

THE RELATIONSHIP BETWEEN COMMUNITY CAPITALS AND QUALITY OF LIFE IN
RURAL AND ABORIGINAL WESTERN CANADIAN COMMUNITIES:
IMPROVING POLICYMAKING USING A PLACE-CONSCIOUS APPROACH

A Thesis Submitted to the
College of Graduate Studies and Research
In Partial Fulfillment of the Requirement
For the Degree of Master of Public Policy
In the Johnson-Shoyama Graduate School of Public Policy
University of Saskatchewan

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ABSTRACT

Policymakers around the world now recognize that quality of life is an important indicator of what actually matters to communities. Also referred to as well-being, satisfaction, or happiness, quality of life is a complex, multidimensional construct pertaining to one's place of residence, physical environment, social characteristics, experiences, and access to services within one's local environment. Given the close relationship between local conditions and quality of life, using community capitals, or latent measures of the current state of communities' various resources and capacities, to measure quality of life may provide policymakers with a more useful quality of life measure. This study uses secondary survey data to examine whether there is a relationship between community capitals and reported quality of life in rural western Canada. To explore quality of life as a product of the communities in which community capital stocks are created and experienced, this thesis will also examine whether and how the relationships between quality of life and community capitals may differ across Aboriginal and non-Aboriginal communities in the study region. The results may help policymakers understand how different types of communities conceptualize themselves, as well as how they may pursue place-conscious policies that build upon current community capitals to maintain or improve quality of life in these communities in the future.

ACKNOWLEDGEMENTS

I would first like to thank the Johnson-Shoyama Graduate School of Public Policy and my supervisor Dionne Pohler for providing financial support for my studies. Without the generous support from both of these sources, this thesis would not have been possible.

I want to extend further thanks to Dionne for her stellar support during this entire process. This thesis would never have happened without her suggestion that I delve deeper into the CIP telephone survey data last summer. I would also like to thank my committee members Haizhen Mou and Merle Massie for their valuable input at both the proposal defence and thesis defence stages of this project. I am grateful to John Hansen for agreeing to be my external examiner, especially at such a busy time of the year. Special thanks go out to Joe Schmidt for helping me sort out the intricacies of factor analysis.

Thank you to all members of Co-operative Innovation Project team for letting me start to learn about rural and Aboriginal communities in western Canada as a research assistant. Special thanks to Hao Tao Wu for organizing and sharing her data with me and helping me expand my knowledge of statistical programs and methods. Furthermore, congratulations to CIP on transitioning into a non-profit organization, Co-operatives First, that can continue to inspire co-operative development in rural and Aboriginal communities going forward.

Special thanks goes out to my friends and family for their moral support during this degree. My mother remains my greatest cheerleader, even though she is over 3800 kilometres away in Miramichi. To my brother Tyler, I am amazed by your strength and comportment everyday, and unfortunately, I didn't fit any of the words you wanted me to mention into the thesis. I did, however, manage to work three out of the five words into this paragraph. I'd chirp you, but I accept that you outsmarted me on this one. To my cohort, you remain my favourite group of people to debate with. Thanks for the potluck barbecues, movie and board game nights, and laughs. Laurent, thank you for always being there to discuss policy issues or simply to help me unwind after a long day when I was at my most anxious and discombobulated. I've appreciated your support, especially during these past nine months since you decided to join me in Saskatoon.

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CHAPTER 1 INTRODUCTION

Policymakers around the world now recognize that quality of life is an important indicator of what actually matters to communities. Also referred to as well-being, satisfaction, or happiness, quality of life is a complex, multidimensional construct pertaining to one's place of residence, physical environment, social characteristics, experiences, and access to services within one's local environment (Forjaz et al. 2011). All levels of government, from the national to the local level, and non-governmental organizations alike are beginning to acknowledge the importance of quality of life in helping to determine what policy interventions to pursue (Callaghan and Colton 2008, Bagstad and Shammin 2012). Improvements in quality of life may ultimately reduce pressure on governments and services due to the strong relationship between quality of life and positive outcomes in areas such as employment, health, and one's personal life (Dolan, Layard and Metcalfe 2011, Helliwell 2011). In 2011, the United Nations General Assembly formally called on its member states to use quality of life outcomes to guide the creation and implementation of more effective public policies (Helliwell, Layard and Sachs 2015). The United Nations' international call to action exemplifies quality of life's increasing implications for policymaking and policymakers alike.

In Canada, rural and remote communities struggle to improve their residents' quality of life. Approximately 95 percent of Canada's total land area is defined as rural, while the majority of Canadians now inhabit urban areas. That Canadians are mostly urban while space is mostly rural means that the small fraction of the country's population that does live in rural communities is widely scattered (Government of Canada 2002). Rural communities in Canada often confront obstacles not faced by most urban communities, such as population decline, geographic isolation, crumbling infrastructure, and weak social supports (Serageldin and Steeds 1996, Iorio and Corsale 2010, Canadian Rural Revitalization Foundation 2015). Due to lower economies of scale and greater transportation costs, rural and remote community residents may also pay higher prices for basic goods and services (Sauer 2005, Glass and Stefanova 2012). Lower median incomes and fewer opportunities for employment or training exacerbate the economic and social costs of living in these areas (Partridge et al. 2009).

Rural development scholars propose that the presence or absence of community capitals may affect rural communities' ability to most effectively address local challenges and improve their residents' quality of life. Community capitals are latent measures of the current state of communities' various resources and capacities that communities may mobilize for personal and community benefit (Fey, Bergendahl and Flora 2006). Community capitals' latency means that they cannot be examined directly, but rather only as the products of combined community activities and strengths. Community capitals extend beyond financial or human capitals like income or education to include more difficult-to-quantify social, cultural and political capitals. Capacities such as residents' ability to work together and the levels of community trust and social cohesion may be important components of these elusive capitals. Community capitals may be different across communities, and the relationships between particular capitals and quality of life may also differ across communities (Olfert and Natcher 2013). Due to the differences in valuations of quality of life and community capitals, policy interventions may have different effects in different communities. Given the community-based character of both quality of life and community capitals, it is important to consider the similarities and differences that exist and persist across communities.

Rural and remote communities in western Canada share many of the same challenges as other rural areas in improving their community capital stocks. Numerous communities in this region have undiversified, volatile, and resource-dependent economies (Government of Canada 2012). A significant number of rural communities are located in the four western provinces' isolated northern areas and may be inaccessible by road for at least part of the year (McKay 1987, Schmidt 2000). Azmier and Lozanski (2004: 3) discuss western Canada's "rural problem" as the culmination of few employment opportunities, deteriorating infrastructure, poor educational attainment, and low levels of immigration combined with youth out-migration, isolation, and poor health outcomes.

This problem definition concerning rural areas, however, ignores the unique set of challenges that also face rural *Aboriginal* communities in rural western Canada. Due to the tendency toward homogenizing rural western Canada in combination with the tendency to overlook Aboriginals as part of the rural landscape, scholars and policy-makers often operate, sometimes purposely (Azmier and Lozanski 2004), with an incomplete picture of the diversity that exists in rural western Canada. Aboriginal communities and their residents struggle with the

ongoing effects of centuries-old colonial policies and practices, including but not limited to, the *Indian Act*, the reserve system, and residential schools, which exacerbate the effects of the aforementioned rural challenges (Frideres and Gadacz 2012). While there are numerous studies concerning Canada's rural non-Aboriginal population (i.e. Azmier and Lozanski 2004, Bryant and Joseph 2008, Kulig and Williams 2012), there has been far less research on the unique characteristics of remote and rural Aboriginal communities in this region. The unique situations facing Aboriginal communities in rural western Canada suggests that these communities may require policy interventions that differ from those used in rural, non-Aboriginal communities. Many Aboriginal communities are Indian reserves, which fall under the federal government's jurisdiction and further complicate decision-making and funding allotments and also have unique cultural practices, heritages, and worldviews that may impact how the community conceptualizes itself (Government of Canada 2002). This may mean that the types of community capitals that affect quality of life in rural Aboriginal communities may be different from those that impact quality of life in rural non-Aboriginal communities. Though rural and Aboriginal communities in western Canada have much to learn from one another, the systematic failure to acknowledge the unique challenges and strengths of Aboriginal communities in relation to their rural non-Aboriginal counterparts gives us very little insight into the types of policy interventions that may or may not benefit these particular communities.

Related to these concerns about quality of life in rural and Aboriginal western Canada, research on quality of life to date lacks a systematic and accepted framework for analysis. Broadly, quality of life research divides along quantitative or "objective" and qualitative or "subjective" studies. Due to the difficulties associated with collecting subjective indicators, quantitative studies often dominate conversations about quality of life. Many objective studies use aggregate economic progress indicators like Gross Domestic Product (GDP) as proxies for quality of life. Such indicators overlook the lived experiences in communities and how the community capitals communities possess may differentially affect residents' quality of life. GDP is also a very "westernized" indicator of quality of life that does not take into account how quality of life may be differently perceived or affected in Aboriginal communities.

Quality of life scholars have also suggested that GDP is an ineffective quality of life measure because economic growth indicators ignore the negative externalities created by development activities (Costanza 2012, Petrosillo et al. 2013). Examples of this in rural western

Canada might include increased pollution or a housing shortage experienced in a community due to an oil boom. Thus, economic indicators alone are at best insufficient for measuring quality of life for public policy purposes (Bagstad and Shammin 2012). There are also fewer economic indicators in rural and remote communities due to the lower levels of development and the challenges associated with statistical data collection in these communities. Researchers have also recognized that Aboriginal communities' data collection problems are more pronounced than those in rural, non-Aboriginal communities (Wright 1993, Government of Canada 2013). Focusing solely on economic indicators may contribute to incorrect measures of what is important to rural communities and what residents view as their communities' strengths (Canadian Rural Revitalization Foundation 2015).

Notwithstanding these problems, governments maintain a desire to quantify the effects of policies and in the absence of alternative progress measures, macroeconomic indicators remain relatively easy to access. While it is not often possible to directly observe differences in quality of life at the community level due to insufficient information, being able to bring quality of life measures closer to the micro level to examine subjective quality of life assessments in different types of communities may be more helpful for communities and policymakers alike.

1.1 Purpose of Study

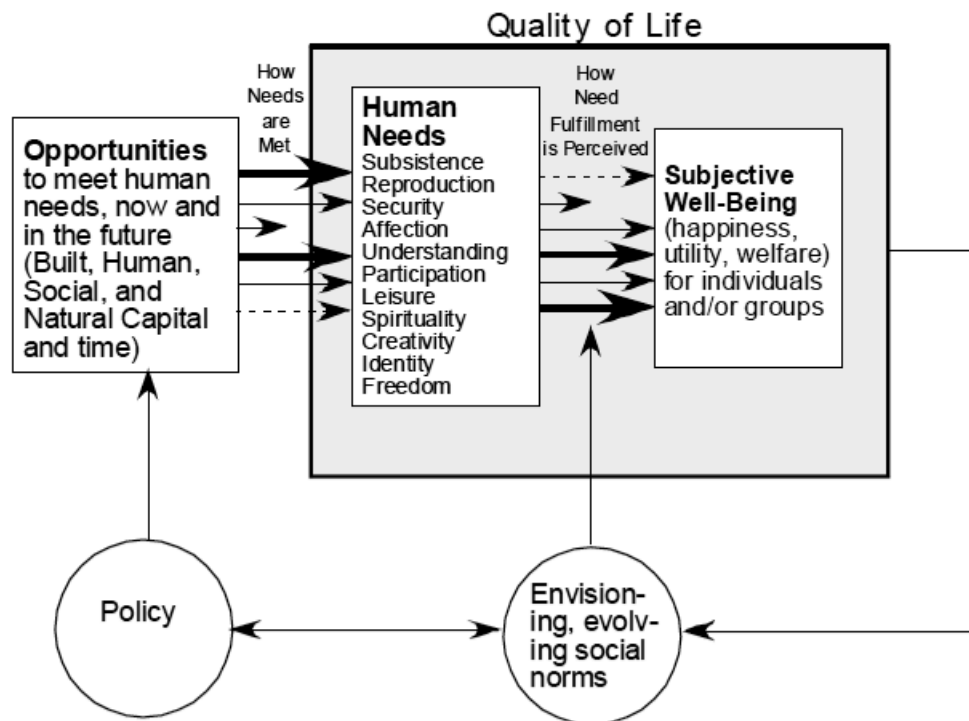
1.1.1 Problem Statement

Rural development scholars propose that rather than individuals having to exit their communities altogether, improving life in rural and remote communities might require more specialized interventions to optimize the effectiveness of policies (Olfert et al. 2014). Given the currently limited scholarly state of knowledge about many western Canadian rural and Aboriginal communities, a first step toward more specialized policy interventions in this region would be to examine the relationship between quality of life and community capitals, including how they interact in these different types of communities. Rural non-Aboriginal and rural Aboriginal communities in Western Canada provide an excellent context to measure the relationship between quality of life and community capitals. Rural non-Aboriginal and rural Aboriginal communities occupy the same rural western Canadian space, but each confront different challenges and likely have different community strengths and conceptions of quality of

life that highlight the need for greater attention to be paid to “place-based” ideas in policymaking.

Despite the growing policy discussions around the relationship between quality of life and community capitals, studies that examine how these two concepts relate in different contexts remain limited. Quality of life studies that use traditional economic metrics would suggest that residents in rural and remote areas will have lower quality of life due to their communities’ economic development limitations. Ramsey, Annis and Everitt (2002: 197) however, found that rural residents in southwestern Manitoba identified their communities’ safety, remoteness, and “slower pace of life” as contributors to a higher overall quality of life. In this example, community members remarked that what many outsiders would identify as weaknesses were, in fact, their communities’ strengths. In comparison, Aboriginal communities in western Canada may perceive their quality of life differently due to various historical and cultural factors. The histories and cultures of Aboriginal communities, as well as their relative isolation, and fewer opportunities for growth, health care, social supports, and employment may mean that the relationship between community capitals and quality of life may be entirely different from that of rural communities.

Figure 1.1 Quality of Life as the Interaction of Human Needs (Costanza et al. 2008)



There are numerous rudimentary models of the relationship between public policy, community capitals, and quality of life (i.e. Hagerty et al. 2001, Costanza et al. 2008). For example, in Figure 1.1, quality of life is the combined interaction of one's needs with one's perception that these are fulfilled, influenced by the combined force of community capitals, which in turn are influenced by public policy (Costanza et al. 2008). Understanding quality of life as a component in a larger community ecosystem may allow one to conceptualize quality of life as being different in different types of communities. Rural and Aboriginal communities in western Canada, for example, may need different inputs, such as increased security or participation in community life, in order to meet their definition of quality of life.

Despite the noted uniqueness of communities, there are still opportunities for communities to learn from one another. Due to the limited resources of many communities, as well as many governments, this thesis takes the more reasonable approach of examining the issues that face similar types of communities. Rather than discussing what makes each community unique, policymakers may be able to recognize communities' differences, yet still categorize communities by their similarities to one another. In this way, communities may be able to learn from other communities that have faced similar problems and challenges. Categorizing communities by their shared geographical, cultural, political and social heritages may strike the needed balance between the extreme inefficiency of place-based policy-making and the often unintended consequences of policy emulation, or copying policies across vastly different communities. Understanding how different types of communities combine their community capitals to best meet their own conception of quality of life may allow policymakers to pursue more informed policy emulation through improved problem structuring. Using community capitals to carry out a quality of life study may also help to establish both of these latent constructs as potential tools for local management and strategic planning (Rybakovas and Sajeve 2012).

1.1.2 Research Questions

This study adopts a combination of a qualitative and quantitative approach to examine the relationship between community capitals and quality of life grounded in residents' subjective evaluations of their communities' capitals and quality of life. This thesis will first examine whether there is a relationship between community capitals and reported quality of life in rural

western Canada. To explore quality of life and community capitals as the products of the communities in which these latent indicators exist, this thesis will also examine whether and how the relationships between quality of life and community capitals may differ across rural non-Aboriginal and rural Aboriginal communities the region.

1.2 Organization of Study

I am a non-Indigenous scholar from a small community in Atlantic Canada, which is outside of the study region. I have attempted to approach the data analysis and interpretation from a positive rather than a normative perspective; however, I acknowledge any biases I bring with me based on my own history and cultural origins. Each of our worldviews is shaped by our unique experiences and these have an impact on the approaches we take toward research and our interpretation of the data that is collected. I am open to alternative interpretations and criticisms of the perspectives adopted here, and welcome the creation of a dialogue.

The chapters in this thesis will tie together the quality of life, rural sociology, public policy, and community and economic development literatures. Given the breadth of qualitative work done on quality of life to date, this study takes a more mixed approach to measuring community capitals by quantifying citizens' subjective ratings of quality of life in their communities, as well as their own personal assessments of their level of satisfaction with their community. Chapter two provides the current state of knowledge about quality of life, community capitals, how they have been discussed separately and in tandem, as well as pertinent policy theories. Chapter three provides an initial examination of secondary data through univariate and bivariate analyses to justify examining community capitals to explain quality of life in communities. Chapter four outlines the results of regression analyses by exploring the similarities and differences across rural Aboriginal and non-Aboriginal communities in relation to the total rural western Canadian sample and elaborates on the theoretical and policy implications of the regression results. The differences in quality of life across the rural community and Aboriginal community samples will show the differences in how quality of life is conceptualized in relation to community capitals in both types of communities.

CHAPTER 2 LITERATURE REVIEW

2.1 Quality of Life

Perceptions of quality of life emerge from a combination of fulfilling both community and individual needs (Costanza et al. 2008, Cummins 2005). As defined in chapter 1, quality of life is a multidimensional construct generated through assessments of one's place of residence, environment, social characteristics, experiences, and ability to access programs and services (Forjaz et al. 2011). At the community level, quality of life may be thought of as the overall satisfaction with a locality, its social, economic, and natural environment, as well as its infrastructure and programs (McCrea, Walton and Leonard 2014). The social interactions that occur and shape lived experiences in a given place define a sense of community (Zekeri 2013). Both quality of life and communities therefore exist at a given point in time, in a given place, and are in a state of constant flux based on current satisfaction with conditions.

2.1.1 Objective Indicators of Quality of Life

Among quality of life scholars, how best to understand and measure quality of life remains contested. Quality of life may be measured using either subjective or objective indicators. Although both types of quality of life indicators aim to investigate individuals' life evaluations, needs, emotions, relationships, and other characteristics (Forgeard et al. 2011, Petrosillo et al. 2013), they use different methodologies. Researchers collect objective quality of life indicators as "opportunities," or proxies for lived experiences. Subjective quality of life researchers criticize this practice, stating that objective measures cannot replace citizens' experiences (Costanza et al. 2008). According to this perspective, objective indicators can at best be viewed as a partial explanation of quality of life (Cummins 2005). Indicators like median income or housing prices, while arguably more applicable to citizens' quality of life assessments than objective economic indicators, may also be contaminated by measurement issues because they do not necessarily rely on individual perceptions and responses (Diener and Suh 1997).

Quality of life studies that use objective indicators rely heavily on assumptions about what individuals can accomplish given present conditions. Assumptions about individuals meeting their needs may disempower citizens by excluding them from defining and elaborating

upon their lived experiences and quality of life (Costanza et al. 2007, Dolan, Layard and Metcalfe 2011). For example, the needs-based theory of quality of life categorizes various economic, political, and health indicators, but proponents admit it cannot properly measure quality of life in any meaningful way (Forgeard et al. 2011). The limited applicability of objective quality of life indicators reinforces the importance of measuring residents' experiences using their own subjective standards. The importance of individuals' standards are especially pertinent to future quality of life studies given that studies show a relatively weak relationship between objective indicators and quality of life. Layard (2005), for example, found that income correlates weakly with quality of life among individuals with relatively higher incomes. Layard's study indicates that higher consumption capabilities and material wealth alone may not improve one's quality of life.

Objective indicators, such as employment rates, income, and health status appear frequently as measures of quality of life in rural and Aboriginal communities. The non-comprehensive nature of these measures in rural communities due to data limitations or small sample size may make them especially poor measures of quality of life in these contexts (McCrea, Walton and Leonard 2014). This may be especially true in rural and remote western Canada, particularly following the low response rates to the optional long-form census in 2011. Similar problems with collecting objective indicators exist in Aboriginal communities throughout Canada. Studies show that data collection in Aboriginal communities has long been notoriously flawed (Wright 1993). Response rates and the reliability of Aboriginal communities' data were further affected in 2011, leading to data suppression for many Indian reserves. Additionally, Aboriginal peoples living off-reserve in rural areas represent a fraction of these communities' total respondents and researchers should interpret this subpopulation's data with caution (Government of Canada 2013).

2.1.2 Subjective Indicators of Quality of Life

A major advantage of subjective quality of life studies is that they may better capture citizens' experiences using their own standards. When measuring quality of life subjectively, the focus should not be on needs; needs indicate a deficit situation rather than a focus on measuring how current conditions contribute to quality of life outcomes (Cummins 2005). The presence of certain programs and services like seniors' programming or health care does not necessarily indicate that they are of high quality, accessible, or valued by those who access them. The

quality of residents' lived experiences in communities, should be of greater importance to quality of life than the availability of opportunities alone (Bradford 2005).

Respondents' culture, material well-being, past experiences, and social and lived experiences may influence how they conceptualize their quality of life and answer questions pertaining to it. The differences that exist across personal characteristics and cultural, social, economic, and political environments show the potential value of undertaking more context-specific quality of life studies (Dolan and Peasgood 2008, Helliwell 2010).

One drawback of subjective quality of life measures, however, is that respondents' experiences are best measured through multiple questions and methods. Using multi-question studies to collect information about quality of life is often impossible given the limitations of interview techniques, research funding constraints, and the kinds of survey data and tools available to researchers and governments (Diener and Suh 1997). Rather than asking directly about quality of life, multi-question subjective studies may ask respondents indirectly about quality of life through questions about trust, health, community life, social engagement, income, and freedom of choice (Helliwell 2011). The ideal quality of life study allows for the incorporation of place, either by considering it as a factor of quality of life or allowing respondents to define their own conception of it, as well as the measurement of opportunities instead of needs (McCrea, Walton and Leonard 2014). Allowing citizens to define quality of life for themselves may help researchers incorporate respondents' values and norms into their studies.

2.1.3 Quality of Life and Public Policy

Improvements in quality of life measurement tools helped to increase discussions about quality of life's public policy relevance since the mid- to late-twentieth century (Ng 2008, Dolan and Peasgood 2008, van Hoorn 2009, Dolan, Layard and Metcalfe 2011). The increased coherence about quality of life and how to measure it spurred its use as a component of some societal progress measures, benefit-cost analyses, and poverty statistics (van Hoorn 2009). Innovative uses of quality of life measures for public policy purposes support the assertion that quality of life improvement can be "something to be pursued as a matter of public policy, through public means" (Gerson 1976: 793).

Working toward the improvement of citizens' quality of life is a worthwhile policy goal (Forgeard et al. 2011), given that quality of life correlates positively to fulfilling basic human

needs (McGregor, Camfield and Woodcock 2009, Rybakovas and Saheva 2012). Governments may choose to either help individuals meet their needs through providing the necessary freedom and incentives for citizens to pursue their own self-improvement, or more directly through the creation of sufficient opportunities in the form of funding, programs, and other policy instruments (Fleche, Smith and Sorsa 2011, Dolan, Layard and Metcalfe 2011).

In addition to being an indicator of current conditions, quality of life may be used by policymakers as an instrument to improve policy design and to consider policies' implications. Quality of life may serve as a comparative measure between individuals, demographics, communities, regions, provinces, or even countries, and if collected over time, as an assessment of societal improvement not founded entirely in economic growth like GDP. In public policy, quality of life may be both a means and an end due to its multiple uses. Quality of life may be an indirect method through which to improve community and personal outcomes as well as a worthy end goal and measure of public policy success. There is a tendency among public policy scholars, however, to think of quality of life only as an indicator (New Economics Foundation 2008).

Local government and community residents are implicitly responsible for quality of life in a community. Communities also rarely think about quality of life in an explicit manner in their decision-making processes. Instead of focusing on quality of life, local governments and community members often focus their attention instead on projects, services, and programs, and other performance indicators, the effects of which may either help or hinder quality of life. Limited financial and human resources to allocate to projects, services, and programs may stall proactive attempts to improve quality of life, and especially in rural, remote, and Aboriginal communities like those in western Canada. Local governments are thus left to engage in crisis management and reactionary decision-making to problems as they arise (Callaghan and Colton 2008, McCrea, Walton and Leonard 2014). There are also numerous difficulties associated with collecting proper and sufficient information to measure and monitor quality of life. The inability to engage quality of life issues locally may also be due to the "murky waters" of governmental decision-making, wherein it may not be a local government's constitutional role to address a particular issue, such as health care (Federation of Canadian Municipalities 1999: 7).

2.1.4 Quality of Life Studies in Canada and Abroad

Quality of life studies at the supranational or national level generally use aggregate data that may not entirely encompass people's lived realities. Examples of these quality of life studies include the United Nations' and the Organization for Economic Co-operation and Development's respective indices (Organization for Economic Co-operation and Development 2015, United Nations Development Program 2015). Supranational and national studies have limited implications beyond the level at which the analysis was completed. Such studies are not meant to replace economic indicators, but instead to stand alongside them to reinforce assumptions about progress and growth (Forgeard et al. 2011). Supranational and national studies persist despite the assertion that examining variance in quality of life outcomes at lower levels, such as between regions, provinces, or communities, holds the greatest potential to direct useful policymaking (Lawless and Lucas 2011).

In Canada, the Canadian Index of Wellbeing (CIW) attempts to quantify quality of life at the national level by measuring seven areas related broadly to the social determinants of health: living standards; healthy populace; time allocation; ecosystem health; educated populace; community vitality; and good governance. The CIW measures Canadians' quality of life and considers how quality of life changes over time. In this sense, the CIW focuses on quality of life as a complementary progress indicator similar to GDP at the national level (Michalos et al. 2011).

Statistics Canada generates a Community Well-Being (CWB) Index intended to measure quality of life in Canadian communities at the census subdivision (CSD)¹ level. The index generates income, education, housing, and labour force activity scores, as well as a total score that combines these five categories into an overall CWB Index score for each CSD (Government of Canada 2015a). Statistics Canada currently provides this indicator from 1981 to 2011. Due to data suppression in 2011, the data available by CSD in this index is now more limited, especially for rural and remote CSDs. The CWB Index scores focus on the economic aspects of the community due to the types of data collected by Statistics Canada, neglecting social, cultural, and political characteristics that may affect quality of life.

¹CSDs are municipal areas or regions deemed equivalent to communities for Statistics Canada's purposes (Government of Canada 2015e).

²As a University of Saskatchewan research project, the CIP telephone survey required ethics approval and did not proceed until approval was granted (Co-operative Innovation Project 2016).

³A CMA consists of a total population of at least 100,000 people with at least 50,000 people living in the area's

A recent study conducted by the research firm Abacus Data in collaboration with the Federation of Canadian Municipalities (FCM), titled “Life in Canada’s Communities” (Anderson and Coletto 2016), polled Canadians about their community, quality of life, and local services. This study complements FCM’s longstanding Quality of Life Reporting System, which now analyzes community trends across 27 urban Canadian municipalities (Federation of Canadian Municipalities 1999, Municipal Data 2011). Although the results suggest that quality of life outcomes are relatively strong across Canada, it is important to note that people were asked to rate their own quality of life rather than quality of life in their community more generally. Furthermore, rather than rating community life without any reference point to another place, respondents rated their community relative to others in Canada. The focus on happiness with one’s current quality of life and services in relation to the perceived quality of life and services in other communities limits the study’s policy implications, as there is no indication of what the comparator communities’ respondents referred to in answering the survey. The study also lacks transparency as to how the data were weighted to make the sample match the population’s demographics. With a nationwide non-random sample size of 1,500, it is unclear how many respondents were from each province, community size and type, or income level before weighting. The survey’s results also do not mention Aboriginal respondents, or if there were any. The aforementioned problems with these data may lead to the incorrect conclusion that Canadians have high levels of quality of life across the board, regardless of their location and local circumstances, rather than realizing that there are localized and demographic intricacies to quality of life conceptions and how these conceptions relate to local conditions.

2.2 Community Capitals

2.2.1 Community Capacities as Capitals

Quality of life indicators, such as one’s financial situation, personal and professional relationships, available programs and services, and education and training should instead be considered components of stocks of capital. A capital stock in this sense is the current wealth provided by the combined strength of its capital stock components. Understanding these stocks of capital as something that may yield some benefit through its future mobilization (Costanza and Daly 1992, Miles 2015) allows one to think about capital stocks as something in which governments may be able to invest in or influence. An example of a capital stock component might be the quality of educational institutions or of health care infrastructure and services.

Thinking about community life in this way is an important step toward understanding quality of life as what a community has rather than what it currently lacks (Emery and Flora 2006).

Making capitals more understandable to local governments, especially those with limited resources, would involve moving beyond reactionary, economically driven decision-making to collecting information about a variety of areas of community life. Such tools could be used for long-term planning and evaluation of changes over time. Bringing together the importance of place, social dynamics, the economy, infrastructure, labour and training, and social networks and norms as existing capital stocks would represent a more complete approach to studying quality of life, but frameworks with the potential to help researchers do so remain scarce (Callaghan and Colton 2008).

2.2.2 Quality of Life and Capitals

The respective quality of life and community capitals literatures link these two concepts, but the nature of the relationship remains poorly fleshed out (McCrea, Walton and Leonard 2014). Scholars have recognized quality of life as culmination of a community's economic, social, cultural, political, and environmental conditions in the early days of quality of life research. Gerson (1976), for example, argued for the consideration of money, time, sentiment, and skills in relation to quality of life, thereby creating a rudimentary guide for understanding quality of life in this fashion. Among capitals scholars, Bourdieu's (1986, 1987) identification of economic, social, and cultural capitals hinged on the importance of property rights, social connections, and power for their mobilization, creating a more complete framework for understanding quality of life.

Since the rudimentary connection of capitals to quality of life, scholars have proposed more developed frameworks that link quality of life to different types of capital. Costanza (2000) explains quality of life using natural, human, social, and manufactured capital in his ecological economics model. Christakpoulou, Dawson and Gary (2001) incorporated place-based capitals into their framework, while Sirgy and colleagues (2010) expanded upon the importance of natural resources, infrastructure, education, training, social norms, and networks, without proper consideration of place-based variables like the effect of the local community. While these approaches represent reasoned attempts to use capitals to explain and measure quality of life, all of the aforementioned models lack elements that might increase their accuracy and analytical

usefulness, such as increased specificity in defining the types of capital that ultimately influence quality of life, and how these relationships might differ across communities.

Hagerty and colleagues (2001) and Costanza and colleagues (2008) are among the numerous scholars who have attempted to theorize the relationship between quality of life and its causes and effects as continually feeding into one another as a feedback loop. Hagerty and colleagues (2001) talk about public policy as an input, individual choices as throughputs, and happiness as an output that contributes to quality of life, which then feeds back into new community and personal choices. Costanza and colleagues' (2008) model, shown in Figure 1.1 in chapter 1, considers public policy an input that provides opportunities for humans to meet their needs, which feeds into quality of life, leading to the changing social norms that influence new public policies. While McCrea, Walton and Leonard (2014) do not characterize their model as a feedback loop, they consider instead the impacts of change on capitals, community quality of life, overall well-being, and resilience on future community well-being outcomes. Comprehensive frameworks that allow one to think about this relationship at its broadest and most inclusive may help guide research on community capitals and quality of life.

2.2.3 Community Capitals Framework

Flora, Flora and Fey's (2004) community capitals framework (CCF) offers a particularly useful application of community capitals that may have relevance for rural quality of life studies. The CCF comes out of the capacity-building tradition, wherein "the combined influence of a community's commitment, resources, and skills...can be deployed to build on community strengths and address community problems and opportunities" (Aspen Institute 1996: 1). The framework's goal is to identify, describe, and categorize the shared characteristics of socially and economically strong and sustainable communities (Blanke and Walzer 2013). This means that not only are the implications of change considered in the CCF, they are considered in an all-encompassing framework of expected community change based on current strengths. The CCF has three core tenets: all rural communities, regardless of size or isolation, possess capitals; each capital exists as a unique subsystem within a larger system; and strategic investments in the stock of one capital may negatively or positively affect other capitals (Fey, Bergendahl, and Flora 2006).

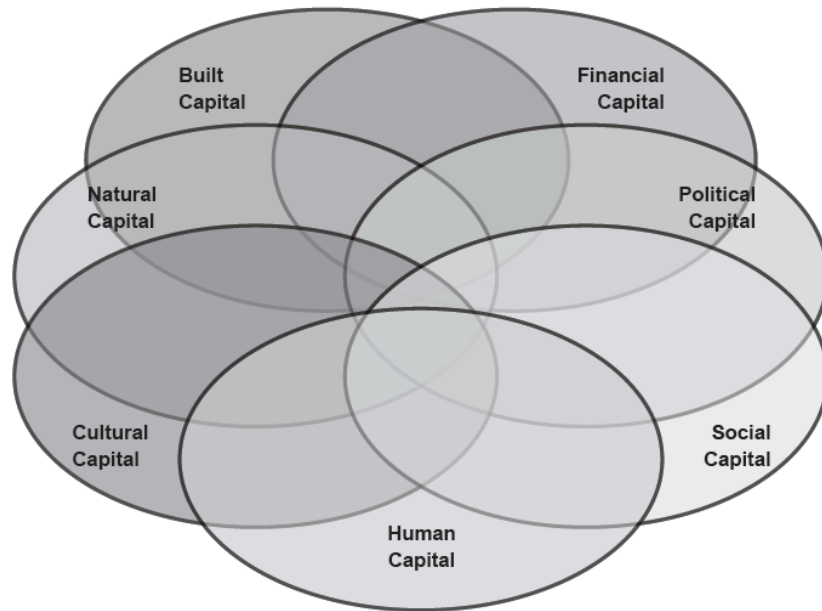
Community capitals exist as stocks that can be accessed and built on to create other capitals. Communities experience the strength of these stocks in their everyday life, like when

they access services and programs. The community capitals are held by community members as well as by government as public goods that can be mobilized to benefit the greater community. Community capitals are not permanent and can improve or deteriorate over time due to their utility to the community or their use, disuse, or misuse (Monier 2011). In thinking about community life in this way, community and economic development officials and governments must consider new indicators of success and think about the implications of their decisions on all capitals (Emery and Flora 2006).

Researchers to date primarily use the CCF for qualitative exercises like asset mapping. The CCF helps researchers understand how developed each capital stock may be in a particular place, or community. The framework's qualitative application is largely due to the difficulty of measuring how various capital investments affect communities due to local data limitations (Fey, Bergendahl and Flora 2006). Starting from a positive position where all communities possess capitals may empower communities, especially to those that may possess fewer financial or economic resources (Gutierrez-Montes, Emery and Fernandez-Baca 2009). Case studies that apply the CCF in a rural context show that a targeted focus on improving a few particular capital stocks might improve other areas of community life and change how people conceptualize themselves. This suggests the importance of considering the relationship between community capitals and quality of life (Emery and Flora 2006, Onyx and Leonard 2010). Elsewhere, the coming together of community capitals contributes to a "healthy ecosystem," "vital economy," and "social well-being" (Fey, Bergendahl and Flora 2006).

One issue with CCF research to date is that scholars tend to model the framework to represent all capitals as producing the same human benefits and therefore contributing equally to quality of life across all communities. Scholars such as Emery and Flora (2006) model this relationship without considering how different communities may have different combinations or sizes of community capital stocks due to their unique histories or cultures, and therefore different components of community life may differentially affect their overall assessment of quality of life.

Figure 2.1 Community Capitals Framework (Emery and Flora 2006)



In Figure 2.1, Emery and Flora (2006) represent all community capitals as being equal in size and importance, although this is not necessarily the best way to think about community capitals. Certain community capitals may have a stronger relationship to quality of life in general, or may be more prevalent or better developed in a particular community. This is not to say that certain capitals should be favoured over others. Favouritism in community capital stock investments may lead to the destruction of other capital stocks (Gutierrez-Montes, Emery, and Baca 2009). For example, focusing on investing solely in human capital might help lead to a competent, well-trained workforce, but deterioration of social capital might result and make it more difficult for these newly skilled workers to get along or get anything done.

CCF research remains a relatively new subfield in community economic development and rural sociology, and further research constantly improves how researchers understand and apply it. This framework, however, remains one of the most frequently used among community capitals scholars. It also helps researchers understand the connections that exist in community life and embrace the complexity of problems (Flint 2010).

2.2.3.1 Definitions

The CCF recognizes seven forms of capital: built, financial, political, social, human, cultural, and natural capital. How many types of capital exist and how best to define each type

remains contested (Robinson and Carson 2015), but the CCF aims to cover the broadest understanding of capitals present in the literature (Miles 2015). These capitals divide into tangible and intangible groups (Flora, Flora and Fey 2004, Emery and Flora 2006). Another way of thinking about them is as “market” (financial, built, and human capital) and “non-market” capital stocks (natural, social, cultural, and political capital). Despite the numerous studies done on one or two types of capital, and especially on human capital (Schultz 1961, Becker 1993) and social capital (Putnam 1995, 2000), there remain fewer studies that bring these capitals together in a practical application for empirical study or policy advice (Callaghan and Colton 2008). However, CCF research to date suggests that investments in the non-market capitals may also help communities develop socially and economically, contributing to stronger communities overall (Fey, Bergendahl and Flora 2006).

Financial capital: As a market capital, financial capital remains what is most commonly thought of as capital. Financial capital represents the stocks of financial resources that can be invested into further community capacity building, business development, and government services (Emery and Flora 2006). Citizens and governments alike possess financial capital that they can mobilize in pursuit of other capitals. In this sense, however, financial capital is difficult to quantitatively measure as a stock, and is often only visible once operationalized as a flow that communities transform into capital stocks of social, human, built, cultural, or political capital.

Natural capital: Natural capital relates to location-specific earth systems that are both renewable, such as ecosystems, and non-renewable, such as oil and mineral deposits (Costanza and Daly 1992). Natural capital’s stocks often exist in their current location, though they can change and move location through activities like construction and mining. In its simplest sense, natural capital is the base upon which a community exists. Without the resources and beauty that natural capital provides, the community would be entirely different. Dependency on this capital stock may lead to an undiversified economy, which may in turn make a community more susceptible to economic booms and busts. Such poorly diversified economies also tend to be at the mercy of political forces that control the local economy (Fey, Bergendahl and Flora 2006). Public policy cannot lead directly to the creation of natural capital in the same way that it can help create other forms of capital. Natural capital, instead, changes into new forms, such as when trees are turned into lumber, or ore into metals. The natural environment itself is difficult to

change, but a community's longevity and viability undeniably requires environmental stewardship.

Built capital: In Flora, Flora and Fey's (2004) original framework, built capital occurs due to the transformation of financial capital through investment. Built capital is also essential for supporting the activities and success of other capital stocks. Apart from basic roads and water infrastructure, built capital may include a combination of private and public amenities, such as youth and seniors' centres, parks, housing, and business spaces (Callaghan and Colton 2008). Built capital encapsulates both private and public amenities, such as programming and the buildings required for programming (Black and Hughes 2001).

Human capital: Human capital is the capital stock intrinsic to human beings that enhances labour productivity. It can come both from knowledge acquired through certifications and education, but also from natural talents, informal education, work experience, health status, growth, and leadership within a population (Flora, Flora and Fey 2004). Human capital as a capital stock remains especially important to measuring quality of life due to its connection to individuals' ability to self-actualize, grow, and prosper (Callaghan and Colton 2008).

Cultural capital: Scholars measure cultural capital as a combination of built and intangible culture, such as cultural and community activities, religious organizations, and cultural retention (Callaghan and Colton 2008). Communities may increase cultural capital flows through investments or time and funding into community events (Fey, Bergendahl and Flora 2006). The influence of cultural capital flows may affect community life by generating greater levels of creativity and innovation or reducing these forms of growth by stifling local change. Although cultural capital remains one of the most difficult capitals to change due to its reliance on existing social capital stocks, such as societal norms, habits, and cohesion (Emery et al. 2007, Callaghan and Colton 2008), Costanza and colleagues (2008) posit that cultural capital remains an influential and integral component of quality of life.

Political capital: Political capital is the organizational membership, wealth, connections, information, and specialized expertise possessed by individuals that can be mobilized for political purposes (Flora, Flora and Fey 2004). Political capital stocks affect how a community can access resources and work to influence their local government. This capital stock relates strongly to social capital stocks, which helps communities build trust, ask government for assistance, and secure private sector investments (Fey, Bergendahl and Flora 2006). Political

capital represents important aspects of social cohesion, knowledge, and traditions at work in the community (Gutierrez-Montes, Emery and Fernandez-Baca 2009).

Social capital: Of the seven capitals included in the CCF, social capital remains one of the better known and most frequently researched capitals to date. Social capital refers to the norms, networks, and trust that exist in a group that allow for the construction of a shared identity and ability to work together. Social capital has two core components: bonding capital, or the close ties that build social cohesion, and bridging capital, or the looser ties that allow organizations and individuals to work together both inside and outside of the community. Both forms of social capital are important to consider due to human interaction shaping the structures and institutions of society through personal relations and politics (Flora, Flora and Fey 2004). A community that possesses strong social capital stocks tends to be more empowered and better able to meet its needs than other communities (Coleman 1988). The term social capital first emerged into common usage after Putnam's (1995, 2000) seminal work on the growing societal disconnect and individualism in the United States. In the Canadian context, a federal report recognized that social capital is a useful component of and complement to government policy and programming that may help facilitate better community outcomes (Government of Canada 2005).

2.3 Policy Theory

Public policy research recognizes the inherent problems created by removing a problem from its context. Problem definition is subjective and no policy problem presents itself the same way twice (Hoppe and Hisschemoller 1996). In reality, however, examining problems in one community alone may not be feasible for policymakers given information or funding constraints. The current tendency in policymaking to broadly define and attempt to solve problems through universal solutions rather than considering problems in a place-conscious manner shows a potential role for community capitals research in policymaking. To be place-conscious in a public policy sense involves considering whether communities share similar community capital stocks. If so, they may also confront similar problems and therefore have the potential to benefit from similar policy interventions. This may also help shed light on the complexity of communities, and recognizes that policies may affect places differently (Zasada et al. 2015).

Policymaking tends to revert to the implementation of ready-made solutions to solve similar problems in other jurisdictions in an attempt to increase external legitimacy and comply

with “best practices.” Rather than being place-conscious, such an attempt at policymaking does not often take into account present conditions and fails to properly consider the institutional and historical context of a policy’s implementation. The policy literature refers to this process, with its lack of proper consideration for the problem and solution’s contexts as policy transfer, policy emulation, or lesson drawing (Dolowitz and Marsh 1996). While external legitimacy increases through emulation, policies and programs perceived as effective elsewhere may not fit well with the local realities of the place to which they were transferred. In this case of policy form over policy function, there are few incentives for policymakers to improve the policy or program to create a better solution due to the lack of external reward for innovation, experimentation, or the incorporation of feedback (Andrews, Pritchett and Woolcock 2012). If policymakers considered the importance of performance and effect over external legitimacy and compliance, however, they might attempt to better assess local context and conditions to improve problem solving. The engagement of local agents and the continuous re-evaluation of problem solving both hold the potential to improve community capitals that have an impact on quality of life.

2.3.1 Place-based Policymaking

One of the CCF’s greatest strengths is that it considers community capitals within the given local context due to what it prioritizes as important to quality of life in a community. In this sense, the CCF is place-based, rather than people-based, as it focuses on communities’ improvement rather than on individuals (Olfert et al. 2014). Place is a geography term with many interpretations and potential definitions; it is physical, spatial, subjective, and experienced as the environmental and human realities of an area (Hanna et al. 2009). Using place to understand quality of life as tied to particular social, historical, and cultural characteristics, as well as geographical location is thus important for the proper measurement of community capitals relative to quality of life (White 2008, Morrison 2007). Incorporating place into quality of life studies is especially important when one understands that similar to quality of life, the concepts of both place and of community are constantly changing and exist at a given point in time (Hanna et al. 2009). That a community has unique strengths that may provide it with a comparative advantage is one of the core tenets of community development (Barca, McCann and Rodriguez-Pose 2012). Targeting interventions to places may correct gaps that exist between communities and play to existing community strengths to enhance quality of life in problem-plagued communities (Olfert et al. 2014). This allows for the creation of policy that may better

align with local attitudes, beliefs, and social structures, all steps that may increase a policy's overall legitimacy, efficacy, and effectiveness (Wallner 2008).

Arguably, problems cannot be properly defined in an objective manner. Problem definition is inevitably subjective due to its heavy reliance on assumptions about conditions and the effects of attempting to alter them. Actors in the policymaking process have the ability to choose the problems that they solve and often define what these problems are (Hisschemoller and Hoppe 1996). The subjectivity of problem definition from outside of a community, however, may not align with the community's values, and thus may not have much impact on improving quality of life.

Policymaking has seen a renewed interest in place-based approaches in recent years. Despite the increasingly global nature of problems in today's world, there is a growing sense that policies should come from the bottom up (Government of Canada 2006). Place-based policymaking focuses on a sub-region within a larger region or structure, such as an economic region, county, province, or country, which lags relative to some reference point (Olfert and Natcher 2013). The Organization for Economic Co-operation and Development (2006: 3) argued over a decade ago:

Promoting integrated rural development...requires a less "defensive" approach to rural policy and stronger co-ordination across sectors, across levels of government, and between public and private actors. It also requires a new focus on places rather than sectors and an emphasis on investments rather than subsidies.

Interestingly, Canada's federal government saw place as a relevant policymaking priority even before this OECD report. The federal government created the Rural Lens through the Rural Secretariat, which existed within Agriculture and Agri-Food Canada from 1998 to 2013. The Rural Lens was a policy tool meant to help government departments consider policies' impacts on rural communities with the goal to "improve the quality of life in rural and remote Canada" (Government of Canada 2001: 2). By evaluating policies' potential impact starting from the problem definition stage to reduce the need to make changes to the policy later into the process, this multi-step policy assessment tool, including the impact assessment outlined in Figure 2.2, was cumbersome to use. However, the onus was on departments other than Agriculture and Agri-Food to use this tool, and the Rural Lens was not a requirement of the policymaking process, which perhaps reduced its effectiveness. In examining the Annual Reports to Parliament on

Rural Canada from the years following the Rural Lens' creation in 2001, it is not immediately clear what kind of impact it had on federal policymaking processes (Government of Canada 2004). The Rural Lens remains poorly documented; though it is possible it fell out of favour during changes in federal leadership both in 2003 and in party stripe in 2006.

Figure 2.2 Rural Lens Impact Assessment Questions

- | | |
|---|---|
| - How is this initiative relevant to rural and/or remote Canada? | - How can the effects on rural and remote regions be measured? |
| - Will the impact on this initiative vary for specific groups (such as men, women, youth, seniors, Aboriginal and non-Aboriginal residents) in rural and remote Canada? | - How is the initiative consistent with government priorities, with government commitments to rural and remote Canada, and to other subgroups in rural and remote Canada? |
| - What is the potential social impact on rural and remote regions? | - Is the impact specific to a selected rural/remote environment or region? |
| - What is the potential cultural impact on rural and remote regions? | - Is sustainability (i.e. the convergence of economic, social and environmental factors) being considered? |

Place-based policymaking is not feasible for most rural and remote communities, or evidently for the federal government, given it can be a laborious and time-intensive task for time- and cash-strapped governments and local leaders. Place-based policymaking intends to help lagging communities; however, this overlooks that these communities have fewer resources to help themselves. Taking steps toward place-based policymaking, however, by considering the commonalities that exist among similar communities may solve some of the issues associated with current trends toward broad problem definition and problem solving. This may relieve some poor or disadvantaged communities of the financial and informational burden of considering their problems as their problems alone.

2.3.2 Policy Emulation

Policy emulation can be a positive tool when pursued in a meaningful way. Emulation in policymaking can contribute to capacity building in communities as a form of informed and potentially less risky policy experimentation. Emulating policies from other places should be done with consideration of the environment in which the policy was originally implemented. This involves understanding both the originator and emulator's political, social, and economic institutions, available resources, and policy environment (Mossberger and Wolman 2003).

Place-conscious approaches to rural and remote policy problems could be a form of informed policy emulation. Policy emulation with a place-conscious lens is possible if communities can learn from one another in a meaningful way, which might increase the likelihood of policy success. While accounting for similarity and differences may not be efficient in the short run, it is a more reasoned approach that may lead to more effective outcomes when borrowing policies from other areas. Better-informed policy emulation may also be more efficient due to its potential influence on problem structuring, decreasing uncertainty and risk, and reducing the number of feasible solutions considered (Hoppe and Hisschemoller 1996). Considering policy options based on understanding place would help structure policymaking in such a way to help policymakers move beyond a narrow focus on “best practices” to “better practices” based on an understanding of what assets that community has and how it can leverage its current conditions compared to other similar places. Doing so may lead to less waste due to the implementation of policies that can be better utilized by communities.

2.4 Distinguishing Aboriginal from Rural for Policy Purposes

This study discusses Aboriginal and rural communities together in the context of western Canada. The following chapters employ the term “rural” to refer to those communities whose survey respondents do not identify their community members as being of predominantly Aboriginal descent. Aboriginal communities in this study are those communities’ study respondents who identified their community members as being predominantly Aboriginal, First Nations, Métis, or First Nations and Métis. This is not to say that there is not crossover between groups within each of these community types. However, given the approach adopted in this study, the community type identified by the respondent is likely the most relevant for this study’s purposes, rather than relying solely on statistical definitions of geographic and cultural communities defined by outside agencies such as Statistics Canada. This also allows respondents who are not currently physically located in the community that they would define as their own community to respond to the questions in the way that made the most sense to them given their definition of their community.

Rural development in western Canada rarely explicitly considers that many Aboriginal communities exist within and share rural space with other types of communities. Where this reality is acknowledged, however, scholars often overlook the significance of Aboriginal communities as being rural. For instance, Azmier and Lozanski (2004) made recommendations

about how to strengthen western Canada's rural communities. The report's recommendations explicitly did not extend to Aboriginal communities, perhaps due to the report's recognition of the differential character of Aboriginal communities. The lagging economic conditions, poor health outcomes, and weak social supports that rural areas often face are further exacerbated by the effects of colonization that Aboriginal communities continue to face (Government of Canada 2002). Furthermore, Aboriginal communities that are Indian reserves are subject to different political decision-making and governance structures, as well as administrative ties to the federal government rather than provincial governments. These unique conditions indicate the importance of delineating the issues facing rural communities from those facing Aboriginal communities in this context.

There are renewed calls to consider the place of both Aboriginal and non-Aboriginal peoples within the rural context. Each of these community types, however, deserve separate consideration given that they confront different challenges, and may have different community capitals on which to build to improve their quality of life. For a variety of reasons, they may also have different conceptions of quality of life. Aboriginal capacity building, for example, may require greater emphasis on supporting local culture and community life than it might in rural communities (Government of Canada 2002). The Canadian Rural Revitalization Foundation (2015: 102) asserts that for "a re-imagined rural Canada we need to listen to rural peoples, both Aboriginal and non-Aboriginal" because "we cannot re-imagine places and economies without the vision and experience of those who live and work everyday in these places." Heeding this call properly involves considering Aboriginal and non-Aboriginal similarities and differences within the rural context, as well as citizens' inclusion in informing change to their communities. Adopting a place-conscious approach to policy development in these communities requires first acknowledging that both of these types of communities occupy the same space, which necessitates studying both in any comprehensive examination of rural Western Canada.

CHAPTER 3 METHODOLOGY

3.1 Co-operative Innovation Project Telephone Survey

From January to April 2015, the Co-operative Innovation Project (CIP) conducted a telephone survey using the University of Saskatchewan's Social Sciences Research Laboratories (SSRL).² This survey formed one part of a larger undertaking by CIP which intended to examine the needs and capacities of rural and Aboriginal communities in western Canada. The ultimate goal of CIP was to determine whether the co-operative model was still relevant and feasible in helping these communities address some of their needs.

The data collected and used in this study was part of a three-part data capture by CIP researchers that assessed community needs in western Canada through community meetings to engage directly with community members and local stakeholders, a survey of municipal and band administrators, and a survey of community members. As a research assistant with the CIP project, I worked as part of the team involved in collecting data via community meetings. I helped facilitate these community meetings and contributed to data collection and some analysis concerning that facet of data collection. The original purpose of the CIP telephone survey was to help answer questions about the feasibility of the co-operative model in today's rural and Aboriginal western Canada, and how to inspire co-operative development in this region to address the current needs of communities. The CIP research team used the data to identify similarities and differences between communities across the four provinces in the study region and my thesis serves as a complementary study to this undertaking.

3.1.1 Sample Description

The CIP telephone survey limited the study region to rural (non-Aboriginal) and Aboriginal communities located in rural areas in western Canada (Manitoba, Saskatchewan, Alberta, and British Columbia) and targeted the residents aged 18 years and older of these communities as potential respondents. The communities in the population are "rural" as per Statistics Canada's Statistical Area Classification, which removes census metropolitan areas

²As a University of Saskatchewan research project, the CIP telephone survey required ethics approval and did not proceed until approval was granted (Co-operative Innovation Project 2016).

(CMAs)³ and metropolitan influenced zones (MIZs)⁴ from the study region population (Government of Canada 2015c). During its data collection phase, the CIP telephone survey used the Statistics Canada definition of a “community,” a census subdivision (CSD),⁵ to identify rural and Aboriginal communities within the study region. Such a definition of community is more geographic than the cultural definition provided in chapter 2, because Statistics Canada imposes a definition of community on census respondents based on geography rather than having respondents to define their own community (Dorius 2009). Given this, CSD was not used as the community type identifier for analytical purposes in this study; however, CSD was used for the purposes of defining the study population from which to draw the sample.

3.1.2 Data Collection

The CIP telephone survey targeted residents of the study region aged 18 years and older. The SSRL used random digit dialling to contact respondents. Three rounds of data collection occurred in an attempt to produce a sufficiently representative sample of the study region with at least 10 percent of the total respondents self-identifying themselves as living in a predominantly Aboriginal community (Co-operative Innovation Project 2016).

Facilitators asked respondents to answer questions about themselves as well as how they perceive the current quality of their community, its businesses, services, and local government (see Appendix A for the complete list of survey questions). The interviewers allowed respondents to conceptualize what community means to them rather than defining it for them geographically, administratively, or culturally. The CIP telephone survey contains questions concerning programs, public services, and childcare and educational services using a 4-point Likert scale, where “poor” was given a value of 1, “fair” a value of 2, “good” a value of 3, and “excellent” a value of 4. Responses of “don’t know” and “refused” and “not available in the community” were coded as missing values. Scales for business development, law, safety, and unpaid activities used similar 4-point Likert scales, with answers of “don’t know” and “refused” coded as missing values. Questions concerning respondent perceptions of quality of life in the community and personal satisfaction with the community used the same scale, but employed the

³A CMA consists of a total population of at least 100,000 people with at least 50,000 people living in the area’s defined core (Government of Canada 2015d).

⁴A MIZ is an area wherein 30% or more of the workforce commutes to a CMA or census agglomeration (CA) for employment purposes (Government of Canada 2016b).

⁵As mentioned in Chapter 2, CSDs are municipal areas or regions found to be equivalent to such for Statistics Canada’s purposes (Government of Canada 2015e).

terminology “low” for a value of 1, “moderate” for a value of 2, “high” for a value of 3, and “very high” to indicate a value of 4. Many of the survey’s questions concerning social capacity and community life used a binary scale, with questions pertaining to recent behaviour collected on a binary scale with “yes” as a value of 1, “no” as a value of 0, and “don’t know” and “refused” as missing values.

While the CIP research team that developed the survey instrument consisted of researchers with First Nations, Métis, rural, and non-Aboriginal backgrounds, the methodology for this particular data collection was not necessarily reflective of Indigenous methodologies or ways of knowing. Other methods of data collection for the CIP, like community meetings, were used to engage more deeply and directly with communities in ways that made sense to them. These additional data collection methods served to triangulate some of the findings in the larger project using mixed methods, where community meetings provided the qualitative complement to quantitative survey findings. Given the time constraints in completion of a master’s thesis, this study relies solely on the CIP telephone survey, and acknowledges some of the challenges and limitations this poses in generating a more in-depth understanding of the phenomena under investigation.

Each survey respondent provided their postal code to the interviewers to allow CIP researchers to identify their CSD of residence. CIP researchers had originally intended to use CSD identification numbers to define “community” in the survey. The boundaries of these postal codes, however, did not always align perfectly with a CSD’s boundaries or corresponded to multiple CSDs. This led CIP researchers to decide to allocate respondents by postal code to the corresponding CSD with the greater population base. For example, if a respondent’s postal code was associated with two CSDs, and one was an unincorporated area and the other a town, the respondent would be placed in the town. CIP researchers also concluded that due to the numerous conflicts between CSD type and respondents’ self-identified community type, especially among Aboriginal community respondents where few came from CSDs classified as Aboriginal,⁶ CSD type was not the best indicator of community type. Given that the survey asked respondents to identify the type of community that they lived in, the analysis of the data used respondents’ self-identified community type to define Aboriginal and rural (non-

⁶Aboriginal CSD types in the study region are: Indian reserves (IRIs), Indian settlements (S-És) Indian government districts (IGDs) and Nisga’a lands (NLs). Statistics Canada defines these types of CSDs in conjunction with Indigenous Affairs and Northern Development Canada.

Aboriginal) communities, but clustered multiple responses from a community together using the CSD's identification number for the purposes of statistical analysis where required. This means that the survey and its analysis allowed respondents to define their own community and conceptualize it as best suited them to answer the questions.

3.2 Variables

3.2.1 Data Cleaning

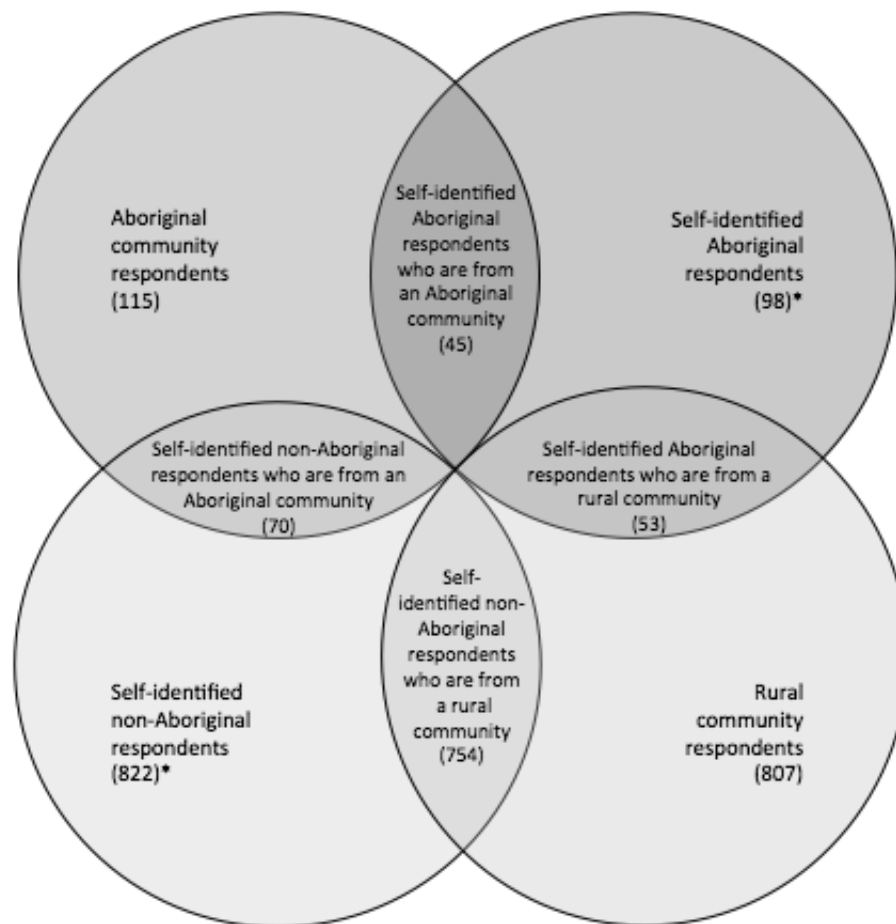
The data collection phase produced a sample of 491 respondents from Manitoba, 504 respondents from Saskatchewan, 513 respondents from Alberta, and 517 respondents from British Columbia, for 2,025 total observations (Co-operative Innovation Project 2016). For the purpose of this study's analysis, of the total 2,025 observations in the uncleaned dataset, data cleaning first dropped 204 observations from respondents who failed to answer 8 or more of the survey's core questions. Analysis of the remaining observations showed that 63 of the remaining respondents were from an urban rather than an Aboriginal or rural CSD and these observations were dropped. The data were then recoded to ensure that responses of "don't know" or "refused" were considered missing data, while "not available in the community" was given a value of 0. If there was a missing observation in one of final factor analysis questions (see Appendix C), the observation was dropped. 13 additional respondents were dropped due to a failure to self-identify their community as Aboriginal, Métis, First Nations, Métis and First Nations, or none of the above. Sixteen respondents were from communities where data were unavailable concerning distance from the nearest CMA and were dropped. The remaining responses from each province were then 262 from Manitoba, 220 from Saskatchewan, 228 from Alberta, and 212 from British Columbia for 922 total respondents spanning 282 unique CSDs.

3.2.2 Community Type Specification

The CIP telephone survey collected information about the respondents' definition of community type as well as respondents' self-identification about whether they were of Aboriginal or non-Aboriginal heritage. Figure 3.1 shows the overlap in indicators of respondents' identity and community type. The crossover between these two indicators demonstrates that not all self-identified Aboriginal respondents currently live in predominantly Aboriginal communities, and that not all rural respondents are non-Aboriginal. The survey's question about identity complements information collected concerning community type. Of the

922 respondents in the retained sample, 115 respondents identified themselves as being from a predominantly Aboriginal, Métis, First Nations, or Métis and First Nations community. 98 respondents identified themselves as being of Aboriginal, Métis, First Nations, or Métis and First Nations descent.

Figure 3.1 Overlap Between Respondent Groups in the Total Sample



*These two numbers equal to 920, rather than the 922 observations used throughout much this section to refer to the study sample, because of two respondents' failure to identify themselves as either Aboriginal or non-Aboriginal.

Given this incomplete overlap between self-identification and community type, self-identification is used as a robustness check in chapter 4 to demonstrate whether the results are the same when using non-Aboriginal respondents instead of rural community respondents, and Aboriginal respondents instead of Aboriginal community respondents. Sample size determination tests found that the respective sample sizes are sufficient for an unbalanced comparative study of both of these groups.

3.2.3 Dependent Variables

The dependent variables used in this study are direct indicators of quality of life. This study uses the survey questions “How would you rate the quality of life in your community?” (quality of life), which measures community quality of life and “How satisfied are you with your community overall?” (personal satisfaction), which measures personal quality of life as its two dependent variables used in separate models. These variables differ in that they represent quality of life at different levels (community and individual), and respondents may have different perceptions of quality of life at different levels. Quality of life was collected to represent the community level and speaks to how a community’s residents conceptualize their quality of life overall in the community, while personal satisfaction represents one’s perception of their own satisfaction with the community.

Due to the random digit dialling technique employed during the data collection stage, the data contain multiple observations for some communities. Intercorrelation between multiple observations from one CSD is assumed due to the higher likelihood that respondents from the same CSD responded more similarly to survey questions than would respondents from other CSDs. The descriptive statistics reported in this chapter therefore cluster multiple respondents within a community type from one CSD together by their CSD identification number using robust standard errors. Although CSD identification number is not the community identifier used throughout the majority of this study – rather, this study uses respondents’ self-identified community type – clustering by CSD identification number statistically controls for multiple respondents from one CSD. Clustering ensures that the regressions do not violate the assumption of observations’ independence by controlling for similarity that exists within data from a given continuous or binary measure. Using individual responses to measure quality of life in a community is methodologically sound because it is unlikely that communities share a singular voice or opinion (McCrea, Walton and Leonard 2014). That being said, regression analyses aggregates responses to generalize patterns within the data, so this removes some of the individual variation both within and across communities. All analyses used Stata 13.

Table 3.1 Univariate Statistics of Dependent Variables, Clustered by CSD

	Total sample	Rural community sample	Aboriginal community sample
Quality of life	2.86 (0.76)	2.90 (0.74)	2.50 (0.85)
Personal satisfaction	3.42 (0.67)	3.48 (0.64)	3.04 (0.80)
Observations (n)	922	807	115

There are notable differences between the average responses from rural community and Aboriginal community respondents reported in Table 3.1. Both quality of life and personal satisfaction were rated on a scale from 1 to 4, with 1 being low and 4 being very high. There is a substantial difference between Aboriginal community respondents and both the rural community respondents and the total sample groups. The rural community sample means and standard deviations closely resemble those of the total sample, as rural respondents compose the majority of the total sample's respondents. Aboriginal community respondents, on average, rate their quality of life 0.40 lower than that of rural community respondents on a 4-point Likert scale. This appears to be due to a greater number of Aboriginal community respondents identifying quality of life in their community as either "low" (1) or "moderate" (2) in the dataset in contrast to rural respondents, who tended to rate quality of life in their communities as "high" (3) or "very high" (4). Ratings of personal satisfaction with the community are significantly greater than quality of life ratings on the same scale for all groups. Aboriginal community respondents' average personal satisfaction, however, remains lower than that of rural community respondents and the total sample.

3.2.4 Independent Variables

3.2.4.1 Exploratory factor analysis

This study uses the exploratory factor analysis (EFA) technique to create independent variables that represent community capital stocks. EFA, also called common factor analysis, is a multivariate statistical technique used to simplify data by isolating the latent constructs that exist within it. An EFA groups variables together based on their common variance. When variables are combined into these latent constructs called factors, they are assumed to represent the underlying causes of the measured variables, reflecting concepts that are difficult to measure directly. In simpler terms, an EFA is the mathematical simplification of patterns that exist within data (Yong and Pearce 2013). Factor analysis is the most appropriate method for this study given that community capitals are latent. One cannot directly collect information about community

capitals because they are the combined effects of numerous community characteristics, some of which are intangible. Therefore, community capitals research must use information about communities to create factors representative of community capitals stocks.

The EFA technique is closely related to that of confirmatory factor analysis (CFA), but researchers employ these two types of factor analysis in different contexts. An EFA is exploratory, and attempts to uncover patterns within the data without prior hypotheses. A CFA helps to confirm hypotheses and is usually used with data that employed questions previously validated or specifically constructed to measure the hypothesized latent constructs. Researchers who use CFA have already defined what they wish to observe in the data. While the CIP survey measures both market and non-market community capitals, and they were guided by broader understanding of community capitals, the survey's designers did not make these priors explicit in their survey design. Thus, an EFA is the most appropriate method for this study to determine how to construct the community capitals measures, given that there are no previously validated scales to guide the construction of these measures in relation to quality of life.

An EFA uses several methods to determine how to retain factors. EFA relies largely on the researcher's set cut-offs, as there are many ways to determine how to retain factors. This extraction uses principal factors, which computes factor loadings using the squared multiple correlation method to estimate uniqueness based on the difference of a factor loading's communality from the assumed value of 1. The analysis reports factor loadings with eigenvalues, or characteristic values, greater than 1, which result from the EFA condensing variance that exists. From there, the analysis drops data with eigenvalues less than 1 or with factor loadings of less than 0.30. The appropriate number of factors to retain, regardless of reported results, may be determined using a scree plot, which shows the eigenvalues associated with the factors extracted. From there, the analysis is rotated using an oblique rotation, which helps make the data more comprehensible and allows the factor to correlate. Tests such as the Kaiser-Meyer-Olkin (KMO) measurement of accuracy may help determine the validity of an EFA's results.

Based on a literature review on community capital stock indicators, the data were thought to sufficiently measure five community capital stocks: built capital, cultural capital, human capital, political capital, and social capital (see Appendix B). The survey questions selected for use in the EFA were those that most closely followed the definitions of each community capital stock provided in chapter 2. For example, innovation is a noted effect of strong cultural capital

stocks (Emery and Flora 2006); therefore, the survey question concerning the level of innovation in a community was thought to be a component of a potential cultural capital stock factor.

Following the advice of Black and Hughes (2001), the CIP telephone survey questions selected for this analysis were chosen for their applicability to various types of communities, as well as their direct public policy relevance. Policy relevance in this context means that they are areas of community life where public policy can likely have some influence, be it through soft instruments, like information campaigns, or hard instruments, like legislation, that require mandatory compliance. This EFA's construction did not consider the potential to measure either financial or natural capital. There are notable difficulties associated with measuring stocks of financial capital, as it is typically observed as a flow, which communities transform into other community capital stocks. Natural capital has a notably weak relationship to rural development outcomes (Zekeri 2013), in combination with data limitations in the current dataset.

Additionally, the potential impact of public policy on natural capital stocks is limited; public policy can generate changes to natural capital, through incentives to create mines, for example, but policymaking cannot create new natural resources that do not already exist.

The survey questions measure capital stocks, rather than flows. The current state of a given capital is the result of previous flows, resulting in the current strength of the capital stock, measured here through the rated "quality" of various aspects of community life in the CIP telephone survey. Data recoding at this stage intended to ensure that the variables' coding and subsequent interpretation was intuitive for the purposes of measuring community capital stocks. Data concerning violent and property crime were recoded to reflect that "low" (1) crime is best understood as a high value (4), while "high" crime (4) is a poor outcome (1). Questions that included "not available in the community" as a response option were recoded to give this response a value of 0 to reflect that its absence is a gap in the quality of that potential community capital stock component. To account for the different scales used in the data collection phase, all data used in the EFA were standardized to make them easier to compare and ensure that no variables' importance was overstated or understated.

The EFA used observations associated with 44 CIP survey questions. Following Kaiser's criterion, the analysis dropped variables that did not achieve minimum eigenvalues of 1 (Kaiser 1960). Once all variables included in the EFA achieved minimum eigenvalues of 1, the analysis dropped those variables with factor loadings of less than the absolute value of 0.30. An exception

to this was the quality of post-secondary education survey question, which had factor loadings with absolute values between 0.03 and 0.26 but was considered important to understanding the quality of communities' human capital stocks.⁷ The unique variance of each variable ranged from 0.58 to 0.82, indicating high communalities of the retained factor loadings. The EFA's unrotated factor loadings and the scree plot indicated that the analysis should retain 4 factors. Following an oblique rotation with Kaiser normalization applied, the same 4 factors remained, with each survey question associated with a factor having a factor loading greater than the absolute value of 0.30 (see Appendix C).

The final factors consist of 36 total survey questions (see Appendix D). The first factor contains 18 variables; the second factor, 10 variables; the third factor, 3 variables; and the fourth factor, 5 variables. The KMO measurement of adequacy verified the EFA's validity, and a total KMO of 0.89 and all variables individually exceeding a minimum KMO of 0.60 indicates that the variables have a lot in common (Kaiser 1970). The quality of business skills cross-loaded onto two factors. Based on the other variables that loaded onto the first factor, representing infrastructure, programming, and labour, the quality of business skills fit best with this factor rather than the second factor's measures of trust and social norms.

3.2.5.2 Variables of interest

The four factors extracted from the EFA do not directly represent the five capitals discussed before conducting the EFA. They do, however, divide broadly along market and non-market capital lines to represent the core idea behind each of the proposed community capitals variables. Collective social capital, safety and security, and individuals' social capital are representative of non-market capital stocks, while the human and built capital variable represents the anticipated stocks of market capital. The difficulty in measuring community capitals may be because most CCF research to date has been qualitative in its focus. Obscurity remains as to how to separate capitals from one another due to the evident overlap in the understanding of each capital stock. Researchers have focused on understanding the context in which a community operates, the processes undertaken to generate capital, and attempted to monitor the outputs and outcomes of community capital investments. Flora, Bergendahl, and Flora (2006) discuss the community capitals' "grey area," in which it is difficult to separate community capitals distinctly

⁷ Factor analysis is largely inferential. This decision exemplifies why it is best understood as an "art" rather than a "science."

from one another due to their influence on one another. As per Emery and Flora's (2006) 'spiralling up' theory, investments in one type of community capital stock may also have the potential to generate stronger outcomes in other areas. Human and social capital are noted in this theory as being the core capitals that influence the other five identified in the CCF. This may explain in part why the EFA of the secondary survey data did not factor more specifically into a greater number of differentiated community capital variables. However, the oblique rotation employed allows the factors to correlate with one another. Given this, the unspecific results of the EFA may relate more to how the data were collected than how they were analyzed, or it may be due to difficulties in differentiating between these capitals using quantitative methods.

Three of the four factors extracted from the data are the core independent variables used in this study. The first factor, which consists of variables rating business skills, labour quality, education, public services, and programming, can be thought of as a combined "human and built capital" variable. Both built and human capitals are related closely as economic or market capitals. The quality of infrastructure, programs, and other amenities intersect with quality of health, labour and training, and educational services (Costanza 2012). The quality of business skills, education, and community services therefore rely on the state of existing buildings and other infrastructure. The second factor, consisting of variables rating the community's trust, ability to take action, work together, and partner with other communities, is a "collective social capital" variable. The third factor, consisting of various crime and safety variables, is a "safety and security" variable. Collective social capital and safety and security both indicate varying aspects of social capital stocks.

Table 3.2 Univariate Statistics of Independent Variables of Interest, Clustered by CSD

	Total sample	Rural community sample	Aboriginal community sample
Built and human capital (unstandardized)	2.45 (0.46)	2.47 (0.45)	2.31 (0.49)
Collective social capital (unstandardized)	2.51 (0.50)	2.52 (0.49)	2.40 (0.53)
Safety and security (unstandardized)	3.61 (0.49)	3.67 (0.44)	3.23 (0.66)
Observations (n)	922	807	115

Table 3.2 reports the EFA-generated variables in their unstandardized form for ease of interpretation and comprehension. The table shows that rates of the community capital stock variables in Aboriginal communities are slightly lower than those of rural communities or the total sample.

3.2.5.3 Control variables

The fourth factor extracted, which consists of volunteer and participation in unpaid activities for individual survey respondents, is an “individual social capital” variable. Individual social capital relates directly to the survey respondent, whereas the variables included in the collective social capital variable concern the community as a whole. Individual social capital, therefore, is included in the models to control for the effects of the individual on the results, given that this study primarily seeks to examine broad trends across community types rather than individuals.

The regression models also use other control variables to capture the impact of various demographic and institutional factors on quality of life and personal satisfaction. Individual social capital, population size, population change between 2006 and 2011, age, and distance from the nearest CMA and census agglomeration (CA)⁸ are all used as control variables. The social capital literature recognizes larger population size as having a negative impact on social capital stocks, and more specifically on safety and security evaluations (Rosenfield, Messner and Baumer 2001), therefore it is important to control for population size, as well as the impact that population change, either positive or negative, may have on a given community. Controlling for the distance from urban and services centres (CMAs and CAs) is important due to the benefits of accessing goods, services, and employment derived from a rural location situated close to such areas (Olfert and Natcher 2013). Additionally, eliminating metropolitan-influenced zones from this dataset minimizes the potential that respondents benefit from commuting daily to urban employment. Although closely related, population size, population change, and distance to the nearest CMA and CA, each increase the explanatory value of the regression models, and are thus all included in the models.

The dichotomous or dummy variables self-identified community type, respondent’s sex, personal identification and province of residence are used to indicate the presence or absence of a trait among respondents. The subjectivity of quality of life studies across cultures, jurisdictions, and economic and social conditions justifies such control variables (Helliwell and Barrington-Leigh 2010). Income, however, is not used as a control variable in this study because income was reported as household income and therefore is not related necessarily to the respondent.

⁸A census agglomeration (CA) is an area with a core population of at least 10,000 people (Government of Canada 2015d).

Studies conclude that income over a certain level fail to improve one's happiness (Layard 2005). Household income was also reported in ranges rather than exact dollar amounts, with ranges of \$25,000 increments. 179 respondents in the retained sample used here also failed to report their household income range, which would reduce the sample size.

All population data in this analysis is from Statistics Canada, with population change data coming from the difference in a CSD's population in a given CSD from 2006 and 2011, while GIS software and mapping search engines collected the distances from CMAs and CAs.

Table 3.3 Univariate Statistics of Independent Control Variables, Clustered by CSD*

	Total sample	Rural community sample	Aboriginal community sample
Individual social capital	2.13 (0.53)	2.13 (0.53)	2.14 (0.57)
Population (Total, rounded)	4488 (3203)	4444 (3219)	4796 (3079)
Population change 2006-2011 (%)	4.46 (7.90)	4.65 (7.57)	3.08 (9.89)
Distance to CMA (Kms, rounded)	267 (210)	259 (207)	317 (223)
Distance to CA (Kms, rounded)	146 (94)	142 (90)	176 (117)
Age (Years)	52.26 (15.18)	52.86 (15.87)	48.07 (16.65)
Female (% respondents)	57.16 (0.50)	57.25 (0.50)	56.52 (0.50)
Manitoba (% respondents)	28.41 (0.45)	27.39 (0.44)	35.65 (0.48)
Saskatchewan (% respondents)	23.86 (0.43)	24.41 (0.43)	20.00 (0.40)
Alberta (% respondents)	24.73 (0.43)	24.78 (0.43)	24.35 (0.43)
British Columbia (% respondents)	23.00 (0.42)	23.42 (0.42)	20.00 (0.40)
Aboriginal respondent (% respondents)	10.65 (0.31)	6.58 (0.01)	39.13 (0.05)
Observations (n)	922	807	115

*Means reported for complementary dummy variables may not add up to exactly 100 due to rounding.

Individual social capital stocks are similar across all sample groups. The populations of Aboriginal communities in the sample are on average larger than the total sample and rural communities. Aboriginal communities also experienced weaker population growth between 2006 and 2011 and are located further from urban areas. Average age in Aboriginal communities is lower than that of rural communities and the total sample.

3.2.5.3 Representativeness

Blumberg and Luke (2007) found that in landline only surveys that employ random digit dialling, low income and young adults might not be sufficiently represented in a study's sample. Given that the CIP telephone survey solely used landlines and random digit dialling to contact respondents, the criticism that respondents overrepresent certain demographics, especially older, better educated, and higher earning adults due to methodology is a notable consideration. Based on the CIP final report analyses, however, the sample was found to be broadly representative of

the study population (Co-operative Innovation Project 2016). While this study does use fewer respondents than did the CIP final report, this study's respondents display similar demographic characteristics.

As shown in Table 3.3, the sample retained for the purposes of this study displays a slight bias toward female, older, higher earning, and better educated respondents. Both the rural community and Aboriginal community respondent samples tended to overrepresent females, with 57.25 percent and 56.52 percent of each group identified respectively as such. Average household size was 3.3 for Aboriginal community respondents and 2.8 for rural community respondents. The median age of rural community respondents was 53 and ranged from 18 to 90, while the median age of Aboriginal community respondents was 46, ranging from 18 to 84. Rural community respondents tended to report a higher household income range than Aboriginal community respondents. While there is an overrepresentation of certain groups within the study sample, there are no significant skews in the distribution of respondents in certain demographic groups, apart from income. Given this, the results should be interpreted as being more representative of individuals and communities that represent these traits.

3.2.6 Bivariate Statistics

The correlation coefficient matrices of the relationships between variables for the total sample and by community type in Tables 3.4, 3.5, and 3.6. These correlations are not clustered by CSD like the univariate statistics or the linear fit graphs due to limitations in using Stata 13's clustering command with its correlation coefficient matrix commands.

Table 3.4 Correlation Coefficient Matrix, Total Sample

	Quality of life	Pers satisf	Human /built capital	Coll social capital	Safety and security	Ind social capital	Pop size	Pop % change	Dist to CMA	Dist to CA
Quality of life	1									
Personal satisfaction	0.46*	1								
Human/built capital	0.59*	0.44*	1							
Coll social capital	0.48*	0.53*	0.66*	1						
Safety and security	0.41*	0.39*	0.27*	0.36*	1					
Ind social capital	0.16	0.22*	0.25*	0.17	0.12	1				
Population size	0.16	0.09	0.20*	0.09	-0.07	-0.09	1			
Population % change	0.01	0.07	-0.04	-0.06	0.06	-0.11	0.02	1		
Distance to CMA	-0.18	-0.08	-0.24	-0.10	-0.11	0.01	-0.35*	-0.40*	1	
Distance to CA	-0.11	-0.19*	-0.11	-0.04	-0.13*	-0.01	-0.08	-0.38*	-0.64*	1

Correlation coefficients with p-values rounded to two decimal points. * = p-value ≤ 0.05 .

Table 3.5 Correlation Coefficient Matrix, Rural Respondents Only

	Quality of life	Per satisf	Human /built capital	Coll social capital	Safety and security	Ind social capital	Pop size	Pop % change	Dist to CMA	Dist to CA
Quality of life	1									
Personal satisfaction	0.41*	1								
Human/built capital	0.48*	0.40*	1							
Coll social capital	0.46*	0.54*	0.52*	1						
Safety and security	0.30*	0.34*	0.16*	0.22*	1					
Ind social capital	0.15*	0.19*	0.17*	0.20*	0.09*	1				
Population size	0.11*	0.02	0.24*	0.03	-0.17*	-0.03	1			
Population % change	0.11*	0.11*	0.16*	0.07*	0.07*	0.06	0.30*	1		
Distance to CMA	-0.07*	-0.09*	-0.11*	-0.07*	-0.11*	-0.07*	-0.08*	-0.27*	1	
Distance to CA	-0.07*	-0.09*	-0.09*	-0.07*	-0.17*	-0.09*	0.06	-0.15*	0.48*	1

Correlation coefficient swith p-values rounded to two decimal points. * = p-value < 0.05.

Table 3.6 Correlation Coefficient Matrix, Aboriginal Respondents Only

	Quality of life	Pers satisf	Human /built capital	Coll social capital	Safety and security	Ind social capital	Pop size	Pop % change	Dist to CMA	Dist to CA
Quality of life	1									
Personal satisfaction	0.50*	1								
Human/built capital	0.59*	0.53*	1							
Col social capital	0.48*	0.58*	0.68*	1						
Safety and security	0.37*	0.35*	0.26*	-0.26*	1					
Ind social capital	-0.08	0.07	0.15*	0.14	-0.02	1				
Population size	0.10	0.07	0.13	0.09	-0.04	-0.04	1			
Population % change	-0.09	0.01	-0.12	-0.20	-0.06	-0.24*	-0.05	1		
Distance to CMA	-0.05	-0.23*	-0.18	-0.13	-0.18	0.10	0.04	-0.36*	1	
Distance to CA	-0.14	-0.20	-0.06	0.06	-0.06	0.11	-0.04	-0.30*	0.46*	1

Correlation coefficients with p-values rounded to two decimal points. * = p-value < 0.05.

None of the correlations show any apparent multicollinearity; all correlations are less than the absolute value of 0.80. These matrices show the correlations between the dependent variables – quality of life and personal satisfaction – and the human and built capital, collective social capital, and safety and security with significance at the 95 percent confidence level for the total sample, and separated out for the Aboriginal community and rural community respondent groups.

The correlation coefficient matrices for rural community respondents are very similar to those for the total sample. In the total sample, human and built capital has the strongest relationship to quality of life, while collective social capital has the strongest relationship to personal satisfaction. Regardless of the dependent variable considered, individual social capital has the weakest relationship to the dependent variables out of the four community capital

variables generated by the EFA. In the total sample, rural community sample, and Aboriginal community sample, individual social capital also displays a weak but positive relationship to collective social capital.

Given the positive relationships in the correlation coefficient matrices, examining the linear fit graphs for each of the community capitals variables allows analysis of the strength of the relationship between the two dependent variables and the community capitals across community types. Appendix E shows that the relationship between quality of life at both the personal and community levels and the community capital variables in the total sample are positive. Similarly, for both Aboriginal community and rural community respondents, the relationships between community capitals and quality of life at both the personal and community levels are positive. However, there are notable differences in the strength of the relationships between rural community and Aboriginal community respondents. For example, the strength of the relationship of the quality of life variables with overall safety and security is lower for Aboriginal in comparison to that of rural respondents. The relationships between other variables, however, are stronger among Aboriginal community respondents than among rural community respondents. The different relationships that appear to exist between the dependent variables and independent variables of interest across community types demonstrate that these relationships might be further explored through regression analysis to establish exactly what differences exist across these two groups.

3.3 Model Specification

Multivariate regression analysis explores the relationships between a dependent variable (y) and multiple independent variables ($x_1, x_2, x_3 \dots x_n$). This study uses six model specifications, three of which use quality of life (the survey question “How would you rate the quality of life in your community?”) as the dependent variable, and the other three of which use personal satisfaction (the survey question “How satisfied are you with your community overall?”) as the dependent variable. By letting respondents define the terms quality of life and personal satisfaction themselves and leaving the parameters of community open for respondents to conceptualize, the survey considers place as the respondent defined it for his or herself. Moreover, both quality of life and personal satisfaction are used to examine whether personal satisfaction with the community differs from community quality of life assessment, as personal quality of life is often used as a proxy for community quality of life. As mentioned previously,

two measures of quality of life are used to determine nuances in conceptions of quality of life as constructed at both the individual and community levels.

To answer the first research question concerning the existence of a relationship between quality of life and community capitals, models 1 and 4 analyze the total sample using quality of life and personal satisfaction respectively as dependent variables and human and built capital, collective social capital, and safety and security as independent variables. Then, to explore the second research question about how this relationship between quality of life and community capitals may vary across different types of communities, the relationship between the dependent variables is modelled by community type in models 2, 3, 5, and 6. Regressions using personal identification as a proxy for each community type group are reported as a robustness check on the community type regressions.

Table 3.7 Robust Multivariate Regression Model Specifications

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Dependent variable	Quality of life	Quality of life	Quality of life	Personal satisfaction	Personal satisfaction	Personal satisfaction
Sample	Total sample	Rural community sample	Aboriginal community sample	Total sample	Rural community sample	Aboriginal community sample

As previously mentioned, each regression model controls for intercorrelation between respondents by clustering respondents by CSD identification number when there are multiple respondents from a given CSD in a respondent group. Clustering in regression analysis controls for similarity between results within a given group. Cluster analysis calculates similarity between results to create a measure of dissimilarity from the mean within the clustered results. As intercorrelation in a dataset violates the ordinary least square (OLS) regression assumption of independence, the cluster function uses robust regression instead.

All regressions used in this study use standardized variables for the dependent variables of interest. While this makes comparisons easier by removing units and instead meaning that coefficients are compared based on their relative strengths, it makes interpretation more difficult. The closer to the absolute value of 1 the coefficient is, the stronger the independent variable's effect on the dependent variables of interest, controlling for other factors. The independent variables and controls variables remain unstandardized.

CHAPTER 4 RESULTS

4.1 Robust Multivariate Regression Results

Tables 4.1 and 4.2 present the robust multivariate regression results for models 1 through 6. Models 1 through 3 (Table 4.1) use community quality of life as the dependent variable, and models 4 through 6 (Table 4.2) use the personal satisfaction with the community as the dependent variable. Because robust regressions compute weights for each observation multiple times, the R^2 must be interpreted with caution. The tables below report significance levels (p-values) of 0.05, 0.01, and 0.001. Stata 13 was used for all analyses.

Table 4.1 Robust Multivariate Regressions, Clustered by CSD (Quality of Life)

	Quality of life as the dependent variable		
	Model 1 Total sample	Model 2 Rural community sample	Model 3 Aboriginal community sample
Human and built capital (standardized)	0.48***	0.45***	0.79***
Collective social capital (standardized)	0.28***	0.30***	0.05
Safety and security (standardized)	0.16***	0.17***	0.16*
<i>Control variables</i>			
Individual social capital (standardized)	0.03	0.0335	-0.0225
Population (/1000)	0.004	0.005	0.004
Population change 2006-2011 (%)	0.001	0.002	-0.003
Distance to CMA	-0.0001	-0.0001	-0.0004
Distance to CA	-0.0001	-0.0002	0.0006
Age	-0.0009	-0.0009	-0.0005
<i>Dummy variables</i>			
Female	-0.12**	-0.12**	-0.06
Reference province	British Columbia	British Columbia	British Columbia
Manitoba	-0.30***	0.28***	-0.54**
Saskatchewan	-0.32***	0.30***	-0.56**
Alberta	-0.28***	-0.23***	-0.50*
Aboriginal respondent	-0.11	-0.07	-0.13
Aboriginal community respondent	-0.11	n/a	n/a
Constant	3.24***	3.21***	3.28***
Observations (n) ⁹	903	790	113
F Statistics	44.48	9.04	40.18
R ²	0.39	0.36	0.48
Rounded. Significance (p-value): * < 0.05, ** < 0.01, *** < 0.001			

⁹ The number of observations (n) reported is lower than that used for descriptive statistics discussions in chapter 3. This is due to respondents' failure to report across all characteristics used as dummies or controls, be it age, province of residence, or community type, or identity. The regression analysis used list-wise deletion of cases, which requires complete information across all observations.

Table 4.2 Robust Multivariate Regressions, Clustered by CSD (Personal Satisfaction)

Personal satisfaction as the dependent variable			
	Model 4 Total sample	Model 5 Rural community sample	Model 6 Aboriginal community sample
Human and built capital (standardized)	0.17***	0.18***	0.23
Collective social capital (standardized)	0.43***	0.43***	0.42**
Safety and security (standardized)	0.18***	0.18***	0.19*
<i>Control variables</i>			
Individual social capital (standardized)	0.04	0.04	0.06
Population (/1000)	0.003	0.004	0.0001
Population change 2006-2011 (%)	0.003	0.002	0.007
Distance to CMA	-0.0001	-0.0001	0.0009*
Distance to CA	-0.0001	0.0002	-0.002*
Age	-0.003**	0.003*	0.005
<i>Dummy variables</i>			
Female	-0.10**	0.09*	0.19
Reference province	British Columbia	British Columbia	British Columbia
Manitoba	-0.0005	-0.02	0.19
Saskatchewan	-0.002	0.01	-0.03
Alberta	0.04	0.01	0.25
Aboriginal respondent	-0.13*	-0.21**	-0.03
Aboriginal community respondent	-0.16*	n/a	n/a
Constant	3.20***	3.24***	2.63***
Observations (n) ⁸	903	790	113
F Statistics	43.83	36.38	10.16
R ²	0.42	0.39	0.44
Rounded. Significance (p-value): * < 0.05, ** < 0.01, *** < 0.001			

4.2 Interpretation

This section interprets all six models' independent variable coefficients. First, models 1 and 4 establish that there is a relationship between community capitals and quality of life at the community and personal levels. Models 2, 3, 5, and 6 show whether and how these relationships differ across the community types of interest.

Models 1 and 4 show that a relationship exists between quality of life and community capital stocks. In these two models, the relationship between quality of life and community capitals are significant and positive. In model 1, on average, for every 1 standard deviation increase in human and built capital stocks, quality of life increases by 0.48 on a scale of 4. This coefficient suggests a heavy dependence on human and built capital stocks for quality of life assessments in the total sample. In model 4, however, human and built capital stocks have a

weaker effect on personal satisfaction. On average, for every 1 standard deviation increase in human and built capital stocks, personal satisfaction only increases by 0.17 on a scale of 4.

Collective social capital stocks demonstrate a different relationship than those of human and built capital. In model 1, on average, for every 1 standard deviation increase in collective social capital stocks, quality of life increases by 0.28 on a scale of 4. This differs from collective social capital's effect on personal satisfaction. In model 4, on average, for every 1 standard deviation increase in collective social capital stocks, personal satisfaction increases by 0.43 on a scale of 4. This demonstrates the opposite effect of that of human and built capital had on the quality of life variable; while human and built capital has a greater effect on quality of life, collective social capital has a greater effect on personal satisfaction with the community.

The effect of safety and security across models 1 and 4 is similar across both quality of life conceptions. The relationship between safety and security and both quality of life and personal satisfaction, like that of the other two dependent variables of interest, is positive and significant. In model 1, on average, for every 1 standard deviation increase in safety and security, quality of life increases by 0.16 on a scale of 4. In model 4, on average, every 1 standard deviation increase in safety security increases personal satisfaction by 0.18 on a scale of 4. This demonstrates that the effect of safety and security across both models is fairly consistent and statistically significant.

The dummy variables representing Manitoban, Saskatchewanian, and Albertan respondents in model 1 also show that province of residence is a significant factor in determining quality of life in a community. Controlling for other factors, those respondents living in Manitoba report their quality of life as 0.29 lower on a scale of 4 than the reference group British Columbia, while those respondents living in Saskatchewanian respondents report their quality of life as 0.32 lower on a scale of 4, and Albertans as 0.28 lower on a scale of 4. In model 4, gender, community type, and personal identification were significant to a respondents' personal satisfaction. Aboriginal respondents reported their personal satisfaction as being 0.13 lower than non-Aboriginal respondents on a scale of 4, controlling for other variables. Aboriginal community respondents reported their personal satisfaction as being 0.16 lower than rural community respondents on a scale of 4, controlling for other variables.

The bivariate statistics and correlations presented previously justify a deeper analysis of the data to gain a better understanding of how the relationships between the community capital

stock variables and the dependent variables vary across community types. Models 2, 3, 5, and 6 show the robust multivariate regression results when dividing respondents by their reported community type. Models 2 and 3 use quality of life as the dependent variable, and models 5 and 6 use personal satisfaction as the dependent variable.

In models 2 and 5, the relationship between human and built capital, collective social capital, and safety and security, and the dependent variables of quality of life and personal satisfaction for rural community respondents is substantively significant. As in the total sample, human and built capital has a greater effect on quality of life than it does on personal satisfaction among rural community respondents. In model 2, on average, for every 1 standard deviation increase in human and built capital stocks, quality of life increases by 0.45 on a scale of 4 among rural community respondents. In model 5, on average, for every 1 standard deviation increase in human and built capital stocks, personal satisfaction increases by 0.18 on a scale of 4.

Models 2 and 5 also reflect the similar trends viewed in the total sample concerning collective social capital's effects. Social capital has a greater effect on personal satisfaction than it does on quality of life. In model 2, on average, for every 1 standard deviation increase in collective social capital stocks, quality of life increases by 0.30 on a scale of 4. In model 5, on average, every 1 standard deviation increase in collective social capital stocks increases personal satisfaction by 0.42 on a scale of 4.

Safety and security among rural community respondents reflects a similar and substantively significant effect on both quality of life and personal satisfaction. In model 2, on average, a 1 standard deviation increase in safety and security increases quality of life by 0.17 on a scale of 4. In model 5, a 1 standard deviation increase in safety and security increases personal satisfaction by 0.18 on a scale of 4.

Like the total sample results, province of residence has a substantively significant impact on quality of life, but not on personal satisfaction. Controlling for other variables, on average, Manitoban respondents reported their quality of life as 0.28 higher, Saskatchewanian respondents as 0.30 higher, and Albertan respondents as 0.23 lower on a scale of 4 than respondents in the reference group, British Columbia. Gender also has a substantively significant impact on both quality of life and personal satisfaction. In model 2, controlling for other variables, on average, female respondents reported their quality of life as being 0.12 lower on a scale of 4 than male respondents in the rural community respondents group. In model 2,

controlling for other variables, on average, female respondents reported their personal satisfaction as being 0.09 higher on a scale of 4 than male respondents in the rural community respondents group.

The regression results for Aboriginal community respondents in models 3 and 6 differ greatly from those of rural community respondents across the two dependent variables. In model 3, on average, a 1 standard deviation increase in human and built capital stocks increases quality of life by 0.78 on a scale of 4. In model 6, on average, human and capital stocks do not have a statistically significant impact on personal satisfaction. This difference is notable, especially given the strength of the human and built capital stocks coefficient in model 3.

Collective social capital reflects this similar relationship in reverse. In model 3, on average, collective social capital does not have a statistically significant relationship to quality of life. In model 6, however, on average, for every 1 standard deviation increase in collective social capital, personal satisfaction increases by 0.42 on a scale of 4.

Safety and security is important to Aboriginal community respondents' conceptions of quality of life in both models 3 and 6. In model 3, on average, a 1 standard deviation increase in safety and security increases quality of life by 0.16 on a scale of 4. In model 6, on average, a 1 standard deviation increase in safety and security increases personal satisfaction by 0.19 on a scale of 4. The relationship between both dependent variables and safety and security is similar to that among rural community respondents in models 2 and 5.

Similar to the total sample results, the dummy variables representing province of residence in the model using quality of life as the dependent variable are significant. Controlling for other variables, model 6 shows Manitoban Aboriginal community respondents reported their quality of life as 0.28 higher, Saskatchewan Aboriginal community respondents as 0.30 higher, and Albertan Aboriginal community respondents as 0.23 lower on a scale of 4 than British Columbian Aboriginal community respondents. Controlling for other variables in model 3, Aboriginal community respondents in Manitoba reported their quality of life as 0.54 lower, with their Saskatchewan counterparts reporting their quality of life as 0.56 lower, and Albertans reporting their quality of life 0.50 lower on a scale of 4 than British Columbian Aboriginal community respondents. Distance from CMAs and CAs are both significant at 5 percent to personal satisfaction among Aboriginal community respondents, but none of the other controls or dummy variables are statistically significant.

Appendix F reports additional regressions that examine quality of life and personal satisfaction by respondents' self-identification of ancestry as a robustness check. As discussed in chapter 3, there are significant, but not complete, overlaps between the rural community respondents and non-Aboriginal respondent groups and the Aboriginal community respondents and Aboriginal respondent groups. The table shows that the trends displayed for different quality of life indicators in relation to community capitals hold across community types when using self-identification of individual ancestry as a proxy for each community type (i.e. non-Aboriginal respondents as a proxy group for rural respondents, and Aboriginal respondents as a proxy for Aboriginal community respondents). These regressions display similarity to the primary analyses reported here, given the stronger effect of human and built capital on quality of life, and the stronger effect of collective social capital on personal satisfaction conceptions among both Aboriginal and non-Aboriginal respondents.

4.3 Discussion

Overall, the community capital stock variables have a statistically significant impact on both personal satisfaction and quality of life in their respective regression models. Human and built capital has a greater impact on quality of life in the total sample, while collective social capital has a greater impact on personal satisfaction in the total sample. The different relationship between quality of life at different levels and the different quality of life variables indicates that at a personal level, collective social capital stock components, such as the ability to get along, volunteer, and collaborate with other communities, have a greater impact than other forms of community capital, which are still substantively significant to one's personal satisfaction with the community. At the community level, human and built capital stocks have a greater impact on quality of life than do the other two community capital stocks, but all community capital stocks are significant to the community's quality of life. The two aforementioned phenomena show that while personal and community conceptions of quality of life differ, as do the influence of different community capitals on these conceptions, the coming together of community capitals nonetheless affects both conceptions.

The six models indicate that there are significant differences between how rural and Aboriginal communities and community members conceptualize quality of life at both the community and personal levels. In terms of similarities, however, safety and security has a positive and significant impact on all models reported and demonstrates a similar effect on all

models regardless of conception of quality of life or community type used. Among rural community respondents, as is the case in the total sample, collective social capital stocks have a greater impact on personal satisfaction, while human and built capital stocks have a greater influence on quality of life. However, in Aboriginal communities, collective social capital stocks have no statistically significant impact on quality of life in the community, although these stocks do have an impact on individual's personal satisfaction with the community. The opposite is the true of human and built capital stocks, which have a positive relationship with quality of life in the community, but no statistically significant relationship on personal satisfaction. Strong community capital stocks generally contribute to better assessments of quality of life for communities and personal satisfaction of individuals with their communities, but community type impacts the strength and significance of these relationships.

The difference in the significance of human and built capital stocks and collective social capital stocks across different conceptions of quality of life among Aboriginal community respondents is of interest. For personal satisfaction with the community respondents from Aboriginal communities are more concerned with trust, reciprocity, and norms that they derive from the community's collective social capital. Concerning perception of community quality of life, however, Aboriginal community respondents rely more on more traditional market capitals, such as built and human capital, to conceptualize quality of life in their communities at large.

Province of residence affects quality of life, but not personal satisfaction in most models. This follows the idea that place, in this case province, influences one's conception of quality of life in a community (Forjaz et al. 2011), but not their personal satisfaction with the community. The effect of the provincial jurisdiction on communities appears not to extend to conceptions of personal satisfaction. Quality of life relies more heavily on built and human capital stocks in the models, which may be tied more strongly to province of residence, given the role that federal and provincial governments play in developing things like roads and infrastructure.

Population size does not have a statistically significant impact on quality of life or personal satisfaction in any of the models, which is surprising. The social capital literature recognizes larger population size as having a negative impact on social capital stocks, and more specifically on safety and security evaluations (Rosenfield, Messner and Baumer 2001). However, there are also many benefits that accrue to larger centres, such as greater access to

goods and services, and better employment opportunities, so the impact of population size may have effects in both directions may minimize any effect visible within these data.

The statistically insignificant relationship between quality of life and distance from CMAs and CAs in all models except model 6 (Aboriginal community respondents' personal satisfaction) might be symptomatic of the adaptation of expectations concerning personal satisfaction and quality of life in communities within the study region. In communities located further away from service centres and urban areas, individuals and the communities that they live in might adapt their needs and expectations for what consists of a "good" quality of life based on what is available to them in their community, thereby altering their criteria or reference points about what is an acceptable quality of life.

The insignificance of human and built capital to Aboriginal community respondents' personal satisfaction indicates that there may be a different conceptualization of what matters for personal satisfaction among these respondents compared to rural respondents. Similarly, the insignificance of collective social capital to Aboriginal community respondents' quality of life shows that Aboriginal communities have different ideas of what is important to community quality of life in their communities than do rural community respondents.

4.4 Implications

4.4.1 Theoretical Implications

4.4.1.1 Community capitals framework

The results of this study's regression models make clearer the relationship that exists between quality of life and community capitals. Despite this, ambiguity remains about how to generate more specific community capital variables for future studies. More targeted and specific survey tools, rather than relying on secondary data, may produce more specific results that are not dominated by the most powerful capital stocks.

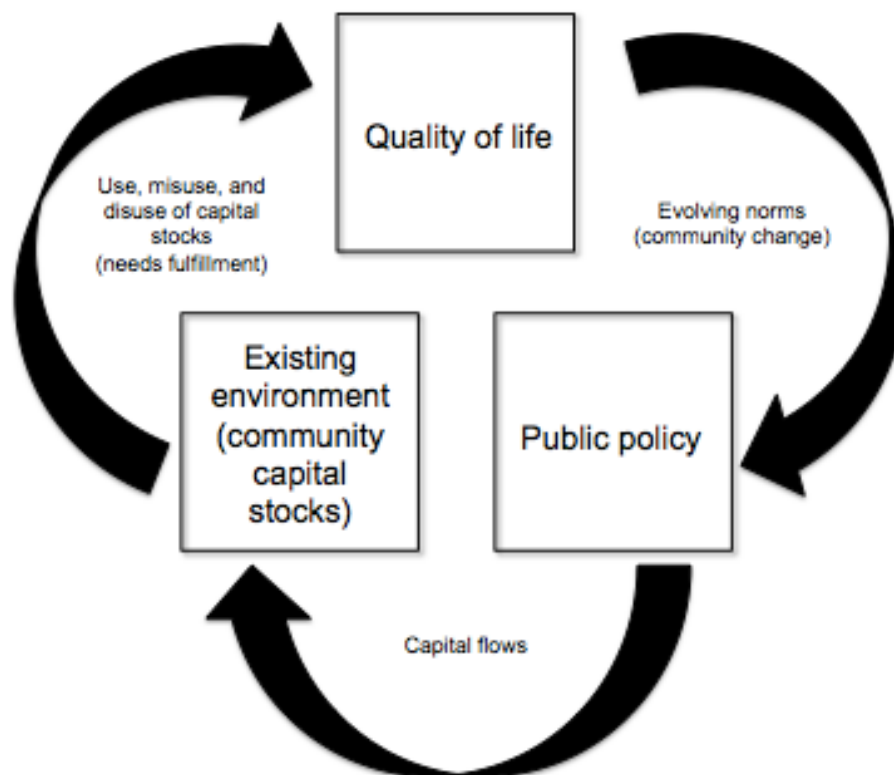
Although the CCF states that the coming together of community capitals generates better outcomes in a community (Fey, Bergendahl and Flora 2006), it remained unclear to qualitative CCF scholars what this meant, especially in different types of communities. This thesis suggests that the coming together of community capitals leads to different conceptions of quality of life at both the personal and community levels. The different conceptions of quality of life are dependent on the kinds of places in which people live, such as rural or Aboriginal communities,

but indicate that community-level quality of life relies more strongly on human and built capital stocks, while personal satisfaction relies more heavily on social capital stocks. These relationships are even stronger in Aboriginal communities, where collective social capital stocks do not have a statistically significant impact on community quality of life, and human and built capital does not have a statistically significant impact on personal satisfaction.

4.4.1.2 Quality of life, community capitals, and public policy

As discussed in chapter 2, quality of life can be both a means and end in policymaking (New Economics Foundation 2008). Building on the work of scholars like Hagerty and colleagues (2001) and Costanza and colleagues (2008), whose model is included in chapter 1, this study's results may help increase the coherency of the relationships that exists between community capital stocks, quality of life, and public policy. By connecting quality of life to community capital stocks in the regression models, and given the pre-existing coherence of the relationship between quality of life and public policy, a connection between these three concepts may be drawn in the context of community change.

Figure 5.1 Feedback Loop of Community Capital



As is modelled in Figure 5.1, community capitals, quality of life, and public policy can be understood as coexisting within the feedback loop of community capital stock generation. Public policy is a part of the community change cycle that contributes to communities' available capital stocks that in turn may improve their quality of life. Communities are in constant flux, with each decision accumulating in some sort of change. Given the relationship established between community capital stocks and quality of life in this study, public policy can help establish better quality of life through capital flow contributions. Public policies may create or generate capital flows, like infrastructure funding, which become part of the community's capital stocks, like the current quality of its roads. Governments may be better able to contribute more easily to certain community capital stocks, such as those of financial, built, or human capital, than those of social, political, cultural, or natural capital due to the greater intangibility of these latter capitals. The use, misuse, or disuse of all of these community capital stocks contributes to a conception of quality of life in the community. Over time, road quality may deteriorate without capital flow inputs. Without maintaining or improving existing capital stocks, quality of life may not improve and may, in fact, deteriorate. Quality of life in this model is therefore the accumulation of all previous interventions combined with new choices, or the community decisions and public policies of the past and present. The cumulative community conditions ideally influence the direction of future public policies.

In more clearly defining a place for community capitals within this model, built on this study's establishment of the existence of a relationship between community capitals and quality of life in rural western Canada, this study offers support for existing community change models such as that of Costanza and colleagues (2008).

4.3.2 Policy Implications

4.3.2.1 Policymaking for community change

Given that this study shows that community capitals are directly related to quality of life in communities, identifying existing capital stocks in communities may allow for a better understanding of local strengths, and therefore more strategic policymaking to generate future community capacity. The results of this study may help policymakers understand that the capital stock component of this feedback loop may have varying effects on quality of life dependent on local circumstances. Understanding that communities can build capacity and a sense of quality of

life in different ways, and that quality of life is also conceptualized in different ways, indicates that certain communities may benefit differently from a policy than other communities might. Moreover, there should also be adequate community capital stocks on which new policy interventions and capitals flows can build.

For communities in rural western Canada broadly speaking, built and human capital stocks, collective social capital stocks, and safety and security have a significant and positive relationship to quality of life assessments at the personal and community levels. All of these community capital stocks deserve consideration in attempts to build community capacity. Quality of life scholars acknowledge that to date, most policies focus on human, built, and financial capitals rather than on changing human behaviours concerning how time is spent, personal decisions made, or how citizens in communities interact between themselves and with other communities (New Economic Foundations 2008). This study's results, however, show that a community's social capital is an important component of quality of life at both the community and personal levels in rural western Canada. Investing time and funds outside of the traditional policymaking areas would be a step toward acknowledging the important relationship between non-market capitals and quality of life. In addition to investing in infrastructure, housing, health, and businesses, communities should create spaces to build reciprocity, trust, sharing, and the ability to work together. This would follow in the long-recognized idea in Canada that social capital is something that helps both policy design and practice (Government of Canada 2005). Without considering the role played by non-market capitals in affecting how people conceptualize their personal and community quality of life in rural western Canada, policymaking may suffer or be ineffective in reaching its intended goals.

The results also show that depending on how quality of life is conceptualized, different community capital stocks may be considered important. All community capitals exist within a community and have the potential to affect overall quality of life. When asked about quality of life in the community, human and built capital stocks are more important than safety and security and collective social capital stocks. When respondents are asked about their personal satisfaction within their community their conception instead relies more heavily on collective social capital than it does on safety and security and human and built capital stocks, particularly in Aboriginal communities. This shows the importance of considering how information concerning community capitals and quality of life is collected and intended to be used in policymaking. Community

capitals are integral to quality of life, but they affect people and their communities in different ways.

4.3.2.2 The potential for place-conscious policy interventions in rural western Canada

To implement a more place-conscious approach to quality of life improvement, considering the strengths of different types of communities is a potential first step. As the models show, Aboriginal community and rural community respondents conceptualize their quality of life differently. Analyzing the survey respondents separately by community type reveals interesting features that are more nuanced than the total sample results. At the community level, both safety and security and human and built capital stocks are positively related to quality of life among Aboriginal community respondents and Aboriginal respondents alike, while collective social capital stocks are not statistically significant. The statistically substantive and positive effect of human and built capital stocks on quality of life at the community level for Aboriginal community respondents is stark and shows the potential to alleviate some of the issues facing these communities through some form of improvement to basic amenities and services such as water, sewage, or training opportunities. At the personal level, safety and security and collective social capital stocks are positively related to personal satisfaction among Aboriginal community respondents and Aboriginal respondents while human and built capital stocks are not. However, for rural community respondents and non-Aboriginal respondents, both community quality of life and personal satisfaction with the community are positively related to all community capital stocks. Such results emphasize the value of considering the local context in policymaking to improve policy success.

Previous studies of Aboriginal social capital acknowledge that Aboriginal communities tend to have extensive ties within themselves, but lack the connections and ability to mobilize their distinct advantages due to geography, racism, prejudice, or a combination of these factors (Government of Canada 2005). This may help to explain why collective social capital is so important to one's personal satisfaction with the community among Aboriginal community respondents and Aboriginal respondents, but not to perceptions of overall community quality of life, part of which relies on the community's ability to mobilize itself and work with other communities. A place-conscious approach to impacting quality of life in these communities might thus involve understanding that community change involves different solutions in these communities. Improving built and human capital helps the community, but neglecting social

capital in a community may lead to the deterioration of personal relations, which are very important in communities overall. Moody and Cordua-von Specht (2005) discuss the importance of traditional knowledges and practices, kinship, reciprocity, and trust. These norms in Aboriginal communities live on despite the colonial imposition of relocation, disease, outside traditions, governance practices, and ways of life over the course of centuries. Olfert and Natcher (2013) further consider the importance of traditional means of subsistence, production, and livelihood in Aboriginal communities, emphasizing that Aboriginal communities and peoples tend to lag in personal and community outcomes, making these groups prime candidates for targeted policy interventions.

Another potential explanation for these differences is that Aboriginal community respondents have been subject to “westernized” ideas about what contributes to overall community quality of life, for instance that quality of life is largely based on access to market capitals. Given the impact of colonization on the Indigenous population, they may answer this question in a way reflective of this dominant narrative. The reliance on built and human capital to conceptualize quality of life in the community may also rely on thinking about what the community requires within westernized conceptions of community essentials. However, Aboriginal community respondents appear to have two different ways of conceptualizing quality of life – one way that is in line with the broadly “westernized” idea of quality of life, and one way that is more in line with unique cultural understandings at a personal level. The difference between community and personal quality of life differs based on the framing of the question – whether it concerns the community at large, or what matters to the particular individuals to whom the question was posed. The personal satisfaction rating appears to be in line with what an individual needs to function within the community and is more focused on ideas of kinship, trust, and norms. Broadly, this means that both market and non-market capitals are integral to quality of life for Aboriginal communities and their citizens, but the role that each of these capital stocks play in informing quality of life differ: market capitals are important for Aboriginal community life, and non-market capitals are important to how Aboriginal community respondents perceive that they fit within their community.

Notwithstanding the differences between rural and Aboriginal communities, community capital stock deterioration is a very real possibility in all rural communities if they are not considered as in need of constant maintenance or the local demographics are not properly

considered. The continual maintenance of community capitals and community capacity building are both essential to retaining and improving quality of life outcomes in communities. Avenues for new and renewed capacity building at the community level may take the form of citizen participation, increased leadership opportunities, skills and training programs, discussing a vision for the future of the community, strategic planning and agenda-setting for community improvement, increasing community organizations and institutions' effectiveness, and better using current resources (Black and Hughes 2001). Many of these capacity building activities can follow the proposed informed policy emulation strategy outlined in chapter 2. Looking to other similar communities that share certain characteristics or overcame similar challenges may help inform better local decision-making. The intent of policy emulation is, firstly, to lead to better policy experimentation and reduce policy failure and wasted resources. At the same time, policy emulation requires being conscious of the fact that ready-made policy solutions or prescriptions from other communities may not transfer well because of unique historical, cultural and social differences that exist between the emulator and community it chooses to emulate.

Increasing the focus on place in policymaking and building community capacity is not a novel recommendation for rural communities in Canada. In 2006, the federal government's External Advisory Committee on Cities and Communities recommended incorporating place and undertaking local capacity building in all communities as part of its report recommendations. The purpose of these recommendations, interestingly, was to help Canadian communities sustain their quality of life (Government of Canada 2006). These two recommendations stated that place has a role in policymaking at *all* levels of government and that developing capacity through governments learning from one another was key to sustaining quality of life in today's communities. The results of this thesis suggest reconsidering these recommendations and evaluating to what extent they have been effectively implemented, particularly given the challenges continually facing rural and remote Aboriginal and non-Aboriginal communities in western Canada. The results of this study are relevant to all levels of government. Urban communities and citizens rely on many industries that occupy rural spaces, such as agriculture or natural resource extraction. Maintaining the strength of these industries by investing in the people who work and live in these communities is integral to maintaining the greater ecosystem of Canadian communities going forward.

The findings of this study might be of interest to organizations that set the strategic direction for government lobbying for communities within the study region. In the Saskatchewan context, the Saskatchewan Association of Rural Municipalities, the Federation of Sovereign Indigenous Nations, and Métis Nation-Saskatchewan, which each represent the interests of the communities surveyed in this study, might use these results to help facilitate discussions about funding for local services, programs, and policies with government. Equivalent organizations in Manitoba, Alberta, and British Columbia might also find the results to be of interest for their purposes.

4.4 Study Limitations

4.4.1 CIP Telephone Survey Limitations

There are notable limitations to these data. As mentioned in chapter 3, the data were collected via telephone survey using landlines only. This may have limited the types of respondents reached and potentially accounts for the overrepresentation of well-educated, older, high earners in the total sample. The survey specifies the collection of respondents' sex rather than gender. Survey facilitators determined respondents' sex using their voice rather than asking respondents to identify whether they were male or female, which may have led to measurement error. Further, using the biological definition of sex rather than having respondents identify themselves by the gender of their choice may be problematic due to conflicts between biological sex and identified gender.

There may be certain limitations in how respondents identified their communities and identified their ancestry. For example, the survey provided the identities of First Nations, Aboriginal, First Nations and Métis, and non-Aboriginal peoples for respondents to choose from. There was not an option for respondents to use other terms, such as Indigenous, which they may have found to be more inclusive of their identity or identities. Respondents' selected their own identity, as is done for census purposes, but this survey did not use the census terms of status Indian, non-status Indian, Métis, First Nations, and Inuit or, alternatively, Aboriginal, First Nations single identity, Métis single identity, Inuk single identities, multiple Aboriginal identities, Aboriginal identities not included elsewhere, or non-Aboriginal identity (Government of Canada 2015a). For analysis purposes in this thesis, the collected identification information

was simplified to Aboriginal and non-Aboriginal only, homogenizing the numerous Aboriginal populations and identities surveyed within the total sample.

Community type in this analysis, however, also relied on respondents' identification, rather than on CSD type like Statistics Canada data does. Respondents provided what they saw their predominant community type to be, which may be influenced by peer groups or the dominance of certain groups within a community. This also means that there were multiple conflicts between what a respondents' postal code stated the community type technically ought to be and what the respondent reported their community to be. However, the availability of a question that asked respondents to self-identify their community type, rather than simply relying on Statistics Canada definitions of CSD, ended up being one of the strengths of the CIP survey.

Due to respondents failing to answer multiple questions, the number of responses that could be analyzed in this thesis was reduced significantly from 2,025 following the data collection stage to between 903 to 922, or between 44.6 and 45.5 percent of total respondents. This was due largely to the methods used, including EFA and multivariate regression, which require complete responses across all observations.

The survey used in this study is secondary data, and so is limited to using the questions that were developed for CIP. Similarly, the survey collected many questions about similar topics, such as the social capital variables, on the same scales and at the same point in the survey. Asking similar survey questions with similar scales at the same point in a survey increases the possibility of unintended common method variance, which may explain in part why these questions factored together in the EFA. However, the survey collected two different questions on quality of life, personal satisfaction with the community and community quality of life, at different points in the survey, which was a strength of the CIP survey, particularly given that Aboriginal community respondents viewed these questions differently.

4.4.2 Analysis Limitations

In comparing the expected EFA components to the actual EFA components (Appendices B and D), it is clear that it is difficult to study community capitals quantitatively. CCF researchers acknowledge the overlapping nature of capitals, wherein certain indicators of community capital stocks are composites of multiple capitals. Fey, Bergendahl, and Flora (2006) use the example of leadership. Leadership can be an indicator of human, social, and political capital, wherein each of these capital stocks contributes to the quality of leadership. Olfert and

Natcher (2013) refer to the political prowess of communities as one of the positive externalities of social capital. These overlaps in cause and effect may make it more difficult to cleanly or properly measure community capitals quantitatively.

The exploratory factor analysis phase of this study's methodology inadvertently tested this understanding of the CCF. The EFA generated a broadly market capital variable, human and built capital, while variables thought to represent the non-market social, cultural, and political capitals became three variables displaying various aspects of these capitals in communities considered in the analysis under the umbrella term social capital. Chapter 3 mentioned the community capitals' "grey area," which makes it difficult to separate capitals from one another, a fact that when considered alongside the overwhelming influence of human and social capital, makes it more difficult to measure the other five capitals (Flora, Bergendahl and Flora 2006, Emery and Flora 2006). Going forward, using the CCF for quantitative purposes may involve tailoring survey questions to capture more community capitals separately in future studies, if this is possible.

To have individuals speak for a community is also limited in its applicability due to the low likelihood that a community speaks with one voice (Callaghan and Colton 2008). This, in part, is why it is useful to examine how individuals rate their own quality of life, as well as quality of life in their community, to see how these evaluations differ across community types and personal identifications. For non-Aboriginal community respondents, these conceptualizations are very similar.

It is also noteworthy that this study only considers quality of life in communities and the quality of life of individuals in their communities. Other levels of government and levels of community may affect quality of life, such as the province of residence. Models 1 through 3 demonstrate the importance of province of residence to quality of life. Due to the CIP methodology, larger communities are also more likely to have had multiple residents surveyed, while smaller communities likely have no representatives, so these results may also be slightly biased toward representing slightly larger rural and Aboriginal communities. That the average community size in the total sample was 4,488 suggests that smaller communities were underrepresented in the data and final analysis. The total retained sample contained 922 respondents, but covered 282 unique CSDs, meaning that many of the CSDs surveyed had multiple respondents; the analyses were adjusted to account for this clustering.

Notwithstanding these and likely many other limitations, this study's results show the potential to incorporate place into the policymaking process in quantitative research. The results, however, cannot suggest that place will meaningfully change policymaking. Place is simply another factor to consider as policymakers continue to explore new techniques to improve their decision-making processes.

Finally, this study acknowledges that policy approaches to community development and change is something in need of constant evaluation, re-evaluation, and investment. Communities must consider whether, in addition to improving economic returns, considering quality of life in all policies may have social returns. Incorporating new measures of community strength like quality of life, however, will not become mainstays of community development until there are better ways to encourage innovation, experimentation and feedback incorporation into policymaking and evaluation. Ways to encourage better emulation remain elusive because there are no guarantees that policymaking would in fact improve community capital stocks or quality of life; as Costanza (2012: 107) acknowledges, "policy-making is an iterative experiment acknowledging uncertainty, rather than a static 'answer.'" No one government can solve the problems facing today's communities alone (Government of Canada 2006), but all can contribute, either through better policymaking, devolving decision-making powers, or altering funding provisions so that problems can be considered at the community level first where possible.

CHAPTER 5 CONCLUSION

5.1 Final Thoughts

Given the growth of discussions concerning quality of life in public policy circles, this thesis shows that a relationship exists between current community capital stocks and conceptions of quality of life in rural and Aboriginal western Canada. The results also suggest that different types of communities have different aspirations, strengths, and conceptions that contribute to how they conceptualize of their quality of life, which relies on different types of community capital stocks. The different types and strengths of the community capital stocks across rural and Aboriginal communities in the sample helps generate an understanding of how different types of communities conceptualize of their quality of life in different ways. The differences that exist in today's rural western Canadian communities suggest exploring the feasibility of place-conscious policymaking to guide local capacity building. This is not a decision that can be made lightly, or outside of a community, but one that requires consideration by all levels of government in combination with community members' input.

Many of today's rural communities continue to struggle relative to their urban counterparts. This study, however, shows that rural and Aboriginal communities in western Canada feel that they have high levels of quality of life at both a personal and community level, albeit Aboriginal communities indicate a much lower quality of life than their rural counterparts. Despite the lower economies of scale, lower incomes, poor health outcomes, and economic and social costs of rurality, today's rural and Aboriginal western Canadians may experience high levels of quality of life despite the obstacles these communities face. Understanding that rural and Aboriginal communities have strengths in addition to unique challenges changes how we think about rural communities. Ways of improving life in different kinds of communities relies on different types of policy inputs, or community capital flows, to improve quality of life. One must consider, however, that individuals have different conceptions of what capitals matter to quality of life depending on at what level the question is posed and what kind of community an individual comes from or lives in. Community capitals are not just market-based; they are also

communal, experienced, and relational. Building stronger communities relies on investing in all areas of community life to maintain a strong local ecosystem.

The stronger reliance of Aboriginal communities on human and built capital relative to their conception of quality of life in their communities reminds us that this is an area into which governments must continue to invest. However, the focus on market capitals for the community as a whole versus the focus on non-market capitals for personal satisfaction shows how governments may manipulate the results of quality of life studies. Governments, in asking a question about quality of life in a certain way, can change the conversation to one about human and built capital rather than one about the importance of all community capitals, leading decision makers to potentially overlook the importance of social, political, and cultural capitals. This study shows that both market and non-market capitals are important, but to different extents in different types of communities. Understanding that how you collect information can change a policy conversation is a prime example of how flawed measurement of performance indicators and information dissemination can impede more effective and evidence-based policy- and decision-making.

5.2 Future Research

Future qualitative research concerning community capitals in rural and Aboriginal communities in western Canada may strengthen this study's findings. Conceptions of community capitals in these communities, and especially in Aboriginal communities, remain little understood in this study region. Discussing what quality of life means to community members relative to their community capital stocks might improve the understanding of how quality of life relates to community capitals, and how to best invest in communities to improve resident quality of life. This may lead to the development of more nuanced community capital stocks indicators, as well as differentiating between how the various stocks may differentially affect life in different kinds of communities.

Future research in this domain would also benefit from an improved survey tool that better captures community capital stock components and better incorporates Indigenous methodologies and ways of knowing. A stronger focus on the observable traits of community capital stocks in communities as the result of particular capital flows and incorporating communities' feedback into a survey tool might improve future factor analyses intending to measure community capital stocks in survey-based research. It may also be possible that

community capitals research requires a more specialized instrument for Aboriginal communities, depending on what qualitative research finds to be most important to informing quality of life in Aboriginal communities.

Although this study recommends pursuing informed policy experimentation and emulation, how to encourage “place-conscious policy-making” in the absence of incentives to do so means that improved emulation remains a theoretical ideal, rather than a way to gain real improvements in the policymaking process. Gaining a better understanding of both internal and external legitimacy in policymaking might be a useful theoretical complement to this study’s results in the future.

APPENDIX A: CIP TELEPHONE SURVEY

Introduction

Hello, my name is (first name only) and I am calling on behalf of The Co-operative Innovation Project at the University of Saskatchewan. We are conducting a short 15-minute telephone survey of residents across Western Canada to see if we can find a new approach to co-operative development that is more in tune with rural and Aboriginal communities.

May I please speak with a person in your household who is 18 years of age or older and having the next birthday.

- | | |
|--------------------------|--|
| 1. Yes, speaking | continue |
| 2. Yes, I'll get him/her | repeat introduction and continue |
| 3. Not available | arrange call back — request respondent's first name
(record in notes) and arrange call back (press the ctrl and end keys) |

I would like to invite you to participate in this short survey. Participation is voluntary and you can stop the survey at any time. The information we collect is kept strictly confidential and none of the answers that you provide will be attributed to you personally. If you would like more information regarding this study, please contact Dazawray Parker, 1-306-966-2946, or the University of Saskatchewan Research Ethics Office toll free at 1-888-966-2975.

Are you willing to participate in the survey?

- | | |
|------------------------|--|
| 1. Yes | continue |
| 2. No | thank and end interview |
| 3. Later/Not right now | arrange call back — request respondent's first name
(record in notes) and arrange call back (press the ctrl and end keys) |

Before we begin, can I please have your (complete six-character) postal code?

If respondent is reluctant, assure them that their postal code will be used for statistical purposes only (to understand differences among cities and among areas of cities) and will not be used to identify them in any way.

Ensure respondent provides complete six-character postal code.

1. (RECORD POSTAL CODE)

Record sex from respondent's voice.

1. Male
2. Female

Community Need

A1INTRO.

Using a scale of poor, fair, good and excellent, please rate the following programs in your community.

- A1a. Seniors' Programs
- A1b. Arts and Culture Programs
- A1c. Physical Activity Programs
- A1d. Youth Programs

Poor	Fair	Good	Excellent	Don't know	Refused	Not available in community
------	------	------	-----------	---------------	---------	----------------------------------

A2. Using a scale of poor, fair, good and excellent, please rate the following public services in your community.

- A2a. Drinking Water
- A2b. Sanitation and Waste Management
- A2c. Recycling
- A2d. Roads
- A2e. Housing
- A2f. Health Care
- A2g. Internet Access

Poor	Fair	Good	Excellent	Don't know	Refused	Not available in community
------	------	------	-----------	---------------	---------	----------------------------------

A3. Using a scale of poor, fair, good and excellent, please rate the following childcare and educational services in your community.

- A3a. Daycare
- A3b. Preschool
- A3c. Elementary School
- A3d. High School
- A3e. Post-Secondary Training

Poor	Fair	Good	Excellent	Don't know	Refused	Not available in community
------	------	------	-----------	------------	---------	----------------------------

A4. Are there any programs or services that you think might be missing in your community that we have not covered?

(Don't Know)

(Refused)

(No, all programs and services were covered)

Business Development

B1. How would you rate the level of willingness to undertake new projects in your community? Would you say it is...

Low	Moderate	High	Very High	Don't know	Refused
-----	----------	------	-----------	------------	---------

B2a. How would you rate the level of innovation in your community? Would you say it is...

Low	Moderate	High	Very High	Don't know	Refused
-----	----------	------	-----------	------------	---------

B2b. How would you rate the quality of life in your community? Would you say it is...

Low	Moderate	High	Very High	Don't know	Refused
-----	----------	------	-----------	------------	---------

B3. I am now going to ask you to rate the business development capacity and support services in your community.

B3a. General Business Skills

B3b. Financing

B3c. Technology

B3d. Labour

B3e. Networking Opportunities

Poor	Fair	Good	Excellent	Don't know	Refused
------	------	------	-----------	------------	---------

B4. Do you know what a co-operative is?

Yes	No	Don't know	Refused
-----	----	------------	---------

B5. Are there currently co-operatives and/or credit unions in your community?

Yes	No	Don't know (skip to C1A)	Refused (skip to C1A)
-----	----	--------------------------	-----------------------

B6. Which kinds of co-operatives are present in your community?

Financial	Retail	Housing	Preschool/ Daycare	Workers	Arts and Crafts	Marketing	Other	Don't know	Refused
-----------	--------	---------	-----------------------	---------	-----------------------	-----------	-------	---------------	---------

Social Capacity

C1a. In your opinion, what is the level of sharing and working together at the administrative level between your community and neighbouring communities...

C1b. In your opinion, is the level of volunteerism in your community ...

C1c. In your opinion, is the occurrence of property crime in your community...

C1d. In your opinion, is the occurrence of violent crime in your community...

Low	Moderate	High	Very High	Don't know	Refused
-----	----------	------	-----------	------------	---------

C2. In your opinion, would you say that the relationships between residents in your community and the neighbouring communities are ...

Poor	Fair	Good	Excellent	Don't know	Refused
------	------	------	-----------	------------	---------

C3. Are you planning to remain in your community for the next:

1-5 years	6-10 years	11+ years	Not planning to stay (skip to C3B)	Don't know	Refused
-----------	------------	-----------	--	------------	---------

C3a. Why are you planning to remain in your community?

Open-ended response. (Multiple responses acceptable)

(Don't Know)

(Refused)

C3b. Why are you planning on leaving?

Open-ended response. (Multiple responses acceptable)

(Don't Know)

(Refused)

C4. Over the past year, have you attended a meeting of a trade union, political party, or political action group?

Yes	No	Don't know	Refused
-----	----	------------	---------

C5. Over the past year, have you attended a protest or demonstration, or signed a petition?

Yes	No	Don't know	Refused
-----	----	------------	---------

C6. Did you vote in the last municipal or band election?

Yes	No	Don't know	Refused
-----	----	------------	---------

C7. In your opinion, what is the level of competency of the administration of your local government (RM, town, band)? Would you say it is...

Poor	Fair	Good	Excellent	Don't know	Refused
------	------	------	-----------	------------	---------

C8a. Please tell me how much trust you have in your local politicians. Would you say you have...

No trust	Moderate trust	High trust	Very high trust	Don't know	Refused
----------	----------------	------------	-----------------	------------	---------

C8b. Please tell me how much trust you have in your Local Police Service. Would you say you have...

No trust	Moderate trust	High trust	Very high trust	Don't know	Refused
----------	----------------	------------	-----------------	------------	---------

C9. How long have you lived in your current community?

Less than 2 years	Between 3 and 9 years	10 years or more	Don't know	Refused
-------------------	-----------------------	------------------	------------	---------

C10a. In the past 30 days have you helped out or assisted a neighbour?

Yes	No	Don't know	Refused
-----	----	------------	---------

C10b. In the past 30 days have you participated in a community event or activity?

Yes	No	Don't know	Refused
-----	----	------------	---------

C11. How comfortable would you feel calling upon your neighbour(s) for assistance during a crisis? Would you say you are...

Very uncomfortable	Somewhat uncomfortable	Somewhat comfortable	Very comfortable	Don't know	Refused
--------------------	------------------------	----------------------	------------------	------------	---------

C12. On average, how often do you interact with your neighbour(s)? Would you say it is...

Never	Sometimes	Often	Very often	Don't know	Refused
-------	-----------	-------	------------	------------	---------

C13. Which of the following best describes your use of the Internet in the past month? Would you say it was...

Never	Sometimes	Often	Very often	Don't know	Refused
-------	-----------	-------	------------	------------	---------

C14. To what extent do you think most people in your community obey the law? Would you say it is...

Never	Sometimes	Often	Very often	Don't know	Refused
-------	-----------	-------	------------	------------	---------

C15. Using the same scale of never, sometimes, often, or very often, Outside of paid work, how often are you involved in the following:

D15a. Caring for and educating children?

D15b. Caring for the elderly or disabled?

D16c. Volunteer and/or charitable activities?

D15d. Religious or church activities?

Never	Sometimes	Often	Very often	Don't know	Refused
-------	-----------	-------	------------	------------	---------

C16. In the past year, have you done any of the following to meet your own requirements for food (not for commercial purposes):

C16a. Hunting, trapping, or gathering?

C16b. Growing vegetables or fruit?

C16c. Keeping poultry or livestock?

C16d. Trading or bartering?

Yes	No	Don't know	Refused
-----	----	------------	---------

C17. How would you rate the cleanliness of your community? Would you say it is....

Very dirty	Somewhat dirty	Somewhat clean	Very clean	Don't know	Refused
------------	----------------	----------------	------------	------------	---------

C18. How would you describe your feelings of safety and security for you and your family in your community? Would you say you feel ...

Not safe at all Somewhat unsafe Somewhat safe Very safe Don't know Refused

C19. In your opinion, how willing and supportive is your community of people coming together to take action to solve community needs? Would you say your community is...

Not willing Somewhat unwilling Somewhat willing Very willing Don't know Refused

C20a. In your opinion, what is the willingness of your community to partner with neighbouring communities? Would you say it is...

Not willing Somewhat unwilling Somewhat willing Very willing Don't know Refused

C20b. In your opinion, what is the willingness of your community to adopt new mindsets or ways of thinking to solve problems? Would you say it is...

Not willing Somewhat unwilling Somewhat willing Very willing Don't know Refused

C21a. To what extent has the similarity in ages among members of your community changed over time? Has the similarity among ages:

Greatly decreased Slightly decreased Stayed the same Slightly increased Greatly increased Don't know Refused

C21b. To what extent has the similarity in race among members of your community changed over time? Has the similarity in race:

Greatly decreased Slightly decreased Stayed the same Slightly increased Greatly increased Don't know Refused

C21c. To what extent has the similarity in languages spoken in your community changed over time? Has the similarity:

Greatly decreased Slightly decreased Stayed the same Slightly increased Greatly increased Don't know Refused

C21d. To what extent has the similarity in religions in your community changed over time? Has the similarity in religions:

Greatly decreased	Slightly decreased	Stayed the same	Slightly increased	Greatly increased	Don't know	Refused
-------------------	--------------------	-----------------	--------------------	-------------------	------------	---------

C21e. To what extent has the similarity in income among members of your community changed over time? Has the similarity in income:

Greatly decreased	Slightly decreased	Stayed the same	Slightly increased	Greatly increased	Don't know	Refused
-------------------	--------------------	-----------------	--------------------	-------------------	------------	---------

C21f. To what extent has the similarity in type of work performed among members of your community changed over time? Has the similarity in the type of work performed:

Greatly decreased	Slightly decreased	Stayed the same	Slightly increased	Greatly increased	Don't know	Refused
-------------------	--------------------	-----------------	--------------------	-------------------	------------	---------

C22. How satisfied are you with your community overall? Would you say you are...

Dissatisfied	Somewhat dissatisfied	Somewhat satisfied	Very satisfied	Don't know	Refused
--------------	-----------------------	--------------------	----------------	------------	---------

Demographics

We're almost done The next questions are all demographic questions get information about your background to make sure we have a representative sample of people in our study.

D1. In what year were you born?

(ENTER YEAR OF BIRTH)

(Refused)

D2. Would you describe your community as predominantly...

First Nations	Métis	First Nations and Métis	Aboriginal	None of the above	Don't know	Refused
---------------	-------	-------------------------	------------	-------------------	------------	---------

D3. Would you self-identify as any of the following?

First Nations	Métis	First Nations and Métis	Aboriginal	None of the above	Don't know	Refused
---------------	-------	-------------------------	------------	-------------------	------------	---------

D4. Counting yourself, how many people live in your household?

IF ASKED, THIS INCLUDES ALL PEOPLE WHO LIVE IN THE HOUSEHOLD AND NOT JUST FAMILY MEMBERS.

(RECORD NUMBER 1 – 20)

(If answer = 1 SKP D5)

(Refused)

D5. And how many of your household members are under 18 years of age?

(RECORD NUMBER 0 – 19)

(Refused)

D6. What is the highest level of education that you have completed? (READ LIST IF NECESSARY)

No schooling	Some elementary	Completed elementary	Some secondary	Completed secondary	Some technical/college	Completed technical/college
Some university	Bachelor's degree	Master's degree	Professional degree	Doctorate	Refused	

D7. Could you please tell me your total annual household income from all sources in 2014.

Was it...

IF ASKED, ALL SOURCES INCLUDE EMPLOYMENT INCOME (WAGES OR SALARY), SAVINGS, PENSIONS, RENT, ETC.

Less than \$25,000	\$25,000 to less than \$50,000	\$50,000 to less than \$75,000	\$75,000 to less than \$100,000	\$100,000 to less than \$125,000	\$125,000 to less than \$150,000	\$150,000 or more	Don't know	Refused
--------------------	--------------------------------	--------------------------------	---------------------------------	----------------------------------	----------------------------------	-------------------	------------	---------

Thank you very much. Those are all the questions that I have. Again, for more information on the study itself please contact Dazawray Parker at 1-306-966-2946.

APPENDIX B: PRELIMINARY DIVISION OF CIP TELEPHONE SURVEY QUESTIONS

Capital type	CIP Telephone survey question	Source(s)
Built	Road quality	Black and Hughes 2001, Christakopoulou et al. 2001, Crowe 2008, Fey, Bergendahl and Flora 2006, Sirgy et al. 2010, Webb and Curtis 2002
	Drinking water quality	Black and Hughes 2001, Christakopoulou et al. 2001, Crowe 2008, Fey, Bergendahl and Flora 2006
	Internet access quality	Black and Hughes 2001, Christakopoulou et al. 2001, Crowe 2008, Fey, Bergendahl and Flora 2006, Hoffer and Levy 2010, Webb and Curtis 2002
	Sanitation and waste quality	Black and Hughes 2001, Christakopoulou et al. 2001, Crowe 2008, Fey, Bergendahl and Flora 2006
	Recycling quality	Black and Hughes 2001
	Health care quality	Christakopoulou et al. 2001, Canadian Policy Research Networks 2001, Crowe 2008, Sirgy et al. 2010
	Seniors' programs quality	Forjaz et al. 2011, Sirgy et al. 2010
	Youth programs quality	Forjaz et al. 2011, Sirgy et al. 2010
	Arts and culture programs quality	Forjaz et al. 2011, Sirgy et al. 2010
Cultural	Housing quality	Christakopoulou et al. 2001, Fey, Bergendahl and Flora 2006, Hoffer and Levy 2010
	Residency length	Patterson 2008
	Relations between residents	Patterson 2008
	Willingness to partner with neighbouring communities	Patterson 2008
	Community support for coming together to solve problems	Black 2001, Crowe 2008, Ross 1999, Shaver and Tudball 2001
	Willingness to undertake new projects	Flora, Flora and Fey 2004
	Level of innovation	Flora, Flora and Fey 2004
	Willingness to adopt new mindsets	Patterson 2008, Flora, Flora and Fey 2004

Human	Business financing	Bates 1990
	Business skills	Black and Hughes 2001
	Technology quality	Black and Hughes 2001, Christakopoulou et al. 2001, Crowe 2008, Fey, Bergendahl and Flora 2006, Hoffer and Levy 2010, Webb and Curtis 2002
	Labour quality for business	Becker 1993
	Daycare quality	Callaghan and Colton 2008
	Elementary school quality	Callaghan and Colton 2008
	High school quality	Callaghan and Colton 2008
	Postsecondary education quality	Callaghan and Colton 2008
Political	Voted in last municipal election	Canadian Policy Research Networks 2001, Flora, Flora and Fey 2004, Putnam 2000
	Participated in community event (personal)	Aigner et al. 2001, Black and Hughes 2001, Hoffer and Levy 2010, Putnam 2000
	Attended political party/trade/union/PAC	Black and Hughes 2001, Hoffer and Levy 2010
	Attended a protest/demonstration	Black and Hughes 2001, Hoffer and Levy 2010
	Local administration competency	Fey, Bergendahl and Flora 2006, Flora, Flora and Fey 2004
	Level of sharing and working together	Black and Hughes 2001, Crowe 2008, Ross 1999, Shaver and Tudball 2001
Social	Trust in local politicians	Black and Hughes 2001, Canadian Policy Research Networks 2001, Putnam 2000, Stone and Hughes 2001
	Trust in local police	Black and Hughes 2001, Canadian Policy Research Networks 2001, Putnam 2000, Stone and Hughes 2001
	Comfort in asking for neighbour's help	Hoffer and Levy 2010, Sirgy et al. 2010, Stone and Hughes 2001
	Occurrence of property crime	Black and Hughes 2001, Sirgy et al. 2010
	Occurrence of violent crime	Black and Hughes 2001, Sirgy et al. 2010
	How well community obeys the law	Black and Hughes 2001, Sirgy et al. 2010
	Safety and security in the community	Black and Hughes 2001, Sirgy et al. 2010

Interaction with neighbours	Black and Hughes 2001, Fey, Bergendahl and Flora 2006, Hoffer and Levy 2010, Sirgy et al. 2010
Level of volunteerism	Black and Hughes 2001, Hoffer and Levy 2010, Webb and Curtis 2002, Putnam 2000, Shaver and Tudball 2001
Unpaid child care (personal)	Black and Hughes 2001, Hoffer and Levy 2010, Webb and Curtis 2002, Putnam 2000, Shaver and Tudball 2001
Unpaid elder care (personal)	Black and Hughes 2001, Hoffer and Levy 2010, Webb and Curtis 2002, Putnam 2000, Shaver and Tudball 2001
Unpaid volunteer and charity involvement (personal)	Black and Hughes 2001, Hoffer and Levy 2010, Webb and Curtis 2002, Putnam 2000, Shaver and Tudball 2001
Unpaid church or religious event involvement (personal)	de Raadt and de Raadt 2005, Machlup 1987
Assisted a neighbour in the past month (personal)	Black and Hughes 2001, Fey, Bergendahl and Flora 2006, Hoffer and Levy 2010, Sirgy et al. 2010

APPENDIX C: EXPLORATORY FACTOR ANALYSIS RESULTS

Rotated Factor Loadings (Pattern Matrix) and Unique Variances

Variable	Human/ built capital	Collective social capital	Safety and security	Individual social capital	Uniqueness
Road quality	0.3366				0.8009
Drinking water quality	0.3932				0.8233
Internet access quality	0.5014				0.7827
Sanitation and waste quality	0.4850				0.7092
Recycling quality	0.4638				0.7509
Health care quality	0.5410				0.6972
Seniors' programs quality	0.5215				0.6848
Arts/culture programs quality	0.3401				0.7966
Youth programs quality	0.4802				0.6180
Daycare quality	0.4724				0.7904
Elementary school quality	0.7149				0.5452
High school quality	0.6806				0.5807
Postsecondary quality	0.3300				0.8674
Housing quality	0.4153				0.7246
Financing for business quality	0.4648				0.6764
Technology for business quality	0.4375				0.6319
Business skills quality	0.3487	0.3100			0.6866
Labour for business quality	0.3637				0.7841
Resident relations		0.5230			0.7037
Community partnerships		0.6875			0.6328
Coming together to solve problems		0.5589			0.6508
Willingness to undertake new projects		0.6002			0.5801
Level of innovation		0.6100			0.5814
Willingness to adopt new mindsets		0.5925			0.6461
Level of government competency		0.4264			0.6268
Willingness to work together		0.6272			0.6097
Level of government trust		0.4030			0.6871
Level of volunteerism		0.4187			0.7484
Occurrence of property crime			0.5910		0.6491
Occurrence of violent crime			0.6170		0.6185
Level of safety			0.5395		0.6018
Personal event participation				0.4613	0.7775
Personal neighbour interaction				0.3867	0.8084
Personal elder care				0.3846	0.8585
Personal charity or event participation				0.6456	0.5817
Personal church or religious activity				0.4080	0.8033

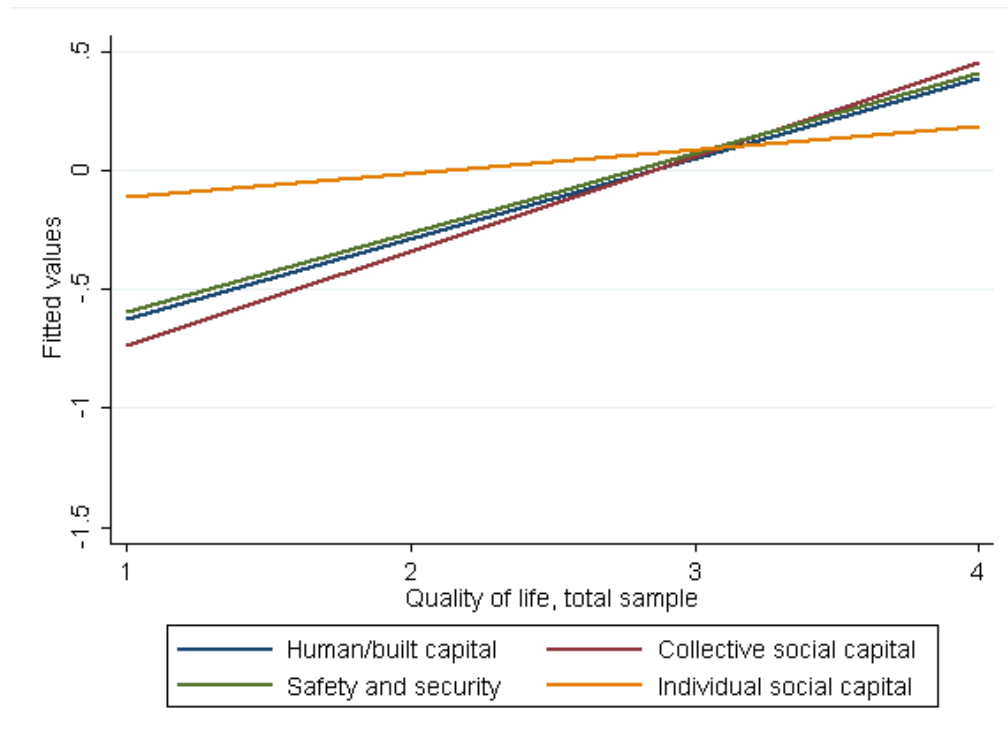
APPENDIX D: FINAL DIVISION OF CIP TELEPHONE SURVEY QUESTIONS

Capital type	CIP Telephone survey question	Source(s)
Built/human capital	Road quality	Black and Hughes 2001, Christakopoulou et al. 2001, Crowe 2008, Fey, Bergendahl and Flora 2006, Sirgy et al. 2010, Webb and Curtis 2002
	Drinking water quality	Black and Hughes 2001, Christakopoulou et al. 2001, Crowe 2008, Fey, Bergendahl and Flora 2006
	Internet access quality	Black and Hughes 2001, Christakopoulou et al. 2001, Crowe 2008, Fey, Bergendahl and Flora 2006, Hoffer and Levy 2010, Webb and Curtis 2002
	Sanitation and waste quality	Black and Hughes 2001, Christakopoulou et al. 2001, Crowe 2008, Fey, Bergendahl and Flora 2006
	Recycling quality	Black and Hughes 2001
	Health care quality	Christakopoulou et al. 2001, Canadian Policy Research Networks 2001, Crowe 2008, Sirgy et al. 2010
	Daycare quality	Callaghan and Colton 2008
	Elementary school quality	Callaghan and Colton 2008
	High school quality	Callaghan and Colton 2008
	Seniors' programs quality	Forjaz et al. 2011, Sirgy et al. 2010
	Youth programs quality	Forjaz et al. 2011, Sirgy et al. 2010
	Arts and culture programs quality	Forjaz et al. 2011, Sirgy et al. 2010
	Housing quality	Hoffer and Levy 2010, Fey, Bergendahl and Flora 2006, Christakopoulou et al. 2001
	Business financing	Becker 1993
	Business skills	Black and Hughes 2001
	Technology quality	Black and Hughes 2001, Christakopoulou et al. 2001, Crowe 2008, Fey, Bergendahl and Flora 2006, Hoffer and Levy 2010, Webb and Curtis 2002
	Labour quality for business	Bates 1990

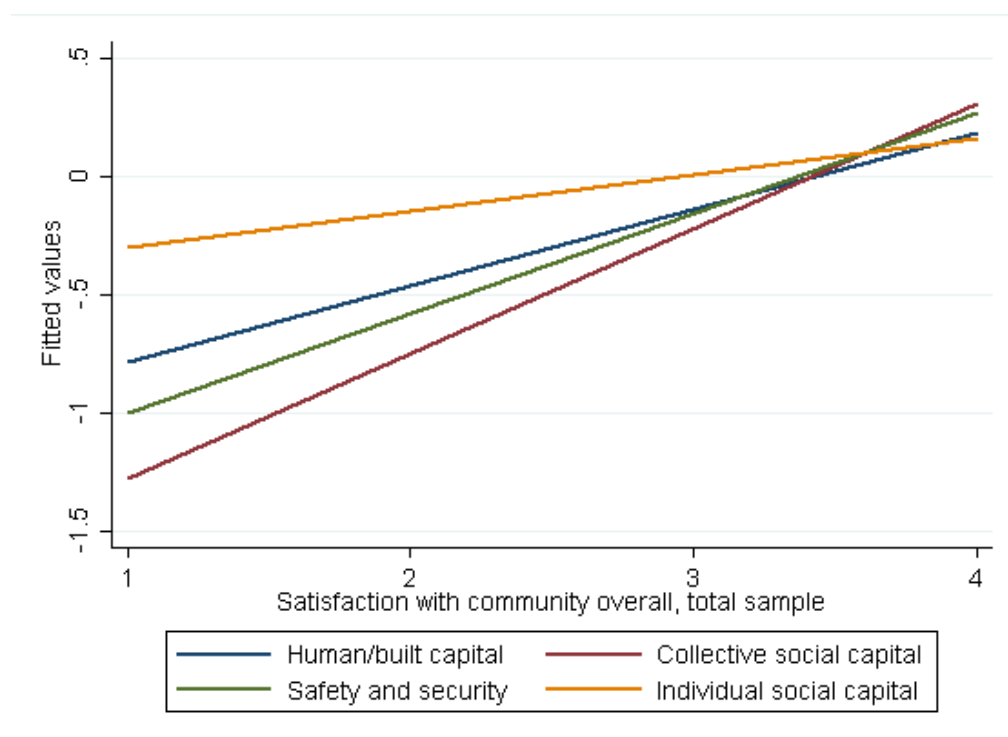
	Postsecondary education quality	Callaghan and Colton 2008
Collective social capital	Relations between residents	Patterson 2008
	Willingness to partner with neighbouring communities	Patterson 2008
	Community support for coming together to solve problems	Black and Hughes 2001, Crowe 2008, Ross 1999, Shaver and Tudball 2001
	Willingness to undertake new projects	Flora, Flora and Fey 2004
	Level of innovation	Flora, Flora and Fey 2004
	Willingness to adopt new mindsets	Patterson 2008, Flora, Flora and Fey 2004
	Level of volunteerism	Black and Hughes 2001, Hoffer and Levy 2010, Putnam 2000, Shaver and Tudball 2001, Webb and Curtis 2002
	Trust in local politicians	Black and Hughes 2001, Canadian Policy Research Networks 2001, Putnam 2000, Stone and Hughes 2001
	Level of sharing and working together	Black and Hughes 2001, Crowe 2008, Ross 1999, Shaver and Tudball 2001
	Local administration competency	Fey, Bergendahl and Flora 2006, Flora, Flora and Fey 2004
Safety and security	Occurrence of property crime	Black and Hughes 2001, Sirgy et al. 2010
	Occurrence of violent crime	Black and Hughes 2001, Sirgy et al. 2010
	Safety and security in the community	Black and Hughes 2001, Sirgy et al. 2010
Individual social capital	Participated in community event (personal)	Aigner et al. 2001, Black and Hughes 2001, Hoffer and Levy 2010, Putnam 2000
	Interaction with neighbours	Black and Hughes 2001, Fey, Bergendahl and Flora 2006, Hoffer and Levy 2010, Sirgy et al. 2010
	Unpaid elder care	Black and Hughes 2001, Hoffer and Levy 2010, Putnam 2000, Shaver and Tudball 2001, Webb and Curtis 2002
	Unpaid volunteer and charity involvement	Black and Hughes 2001, Hoffer and Levy 2010, Putnam 2000, Shaver and Tudball 2001, Webb and Curtis 2002
	Unpaid church or religious event involvement	de Raadt and de Raadt 2005, Machlup 1987

APPENDIX E: LINEAR FIT GRAPHS

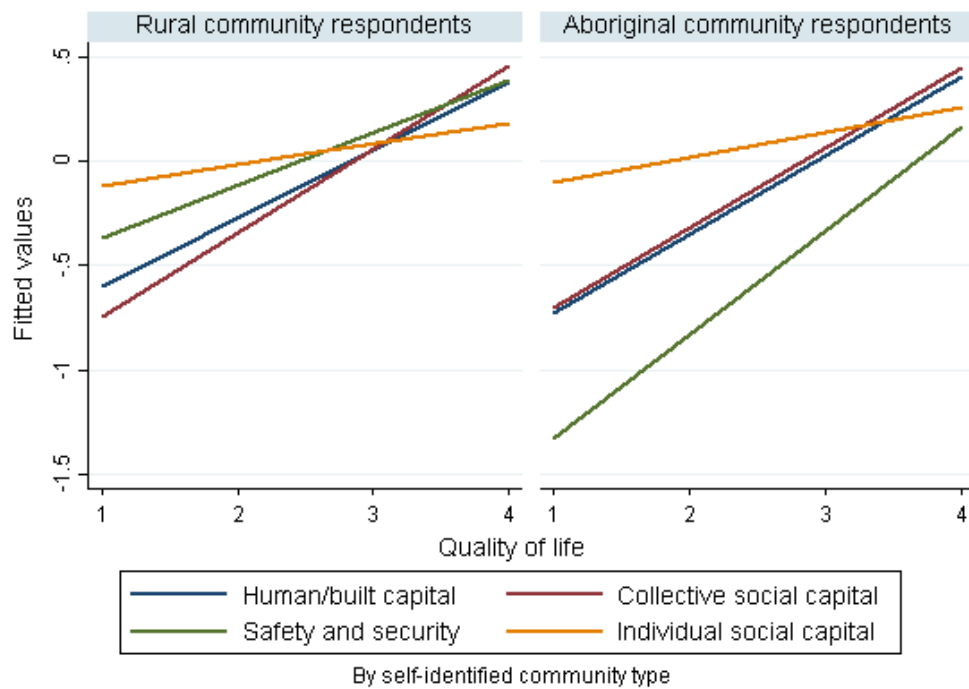
Quality of Life, Total Sample



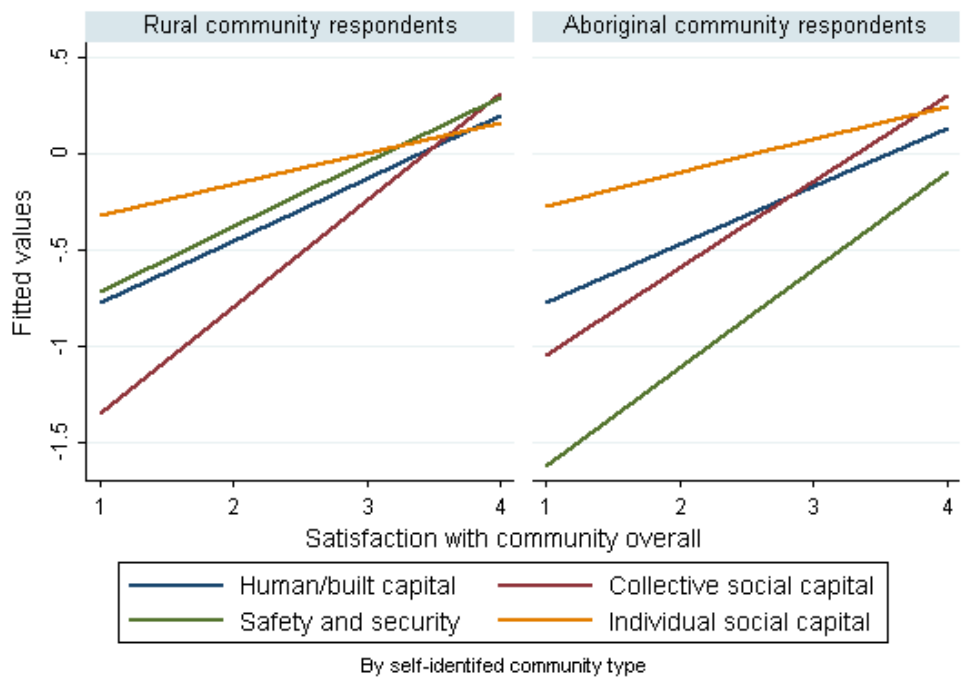
Personal Satisfaction, Total Sample



Quality of Life, by Community Type



Personal Satisfaction, by Community Type



APPENDIX F: ROBUSTNESS CHECK

Robust Multivariate Regression, Clustered by CSD by Self-identification

	Model 7 Quality of life, Non-Aboriginal respondents	Model 8 Quality of life, Aboriginal respondents	Model 9 Personal satisfaction, Non-Aboriginal respondents	Model 10 Personal satisfaction, Aboriginal respondents
Human and built capital (standardized)	0.47***	0.59**	0.15**	0.35
Collective social capital (standardized)	0.29***	0.25	0.42***	0.54**
Safety and security (standardized)	0.17***	0.17**	0.18***	0.17*
<i>Control variables</i>				
Individual social capital (standardized)	0.06	-0.16	0.05	-0.04
Population (/1000)	0.005	-0.004	0.005	-0.009
Pop change 2006-2011 (%)	0.002	-0.0003	0.002	0.004
Distance to CMA	-0.0002	0.0004	-2.76 ⁻⁷	-0.0001
Distance to CA	-0.0001	-0.001**	0.0001	-0.0006
Age	0.0002	-0.012*	0.002*	0.01
<i>Dummy variables</i>				
Female	-0.12**	-0.22*	0.10**	0.15
Reference group	British Columbia	British Columbia	British Columbia	British Columbia
Manitoba	-0.28***	-0.28	0.02	-0.17
Saskatchewan	-0.30***	-0.37	0.02	-0.37*
Alberta	-0.26**	-0.32	0.02	0.4
Aboriginal respondent	n/a	n/a	n/a	n/a
Aboriginal community respondent	-0.09	-0.19	-0.20*	0.09
Constant	3.15***	3.92***	3.21***	2.96***
Observations (n)	805	98	805	98
F Statistics	37.63	9.18	38.73	6.65
R ²	0.36	0.54	0.38	0.49
Rounded. Significance (p-value): * < 0.05, ** < 0.01, *** < 0.001				

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