inappropriate geographic scale or “spatial extent of a phenomenon or a study” to measure neighbourhood (Marston, 2000, p. 220). Identity and solidarity are two components that contribute to bonding social capital, the form of social capital that has been shown to be associated with health outcomes. Bonding social capital typically takes place in a closed community, a community that is spatially defined with borders that are recognizable (Lewicka, 2011). Identity and solidarity were reported 12 times in the workplace and only twice in the neighbourhood, indicating that the neighbourhoods as defined may not have been considered a closed community by the residents. In most cases, a workplace is spatially defined. Neighbourhoods, on the other hand, have “diffuse and often arbitrary borders” (Lewicka, 2011, p. 212). The neighbourhood as defined may have been the “optimal level of abstraction for place researchers, although it is not at all certain that it has the same meaning for residents themselves” (Lewicka, 2011, p. 212).

The intention of Objective 3 was to explore further the association between social capital in multiple social communities and health. Residents were asked where they thought they accessed their social capital. The results of the Social Capital Context Tool demonstrated that residents not only accessed social capital in their neighbourhood and workplace, but were “simultaneous members of multiple communities” (Brodsky, Loomis, & Marx, 2006) and accessed social capital from these communities. This conclusion reinforces the response to the first objective, that social capital is not a restricted resource that can only be accessed in one community at a time, but a fluid resource that can be accessed in multiple communities simultaneously. Family and friends, neighbourhood, workplace, place of worship, and ethnic communities were a few of the social communities mentioned. There was considerable intersection between these communities demonstrating that geographic and social communities are not individual entities but are related and inter-related.

5.2 Methodological Implications and Limitations

Three methodological limitations emerged early in this process: sample shortcomings; the lack of a clear definition for social capital; and measurement inconsistencies. The results of this dissertation raised a thought-provoking methodological implication, the challenge of measuring social capital in multiple social communities simultaneously.

The Deconstructing the Determinants of Health Project dataset analysed in Phase 1 was not intended to answer the specific question on the association of social capital accessed in the neighbourhood and in the workplace and health. For this reason, the data did not contain information on workplace social capital. This shortfall precluded the simultaneous analysis of social capital in the neighbourhood and workplace in a large sample. Time and budget constraints limited the number of residents who could be interviewed in Phase 2. The principle objective of this dissertation was to investigate the migration of social capital from the neighbourhood to the workplace, therefore only residents who were employed were interviewed. This limitation precluded a comparison of residents who were employed and not employed and may have overlooked the segment of society that the association between social capital and health may be the greatest.

The review of the literature demonstrated that a clear definition for social capital is absent and that the resultant abundance of measurement tools has led to confusion and inconsistent results. The systematic review by von dem Knesebeck, et al. contained 42 studies that reported on 41 definitions of social capital (von dem Knesebeck, Dragano, & Siegrist, 2005). Most of these definitions incorporated multiple elements. In this review and the majority of research found to date, an association between social capital and health is considered if an association is shown between any of the elements of social

capital and health. A significant methodological observation of this dissertation occurred when the results of the two definitions for social capital were compared. One third of the residents considered having social capital in Phase 1 did not have the additional elements of the multi-faceted concept that was applied in Phase 2. These inconsistencies would influence the level of social capital attributed to a certain community and the association between social capital and the health outcome being measured as previously stated.

A second significant methodological observation of this dissertation was how pre-set notions in developing measurement tools can result in measurement inconsistencies. Two tools were used to measure social capital in Phase 2: interviews that consisted of pre-determined open-ended questions and the Social Capital Context Tool, a measurement tool designed to capture the community social capital as accessed from the viewpoint of the resident. The open-ended questions were restricted to the two communities where this author assumed most social capital is accessed, the neighbourhood and the workplace. The Social Capital Context Tool contained no restrictions. When the residents were asked in what social communities they thought they accessed social capital, without the restrictions, their responses were unrelated to those of the restricted open-ended questions. Additionally, the Social Capital Context Tool facilitated the assignment of a value of the social capital accessed in each community. These responses did not support the responses to the open-ended questions. Many

residents who accessed social capital in their neighbourhood, workplace, or both neighbourhood and workplace, in the open-ended questions assigned minimal values to each of these communities in the Social Capital Context Tool. The results of the Social Capital Context Tool also indicated that the amount of social capital accessed through the neighbourhood and workplace is not as significant as this author assumed. If this were the case, the association between social capital and health would not be fully realized until all the sources of social capital were considered.

Also related to measurement tool inconsistencies is the failure of tools used to measure social capital to take degree or level of response into account. The counting as 'present' versus 'not present' in the study of social capital in qualitative or quantitative research accords a broad range. For example, social capital was measured as 'participation in networks' in Phase 1. Participants were considered to access social capital if they participated 'a little' or 'a great deal' in one organization or many. In Phase 2 the range for reporting elements was also broad. Neighbourhood trust ranged from trusting a neighbour to keep an eye on an empty house to trusting a neighbour to look after children. The following example further demonstrates the gradient in helping neighbours with respect to shovelling snow.

I would shovel my own snow my section. Sometimes I would shovel the people next door. Other than that basically everybody is on their own so to speak... There is nobody that is not in good enough shape to be self-

sufficient... We kind of semi look after each other but a lot of time you are on your own... I am sure that if somebody had a broken arm and broken leg I am sure that I would not leave them on their own... If I had a snow blower here I would probably keep going to whatever but when I have to do it by hand unfortunately it is a little tougher. (Michael-NEN)

Absolutely you know in the winter somebody whoever has a snow blower you will see them doing about 10 driveways. We had one neighbour who was out in that huge snowstorm. He was out that entire day. He did everybody's driveways, sidewalks and bailed people out that were stuck. (Nora-MTN)

The question becomes how much help is sufficient for social capital?

The conclusion of this dissertation, that social capital can be accessed in multiple communities simultaneously, raises a further methodological implication; the challenge of measuring social capital in multiple communities. The differences in the tools used in this dissertation to measure social capital in the neighbourhood and in the workplace highlight the variation in the dimensions of social capital in different communities (Stone & Hughes, 2002). The concept of social capital in the neighbourhood included the elements participation in networks, trust, help, and reciprocity. The concept of social capital in the workplace included the elements solidarity, understood and accepted, informed, co-operate, respect of supervisors, and trust supervisors. These variations would also be expected in measuring social capital in other communities such as places of worship, social clubs, health clubs, etc. and have been previously raised in literature developing and examining theoretically-based measures for social capital (Stone, 2001; Stone & Hughes, 2002). The results of the Social Capital

Context Tool also demonstrated that residents have varying ranks of importance for the community in which social capital is accessed and that this rank differs with each individual. Here lies the challenge: first, there is the need to measure social capital in multiple social communities, each with their variation in dimension and means of measuring social capital. Second, there is the sensibility of generalizing results or tallying social capital in multiple social communities. The undertaking of compiling this information to make a general statement on the association of social capital and health could be problematic.

5.3 Substantive and Theoretical Contributions

The existing research on social capital is primarily performed in one context or community. In most cases it is within a geographical boundary, whether it is neighbourhood, city, province, or country. More recently, social capital accessed in the workplace or in a religious institution has been investigated. When this dissertation commenced there were no studies investigating social capital in more than one community simultaneously. Similarly, the hypothesis of this dissertation was that social capital has migrated from the neighbourhood to the workplace, again assuming that social capital is accessed in one community only. The findings of this study contribute to the understanding of social capital by demonstrating that social capital is not a resource of one community but is accessed in multiple communities simultaneously, and also demonstrate that the restrictive tools to measure social capital may not convey an

accurate story. Until social capital is measured in all the communities it is accessed, the true association between social capital and health may not yet be fully realized.

5.4 Policy Implications and Future Research

Three policy implications originate from this research. Although the following policy implications may affect children, recent immigrants, and other populations, they are intended for the sample population of this study that comprised exclusively of English-speaking adults. Two policy implications pertain to the association between social capital and health. First, the literature review and the results of this study demonstrate that social capital plays a lesser role with respect to health outcomes in countries that are more egalitarian (Islam et al., 2006; von dem Knesebeck et al., 2005). This association was demonstrated at the individual level and in the context of neighbourhood and state (Schultz, O'Brien, & Tadesse, 2008; Kim & Kawachi, 2007; Islam et al., 2006; Kim & Kawachi, 2006; Kim et al., 2006; Kim et al., 2006). Canada is considered a moderately egalitarian country with taxation policies that distribute income, universal healthcare, and a fair safety net that endeavor to ensure that Canadians are treated equally with respect to social, political, and economic affairs. It would be in the government's best interest to strengthen, or at the very least maintain, this philosophy of equality with respect for all under the Charter

and the law as well as in the provision of services so that disparities in health are reduced or no longer exist.

Second, the review of the literature also demonstrates that social capital in communities or individuals that are marginalized plays a lesser role and in some cases has a reverse association with health. The ramification of this outcome is that developing policies to increase social capital in these communities may produce the opposite effect than what is intended. Social capital reinforces the norms of a community, whether the community is a neighbourhood, workplace, or social group. If the norms of the community are detrimental to health, such as high unemployment, smoking, or criminal activity social capital reinforces these behaviors. In these instances, as an alternative to encouraging social capital in the existing communities, policies should consider providing and supporting activities that offer opportunities to join communities that are advantageous to health. Programs such as adult education and training opportunities as well as employment assistance programs create an opportunity for social capital in a workplace. As well, a higher education and greater opportunity for work provide an opportunity to move out of the marginalized community. It is important for these programs to continue. In an effort to reduce the development of marginalized neighborhoods, all level of governments are calling for new and renovated neighbourhoods to be zoned for mixed housing, a combination of high-, medium-, and low-density housing to accommodate a broad range of incomes

and ages. This practice is intended to prevent the concentration of low-income housing and if successful, to prevent residential segregation and the creation of marginalized neighbourhoods.

The third implication pertains to social capital in general. The central rationale of this dissertation is *that if social capital has declined where people live (Putnam, 2000), it would be beneficial for governments to devote time and resources to studying and increasing social capital in the neighbourhood. If social capital is not on the decline but merely changed or migrated to where people work (Edwards, 2004; Wolf, 1998), it would be more useful to study and increase social capital in the workplace.* The findings of this dissertation demonstrate that social capital is not just accessed in the neighbourhood and workplace, but is accessed in multiple communities. Although most of these communities are not considered to be under government jurisdiction these communities and their members are directly affected by government decisions. Urban planning policies in designing neighbourhoods are a prime example of how these decisions can affect social capital directly. Most residents interviewed in Phase 2 demarcated their neighbourhood by busy through streets. In the case of Julita (NEN), *“for me my neighbourhood is mostly just a very small area here because we’re on a main street”*, her neighbourhood and the opportunity for social capital were greatly restricted because of a busy through street. Residents who lived in neighbourhoods designed to restrict traffic flow considered their neighbourhoods

wider ranging. Annetta (MTN) lived in a residential community with restricted traffic flow and described the boundaries of her neighbourhood as, *my boundaries is Randall Estates, which we are called. It is a pretty big area Randall Estates one and two.* Additionally, neighbourhoods designed to restrict traffic flow created opportunities to connect with neighbours,

This summer we had a street party where we invited went around each block everybody in the neighbourhood sort of thing. We had roasted pig and we had the whole the whole street closed off. (Nora-MTN)

Urban policies that incorporate local parks in neighbourhoods create space for neighbours, especially parents of children, to connect with other neighbours.

...when I think of my neighbourhood I think of the park where I take my girls to go on the swings and slide and so I picture everybody who can walk to the park. (Brian-NEN)

As well as urban planning policies, government initiatives and grants to enhance community parks were the catalyst for neighbourhood associations that created a sense of identity and a common goal.

The one time we did a party to celebrate the opening of our park because actually when our park came in we had to do fund raising for it. The City would only match us for whatever we gave so we did all kinds of fund raising for it. After the park went in we had a big Canada Day celebration actually Matt Hayes was here the whole bit. We had cotton candy, bouncy castles and the whole bit so when we do we can really pull things together. (Nora-MTN)

The whole thing started up with wanting to get a park. Every block has a park in the center of it. Getting equipment and stuff in there so an organization that was formed to do some fundraising because the city wants a certain amount of money before they put some equipment in there. So that is basically how it started and we decided to continue and keep the neighbourhood organization going. (Amy-MTN)

Because there are considerable intersections between these communities, policy decisions can have unintended effects on social capital. Policies regarding public transportation can enhance and expand opportunities for networks and access to social communities, especially for those people who lack mobility. For Emma (NEN), public transportation was not available for her to attend a church; *we went to this new church because there wasn't enough young people for my daughter in the local church. They can pick you up if you don't have a car.* If it was not for the transportation service offered by the church, Emma would not have had the opportunity to access this community.

The workplace is a community where social capital can be accessed and can also impede or restrict access to social capital in other communities. This relationship is the premise of this dissertation. Policies including trade, monetary, taxation, debt reduction, etc. effect how business is carried out. Global competition, a high unemployment rate particularly for youth and the unskilled, declining living standards, and a weakened social safety net due to increasing government cutbacks are some of the outcomes of these policies. As a result, Canadians are having to spend more time in work-related activities and are therefore spending less time with their family members (Turcotte, 2007; Duxbury & Higgins, 2001). As “every hour spent at work is one less hour that can be spent with family or friends, or pursuing personal interests” (Canadian Policy Research Networks, 2004), the time to access social capital in these other communities is

greatly diminished. As well, the ability to participate in the workforce greatly affects the access to social capital in choice of neighbourhood to live, the ability to participate in social communities, and has been shown to be strongly associated with health outcomes (Jin, Shah, & Svoboda, 1995). Furthermore, friendly, team-oriented work places may enhance social capital as well.

These examples demonstrate that policy decisions affect the access to social capital directly and indirectly. Policy makers need to be aware of and sensitive to the potential impact on social capital when deciding on policies. There are signs that the awareness is present. Urban planning initiatives such as neighbourhoods zoned for mixed housing and initiatives that encourage employers to implement work/life balance strategies in their workplace (Higgins, Duxbury, & Lyons, 2001) are two policies directed to increasing a version of social capital as one of their outcomes. However, before further progress can be made, there needs to be a process by which to evaluate social capital.

As discussed in the Methodological Implications some fundamentals have been left overlooked. Until a definition for social capital is determined and a consistent form of measuring social capital is agreed upon, it is challenging for policy makers to be sensitive to and incorporate decisions to promote social capital. To borrow from Nannestad in the conclusion of his review of the literature on generalized trust, at this point there are three possible strategies, “[o]ne is to

acknowledge defeat and withdraw. The second is to keep going, producing ever more empirical findings in the hope that, by a process of scientific Darwinism, knowledge in the end will emerge from continuous variations of existing research programs... and the third is to *“begin sifting these results to find out which generalize and which do not”* (Nannestad, 2008, p. 432). I would like to put forward a fourth strategy, stop and regroup. Gain consensus on how social capital is to be conceptualized. Gain consensus on how social capital is to be measured. It will only be then that policy and programmes can consider social capital to improve health.

5.6 Conclusion

It does not appear that social capital has migrated from the neighbourhood to the workplace. Instead, social capital appears to be an unrestricted resource that can be accessed in multiple communities simultaneously. There is considerable intersection between these communities demonstrating that geographic and social communities are not individual entities but are related and inter-related. With that said, social capital accessed in the neighbourhood, the workplace, or other social communities does not appear to influence health. Putnam's contention that social capital can be both a private good and public good that benefits bystanders was not demonstrated for physical or emotional health. Whether social capital was accessed in the high social capital neighbourhoods or low social capital neighbourhoods did not influence health outcomes.

Reference List

- Adam, F. & Roncevic, B. (2003). Social capital: Recent debates and research trends. *Soc.Sci.Info.*, 42, 155-183.
- Adams, J. & White, M. (2003). Evidence concerning social capital and health inequalities is still lacking. *J.Public Health Med.*, 25, 184-185.
- Aldridge, S., Halpern, D., & Fitzpatrick, S. (2002). Social capital - A discussion paper. Performance and Innovation Unit [On-line]. Available: (<http://www.number-10.gov.uk/su/social%capital/socialcapital.pdf>)
- Araya, R., Dunstan, F., Playle, R., Thomas, H., Palmer, S., & Lewis, G. (2006). Perceptions of social capital and the built environment and mental health. *Soc.Sci.Med.*, 62, 3072-3083.
- Bartunek, J. M. & Seo, M. (2002). Qualitative research can add new meanings to quantitative research. *J.Organ.Beh.*, 23, 237-242.
- Baum, F. E. & Ziersch, A. M. (2003). Social capital. *J.Epidemiol.Community H.*, 57, 320-323.
- Baxter, J. & Eyles, J. (1997). Evaluating qualitative research in social geography: Establishing 'rigour' in interview analysis. *Transactions - Institute of British Geographers*, 22, 505-525.
- Bazeley, P. (2004). Issues in mixing qualitative and quantitative approaches to research. In R.Buber, J. Gadner, & L. Richards (Eds.), *Applying qualitative methods to marketing management research* (pp. 141-156). UK: Palgrave Macmillan.
- Berg, B. L. (2009). *Qualitative research methods for the social sciences*. (7th ed.) San Francisco: Allyn & Bacon.

- Borgonovi, F. (2010). A life-cycle approach to the analysis of the relationship between social capital and health in Britain. *Soc.Sci.Med.*, 71, 1927-1934.
- Borrell, C., Muntaner, C., Benach, J., & Artazcoz, L. (2004). Social class and self-reported health status among men and women: What is the role of work organisation, household material standards and household labour? *Soc.Sci.Med.*, 58, 1869-1887.
- Bourdieu, P. (1986). The forms of capital. In J.E.Richardson (Ed.), *Handbook of Theory for Research in the Sociology of Education* (pp. 241-258). Westport: Greenwood Press.
- Brodsky, A. E., Loomis, C., & Marx, C. M. (2006). Expanding the conceptualization of PSOC. In A.T.Fisher, C. C. Sonn, & B. J. Bishop (Eds.), *Psychological Sense of Community* (pp. 319-336). New York: Plenum Publishers.
- Caelli, K., Ray, L., & Mill, J. (2003). 'Clear as Mud': Toward greater clarity in generic qualitative research. *International Journal of Qualitative Methods* [On-line]. Available:
http://www.ualberta.ca/~iiqm/backissues/2_2/html/caellietal.htm
- Canadian Policy Research Networks (2004). Long hours of work. Canadian Policy Research Networks [On-line]. Available:
http://www.jobquality.ca/indicator_e/dem002.stm
- Carlson, E. D. & Chamberlain, R. M. (2003). Social capital, health, and health disparities. *J.Nurs.Scholarsh.*, 35, 325-331.
- Carpiano, R. M. (2007). Neighborhood social capital and adult health: An empirical test of a Bourdieu-based model. *Health Place.*, 13, 639-655.

- Carpiano, R. M. (2008). Actual or potential neighborhood resources and access to them: Testing hypotheses of social capital for the health of female caregivers. *Soc.Sci.Med.*, 67, 568-582.
- Cherryholmes, C. H. (1992). Notes on pragmatism and scientific realism. *Educ.Res.*, 34, 13-17.
- Coleman, J. S. (1988). Social capital in the creation of human capital. *American J.Sociol.*, 94, S95-S120.
- Cresswell, J. W. (2003). *Research design qualitative, quantitative, and mixed methods approaches*. (2nd ed.) Lincoln: Sage Publications.
- Cresswell, J. W. (2009). Mapping the field of mixed methods research. *Journal of Mixed Methods Research* [On-line]. Available: <http://jmmr.sagepub.com>
- Cresswell, J. W., Plano-Clark, V. I., Gutmann, M. L., & Hanson, W. E. (2003). Advanced mixed methods research designs. In A.Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social & behavioral research* (pp. 209-240). Thousand Oaks: Sage Publications.
- Cresswell, J. W. & Plano-Clark, V. L. (2007). *Designing and conducting mixed methods research*. Thousand Oaks: Sage Publications.
- Cresswell, J. W. & Tashakkori, A. (2007). Differing perspectives of mixed methods research. *Journal of Mixed Methods Research* [On-line]. Available: <http://jmmr.sagepub.com/content/1/4/303.refs>
- Dahl, E. & Malmberg-Heimonen, I. (2010). Social inequality and health: The role of social capital. *Sociol.Health Illn.*, 32, 1102-1119.

- De Silva, M. J., Huttly, S. R., Harpham, T., & Kenward, M. G. (2007). Social capital and mental health: A comparative analysis of four low income countries. *Soc.Sci.Med.*, *64*, 5-20.
- De Silva, M. J., McKenzie, K., Harpham, T., & Huttly, S. R. (2005). Social capital and mental illness: A systematic review. *J.Epidemiol.Commun.H.*, *59*, 619-627.
- DeSalvo, K. B., Fisher, W. P., Tran, K., Bloser, N., Merrill, W., & Peabody, J. (2006). Assessing measurement properties of two single-item general health measures. *Qual.Life Res.*, *15*, 191-201.
- DeSalvo, K. B., Jones, T. M., Peabody, J., McDonald, J., Fihn, S., Fan, V. et al. (2009). Health care expenditure prediction with a single item, self-rated health measure. *Med.Care*, *47*, 440-447.
- Ebstyne-King, P. & Furrow, J. L. (2004). Religion as a resource for positive youth development: Religion, social capital, and moral outcomes. *Dev.Psych.*, *40*, 703-713.
- Edwards, R. (2004). Social capital. *Organization Management Journal*, *1*, 81-88.
- Ehrlich, A., Herring, A., Justice, C., Moffat, T., & Warry, W. (2001). *Profile of the Downtown Neighbourhood* (Rep. No. SSHRC 828-1999-1014).
- Ehrlich, A., Herring, A., Justice, C., Moffat, T., & Warry, W. (2001). *Profile of the Mountain Neighbourhood* (Rep. No. SSHRC 828-1999-1014).
- Ehrlich, A., Herring, A., Justice, C., Moffat, T., & Warry, W. (2001). *Profile of the Northeast Neighbourhood* (Rep. No. SSHRC 828-1999-1014).
- Ehrlich, A., Herring, A., Justice, C., Moffat, T., & Warry, W. (2001). *Profile of the Southwest Neighbourhood* (Rep. No. SSHRC 828-1999-1014).

Eyles, J. D. (1999). *Deconstructing the determinants of health at the local level*.

Feilzer, M. Y. (2010). Doing mixed methods research pragmatically: Implications for the rediscovery of pragmatism as a research paradigm. *Journal of Mixed Methods Research* [On-line]. Available: <http://mmr.sagepub.com/content/4/1/6>

Ferlander, S. & Makinen, I. H. (2009). Social capital, gender and self-rated health. Evidence from the Moscow Health Survey 2004. *Soc.Sci.Med.*, 69, 1323-1332.

Freeman, B. (2001). *Hamilton: A people's history*. Toronto: James Lorimer & Company Ltd.

Giordano, G. N., Ohlsson, H., & Lindstrom, M. (2011). Social capital and health- Purely a question of context? *Health Place.*, 17, 946-953.

Glaeser, E. I., Laibson, D., & Sacerdote, B. (2002). An economic approach to social capital. *Econ.J.*, 112, F437-F458.

Goldberg, D. P. (1972). *The Detection of Psychiatric Illness by Questionnaire*. Oxford: Oxford University Press.

Goldberg, D. P., Gater, R., Sartorius, N., Ustun, T. B., Piccinelli, M., Gureje, O. et al. (1997). The validity of two versions of the GHQ in the WHO study of mental illness in general health care. *Psychol.Med.*, 27, 191-197.

Goldberg, D. P., McDowell, I., & Newell, C. (1996). *Measuring health: A guide to rating scales and questionnaires*. (2nd ed.) New York: Oxford University Printing.

- Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educ.Eval.Policy An.*, 11, 255-274.
- Guba, E. G. & Lincoln, Y. S. (1981). *Effective evaluation: Improving the usefulness of evaluation results through responsive and naturalistic approaches*. San Francisco: Jossey-Bass.
- Harpham, T. (2002). *Measuring the social capital of children* (Rep. No. Working Paper 4) [On-line]. Available:
<http://94.126.106.9/r4d/PDF/Outputs/YoungLives/R7874wp4.pdf>.
- Harpham, T., Grant, E., & Thomas, E. (2002). Measuring social capital within health surveys: Key issues. *Health Policy Plan.*, 17, 106-111.
- Heckathorn, D. D. (2002). Respondent-driven sampling II: Deriving valid population estimates from chain-referral samples of hidden populations. *Social Problems* [On-line]. Available:
<http://www.respondentdrivensampling.org/reports/RDS1.pdf>
- Helliwell, J. F. & Huang, H. (2005). *How's the job? Well-being and social capital in the workplace* (Rep. No. NBER Working Paper #11759). National Bureau of Economic Research [On-line]. Available:
<http://digitalcommons.ilr.cornell.edu/ilrreview/vol63/iss2/2/>.
- Helliwell, J. F. & Putnam, R. D. (2004). The social context of well-being. *Philos.Trans.R.Soc.Lond B Biol.Sci.*, 359, 1435-1446.
- Hsieh, H. F. & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qual.Health Res.*, 15, 1277-1288.
- Human Resources and Skills Development Canada (2011). Occupational structure by skill type. Human Resources and Skills Development Canada

[On-line]. Available:

<http://www5.hrsdc.gc.ca/NOC/English/NOC/2006/OccupationIndex.aspx>

- Idler, E. L. & Benyamini, Y. (1997). Self-rated health and mortality: A review of twenty-seven community studies. *J.Health Soc.Behav.*, 38, 21-37.
- Islam, M. K., Merlo, J., Kawachi, I., Lindstrom, M., Burstrom, K., & Gerdtham, U. G. (2006). Does it really matter where you live? A panel data multilevel analysis of Swedish municipality-level social capital on individual health-related quality of life. *Health Econ.Policy Law*, 1, 209-235.
- Johnson, B. & Turner, L. A. (2003). Data Collection Strategies in Mixed Methods Research. In A.Tashakkori & C. Teddlie (Eds.), *Handbook of Mixed Methods in Social & Behavioral Research* (pp. 297-319). Thousand Oaks: Sage Publications.
- Johnson, J. V. & Hall, E. M. (1988). Job strain, work place social support, and cardiovascular disease: A cross-sectional study of a random sample of the Swedish working population. *Am.J.Public Health*, 78, 1336-1342.
- Kawachi, I. (2006). Commentary: Social capital and health: making the connections one step at a time. *Int.J.Epidemiol.*, 35, 989-993.
- Kawachi, I., Kennedy, B. P., & Glass, R. (1999). Social capital and self-rated health: A contextual analysis. *Am.J.Public Health*, 89, 1187-1193.
- Kawachi, I., Kennedy, B. P., Lochner, K., & Prothrow-Stith, D. (1997). Social capital, income inequality, and mortality. *Am.J.Public Health*, 87, 1491-1498.
- Kawachi, I., Kim, D., Coutts, A., & Subramanian, S. V. (2004). Commentary: Reconciling the three accounts of social capital. *Int.J.Epidemiol.*, 33, 682-690.

- Kearns, R. A. & Joseph, A. E. (1993). Space in its place: Developing the link in medical geography. *Soc.Sci.Med.*, 37, 711-717.
- Kemper, E. A., Stringfeld, S., & Teddlie, C. (2003). Mixed methods sampling: Strategies in social science research. In A.Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social & behavioral research* (pp. 273-296). Thousand Oaks: Sage Publications.
- Kim, D. & Kawachi, I. (2006). A multilevel analysis of key forms of community- and individual-level social capital as predictors of self-rated health in the United States. *J.Urban Health*, 83, 813-826.
- Kim, D. & Kawachi, I. (2007). U.S. state-level social capital and health-related quality of life: Multilevel evidence of main, mediating, and modifying effects. *Ann.Epidemiol.*, 17, 258-269.
- Kim, D., Subramanian, S. V., Gortmaker, S. L., & Kawachi, I. (2006). US state- and county-level social capital in relation to obesity and physical inactivity: A multilevel, multivariable analysis. *Soc.Sci.Med.*, 63, 1045-1059.
- Kim, D., Subramanian, S. V., & Kawachi, I. (2006). Bonding versus bridging social capital and their associations with self rated health: A multilevel analysis of 40 US communities. *J.Epidemiol.Commun.H.*, 60, 116-122.
- Kouvonen, A., Kivimaki, M., Vahtera, J., Oksanen, T., Elovainio, M., Cox, T. et al. (2006). Psychometric evaluation of a short measure of social capital at work. *BMC.Public Health*, 6, 251.
- Kouvonen, A., Oksanen, T., Vahtera, J., Stafford, M., Wilkinson, R., Schneider, J. et al. (2008). Low workplace social capital as a predictor of depression: The Finnish Public Sector Study. *Am.J.Epidemiol.*, 167, 1143-1151.

- Lavis, J. N. & Stoddart, G. (1999). *Social cohesion and health*. McMaster University Centre for Health Economics and Policy Analysis Working Paper Series, Rep. No. 99-09.
- Lewicka, M. (2011). Place attachment: How far have we come in the last 40 years? *J. Environ. Psychol.*, 31, 207-230.
- Liukkonen, V., Virtanen, P., Kivimaki, M., Pentti, J., & Vahtera, J. (2004). Social capital in working life and the health of employees. *Soc. Sci. Med.*, 59, 2447-2458.
- Loscocco, K. A. & Spitze, G. (1990). Working conditions, social support, and the well-being of female and male factory workers. *J. Health Soc. Behav.*, 31, 313-327.
- Lowe, G. S. & Schellenberg, G. (2001). *What's a good job? The importance of employment relationships* (Rep. No. CPRN Study No. W/05) [On-line]. Available: <http://www.grahamlowe.ca/documents/44/Good%20job%20-%20exec%20summary.pdf>.
- Luginaah, I., Jerrett, M., Elliott, S., Eyles, J., Parizeau, K., Birch, S. et al. (2001). Health profiles of Hamilton: Spatial characterisation of neighbourhoods for health investigations. *GeoJournal*, 53, 135-147.
- Maas, C. J. M. & Hox, J. J. (2005). Sufficient sample-sizes for multilevel modeling. *Methodology*, 1, 86-92.
- Mansyur, C., Amick, B. C., Harrist, R. B., & Franzini, L. (2008). Social capital, income inequality, and self-rated health in 45 countries. *Soc. Sci. Med.*, 66, 43-56.
- Marks, S. R. (1994). Intimacy in the public realm: The case of co-workers. *Soc. Forces*, 72, 843-858.

Marston, S. A. (2000). The social construction of scale. *Prog.Hum.Geog.*, 24, 219-242.

McCracken, G. (1988). *The long interview*. (vols. 13) London: Sage Publications.

Mcleod, S. A. (2008). Social Identity Theory. Simply Psychology [On-line].
Available: <http://www.simplypsychology.org/social-identity-theory.html>

McPherson, M., Smith-Lovin, L., & Cook, J. M. (2001). Birds of a feather: Homophily in social networks. *Annu.Rev.Sociol.*, 27, 415-444.

Milne, J. & Oberle, K. (2005). Enhancing rigor in qualitative description: A case study. *J.Wound.Ostomy.Continence.Nurs.*, 32, 413-420.

Milne, J. & Oberle, K. (2005). Enhancing rigor in qualitative description: a case study. *J.Wound.Ostomy.Continence.Nurs.*, 32, 413-420.

Moineddin, R., Matheson, F. I., & Glazier, R. H. (2007). A simulation study of sample size for multilevel logistic regression models. *BMC.Med.Res.Methodol.*, 7, 34.

Moore, S., Bockenholt, U., Daniel, M., Frohlich, K., Kestens, Y., & Richard, L. (2011). Social capital and core network ties: A validation study of individual-level social capital measures and their association with extra- and intra-neighborhood ties, and self-rated health. *Health Place*, 17, 536-544.

Morse, J. M. (2003). Principles of mixed methods and multimethod research design. In A.Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social & behavioral research* (pp. 189-208). Thousand Oaks: Sage Publications.

- Morse, J. M., Barrett, M., Mayan, M., Olson, K., & Spiers, J. (2002). Verification strategies for establishing reliability and validity in qualitative research. *Int.J.Qual.Meth.*, 1, 13-22.
- Muntaner, C. & Gomez, M. B. (2003). Qualitative and quantitative research in social epidemiology: Is complementarity the only issue? *Gac.Sanit.*, 17 Suppl 3, 53-57.
- Nannestad, P. (2008). What have we learned about generalized trust, if anything? *Annu.Rev.Polit.Sci.*, 11, 413-436.
- Neergaard, M. A., Olesen, F., Andersen, R. S., & Sondergaard, J. (2009). Qualitative description - The poor cousin of health research? *BMC.Med.Res.Methodol.* [On-line]. Available: <http://www.biomedcentral.com/1471-2288/9/52>.
- Nieminen, T., Martelin, T., Koskinen, S., Aro, H., Alanen, E., & Hyypä, M. T. (2010). Social capital as a determinant of self-rated health and psychological well-being. *Int.J.Public Health*, 55, 531-542.
- O'Cathain, A. (2009). Mixed Methods Research in the Health Sciences. *Journal of Mixed Methods Research* [On-line]. Available: <http://jmmr.sagepub.com>.
- Oksanen, T., Kouvonen, A., Kivimäki, M., Pentti, J., Virtanen, M., Linna, A. et al. (2008). Social capital at work as a predictor of employee health: Multilevel evidence from work units in Finland. *Soc.Sci.Med.*, 66, 637-649.
- Oksanen, T., Kouvonen, A., Vahtera, J., Virtanen, M., & Kivimäki, M. (2009). Prospective study of workplace social capital and depression: Are vertical and horizontal components equally important? *J.Epidemiol.Community Health*.

- Osberg, L. (2008). A quarter century of economic inequality in Canada: 1981-2006. Canadian Center for Policy Alternatives [On-line]. Available: http://www.policyalternatives.ca/sites/default/files/uploads/publications/National_Office_Pubs/2008/Quarter_Century_of_Inequality.pdf.
- Patton, M. Q. (1999). Enhancing the quality and credibility of qualitative analysis. *Health Serv.Res.*, *34*, 1189-1208.
- Penninkilampi-Kerola, V., Miettunen, J., & Ebeling, H. (2006). A comparative assessment of the factor structures and psychometric properties of the GHQ-12 and the GHQ-20 based on data from a Finnish population-based sample. *Scand.J.Psychol.*, *47*, 431-440.
- Perkins, D. D. & Long, D. A. (2002). Neighborhood sense of community and social capital a multi-level analysis. In A.T.Fisher, C. C. Sonn, & B. J. Bishop (Eds.), *Psychological sense of community. Research, applications and implications* (pp. 291-318). New York: Kluwer Academic/Plenum Publishers.
- Petrou, S. & Kupek, E. (2008). Social capital and its relationship with measures of health status: Evidence from the Health Survey for England 2003. *Health Econ.*, *17*, 127-143.
- Poortinga, W. (2006). Social capital: an individual or collective resource for health? *Soc.Sci.Med.*, *62*, 292-302.
- Portes, A. (1998). Social capital: its origins and applications in modern sociology. *Annu.Rev.Sociol.*, *24*, 1-24.
- Portes, A. (2000). The two meanings of social capital. *Sociol.Forum*, *15*, 1-12.
- Portes, A. & Landolt, P. (2000). Social capital: Promise and pitfalls of its role in development. *J.Lat.Amer.Stud.*, *32*, 529-547.

Putnam, R. (1995). Bowling alone: America's declining social capital. *Journal of Democracy* [On-line]. Available:

http://128.220.50.88/demo/journal_of_democracy/v006/putnam.html

Putnam, R. (1995). *Making Democracy Work: Civic Traditions in Modern Italy*. New Jersey: Princeton University Press.

Putnam, R. (2000). *Bowling alone*. New York: Simon & Schuster.

Putnam, R. (2000). *Bowling alone: The Collapse and Revival of American Community*. New York: Simon & Schuster.

Putnam, R. (2006). Work and social capital. John F. Kennedy School of Government, Harvard University [On-line]. Available:
<http://www.bettertogether.org/pdfs/Work.pdf>.

QSR International Pty. Ltd. (2012). NVivo. <http://www.qsrinternational.com> [On-line]. Available: support@qsrinternational.com | www.qsrinternational.com

QualityMetric Incorporated (2006). SF-36.org. Medical Outcomes Trust [On-line]. Available: <http://www.sf-36.org>

Requena, F. (2003). Social capital, satisfaction and quality of life in the workplace. *Soc. Indic. Res.* 61[3], 331-360.

Richards, L. (2005). *Handling Qualitative Data A Practical Guide*. Thousand Oaks: Sage Publications.

Saguaro Seminar (2000). *Bettertogether* Cambridge: Kennedy School of Government, Harvard University [On-line]. Available:
<http://www.bettertogether.org/thereport.htm>.

- Sandelowski, M. (2000). Combining qualitative and quantitative sampling, data collection, and analysis techniques in mixed-method studies. *Res.Nurs.Health, 23*, 246-255.
- Sandelowski, M. (2000). Whatever happened to qualitative description? *Res.Nurs.Health, 23*, 334-340.
- Sandelowski, M. (2001). Real qualitative researchers do not count: The use of numbers in qualitative research. *Res.Nurs.Health, 24*, 230-240.
- Sandelowski, M. (2007). Words that should be seen but not written. *Res.Nurs.Health, 30*, 129-130.
- Sandelowski, M. (2010). What's in a name? Qualitative description revisited. *Res.Nurs.Health, 33*, 77-84.
- Sandelowski, M., Voils, C. I., & Knafl, G. (2009). On Quantitizing. *J.Mix.Methods Res., 3*, 208-222.
- Sandelowski, M. J. (2010). Getting it right. *Res.Nurs.Health, 33*, 1-3.
- Sapp, A. L., Kawachi, I., Sorensen, G., LaMontagne, A. D., & Subramanian, S. V. (2010). Does workplace social capital buffer the effects of job stress? A cross-sectional, multilevel analysis of cigarette smoking among U.S. manufacturing workers. *J.Occup.Environ.Med., 52*, 740-750.
- Schultz, J., O'Brien, A. M., & Tadesse, B. (2008). Social capital and self-rated health: Results from the US 2006 social capital survey of one community. *Soc.Sci.Med., 67*, 606-617.
- Shortt, S. E. (2004). Making sense of social capital, health and policy. *Health Policy, 70*, 11-22.

Sin, C. H. (2003). Interviewing in 'place': The socio-spatial construction of interview data. *Area*, 35, 305-312.

Snelgrove, J. W., Pikhart, H., & Stafford, M. (2009). A multilevel analysis of social capital and self-rated health: Evidence from the British Household Panel Survey. *Soc.Sci.Med.*, 68, 1993-2001.

Stafford, M., De, S. M., Stansfeld, S., & Marmot, M. (2008). Neighbourhood social capital and common mental disorder: Testing the link in a general population sample. *Health Place*, 14, 394-405.

Statistics Canada (1999). General Social Survey: Time use. Statistics Canada, The Daily [On-line]. Available:
<http://www.statcan.ca/Daily/English/991109/d991109a.htm>

Statistics Canada (2004). Selected religions, for census metropolitan areas. Statistics Canada [On-line]. Available:
<http://www12.statcan.ca/english/census01/products/highlight/Religion/Page.cfm?Lang=E&Geo=CMA&View=2a&Code=537&Table=1&StartRec=1&Sort=2&B1=537&B2=1>

Statistics Canada (2005). Child care. Statistics Canada, The Daily [On-line]. Available: <http://www.statcan.ca/Daily/English/050207/d050207b.htm>

Statistics Canada (2006). Labour force, employed and unemployed, numbers and rates, by province (Quebec, Ontario, Manitoba). Statistics Canada [On-line]. Available: <http://www40.statcan.ca/101/cst01/labor07b.htm>

Statistics Canada (2011). Residential Telephone Service Survey. Statistics Canada, The Daily [On-line]. Available: <http://www.statcan.gc.ca/daily-quotidien/060405/dq060405b-eng.htm>

- Stone, W. (2001). *Measuring social capital. Towards a theoretically informed measurement framework for researching social capital in family and community life* (Rep. No. 24). Australia: Australian Institute of Family Studies [On-line] Available: <http://www.aifs.gov.au/institute/pubs/RP24.pdf>.
- Stone, W., Gray, M., & Hughes, J. (2003). Social capital at work - An Australian illustration. *Horizons* [On-line] Available: <http://www.aifs.gov.au/institute/pubs/respaper/RP31.pdf>.
- Stone, W., Gray, M., & Hughes, J. (2003). *Social capital at work - How family, friends and civic ties relate to labour market outcomes* (Rep. No. 31).
- Stone, W. & Hughes, J. (2002). *Social capital - Empirical meaning and measurement validity* (Rep. No. 27). Melbourne: Australian Institute of Family Studies [On-line]. Available: <http://www.aifs.gov.au/institute/pubs/RP27.pdf>.
- Super, D. E. (1980). A life span, life space approach to career development. *J.Vocat.Beh.*, 13, 282-298.
- Szreter, S. & Woolcock, M. (2004). Health by association? Social capital, social theory, and the political economy of public health. *Int.J.Epidemiol.*, 33, 650-667.
- Tashakkori, A. (2009). Are We There Yet? *Journal of Mixed Methods Research* [On-line]. Available: <http://jmmr.sagepub.com>
- Tashakkori, A. & Creswell, J. W. (2007). The new era of mixed methods. *Journal of Mixed Methods Research* [On-line]. Available: <http://jmmr.sagepub.com>
- Tashakkori, A. & Creswell, J. W. (2007). Exploring the nature of research questions in mixed methods research. *Journal of Mixed Methods Research* [On-line]. Available: <http://jmmr.sagepub.com>

- Taylor, S. M. (1987). Social change in Hamilton, 1961-1981. In M. Dear, J. J. Drake, & L. G. Reeds (Eds.), *Steel City Hamilton and Region* (pp. 138-155). Toronto: University of Toronto Press.
- Theorell, T. & Karasek, R. A. (1996). Current issues relating to psychosocial job strain and cardiovascular disease research. *J. Occup. Health Psychol.*, 1, 9-26.
- Timberlake, S. (2005). Social capital and gender in the workplace. *Journal of Management Development*, 24, 34-44.
- U.S. Department of Health and Human Services (2010). Cognitive and Emotional Health Project: The Healthy Brain. U.S. Department of Health and Human Services [On-line]. Available: <http://trans.nih.gov/CEHP/HBPdemo-socialsupport-define.htm>.
- Uslaner, E. M. (2003). The moral foundations of trust. [On-line]. Available: <http://www.bsos.umd.edu/gvpt/uslaner/uslanermoralfoundations.pdf>.
- Uslaner, E. M. (2008). The foundations of trust: Macro and micro. *Cam. J. Econ.*, 32, 289-294.
- Vaananen, A., Kouvonen, A., Kivimaki, M., Oksanen, T., Elovainio, M., Virtanen, M. et al. (2009). Workplace social capital and co-occurrence of lifestyle risk factors: The Finnish Public Sector Study. *Occup. Environ. Med.*, 66, 432-437.
- Vaananen, A., Toppinen-Tanner, S., Kalimo, R., Mutanen, P., Vahtera, J., & Peiro, J. M. (2003). Job characteristics, physical and psychological symptoms, and social support as antecedents of sickness absence among men and women in the private industrial sector. *Soc. Sci. Med.*, 57, 807-824.

- van Kemenade, S. (2003). *Social capital as a health determinant. How is it measured?* (Rep. No. 02-08). Ottawa: Policy Research Division, Strategic Policy Directorate, Population and Public Health Branch, Health Canada. [On-line]. Available: http://www.exclusion.net/images/pdf/752_latuk_engsocial2.pdf
- Veenstra, G. (2000). Social capital, SES and health: An individual-level analysis. *Soc.Sci.Med.*, 50, 619-629.
- Veenstra, G. (2002). Social capital and health (plus wealth, income inequality and regional health governance). *Soc.Sci.Med.*, 54, 849-868.
- Veenstra, G. & Lomas, J. (1999). Home is where the governing is: Social capital and regional health governance. *Health Place*, 5, 1-12.
- Veenstra, G., Luginaah, I., Wakefield, S., Birch, S., Eyles, J., & Elliott, S. (2005). Who you know, where you live: Social capital, neighbourhood and health. *Soc.Sci.Med.*, 60, 2799-2818.
- von dem Knesebeck, O., Dragano, N., & Siegrist, J. (2005). Social capital and self-rated health in 21 European countries. *GMS Psycho-Social-Medicine*, 2, 1-9.
- Webber, M. & Fincher, R. (1987). Urban policy in Hamilton in the 1980s. In M.J.Dear, J. J. Drake, & L. G. Reeds (Eds.), *Steel City Hamilton and Region* (pp. 238-257). Toronto: University of Toronto Press.
- Westlund, H. & Nilsson, E. (2003). Measuring enterprises' investments in social capital - A pilot study. In European Regional Science Association. [On-line]. Available:<http://www.jyu.fi/ersa2003/>.
- Whittemore, R., Chase, S. K., & Mandle, C. L. (2001). Validity in qualitative research. *Qual.Health Res.*, 11, 522-537.

Williams, A., Kitchen, P., DeMiglio, L., Eyles, J., & Newbold, B. (2010). Sense of place in Hamilton, Ontario: Empirical results of a neighborhood-based survey. *Urban Geogr.*, 31, 905-931.

Wilson, K., Elliott, S., Law, M., Eyles, J., Jerrett, M., & Keller-Olaman, S. (2004). Linking perceptions of neighbourhood to health in Hamilton, Canada. *J.Epidemiol.Commun.H.*, 58, 192-198.

Winter, I. (2000). Towards a theorised understanding of family life and social capital. Australian Institute of Family Studies. [On-line]. Available: <http://www.aifs.gov.au/institute/pubs/WP21.pdf>.

Wolf, A. (1998). Developing civil society: Can the workplace replace bowling? *Responsive Community* 8[2], 41-47.

Wood, H. A. (1987). Emergence of the modern city. In M.J.Dear, J. J. Drake, & L. G. Reeds (Eds.), *Steel City Hamilton and Region* (pp. 119-137). Toronto: University of Toronto Press.

Woolley, C. M. (2009). Meeting the mixed methods challenge of integration in a sociological study of structure and agency. *Journal of Mixed Methods Research* [On-line]. Available: <http://jmmr.sagepub.com>

Wrigley, N. (1985). *Categorical Data Analysis for Geographers and Environmental Scientists*. New York: Longman.

Wrobel, K., Raskin, P., Maranzano, V., Leibholz-Frankel, J., & Beacom, A. (2003). Career stages. Sloan Work and Family Research Network [On-line]. Available: <http://wfnetwork.bc.edu>

Yin, R. K. (2006). Mixed methods research: Are the methods genuinely integrated or merely parallel? *Research in the Schools*, 13, 41-47.

Ziersch, A. M. (2005). Health implications of access to social capital: Findings from an Australian study. *Soc.Sci.Med.*, 61, 2119-2131.

Appendix 1

Autobiography of Author

I was born in the City of Hamilton, Ontario in 1954. My father was a first-generation Italian immigrant and my mother's family settled in Saskatchewan from Ireland many generations ago. My mother moved with her family to Hamilton when she was in her early teens. When my parents married, they spent their first five years living with my father's parents in a predominantly Italian neighbourhood in the northeast area of the city. We had a traditional family structure. My father worked as an electrician in the Steel Company of Canada (Stelco) and my mother stayed home and raised four children. After my parents saved enough money for a down payment on a house, and the higher wages the union had won at Stelco, they moved to a 'comfortable bungalow' on the central mountain. My siblings and I were enrolled in the public school system. We all went to work and married shortly after high school.

Most of my occupations consisted of secretarial positions. In 1979, I worked as a labourer in Stelco. It was not long after that Stelco went through great economic hardship and a 125-day strike in 1981. When the strike was over thousands of employees, including myself, were not recalled. I was intrigued by the union and company relationship and enrolled at McMaster University in 1986 in Labour Studies and Economics on a part-time basis. When I completed my

degree, I took a position in the Department of Clinical Epidemiology and Biostatistics at McMaster University where I had the opportunity to further my studies in the Health Research Methods Program on a part-time basis. My course emphasis was in health economics and statistics. After working many years in the capacity of project coordinator for the Center for Evaluation of Medicines, Cancer Care Ontario, and Public Health, I decided again to further my studies and began a PhD in the Department of Geography and Earth Sciences in the field of Human Geography. Soon after I started my studies, the company my husband worked for asked us to move to Tennessee.

The distance created numerous challenges in carrying out my research that was located in the City of Hamilton. I was only able to return to Hamilton one week every three months. I had to try to schedule interviews for the week I was here. At most, I could schedule three interviews during a day for a few days. This is a demanding schedule for an experienced interviewer, which I was not. One of the weeks I was in Hamilton was during a snowstorm. All the interviews cancelled and were rescheduled for the next visit three months later. This distance was the main cause for not reaching the proposed sample for the interviews. After five years in the United States my husband and I moved back to Ontario and now live in Brantford, about a half hour from Hamilton. The move to Tennessee was a valuable experience because it brought to the forefront the meaning and the importance of the topic of this dissertation, social capital. Having lived my entire

life in Hamilton with family and friends always close by, I had no idea what it would be like not to have a support network around me.

These events shaped my interpretation of the interviews. Like experiences permitted me to have a deeper understanding of the neighbourhoods and workplaces. Studies in multiple disciplines provided me with different theoretical views with which to consider the objectives of this dissertation. I hope this combination provides an accurate and rich interpretation and analysis of the residents' thoughts.

Appendix 2

Telephone Message Script

Hello, Mr./Mrs./Ms. _____. It is Sandra Micucci - 905-963-1209 - a PhD student at McMaster University. I am working in an ongoing project that you participated in a telephone survey for a few years ago and said that you would be interested in participating in future phases of this study (Deconstructing the Determinants of Health).

I will try to get hold of you in the next few days to see if you would like to participate.

Thank you.

Appendix 3

Draft Telephone Script – Eligibility and Introduction

1. Hi, my name is Sandra Micucci and I am a PhD student at McMaster University. Someone in your household took part in earlier stages of the Deconstructing the Determinants of Health project and I was wondering if they are available?

If Yes, go to 2.

If No, go to 4.

2. A few years ago you took part in two telephone interviews about health and community. At that time you said that you would be interested in participating in future studies and that is why I am calling you today.

I would like to interview you in person about your feelings on how involved and supportive people are in your neighbourhood and workplace. To be eligible for this study you must be presently working full-time. Are you presently working full-time?

If No, I am sorry that you do not meet the eligibility criteria to participate in this study. Thank you so much for your time and your participation in previous interviews.

May I send you some information about the new study so that you can decide whether or not you would like to participate?

If No, thank you for your time and your participation in previous studies.

Great, is e-mail or regular mail better? I will phone you again in about two weeks, after you have time to read the information. My contact information will be included so if you have any questions you could contact me.

Again, thank you and I will talk to you soon.

Appendix 4



School of Geography
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L8S 4K1

Letter of Information

Social capital and health

Does where you acquire social capital make a difference?

Investigators:

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Department of Geography and Earth Sciences
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Hamilton, Ontario, Canada
(905) 963-1209
micuccis@mcmaster.ca

Dr. John Eyles (Faculty Supervisor)
Department of Geography and Earth Sciences
McMaster University
Hamilton, Ontario, Canada
(905) 525-9140 ext. 23152
eyles@mcmaster.ca

Website (Study Results):

www.mcmaster.ca/mieh/

Purpose of the Study

Recently it has been suggested that one way to keep people healthy is through developing cohesive and supportive communities where people are involved with each other and support and help one another – or in other words, communities that are high in social capital. The purpose of this study is to investigate where people find their social capital and how this relates to health. I will be focusing on two main places people find social capital, where they live and where they work. I will be talking to people in two neighbourhoods in Hamilton to try to see if there are differences in health perceptions based on where people find their social capital.

Procedures involved in the Research

I will be visiting with you for about an hour to discuss where you feel you find your social capital, whether it is in your neighbourhood, your workplace, or other places. I will also ask you for some demographic information like your age, education, income, and household structure during the interview. All interviews will be voice recorded, with your permission, so that I can accurately examine the information you provided in the interview at a later date.

Potential Harms, Risks or Discomforts:

It is not likely that there will be any harms or discomforts associated with this study on time-use and health, but you may feel uncomfortable discussing some issues with me. If this is the case, you do not need to answer questions that make you uncomfortable or that you do not want to answer.

Potential Benefits

You will have the opportunity to discuss neighbourhood and workplace issues surrounding social capital. The information you provide will be helpful increasing our understanding of where people find social capital and how this relates to health.

Payment or Reimbursement:

There is no financial compensation for this project.

Confidentiality:

Anything that you say will not be shared with anyone else. Also your privacy will be completely respected and anything that could identify you will not be shared. In the final thesis and in summary reports, your real name will be replaced by a pseudonym to ensure that the information that you provide in your interview remains confidential.

The information obtained in this interview will only be available to me and my faculty supervisor. In order to keep all interview material secure, the information will be locked in a cabinet and electronic files will be password protected.

Participation:

Your participation in this study is voluntary. It is your choice to be part of the study or not. If you decide to participate, you can decide to stop at any time, even after signing the consent form. If you do not want to answer some of the questions you do not have to, but you can still be in the study. If you decide to stop participating, there are no consequences for you. The data you provided will be destroyed unless you tell me it is okay to use it.

Information About the Study Results:

You may obtain information about the results of the study by visiting www.mcmaster.ca/mieh/. You may also request a paper copy of a summary of research results. Results of this project can be expected to be viewed by the end of 2008.

Information about Participating as a Study Subject:

I am looking forward to meeting with you. I will phone you again in about a week to answer any questions and set up a time for us to meet. If you have questions or require more information about the study itself, please contact me, Sandra Micucci, or Dr. John Eyles (see contact information above).

This study has been reviewed and approved by the McMaster Research Ethics Board. If you have concerns or questions about your rights as a participant or about the way the study is conducted, you may contact:

McMaster Research Ethics Board Secretariat
Telephone: (905) 525-9140 ext. 23142
c/o Office of Research Services
E-mail: ethicsoffice@mcmaster.ca

Appendix 5

Draft Telephone Script - Recruitment

1. Hi. Is name there? It is Sandra Micucci from McMaster University.

If No, go to 3.

Hi name, I talked to you two weeks ago about participating in another stage of the Deconstructing the Determinants of Health project. Did you receive the information package I sent you?

If No, may I send it to you again? Please let me check your address. I will phone you in a week to make sure you receive it.

Do you have any questions?

Are you interested in participating in this stage of the study?

If No, go to 4.

2. Thank you so much for your willingness to participate in the interview. I would like to meet with you between _____.

When would be a good time to meet with you during this period?
Where would you like to meet?

I will contact you again the day before the interview to confirm the set time and place. If you have any questions in the meantime please do not hesitate to contact me at my McMaster University Office at (905) 525-9140 x 23152.

Thank you again for your time.

3. Is it okay if I call back at a different time? When will name be available?

Thank you so much. I will try back at that time. If you have any questions please contact me at my McMaster University Office at (905) 525-9140 x 23152.

4. Thank you so much for your time and your participation in previous interviews. If you change your mind or have any questions you can contact me at my McMaster University Office at (905) 525-9140 x 23152. Thanks again.

Appendix 6

Consent Form

Social capital and health
Does where you acquire social capital make a difference?

I have read the information presented in the information letter about a study being conducted by Sandra Micucci and Dr. John Eyles, of McMaster University. I have had the opportunity to ask questions about my involvement in this study, and to receive any additional details I wanted to know about the study. I understand that I may withdraw from the study at any time, if I choose to do so, and I agree to participate in this study. I have been given a copy of this form.

 Name of Participant

 Signature of Participant

I give permission for the interview to be audiotaped.

 Name of Participant

 Signature of Participant

In my opinion, the person who has signed above is agreeing to participate in this study voluntarily, and understands the nature of the study and the consequences of participation in it.

 Signature of Researcher

Investigators:
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Website (Study Results): www.mcmaster.ca/mieh/

Appendix 7

Interview Template

Qualitative Interview Introduction

My name is Sandra Micucci. I am a PhD student at McMaster University with an interest in health promotion. Recently it has been suggested that one way to keep people healthy is through developing cohesive and supportive communities where people are involved with each other and support and help one another – or in other words communities that are high in social capital. Social capital has been said to be the glue that binds a community together and enables people to build networks and relationships with other people. When I say community, I mean a social group that can be the neighbourhood you live in, your workplace, place of worship, school, extended family, a club or hobby organization such as a bridge club, softball league, etc.

I will be talking to people in a number of neighbourhoods in Hamilton to see if the amount of social capital they have and what community they get social capital from influences health.

Today, I would like to ask you some questions about your neighbourhood community, your work community, and your health. The interview takes about one hour. *There are no right or wrong answers.* I will be recording our discussion so that I do not miss anything that you say.

Before we start the interview I would like to review the Letter of Information I sent you and will need to get you to sign a consent form. As researchers we operate under a strict code of ethics – and as such we cannot interview people unless we have their signed consent.

Italics represent prompts

Please let me expand on the notion of social capital. Social capital is defined as features of social organizations - sports leagues, running or walking groups, neighbourhood watch, recreation committees, choir groups, etc. - such as networks, norms/standards and social trust that make possible coordination and cooperation for mutual benefit/coming or working together to achieve a common goal

1. First, what do you consider your neighbourhood community?

2. In your experience, is social capital evident in your neighbourhood?

2a - What networks such asexist in your neighbourhood?

- *are you involved in any of these networks?*

2b - Do people in your neighbourhood have a feeling of a local identity, a sense of solidarity and equality with their neighbours?

2c - Do people in your neighbourhood trust their neighbours and feel that if they needed help and support their neighbours would be there for them?

Would you do the same for them/them for you?

3. Not only is the neighbourhood a community where social capital may take place but the workplace is a community where social capital can take place as well. Please tell me a bit about your job and your workplace?

job title
 how long have you worked there
 work hours (shift work)
 size of company
 any hazards
 commute

4. What do you consider your workplace community?

5. In your experience, is social capital evident in your workplace?

6a - Do people in your workplace have a together attitude that you are all on the same side?

6b - Do people in your workplace feel like they are understood and accepted by the people they work with?

6c - Do people in your workplace keep each other informed about work-related issues or is information hidden from one another?

6d - Do people in your workplace cooperate with each other to develop and apply new ideas?

6e - Do you feel that supervisors/organization treat people with consideration and respect?

6f - Do people in your workplace trust their supervisor/organization?

- 6. Like I said earlier, as well as the neighbourhood and workplace community you could consider many other communities such as family, church or a community that revolves around a sport or hobby as places where social capital exists as well. With the total adding up to 100%, what percent of your social capital comes from where?**

If other communities were rated ask about the communities?

- 7. How do you think social capital affects people's health?**

- 8. Please tell me a bit about yourself? (*if you can observe the response do not prompt)**

- gender*
- age (<>45)*
- marital status*
- how long have you lived in this neighbourhood
- how long have you lived in Hamilton/Ontario/Canada
- did you go to school in Hamilton
- what schools did you attend (for education level)
- what languages do you speak in your home?
- household income (<>\$30,000)*

Appendix 8

Social Capital Context Tool

As well as the neighbourhood and workplace communities you could consider other communities such as family, church or a community that revolves around a sport or hobby as places where social capital exists as well.

With the total adding up to 100%, what percent of your social capital comes from where?

A large, empty rectangular box with a thick black border, intended for the user to input their responses to the survey question above.

Appendix 9

Physical and Emotional Health Measurement Tools

In general, compared to other people your age, how would you say your physical health is?

excellent very good good fair poor

We would like to know how your health has been in general, over the past few weeks.

Please answer the following questions by putting a check mark in the that best applies to you.

Have you recently ...	much less than usual	same as usual	more than usual	much more than usual
Been able to concentrate on whatever you are doing?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lost much sleep over worry?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Felt that you were playing a useful part in things?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Felt capable of making decisions about things?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Felt constantly under strain?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Felt that you couldn't overcome your difficulties?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Been able to enjoy your normal day-to-day activities?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Been able to face up to your problems?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Been feeling unhappy and depressed?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Been losing self-confidence in yourself?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Been thinking of yourself as a worthless person?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Been feeling reasonably happy, all things considered?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix 10

Thank you for Participating Letter



**School of Geography
and Earth Sciences**

1280 Main Street West
Hamilton, Ontario, Canada
L8S 4K1

Dear Participant,

Thank you again for participating in this research. Your participation will help us find how social capital affects people's health and further research in the field of determinants of health.

If this interview has raised any questions or concerns, please do not hesitate to contact the investigator - contact information listed below. As well, I have listed some contact information of other organizations that may be of service to you.

Again, thank you for your participation.

Sandra

Sandra Micucci, PhD Candidate
Department of Geography and Earth Sciences
McMaster University
Hamilton, Ontario, Canada
(905) 963-1209
micuccis@mcmaster.ca

Appendix 11

Community Resources Information



School of Geography
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1280 Main Street West
Hamilton, Ontario, Canada
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Following are a few suggestions where you could find help or more information. This list is by no means exhaustive.

PHYSICAL & EMOTIONAL HEALTH	WORKPLACE
Your family physician	Your union office
<p>Mental Health Service Information Ontario 519-439-0174, 1-866-531-2600 (toll free) info_ref_services_mhsio@connexontario.ca Service offering access to information and mental health services across the province.</p>	<p>City of Hamilton Workplace Health publichealth@hamilton.ca 905-546-2424, 3065 Services are directed to those people who influence employee health and wellness in the workplace.</p>
<p>Family Mental Health Support Network for Hamilton 905-777-9921 Resource centre for mental health support and self-help groups, community services and programs, mental health advocacy initiatives and family education opportunities.</p>	<p>Ontario, Ministry of Training, Colleges and Universities Workplace Training Branch, Apprenticeship and Client Services, Adjustment Advisory Program 1-800-668-4479 www.edu.gov.on.ca/eng/training/aap/aapeng.html Services include advisory services and financial support to help clients adjust to the impact of job loss, or threatened job loss.</p>
<p>Catholic Family Services 905-527-3823 Offers counseling for families, seniors, abuse, seniors and credit management.</p> <p>Salvation Army Community & Family Services 905-540-1888 office@sahelphamilton.ca Programs include counseling for budget and nutrition, suicide crisis, emergency food services, vouchers for work boots, transportation, eyeglasses, moving and storage assistance</p>	<p>City of Hamilton Career Development Centre 905-546-2424, 5208 saphsweb@hamilton.ca Provides a free employment services in Hamilton where all residents can explore career opportunities and gain the skills they need to ensure successful employment.</p>

NEIGHBOURHOOD	
Citizens for Citizens 905-549-4407 dbeland@istar.ca , This group is organized on a volunteer basis to examine any issue that affects the quality of living and the character of neighbourhoods within the city.	

Appendix 12

Human Resources and Skills Development Canada
National Occupation Categories

	Skill Type	Recoded to
0	Management occupations	Management and business
1	Business, finance and administration occupations	
2	Natural and applied sciences and related occupations	Health and people
3	Health occupations	
4	Occupations in social science, education, government service and religion	
5	Occupations in art, culture, recreation and sport	
6	Sales and service occupations	Sales and service
7	Trades, transport and equipment operators and related occupations	Machines and manufacturing
8	Occupations unique to primary industry	
9	Occupations unique to processing, manufacturing and utilities	

(Human Resources and Skills Development Canada, 2011)

Appendix 13

Resident Profiles

Mountain Neighbourhood

Amy

Amy was born and raised in Hamilton. She married soon after completing high school and has two sons who now live on their own. She has lived in the same neighbourhood for over 20 years. They used to live in the house beside their current house. The lot was severed many years ago and they built a new house beside their old house. The first house is rented out. Their property is large and there are approximately 10 newer houses backing on their houses. One of these houses belongs to her in-laws. In her spare time, Amy swims at the community center. Swimming and keeping active help her cope with a potentially debilitating autoimmune disease that she has. The disease appears to be well controlled and does not limit the activities she wants to participate in.

Amy has an industrial size coffee machine always brewing on her counter to offer anyone who drops in a coffee. She started a neighbourhood association approximately 15 years ago when her children were in primary school. The purpose of the association was to raise funds for playground equipment in a park. She has continued running the association and has managed to secure Nevada funds to add fitness equipment for an adult section of the park. Although Amy is very involved in her neighbourhood, she does not know all her neighbours, including the neighbours that back on her property. She is good friends with Greg (also interviewed) and his wife. The two couples spend a lot of time together and vacation together. Greg is the vice-president of the neighbourhood association.

Amy has worked as a server in the cafeteria of a neighbourhood high school for the past four years. She works regular hours and can walk to work. She works to keep involved and be with people. The company she works for is subcontracted by the Board of Education to run the cafeteria. Amy works with between five to nine women of which some of them have been friends since high school.

Annetta

First, I would like to state that Annetta might have been tentative in her responses. I previously worked in the same workplace and knew many of the people she works for and works with. I was also aware first-hand of many of the issues Annetta has to contend with in her workplace.

Annetta was born and raised in Hamilton. She is of Italian descent and both Italian and English are spoken in her home. Annetta lives with her husband, and two children who are in their late teens, early twenties. Both children still attend school and live at home. Annetta has spent most of her married life in the neighbourhood she lives in. She and her husband are the original owners of the house they live in like many of their neighbours. Annetta was interviewed in her workplace therefore I did not have the opportunity to visit her home. The woman who lives across the street and Annetta are best friends. The couples from both homes socialize together often. Annetta said she used to be more involved in her community when her children were young but has no reason to be involved now. Much of her social life revolves around her husband's friends and workplace. Annetta spoke very highly of her husband's workplace and the many events they have. The events have declined since her husband's workplace was bought out by a larger firm but she said there was still a great deal of camaraderie there.

Annetta works as an administrative assistant in a university. Kath and Pam (also interviewed) work in the same office but for different researchers. In a university research structure, researchers seek funding for carrying out their research. This funding covers the wages of employees working on the projects, including administrative staff. When the project or funding ends staff move on to other research projects. Many of the newly funded positions are only open to these internal employees. This guarantees in most cases that university staff does not have a break in their employment. Staff can move from position to position within the university and not lose seniority. Annetta has worked for the university for 19 years. She has worked for three researchers in a satellite office at another hospital for the past nine years. These three researchers all contribute a share of Annetta's wages. When Annetta worked at the main campus, she was involved in many of the sports and social activities. Now that she works at a location away from the main campus, she finds it difficult to stay in touch and be involved in activities on the main campus. The satellite office she now works in is small and does not have the staff to organize many activities themselves. As well, the researchers go back and forth to the main campus often and are not motivated to duplicate activities in the satellite location. Annetta keeps to herself and is friends with one other woman at the satellite location. She said that if she left this position she would probably only keep in touch with the one friend. I would not put the onus on Annetta for not having friends in her workplace. She still maintains contact with friends from her previous workplace.

Barbara

Brenda was born and raised in Hamilton. Her home is near where she was raised and went to high school. Recently divorced, Brenda is raising three children on her own. The oldest child is in university in another city. The other two children are under 16 and live at home. Brenda moved to the semi-attached house she now lives in just after her divorce approximately two years ago. Family and friends live close by. The only neighbour Brenda communicates with is a woman who also is raising her family on her own. The other neighbours are elderly and have nothing in common with her. She also feels that the neighbours do not like her because she is a single mother. Brenda has many long-time friends from high school, her previous neighbourhood, and work.

Brenda does not drive a car. At the moment, she feels that a car is an expense she cannot afford. She takes a bus to work in downtown Hamilton. Brenda has worked for a large insurance company for the past 10 years. She started as an administrative assistant and has worked her way up to an adjuster by taking courses in the evening. Brenda cannot say enough about how her supervisor and peers have helped her during the hardships in her divorce. She also cannot say enough about the insurance company she works for. They have many social events and opportunities to progress in the company.

Donata

Donata was born in Italy and her family immigrated to Canada with her family when she was a young child. Her family lived in the northeast area of Hamilton until Donata went to high school. Her parents moved to the Mountain because it was a better neighbourhood. She completed high school and met and married her husband not long after he immigrated to Canada from Italy. They have one child who is under 16 years of age. The primary language in her home is Italian. Not long after they were married, Donata and her husband bought a townhouse in a complex of approximately 20 units. Donata was interviewed in her workplace therefore I was not able to personally see her home and neighbourhood. Her home is close to her family and work. Donata's family and her husband's family are a priority in her life. She does not participate in any organizations or socialize with her neighbours. Many of her and her husband's family are in Italy. Donata talks about Italy as still being her home.

Donata has worked for an Italian, family-run delicatessen since she graduated from high school. She has worked her way up from kitchen staff to the manager of the catering department. She works in the same office as Kathy (also interviewed). The delicatessen has grown from a small single shop to multiple locations and franchises. Many of the staff are female and from different ethnic backgrounds. A high percentage of staff has recently immigrated to Canada and do not speak English. Donata keeps to herself and does not associate with staff outside of work.

June

June was born and raised, not far from where she currently lives. She completed high school and married soon after. The marriage ended about five years ago.

She has two children. One child lives on her own and one child is in university. June is currently in a long-term relationship. June is second generation Italian and her partner was born in Italy. Although June does not speak Italian, her partner does speak Italian with his family. June bought her townhouse soon after she was divorced. Her townhouse is one of seven townhouses. She knows her neighbours but does not socialize with them. She does not belong to any associations and mostly socializes with her partner's family and friends

Most of June's jobs were low-skilled. She had an opportunity to go to college when she was laid off from a previous job. June enrolled and graduated from a computer software electronics program. June works in the same Italian, family-run delicatessen as Donata (also interviewed). She has been the controller for all the stores and the owners' other companies for five years. June works regular hours but can be called to work when the point-of-sale system breaks down. There is considerable competition in the food retail business therefore her job has many stressful moments. Also, three brothers own the business and she stated that they do not always agree on how the business should be run. June said she felt that the brothers and family did not like her, an outsider, in her position.

Linda

Linda is very quiet and it was a challenge to get her to tell me about herself and to expand on her responses to interview questions. She was born and raised on the Mountain close to where she currently lives. She has lives in a townhouse in a moderately large townhouse complex since her divorce five years ago. One of her children is going to university and lives at home. The other child lives in his own home. Linda spoke very highly of her children. She is not involved in activities and does not associate with her neighbours or colleagues at work. She spends most of her spare time caring for her elderly parents.

Up until last year Linda worked for a large legal firm of about 700 employees. She commuted to her job by train. Recently her parents' health started to decline. Linda left her job in Toronto last year to work as a legal assistant for a small law firm of about six employees in Hamilton. She likes her job but misses her job with the larger firm in Toronto.

Lisa

Lisa was born and raised in Hamilton. She and her husband have lived in their neighbourhood for over 20 years. They used to live next door. They severed their lot and built a new house. Her parents live in their first house. Lisa has two children. One child is in university and the other child has just finished university and lives on her own. Lisa's parents and husband were born in Italy. They speak English and Italian in their home and are very involved in Italian cultural clubs. Many of her friends are of Italian descent. She makes socializing with her family and friends a priority.

Lisa works as an administrative assistant for a large bank. She has worked there since high school. She now works at the regional head office in a large office building in downtown Hamilton. She supervises five clerical staff. Lisa speaks very highly of her job and the people she works with. Many of the people she works with she considers her friends.

Nora

Nora was born and raised in Hamilton and has lived in her current neighbourhood for eight years. She and her family live in a newer neighbourhood and are the first owners of their house. The neighbourhood is predominantly well-appointed, large, two-story houses. She has four young children. Nora has become close friends with many of her neighbours including Pino. (also interviewed). One couple is godparents to one of her children. When Nora became pregnant with her fourth child, she was concerned that they would have to move from their house because it was only four bedrooms. Instead of moving she and her husband decided they would build a room in their basement for their oldest child when the time came. Nora and her husband are involved in many neighbourhood, cultural, children's, and sports activities and organizations. Her husband is the current president of an Italian club.

Nora is a junior kindergarten teacher in a large Catholic school. She has worked there since it opened eight years ago. She loves her job and speaks highly of her colleagues and principal. As in her neighbourhood, Nora is good friends with many of the people she works with. She is involved in many of the social activities that go on at the school.

Celino

Celino was born in Italy and immigrated with his family to Canada when he was young. He was not able to finish his education because his father died so he had to go to work to support his mother and siblings. A few years later he managed to attain a college certificate. Family and friends are a priority and their home is always open to them. His wife was also born in Italy. They have two children. Their eldest child finished university and is married. Their second child is in college and is living at home. They speak English and Italian in their home. They live in the house that was bought when they were first married more than 30 years ago. Celino built on to what was a two-room house on the outskirts of town. The house is now a two-story house surrounded by newer houses. Most of the people who originally lived in the neighbourhood have moved away or died. Celino talked about the way it was 20 years ago. They knew and socialized with many of their neighbours. He does not know many of the people who have moved into the neighbourhood in the past 20 years. Celino is involved in many organizations including cultural, political and sports.

For most of Celino's working life he worked for a larger steel company. Fifteen years ago he decided to open a business on his own. Celino and a partner started a steel fabricating company. The company employs less than five people. He is seriously thinking of selling the business because he is finding it difficult to compete with the increased price of locally produced steel and to keep up with the physical work.

Enzio

Enzio is married and has two children less than 16 years of age. He was born in Hamilton and has lived in his home for the last 15 years. His parents live close by. Both English and Italian are spoken in his home. Enzio was interviewed in his workplace and it was difficult to get a sense of his home life. He appears to be family oriented but also a very private person about his personal life.

Enzio has worked as an accountant for a number of local franchises of a pharmacy retailer chain for over ten years. He is enthusiastic about the company and speaks very highly of his employer and the corporate office. He does not socialize with the staff in the stores and goes home every day for lunch.

Greg

Greg is married and has two children who no longer live at home. Greg moved to Hamilton to go to university and stayed in the city. He moved to the Mountain neighbourhood about 15 years ago. He and his family outgrew their first house and they bought a larger house on the same street. Both Greg and his wife are very close to Amy (also interviewed) and her husband and they travel together often. Greg is also the vice-president of the neighbourhood association.

Greg has a science degree and took technical and management courses. He has worked for the same company over 25 years and is now the manager. The company has their head office in the United States and they produce a product for an industry that is becoming redundant. The company is in the process of downsizing so they are not replacing staff when they leave. Because of this Greg wears many hats and has little support. He works long hours and sometimes seven days a week. He was responding to e-mails from work during the interview.

Naldo

Naldo is married, and has two children over 16 years of age of which one lives at home and goes to school. His parents immigrated to Canada from Italy and settled in Hamilton. They have lived in their neighbourhood for over 20 years. Naldo and his wife speak Italian in their home and are very involved in Italian cultural activities. Family and friends are very important to them.

Naldo started a television and electronic repair business over 25 years ago. He used to have a partner but now works on his own. Naldo enjoys the repair business and speaks highly of many customers he has had since he started his business. He realizes fixing televisions is a dying trade because new televisions are so inexpensive it is not worth fixing them. He plans on retiring soon so this will not be a problem.

Pino

Pino is married and has children less than 16 years of age. He was born and raised in Hamilton. He has lived in his house for 13 years. His mother and in-law, brother-in-law, aunt and uncle, and cousins live close by. Pino is very close to many of his neighbours including Nora (also interviewed) and considers many of them close friends. He is very involved in sports and his children's sports and coaches many of teams his children play on. He confided that had spread himself too thin and is going to have to relinquish some of his coaching responsibilities to spend more time with his family.

Pino is a teacher and head of the physical education department at a local high school. He has been at that school for eight years. Pino was interviewed in the teachers' lounge at the school. Students came in to talk to him during the interview and there was a lot of respect shown from both him and his student. Students called him Mr. G. Pino's home life and work life are much intertwined. Some of his students live in his neighbourhood and are on many of the same sports teams he coaches. Family and friends are neighbours and are parents to his students.

Northeast Neighbourhood

Emma

Emma lives with her young daughter. She has lived in Hamilton for 13 years and in her current home for four years. She is on a limited income and lives in a subsidized home close to an industrialized area. She does not drive and walks or takes the bus. Emma does not have family or friends living near her, however, she is very involved in her community. Emma is involved in organized community activities such as the recreation center close by, City Kids, and her church. She is also involved with her neighbours as far as looking out after neighbours' children, neighbours who are ill or marginalized, or have recently immigrated to Canada. Emma's priority is the well-being and education of her daughter.

Emma has worked as a secretary for the church she is involved with for the past three years. There are only four people working for the church. She speaks very highly of the people she works with and enjoys her job.

Elena

Elena is married and has two young children. She has always lived in Hamilton and has lived in her current home for 15 years. The home used to belong to her husband's family. They are currently doing renovations to the house to better accommodate their growing family. Elena considers her neighbourhood a three-kilometer radius where she can comfortably walk to the services her family needs. Most of her family and friends live on the Mountain. Her husband asked her if she would rather live on the Mountain to be closer to her family but Elena chose not to. Currently, most of her neighbours are elderly. The neighbourhood is 'turning over' as the elderly neighbours are moving out and younger families are moving in. Elena tries to volunteer at the school her children attend when she gets the opportunity.

Elena is an accountant for a large multi-national company in the city. She just celebrated her 10th anniversary in her job. She speaks highly of the company she works for and the people she works with. Many of the people that work at the same location have been with the company for many years; however, most of the managers like herself have been with the company less than ten years. Elena did not think this was a problem.

Julita

Julita and her brother Jeffery (also interviewed) immigrated to Canada with their family from Poland when they were children. She has two children of which one is going to college and is living at home. She has lived in her current home since she was divorced five years ago. The decision to move to this home was more economical than choice. The house is not in a nice area and on a main street. Julita wishes she was back in her previous home and neighbourhood where she still has many friends. She also works near where she used to live so she is able to maintain her friendships.

Julita works as an educational assistant for a school in her old neighbourhood. She started working there just after her divorce. The school is small compared to the school she used to work for. Julita prefers the smaller school because the principal, teachers, and staff work closer together. Julita also works in a nursing home in her old neighbourhood on weekends when school is in and full-time through the summer. She started working there six years ago as well. Unlike the school, the management, nurses, and support staff of the nursing home do not work well together. A very important hobby to Julita is playing the accordion at nursing homes. She enjoys playing for other people and has set up a business. She just charges enough to cover her expenses of traveling to the nursing homes and back.

Kath G

Karen moved to Hamilton to marry her husband 20 years ago. Since then Karen and her husband have lived in the home her husband's grandparents lived in. Many of her neighbours also live in the home their parents or grandparents lived in. Both her mother-in-law and sister-in-law live on the same street. Karen's sister Pam (also interviewed) lives a block away from her. Karen talked about how cohesive the neighbourhood was and how they would have block parties.

Karen has a postgraduate education and has worked in a large research university since she moved to Hamilton. She works in a senior position and manages projects and staff. Her sister Pam also works for her. Like Annetta (also interviewed) Karen works in a satellite location. As a senior employee, Karen considers it her responsibility to assist new staff and organize social events. If Karen did not take on this responsibility, it is doubtful someone else would.

Renee

Renee has lived on the same block her entire life. She grew up just down the street from where she now lives and her mother still lives. Her two sisters live on the same block as well. Renee and her husband bought the house they live in 23 years ago. Their children have grown and left home. Most of the people in the neighbourhood are elderly. The younger residents try to help out by cutting their grass and removing their snow. Renee also lives on the same block as Jeffery (also interviewed).

Renee and one of her sisters own a successful residential cleaning business. They did advertise but they found most of their business came from word of mouth. Their business evolved from just cleaning to helping many of their senior customers with other jobs around the house. Her and her sister are having challenges separating their personal life from their work life and are seriously thinking of dissolving the business because of it.

Pam

Pam is very quiet and it was a challenge to get her to tell me about herself and to expand on her responses to interview questions. Pam has lived in Hamilton for about five years. She moved to Hamilton just after her divorce. She lives a block away from her sister Karen (also interviewed) and works in a junior research position at a research university for her sister. Pam has very few friends in Hamilton and her only relative close by is her sister. Pam and her sister are very different personalities. Where Karen is outgoing and made a life for herself in her neighbourhood and her workplace, Pam did not. Pam depends on Karen for most of her social life.

Brian

Brian is married with two young children. He and his family have lived in their house for three years. They are moving to live with his wife's family to be closer to their church. His religion is a priority. Both he and his wife are very involved in their church and it is the mainstay of their social life. Although his children do not go to the local school, he has met many of his neighbours at the local park when he was there with his children. Their neighbourhood has 'turned over' and young families have replaced many of the original owners. Many of his neighbours are teachers like himself.

As his home life, Brian's job centers on religion. He is a teacher in a small private school outside Hamilton. The school is not connected to his church but is based on the same principles as his religion. The school is supported and directed by a church that is across the street from the school. Brian speaks highly of the directors, his peers and students.

Jeffery

Jeffery was born in Poland and immigrated to Canada with his parents and sister Julita (also interviewed) when he was a child. He has lived in the north end of Hamilton since he arrived in Canada. He moved to his current home when he divorced eight years ago. The house needed substantial work and Jeffery has been renovating it when he has the finances to do so. He has two children of which one lives with him and is in college. He is considered a friend of many of the children in his neighbourhood. He has an 8-seater van and takes many of the children on excursions with his children. He knows many of his neighbours and is good friends with Renee (also interviewed).

Jeffery worked in a high paying job for a subsidiary of one of the steel plants for many years. Just after his divorce, the company closed. He got another job at a much reduced pay rate about 90 minutes away. He was laid off from that job and is now working for a fruit processing company about 30 minutes away. He worked contract for nine months and has just been hired on full-time permanent in a senior position. The job is moderately hazardous because of the heat and lifting heavy containers and is shift work. Jeffery speaks highly of the company and many of his peers.

John

John is married with two children. He was born and raised just down the street from where he now lives. His wife is also from the area. The neighbourhood is a combination of people who have lived there longer than 25 years and people who have moved in recently. John gets along with the long-term neighbours and does not care for or trust the new neighbours.

John went to college and is now a licensed plumber. He works for a medium-sized company that does plumbing installation and repairs. The job has certain risks that are typical for construction sites as well as being exposed to asbestos, natural gas, hot water, etc. The job also entails being on call every other weekend and evenings. He admits to being a practical joker at work and enjoys his job and the men he works with.

Michael

Michael is married with two children living at home. One child is in college and one child is working. He has lived in Hamilton his entire life and lived in his current home for over 20 years. Many repairs and upgrades have been done to his home. He sold his house once and bought it back from the person who bought it because he realized how much he did not want to leave. Michael does not associate with most of his neighbours. He feels that many of them drink too much, gamble, or are involved in criminal activity. Michael is interested in the local politics and attends political meetings at the ward level.

Michael has worked as a driver for a lumber supply company for over 20 years. The lumber company has multiple locations. There are about 15 employees working at the same location. The grandson of the founder of the company took over the business at the same time the big box lumber stores opened. Between the grandson's ideas on how the company needed to be run and the new competition the company went through many changes that were not necessarily beneficial for the employees. About half of the employees have been with the company more than 10 years, a few more than 20 years, and the remaining are transient. Michael gets along with the long-term employees but does not socialize with anyone outside of work.

Peter

Peter spent most of his life in the Canadian military. He injured himself early in his military career and was trained by the military to be a computer security specialist. His career kept him from being home for six months at a time. After retiring from the military at a relatively early age, he settled in the house his parents owned. Peter met and married his wife when he was in the United Kingdom. She moved to Hamilton and they have two young children. Because he grew up in the house he is living in, Peter has known many of his neighbours since he was a child. The older neighbours are starting to move out and younger couples with children are moving in. Peter thought this was good for his wife, who does not know too many people in the area, and his children. Peter still has many friends who are in the military or like him have retired.

After Peter retired, he was asked to manage the computer security system for a private research company. He took a year off to be with his family and just recently started working for the research company. He has an hour plus commute but does not want to move his family away from their neighbourhood. Peter commented that the research company has hired other people from the military and that there were many similarities between the two.