Social Capital and the Wellbeing of Indigenous Peoples in Canada

By

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iv

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Table of Contents

x

List of Tables

List of Equations

Abstract

After theoretically determining the impact of social capital on wellbeing from economics literature, this study uses the Statistics Canada 2012 Aboriginal Peoples Survey to estimate the impact of social capital on the wellbeing of Indigenous Canadians. It is found through econometric analysis that the wellbeing of adults and youth is impacted by social capital in similar and differing ways. The self-reported health of adults and youth is negatively impacted by their degree of social isolation. Peer risk behaviors for youth have a significant negative impact on their self-reported health. These are important considerations for improving the general wellbeing of Indigenous Canadians and stimulate the need for future research.

Introduction

The primary focus of this thesis is estimating the impact of social capital on the wellbeing of indigenous people. The motivation for studying indigenous people comes from the federal government's promise to fully implement all the Calls to Action of the Final Report of the Truth and Reconciliation Commission (TRC) (Truth and Reconciliation Commission of Canada 2015). One of the crucial findings of the TRC is that there are various gaps in socio-economic and wellbeing characteristics between indigenous and non-indigenous people living in Canada. These include education, income, mortality, incarceration rates and health, to name a few. The colonial encounter, and the legacy of neglect which followed for indigenous people (including residential schools) has seriously disadvantaged indigenous peoples in relative terms to non-indigenous Canadians (Truth and Reconciliation Commission of Canada 2015). Studying the impact that social capital has on wellbeing, and specifically health outcomes, may improve our understanding of indigenous people's wellbeing, which can be improved with appropriate public policy that utilizes this information.

Another important motivating factor for this line of research is that the economics literature which focuses on the wellbeing of indigenous people in Canada is sparse. This presents an opportunity for economics researchers to engage with the political project of reconciliation.

Another reason for tackling this research question is bringing a concept more frequently used by sociologists into economics research. In this project, particular focus is placed on defining and developing measures of social capital from the literature so as to

come up with a definition that was quantifiable in an empirical study. This is the first goal of the literature review (chapter 1).

Social capital lacks a strong foundational definition in any subject, and even in economics, the definition used changes from study to study. The general notion from most of these definitions is that social capital describes a set of lasting social relations, networks and contacts, where investing in one's social capital further serves as a mechanism to exchange other types of capital (O'Brien and Ó Fathaigh 2005). For example, neighbors can share tools because of an informal relation of trust, allowing them to reduce costs and have more financial capital available for other activities.

Social capital's most important function is its effect on wellbeing (Szreter and Woolcock 2004). Before explaining how social capital affects wellbeing, it is important to define wellbeing as a concept and narrow it down to a specific indicator with which to guide empirical work. Wellbeing is a multidimensional phenomenon, relating to several different arenas of a person's life including physical health, psycho-social conditions, social relations and economic circumstances (Halleröd and Seldén 2013). Wellbeing has subjective components, meaning that different individuals will define wellbeing differently. Capturing the subjective experience of wellbeing can be difficult, but research has found that subjective wellbeing is primarily correlated with self-reported health (Halleröd and Seldén 2013).

In this research project, self-reported health is adopted as a primary indicator of wellbeing as it is included in various ways in all broader measures of wellbeing (Helliwell 2001), and is positively associated with general wellbeing more so than other wellbeing measures (Halleröd and Seldén 2013). Therefore, this research project is studying the

specific impact of social capital on self-reported health, to determine one channel through which social capital impacts wellbeing. Social capital impacts health by increasing the ease with which a person can amass and produce health capital. In other words, stronger social relations lead to increased access to healthcare, social support, health information, and positive health norms (d'Hombres et al. 2010; Scheffler and Brown 2008). There is uncertainty in determining the direction of causality, as there is a mutually reinforcing relationship between social capital and good health (d'Hombres et al. 2010; Goryakin et al. 2014; Scheffler and Brown 2008; Rocco, Fumagalli, and Suhrcke 2014).

To empirically estimate the relationship between social capital and self-reported health (SRH), the 2012 Aboriginal Peoples Survey (Government of Canada 2011) is used as a dataset. The survey sample is split into two subgroups: adults (19+) and youth (15-18). The impact of social capital, while controlling for other relevant factors, on the SRH of each subgroup, was estimated using an ordered probit model and the marginal effects of the independent variables on SRH were calculated using the survey weights provided by Statistics Canada. More information about the methodology is developed in the methodology section of this thesis (chapter 2).

For adults, this study shows that factors relating to the social isolation of an indigenous person have significant impacts on SRH. Specifically, someone who is isolated from immediate family members and friends, neighbors or coworkers is less likely to report excellent health. Other important variables for the adult subgroup were variables related to the medical history of a person such as bodyweight, long term conditions and mental health. Less important for a social capital study, but extremely important for any study concerned with the wellbeing of indigenous people and reconciliation was the negative

impacts associated with residential school. For adults, residential school attendance is correlated with a lower likelihood of reporting excellent health, while the attendance of family members also has a significant negative impact to health.

For youth, social isolation and measures of participation were important social capital factors in determining self-reported health. Social isolation from family members had a larger negative SRH impact on youth than adults while social isolation from peers with risky behaviour had a positive impact on SRH. Participation in sports activities also had a positive SRH impact. Another important consideration for the youth sub-group was family involvement in education, which had a positive SRH impact. More in-depth analysis of the findings for adults and youth is presented in the results section of this thesis (chapter 3), while the implications of these findings are developed in the conclusion.

The body of this thesis begins in the following chapter with the literature review, where social capital and wellbeing are explored in the economics literature in order to come up with an empirically quantifiable relationship between these concepts.

1 Literature Review

1.1 Aim of the Study

In this thesis, the impact of social capital on the wellbeing of indigenous peoples is examined. While social capital varies in definition and is difficult to measure, "the emerging field of cultural economics has been successful in furnishing quantitative evidence that social norms and values do explain some current important economic outcomes" (Hollard and Sene 2016). The impact of these norms and values, alongside other elements of social capital such as trust and networks, are significant for marginalized groups or populations in transitioning economies (d'Hombres et al. 2010; Goryakin et al. 2014; Hollard and Sene 2016; Sun, Rehnberg, and Meng 2009).

Social capital impacts wellbeing in various ways. For example, when studying marginalized or disadvantaged populations, social capital is an important resource when other more liquid forms of capital are not available (Sun, Rehnberg, and Meng 2009). Another study found that social capital as measured by an environment of trust reduces the costs and risks of undertaking economic and social ventures (Helliwell 2001). In the United States, social capital is found to have a positive impact on measures of economic equality and employment stability (Casey and Christ 2005). A village's social capital level has a large, causal impact on household income for villages in Tanzania (Narayan and Pritchett 1999).

As we can see, there are many ways to approach social capital and social capital affects wellbeing in many ways. This has led some to claim that social capital's impact on wellbeing is its most important function (Szreter and Woolcock 2004). This motivates the following research question: How does social capital affect the wellbeing of historically marginalized First Nations, Inuit and Metis people in Canada?

As the examples given above show, social capital is used as a concept along a wide spectrum of literature in the social sciences. The next subsection explores different definitions and conceptions of social capital in the literature, driving towards a single definition to be used in this study.

1.2 What is Social Capital?

The concept of social capital was introduced by Bourdieu and Coleman who simultaneously, but independently, started using the concept in a systematic way in the 1980s (Häuberer 2011). Each theorist's definition of social capital will be explored in the following subsection, paying particular focus to how these conceptions of social capital can guide empirical work.

In an economic sense, social capital has capacity to facilitate productive capacity (Rose 2000). This works in different ways, depending on whether we look at social capital in its community or individual dimension. James Coleman's conception of community social capital, describes it as something that is intangible and exists in the structure of relations between individuals (O'Brien and Ó Fathaigh 2005). It should be noted that under this conception of social capital, the aggregate social capital levels of a community may have a positive or negative externality on an individual beyond their own investment or

disinvestment in social capital (Scheffler and Brown 2008). An example of a community level of social capital is an environment of trust, which allows for more efficient transactions between individuals.

An important critique of Coleman's conception of social capital is that there needs to be a clearer distinction between resources and the ability to obtain them in a given social structure. In other words, social capital might be conceptualized as social networks themselves or as resources that are made available through one's social network. The lack of distinction is linked to focusing on the family's and the community's role in social capital access and utilization, which hides the agency of an individual to access and invest in these resources (O'Brien and Ó Fathaigh 2005).

As a remedy to these critiques, O'Brien and Ó Fathaigh (2005) suggest applying the theoretical insights of Bourdieu. The importance of using Bourdieu's conception of social capital for this study is in how he explores it as an individual dimension of capital. To Bourdieu, wellbeing relies upon the interaction and exchange of economic, social, cultural and symbolic capital (O'Brien and Ó Fathaigh 2005). He identifies social capital as a set of lasting social relations, networks and contacts, emphasizing that individual gain may be sought through investing in it: "Investment in social capital, then, acts as a kind of strategy which (unconsciously or otherwise) further serves as a mechanism to exchange other [types of] capitals" (O'Brien and Ó Fathaigh 2005).

In order to flesh this out, is important to dig down into how Bourdieu describes the activities of individuals in a given social structure, or what he calls "field". To Bourdieu, fields consist of an ordered system and the relationships involved which have an impact on the habits of the individual (O'Brien and Ó Fathaigh 2005). Each field is conceptualized

7

as involving a struggle for the possession of capital, where some are more successful than others: "Bourdieu claims that as certain individuals enter the field, they (consciously or otherwise) are more aware of the rules of the game and/or have greater capacity to manipulate these rules through their established capital appropriation" (O'Brien and Ó Fathaigh 2005). For example, one can imagine that someone who has amassed a large amount of social capital volunteering in their local community may not be able to utilize this capital in the labour market, which is a field with different rules requiring different kinds of capital accumulation.

Taking Bourdieu's theory of social capital into account requires that an empirical study must pay careful attention to the amounts of social capital amassed by individuals, and how social capital operates to secure resources in different fields of interest. Adding this to the conceptions developed by Coleman means that a study must pay particular attention to how social capital operates at two distinct levels: the individual and the community level.

As mentioned above, social capital is commonly theorized to operate through social connections and this view serves to limit the role that the individual can play in investing in and growing social capital. The opposite critique applies to empirical work, however. Studies involving individual social capital (which most of them do), often fail to capture social capital in its group-level dimension (Scheffler and Brown 2008). Another important lesson from this is therefore to identify "community-level indicators of social capital that are not merely aggregations of individual data (and thus not subject to the fallacy of composition)" (Scheffler and Brown 2008). Given the influence of social capital at the community level on the ability of the individuals to invest and accumulate social

capital, this again emphasizes that individual and community levels of social capital indicators should be taken into consideration in an empirical study.

With all of this in mind, the following definition, adopted from the Policy Research Initiative of Canada will be used in this study: "Social capital refers to the networks of social relations that may provide individuals and groups with access to [social and physical] resources and supports" (Sun, Rehnberg, and Meng 2009). This definition was chosen as it encompasses community and individual dimensions of social capital. It also identifies that social capital encompasses both the networks of relations which an individual/community may have, and the resources which these networks provide an individual/community access to.

An important aspect of social capital is that for development studies, social capital is an instrumental good, allowing the achievement of intrinsic ends, such as living a life one would have reason to value (Sen 2000). It is important also to note that even in 'developed' societies, "social capital does not uniformly benefit individuals living in the same community or society" (Poortinga 2006a). For example, lower income individuals "may be more likely to benefit from social capital because they have less ability to directly purchase information and find social support that would otherwise be provided through social capital" (Scheffler and Brown 2008). There may also be a differential impact of social capital related to education level and the ability of a more educated person to access and understand information on their own without utilizing social capital (Scheffler and Brown 2008). This is why it is particularly important to study the impacts of social capital on the wellbeing of marginalized groups, since it may play a large role in determining wellbeing.

Having established a theoretical basis for social capital, and with the research question in mind, it is time to turn to wellbeing. As social capital can impact wellbeing in various ways, it is important to investigate the multidimensional aspects of wellbeing in order to develop a concrete relationship between these two concepts.

1.3 Health and Wellbeing

The focus of this study is to measure how wellbeing is affected by social capital. Wellbeing is a multidimensional phenomenon, meaning that it relates to several different arenas of a person's life, including physical health, phsychosocial conditions, social relations and economic circumstances (Halleröd and Seldén 2013). Wellbeing has subjective and objective components, and within each dimension, it is possible to describe a continuum "extending from best possible wellbeing to worst imaginable 'illbeing' " (Halleröd and Seldén 2013).[1]

There are correlations between different wellbeing dimensions, where correlations can indicate the presence of vicious cycles. Vicious cycles are "processes whereby wellbeing problems on one specific arena [or dimension] cause problems on other arenas" (Halleröd and Seldén 2013). For example, it is easy to consider that a person undergoing economic hardship may also report poor physical health. On the more positive side, a healthier person will tend to have a higher, more stable income, which contributes to their overall health.

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[1] For a description of the various wellbeing arenas and the issues associated with them, see Halleröd and Seldén 2013: 810

In this study, self-reported health is adopted as a primary indicator of wellbeing. There are several reasons for this. The first is that "good health and longevity are included in various ways in all broader measures of well-being" (Helliwell 2001). The sense here is that people want good health as an end in itself. In other words, being well-off is *primarily* associated with being healthy. For example, Halleröd and Seldén (2013), conclude that global wellbeing among older people is closely related to health.

Another aspect of this relationship is that good health also forms an integral piece of human capital. In other words, good health facilitates work and earning of income, both of which directly contribute to wellbeing through economic circumstances and psychosocial conditions. Self-reported health is frequently used in the literature because it allows a person to assess their wellbeing in terms of health. This importantly captures the subjective component of wellbeing. It has also been found to be a robust predictor of mortality as compared to other health measures (d'Hombres et al. 2010).

Having established that health can be used as an intrinsic component of wellbeing, it is important to now consider how one amasses or creates good health for themselves.

1.4 The Formation of Health

As mentioned above, health can be considered an integral part of human capital, right alongside education. If knowledge from education serves as a way to increase market and nonmarket productivity, our stock of health determines the total amount of time we can spend "producing money earnings and commodities" (Grossman 1972). To put it

another way, the returns to an investment in health differ from the returns to an investment in other forms of human capital, as it does not directly raise wage rates (Grossman 1972).

Health, when conceived of as a stock, also receives the distinction of capital. In this way, Grossman (1972) identifies that people have an initial stock of health, determined by exogenous and environmental characteristics, that depreciates over time and therefore requires investment in order to continually produce utility. An increase in the stock of health reduces time lost from sick days, and the monetary value of this reduction in lost time is the return to an investment in health (Grossman 1972)[2].

Social capital importantly can reduce this 'shadow price' of the investment in health, by making good health investments more accessible and less costly (in terms of time as well as price). The externalities associated with community and society levels of social capital can also provide health benefits that reduce the costs of investing in health capital. Negative externalities related to community levels of social capital and the increasing opportunity costs associated with investing in one's health in a climate of scarce health resources showcases how social capital and health may be negatively related.

1.5 Social Capital and Health

Social capital and its relation to well-being outcomes has been studied from various angles. Since we have just linked wellbeing to health, and discussed how one amasses health, it is time to identify the role social capital plays in health formation.

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[2] For a vastly more detailed description of health production, refer to Grossman 1972.

As mentioned earlier, the importance of social capital is more relevant as a resource for disadvantaged groups. The same is also true of transitioning or developing societies. For example, social capital as measured by trust has a causal impact on individual and community access to healthcare in Sub-Saharan African countries (Hollard and Sene 2016). The results of that study revealed that localized trust (trust in neighbors) has a significant and positive effect on health center quality and water quality.

The idea behind most of the studies is that stronger social relationships lead to increased access to health care, social support and informal insurance arrangements (d'Hombres et al. 2010). Social capital also makes health information more readily available to community members, "helping to improve their decisions related to health, such as diet or exercise, or selecting a physician or a hospital" (Scheffler and Brown 2008). Informal networks have also been attributed to reducing the costs associated with transferring health information while constraining risky health behaviour (d'Hombres et al. 2010). The strength of one's social capital constrains risky behaviour either through the information channel or due to coercive social norms improving people's health such as encouraging people to lose weight, diet, exercise or stop smoking (Scheffler and Brown 2008; Hollard and Sene 2016). One can also imagine the strength of these bonds coercing people into unhealthy behaviour, such as encouraging smoking among teens. Bonding social capital has been found to collectively contribute to "…people's self-rated health over and above the beneficial effects of personal social networks and support" (Poortinga 2006b). All of this establishes that the strength of one's ties to a community of similar people determines their subjective health experience.

Another mechanism through which social capital can have an impact on health is through its effect on psychosocial stress, described as the perception of living in an unequal society and the related tangible consequences on health (Sun, Rehnberg, and Meng 2009; Scheffler and Brown 2008). Through improving the strength of linkage bonds with private and public institutions, the negative health effects associated with psychosocial stress may be lessened, although this may not always be the case.

These mechanisms work together to produce a synergistic effect on health, although the direction of causality is difficult to determine (Scheffler and Brown 2008)[3]. The difficulty in determining the direction of causality comes from the mutually reinforcing relationship between social capital and enhanced health: "We can see that social capital works through information and norms to [improve] health, but we also see that health can have a direct link to social capital" (Scheffler and Brown 2008).

Sun, Rehnberg, and Meng (2009) found that the poor had higher probabilities of belonging to the low individual-level social capital group, and for the poor, reciprocity and social support variables alongside neighborhood cohesion were associated with a lower probability of low self-reported health. Due to the ambiguities of social capital and the data set used, the authors are more convinced by the findings of economic deprivation (poverty) leading to poor health, while acknowledging that social capital at least plays some part in this negative effect.

Social capital is theorized and statistically estimated to have impacts on both individual and community levels of health, which mirrors its public and personal dimension

[3] For a great visual representation and further explanation of the these mechanisms, see Scheffler and Brown 2008: 325.

as a resource. Given the limits of the dataset which I am using with this study, the focus

will be primarily with the micro or personal dimensions of social capital as a resource[4]. For

now, we must turn to measuring social capital.

1.6 Measurement of Social Capital

Trust variables are an important indicator of social capital and a person's

connection with their community or society. Many studies have found that they are

positively correlated with health outcomes (d'Hombres et al. 2010; Goryakin et al. 2014;

Hollard and Sene 2016; Sun, Rehnberg, and Meng 2009; Rose 2000). Trust operates at

different levels, from trust in one's government to trust in one's immediate neighbors.

Community indicators of trust, such as neighborhood cohesion, will also impact a person's

health (Sun, Rehnberg, and Meng 2009).

Membership in formal organizations is another commonly used measurement of

social capital (d'Hombres et al. 2010; Goryakin et al. 2014; Sun, Rehnberg, and Meng

2009; Rose 2000). Membership represents bonding social capital as most of the

organizations utilized fall into religious/ethnic /neighborhood descriptions. Community

levels of formal membership will have externality effects on a person's health, and must

also be accounted for (Hollard and Sene 2016). In terms of linkage social capital, the level

of a community's participation in political processes constitutes a sound measure (Hollard

and Sene 2016). Informal social arrangements and networks are also important indicators

of social capital, especially among the economically or otherwise disadvantaged where the

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[4] I will expand upon the data set and its limitations in the Methodology section of this paper (chapter 2).

linkage social capital relations tend to be weak (Ronconi, Brown, and Scheffler 2012; Sun, Rehnberg, and Meng 2009; Rose 2000).

An indication of a complete lack of social capital in all its forms is represented by loneliness or high degrees of isolation (d'Hombres et al. 2010; Goryakin et al. 2014; Ronconi, Brown, and Scheffler 2012; Sun, Rehnberg, and Meng 2009). As this is a robust indication of the effects of extremely low levels of social capital, it potentially allows a researcher to establish significant relationships, especially in terms of health outcomes.

This establishes the most common ways to measure social capital. Most studies involving social capital and health involve some variation of the indicators presented above. Studying indigenous individuals and communities offers some possibly fresh ways to conceive of social capital. For example, an indigenous person participating in traditional activities is not only crafting or harvesting resources, but spiritually emphasizing connection to their ancestors and their broader community (Alfred 2008, 2005). As a researcher studying the studying social capital in the decolonial atmosphere of reconciliation, it is important to allow indigenous knowledge to inform how we can perceive of academic concepts. Therefore, in this study, the connections of a person established through cultural/traditional activities including speaking an aboriginal language will be included as measures of social capital. The next section further establishes the reasoning behind involving indigenous peoples and knowledges in this study.

1.7 Colonial Legacy

Studying how indigenous people experience life in relation to mainstream Canadian society is motivated by the federal government's promise to fully implement all the Calls to Action of the Final Report of the Truth and Reconciliation Commission (TRC) (Truth and Reconciliation Commission of Canada 2015). One of the crucial findings of the TRC is that there are various gaps in socio-economic indicators of well-being between indigenous and non-indigenous peoples living in Canada. These include education, income, mortality, incarceration rates and health, to name a few. The colonial encounter, and the legacy of neglect and destruction which followed for indigenous people in this territory has seriously disadvantaged them in relative terms to non-indigenous Canadians (Truth and Reconciliation Commission of Canada 2015).

Despite these disadvantages, however, there are those who have met with relative success in their economic and health outcomes. This thesis is an attempt to economically evaluate the social aspects of that success, using a social capital analysis. Indigenous Canadians, as members of various nations within nations are involved in various horizontal and vertical relationships with mainstream Canadian society that are complex and at times beneficial or hindering. The concept of social capital offers a way to study how the bonds, bridges and linkages that an indigenous person has to their own communities, to other communities and groups, and to the larger Canadian society affects their wellbeing.

2 Methodology

2.1 Dataset

The information available in the Public Use Microdata File version of the 2012 Aboriginal Peoples Survey (APS) was used to estimate the impact of social capital on the self-reported health of indigenous peoples in Canada. The APS is conducted every 5 years by Statistics Canada and is a thematic survey, meaning that in each of its iterations, it focuses on a different topic linked to the social and economic conditions of Aboriginal people living in Canada. The 2012 version focuses specifically on "issues such as education, employment, health, language, income, housing and mobility" (Government of Canada 2011).

The target population of the survey is the Aboriginal identity population of Canada who were 6 years of age and older as of February 1, 2012. Aboriginal identity population refers to "those persons who reported identifying with at least one Aboriginal group, namely, First Nations (North American Indian), Métis or Inuit, those who reported being a Status Indian (Registered Indian or Treaty Indian, as defined by the Indian Act of Canada), or those who reported being a member of a First Nation or Indian band" (Government of Canada 2011). The total number of Aboriginal respondents included in the 2012 APS dataset is 28,410. The data in the final 2012 APS file also includes 100 2011 National Household Survey (NHS) variables which are included to make the micro data file more comprehensive, reduce the response burden of the target population of the APS and to help derive survey weights (Government of Canada 2011).

The survey was conducted either in person or over the phone, using Computer Assisted Telephone Interviews (CATI) and Computer Assisted Personal Interviews (CAPI) (Government of Canada 2011) although most interviews were carried out over the phone. Proxy reporting was used for most children under the age of 15, for about half of those aged 15 to 17 and for adults unable to answer for specific reasons such as language barriers, health reasons, or who were unavailable for the duration of the survey (Government of Canada 2011).

The responses in the sample were weighted so that they could portray accurate information about the Aboriginal population living in Canada using a combined method: "the inverse of the stratum sampling fraction and the NHS weight corrected for non-response for the unit in question" (Government of Canada 2011). The stratum sampling fraction is "calculated as the number of people selected for the APS in each stratum divided by the total number of available NHS respondents for that stratum" (Government of Canada 2011). By comparing the number of responses per unit in the 2012 APS to the 2011 NHS, Statistics Canada developed a robust survey weighting method.

This dataset was chosen as it is one of the only surveys to report on the wellbeing of indigenous peoples in Canada. Other dataset options are the Canadian Census, Canadian Community Health Survey, or the National Household Survey, but these were not utilized as they do not report as comprehensively as the APS on the wellbeing of survey participants. As mentioned above, the 2012 APS final file includes 100 variables from the 2011 NHS which make it a comprehensive dataset for determining the wellbeing of indigenous peoples.

2.2 Data Cleaning

Due to the proxied responses of most of the respondents under 15, and the subjective mature of the self-reported health variable making those proxied responses unreliable, the responses for survey participants under the age of 15 were dropped.[5]

Most of the survey questions were categorical, and in order to disseminate the individual characteristics and wellbeing of the respondents, a set of dummy variables for each survey question were generated for estimation purposes. The only exceptions are the self-reported health variable, which was kept as an ordered categorical variable and, for the youth, variables assessing the positivity or negativity of their school environment were kept as continuous variables ranging from 1-4.

There were three main types of non-responses in this survey data: not stated, refusal and don't know. For nearly all of the selected variables in this estimation, the responses of the respondents who fell into these categories were removed. The only exception is for the residential schooling variables, where a considerable portion of the respondents did not respond when asked if they or any of their family members attended residential schools. Another dummy variable was created under this category to identify those who chose not to respond to that question.

The survey sample was split into two sub-groups: adults (19+) and youth (15-18). For each group, a different set of co-variates were used to estimate the impact of social capital on self-reported health. Due to the nature of the questions asked, and the age of the

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[5] STATA (v15.1) was used to make these and other modifications to the dataset, as well as calculate the estimations.

respondents certain questions were asked to, the separating of youth from adults was logical. The main reason for stratifying the youth sub-group was the wealth of information pertaining to schooling and education environment. For adults, the wealth of medical history questions only asked of adults have a direct impact on self-reported health. After data cleaning and splitting, the adult sub-group includes 10, 723 respondents, and the youth sub-group includes 2, 114 respondents.

2.3 Ordered Probit Model

This study uses an ordered probit model to estimate the impact of social capital and other control variables on an individual's self-reported health. The following subsection explains how the ordered probit model estimates the impact of independent variables on an ordered categorical outcome. These explanations are paraphrased from Cameron and Trivedi (2009).

The outcomes of interest in this study are a person's reported health. When a person's *actual* health, the latent variable y^*, crosses progressively higher thresholds α_j, they report sequentially higher health status y. The latent health variable is specified by

Equation 1: Latent Health Specification

$$y_i^* = x_i'\beta + u_i$$

For $y^* < \alpha_1$, health status is poor; for $\alpha_1 < y^* \leq \alpha_2$, health status increases to fair; for $\alpha_2 < y^* \leq \alpha_3$, health status increases to good; for $\alpha_3 < y^* \leq \alpha_4$, health status increases to very good; and for $y^* > \alpha_4$, health status increases to excellent. This can be represented as

Equation 2: Ordered Probit Reported Health Categories

$$y_i = j \quad \text{if } \alpha_{j-1} < y_i^* \leq \alpha_j, j = 1, 2, 3, 4, 5$$

22

where $\alpha_0 = -\infty$ and $\alpha_5 = \infty$. Then

Equation 3: Health Categories in Cumulative Distribution Function

$$
\begin{aligned}
\Pr(y_i = j) \quad &= \Pr(\alpha_{j-1} < y_i^* \leq \alpha_j) \\
&= \Pr(\alpha_{j-1} < x_i'\beta + u_i \leq \alpha_j) \\
&= \Pr(\alpha_{j-1} - x_i'\beta < u_i \leq \alpha_j - x_i'\beta) \\
&= F(\alpha_j - x_i'\beta) - F(\alpha_{j-1} - x_i'\beta)
\end{aligned}
$$

where F is the cumulative distribution function (c.d.f) of u_i. For the ordered probit model, u is standard normally distributed with $F(\cdot) = \Phi(\cdot)$.

The sign of the coefficients β can be interpreted as determining whether actual health y^* increases with the independent variable. In other words, if β_j is positive, then an increase in x_{ij} decreases the probability of reporting poor health ($y_i = 1$) and increases the probability of reporting excellent health ($y_i = 5$).

To interpret the magnitude of the coefficients, marginal effects must be calculated. For example, the marginal effect of choosing excellent health when regressor x_r changes is given by

Equation 4: Marginal Effect Calculation

$$
\frac{\partial \Pr(y_i=5)}{\partial x_{ri}} = \{ F'(\alpha_5 - x_i'\beta) - F'(\alpha_4 - x_i'\beta) \} \beta_r
$$

2.4 Adult Specification

The specification for adults is as follows:

Equation 5: Specification for Adults

$$
Y_i = \beta_0 + \beta_j SC_{ji} + \beta_k X_{ki} + \beta_l SE_{li} + \beta_m H_{mi} + u_i
$$

23

Where Y_i is the self-reported health category of an individual, SC_{ji} is a group of social capital descriptive variables of an individual, X_{ki} is a group of personal/demographic descriptive variables of an individual, SE_{li} is a group of socio-economic variables of an individual and H_{mi} is a group of medical history variables of an individual and u_i is the disturbance term of the estimation. The variables constituting each of these groups are described in Table 1. Variables were also categorized according to whether they serve a primary or enabling social capital investment function, where primary indicates a variable directly indicating a respondent's social capital (networks and network-based resources) and enabling represents a variable which potentially impacts health through the social capital channel but has other likely relationships to health. For example, being married provides someone with spousal support which is a social capital resource, but marriage also impacts health in more direct ways such as through the impact of shared wealth.

Table 1: Variables in the Adult Specification

N = 10, 723

Group	Variable	Description	Primary/ Enabling[6]
Social Capital			
SC-Membership			
	band_member	Respondent is a member of an Aboriginal band	Primary
Ethnic Identity	Base: aborig_in	Inuit indigenous ethnicity	Primary
	aborig_fn	First Nations indigenous ethnicity	Primary
	aborig_met	Metis indigenous ethnicity	Primary
SC-Participation			
	tradact	Respondent participated in traditional activities in the	Primary

[6] Primary describes a variable directly indicating a respondent's social capital (networks and network-based resources) and Enabling represents a variable which potentially impacts health through the social capital channel but has other likely relationships to health.

		past year such as trapping, hunting and crafting	
	language_speak	Respondent can speak an aboriginal language	Primary
SC-Social Isolation			
Support	Base: supp_none	Respondent has no one to turn to for support	Primary
	supp_immfam	Respondent can turn to mother, father, and/or siblings for support	Primary
	supp_distfam	Respondent can turn to other family members for support	Primary
	supp_frneco	Respondent can turn to friends, neighbors and co-workers for support	Primary
	supp_comm	Respondent can turn to other community members and organizations for support	Primary
Strength of family ties to community	Base: famties_none	Respondent has no familial ties to the community outside of their household	Primary
	famties_vryweak	Respondent describes family ties to their community as very weak	Primary
	famties_weak	Respondent describes family ties to their community as weak	Primary
	famties_moder	Respondent describes family ties to their community as moderate	Primary
	famties_strong	Respondent describes family ties to their community as strong	Primary
	famties_vrystrong	Respondent describes family ties to their community as very strong	Primary
Personal/Demographic Information			
Pop. Density	Base: area_rural	Respondent lives in a rural area	

	area_cma	Respondent lives in a Census Metropolitan Area	
	area_urban	Respondent lives in other urban area	
	reserorfnatcom	Respondent has lived in a reserve or First Nation community	
Community tenure	nonlocal	Respondent has not lived in current community their entire life	Enabling
	nonloc_reslt1	Respondent's tenure in current community is less than one year	Enabling
Residential schooling	Base: resschool_none	Respondent or respondent's family members have not attended residential schools	
	resschool_attend	Respondent has attended residential schools	
	resschool_pgpattend	Only respondent's parents or grandparents have attended residential schools	
	resschool_othfamattend	Only respondent's other family members have attended residential schools	
	resschool_pgpothfamatt end	Respondent's parents, grandparents and other family members have attended residential schools	
	resschool_ns	Respondent did not state their own or their family members' residential school attendance	
Age	Base: age_1924	Respondent age group: 19-24	
	age_2534	Respondent age group: 25-34	
	age_3544	Respondent age group: 35-44	
	age_4554	Respondent age group: 45-54	

	age_55over	Respondent age group: 55+	
Sex	female	Respondent is female	
Federal identity status	aborig_status	Respondent has Federal Aboriginal status	
Marital Status	Base: single	Respondent is single and has never married	Enabling
	ms_married	Marriage status: married	Enabling
	ms_claw	Marriage status: common-law	Enabling
	ms_sepdivwid	Marriage status: separated/divorced/widowed	Enabling
	hh_children	Respondent lives with children	
Household size	Base: hhsize_one	Respondent lives alone	Enabling
	hhsize_two	Household size: two	Enabling
	hhsize_three	Household size: three	Enabling
	hhsize_four	Household size: four	Enabling
	hhsize_fiveom	Household size: five or more	Enabling
Socio-Economic Information			
Education level	Base: educ_gr8	Highest level of education completed: grade eight or less	
	educ_somesec	Highest level of education completed: some high school	
	educ_secondary	Highest level of education completed: high school diploma or equivalent	
	educ_somepostsec	Highest level of education completed: some post-secondary	
	educ_postsec	Highest level of education completed: post-secondary diploma or certificate below bachelor level	
	educ_bachormore	Highest level of education completed: bachelors or higher degree	
Labour force status	Base: lfs_emp	Labour force status: employed	Enabling

	lfs_nolf	Labour force status: not in LF	Enabling
	lfs_unemp	Labour force status: unemployed	Enabling
Occupation	Base: occ_nlf	Labour force status: not in LF	
	occ_mngmnt	Occupation: management	
	occ_sciences	Occupation: sciences	
	occ_health	Occupation: healthcare	
	occ_educlawgovsev	Occupation: education/law/government services	
	occ_artcultrecsprt	Occupation:art/culture/recreation/sports	
	occ_salesserv	Occupation: sales/ service	
	occ_tradesandoperators	Occupation: trades and operators	
	occ_natresagric	Occupation: natural resources/ agriculture	
	occ_manufutil	Occupation: manufacturing/ utilities	
Personal income	Base: inc_lt5k	Annual personal income: less than $5000	
	inc_5t10k	Annual personal income: $5000-10000	
	inc_10t20k	Annual personal income: $10000-20000	
	inc_20t30k	Annual personal income: $20000-30000	
	inc_30t40k	Annual personal income: $30000-40000	
	inc_40t50k	Annual personal income: $40000-50000	
	inc_mt50k	Annual personal income: more than $50000	
Poverty measures	Base: foodsec_high	High food security	
	foodsec_low	Low food security	
	foodsec_vrylow	Very low food security	
	Base: dwelrep_regmait	Dwelling repairs required: regular maintenance	
	dwelrep_minor	Dwelling repairs required: minor	
	dwelrep_major	Dwelling repairs required: major	

Medical History Information			
Health Access	consult	Respondent has consulted a health professional within the last year	
	hcareneednotrcv	Healthcare was needed within the last year and not received	
	Base: regdoc	Respondent has a regular doctor	
	noregdoc	Respondent does not have a regular doctor	
	noregdoc_notry	Respondent does not have a regular doctor and has not tried to find one	
	noregdoc_smwhrelse	Respondent does not have a regular doctor because there are none available within their local area	
Bodyweight	Base: weight_normal	BMI weight: normal	
	weight_under	BMI weight: underweight	
	weight_over	BMI weight: overweight	
	weight_obese1	BMI weight: obese threshold 1	
	weight_obese2	BMI weight: obese threshold 2	
	weight_obese3	BMI weight: obese threshold 3	
Cigarette use	Base: nonsmoker	Respondent has not smoked in past year	
	smoker_occasion	Respondent smokes occasionally	
	smoker_daily	Respondent smokes daily	
Alcohol use	Base: nondrinker	Respondent has not drunk alcohol in the past year	
	alcfreq_4to6pw	Respondent drinks 4-6 alcoholic drinks per week	
	alcfreq_2to3pw	Respondent drinks 2-3 alcoholic beverages per week	
	alcfreq_1pw	Respondent drinks 1 alcoholic beverage per week	
	alcfreq_0to3pm	Respondent drinks 3 or less drinks per month	

Drug use	drugs	Respondent has used illegal drugs in their life	
Long-term conditions	Base:ltc_none	No long-term condition	
	ltc_asthma	Long-term condition: asthma	
	ltc_arthritis	Long-term condition: arthritis	
	ltc_highbp	Long-term condition: high blood pressure	
	ltc_crbroncopd	Long-term condition: chronic bronchitis/ COPD	
	ltc_diabetes	Long-term condition: diabetes	
	ltc_heartdis	Long-term condition: heart disease	
	ltc_ulcers	Long-term condition: ulcers	
	ltc_boweldis	Long-term condition: bowel disorder	
	ltc_mooddis	Long-term condition: mood disorder	
	ltc_anxietydis	Long-term condition: anxiety disorder	
	ltc_learningdis	Long-term condition: learning disorder	
	ltc_other	Long-term condition: other	
Mental distress	Base: stress_low	Low stress level	
	stress_mod	Moderate stress level	
	stress_high	High stress level	
	stress_vryhigh	Very high stress level	
Mental health	Base: mentalhlth_poor	Self-reported mental health: poor	
	mentalhlth_fair	Self-reported mental health: fair	
	mentalhlth_good	Self-reported mental health: good	
	mentalhlth_verygood	Self-reported mental health: very good	
	mentalhlth_excellent	Self-reported mental health: excellent	
Suicidal Thoughts	Base: suic_never	Respondent has never had suicidal thoughts	

	suic_mt1yrago	Respondent has had suicidal thoughts more than 1 year ago	
	suic_recent	Respondent has had suicidal thoughts within the last year	

The social capital group was separated into three sub-categories: membership, participation and social isolation. Membership refers to formal and informal memberships to certain groups, in this case, formal membership means that a person has sought membership in an Aboriginal Band and informal membership involves less of a choice and refers to the ethnic group to which a person belongs. These variables are primary social capital variables. Participation refers to activities wherein a person takes an active role in engaging with their social community and culture, and in this case is captured by a person's ability to speak an indigenous language and their participation in traditional activities. Participation involves a more active role in amassing social capital, and so these variables are considered primary social capital. Social isolation measures to what degree a person is isolated from others in the community and is captured by variables describing who a person can turn to for support and variables assessing the strength of a person's familial ties to their community, beyond their own household. These variables are considered primary social capital.

The personal/demographic group of variables control for factors such as age, sex, marital status, Federal Aboriginal Status, community size, tenure in the community, whether a respondent has lived on a reserve or in a First Nations community, household size and type, and personal or family residential school attendance for the effects these may have on a person's self-reported health. Of these, the community tenure variables are

31

considered enabling, as it is likely that a person who has lived longer in a community has had a greater chance to amass social capital than someone who hasn't. The marital status and household size variables are also considered enabling, as someone who is married or common law has at least one much stronger social relationship compared to someone who is divorced, and living in a larger household gives an individual the opportunity to strengthen and utilize more social relationships than a person who lives in a smaller household.

Socio economic indicators also impact a respondent's health. These variables include respondent education, income, employment status and occupation, and two variables which identify poverty levels: the state of a person's dwelling and their food security. Of these, labour forces status has an enabling social capital effect, as one would expect that someone who is working or actively seeking work to have a greater opportunity to amass social capital than someone who is not in the labour force, although being in the labour force can impact health in more direct ways.

The final group of variables, medical history, are directly related to health and so must be included in this study. These variables describe a respondent's access to health services, bodyweight, cigarette, alcohol and drug use, long term conditions, mental distress level, mental health, and suicidal thoughts. None of the variables in this category have an enabling social capital effect, as they are all directly related to health through personal history or health infrastructure characteristics.

Access to health services includes variables which describe if a person has consulted a health professional within the last year, whether they have access to a regular medical doctor or not and if not, why, and indicates if a respondent has required healthcare

and not received it in the past year. Having regular access to health services is expected to positively impact health, although someone who needs healthcare on a regular basis may be more likely to report lower levels of health.

Bodyweight is evaluated in accordance to the body mass index. Underweight, overweight and obese respondents are predicted to have a lower likelihood of reporting high levels of health than are respondents who fall into the normal weight category.

The use of cigarettes, alcohol and drugs are predicted to have a negative impact on health. In the data, the frequency of cigarette use is assessed as either occasionally or daily. Daily use should have a greater impact than occasional use. The frequency of alcohol use is also assessed in the dataset. The more frequently a person uses alcohol, the greater the expected negative impact to health is. Drug use is evaluated on whether a respondent has ever used illegal drugs or not. It would be helpful to also have the frequency of use for drugs available, but a negative impact to health is still suspected to be related to drug use.

Long-term conditions are all expected to have a negative impact on health, as they present cases where the health of a respondent is impacted by a health disorder. These disorders include asthma, arthritis, high blood pressure, chronic bronchitis, COPD, diabetes, heart disease, mood disorders, anxiety disorders, learning disorders and a category for other disorders.

Indicators of mental health are included because of the impact they will have on self-reported health, due to the links between mental and physical health as well as the tendency of mental health to impact one's perception of their health. This is evaluated in

the data through self-reported mental health, mental distress level and presence of recent (< 1 year) or less recent (> 1 year) suicidal thoughts.

2.5 Youth Specification

The specification for youth is as follows:

Equation 6: Specification for Youth

$$Y_i = \beta_0 + \beta_j\ SC_{ji} + \beta_k\ X_{ki} + \beta_l SE_{li} + \beta_m\ H_{mi} + u_i$$

Where Y_i is the self-reported health of an individual, SC_{ji} is a group of social capital descriptive variables of an individual, X_{ki} is a group of personal/demographic/socio-economic descriptive variables of an individual, SE_{li} is a group of variables relating to the education and schooling environment of an individual and H_{mi} is a group of medical history variables of an individual and u_i is the disturbance term of the estimation. A description of the variables selected for the youth is given in Table 2.

Table 2: Variables in the Youth Specification

N = 2, 114

Group	Variable	Description	Primary/ Enabling
Social Capital			
SC-Membership			
	band_member	Respondent is a member of an Aboriginal band	Primary
Ethnic Identity	Base: aborig_in	Inuit indigenous ethnicity	Primary
	aborig_fn	First Nations indigenous ethnicity	Primary
	aborig_met	Metis indigenous ethnicity	Primary

SC-Participation			
Participation in culture	language_speak	Respondent can speak an aboriginal language	Primary
Participation in the community	participation_cult	Respondent has participated in cultural activities in the past year	Primary
	participation_cult_na	Cultural activities not available	Primary
	participation_elder	Respondent has spent time with community Elders in past year	Primary
	participation_volun	Respondent has volunteered in the community in the past year	Primary
	participation_sports	Respondent has participated in sports activities in the past year	Primary
	participation_sports_na	Sports activities are not available	Primary
	participation_arts	Respondent has participated in arts/ drama/ music activities in the past year	Primary
	participation_arts_na	Arts/ drama/ music activities not available	Primary
	participation_clubs	Respondent has participated in club activities in the past year	Primary
	participation_clubs_na	Club activities are not available	Primary
SC-Social Isolation			
Peer norms and values	Base: peeraspirations_vrylow	Respondent's peer educational aspirations: very low	Primary
	peeraspirations_high	Respondent's peer educational aspirations: high	Primary

	peeraspirations_moderate	Respondent's peer educational aspirations: moderate	Primary
	peeraspirations_low	Respondent's peer educational aspirations: low	Primary
	Base: peerrisk_vrylow	Respondent's prevalence of peer risk behaviours: very low	Primary
	peerrisk_low	Respondent's prevalence of peer risk behaviours: low	Primary
	peerrisk_moderate	Respondent's prevalence of peer risk behaviours: moderate	Primary
	peerrisk_high	Respondent's prevalence of peer risk behaviours: high	Primary
Support	Base: supp_none	Respondent has no one to turn to for support	Primary
	supp_immfam	Respondent can turn to mother, father, and/or siblings for support	Primary
	supp_distfam	Respondent can turn to other family members for support	Primary
	supp_frneco	Respondent can turn to friends, neighbors and co-workers for support	Primary
	supp_comm	Respondent can turn to other community members and organizations for support	Primary
	Base: supp_noneed	Support not needed	Primary
	supp_needrec	Support needed and received	Primary
	supp_neednr	Support needed and not received	Primary
Strength of family ties to community	Base: famties_none	Respondent has no familial ties to the	Primary

		community outside of their household	
	famties_vryweak	Respondent describes family ties to their community as very weak	Primary
	famties_weak	Respondent describes family ties to their community as weak	Primary
	famties_moder	Respondent describes family ties to their community as moderate	Primary
	famties_strong	Respondent describes family ties to their community as strong	Primary
	famties_vrystrong	Respondent describes family ties to their community as very strong	Primary
Personal/ Socioeconomic Descriptors			
Sex	female	Respondent is female	
Marital Status	single	Respondent is single	Enabling
Pop. Density	Base: area_rural	Respondent lives in a rural area	
	area_cma	Respondent lives in a Census Metropolitan Area	
	area_urban	Respondent lives in other urban area	
	reserorfnatcom	Respondent has lived in a reserve or First Nation community	
Community tenure	nonlocal	Respondent has not lived in current community their entire life	Enabling
	nonloc_reslt1	Respondent's tenure in current community is less than one year	Enabling
	nonloc_res2to5	Respondent's tenure in current community is 2-5 years	Enabling

	nonloc_res6to10	Respondent's tenure in current community is 6-10 years	Enabling
Residential Schooling	Base: resschool_none	Respondent or respondent's family members have not attended residential schools	
	resschool_pgpattend	Only respondent's parents or grandparents have attended residential schools	
	resschool_othfamattend	Only respondent's other family members have attended residential schools	
	resschool_pgpothfamattend	Respondent's parents, grandparents and other family members have attended residential schools	
	resschool_ns	Respondent did not state their own or their family members' residential school attendance	
Labour force status	Base: lfs_emp	Labour force status: employed	Enabling
	lfs_nolf	Labour force status: not in LF	Enabling
	lfs_unemp	Labour force status: unemployed	Enabling
Personal income	Base: inc_lt5k	Annual personal income: less than $5000	
	inc_5t10k	Annual personal income: $5000-10000	
	inc_10t20k	Annual personal income: $10000-20000	
	inc_mt20k	Annual personal income: more than $20000	
Poverty measures	Base: foodsec_high	High food security	
	foodsec_low	Low food security	

	foodsec_vrylow	Very low food security	
	Base: dwelrep_regmait	Dwelling repairs required: regular maintenance	
	dwelrep_major	Dwelling repairs required: minor	
	dwelrep_minor	Dwelling repairs required: major	
Household size	Base: hhsize_one	Respondent lives alone	Enabling
	hhsize_two	Household size: two	Enabling
	hhsize_three	Household size: three	Enabling
	hhsize_four	Household size: four	Enabling
	hhsize_fiveom	Household size: five or more	Enabling
Federal identity status	aborig_status	Respondent has Federal Aboriginal Status	
Education/ School Environment			
Education level	Base: educ_curr712	Currently attending grade 7-12	
	educ_currk6	Currently attending grade k-6	
	educ_hsleave	High school leaver	
	educ_hscomp	High school completer	
Education performance	Base: grade_a	Last report grade: a	
	grade_b	Last report grade: b	
	grade_c	Last report grade: c	
	grade_d	Last report grade: d	
	grade_f	Last report grade: f	
	grade_none	Last report grade: none to report	
Family involvement in education	Base: fam_invnone	Family involvement in education, school, other academic activities: none	Primary
	fam_inveduc	Family involved in education	Primary
	fam_invsch	Family involved in school	Primary

	fam_invoth	Family involved in other academic activities	Primary
	fam_invothna	Other academic activities not available	Primary
School environment	school_enpos	School environment: less positive to more positive (1-4)	Enabling
	school_enneg	School environment: less negative to more negative (1-4)	Enabling
Schools attended	Base: school_att1	Number of schools attended: 1	Enabling
	school_att2	Number of schools attended: 2	Enabling
	school_att3	Number of schools attended: 3	Enabling
	school_att4	Number of schools attended: 4	Enabling
	school_att5ormore	Number of schools attended: 5 or more	Enabling
Health Information			
Healthcare access	consult	Respondent has consulted a health professional within the last year	
	hcareneednotrcv	Healthcare was needed within the last year and not received	
	noregdoc	Respondent does not have a regular doctor	
	noregdoc_notry	Respondent does not have a regular doctor and has not tried to find one	
	noregdoc_smwhrelse	Respondent does not have a regular doctor because there are none available within their local area	
Long-term Conditions	Base: ltc_none	No long-term condition	
	ltc_asthma	Long-term condition: asthma	

	ltc_arthritis	Long-term condition: arthritis	
	ltc_highbp	Long-term condition: high blood pressure	
	ltc_crbroncopd	Long-term condition: chronic bronchitis/ COPD	
	ltc_diabetes	Long-term condition: diabetes	
	ltc_heartdis	Long-term condition: heart disease	
	ltc_ulcers	Long-term condition: ulcers	
	ltc_boweldis	Long-term condition: bowel disorder	
	ltc_mooddis	Long-term condition: mood disorder	
	ltc_anxietydis	Long-term condition: anxiety disorder	
	ltc_learningdis	Long-term condition: learning disorder	
	ltc_other	Long-term condition: other	
Suicidal thoughts	Base: suic_never	Respondent has never had suicidal thoughts	
	suic_mt1yrago	Respondent has had suicidal thoughts more than 1 year ago	
	suic_recent	Respondent has had suicidal thoughts within the last year	

For the social capital group, the membership variables are the same as the ones used for the adult specification. The participation sub-category of youth was expanded with variables describing a respondent's participation in cultural activities, with elders, as a volunteer, with sports activities, with arts/drama/music activities, and with other clubs. All of these are considered primary social capital indicators. In the social isolation category, there is extra information available in the 2012 APS for youth compared to adults about

the nature of their friendships and support available which are important for a social capital study. These added variables describe a respondent's peer educational aspirations, peer risk behaviour, and whether social support was needed or not and received or not. These are all primary social capital variables. Interestingly, peer risk behaviors present us with the first variable describing a negative social capital impact on wellbeing. In this particular case, a youth would be better off socially isolated from these kinds of relationships. The other variables in the social isolation sub-category are the same ones that are in the adult specification.

For the youth the socio-economic and personal demographic variables were combined. The only additions to the hybrid demographic category compared to adults are more variables describing the length of tenure in a community. This is an enabling social capital factor. Unlike the adults, variables relating to occupation and the higher end of income are unavailable for youth. Another difference in this category from adults is that no-one under 19 has attended residential schools, so the residential school variables in this section only describe family member attendance.

The next section relates to the school environment and education of a respondent. These variables are important from a social capital standpoint and are one of the reasons for splitting the sample into the adult/youth sub-groups. These variables assess current education level, latest report card grade, family involvement in education/school/other academic activities, school environment, and number of schools attended. Of these, the family involvement variables are the most important from a social capital standpoint, as this directly represents utilization of a social resource. These are therefore considered primary social capital variables. School environment is an enabling factor, as someone who

reports a positive school environment is more likely to engage with their school community and amass more social capital than someone reporting a less positive or negative school environment. Number of schools attended is also an enabling social capital factor, as someone who has attended a smaller number of schools has the opportunity to build stronger relationships and amass more social capital than someone who has attended more schools.

The medical history group for the youth is similar to the adults, although for the youth we only see information relating to access to healthcare, long term conditions and suicidal thoughts.

3 Results

3.1 Regression Results for the Adult Sample

As mentioned in the previous section, the impact of social capital on self-reported health, while controlling for other relevant variables, was estimated using an ordered probit model in STATA. The ordered probit model was chosen due to the ordered categorical nature of the dependent variable (i.e., self-reported health, where responses range from 1 – poor to 5 – excellent). Survey weights[7] provided by Statistics Canada were used in the estimation process to preserve the representativeness of the sample.

Regression output for adults are presented in Table 3 below. In particular, variables and the names of the dummy variables included in the specification to control for individual categories of these variables are presented in the first and second columns of the table respectively. The third column presents the coefficient estimates and the robust[8] standard errors (SE), which are presented below the coefficients in parentheses. According to the R^2 value, this model predicts 21% of the variability of the response data around its mean. Due to the nonlinear nature of the ordered-probit model, the coefficients do not correspond to the marginal effects of the independent variables on the self-reported health of individuals. Therefore, marginal effects and their robust SEs are presented in column four of the table. Statistical significance of the coefficients and the marginal effects are illustrated by the number of '*' symbols next to the estimates[9]. For the sake of brevity, the discussion on

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[7] See the survey website (http://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&Id=28330) for further information on the survey weights.
[8] This procedure allows for the standard errors of the regression coefficients to be calculated accurately even when the error term is not identically distributed and exhibits heteroscedasticity.
[9] 1, 5 and 10% levels of significance are indicated by ***, ** and * symbols respectively.

marginal effects presented in the next section focuses on the marginal effects that are statistically significant at the 10% level or higher.

Table 3: Regression Output for the Adult Sample

n = 10, 723; Pseudo R^2 = 0.2107; Wald chi^2 (102) = 2308.44; Prob > chi^2 = 0

Group	Variable	Coefficient (Robust Standard Error)	Marginal Effects (Robust SE)
Social Capital			
SC- Membership			
	band_member	0.049 (0.053)	0.010 (0.010)
Ethnic Identity	Base: aborig_in		
	aborig_fn	0.058 (0.079)	0.011 (0.015)
	aborig_met	0.071 (0.073)	0.014 (0.014)
SC-Participation			
	tradact	0.028 (0.038)	0.005 (0.007)
	language_speak	0.026 (0.061)	0.005 (0.012)
SC- Social Isolation			
Support	Base: supp_none		
	supp_immfam	0.133** (0.055)	0.026** (0.011)
	supp_distfam	0.065 (0.048)	0.013 (0.009)
	supp_frneco	0.085* (0.044)	0.017* (0.009)
	supp_comm	0.038 (0.080)	0.007 (0.016)
	Base: famties_none		
	famties_vryweak	0.083 (0.093)	0.016 (0.018)
	famties_weak	0.030 (0.102)	0.006 (0.020)
	famties_moder	-0.050 (0.076)	-0.010 (0.015)
	famties_strong	-0.024 (0.071)	-0.005 (0.014)
	famties_vrystrong	0.045	0.009

		(0.066)	(0.013)
Personal/ Demographic			
Pop. Density	Base: area_rural		
	area_cma	-0.005	-0.001
		(0.047)	(0.009)
	area_urban	0.042	0.008
		(0.051)	(0.010)
	reserorfnatcom	-0.030	-0.006
		(0.062)	(0.012)
Community tenure	nonlocal	0.015	0.003
		(0.039)	(0.008)
	nonloc_reslt1	-0.075	-0.015
		(0.088)	(0.017)
Residential schooling	Base: reschool_none		
	resschool_attend	-0.157**	-0.031**
		(0.079)	(0.016)
	resschool_pgpattend	-0.014	-0.003
		(0.057)	(0.011)
	resschool_othfamattend	-0.058	-0.011
		(0.096)	(0.019)
	reschool_pgpothfamattend	-0.106*	-0.021*
		(0.056)	(0.011)
	resschool_ns	-0.019	-0.004
		(0.046)	(0.009)
Age	Base: age_1924		
	age_2534	-0.118**	-0.023**
		(0.058)	(0.011)
	age_3544	-0.193***	-0.038***
		(0.063)	(0.012)
	age_4554	-0.234***	-0.045***
		(0.070)	(0.014)
	age_55over	-0.173**	-0.034**
		(0.086)	(0.017)
Sex	female	0.037	0.007
		(0.043)	(0.008)
Federal identity status	aborig_status	0.012	0.002
		(0.051)	(0.010)
Marital Status	Base: single		
	ms_married	0.037	0.007
		(0.043)	(0.011)
	ms_claw	-0.015	-0.003
		(0.052)	(0.010)
	ms_sepdivwid	0.096	0.019
		(0.070)	(0.014)

	hh_children	-0.074 (0.050)	-0.014 (0.010)
Household size	Base: hhsize_one		
	hhsize_two	0.034 (0.062)	0.007 (0.012)
	hhsize_three	0.083 (0.078)	0.016 (0.015)
	hhsize_four	0.088 (0.084)	0.017 (0.016)
	hhsize_fiveom	0.093 (0.084)	0.018 (0.016)
Socio-economic			
Education level	Base: educ_gr8		
	educ_somesec	0.115 (0.083)	0.022 (0.016)
	educ_secondary	0.078 (0.085)	0.015 (0.017)
	educ_somepostsec	0.062 (0.085)	0.012 (0.017)
	educ_postsec	0.158* (0.082)	0.031* (0.016)
	educ_bachormore	0.275*** (0.094)	0.053*** (0.018)
Labour force status	Base: lfs_emp		
	lfs_nolf	-0.221*** (0.073)	-0.043*** (0.014)
	lfs_unemp	-0.082 (0.089)	-0.016 (0.017)
Occupation	Base: occ_nlf		
	occ_mngmnt	0.092 (0.097)	0.018 (0.019)
	occ_sciences	0.067 (0.115)	0.013 (0.022)
	occ_health	-0.062 (0.091)	-0.012 (0.018)
	occ_educlawgovsev	-0.105 (0.070)	-0.020 (0.015)
	occ_artcultrecsprt	0.035 (0.126)	0.007 (0.025)
	occ_salesserv	-0.064 (0.070)	-0.012 (0.014)
	occ_tradesandoperators	-0.081 (0.075)	-0.016 (0.015)
	occ_natresagric	0.079 (0.132)	0.015 (0.026)

	occ_manufutil	-0.039 (0.116)	-0.008 (0.023)
Personal income	Base: inc_lt5k		
	inc_5t10k	-0.146* (0.082)	-0.028* (0.016)
	inc_10t20k	-0.167** (0.074)	-0.032** (0.015)
	inc_20t30k	-0.117 (0.077)	-0.023 (0.015)
	inc_30t40k	-0.075 (0.077)	-0.015 (0.015)
	inc_40t50k	0.005 (0.082)	0.001 (0.016)
	inc_mt50k	-0.038 (0.073	-0.007 (0.014)
Poverty measures	Base: foodsec_high		
	foodsec_low	-0.004 (0.060)	-0.001 (0.012)
	foodsec_vrylow	-0.063 (0.084)	-0.012 (0.016)
	Base: dwelrep_regmait		
	dwelrep_minor	-0.047 (0.040)	-0.009 (0.008)
	dwelrep_major	-0.108* (0.061)	-0.021* (0.012)
Medical History			
Access to healthcare	consult	-0.162*** (0.046)	-0.031*** (0.009)
	hcareneednotrcv	-0.269*** (0.055)	-0.052*** (0.011)
	Base: regdoc		
	noregdoc	0.010 (0.061)	0.002 (0.012)
	noregdoc_notry	0.015 (0.077)	0.003 (0.015)
	noregdoc_smwhrelse	-0.065 (0.094)	-0.013 (0.018)
Bodyweight	Base: weight_normal		
	weight_under	-0.233 (0.154)	-0.045 (0.030)
	weight_over	-0.129*** (0.041)	-0.025*** (0.008)
	weight_obese1	-0.241*** (0.050	-0.047*** (0.010)
	weight_obese2	-0.471***	-0.092***

		(0.079)	(0.015)
	weight_obese3	-0.565***	-0.110***
		(0.106)	(0.021)
Frequency of cigarette use	Base: nonsmoker		
	smoker_occasion	-0.226***	-0.044***
		(0.058)	(0.011)
	smoker_daily	-0.287***	-0.056***
		(0.044)	(0.009)
Frequency of alcohol use	Base: nondrinker		
	alcfreq_4to6pw	0.132	0.026
		(0.083)	(0.016)
	alcfreq_2to3pw	0.206***	0.040***
		(0.064)	(0.012)
	alcfreq_1pw	0.154**	0.030***
		(0.063)	(0.012)
	alcfreq_0to3pm	0.082	0.016
		(0.052)	(0.010)
Drug use	drugs	-0.033	-0.006
		(0.043)	(0.008)
Long-term conditions	Base: ltc_none		
	ltc_asthma	-0.087	-0.017
		(0.056)	(0.011)
	ltc_arthritis	-0.333***	-0.065***
		(0.056)	(0.010)
	ltc_highbp	-0.379***	-0.074***
		(0.055)	(0.011)
	ltc_crboncopd	-0.364***	-0.071***
		(0.106)	(0.020)
	ltc_diabetes	-0.608***	-0.118***
		(0.074)	(0.014)
	ltc_heartdis	-0.625***	-0.122***
		(0.091)	(0.018)
	ltc_ulcers	-0.278***	-0.054***
		(0.103)	(0.020)
	ltc_boweldis	-0.215***	-0.042***
		(0.069)	(0.014)
	ltc_mooddis	-0.049	-0.010
		(0.068)	(0.013)
	ltc_anxietydis	-0.016	-0.003
		(0.060)	(0.012)
	ltc_learningdis	-0.015	-0.003
		(0.065)	(0.013)

	ltc_other	-0.417*** (0.048)	-0.081*** (0.009)
Mental distress level	Base: stress_low		
	stress_mod	-0.012 (0.079)	-0.002 (0.015)
	stress_high	-0.236* (0.138)	-0.046* (0.027)
	stress_vryhigh	-0.113 (0.225)	-0.022 (0.044)
Self-reported mental health	Base: mentalhlth_poor		
	mentalhlth_fair	0.777*** (0.161)	0.151*** (0.032)
	mentalhlth_good	1.208*** (0.162)	0.235*** (0.032)
	mentalhlth_verygood	1.678*** (0.164)	0.326*** (0.033)
	mentalhlth_excellent	2.164*** (0.168)	0.421*** (0.021)
Suicidal thoughts	Base: suic_never		
	suic_mt1yrago	0.080 (0.052)	0.016 (0.010)
	suic_recent	0.057 (0.106)	0.011 (0.021)

3.2 Marginal Effects for the Adult Sample

Marginal effects (ME) show the impact of a change in one variable on the probability of observing a particular self-reported health response on average, holding other variables in the specification constant. For this study, the MEs show the average change in the probability of reporting excellent as a self-reported health response due to a change in an individual independent variable, when all other independent variables are held constant at their means[10].

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[10] Due to the nonlinear nature of the ordered probit model, the marginal effect of a variable depends on the values of other variables and their coefficients. There are two major approaches in calculating the marginal effects in practice. The variables are evaluated at their means in the "Marginal Effect at the Mean" method, whereas the marginal effects for each individual are calculated first using the values of the variables for each observation prior to taking an average in the "Average Marginal Effect" method. The marginal effects in this

For the adults, the social capital group exhibits two significant variables which are both listed under the social isolation category. Compared to someone with no one to turn to for support, someone who can turn to an immediate family member for support is 2.58% more likely to report excellent health on average, while someone who can turn to a friend, neighbor or co-worker for support is 1.66% more likely to report excellent health on average, *ceteris paribus.* On average, the probability to report excellent health for someone who has distant family members or community groups to turn to is not significantly different than an individual who has no one to turn to, *ceteris paribus.* The support of immediate family members and friends, neighbours and co-workers are social capital resources that can be transmuted into health capital. This confirms the theoretically positive relationship between social capital and self-reported health, with the clause that only certain relationships are significantly correlated with the health of an individual. I suspect that the ME of the other support variables are not statistically significant because they are not social resources that are available to a person on a regular basis.

Unfortunately, the public version of the 2012 APS data file does not contain information for developing instruments such as the ones developed by d'Hombres et al. (2010), and improved upon by Goryakin et al. (2014), to make causal identification of these variables on self-reported health. In particular, unobserved variables that affect individuals' health may also have an effect on their social capital, which may result in the coefficient estimates from the regular regression to be biased due to the endogeneity of the social capital variables. However, aforementioned studies use community level of social capital

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thesis are calculated using the "Marginal Effect at the Mean" method, hence they can be interpreted as the marginal effect of each variable on the probability of reporting "excellent" as a health response for an average person in the population.

as an instrument to break up the correlation between unobserved health shocks and individual social capital. Authors in these studies argue that while social capital at the community level is correlated with the individual's social capital, it is not correlated with the individual's health outcomes. Hence, using these instruments for the social capital variables allows identification of the causal relationship between social capital and health. The APS 2012 Public Use Microdata Files (PUMF) withholds indicators describing where a respondent lives beyond community size for confidentiality reasons. Due to the absence of this crucial information from the PUMF version of the data, instrumental variable estimation cannot be implemented, which constitutes a major limitation of this study.

There are a few statistically significant MEs in the personal/demographic group. On average, compared to someone who themselves or whose family members did not attend residential schools, someone who attended residential schools is 3.1% less likely to report excellent health, while someone whose parents, grandparents and other family members attended is 2.1% less likely to report excellent health, *ceteris paribus*. On average, the probability to report excellent health for a person who had only parent and grandparent attendance to residential school or only other family member attendance is not statistically significant from someone who themselves or whose family members did not attend residential schools, *ceteris paribus*. This highlights the legacy of residential schooling, which will affect residential school attendees and their families for generations (Truth and Reconciliation Commission of Canada 2015). While this is a less important result for a social capital study, it is important for reconciliation and any study concerned with the wellbeing of indigenous peoples in Canada.

The other variables significant within the personal/demographic group are those that describe the ages of the respondents. On average, compared to someone who is 19 to 24 years old, someone who is 25 to 34 is 2.3% less likely to report excellent health, while someone who is 35 to 44 is 3.8% less likely to report excellent health, while someone who is 45 to 54 is 4.5 % less likely to report excellent health, while someone who is 55 or older is 3.4% less likely to report excellent health, *ceteris paribus*. As we would expect, as one ages, the likelihood that they report excellent health decreases, although the likelihood of the oldest cohort is slightly less negative than those aged 35 to 54. I suspect this has something to do with entering retirement and being able to focus more on one's health after leaving the labour market (Insler 2014).

In the socio-economic category, education, labour force status, income and dwelling repair status have significant MEs. On average, compared to someone whose highest level of education is grade 8 or less, someone with a bachelor's or greater degree is 5.3% more likely to report excellent health, while someone with a postsecondary certification below the bachelor's level is 3.1% more likely to report excellent health, *ceteris paribus.* On average, the probability to report excellent health for someone whose highest level of education is some high school, high school diploma or some post-secondary is not significantly different from someone whose level of education is grade 8 or less, *ceteris paribus*. This makes sense because we would expect someone with higher education to be relatively more knowledgeable about maintaining excellent health. Vice versa, we would expect someone in great health to be able to be able to achieve a higher education level.

Compared to someone who is employed, someone who is not in the labour force is 4.3% less likely to report excellent health on average, *ceteris paribus*. On average, the probability to report excellent health for someone who is unemployed is not significantly different than someone who is not in the labour force, *ceteris paribus*. This indicates the positive health effects of employment beyond income. The most likely explanation is that being healthy increases an individual's ability to participate in the labour force. The positive relationship could be due to direct employment effects such as having health related benefits available through employment, or it could be due to indirect effects of other variables through employment. For example, someone who is employed will have a greater opportunity to expand social networks and access resources via those networks than someone who is not in the labour force, which positively impacts health. Support of neighbours friends and coworkers has a significant positive effect on the self-reported health of adults, so it makes sense that employment would as well, as it ensures increased access to people in that category.

Regarding income, compared to someone whose total annual personal income is less than $5 000 per year, someone whose total annual personal income is $5 000 – 10 000 is 2.8% less likely to report excellent health on average, while someone whose total annual personal income is $10 000 – 20 000 is 3.2 % less likely to report excellent health on average, *ceteris paribus*. On average, the probability to report excellent health for someone whose annual personal income is higher than $20 000 is not significantly different from someone whose annual personal income is less than $5 000, *ceteris paribus*. This result is not intuitive, as one would expect that higher income levels would allow for a person to

invest more time and resources into their health production and therefore have a higher likelihood of reporting excellent health.[11]

One of the poverty measures utilized in this study focuses on the quality of a respondent's dwelling. On average, compared to a respondent who lives in a home that requires only regular maintenance, someone whose home requires major repairs is 2.1% less likely to report excellent health, *ceteris paribus.* On average, the probability to report excellent health for someone whose dwelling requires minor repairs is not significantly different from someone whose dwelling requires only regular maintenance, *ceteris paribus.* This is easy to understand, because it seems likely to assume that someone without the time or resources to undertake needed home repairs may also have trouble maintaining their health.

The ME of the medical history variables are extremely intuitive. On average, compared to someone who hasn't consulted a health professional in the last year, someone who has consulted a health professional within the last year is 3.1% less likely to report excellent health, while someone who has needed but not received health care is 5.2% less likely to report excellent health, *ceteris paribus*. This is plausible because it is likely that someone who has needed to consult a health professional likely had a health issue which would lower the probability of them reporting excellent health, while someone who did not receive the health care they needed would have an even lower probability of reporting excellent health.

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[11] Barring no internal problems with the modelling used in this study, this result requires further investigation beyond the scope of this thesis.

Bodyweight is another significant factor in determining self-reported health. On average, compared to someone with a normal body-mass-index (BMI), someone who is overweight is 2.5% less likely to report excellent health, while someone who is obese up to the first, second and third thresholds are 4.7%, 9.2% and 11% less likely to report excellent health respectively, *ceteris paribus*. On average, the probability to report excellent health for someone who is underweight is not significantly different from someone who is normal weight, *ceteris paribus*. This is an intuitive result, as being overweight or obese exposes a person to health complications.

As one would suspect, smoking is another factor which has a significant impact on health. Compared to nonsmokers, people who smoke occasionally are 4.4% less likely to report excellent health on average, while people who smoke daily are 5.6% less likely to report excellent health on average. As can be expected, people who smoke more frequently are less likely to report excellent health on average.

Alcohol usage has an unexpected relationship with self-reported health. On average, compared to a nondrinker, someone who consumes 2 to 3 alcoholic beverages per week is 4% more likely to report excellent health, while someone who consumes 1 drink per week is 3% more likely to report excellent health, *ceteris paribus*. On average, the probability to report excellent health for someone who drinks 4 to 6 drinks per week or 1 to 3 drinks per month is not significantly different from a non-drinker, *ceteris paribus*. This is interesting because one would expect alcohol use to have a negative impact on health, but perhaps in small amounts, alcohol has a positive impact on health or one's perception of it.

As expected, long-term conditions are significant determinants of health. On average, compared to someone without a long-term condition, someone with arthritis is 6.5% less likely to report excellent health, someone with high blood pressure is 7.4% less likely to report excellent health, while someone with chronic bronchitis or COPD is 7.1% less likely to report excellent health, while someone with diabetes is 11.8% less likely to report excellent health, while someone with heart disease is 12.2% less likely to report excellent health, while someone with ulcers is 5.4% less likely to report excellent health, while someone with a bowel disorder is 4.2% less likely to report excellent health, while someone with other long term conditions is 8.1% less likely to report excellent health, *ceteris paribus*. On average, the probability to report excellent health for someone with asthma, anxiety, mood or learning disorders is not significantly different than someone without a long-term condition, *ceteris paribus*. The relationship between health conditions and self-reported health is self-evident. Of these, diabetes and heart disease have the largest adverse health effects.

Stress has a significant relationship with excellent health, although surprisingly not at the highest stress levels. Compared to someone who reports low stress levels, someone with high stress levels is 4.6% less likely to report excellent health on average, *ceteris paribus*. On average, the probability to report excellent health for someone of moderate or very high stress levels are not significantly different from someone with low stress levels, *ceteris paribus*. Interestingly, the ME of the highest level of stress on self-reported health is not statistically significant.

Self-reported mental health exhibits the strongest correlation with self-reported general health. I suspect this is primarily due to the fact that mental health is a large

58

contributing factor to one's overall health, even more so when a person subjectively evaluates their health. On average compared to someone who reports poor mental health, someone who reports fair, good, very good or excellent mental health is 15.1%, 23.5%, 32.6% or 42.1% more likely to report excellent health, respectively, *ceteris paribus.*

3.3 Regression Results for the Youth Sample

Regression output for youth are presented in Table 4 below. In particular, variables, categories, coefficients and marginal effects for the youth sample are presented first, second, third and fourth columns of the table respectively. From the R^2 value, this model was able to explain 13.8% of the variability of the response data around its mean. This is much lower than the adult regression and the reason is suspected to be the lack of mental health reporting for youth. For the sake of brevity, discussion on marginal effects for the youth sample will focus on those that are statistically significant at 10% level or above.

Table 4: Regression Output for the Youth Sample

n = 2, 114; Psuedo R^2 = 0.1375; Wald chi^2 (95) = 638.55; Prob > chi^2 = 0

Group	Variable	Coefficient (Robust SE)	Marginal Effects (Robust SE)
Social Capital			
SC- Membership			
	band_member	0.143 (0.109)	0.051 (0.039)
Ethnic Identity	Base: aborig_in		
	aborig_fn	0.227 (0.162)	0.081 (0.058)
	aborig_met	0.169 (0.158)	0.060 (0.056)
SC- Participation			
Participation in culture	language_speak	0.004 (0.130)	0.001 (0.046)

Participation in the community	participation_cult	0.062 (0.090)	0.022 (0.032)
	participation_cult_na	0.122 (0.175)	0.043 (0.062)
	participation_elder	-0.013 (0.072)	-0.005 (0.026)
	participation_volun	-0.013 (0.077)	-0.005 (0.028)
	participation_sports	0.367*** (0.075)	0.131*** (0.027)
	participation_sports_na	0.910 (0.602)	0.324 (0.215)
	participation_arts	-0.072 (0.076)	-0.026 (0.027)
	participation_arts_na	-0.029 (0.478)	-0.10 (0.170)
	participation_clubs	0.105 (0.083)	0.038 (0.029)
	participation_clubs_na	-0.372 (0.367)	-0.132 (0.131)
SC- Social Isolation			
Peer norms and values	Base: peeraspirations_vrylow		
	peeraspirations_high	0.047 (0.250)	0.017 (0.089)
	peeraspirations_moderate	0.066 (0.233)	0.023 (0.083)
	peeraspirations_low	-0.045 (0.225)	-0.016 (0.80)
	Base: peerrisk_vrylow		
	peerrisk_low	-0.269** (0.108)	-0.096** (0.039)
	peerrisk_moderate	-0.507*** (0.126)	-0.181*** (0.045)
	peerrisk_high	-0.913*** (0.213)	-0.326*** (0.076)
Support	Base: supp_none		
	supp_immfam	0.215** (0.098)	0.077** (0.035)
	supp_distfam	0.147* (0.085)	0.052* (0.030)
	supp_frneco	0.089 (0.072)	0.032 (0.026)
	supp_comm	-0.208* (0.124)	-0.074* (0.044)

	Base: supp_noneed		
	supp_needrec	-0.024 (0.071)	-0.008 (0.025)
	supp_neednr	-0.427 (0.494)	-0.152 (0.176)
Strength of family ties to community	Base: famties_none		
	famties_vryweak	-0.137 (0.264)	-0.049 (0.094)
	famties_weak	-0.213 (0.174)	-0.076 (0.062)
	famties_moder	-0.261* (0.145)	-0.093* (0.052)
	famties_strong	-0.136 (0.145)	-0.049 (0.052)
	famties_vrystrong	0.049 (0.139)	0.018 (0.050)
Demographic/ Socio-economic			
Sex	female	-0.256*** (0.071)	-0.091*** (0.025)
Population density	Base: area_rural		
	area_cma	-0.154* (0.093)	-0.055* (0.033)
	area_urban	-0.057 (0.091)	-0.020 (0.032)
	reserorfnatcom	-0.049 (0.158)	-0.018 (0.056)
Community tenure	Base: local		
	Nonloc_reslt1	-0.460** (0.115)	-0.163** (0.080)
	nonloc_res2to5	-0.238 (0.146)	-0.085 (0.052)
	nonloc_res6to10	0.037 (0.140)	0.013 (0.050)
Residential schooling	Base: resschool_none		
	resschool_pgpattend	0.122 (0.096)	0.043 (0.034)
	resschool_othfamattend	0.489** (0.199)	0.174** (0.071)
	resschool_pgpothfamattend	0.321*** (0.106)	0.115*** (0.038)
	resschool_ns	0.120 (0.089)	0.043 (0.032)
Labour force status	Base: lfs_emp		

	lfs_nolf	-0.149* (0.079)	-0.053* (0.071)
	lfs_unemp	-0.231** (0.110)	-0.082** (0.039)
Personal Income	Base: inc_lt5k		
	inc_5t10k	0.023 (0.107)	0.008 (0.038)
	inc_10t20k	-0.049 (0.134)	-0.017 (0.048)
	inc_mt20k	-0.062 (0.291)	-0.022 (0.104)
Poverty measures	Base: foodsec_high		
	foodsec_low	0.093 (0.110)	0.033 (0.039)
	foodsec_vrylow	0.498*** (0.180)	0.177*** (0.064)
	Base: dwelrep_regmait		
	dwelrep_major	-0.137 (0.137)	-0.049 (0.049)
	dwelrep_minor	-0.025 (0.078)	-0.009 (0.028)
	Base: hhsize_one		
	hhsize_two	-0.402 (0.373)	-0.143 (0.133)
	hhsize_three	-0.377 (0.366)	-0.134 (0.130)
	hhsize_four	-0.365 (0.364)	-0.130 (0.130)
	hhsize_fiveom	-0.408 (0.365)	-0.145 (0.130)
Federal identity status	aborig_status	-0.180* (0.099)	-0.064* (0.035)
Education/ School Environment			
Education level	Base: educ_curr712		
	educ_currk6	1.330* (0.805)	0.474* (0.287)
	educ_hsleave	0.338** (0.141)	0.121** (0.050)
	educ_hscomp	0.162 (0.124)	0.058 (0.044)
Education performance	Base: grade_a		
	grade_b	-0.115 (0.085)	-0.041 (0.030)

	grade_c	-0.245** (0.107)	-0.087** (0.038)
	grade_d	0.136 (0.196)	0.048 (0.070)
	grade_f	-0.566*** (0.193)	-0.202*** (0.069)
	grade_none	-0.441* (0.254)	-0.157* (0.090)
Family involvement in education	Base: faminv_none		
	fam_inveduc	0.271*** (0.092)	0.096*** (0.033)
	fam_invsch	-0.070 (0.085)	-0.025 (0.030)
	fam_invoth	0.093 (0.095)	0.033 (0.034)
	fam_invothna	0.170 (0.158)	0.060 (0.056)
School environment	school_enpos	0.170** (0.081)	0.061** (0.029)
	school_enneg	-0.100 (0.066)	-0.036 (0.024)
Number of schools attended	Base: school_att1		
	school_att2	0.295 (0.225)	0.105 (0.080)
	school_att3	0.356 (0.219)	0.127 (0.078)
	school_att4	0.458** (0.223)	0.163** (0.079)
	school_att5ormore	0.359 (0.221)	0.128 (0.079)
Medical History			
Healthcare access	consult	-0.099 (0.078)	-0.035 (0.028)
	hcareneednotrcv	-0.130 (0.135)	-0.046 (0.048)
	Base: regdoc		
	noregdoc	-0.205* (0.111)	-0.073 (0.039)
	noregdoc_notry	-0.016 (0.159)	-0.006 (0.057)
	noregdoc_smwhrelse	0.132 (0.192)	0.047 (0.068)
Long-term conditions	Base: ltc_none		

	Ltc_asthma	-0.320*** (0.091)	-0.073* (0.039)
	ltc_arthritis	-0.313 (0.390)	-0.111 (0.139)
	ltc_highbp	-0.247 (0.350)	-0.088 (0.125)
	Ltc_crbroncopd	-0.405* (0.232)	-0.114*** (0.032)
	Ltc_diabetes	-1.382*** (0.335)	-0.493*** (0.120)
	ltc_heartdis	0.103 (0.203)	0.037 (0.072)
	ltc_ulcers	-0.263 (0.296)	-0.094 (0.105)
	Ltc_boweldis	-0.366* (0.210)	-0.131* (0.075)
	Ltc_mooddis	-0.271** (0.131)	-0.097** (0.047)
	Ltc_anxiety	-0.367*** (0.114)	-0.131*** (0.041)
	Ltc_learningdis	-0.239** (0.097)	-0.085** (0.035)
	Ltc_other	-0.378*** (0.105)	-0.135*** (0.037)
Suicidal thoughts	Base: suic_never		
	Suic_mt1yrago	-0.362*** (0.136)	-0.129*** (0.049)
	Suic_recent	-0.449*** (0.147)	-0.160*** (0.053)

3.4 Marginal Effects for the Youth Sample

Compared to the adults, the social capital category for youth offers similar results, with a few additional significant MEs. This could be due to the fact more information on social capital is available in the 2012 APS for the youth subsample. In addition, social capital may play a larger role for youth, who have relatively less access to alternative resources than adults do. Similar to adults, persons to turn to for support in the social isolation category also exhibits a significant ME on health for youth. On average, compared

to someone with no one to turn to for support, someone who can turn to immediate family members is 7.7% more likely to report excellent health, while someone who can turn to distant family members is 5.2% more likely to report excellent health, while someone who can turn to community support groups and leaders is 7.4% less likely to report excellent health, *ceteris paribus.* On average, the probability to report excellent health for someone who has friends, neighbors or coworkers to turn to for support is not significantly different from someone with no one to turn to for support, *ceteris paribus*. The first two results are expected, because we would suspect that family members are an important social capital resource for youth, as they ideally spend more time with them than adults would. The adverse health effect is puzzling, however. It is suspected that someone who *has* to turn to community members for support is doing so not only because potentially stronger relationships are unavailable, but because they actually need support. Someone with no one to turn to may not need social support, which explains how they could be slightly better off in this case. It should be noted that this last finding is only significant at the 10% level.

Also, in the social isolation category we see the negative impacts of certain norms and values. On average, compared to someone whose peers exhibit very low levels of risky behaviour, someone whose peers exhibit low, moderately and high levels of risky behavior are 9.6%, 18.1% and 32.6% less likely to report excellent health respectively, *ceteris paribus*. These findings support the theoretical presupposition that not all social capital has a positive impact on health, as certain relationships can lead to the transmittance of negative health information and attitudes. In this case, a young individual is better off being socially isolated from peers with risky behaviour.

A confusing finding in the social isolation category relates to the strength of one's family ties to a community. On average, compared to someone with no family ties to a community outside of their household, someone with moderate strength of family ties is 9.3% less likely to report excellent health, *ceteris paribus.* On average, the probability to report excellent health for someone with any of the other strength of family ties indicators is not significantly different from someone with no family ties to the community, *ceteris paribus*. It is difficult to come up with a plausible explanation for this, and it should be noted that this ME is only significant at the 10% level. The youth category uses more proxied responses than the adult category, and this may also be a contributing factor to some of these anomalies. These responses may be unreliable because they may not allow an individual to evaluate their health in a subjective way.

Another result which is different from the adults is a significant ME in the participation category. On average, compared to someone who does not participate in available sports activities, someone who participates in sports activities is 13.1% more likely to report excellent health, *ceteris paribus*. I suspect the primary reason for this is that exercise has a positive impact on health or that only healthy people choose to participate in sports. Some of this positive effect may be channeled through social capital as well. In particular, developing strong relationships with coaches and other team members may expose a young individual to a host of socially accessible resources and transmits norms which positively contribute to health.

In the demographic/ socio-economic category, sex is a significant correlate of self-reported health. On average, compared to males, females have a 9.1% less likely probability of reporting excellent health, *ceteris paribus*. This may be due to differences in

the physical experiences of puberty for males and females, but also may relate to gendered differences with perspectives on health and healthcare engagement (Gil-Lacruz and Gil-Lacruz 2010).

The size of one's community has a statistically significant ME, although only at the 10% level. On average, compared to someone who lives in a rural area, someone who lives in a census metropolitan area is 5.5% less likely to report excellent health, *ceteris paribus*. On average, the probability to report excellent health for someone living in a smaller urban area is not significantly different from someone living in a rural area, *ceteris paribus*. This perhaps captures some of the adverse health impacts of living in a city such as those associated with pollution. Perhaps there is a social capital effect at play here, as people who live in rural areas may have stronger ties to their community, friends and neighbours than someone in a significantly larger city, which may provide access to more resources for an individual that can be translated into health.

Tenure in the community is also important for youth. On average, compared to someone who has never moved, someone who has moved to their current community within the last year is 16.4% less likely to report excellent health, *ceteris paribus.* This may be explainable through the social capital channel, as someone who has lived for a long time in one place has had the opportunity to develop and strengthen their social relationships more than someone who has recently moved to a community.

The residential school attendance status of a youth's family members exhibits significant ME on self-reported health, although in the opposite way from which one would expect. On average, compared to someone whose family members did not attend residential schools, someone whose only family members to attend were other than parents and

grandparents is 17.4% more likely to report excellent health, while someone whose parents, grandparents and other family members attended is 11.5 % likely to report excellent health, *ceteris paribus.* On average, the probability to report excellent health for someone for whom only their parent or grandparent attended residential school or did not answer the question is not significantly different than someone whose family members did not attend residential schools, *ceteris paribus*. Perhaps there is a characteristic common to these types of respondents which is exhibiting a positive health effect that is captured by this variable, such as correlations between the location of former residential schools and availability of health services. Like other anomalies with the youth, perhaps this response is affected by the use of proxied responses.

Participation in the labour force has a significant ME on health, and this can be partially explained through a social capital effect. On average, compared to someone who is employed, someone who is unemployed is 8.2% less likely to report excellent health, while someone who is not in the labour force is 5.3% less likely to report excellent health. This may be due to the fact that an employed person not only has access to benefits (i.e., additional health insurance or health benefits), but also has the opportunity to strengthen a greater number of social relationships and use those resources to produce better health for themselves. Also, and perhaps more dominantly, healthy people may choose to work while less healthy people may not.

Another puzzling result for the youth subgroup concerns food security. On average, compared to someone with a relatively high level of food security, someone with very low levels of food security is 17.7% more likely to report excellent health, *ceteris paribus.* On average, the probability to report excellent health for someone who reports low food

security is not significantly different from someone with high levels of food security, *ceteris paribus*. The direction of the relationship is opposite of expected. Perhaps there is something similar to the respondents in the very low food security category which is causing this result.

On average, compared to those who do not have federal Aboriginal status, those who do are 6.4% less likely to report excellent health, *ceteris paribus*. This may be due to the fact that youth with federal Aboriginal status may have less access to health care, all else being equal, however, the precise channel through which Aboriginal status affects self-reported need to be investigated in a future study that has more detailed information on healthcare access.

There are a few statistically significant MEs on self-reported health under the education/ school environment category including some potential enabling social capital effects. In particular, compared to someone currently in grade 7 to 12, someone in kindergarten to grade 6 is 47.4% more likely to report excellent health on average, while someone who is a high school leaver is 12.1% more likely to report excellent health on average, *ceteris paribus*. On average, the probability to report excellent health for a high school completer is not significantly different than someone currently in grade 7 to 12, *ceteris paribus*. I suspect that these effects are caused by the stressful nature of high school, and perhaps the prevalence of social norms, obligations and bullying which may make people feel healthier when they are not a part of it. This provides a possible example of a negative health effect from social capital, where some are better off being isolated from social relationships in high school.

Academic performance is significantly correlated with the self-reported health. Compared to someone whose last report card grade was an A, someone whose last grade was a C is 8.7% less likely to report excellent health, while someone whose last grade was an F is 20.2% less likely to report excellent health, while someone who does not receive report card grades is 15.7% less likely to report excellent health, *ceteris paribus.* On average, the probability to report excellent health for someone receiving a B or D on the last report card is not significantly different than an A student, *ceteris paribus.* This seems plausible for a few reasons. It is likely that someone of better academic standing knows more about how to maintain their health and is also more motivated to do so. Also, someone who is healthier may find it easier to achieve and maintain higher grades. Hence, academic performance may also exhibit simultaneous causality with self-reported health as well.

Family involvement in education is an important variable in this study from a social capital standpoint and is also significantly correlated with self-reported health. Compared to someone who has no family involvement in their education, someone whose family members are involved in their education is 9.6% more likely to report excellent health on average, *ceteris paribus.* This indicates the value of family involvement in a youth's education as a social capital resource, by its correlated positive health effect. However, it also plausible that young individuals whose families are involved in their education, are likely to have better health outcomes since their families may also be involved with other aspects of their lives as well.

The number of schools attended is another significant factor correlated with the health of a youth. Compared to someone who has only attended one school, someone who has attended four schools is 16.3% more likely to report excellent health on average, *ceteris*

70

paribus. One potential explanation for this result is that communities and regions where schools are segregated by grade levels may offer more health services than places where all of the grades are taught within the same school.

As with the case for adults, the medical history variables of youth exhibit strong correlations with self-reported health. Compared to someone with a regular medical doctor, someone without a regular medical doctor is 7.3% less likely to report excellent health on average, *ceteris paribus.* This indicates the importance of regular access to health services for youth as well.

Like the adult sub-group, long-term conditions for youth exhibit some of the strongest health effects. On average, compared to someone with no long-term conditions, someone with asthma is 11.4% less likely to report excellent health, while someone with diabetes is 49.3% less likely to report excellent health, while someone with a bowel disorder is 3.1% less likely to report excellent health, while someone with a mood disorder is 9.7% less likely to report excellent health, while someone with an anxiety disorder is 13.1% less likely to report excellent health, while someone with an learning disorder is 8.5% less likely to report excellent health, while someone with any other long-term condition is 13.5% less likely to report excellent health, *ceteris paribus.* On average, the probability to report excellent health for someone with arthritis, high blood pressure, heart disease, and ulcers is not significantly different than someone without a long-term condition, *ceteris paribus.* The relationships of these variables to health are self-evident. Diabetes appears to be the most serious physical long-term condition in terms of adverse health effects. Out of the mental health disorders (anxiety, mood and learning disorders), anxiety has the largest adverse health effects.

The indicators of mental health available for the youth in this survey concerned suicidal thoughts. On average, compared to someone who has never had suicidal thoughts, someone who has had them more than a year ago is 12.9% less likely to report excellent health, while someone who has had them within the last year is 16% less likely to report excellent health, *ceteris paribus.* These findings yet again illustrate the importance of mental health in one's perception of their overall health.

Conclusion

This thesis estimates the impact of social capital on self-reported health, as a proxy for individuals' wellbeing for the First Nations, Metis, and Inuit populations in Canada using the Aboriginal Peoples Survey (2012). This required a review of the literature on social capital, wellbeing and health outcomes to determine the relevant variables for conducting an empirical analysis. In particular, the literature on wellbeing illustrates the multi-dimensional nature of the concept and identifies several channels that affect one's wellbeing. Self-reported health was chosen as the dependent variable in this study since not only is it highlighted as a fundamental aspect of wellbeing in the literature, but it is available in the 2012 Aboriginal Peoples Survey.

The literature identifies several channels through which social capital can have an impact on self-reported health. Social capital has a theoretically positive impact on health, because people with greater access to networks and resources are better able to transfer alternate types of capital into health capital. These positive health resources are health information, support, insurance arrangements and positive health norms and values (d'Hombres et al. 2010). Social capital also has theoretically negative impact on health, as some of the resources which an individual's network provides them with may be negative health resources, such as bad health information and unhealthy norms and habits. For example, teens may be coerced by their peers to start smoking, which has a negative health impact. Empirical measurement for social capital commonly utilizes variables relating to individual and community levels of trust, membership, participation and social isolation.

This study utilized an ordered probit model to estimate the impact of social capital on self-reported health, to test the theoretical relationships examined in the literature. Interpreting the coefficients required calculating marginal effects, which lead to some important findings. The policy implications of selected findings are discussed below.

Someone to turn to for support was significant in the social capital category for adults. Compared to adults who are socially isolated, adults with immediate family members or friends, neighbors, and co-workers to turn to for support are more likely to report excellent health. While it can be hard to encourage family or neighborly bonds from a policy angle, policy can enhance the ability of indigenous adults to have access to the support of co-workers, through encouraging labour force participation and employment. The case for this type of policy intervention is supported by the higher probability of reporting excellent health for those who are employed versus those not in the labour force. One option to consider is modifying social assistance so that it encourages labour force participation. For example, instead of a welfare payment, perhaps a wage subsidy or earned income tax credit could be implemented as an income maintenance scheme, which is found to have a smaller work disincentive effect than welfare (Starky 2006).

Another avenue for policy to take is to enhance the ability for indigenous people to increase their human capital through offering more incentives to undertake postsecondary education. This study found that higher education is associated with a higher probability of reporting excellent health which also motivates this policy option. While there is education funding available for indigenous students from the federal government, "the demand for funding far exceeds the money that bands receive for post-secondary education" (Monkman 2016), forcing indigenous bands to prioritize who receives funding. This often

places off-reserve indigenous individuals at a disadvantage relative to their on-reserve counterparts in terms of the funding they receive towards their education, while students who have recently graduated from high school are also prioritized. The prioritization of eligible students also places strict conditions on student performance. Funding often does not cover all of the costs associated with post-secondary education (Monkman 2016). This emphasizes that when examining potential policy options for increasing the wellbeing of indigenous adults, the federal government should consider enhancing post-secondary education funding.

Other important variables which have an impact on health for indigenous adults are those related to medical history as well as residential school attendance. Perhaps one way to enhance the wellbeing of indigenous adults may be to increase the availability of trauma-related mental health services for residential school victims and their family members. This strategy is supported by the strong relationships found between mental and physical health in this study. A policy option to consider is mental health service upgrades which should include a strategy to attract properly trained personnel into permanent community placements to deal with the high prevalence of mental health issues related to the traumatic experiences of residential schooling and associated legacies of violence (Smylie and Cywink 2016).

For youth, having an immediate family member to turn to for support, along with parental involvement in education, is correlated with an increase in the likelihood to report excellent health. Other significant findings are the negative health effects related to the prevalence of risky behaviour among peers, as well as the correlation between suicidal thoughts and lower likelihood of reporting excellent health. Interestingly, these variables

are all related, and the impact of social capital features quite prominently. One study finds that the prevalence of risky behaviour (including suicidal thoughts and attempts) among youth is reduced through parental involvement in the youth's life (Blum and Rinehart 1997).

When considering policy options, the most promising impact to youth wellbeing appears to be through increasing parental involvement in a youth's life, especially in the youth's education. One recommendation is that teachers need to establish relationships of trust with parents of children from diverse backgrounds, which includes addressing physical and cultural barriers to parental involvement in youth education (LaRocque, Kleiman, and Darling 2011). These authors recommend that cultural barriers can be overcome by offering workshops and cultural sensitivity training to the teachers of diverse students. Policy can assist with addressing physical barriers, which relates to issues such as child care and transportation. Subsidizing these costs is predicted to increase parental involvement in youth's education. Another option to consider is to legislate a subsidized allowance for indigenous parents to take time off work to become more involved in their child's education without a negative impact to their income. Alternatively, perhaps tax incentives could be used to encourage employers to offer more flexible work schedules for parents of school-aged children (LaRocque, Kleiman, and Darling 2011). These are encouraging propositions for a social capital study, as it appears that the wellbeing of youth may be directly enhanced through increasing the social capital resources they have access to via their parental relationships.

One important area for further research highlighted by this study involves the difference in health responses for male and female youth. To take sex and gender more

seriously, it would be advantageous to split the sample along those lines to see if similar results to the dummy variable approach are elicited. Adopting this method may more accurately describe the difference in healthcare experiences of indigenous women and men, which may be causing women to under-utilize health services (Gil-Lacruz and Gil-Lacruz 2010). This is critical to the wellbeing of indigenous women and their families because indigenous women are overrepresented as victims of violent crimes in Canada, which leads to a higher prevalence of trauma-related health issues (Smylie and Cywink 2016). This is one of the important health issues which the national inquiry into missing and murdered indigenous women and girls must address.

Another possible public health issue that came up in the youth regression is the lowered probability of reporting excellent health for youth who have federal Aboriginal status. It is not self-evident why this would be the case, which indicates a promising area for future research. An analysis more focused on this finding could indicate if identification issues are at play here or if there is actually something about federal Aboriginal status which is serving as a detriment to health. These findings could inform policy to remedy this effect, if present.

Like any empirical study, this one had limitations. It is extremely important to establish causality in a study like this, so, as mentioned in the results section, being able to develop community instruments to indicate social capital is crucial. Further research should focus on identifying community level social capital variables through the use of the protected APS location data at the Statistics Canada Data Center, or perhaps through the design of a more social capital-intensive survey. Trust was found to be an important indicator of social capital in the literature, but individual or community levels of trust are

not identified in the 2012 APS. Carrying out similar projects like this thesis on the 2017 APS will allow researchers to come up with more robust findings, as this more recent iteration of the survey involves respondents who live in reserves and northern indigenous communities.

Another direction to take this project in is to expand upon the impact of residential schooling either to the wellbeing or social capital (or both) of indigenous communities. This could involve research to find out where residential schools were historically located to determine impacts to particular community levels of social capital on health which can be attributed to residential schools. Ideally, this could explain the puzzling health outcome attributed to a youth's family attendance in residential school. Also in line with reconciliation, it is important to work directly with indigenous communities to figure out what aspects of wellbeing are most important to them, or where they feel research is most critically needed to assist with reconciliation. Future research into reconciliation should therefore involve indigenous community members in study design.

The intent of this study was to develop a theoretical model to be tested with real-world observations. This objective was achieved, and it lead to some important findings, including possible policy outcomes. The lessons learned here can be applied to inform future research into indigenous social capital and wellbeing. Although these findings are limited by the inability to establish causal inference, the relatively strong relationships between certain variables and self-reported health outcomes indicate promising areas for policy to impact the wellbeing of indigenous Canadians.

Bibliography

Alfred, Taiaiake. 2005. *Wasáse: Indigenous Pathways of Action and Freedom*. First

Edition. Peterborough, Ont. ; Orchard Park, N.Y: University of Toronto Press,

Higher Education Division.

———. 2008. *Peace, Power, Righteousness: An Indigenous Manifesto*. Second edition.

Don Mills, Ont. ; New York: Oxford University Press.

Blum, Robert W., and Peggy Mann Rinehart. 1997. *Reducing the Risk: Connections That*

Make a Difference in the Lives of Youth. Add Health c/o Burness

Communications, 7910 Woodmont Avenue, Suite 1401, Bethesda, MD 20814.

https://eric.ed.gov/?id=ED412459.

Cameron, Colin A., and Pravin K. Trivedi. 2009. *Microeconomics Using Stata*. College:

Stata Press.

Casey, Terrence, and Kevin Christ. 2005. "Social Capital and Economic Performance in

the American States." *Social Science Quarterly* 86 (4): 826–45.

https://doi.org/10.1111/j.0038-4941.2005.00358.x.

Gil-Lacruz, Marta, and Ana I. Gil-Lacruz. 2010. "Health Perception and Health Care

Access: Sex Differences in Behaviors and Attitudes." *American Journal of*

Economics and Sociology 69 (2): 783–801. https://doi.org/10.1111/j.1536-

7150.2010.00723.x.

Goryakin, Yevgeniy, Marc Suhrcke, Lorenzo Rocco, Bayard Roberts, and Martin

McKee. 2014. "Social Capital and Self-Reported General and Mental Health in

Nine Former Soviet Union Countries." *Health Economics, Policy and Law* 9 (1):

1–24. https://doi.org/10.1017/S1744133113000121.

Government of Canada, Statistics Canada. 2011. "Aboriginal Peoples Survey (APS)."

    May 27, 2011.

    http://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&Id=109115.

Grossman, Michael. 1972. "On the Concept of Health Capital and the Demand for

    Health." *Journal of Political Economy* 80 (2): 223–255.

    https://doi.org/10.1086/259880.

Halleröd, Björn, and Daniel Seldén. 2013. "The Multi-Dimensional Characteristics of

    Wellbeing: How Different Aspects of Wellbeing Interact and Do Not Interact

    with Each Other." *Social Indicators Research* 113 (3): 807–825.

    https://doi.org/10.1007/s11205-012-0115-8.

Häuberer, Julia. 2011. *Social Capital Theory*. Kindle Edition.

Helliwell, John F. 2001. "Social Capital, the Economy and Wellbeing." *The Review of

    Economic Performance and Social Progress*. http://www.csls.ca/repsp/1/03-

    helliwell.pdf.

Hollard, Guillaume, and Omar Sene. 2016. "Social Capital and Access to Primary Health

    Care in Developing Countries: Evidence from Sub-Saharan Africa." *Journal of

    Health Economics* 45 (Supplement C): 1–11.

    https://doi.org/10.1016/j.jhealeco.2015.10.004.

Hombres, B. d', L. Rocco, M. Suhrcke, and M. McKee. 2010. "Does Social Capital

    Determine Health? Evidence from Eight Transition Countries." *Health Economics*

    19 (1): 56–74. https://doi.org/10.1002/hec.1445.

Insler, Michael. 2014. "The Health Consequences of Retirement." *Journal of Human

    Resources* 49 (1): 195–233. https://doi.org/10.1353/jhr.2014.0000.

LaRocque, Michelle, Ira Kleiman, and Sharon M. Darling. 2011. "Parental Involvement: The Missing Link in School Achievement." *Preventing School Failure: Alternative Education for Children and Youth* 55 (3): 115–22. https://doi.org/10.1080/10459880903472876.

Monkman, Lenard. 2016. "Myth Busted: First Nations People Don't All Get Free University." CBC News. January 29, 2016. http://www.cbc.ca/news/indigenous/debunking-the-myth-that-all-first-nations-people-receive-free-post-secondary-education-1.3414183.

Narayan, Deepa, and Lant Pritchett. 1999. "Cents and Sociability: Household Income and Social Capital in Rural Tanzania." *Economic Development and Cultural Change* 47 (4): 871–97.

O'Brien, Stephen, and Mairtin Ó Fathaigh. 2005. "Bringing in Bordieu's Theory of Social Capital: Renewing Learning Partnership Approaches to Social Inclusion." *Irish Educational Studies* 24 (1).

Poortinga, Wouter. 2006a. "Social Capital: An Individual or Collective Resource for Health?" *Social Science & Medicine* 62 (2): 292–302. https://doi.org/10.1016/j.socscimed.2005.06.008.

———. 2006b. "Social Relations or Social Capital? Individual and Community Health Effects of Bonding Social Capital." *Social Science & Medicine* 63 (1): 255–70. https://doi.org/10.1016/j.socscimed.2005.11.039.

Rocco, Lorenzo, Elena Fumagalli, and Marc Suhrcke. 2014. "From Social Capital to Health – and Back." *Health Economics* 23 (5): 586–605. https://doi.org/10.1002/hec.2934.

Ronconi, Lucas, Timothy T. Brown, and Richard M. Scheffler. 2012. "Social Capital and Self-Rated Health in Argentina." *Health Economics* 21 (2): 201–8. https://doi.org/10.1002/hec.1696.

Rose, Richard. 2000. "How Much Does Social Capital Add to Individual Health?" *Social Science & Medicine* 51 (9): 1421–35. https://doi.org/10.1016/S0277-9536(00)00106-4.

Scheffler, Richard M., and Timothy T. Brown. 2008. "Social Capital, Economics, and Health: New Evidence." *Health Economics, Policy and Law* 2008 (3): 321–31.

Sen, Amartya. 2000. *Development as Freedom*. Reprint edition. New York: Anchor.

Smylie, Janet, and Magen Cywink. 2016. "Missing and Murdered Indigenous Women: Working with Families to Prepare for the National Inquiry." *Can J Public Health* 107 (4–5): 342–46.

Starky, Sheena. 2006. "Scaling the Welfare Wall: Earned Income Tax Credits." Parliamentary Information and Research Service. March 2006. https://lop.parl.ca/content/lop/researchpublications/prb0598-e.html.

Sun, Xiaojie, Clas Rehnberg, and Qingyue Meng. 2009. "How Are Individual-Level Social Capital and Poverty Associated with Health Equity? A Study from Two Chinese Cities." *International Journal for Equity in Health* 8 (1): 2. https://doi.org/10.1186/1475-9276-8-2.

Szreter, Simon, and Michael Woolcock. 2004. "Health by Association? Social Capital, Social Theory, and the Political Economy of Public Health." *International Journal of Epidemiology* 33 (4): 650–67. https://doi.org/10.1093/ije/dyh013.

Truth and Reconciliation Commission of Canada. 2015. *Final Report of the Truth and Reconciliation Commission of Canada. Volume One, Summary: Honouring the Truth, Reconciling for the Future.* [Second printing]. Toronto: James Lorimer & Company Ltd, Publishers.