Social Capital in First Nations Communities: Conceptual Development and Instrument Validation

BY

JAVIER MIGNONE

A Thesis
Submitted to the Faculty of Graduate Studies
In Partial Fulfillment of the Requirements
For the Degree of

DOCTOR OF PHILOSOPHY

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A la memoria de mi padre, Emilio
A la memoria de mi hermana, Mónica
A mi madre, Chela
Con profunda admiración.

Abstract

There is increasing evidence of social environmental factors affecting population health. There are a variety of possible ecological level descriptors of these factors. Social capital is one of these descriptors. It is an elusive concept that, particularly in social epidemiological studies, appears to have been used with scarce theoretical examination. However, it is a promising concept for First Nations communities. The two main contributions of the study were to articulate a conceptual framework for social capital in First Nations communities and to derive culturally-appropriate measures of the dimensions of social capital. The study took place in partnership between the Assembly of Manitoba Chiefs (AMC) via its Manitoba First Nations Health Information and Research (HIR) Committee, and the Centre for Aboriginal Health Research at the University of Manitoba. Three Manitoban First Nations communities took part in the study. The first phase of the study used ethnographic methodology with two aims, to contribute to the development of the conceptual framework, and to generate an initial list of instrument items. Based on these results, dimensions of social capital were identified for measurement and a list of questionnaire items was composed. The questionnaire was pilot-tested, with a total sample of 462 respondents from the three communities. A series of psychometric analyses were performed to assess the reliability and validity of the survey instrument. The study achieved a measurement device that had good discriminatory power among First Nations communities, was made up of internally consistent scales, and had good construct validity. Thus, this instrument is feasible for use in future empirical inquiries. Nonetheless, the construct itself, as formulated by the study,

was only partially validated. Further measurement solutions, as well as research and policy implications were discussed.

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I am grateful to the Chief and Council of the three First Nations that participated in this inquiry for volunteering their communities and providing their assistance to conduct the study. This acknowledgement is extended to all community members of each of the three First Nations. In particular, my gratitude goes to those individuals that agreed to be interviewed or that took part in the survey. The Health Information and Research Committee (HIR) of the Assembly of Manitoba Chiefs (AMC) was instrumental at many levels to the success of the study. Without their commitment to the importance of investigating social environmental determinants of health the study would not have even been formulated. As well, the AMC provided crucial assistance in a variety of ways. The Canadian Population Health Initiative (CPHI) of the Canadian Institute for Health Information (CIHI) generously provided the main funding for the study, without which it would not have been possible to conduct. I wish to also acknowledge the Canadian Institutes for Health Research (CIHR) for the Ph.D. training fellowship that supported the author for three years. Further funding support by the Faculty of Graduate Studies and the Department of Community Health Sciences (CHS) at the University of Manitoba, and the University of Manitoba Student Union is also acknowledged. Finally, the Centre for Aboriginal Health Research (CAHR) and the department of CHS played an essential role in providing a setting and valuable support to the author and the study. Many thanks.

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CHAPTER 1

Introduction

Social epidemiology is motivated by the question "Why is this society unhealthy?" versus the traditional epidemiological question "Why did this individual get sick?"[1] These are two kinds of etiological questions. The latter question seeks the causes of cases whereas the former seeks the causes of prevalence and incidence, and thus requires the study of population features, not so much the characteristics of individuals.[2] Compositional explanations for variations in health between different communities assume that these areas include different types of individuals, and differences between these individuals would account for the observed difference between places. On the other hand, a contextual explanation would consider that there are features of the social or physical environment that influence the health of those exposed to it (either in addition to or in interaction with individual characteristics). This derives in the key distinction between individual level determinants and ecological level determinants of health. The critical view held by the Royal Commission on Aboriginal Peoples (RCAP) (Royal Commission on Aboriginal Peoples, 1996a) on the individualistic analysis of socio-economic determinants of health is aligned with this contextual explanation. It was with this perspective that the Health Information and Research Committee (HIR)[3] of the Assembly

[1] In words of Kawachi (2002).
[2] This paraphrases Rose's ideas (1985).
[3] The HIR Committee is mandated by the Chiefs of Manitoba to represent the health research and information interests of all 62 First Nations communities in Manitoba. The members of the HIR Committee are all Health Directors (or designates) representing all Tribal Councils, independent First Nations and other First Nations political organizations in Manitoba.

of Manitoba Chiefs (AMC)[4], together with the Centre for Aboriginal Health Research (CAHR) outlined a strategic program of research entitled "Why are some First Nations communities healthy and others are not?: Constituting evidence in First Nations health policy."(O'Neil et al., 1999) The authors of this proposed program indicated that analytical frameworks that attempt to associate factors such as poverty with health outcomes are insensitive to the complex socio-economic conditions that exist in First Nations communities. Nonetheless, they also suggested that more recent developments in the population health model that include notions of social inequality, social cohesion and social capital "appear to have more in common with Aboriginal health models." To date, however, there is scarce research on the impact of the social environment on health status in First Nations communities in Canada that include these perspectives.

As mentioned above, there are a variety of possible ecological level descriptors of these factors. Social capital is one of these descriptors. It is an elusive concept that, particularly in social epidemiological studies, appears to have been used with little theoretical examination. Thus, if this notion is to be used with any validity to empirically verify its potential as a determinant of health, a conceptual formulation of social capital and the development of culturally appropriate measures for First Nations communities are first

[4] The Assembly of Manitoba Chiefs was created in 1988 by First Nations in Manitoba to coordinate political action and technical work on common issues. AMC has been structured and mandated to provide a forum for discussion, coordination and consensus building. It is intended to be comprehensive in terms of scope of issues and the integration of political and technical institutions of First Nations. AMC functions under the direction of a Grand Chief, Executive Council of Chiefs and Standing Chiefs Committees on Justice; Self-Determination and Treaties; First Nations Women; Child Welfare; Education; Housing; Health; and Economic Development. The Grand Chief, elected by the Chiefs-in-Assembly, is mandated as the principle spokesperson on common issues for First Nations in Manitoba. The Chiefs-in-Assembly are the source of all authority for AMC. The role of the AMC is essentially political. Internally, the organization functions to build consensus on issues and priorities. Externally, the AMC presents a common front in pursuing issues in many different ways.

required. In essence, this dissertation resulted from the need to scientifically characterize and measure social capital in First Nations communities, for subsequent theorization and empirical testing of its potential as a health determinant, as proposed by the research program of the AMC and the CAHR. This is the main contribution of the dissertation. Findings of the study are expected to be of use for future empirical studies on social determinants of health in First Nations communities.

From the conception of the inquiry to the use of its findings (including all stages in between), the study is a product of the partnership between the HIR Committee of the AMC, three First Nations communities of Manitoba, and the CAHR. The entire study was a team effort that involved numerous individuals in different capacities from these partnering entities. Without this partnership there would have been no study, and without the quality of the partnership it would have been impossible to achieve any conceptual and empirical depth, although of course, the latter is for the reader to judge.

The dissertation is organized in the following manner. The major part of Chapter 2 (Literature Review and Study Goals) reviews the literature on social capital. It does so by first considering the issue of the social environment as a possible health determinant, in particular of social capital and First Nation's health. It then offers an in-depth trajectory of social capital organized according to a particular interpretation of the literature. Critiques of the construct are presented, followed by a review of existing measures of social capital, and a brief review of the issue of its cross-cultural validity. The chapter concludes by presenting the study's main objectives, specific objectives, and questions.

The Methods chapter (Chapter 3) is organized in three sections. It first provides a brief discussion on the issue of construct development and measurement. Subsequently, it details separately the methodology of each of the two phases of the study. Phase one consisted of a concept analysis, of an ethnographic study in three First Nations communities, and of the development of the survey items. In relation to the methodology of phase two, this chapter describes the pilot survey and sample characteristics of the communities, data preparation issues, and the psychometric analyses that were conducted.

Chapter 4 (Conceptual Framework and Ethnographic Study) constitutes the results section for phase one of the study, the concept analysis and the development of the conceptual framework that incorporates findings from the ethnographic study. It presents the conceptual structure on which the instrument was developed and addresses the first main objective of the study. The intent of the concept analysis is to compare the differing notions of social capital and find their common grounds, to formulate a temporary construct of social capital and its dimensions, and to critically compare and differentiate between like concepts (social networks, social cohesion, social support). Based on the concept analysis, a tentative social capital framework is then formulated. After outlining the dimensions and components of social capital, the chapter fleshes out these ideas against the backdrop of the three First Nations communities that participated in the study. They are described in the form of a narrative, and using the preliminary framework as structure, presents current community features that could be considered as descriptors of higher or lower stocks of social capital. The last section then revisits the framework, as a

result of the iteration between theory and qualitative evidence. It offers the framework as it applies to First Nations communities and provides direction to the development of the measurement tool.

Chapter 5 (Instrument Development Results) essentially presents the results of the psychometric analyses that assessed the reliability and validity of the survey instrument. It offers the results of the second phase of the study. The chapter starts, however, by first discussing measurement issues and presenting construct validation hypotheses. It also deals with the issue of "don't know" percentages in item responses, identifying limitations and suggesting analytical options to deal with this matter.

The Discussion chapter (Chapter 6) initially discusses assumptions, limitations and strengths of the study. It then presents further measurement solutions and discusses the construct evidence provided by the study. Finally, it outlines research and policy implications of the findings.

Aside from the reference list, the dissertation also includes a total of 17 main tables corresponding to different chapters. As well, a series of appendices include copies of fieldwork material, more detailed examination of certain issues, and secondary tables. The numbering system for the appendices matches each appendix with the number of the chapter to which it pertains, followed by a Roman numeral.

CHAPTER 2

Literature Review and Study Goals

The following review of the literature on social capital first looks into the issue of the social environment as possible health determinant, in particular of social capital and First Nation's health. An in-depth trajectory of the concept of social capital is then presented, organized according to a particular interpretation of the literature. Critiques of the construct are outlined, followed by a review of existing measures of social capital. The final section of the chapter presents the study's main objectives, specific objectives, and questions.

2.1. The social environment and First Nations' health

Social epidemiology, according to Kawachi (2002) is motivated by the question "Why is this society unhealthy?" versus the traditional epidemiological question "Why did this individual get sick?" In the words of Rose (1985) these are two kinds of etiological questions, "the first seeks the causes of cases, and the second seeks the causes of incidence", (so) "to find the determinants of prevalence and incidence rates, we need to study characteristics of populations, not characteristics of individuals." This leads to Kawachi's description of the goal of social epidemiology, "to conceptualize, operationalize and test the associations between aspects of the social environment and population health." To exemplify the above ideas, let us observe the empirically well established association between socioeconomic status and health (Marmot & Theorell,

1988); (Haan, et al., 1989); (Fox, et al., 1986); (Lahelma & Valkonen, 1990); (Pappas, et al., 1993) that refers to individual (household) level characteristics. Recent studies propose that not only the level of income at the household level (or other measures of socioeconomic status) may be important for the health, but so too, potentially, is the shape of the income distribution. This implies the possibility of a causal effect of ecological level factors, i.e., the social environment per se, on health. There is increasing empirical evidence that suggests that societies with narrower income distributions are healthier (Rodgers, 1979); (Wilkinson, 1992); (Kaplan, et al., 1996); (Kennedy, et al., 1996); (Kawachi & Kennedy, 1997b); (Wilson & Daly, 1997); (Lynch et al., 1998); (Ross & Wolfson, 1999); (Chiang, 1999). This possibility coincides with sociological notions that areas have characteristics that are more than the sum of the individuals living in them (Yen & Syme, 1999). These findings seem to suggest the existence of contextual factors that impact the health status of these populations. We are thus confronted with two major challenges, to find scientifically sound ways of characterizing and measuring the social environment, and to theorize and provide empirical evidence of potential causal pathways. For the latter to be feasible, the former needs to be as rigorous as possible.

Those researchers that defend the evidence of inequality affecting health have formulated possible explanations to explain this phenomenon, providing tentative conceptual frameworks. According to Wilkinson (1996), one reason why greater income equality is associated with better health seems to be that it tends to improve social cohesion and reduce social divisions. This type of explanation suggests a 'bio-psycho-social' translation of social inequality to an empirically observable differential distribution of

health status by social status. Kawachi and Kennedy (1999) mention three plausible mechanisms by which the link between income inequality and health might operate: that income inequality is linked to disinvestment in human capital; that income inequality leads directly to ill health via stressful social comparisons, and that income inequality leads to the erosion of social capital. The notion of "social capital" is a promising concept in this respect. It suggests the investigation of "possible ways in which areal social inequalities, at different scales of analysis, manifest the actual, concrete, day-to-day lives of people, communities, regions, and how these concrete social relations could plausibly be linked to health status."(Dunn, 1999). Further, it is relevant to theorize social capital as a health determinant independent of its possible relation to social inequality. However, as Popay and colleagues (1998) suggest, the concept remains somewhat ill-defined, and further work is required in order to demonstrate how this phenomenon may impact upon health.

Empirical research into the association between social capital and health is a very recent development.[5] To date, these studies are those of Kawachi and colleagues (1997), Gooden (1998), Kennedy and colleagues (1998), Wilkinson and colleagues (1998), Kawachi and colleagues (1999), Kennedy and colleagues (1999), Veenstra (2000), Rose (2000b), Subramanian et al., (2001), Veenstra (2002), Campbell at al.,(2002), Gold et al., (2002). The results of these empirical inquiries provide some support for considering social capital as health determinant. However, both conceptual and measurement issues

[5] This section of the review limits itself to studies of social capital and health. There are numerous studies that from a broader perspective would be related to social capital and health, both from the explanatory variable (e.g., social connectedness, social cohesion, social networks, social support) to the outcome variable (e.g., well-being, violence).

hinder the strength of the findings. As Muntaner and colleagues indicate (2000) the evidence is scant or ambiguous, "depending on the definition that is used." There have also been recent developments in considering social capital as a factor related to access to health care (Hendryx, et al., 2002) or as a requirement for health promotion programs (Clutterbuck, 2001).

The possibility of social inequality and social capital being determinants of health has been categorized in two competing interpretations: the psychosocial environment interpretation and the neo-material interpretation (Ostry, 1999). According to Lynch and colleagues (2000) the former has been Wilkinson's (1996) interpretation, when he argues that income inequality affects health through perceptions of place in the social hierarchy based on a relative position according to income. Lynch and others (2000), from a neo-material interpretation, criticize this notion arguing that health inequalities result from the differential accumulation of exposures and experiences that have their sources in the material world. With respect to social capital, both interpretations appear to have a narrow understanding of the concept. If social capital is conceptually framed in a more rigorous, and simultaneously more comprehensive manner, these apparent dichotomic interpretations can be called into question. What needs to be considered is the extent of the arena to which social capital pertains and what are the levels in which it has meaning. A later section will examine these ideas.

The above debate fits well with the social epidemiological research agenda of First Nations organizations. The Royal Commission on Aboriginal Peoples (1996a), while

agreeing on the importance of socio-economic factors as determinants of health, was critical of the individualistic analysis of these variables. According to O'Neil and colleagues (1999), the original population health model is in marked contrast to Aboriginal health models, such as the Medicine Wheel concept, which are strongly holistic in focus and emphasize the importance of spiritual and cultural factors (Bartlett, 1995). However, they argue that more recent developments in the population health model that include notions of social inequality, social cohesion and social capital "appear to have more in common with Aboriginal health models." (O'Neil et al., 1999). Along similar lines, an essay on suicide and disease in Canada's First Nations (Carstens, 2000) calls for bringing back a Durkheimian paradigm to understand differential health status among First Nations communities.

There is convincing evidence leading to the conclusion that health status in aboriginal communities is lower compared to that of the overall population (Waldram, et al., 1995; Young, 1994). First Nations health planners however indicate that "analytical frameworks that attempt to associate factors such as poverty with health outcomes are insensitive to the complex socio-economic conditions that exist in First Nations communities." (O'Neil et al., 1999). It is under this light that the notion of social capital may be of potential usefulness if properly conceptualized and operationalized for measurement in aboriginal communities. A rigorous examination of population health determinants requires a historical understanding of these factors. Factors that impact the health of populations are a result of historical socioeconomic, political and cultural forces. The history of the relations between First Nations peoples and European nations

and their descendents, is paradigmatic in this regard. The notion of social capital can offer a lens that takes into account these historical factors as they are embedded in current societal features, consequently having the potential to offer a richer understanding of these factors as health determinants. To exemplify from a historical perspective of First Nations peoples, the loss of a significant number of population in aboriginal communities due to disease in the early years of colonization[6], the loss of traditional lands, the policies of assimilation and residential schooling, the loss of political autonomy, etcetera (Royal Commission on Aboriginal Peoples, 1996c; Dickason, 1997; Gralewicz, 1997), can be also interpreted as having had a potentially negative impact on the stocks of social capital. However, this interpretation cannot be made mechanistically, because the ongoing struggles to counter these forces may also have had the potential of generating stocks of social capital. An interesting depiction of the latter is offered in an article describing the native initiative for self-government of Ka Lahui, Hawaii (Trask, 2000).

To date, however, there is scarce research on the impact of the social environment on health status in First Nations communities in Canada that jointly include these perspectives. Particularly, little work has been done on what Corin (1994) calls the cross-cultural applicability of these approaches at either a theoretical or a methodological level. The following statement about social capital by Muntaner and colleagues (2000) is particularly applicable to First Nations communities, "the multidimensionality of the concept has received little theoretical exploration in regard to public health…consequently (providing) little guidance about the importance of the particular

[6] A recent book (Hackett, 2002) offers a meticulous account of the diffusion of diseases from Europe through central Canada to the West between 1670 and 1846.

mechanisms that might link these different dimensions to health." From the perspective of social capital as determinant of population outcomes in general (including health), The First Nations Social Cohesion Project of the Population Studies Centre at the University of Western Ontario, has been the only attempt to examine social capital in First Nations communities in Canada. However, the extent of their contribution up to now has been the presentation of a comprehensive discussion paper on the subject (White, et al., 2000). In terms of specific health outcomes, the most relevant study is that of Chandler and Lalonde (1998). Their study, although not explicitly on social capital, looked into the association between markers of collective effort to rehabilitate cultural continuity (which could be considered aspects of social capital) and rates of suicide in 196 British Columbia bands. They found that the higher the indicators of cultural continuity, the lower the suicide rates. These promising results further the relevance of studying characteristics of communities as determinants of health, which brings us back to the prerequisite of proper construct development and measurement of social capital. The next sections will provide an extensive review of the concept and of the attempts to measure it.

2.2. Social Capital: The conceptual trajectory

Social capital has a somewhat long intellectual history in the social sciences. The first explicit usage of the term in the contemporary sense is that of Lyda Hanifan (1920), who employed the expression to explain the role of community participation in shaping local educational outcomes. Social capital as a concept then disappeared for several decades, but was "reinvented" by Jane Jacobs (1961) in the late 1960s and subsequently elaborated

upon by Glenn Loury (1977) in the late 1970s and then James Coleman in the 1980s[7]. A parallel approach was also being developed by French sociologist Pierre Bourdieu. The major impetus to scholarship on the topic, however, came with Robert Putnam's seminal work in the 1990s on governance in Italy, and his subsequent thesis that Americans in the late twentieth century were 'bowling alone" (Woolcock, 1998b).

Given the relative differences in the conceptualization of social capital, a trajectory of the ideas that inform or are embedded in its current discourse needs to be done following the main thinkers of the concept. Table 1 presents 17 definitions of social capital from a number of authors. (Coleman, 1990; Bourdieu, 1983; Loury, 1992; Putnam, et al., 1993; Portes & Sensenbrenner, 1993; Burt, 1992; Fukuyama, 1995; Edwards, 1997; Woolcock, 1998a; Midgley & Livermore, 1998; Paxton, 1999; Narayan, 1999; Falk & Kilpatrick, 1999; Rose, 1997; Adler & Kwon, 1999; Schuller, Baron, & Field, 2000; Lin, 2001) This should be of practical help while we trace the historical background, the different ideas embedded in the conceptualizations, the fields of scholarship, and the ideological context of social capital. For the purpose of comprehensiveness, the table also includes authors who have introduced distinct definitions that have supplemented the primary concepts.

The idea of social capital can be located in a historical series of ideas on different forms of capital. According to Paxton (1999), the concept of physical capital was originally introduced to explain the ways that physical implements, such as tools or machines, could facilitate production. "Then Becker (1964) building on Schultz (1961), presented the

[7] Schuller and colleagues (2000, p.2) bring to our attention a little known work titled *Housing and Social Capital*, published in 1957 by the Royal Commission on Canada's Economic Prospects (Dube, Howes, & McQueen, 1957). Social capital in their formulation is "the public physical infrastructure of a nation."

notion of human capital and argued that individuals, through education or job training, can hold within themselves the ability to facilitate production. The newer concept of social capital acknowledges that certain social relations can also facilitate production." (Paxton, 1999). Swedberg (1987) has documented that the Durkheimian, Weberian, and Marxist traditions within classical sociology were all heavily influenced by the economic debates, and much of what we now refer to as "social capital" lay at the heart of these concerns. Apparently, similar debates surrounded sociology's controversial entry into the American universities through the University of Chicago in the 1890s, where the case for social forces as independent factors shaping urban development served to differentiate the sociologists from the economists. "Two paths thus divided, and by the early twentieth century qualitatively different approaches to the study of economic life –once a topic of universal social-scientific concern if not agreement- now served to define the boundary between competing academic disciplines on both sides of the Atlantic (Woolcock, 1998a)."

A convenient way of framing the ideas that follow is to make a clear distinction between social capital and civil society. Edwards (1997) provides a simple but lucid distinction: "civil society" *is the arena* on which people come together to pursue the interests they hold in common; "social capital" refers *to the glue* that holds societies together. Consequently, the review will concentrate on the ideas behind the "glue", not on the ideas about the "societal places" where it exists. However, insomuch as there are issues concerning where social capital plays out, then the "arena" will be considered.

According to Greeley (1997) Coleman introduced the term social capital as part of the major project that occupied the final years of his life – the building of a bridge between sociology and economics (in particular the economics of the Chicago School), between the concept of the "socialized" notion of human kind and the "rational choice" notion. In Coleman's (1988) own words: "My aim…is to import the economists' principle of rational action for use in the analysis of social systems proper, including but not limited to economic systems, and to do so without discarding social organization in the process. The concept of social capital is a tool in aid in this." Favell (1993) indicates that Coleman's *Foundations of Social Theory* (in which his main conceptualizations of social capital are found) is an attempt to apply a universal rational choice theory to the entire range of central questions in social theory. More so, he argues, it also "contains the bold articulation of a theory that can tackle the central questions of moral and political philosophy, a positive social theory that will lead to normative statements about society and thereby be capable of generating the philosophical grounding for future social polices."

Putnam, on the shoulders of Coleman, brought the concept into structural social theory by claiming that social capital could accumulate over aggregate sections of a community and influence effective government. Paxton (1998) argues that in this way, Putnam has followed the tradition of de Tocqueville, "who claimed that participation in associations leads individuals to develop an 'enlightened self-interest' that supports democratic society." In this sense, social capital reflects voluntary association membership in a manner similar to other theoretical concepts like civil society, while also capturing

important features of participation, such as subjective trust. The major issue for Putnam is how social trust, that is, trust among those lacking intimate knowledge of each other, develops and is maintained in a society. He claims that trust has two sources: norms of reciprocity and networks of civic engagement, and the first is likely to be a function of the second. His ideas were influenced by the findings of non-cooperative game theory (Sugden, 1986), arguing that a "tit-for-tat strategy" is a self-sustaining equilibrium (Levi, 1996). Thus, if people act trustfully, they tend to cooperate and invite cooperation in return. The "glue" of social capital is here extended to an aggregate societal level and simultaneously limited to the narrow interpretation of what constitutes the "arena" of civil society. If, as Seligman (1992) posits, civil society is a public realm (apart from the state but nevertheless regulated by law) yet constituted by private individuals, it includes those areas of private enterprise. Consequently, this constitutes a separation of the waters in the ideas embedded in social capital. To clarify this point, the work of some additional authors requires attention.

Bourdieu's rationale for the introduction of social capital was that it is "impossible to account for the structure and functioning of the social world unless one reintroduces capital in all its forms and not solely in the one form recognized by economic theory." This notion coincides with Granovetter's (1985) critique of a pure "market" approach to economic action. Accordingly, in Portes and Sensenbrenner's (1993) opinion, the introduction of the concept of social capital has reinforced the sociological perspective. Portes explicitly inserts social capital under the umbrella concept of social

"embeddedness", but this raises the question about the "arena" of civil society, i.e., what does civil society encompass?

Foley and Edwards (1997), although not exactly arguing this point, indicate that Putnam's is a reading of de Tocqueville that privileges the beneficent and nonpolitical manifestations of associational life, ignoring in the process equally powerful interpretations of civil society that lay particular stress on the conflict at the heart of modern societies. Further, Granovetter's "strength of weak ties", runs counter to the traditional interpretation of de Tocqueville, which privileges voluntary networks composed of social ties that are both dense and strong. The Tocquevillian argument leans on what Newton (1997) calls the "thick trust" characteristic of the Durkeheimian version of how relationships get built, which posits the necessity of dense networks of strong ties (Edwards & Foley, 1997). Newton (1997) says that in many ways, social capital (and we add, social capital from Putnam's perspective) is the modern social science analogue of fraternity. In the 1970s and 1980s some political circles assumed that only liberty mattered for democracy, and even then a narrow economic definition of liberty – the liberty of the market place. In the 1990s it was increasingly realized that democracy is much more than liberty and requires a range of values, attitudes, and assumptions of the kind that comprise social capital (e.g., trust). In this sense, it seems to relate to the importance of shared values and a social contract already highlighted by Rousseau ([1762] 1993). Weber (1930), also emphasized the importance of trust, which according to him grew out of religious habit. For example, the early puritans developed shared values that glorified hard work, thrift and honesty. According to Minkoff (1997), most

discussions of civil society and social capital emphasize their local dimensions, drawing attention to the sustenance and growth of face-to-face social networks, voluntary associations, and community institutions. Putnam argues that civil society is the main arena for producing the norms of trust and reciprocity that undergird civility, civic participation, and (a liberal vision of) democracy. National social movements, however, (according to Putnam) lack the same social capital-generating qualities.[8] Minkoff disagrees. Berman (1997) argues that current enthusiasm for civil society holds that political development is a function of societal and cultural factors, and de Tocqueville is seen as the guiding light of political analysis. The author contends that the study of societal and cultural factors needs to be married to the study of political institutions.

We can now return to the division of waters among authors that have a narrow or broader understanding of the arena of civil society. A central idea shared by the two main thinkers of social capital, Coleman and Bourdieu, was the need to integrate sociological and economic thinking to "account for the structure and function of the social world." However, Putnam's development appears to have taken a "Tocquevillian" road (to be fair to de Tocqueville, the adjectivization of his name has the purpose of denotation, not of adequately describing his thinking[9]) whereas social capital is the "glue" of a civil society that does not clearly encompass both economic and political forces. Civil society, and consequently the "arena" of social capital, appears to be limited to face-to-face social networks, voluntary associations, community institutions. In our interpretation, this is not

[8] In his recent book *Bowling Alone: The collapse and revival of American community* (Putnam, 2000) Putnam expands and revises some of his postulates incorporating and/or debating ideas of critics. On the above point however, he still maintains this position.

[9] de Tocqueville, "the master himself", in words of Berman (1997), "did not ignore the need to marry the analysis of societal and cultural factors to the study of political institutions."

what Bourdieu and Coleman had in mind. In this sense, Portes (1995) is more consistent with their ideas when he inscribes the concept of social capital under the discipline of economic sociology, or what Woolcock (1998a) describes as "new economic sociology." The latter writer states that "the new economic sociology – as opposed to the old economic sociology" (characterized by Talcott Parsons and Neil Smelser (1956), "is less deferential to formal economics, seeing little distinction between exchange that is otherwise deemed 'economic' *or* 'social'." A central theme of Woolcock's development of social capital within the field of new economic sociology, is that the latter is a field that seeks to position itself between the traditional "oversocialized" and "undersocialized" approaches to understanding economic behavior. This notion was introduced by Granovetter (1985), who further argued that all economic action was inherently enmeshed in social relations of one configuration or another. Consequently, it allows the analyst to overcome shortcomings of orthodox economics, which in words of Bourdieu (1992) "overlooks the fact that practices may have principles other than mechanical causes or the conscious intention to maximize one's utility and yet obey an immanent economic logic."

The statements of the following two authors help clarify the scope of the arena. Evans (1996) argues that social capital "inheres not just in civil society, but in an enduring set of relationships that span the public-private divide…it is social capital built in the interstices between state and society that keeps (economic) growth on track." He is clearly arguing for a broader scope of the arena. Edwards (1997), on the other hand is somewhat ambiguous in his call for a broader scope. The author understands civil society as the

space where the common goals, product of social capital, are formed and debated. He then adds "completing these visions...involves the state and the market too, but they are the servants of a true civil society and not its masters."

Putnam, in another sense to the above review, actually extends the notion of social capital when he postulates it as a "feature of social organizations." This refers to ideas behind the societal "levels" of social capital (which is different from the "arena"). Let us visit other authors for this discussion. Portes and Landolt (1996) argue that Coleman's concept of social capital has been stretched in questionable ways. Specifically "in Putnam's hands, social capital has become a property of groups and even nations, rather than individuals." We will then first explore the ideas behind Portes' understanding of the concept. Portes and Sensenbrenner (1993) contend that there are four different types of social capital corresponding to each of the major theoretical traditions. They argue that from Marx and Engels, we can extract the notion of "bounded solidarity," i.e., that adverse circumstances can act as a source of group cohesion. From Simmel we learn of "reciprocity transactions," the norms and obligations that emerge through personalized networks of exchange (e.g., favors between neighbors). Durkheim and Parsons discuss the importance of "value introjection," the idea that values, moral imperatives, and commitments precede contractual relations and inform individual goals other than the strictly instrumental. From Weber we discern the idea of "enforceable trust," that formal institutions and particularistic group settings use different mechanisms for ensuring compliance with agreed-upon rules of conduct –the former (e.g., bureaucracies) using legal/rational mechanisms, the latter (e.g., families) substantive/social ones-. The societal levels of

social capital aspects in the above review explains why Portes (1998) is uncomfortable with Putnam's "stretch" in equating "social capital with the level of 'civicness' in communities such as towns, cities or even entire countries." In his understanding, sociological analyses of social capital "have been grounded on relationships between actors or between an individual actor and a group." Sampson and colleagues (1999) exemplify empirical research that coincides with Portes in considering social capital as pertinent to the micro level (e.g., neighbourhood), and not at a more macro level.

Contrarily, Fukuyama (1995), whose notion of social capital centres on the trust component, talks about nations with "healthy endowments of social capital" and of "low-trust countries." Arguably, Fukuyama's understanding of the concept is at a macro level, although not exclusively. Quigley (1996) contends that both Fukuyama and Putnam demonstrate that social capital, especially trust, is accumulated through a time-consuming, primarily local process. Nonetheless, both tend to utilize social capital as a macrosociological phenomenon, or a feature of a community. On the other hand, Midgley and Livermore's (1998) understanding of social capital as social infrastructure, relates more to the micro level. Their conceptualization appears to be related to ideas such as that of community assets (Sherraden, 1991; McKnight, 1995a), the spirit of community (Etzione, 1993) and McKnight's ideas around regenerating community and community power (1987; 1995b).

Woolcock (1998a; 1998b) is the author that most systematically integrates a broad "arena", as envisioned by Coleman and Bourdieu, and includes the possibility of studying

social capital at different societal levels, in the steps of Putnam. Woolcock seeks to apply the concept of social capital to the analysis of national and community development in Third World countries. Woolcock presents four dimensions. He initially identifies two distinct but complementary forms of social capital, based on two concepts, "embeddedness" and "autonomy". The first concept follows from Granovetter's (1985) contribution that argues that all economic action was inherently enmeshed in social relations of one configuration or another, and that development essentially brought about a change in the kind, not degree, of embeddedness. In order to establish whether the cost or benefits of embeddedness prevailed in any given situation, the presence or absence of a complementary set of *autonomous* social ties needed to be incorporated into the analysis. However, Woolcock argues that the sense in which embeddedness and autonomy is employed at the micro and macro level are not the same; embeddedness at the micro level refers to intra-community ties, whereas at the macro level it refers to state-society relations; autonomy at the micro level refers to extra-community networks, while at the macro level it refers to institutional capacity and credibility. Consequently, according to Woolcock (1998a), any synthesis of social capital as it has developed at the micro and macro levels may have to integrate four distinct forms. He refers to embeddedness at a micro level as "integration" and autonomy at a micro level as "linkage". Embeddedness at the macro level as "synergy", while autonomy at the macro level as "organizational integrity." Woolcock argues that different combinations of these four dimensions of social capital can account for a range of developmental outcomes.

Recently, a different terminology was introduced that represents similar notions (World Bank, 2000) but in a more transparent manner. "Bonding social capital" refers to embeddedness, whereas "Bridging social capital" refers to autonomy. A further dimension was later introduced, "Linkage social capital." These recent developments signal the need to pursue the issue of dimensions of social capital, where both the arena and the levels are accounted for. The distinction between Bonding, Bridging, and Linkage social capital (Woolcock, 1999; Narayan, 1999; Woolcock & Narayan, 2000) is a promising path to follow.

2.3. Critique of social capital

As should be expected, the notion of social capital, both as a conceptual tool and for the use it is given, is not without its critics. As Schuller and colleagues (2000) indicate, it is important "to distinguish critiques which seek to explore and develop its (social capital) potential from those which imply a rejection of the concept's utility." They further state that a main criticism of the concept has been its "over-versatility", but that that criticism "relates more to the ways the concept has been applied than to its intrinsic quality." Among the critics we find two Nobel Laureates, Arrow (2000) who maintains that he finds no consensus for adding something called "social capital" to other forms of capital, and Solow (2000) who indicates that so far he has "seen only vague ideas and casual empiricism." They argue that despite the intention of those who write and talk about social capital to get at something difficult but important, namely the interaction between

society's institutions and shared attitudes with the way the economy works, there is no value added with this conceptual tool.

Another author (Labonte, 1999) also points out that the concept of social capital may be just fad in social sciences. If, as Saul (1995) suggests, "(F)ashion is merely the lowest form of ideology," the question to answer is if this concept has brought new theoretical tools to enhance our analytical leverage and further understanding of the social environment, or is it (in Labonte's words) a "Trojan horse" for colonization from any side of the ideological spectrum. The above review of ideas that have nourished the current notion (notions) of social capital, showed that there is an element of repackaging. Notwithstanding, the same can be said of any theoretical construction. As a novelist expressed it "the present, like it or not, never ceases to agglomerate history." (Casullo, 1989)[10]. A variety of earlier ideas are present in the current formulations of social capital, of which the main ones appear to have been brought together from the need to examine society with the combined lenses of sociological and economical thinking. It is in this sense that Bourdieu (1992) insists that a general science of economy of practices "that does not limit itself to those practices that are socially recognized as economic must endeavor to grasp capital, that 'energy of social physics' in all of its different forms, and to uncover the laws that regulate their conversion from one to another."

The ideological context or purpose associated with the conceptual representations of social capital was not always apparent in the previous review section. The visibility of the

[10] "(N)unca deja el presente, lo quiera o no, de aglomerar la historia." Original in Spanish. Translation is mine.

ideological background increases however, when considering the use to which it appears to be put. According to Baum (1997), a contentious area is that of the role of the state in the creation and maintenance of civil society and social capital. The author identifies two fundamentally different positions on this role: libertarian and communitarian. The former position sees the development of civil society as a means of rolling back the state. The state is seen to interfere in the development of civil society by restricting the freedom of individuals. By contrast, the communitarians see a central role of the state as advancing the development of civil society through the provision of state-funded structures to support and nurture it. Champlin (1997) argues that the idea of community has been reshaped in the hands of conservative philosophers (libertarians in Baum's terms) from a cultural construct to a natural law, and that community has been further collapsed into "social capital" which is found to exist at the local level and between individuals. The consequence is that community is seen as "partial, local and entirely private", and thus associated with the economy rather than the state or with the family rather than the economy. This "privatization" of a public good as social capital, according to Champlin, has the implication that other public goods, which are seen as to depend upon social capital (e.g., education and safe neighborhoods), will also be privatized. This appears to be at the heart of Fukuyama's (1995) claim that the "most important factors affecting the real quality of life in such societies lie safely beyond what national governments can affect in positive ways… (it is) less able to promote strong bonds of special solidarity or the moral fabric that underlies community." On the contrary, a "communitarian" perspective would not ignore "the importance of a reformed and activist state" (Allen, et

al., 1998) in order to address broader structural conditions and local social capital configurations.

In words of Schuller and colleagues (2000) "social capital (as a concept) has several adolescent characteristics: it is neither tidy nor mature; it can be abused, analytically and politically; its future is unpredictable, but it offers much promise." There are several justifications in defense of social capital. One is, as Edwards and Foley (1997) state, that social capital adds to theory by bringing mediating levels of the social structure into cultural analysis in a systematic way. "Societies can no longer, if they ever could, be adequately understood in terms of the individual and society." In other words "it shifts the focus of analysis from the behaviour of individual agents to the pattern of relations between agents, social units and institutions. " (Schuller et al., 2000). Closely linked with the latter is "the merit of social capital developing out of empirical research of diverse kinds to act as a link between micro-, meso-, and macro-levels of analysis." (Schuller et al., 2000) Finally, that it provides a "fruitful conceptual and policy device by which to get beyond exhausted modernization and world-systems theories," and "a credible point of entry for sociopolitical issues into a comprehensive multi- and interdisciplinary approach to some of the most pressing issues of our time." (Woolcock, 1998a).

2.4. The measurement of social capital

Attempts to measure social capital have been gaining speed in the last several years. These attempts have taken several routes, in part related to differing theoretical

frameworks, in part related to the confines of existing data. What follows is a review of measures used to date and a brief critical appraisal.

Putnam (1995) considers citizen engagement in community affairs as social capital and specifies three of its features as networks, norms, and trust[11]. His measures are derived from questions from the U.S. General Social Survey (GSS). Several epidemiological studies (Kawachi et al., 1997; Kennedy et al., 1998; Wilkinson et al., 1998; Kawachi et al., 1999; Subramanian et al., 2001 ; Gold et al., 2002), have essentially followed these measurements. Narayan (1997) in a study on poverty and social capital in Tanzania, developed a Social Capital Index inspired in part by Putnam's work in Italy. The Index is an arithmetic average of both the number and characteristics of groups to which a person belongs. The survey queried household respondents about three dimensions of social capital: first, their membership in groups; second, the characteristics of those groups; and third, individual values and attitudes. The study does not provide reliability or validity information about the tool.

An Australian study (Bullen & Onyx, 1998) piloted a questionnaire and using factor analytical tools sought to identify underlying dimensions of the set of questions by locating clusters of questions that were related to each other. The results suggested eight

[11] His measure of trust is derived from the U.S. General Social Survey (GSS) question: "Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people." Whereas his measure of civic engagement is derived from the GSS questions related to group membership: "Now we would like to know something about the groups and organizations to which individuals belong. Here is a list of various organizations. Could you tell me whether or not you are a member of each type?" No reliability information is provided. In terms of construct validity, Putnam acknowledges the important limitations of this survey because "the domains most central to our interests" are "largely confined to formal group membership, church attendance, and social trust." (Putnam 2000, p. 420)

distinct elements that define social capital. These were: participation in local community; pro-activity in social context; feelings of trust and safety; neighbourhood connections; family and friends connections; tolerance of diversity; value of life; work connections. The study did not conduct reliability analyses. Veenstra (2000) explored, in a cross-sectional study, the relationships among individual-level social and human capital attributes and self-rated health status in Saskatchewan. The specific constructs of social capital chosen for the study essentially follow Putnam, although the survey contained questions specifically developed for this inquiry.[12] In a study looking at the relationship between the civic nature of a community and effective political governance by regional health boards in Canada, Veenstra and Lomas (1999) identify three community/aggregate level constructs and two individual level constructs. The former three were: civic participation; opportunities to experience (and abilities to exploit) collaborative problem-solving; and associationalism. The latter two were: trust and commitment.[13]

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[12] One index was related to the construct of civic participation, and asked questions concerning actions that demonstrate a desire to serve the greater good, an interest in affairs in the public realm, and experience participating in political life. Because the author did not have an a priori reason to assume that civic participation would be a cohesive concept, he did not conduct reliability analysis upon this index. A second series of indexes addressed the construct of trust from five different angles: trust in government in general (mean inter-item correlations $r = 0.402$ and Cronbach's alpha 0.871), trust in people from the respondents' parts of the province (mean inter-item correlations $r = 0.359$ and Cronbach's alpha 0.805), trust in people from the respondents' communities (mean inter-item correlations $r = 0.568$ and Cronbach's alpha 0.795), trust in people from respondents' part of Saskatchewan (mean inter-item correlations $r = 0.695$ and Cronbach's alpha 0.817), trust in people in general (mean inter-item correlations $r = 0.620$ and Cronbach's alpha 0.906). The social engagement construct was measured using the following type of questions: frequency of socialization with family members, friends and participation in small groups that provide support for its members; frequency of socialization with work-mates; willingness to turn to a work colleague in a time of trouble; attendance at religious services.

[13] Civic participation was measured by: the proportion of eligible citizens who voted in recent elections; the proportion of households who subscribe to a local newspaper; the proportion of individuals who have belonged to a neighbourhood improvement association, donated blood, volunteered regularly in the past year or written a letter to the editor in a local newspaper. Opportunity and ability to collaboratively solve common problems was measured through a random survey that asked citizens to identify problems in their community, and whether there had been opportunities available to confront the problem, whether they availed themselves of the opportunity and whether they had ever organized a group to deal with a community problem. Associational life was measured with data about clubs and associations in communities, and through a random survey asking for a list of groups in which the respondents

Knack and Keefer (1997) identified the constructs of trust and civic norms for their cross-country investigation of possible economic payoffs of social capital. They used data from the World Values Surveys from 29 market economies[14]. This study has been critized as an example in which single questions about trust levels are used as indices of social capital, "and then linked through sophisticated regressions to very broad measures of national economic performance, with conclusions drawn to several decimal points." (Schuller et al., 2000). Roche (1998) investigated how neighbourhood socio-demographic attributes and extra-familial social capital modified the association between parenting and behavioural precursors to violence among adolescent males. The dimensions of social capital of this study were: organizational or institutional involvement, neighbourhood informal control, and neighbourhood social cohesion[15]. A 1998 study (Doebler) on adolescent and young adult outcomes, delimited social capital based on two dimensions: family-based social capital and community-based social capital. The former was measured by family structure, mother working outside the home, number of siblings, and family relations. The latter was measured by family mobility, church attendance, and

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participated. At the individual level, trust was divided in trust in other citizens and trust in institutions. These constructs were to be measured by survey questions.

[14] They used the question "Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?" to assess the level of trust in a society. Their trust indicator was the percentage of respondents in each nation replying "most people can be trusted." The norms of civic cooperation was assessed from responses to a question about whether each of the following behaviours "can always be justified, never be justified or something in between: a) claiming government benefits which you are not entitled to; b) avoiding a fare on public transport; c) cheating on taxes if you have a chance; d) keeping money that you have found; e) failing to report damage you've done accidentally to a parked vehicle." Respondents chose a number from 1 (never justifiable) to 10 (always justifiable). The researchers reversed these scales and summed values over the five items to create a scale with a 50-point maximum.

[15] The first dimension was measured using data from an in-school questionnaire to students asking about their school club and organizational involvement. Two questionnaires inquired about school parental involvement (this is the only scale for which the study reports internal consistency results, and these results varied from Cronbach Alpha's 0.45 to 0.68) and parent organizational involvement. The second dimension was measured via two parent questionnaires inquiring about neighbourhood collective monitoring of youth and about neighbourhood incivilities. The third dimension was measured using data from an in-home adolescent questionnaire inquiring about the adolescents' perceptions of their neighbourhood.

participation in extra-curricular school activities, vocational activities, and volunteer activities. Paxton (1998; 1999) explored the relationship between social capital and democratic society. The study delimits two dimensions of social capital, trust and associations. The author's model incorporates a variety of measures of group membership, friendship, and trust.

A study on children who prosper in unfavourable environments (Runyan et al., 1998) provides an example of measurements of social capital without proper construct definition. The investigators presented a broad and brief definition of social capital ("benefits that accrue from social relationships in communities and families") and proceeded directly to the creation of an index of social capital using scores from 0 to 5. Their indicators were: presence of two parents residing within the home; social support for the primary maternal caregiver; presence of no more than two children in the home; neighbourhood support; attendance to church or religious services by maternal respondent. There is no clear linkage between these measures and the concept of social capital. Similarly, the measures used by Gooden (1998) in a study on social capital, stress and the health of rural African-Americans in central Virginia appear quite questionable. The study uses frequency of church attendance, community organization membership, employment outside of home, marital status and telephone in home as social capital measures.

Brehm and Rahn (1997) argue that social capital manifests itself in individuals as a tight reciprocal relationship between levels of civic engagement and interpersonal trust. These

two dimensions were measured in their study using data from the GSS[16]. Buckland and Rahman (1999) consider social capital as civic engagement, and measure it by total number of civic organizations to which households report involvement, and total reported number of civic organizations' meetings per year.

The most comprehensive undertakings to date related to the measurement of social capital have been the "Barometer of Social Capital" from Colombia (Sudarsky, 1999), designed to measure social capital and citizen participation, and the development and validation of a social capital inventory by Narayan and Cassidy (2001). The former study built a conceptual space to be measured, and pre-tested a questionnaire to validate its diagnostic capacities in a variety of social formations. The conceptual space was composed of ten dimensions and two main factors were isolated[17]. The second study factor analyzed dimensions of social capital such as group characteristics, generalized norms, togetherness, everyday sociability, neighborhood connections, volunteerism, and trust.

Krishna and Shrader (1999) describe the development of a Social Capital Assessment Tool (SCAT), a field-tested set of indicators and methodologies that measure levels of "cognitive and structural social capital" in communities designated as beneficiaries of

[16] Measures of civic engagement were created from the question "...Here is a list of various organizations. Could you tell me whether or not you are a member of each type?" Factor loadings for the endogenous variables were used. Interpersonal trust measures were created from three questions of the GSS, under the assumption that all three reflected a general trust in others. However, the questions received differential loadings on their measurement scale.

[17] The ten dimensions were: social control, hierarchy, political participation, institutional trust, media, civic republicanism, solidarity and mutuality, civic participation, horizontal relationships, information and transparency. The two main factors that were isolated were: social capital and faith in unvalidated sources of information. The study does not report reliability analyses.

development projects funded by the World Bank. The SCAT includes three components: a community profile, a household survey, and an organizational profile. To date, however, the SCAT has yet to be pilot tested and assessed for validity and reliability.

Inkeles (2000) proposes four component elements of social capital at the community level, social institutions, culture patterns, modes of communication and association between individuals and between collective entities, and psychosocial characteristics of a given community or population. He suggests the development (but does not offer a precise plan) of a social capital index that would provide a single number, comparable to the Gross Domestic Product, summarizing the grand total of social capital available to any group, community, people or nation.

Rose's (2000b) study on social capital and individual health was among the few that used a special-purpose questionnaire designed to measure social capital in a multiplicity of forms, "thus avoiding the risk of 'retrofitting' social capital labels to available survey data collected for other purposes." The New Russia Barometer was administered to a full-scale multi-stage randomly stratified sample covering the whole of the Russian Federation, urban and rural. 1904 Russians age 18 or over were interviewed face-to-face in 191 widely dispersed primary sampling units. The questionnaire included multiple indicators of social integration, an individual's cumulative use of networks, and situation-specific networks, aside from indicators of human capital. This survey was developed drawing on the experience of six previous New Russia Barometer surveys, however neither reliability nor validity information was reported by the study.

Recent studies are developing indices of social capital at the national or subnational levels. In the United States, The National Commission on Philanthropy and Civic Renewal (Barry & Manno, 1998) has developed a Nation's Index of Civic Engagement based on a sample of 1,000 respondents. This index includes five dimensions: the giving climate, community engagement, charitable involvement, the spirit of voluntarism, and active citizenship. Robert Putnam's Saguaro Seminar has launched the Social Capital Community Benchmark, a comprehensive survey of social capital in the United States (Putnam, 2000).

One of the few attempts to measure social capital from ecological level data was reported by Flora and Flora (2000), using data from the "Economic Development Strategies and Entrepreneurial Social Infrastructure" research project for rural communities of the United States. Questionnaires were sent to elected and appointed officials in 1099 randomly selected non-metropolitan communities and counties. Based on their conceptual framework, they sought to measure aspects of legitimacy of alternatives, mobilization of diverse resources, and network diversity. These were group-level indicators, vis à vis the use of aggregate data.

A paper authored by Lochner, Kawachi and Kennedy (1999) reviews the concept of social capital and related constructs, with the aim of providing a brief guide to their operationalization and measurement[18]. The authors conclude that despite differences in

[18] The authors focus on four constructs: collective efficacy, psychological sense of community, neighborhood cohesion, and community competence. They sustain that each of these constructs taps into slightly different, yet overlapping, aspects of social capital. The paper reviews several instruments used to measure each of these constructs and calls for further study into their use as measures of social capital.

the approach to measurement, and despite the lack of a single definition of social capital, there appears to be agreement that community characteristics ought to be distinguished from individual characteristics and measured at the community level.

The above review demonstrates several issues. First, because most comprehensive definitions of social capital are multidimensional, measures incorporate different levels and units of analysis. Second, few long-standing surveys were designed to measure social capital, leaving researchers to compile indexes from a range of approximate items, such as measures of trust in government, voting trends, memberships in civic organizations, hours spent volunteering (Knack, 1999). Third, somewhat conflicting and ambiguous understandings of the concept highlights the intrinsic difficulty of pursuing its measurement. Finally, with the exception of Sadursky's, Bullen and Onyx's, Narayan and Cassidy's, and to some extent Veenstra's, the validity of most measures has not been carefully assessed, nor the reliability of measurement instruments[19]. As Foley and Edwards' (1997) comment, in many cases available measures seem to have driven (and distorted) conceptualization rather than the other way around. What appears most prevalent among the reviewed studies is the use of certain indicators as measures of partial aspects of social capital. This places an important limitation both in assessing the content validity of the instruments, and in providing construct validity evidence. Woolcock and Narayan (2000) warn against the mounting pressure to provide simple measures, indicating that "there is a danger that expectations will exceed capacity and that hastily assembled, poorly conceived measures will jeopardize the agenda they

[19] A recently published article reviewing measures of social capital confirms these appreciations (Harpham, et al., 2002).

purport to serve." They argue that one way of reaching a balance "between quality and quantity measures is to un-bundle social capital into its dimensions and to generate new data sets that are comparable..." In summary, this review of social capital measures shows that there is still a clear need for further development of valid tools to measure social capital.

2.5. Cross-cultural validity

Krishna and Shrader (1999) raise a key point related to the measurement of social capital. They ask if a measure of social capital can be found that is universally valid across countries and cultural contexts. This in fact relates both to the cross-cultural validity of the concept and to the cultural appropriateness of measurement tools. They argue that to retain social capital as a useful concept, we need to empirically test whether social capital is a universally measurable phenomenon, or whether we have to restrain its usage and make comparisons only among social units that are culturally not too dissimilar. Interestingly enough, this is an issue that has not received much attention in the literature on social capital. The above review of the literature however demonstrates that it is a concept that has been used at different societal levels within an array of settings that extends from highly industrialized to non-industrialized societies. Similarly, attempts to develop measures have also extended across this wide range. As a sample of this range we find Putnam's studies in Italy (Helliwell & Putnam, 2000) and the United States (Putnam, 2000), Bullen and Onyx's in Australia (1998), Veenstra's in Canada (2000), Rose's in Russia (2000a), Narayan and Pritchett's in Tanzania (2000), Sudarsky's in

Colombia (1999), Krishna and Shrader's in rural India and Panama (1999). Thus, there are two related issues at stake, one, the universal applicability of the concept, and second, the relevancy of common or diverse measures.

As a general statement it can be argued that it is more scientifically sound to commence the study of social capital within the context of the communities for which the concept will be hypothesized as health determinant. Thus, for our study, a unique conceptualization of social capital for First Nations communities would emerge that is simultaneously relevant to conceptual developments that evolved from the study of other societies. This assumes a level of universality of the concept of social capital, i.e., that we can observe degrees of social capital in any community. Nonetheless, it also requires the consideration of culturally specific elements to capture the meaning of social capital in these particular communities. Finally, in relation to measurement tools, they are by necessity culturally bound. This is so because to tap into any aspect of the construct, a necessary condition is that items be relevant to respondents and that the terminology used be culturally appropriate.

2.6. Study goals and questions

The above review suggests that there is increasing evidence of social environmental factors affecting population health. There are a variety of possible ecological level descriptors of social environmental factors that have been hypothesized as determinants of health or as pathway intermediaries. Social capital is one of these descriptors. It is an

elusive concept that, particularly in social epidemiological studies, appears to have been used with scarce theoretical examination. However, it is a promising concept for First Nations communities, where other socioeconomic factors, both individual and ecological level, appear to have limited explanatory value. To conceptually formulate and seek empirical evidence of social capital as health determinant in First Nations communities, the development of a conceptual framework and of valid measures for aboriginal communities is first required. Consequently, this dissertation has two main objectives.

Main objectives

1. To formulate a conceptual framework of social capital for First Nations communities.
2. To develop an instrument, culturally appropriate to First Nations communities, for the measurement of social capital.

Specific objectives

1. Identify the dimensions and components of the concept of social capital in a conceptual framework for First Nations communities.
2. Develop culturally appropriate items that capture the identified dimensions within the concept of social capital.
3. Conduct pilot testing of the developed instrument to measure social capital in First Nations communities.
4. Conduct psychometric analyses of the social capital instrument and revise accordingly.

Research questions

1. What are the dimensions of social capital in First Nations communities?
2. What are the estimates of the psychometric properties of an instrument developed to measure social capital in First Nations communities?

CHAPTER 3

Methods

The Methods chapter is organized in three sections. It first provides a brief discussion on the issue of construct development and measurement. Subsequently, it details separately the methodology of each of the two phases of the study.

3.1. Epistemological considerations

From a methodological perspective the goals of this study require a few epistemological clarifications. As will be discussed in Chapter 4, there is no such "thing" as social capital. The term social capital simply stands for a concept. Nunnally & Bernstein (1994, p. 104) indicate that "treating a term as if it denotes a real entity or process is called 'reification' and has caused many problems in science." Paraphrasing these authors, there should be no expectation of speaking of social capital as if it were a 'real' variable to be discovered[20] empirically. Words "that scientists use to denote constructs have no real counterparts in the world of observables; they are only heuristic devices for exploring observables." (Nunnally et al., 1994, p. 106). As Max Weber explained, the use of abstractions (ideal types) are simply useful fictions that help us understand the more complex, messy, impure realities (Coser, 1977)[21]. A major objection to this line of thinking is that if there is no such "thing" as social capital, it would then be a mere

[20] Which is different from empirically verifying a construct.
[21] According to Gerth and Mills (Weber, 1958) Weber's term "ideal type" was intended to bring to the awareness of social scientists that there was a "choice of using logically controlled and unambiguous conceptions, which are thus more removed from historical reality, or of using less precise concepts, which are more closely geared to the empirical world."

cognitive construction of the researcher, and consequently not feasible of empirical verification (nor meaningful to do so). The point we are trying to make is not that there is no reality to which social capital refers to, but that we should not confuse "the construction of certain elements of reality into a logically precise conception" (Weber, 1958) with reality itself. Contrary to the objection, this understanding precisely underscores the importance of pursuing empirical verifications of the construct.

Complementary, in terms of the measurement of constructs, Nunnally & Bernstein (1994, p. 106) state that "one can never prove that any set of measurement methods precisely fits a construct name in a strict sense." Nonetheless, there are forms of verification that satisfy major requisite properties. In the case of our study, social capital should be hypothesized with a set of related observables. Then, the internal structure of these observables can be verified, seeking to determine if all variables tend to measure a single construct, or two or more constructs, or there is nothing in common, i.e., possess no structure. In words of Messick (1980),

> "Construct validation is a process of marshaling evidence to support the inference that an observed response consistency has a particular meaning. Gauging the degree of consistency in correlation patterns and factor structures is one of the several ways of assessing the empirical relationships. The understanding of construct validation as a continuous, never-ending process developing an ever-expanding mosaic of research evidence, implies that at any point new evidence may dictate a change in construct, theory, or measurement."

Nunnally & Bernstein (1994, p. 311) describe the process of construct validation as simultaneously testing the theory that it tests and the measure, "a difficult process of

bootstrapping." They state that among the properties of the measure is "the ability to translate the deductions of the theory into meaningful correlates," and that the more properties the construct possesses, the more broadly it can be measured. Schuller and colleagues (2000, p. 26) deftly argue that "social capital is a prime example of the possible use of inappropriate techno-methodologies", where "social scientists deploy techniques that the quality or quantity of the data available cannot sustain...this applies particularly to quantitative exercises that build towers of elaborate statistics on shaky foundations." Schuller and colleagues (2000) also make the "plea for an appropriate mixture of quantitative and qualitative approaches" suggesting "that the value of social capital as a concept is not best served by pinning it tightly to the latest quantitative modeling techniques." Their assessment is that "we are at a stage in the development of the term where on balance more work needs to be done on the *validity* of the measures to be used than on putatively precise analysis. Both are necessary, but we stress the question of balance and self-awareness." (Schuller et al., 2000).

The present study inserts itself in the process of ongoing construct validation of social capital. Simultaneously, the measurement of social capital presents specific methodological challenges. According to Schuller and colleagues (2000, pp. 26-31) some of these are: appropriate techno-methodologies; temporal issues; aggregation; circularity. After presenting the conceptual framework of social capital for the present inquiry, these challenges will be addressed in the first section of Chapter 5.

Before continuing with the research methodology, one issue of particular implications needs to be mentioned, First Nations organizations and communities' involvement in the study. MacGillivray and Walker (2000) offer a statement with which this study is in full agreement, that "there are no robust practical ways of assessing social capital behind peoples' back." In accordance with this, and as will be seen in the next sections, both phases of the study were conducted in real partnership with First Nations' organizational and/or community representatives. The adjective "real" refers to participation in the making of key decisions about the study versus a "false" partnership that would imply "you participate, we decide." First Nations' involvement in the study commenced with the decision to pursue the study of social capital as a potential determinant of health, it continued through a variety of means during the entire process, and is current in relation to decisions to be made on how and for what to use the results of the study.

3.2. Phase one of the study

The first phase of the study consisted of a concept analysis of social capital and then used ethnographic methodology with two aims, to contribute to the development of the conceptual framework specific to First Nations communities, and to generate an initial list of instrument items.

3.2.1. Concept Analysis

An extensive and in-depth review of the literature on social capital was first completed. Both main and secondary authors were examined, common and distinct formulations of the concept were analyzed, concluding with a trajectory of the ideas embedded in the authors' thinking of social capital. Related concepts were compared to determine commonalities and distinctions with social capital. Finally, the concept analysis exposed the dimensions of social capital, and enabled the initial formulation of a conceptual framework. This formulation was anchored to the more developed theoretical frameworks offered by several thinkers.

3.2.2. Ethnographic Study

The research protocol was first approved by the Health Information and Research Committee (HIR) of the Assembly of Manitoba Chiefs, after which it received approval from the Health Research Ethics Board (Bannatyne Campus) of the University of Manitoba. Once this approval process was completed, the HIR Committee extended an invitation to all First Nations communities in Manitoba to participate in the study. A summary of the research proposal was sent to Band officials. Seven communities volunteered to participate, of which three were chosen by majority vote of the HIR Committee: Community A, Community B, Community C. The decision was based on research criteria and best judgment of committee members. The three communities conformed to the expectation of having differential criteria of size, geographic regions,

economic development and cultural representation.[22] A contact person was chosen by each community to help with the initial steps. Research assistant job descriptions were written by the main researcher and a HIR staff person, and were sent out to each community. Based on the job descriptions, within a period of two months each community had hired a research assistant. In January 2001, a two-day planning and training workshop was held with the community research assistants, community contact persons, a HIR Committee representative, and the main researcher. Fieldwork in the three communities took place between February and April, for an average of three weeks in each community. Primary data collection techniques involved a combination of in-depth interviews, informal focus groups, participant observation[23], unobtrusive observations, and to some extent the review of written documents. The selection of key individual and group informants, of areas for participant observation and selection of written documentation was done in partnership between the community research assistant and the main researcher. Selecting interviewees was done through key contacts and through "snowball" techniques. Criteria to ensure saturation across relevant cultural, political, economic, age and gender categories were followed. The total number of interviewees, counting both individual interviewees and focus group participants, reached 89 for the three communities, with 49 females and 40 males and an age range of 19 the youngest

[22] One of the communities is an Ojibway/Dakota community, located close to a small city. This community was signatory of Treaty 1 in 1871, together with several other Ojibway and Cree bands of south central Manitoba. The current on-reserve population is 1,602 with an estimated number of 1,163 band members living off-reserve. The other First Nation is a Cree community located approximately 500 kilometres from the closest city, and is accessible overland by rail that passes at some distance from the community. It has a public-use airport. After freeze-up, a winter road is plowed across lake surfaces and over land portages leading to a small city. This community is considered an isolated community. In 1908 it adhered to Treaty 5. Its on-reserve population is 1,891, and off-reserve 761. The third First Nation is a Cree community located towards the centre of the province of Manitoba. Signatory of Treaty 5 in 1875, the current on-reserve population is 4,065, and has an off-reserve population of 1,455. It is considered a semi-isolated community, and is connected via highway with major cities, and has a public-use airport.

[23] This includes numerous informal conversations with community members that were not tabulated as interviews.

and slightly over 80 the oldest. The breakdown by community, age category[24] and sex was the following.

	Sex		Age Category				Total by Community
	F	M	18-29	30-44	45-59	>60	
Community A	22	18	7	11	10	12	40
Community B	11	12	3	8	7	5	23
Community C	16	10	3	11	8	4	26
Total	49	40	13	30	25	21	**89**

Interviews and informal focus groups involved broad and specific questions, mostly open ended, and were held in a conversational style. They focused on a wide variety of aspects of community life. Some questions were common to most of the interviews, and some were specific to interviewees' direct experience (see Appendix 3-I). Some interviews required language interpretation, which was provided by the community research assistant. Interviews and meetings were audio taped, although recording was conditional to issues of comfort and trust. Three quarters of the interviews were audio taped. All tapes were transcribed verbatim. For the remaining quarter, notes were taken during the interview and transcribed to a word processor the same day to facilitate the recall of information that may not have been captured in initial notes. The main researcher kept a field note diary that incorporated participant observation information. Written documentation was reviewed during fieldwork, and when possible, copies of the material were obtained for later examination (for documents list see Appendix 3-II).

[24] Age categories of community members interviewed in groups are estimates.

As much as possible the analysis of the data was started during the time of the fieldwork, to improve, as part of an iterative process, the data collection effort. However, the more refined analysis was done after the fieldwork was completed. Themes, terms and phrases were compared and integrated with the initial conceptual framework. The researcher used the guiding of the preliminary framework, product of the concept analysis, to suggest several categories that could serve to initially code the data. The analysis identified major themes/domains from observations, notes and transcriptions through the coding system that ranked for logical relevance to the framework. As evidence emerged from the analysis, framework modifications were made. Inductive processes guided the adjustment and refinement of the framework, resulting in its operationalization for measurement. The analysis was completed when the critical categories were defined, the relationships among them were established, and integrated into a grounded framework. A narrative was then created that sought to describe the attributes of social capital dimensions, components and descriptors as exemplified by the communities in the study. This narrative is a main section of Chapter 4. Simultaneously, words and phrases for each of the identified themes were generated from the data for use in questionnaire item generation.

Several aspects of the study process helped to ensure a good level of trustworthiness of results. The entire study was conducted in true partnership, where key decisions concerning staffing, recruitment and conduct of field interviews were ultimately in the hands of the HIR committee and each participant community. This fact, added to the central involvement in the study of community research assistants, was key in developing

rapport, building relationships, and obtaining a wide scope of data. This also enabled a form of persistent observation increasing the accuracy of data and minimizing the possibility of deceits. Triangulation methods were used to verify data[25]. Finally, continuous formal and informal checking of data with stakeholders and community research assistants was conducted, to check categories, interpretations and conclusions.

3.2.3. Questionnaire development

The first step was to generate an item pool. The ethnographic study, supplemented by the review of questionnaires from other studies (see Appendix 3-III for list of questionnaires that were consulted), provided an initial list of items for each of the framework's cells. The development and selection of items was based on multiple subscales (based on themes) identified from the ethnographic study. Purposely, there was a degree of redundancy of items, as well as a larger number of items than was expected to be included in the final scale. Simultaneously to the generation of items, the format of measurement was chosen. The general criterion was to develop a scale made up of items that would be scorable on some continuum and that would be summed to form a scale score. Responses to questions/statements would be scored on a Likert scale. As well,

[25] These methods were of two types, information from one source (e.g., interviewee) was validated by at least one other source (e.g., a second interviewee), or information gathered by one method (e.g., interview) was validated by another method (e.g., observation). Because most of the information was gathered via individual interviews and focus groups, the former type of triangulation was the most frequently used. The criteria was the following: information that resulted in changes (or verification) to the framework had to come from at least three independent sources; information that resulted in questionnaire items had to come from at least two different sources; information that was used to create the narrative had to have been provided within the same community by at least two independent sources. This was the minimum criterion. With the exception of the narrative, decisions were usually made based on well exceeding the minimum criterion. Also, whenever possible, information collected via observations and written documentation was used to corroborate conclusions.

three other non-scorable options were included, "don't know", "prefer not to respond", and "not applicable." It was decided that the administration of the questionnaire be as straightforward as possible. Consequently, the structure would consist of a simply worded root question or statement followed by the scale of response options. The initial item pool, consisting of 214 items (including demographic and validation items), was then sent for review to two groups of experts: one group with methodological and content expertise and one with First Nations community expertise (community leaders, HIR committee, etc.). This review sought to determine how relevant, clear, concise and sensitive the items were. Special consideration was given to comments from First Nations reviewers in relation to cultural appropriateness of themes and wording. Ideas for new items were also part of the feedback. A total of 18 experts reviewed the initial item list, and all comments were carefully tabulated and assessed. After several drafts the scale was pre-tested administering it to nine community members of different genders, educational levels and ages, to further assess clarity, reading difficulty, administration time, and cultural appropriateness. More changes were made, finalizing after a total of seven drafts. An item by item final review of the questionnaire was done at the second training and planning workshop with the participation of six community surveyors, one community contact person, one HIR Committee representative, and the main researcher. The final version of the questionnaire was then completed. It included 137 items, with the following breakdown: 18 demographic, two validation, 45 bonding, 36 bridging, and 36 linkage items. In order to avoid confounding due to individual differences in willingness to respond positively, 24 questions were presented with reverse keying (8 Bonding, 9 Bridging, 7 Linkage). The resulting product was a summated rating-scale questionnaire

(DeVellis, 1991; Spector, 1992) to be administered to adult members in each community. The development of the questionnaire sought to reduce measurement error by writing items clearly, by making it simple to administer, and by providing straightforward instructions for interviewers and interviewees.

3.3. Phase two of the study

The second phase of the study piloted the questionnaire and conducted psychometric analyses, resulting in a final version of the instrument and initial construct validity evidence.

3.3.1. Pilot survey

The pilot survey process commenced at the end of August 2001 and was completed on January 31, 2002. The main objective was to administer the survey instrument to a developmental sample, consisting of community members of three First Nations with contrasting reputations (high, medium, low) for social capital.[26] The communities involved were the same three that participated in phase one of the study. Consequently, sampling of pilot testing participants was done from each of these three communities. Only adult members were eligible for participation. Administration sought to replicate procedures followed by the First Nations Longitudinal Health Survey (community members were hired and trained to administer the pilot questionnaire). Based on

[26] This statement merits some clarification. This assessment was determined using indicators developed in consultation with the HIR Committee and from information gained from the ethnographic study. A detailed explanation is provided in Chapter 5.

recommendations from the literature[27] the total desired sample for this study was calculated to be between 300 and 400 subjects in total (approximately 100 from each community, although the actual numbers depended on the population size of each community). This calculated sample size was determined to provide 80% power to detect medium sized effects (Cohen, 1988), i.e., differences in observed community mean scores neither in the high nor low ends[28]. However, a somewhat higher sample target of 600 was chosen. There was also the expectation of conducting a re-test within a month interval of the first administration for some individuals. As will later be explained, an adequate sample size was not achieved to conduct instrument stability analyses.

The study hired community surveyors, initially two from each community. A three-day planning and training workshop was held late August, 2001. These sessions consisted of a last item by item review of the questionnaire on the first day, with two goals, to familiarize surveyors with the instrument and to receive further feedback. Insightful comments were made which led to last revisions. The next two days dealt with sampling procedures, ethical guidelines, and practice of survey administration. For different reasons, over the course of the survey there was some turnover of surveyors in two of the

[27] According to Nunnally and Bernstein (1994, p. 228) "classical measurement theory is mainly a large-sample theory which assumes that a sufficient number of persons are studied to minimize sampling error from subjects." They suggest at least 300 people in order to eliminate subject variance through factor analysis. On a less conservative note, Spector (1992, p.29) indicates that "item analysis requires a sample size of about 100 to 200 respondents". Nunnally and Bernstein (1994, p. 333) also indicate that because "the opportunities to take advantage of chance are related positively to the number of variables and negatively to the number of persons...that there be at least twice as many subjects as items and that at least 200 subjects be used to construct a test designed for long-term use to minimize the role of chance." The final sample/item ratio for the study was 462/137, more than three to one (in actual fact the ratio is even much higher because analyses were conducted by dimension).

[28] In this case, the operational definition of a medium effect size is "a standard deviation of two or more population means one-quarter as large as the standard deviation of the observations within the populations." (Cohen, 1988, p. 286).

three communities. In Community A one replacement was made. In Community C, three new surveyors had to be hired. New surveyors were trained individually upon hiring.

Two different sample frames were used. For Community C and Community B, band lists were numbered for those individuals aged 18 or over (photocopy of band list was obtained, but did not leave either community). A computer randomizer, Research Randomizer, was utilized to generate the frame. Due to a significant mismatch for Community A between band list numbers and population numbers provided by Indian and Northern Affairs Canada (INAC), the former was not deemed reliable enough to use for developing the sample frame, and a different strategy was chosen. A map of the community detailing every house was obtained and numbered, totaling 221 housing units. The sample plan was to target each household and obtain one interview from each. However, field difficulties (particularly not being able to contact people after repeated attempts) required the use of convenience sampling to achieve the required sample numbers. 55% of Community B interviewees, 70% of Community A interviewees and 65% of Community C interviewees were from the sample frames. All surveys were administered face to face, with the surveyor reading the questions. In cases where the interviewee preferred to read the questions by themselves, this was permitted, but with the surveyor next to the interviewee overseeing the process and helping to clarify any doubts that arose. Prior to the administration of the questionnaire, research ethics issues were properly discussed and a consent form was signed (see Appendix 3-IV), which was then separated from the body of the questionnaire and sealed in a separate envelope that was signed over the flap by both the surveyor and the interviewee. Given the length of

the questionnaire (each survey required between 45 minutes and one hour for administration), an incentive was offered to respondents. They would be entered for a draw prize, with the approximate odds of 1 in 20 of winning a prize (see Appendix 3-V for prize lists). Supplementary to this incentive, the survey was advertised in each of the three communities through radio, postings, brochures and community newspaper ads (see Appendix 3-VI for sample brochure). The combination of the draw prize incentive and the promotion campaign appeared to play a role in the relatively good response rate. Based on surveyor logs, the following were the estimated response rates for each community: Community A 90%, Community B 65%, and Community C 70%. Interviewees were initially contacted essentially using three means, telephone, dropping by the interviewees house, or meeting her or him in public places and inviting her or him to participate. Telephone contact was the preferred method, but involved the difficulty that interview appointments set by this means were many times not respected by the interviewee. Answered questionnaires and sealed consent form envelopes were couriered approximately every two weeks to the offices of the Centre for Aboriginal Health Research (CAHR) at the University of Manitoba, where survey data was input into an Access database. A quality assurance process was initiated early on. After every batch of surveys was received at the offices of the CAHR, they were reviewed one by one to determine possible difficulties, flaws, incomplete data, etc. A detailed log was done of this review. Signed consent forms were kept separate and filed in a secure office. An Excel file linking questionnaire unique numbers and interviewee name was created and password protected (this information was necessary to identify draw prize winners). Only the main researcher and one administrative office staff person had knowledge of the

password. After its start in early September, the progress of the survey became somewhat irregular for Community B and Community C. Community C had a very slow start, which required the hiring of new surveyors, which significantly improved the situation. Community B started well but fell into a slump towards the end of November, from which it did not properly recover. The expectation was that Community B would be able to pick up the pace in January, but Band election campaigns had a negative impact during this final month of the survey. Community A performed consistently well, and was the only community where re-tests were conducted. However, survey fatigue in this community, added to the difficulties in the other two communities, did not allow for an adequate re-test sample. Only 18 individuals were re-tested and not within the time span required (four weeks). January 31, 2002, was the last official date of the survey. Prizes were drawn during the month of March at the CAHR offices after all sample data had been verified. Community surveyors had the task of distributing the prizes.

3.3.2. Sample Characteristics by Community

The final tally of answered questionnaires was exactly 500. However, 18 of these were re-tests. As well, based on the careful review of answered questionnaires, 20 surveys were not deemed to meet quality criteria of completeness and trustworthiness. Consequently, an overall sample of 462 respondents was achieved, with the following breakdown by community: Community A 204, Community B 135, Community C 123. The population percentages of these samples (population aged 18 and over) were the following: Community A 23%, Community B 6%, and Community C 13%.

Before proceeding to the results chapter, this section will describe the characteristics of the community samples based on demographic data collected through each questionnaire, helping to assess how representative samples were of each community. Table 2 compares respondents' age categories and sex percentages with those of population data percentages as provided by statistics from INAC (Indian and Northern Affairs Canada, 2000). This table is central in assessing how representative of each community the study sample was. Community C's sample was 0.80 of the males in age group 18-29 that it should have and only 0.20 of those aged 45-59, whereas it has 40% more males 30-44 than needed. Males 60 and older presented almost identical proportions. In this community, female numbers were closer between sample and population. There was a slight over-sampling in the two younger age categories, and a slight under-sampling in the two older categories, with no proportion exceeding 0.20. Chi-square tests did not indicate any statistically significant differences. Community B appeared to be the most problematic of the three communities in terms of sample and population differences, with a particular bias towards more female respondents. The overall male population was 51%, but only 32.6% of the sample is male. Conversely, 67.4% of the sample was female whereas 49% of the population was female. The difference in proportions was statistically significant. The largest gap was for females aged 30-44, where the sample had 80% more respondents than required (within females there was a statistically significant difference between age categories for this community). Male age groups samples varied from half of the numbers required for the eldest age group, to one third of the numbers required for the 18-29 age category. Overall male/female proportions for Community A were quite well balanced, despite a somewhat large female and smaller

male sample than required (not statistically significant). The youngest age category presented 1/4 less males and 1/4 more females than needed (within females this was statistically significant). In summary, the most serious disproportions were seen with the less than adequate sample of older male age group in Community C, and the over-representation of females in Community B in age group 30-44, generally indicating for all three communities a bias toward female respondents. Age wise, there was some over-sampling of middle-aged age categories, and under-sampling of youngest and oldest age groups.

Table 3 summarizes other sample characteristics. The lack of recent reliable population statistics for each community limits a similar comparison as in Table 2 for other demographic characteristics. More than half of Community B and Community A respondents were married or in common law relationships, whereas almost 60% of Community C respondents were either single or separated/divorced/widowed. In education, Community C also stands out with 50% of respondents not having graduated from high school, compared to almost 40% in Community B and 33% in Community A. This latter community had the highest percentage (43) of respondents that attended some college/university education. In terms of employment, 26% of respondents from Community C were gainfully employed at the time of the survey, compared to 51.1% in Community B and 48.0% in Community A. As well, almost half of Community C respondents were on social assistance compared to 36% in Community B and 27% in Community A. In terms of knowledge of First Nations language, both Community C and Community B respondents were more frequently fluent in speaking and understanding

than Community A respondents. Income bracket information was not very reliable given that approximately 50% of study participants from Community C and Community B, and 30% from Community A, preferred not to respond to this question. Of those that provided income information, the most important distinction was that Community B and Community A had more than double the percentage of respondents in the middle income bracket than Community C.

One concern, related to sample representation, was already identified with the description of sample characteristics and comparisons with population characteristics. Of the three communities that participated in the study, Community B's sample provided the least confidence in relation to how well it might represent the community population. Although not entirely questionable, the main concern for bias was in relation to the male/female ratio, where female respondents would be carrying more weight than would be appropriate.

3.3.3. Data preparation

Questionnaire data were input to an Access database developed for the study. Data input quality was assessed by comparing paper copy data with screen data for every ten questionnaires. No particular data input concerns were identified. The data file was then exported to the statistical software SPSS, where initial data analyses were performed to further identify possible data errors, as well as missing data. Minor errors that were encountered were corrected, and missing data resulting from input error were completed

verifying original questionnaires. A problem was detected with responses to item 21, a question that included two mutually exclusive statement options. Almost 30% of interviewees had answered both statements, making the item un-interpretable. Consequently, the decision was made to exclude this variable from the study, leaving the total number of variables at 136. A series of variables were recoded to collapse categories (e.g., age, education), and all variables (except for those with reverse scoring) were reversed to make results more intuitive by suggesting higher scores as higher levels of social capital. For psychometric analyses, further recoding and the creation of new variables combining existing data were done as required, which is reported in Chapter 5.

3.3.4. Psychometric Analyses

The first step was to examine the percentages of non-responses and "don't know" answers, comparing across communities and scales. Content of individual items were examined to seek to understand possible determinants of high rates. Dummy variables were created for scored responses as one group and "don't know" responses as another, for the purposes of cross-tabulating between items and communities, and to determine via Chi Square tests if there were statistically significant differences between communities. Similar tests were done comparing interviewers to assess possible interviewer bias of "don't know" responses. Finally, logistic regression analyses were run with the highest contrasting dummy variable of each dimension as dependent variable and demographic variables as explanatory, to assess if characteristics of respondents may have accounted for the variances in "don't know" rates.

All analyses were performed separately for each dimension, given the assumption that the dimensions formulated in the conceptual model need not correlate (e.g., a community can have high bonding social capital, but low bridging and linkage social capital). SPSS was the software used to perform all statistical analyses.

The first goal of the psychometric analyses was to find those items that formed an internally consistent scale and to eliminate those items that did not. Internal consistency item analyses were done by subscale. Items with very low item-total scale (subscale) reliability (0.20) were discarded, subject to further evidence from factor analysis findings. As Nunnally and Bernstein (1994, p. 255) indicate, the idea behind internal consistency is that "a test should 'hang together' in that the items should correlate highly with one another...Otherwise, it makes little sense to add scores over items and speak of the total score as measuring any attribute." At the same time, these authors argue that "increasing reliabilities much beyond 0.80 in basic research is often wasteful of time and money." The expectation was that scales that comprised the instrument should evidence a relatively high degree of internal consistency (Cronbach's Alpha coefficients >0.75). To supplement the evidence on which to base the decision of discarding items, initial factor analyses (Principal Component Analysis – Oblique Rotation) by dimension and including all variables were performed. The second goal of the analyses was to assess the discriminatory power between communities of the scale items and to discard those that did not perform well. 0.20 was chosen as the F-ratios' significance level deemed the cut-off point to reject an item. Those items that did not discriminate between communities were subject to a further test to determine if their mean scores could be masking a

difference in score distributions between communities, thus implying that they were tapping into differences. Chi Square tests were performed with these items, and those that did show statistically significant differences would not be considered appropriate to discard. For the third goal, assessment of the test-retest stability of the instrument, Kappa statistics were performed. These three objectives were of particular relevance to the development of the scale. The following three goals, although also part of the scale development procedures, focused on testing the conceptual construct.

The fourth goal was to provide evidence of construct validity of the instrument, with the expectation that mean scores would correspond to the hypothesized ranking of differences between communities. Mean rank orders between communities were assessed by sub-scale and scale. Percentages of correspondence with hypothesized rank orders were computed. The next series of analyses consisted of factor analyses to examine whether empirical support could be found that would justify the multi-component conceptualization of each dimension of social capital. Despite this fifth analysis goal being mostly confirmatory in nature, the decision was to use exploratory factor analysis methods of factor extraction and rotation (Principal Component Analysis – Oblique rotation/Direct Oblimin). This decision was made following the advice of several authors. Nunnally and Bernstein (1994, p. 535) suggest that one consider whether the theory is well developed enough to profit from a confirmatory approach, and state that "exploratory factor analysis can be used to test theories." DeVellis (1991, p. 108) adds that a scale developer can have in mind which items should group together without explicitly programming this information into the analysis (i.e., without using formally

confirmatory methods). "Factor analytically derived groupings can still be compared to these a priori item groupings, and this requires only the conventional (i.e., non-confirmatory) factor analytic methods...Furthermore, finding by means of conventional factoring methods that items group together as suspected should be even more reassuring to the investigator because the analysis has not been instructed to 'look for' a specific pattern. Instead, it has found the anticipated pattern on its own." For the sixth goal, to account for the variance in social capital combining all three communities (i.e., to examine to what extent individual's social capital scale score can be explained by demographic variables), stepwise multiple regression analyses with social capital overall mean scores and factor mean scores as outcome variables and demographic characteristics of respondents as explanatory variables, were performed. Mean score differences between communities were first calculated and analysis of variance performed to determine if there were statistically significant differences. Tukey's HSD was also performed as post-hoc test. To explore for sub-group differences within communities (analysis goal seven) multiple regression analyses were performed with each community analyzed separately, with social capital mean scores as outcome variable and demographic characteristics of respondents as explanatory variables. Initial interpretations of these findings were provided, together with the final version of the questionnaire.

CHAPTER 4

Conceptual Framework and Ethnographic Study

This chapter constitutes the results section for Phase 1 of the study, i.e., the concept analysis and the development of the conceptual framework that incorporates findings from the ethnographic study. It presents the conceptual structure on which the instrument was developed. It addresses the first main objective of the study.

4.1. Concept Analysis

The intent of the concept analysis is to compare the differing notions of social capital and find their common grounds, to formulate a temporary construct of social capital and its dimensions, and to critically compare and differentiate between like concepts (social networks, social cohesion, social support).

4.1.1. Concept analysis of social capital

This sub-section, after inquiring into the definitions of social capital, seeks to formulate a basis for the construct of social capital.

4.1.1.1. What is social capital?

It is evident from the literature review (Chapter 2) that there is no simple answer to the question of what social capital is. In truth, no one can claim to use the "real" definition of social capital. The term social capital stands for a concept, not a thing. Consequently social capital, being an abstract, cannot have a prototype in the way of a term like "car". For ordinary use, we agree on prototypical meanings for the word "car", and the disagreement will reside on the margins (e.g., When does a car become a truck? Is a minivan a car? Etc.). However, terms standing for concepts can mean whatever anyone says they mean. The crux of this concept analysis is to establish, based on the trajectory of the term, the "prototypical" use of the expression social capital in social sciences and its dimensions, within the constraints presented by an abstract concept. The expectation is to present an internally logical construct of social capital with clearly identifiable dimensions, which will agree to varying degrees to that of other authors.

The definitions of social capital presented in the literature review chapter (Table 1) are a starting point in this endeavor. Most authors define social capital by identifying elements or features of the concept, and/or by identifying its functions. Table 4 presents a breakdown of the different definitions by what authors state social capital is, by elements of social capital they identify and by the functions they ascribe to it.

With the exception of Portes, there is a common thread among these authors that social capital can be considered a property of the social environment; it is an aspect, a glue, a

feature, an aggregate of resources, infrastructure, relations embedded in it, etc. Portes' distinct approach is expressed by his notion that the concept of social capital has been stretched in questionable ways, becoming a "property of groups and even nations, rather than individuals." (Portes et al., 1996).

The elements of social capital identified by the reviewed authors can be grouped in order of frequency in five categories: social relationships, networks, social norms and values, trust, and resources. If the categories social relationships and networks are grouped together in one category (which is sensible given their similarity in meaning), this is the element that appears common to all definitions (with the exception of Midgley's which does not clearly identify elements of social capital) (Midgley & Livermore, 1998).

Most definitions identify some form of function for social capital. A review of the definitions (Lin, 2001) reveals a wide range of functions of social capital, from facilitating the actions of individuals to holding societies together. Based solely on the definitions, it is difficult to find a common denominator among the different authors as to the major functions of social capital. As well, the definitions offer only vague statements about these functions. In summary, an analysis of the definitions provides the following conclusions to what social capital **is**. To the point that it is a property of the social environment, it takes the format of a relational resource. It is a resource composed of a variety of elements, most notably social networks, social norms and values, trust, and shared resources. Its function(s) appear(s) related to the enabling of some societal good within the boundary of that specific societal level.

It is apparent from the above that a mere definitional analysis is not enough to address the question of what social capital is. A provisional conceptual formulation of social capital will be presented for the purpose of further analyzing the concept.[29]

4.1.1.2. The construct of social capital

The literature review demonstrated a variety of earlier ideas present in the current formulations of social capital. The main ones appear to have been brought together from the need to examine society with the combined lenses of the disciplines of sociological and economical thinking. Chapter 2 discussed this issue under the guise of the "arena" of social capital. It posed the idea that Putnam's scope is too narrow because it is grounded in the concept of a civil society that does not clearly encompass economic and political forces[30], consequently sidestepping the valuable notion introduced by Granovetter (1985) of economic action as inherently enmeshed in social relations of one configuration or another. However, the literature review favoured Putnam's understanding of social capital as a feature of social organizations, vis à vis Portes' argument. This debate was presented under the banner of "societal levels" of social capital, which inserts the key distinction between understanding the concept as an attribute of individuals or as property of social groups. A number of authors have formulated distinct but complementary conceptual understandings of social capital along those lines. This sub-section will seek

[29] We do so in accordance with Mondak's (1998) assertion that "We face the risk that the meaning of social capital will become muddled, and I agree with the criticism that some discussions of social capital have mixed together multiple concepts. But the solution to these problems is for individual analysts to be as precise as possible in their use of language, not for others to rule some viewpoints to be off limits. We are too early in the game for some paths of inquiry to be excluded from our sights."
[30] This narrow notion of social capital is the one that has been used up to date in most population health empirical inquiries.

to reassemble these formulations in a logical construct of social capital that will further the concept analysis and provide the framework from which to re-tailor the construct based on information from the ethnographic study.

Of the main formulators of social capital, Bourdieu is the author that best characterizes the concept with a clear integration of sociological and economical thinking. His postulation of social capital as "the aggregate of the actual or potential resources within a social structure" includes the economy of a society. It extends the arena of a civil society merely located between the state and the market, to one economically embedded, and his equation of capital to power (Bourdieu, 1983, p. 243) incorporates the consideration of the political.

A slightly modified version of the definition presented by Bourdieu (1983, p. 248) offers a solid structure for further analysis. *Social capital is the aggregate of the actual or potential resources within a social structure linked to the possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition, which provides each of its members with the backing of the collectivity-owned capital, a "credential" which entitles them to credit, in the various senses of the word.* This definition has the following characteristics: i) Social capital can explicitly be considered an aggregate feature, and in that sense can aid in the characterization of a social system. ii) The definition relates to actual or potential resources within a social structure that collectively backs each of its members. iii) Social capital is linked to the possession of a durable network of relationships of mutual acquaintance and recognition. This third aspect can be further deconstructed into trust and association. iv) This notion

of social capital can incorporate a multi-dimensional model of social capital. We will examine each of these characteristics separately.

i) Social capital can explicitly be considered an aggregate feature, and in that sense can aid in the characterization of a social system.

There are two related issues to consider, first, the use of social capital as a feature of communities and nations. Second, the societal level of which social capital is a feature.

Portes, the leading author who is critical of considering social capital as a feature of communities, believes however that "there is nothing intrinsically wrong with redefining it as a structural property of large aggregates." (Portes, 1998) He does, nonetheless, identify several logical cautions for this type of use of the concept: a) Separating the definition of the concept, theoretically and empirically, from its alleged effects; b) Establishing some controls for directionality so that the presence of social capital is demonstrably prior to the outcomes that it is expected to produce; c) Controlling for the presence of other factors that can account for both social capital and its alleged effects; d) Identifying the historical origins of community social capital in a systematic manner. These logical cautions are entirely pertinent for the formulation of a conceptual framework of social capital as health determinant in First Nations communities.

Bourdieu enables the simultaneous consideration of social capital as an individual attribute and as a feature of the social world. He first states that capital is accumulated

labour, that when appropriated on a exclusive basis by agents or groups of agents, "enables them to appropriate social energy…". In one sense, social capital can be "possessed by a given agent", but this possession is dependent on the size of the network of connections. These relationships, however, would be "socially instituted and guaranteed by the application of a common name (the name of a family, a class, or a tribe or of a school, a party, etc.)." It is in this latter meaning that social capital becomes a feature of a given group or society.

With the above formulation, the centrality of identifying the societal level of which social capital is a feature becomes apparent. Understanding social capital as a macro-sociological phenomenon, or a feature of a community sub-group, community, region or nation, implies that these societal levels can hold differing stocks of social capital. Given that social capital can exist at different levels, it may not have positive effects for all members of a community[31]. That is, social capital *within a single group* need not be positively related to social capital *at the community level.* While social capital within a particular group may be expected to have positive effects for the members *of that group*, this need not "spill over" into positive gains in social capital for the community. Not only can social capital within a single group potentially reduce social capital between groups, but high within-group social capital could have *negative* effects for members of the community as a whole (Paxton, 1999). Consistent with this formulation, the estimation of the degree of social capital should be anchored in the appropriate societal level of which

[31] Portes and Landolt (1996) highlight the fact that most theorists of the term consider social capital, almost by default, as a good, not recognizing several distinctly negative aspects. These authors categorize the negative aspects of social capital as follow: conspiracies against the public, restrictions on individual freedom and business initiative, downward leveling pressures.

it is a feature. Referring to that community level as a whole, communities with more social capital would be those characterized by having more potential or actual resources collectively backing *all* its members, more and/or more extended networks of mutual acquaintance and recognition, higher levels of trust and possibilities of association.

ii) The definition relates to actual or potential resources within a social structure that collectively backs each of its members.

Portes (1998) alerts us to the importance of distinguishing resources themselves from the ability to obtain them by virtue of membership in different social structures, because equating social capital with the resources acquired through it can easily lead to tautological statements. Bourdieu's definition makes clear that social capital is decomposable into two elements: first, the social relationship itself that allows individuals to claim access to resources possessed by their associates, and second, the amount and quality of those resources (Portes, 1998). The complementary nature of these two elements enables the understanding of social capital to be both of capital that is a social resource (collectively-owned) and of capital that consists of the social (networks). When defining social capital, Bourdieu talks of credit "in the various senses of the word", implying a broad spectrum of resources, financial among others. It is no accident, however, that social capital is composed of the economic term "capital." On the other hand, the sociological angle of Bourdieu's notion is made explicit in the linkage of the resources to a "network of more or less institutionalized relationships."

An important aspect of this notion of social capital is that it incorporates as inherent resources in its different guises (physical, symbolic, financial, human, natural, etc.). Nonetheless, as Flora and Flora specify (2000) "resources become capital only when they are invested… otherwise they are consumed or stored and do not create new resources."[32] A visit to Marx's formulation on capital helps to clarify this distinction. In *Das Kapital* (1977, pp. 247-57) Marx first distinguishes between the circuit commodity-money-commodity (C-M-C) and the circuit M-C-M. The former circuit starts with "one commodity and finishes with another, which falls out of circulation and into consumption" where "the satisfaction of wants, in one word, use-value, is its end and aim." The circuit M-C-M, on the other hand, "at first sight appears purposeless", tautological. Both extremes have the same economic form (money), therefore "are not qualitatively different use-values." Given that one sum of money is distinguishable from another only by its amount, the character of the process M-C-M is therefore not due to any qualitative difference between its extremes but solely to their quantitative difference. The circuit of capital thus takes the form of M-C-M*, where M* equals the original sum plus an increment (called "surplus-value"). "The value originally advanced…not only remains intact while in circulation, but adds to itself a surplus value or expands itself. It is this movement that converts it into capital." The social capital discourse requires this notion of surplus-value, otherwise it could simply be formulated as social resource or social asset. The key distinction is, as Ostrom (2000, p. 174) specifies, that "(A)ll forms of human-made capital are created by spending time and effort in transformation and transaction activities in order to build tools or assets today" that may bring future benefit.

[32] Or as Solow (2000) explains, "capital stands for a stock of produced or natural factors of production that can be expected to yield productive services for some time."

Bourdieu captures these ideas when stating that the "actual or potential resources" have and/or will be collectively invested via the networks, providing the credit for the members of the social structure. Flora (1999) furthers this understanding when he states that social capital [33]is enhanced when resources inside and outside the community can be readily accessed. "This includes a willingness on the part of those privileged to have resources to invest in community projects, a willingness of citizens to commit local taxes to community betterment, and the development of innovative mechanisms for channeling resources to community endeavors."[34]

iii) Social capital is linked to the possession of a durable network of relationships of mutual acquaintance and recognition. This third aspect can be further deconstructed into trust and association.

The network of relationships is both "capital" in itself and a means of making capital social. As Gottlieb (1981, p. 203) indicates for social networks in general, the network component of social capital can be broken down in a number of ways, based on formal sociological classifications (such as nuclear family, extended family, and peers), based on psychological dichotomies (such as intimate versus casual ties), or based on the settings

[33] Flora (1999) is actually talking about "entrepreneurial social infrastructure", a concept that in Flora's understanding overlaps with social capital.

[34] "So it has to be posited simultaneously that economic capital is at the root of all the other types of capital and that these transformed, disguised forms of economic capital, never entirely reducible to that definition, produce their most specific effects only to the extent that they conceal (not least from their possessors) the fact that economic capital is at their root, in other words –but only in the last analysis- at the root of their effects. The real logic of the functioning of capital, the conversions from one type to another, and the law of conservation which governs them cannot be understood unless two opposing but equally partial views are superseded: on the one hand, economicism, which, on the grounds that every type of capital is reducible in the last analysis to economic capital, ignores what make the specific efficacy of the other types of capital, and on the other hand, semiologism (nowadays represented by structuralism, symbolic interactionism, or ethnomethodology), which reduces social exchanges to phenomena of communication and ignores the brutal fact of universal reducibility to economics." (Bourdieu, 1983. pp. 252-3)

from which ties originate (such as neighbours, workmates, domestic relations, voluntary associations, and the community health, welfare and educational institutions). In addition, it can be analyzed in terms of such structural features as size, density, clustering, and dispersion. Paxton (1999) suggests two components for social capital that are related to the possession of a durable network. First, objective associations between individuals (there must be an objective network structure linking individuals). Second, a subjective type of tie (the ties between individuals must be of a particular type-reciprocal, trusting, and involving positive emotion). These two components, association and trust can be considered requirements for a durable network of relationships of mutual acquaintance and recognition. Further distinctions between trust in individuals and trust in institutions, and association with other individuals and association with other groups or institutions, may be pertinent.

Bourdieu's understanding of social capital does not consider the existence of a network of connections as a "natural given, or even a social given, constituted once and for all by an initial act of institution." The network of relationships is the product of investment strategies, individual or collective, consciously or unconsciously aimed at establishing or reproducing social relationships that are directly usable in the short or long term. The reproduction of social capital presupposes an unceasing effort of sociability, a continuous series of exchanges in which recognition is endlessly affirmed and reaffirmed. (Bourdieu, 1983). Networks are thus the mechanism through which trust is developed and legitimacy established. But networks and networking can serve to exclude as well as include, and to consolidate power as well as to share power. Similarly, Putnam and colleagues (1993)

argue that any society is characterized by networks of interpersonal communication and exchange, both formal and informal. Some of these networks are primarily "horizontal," bringing together agents of equivalent status and power. Others are primarily "vertical," linking unequal agents in asymmetric relations of hierarchy and dependence.

Following Flora (1999), networks can be considered most effective for the community as a whole when they are diverse, inclusive, flexible, horizontal (linking those of similar status), and vertical (linking those of different status, particularly local organizations or individuals with external organizations and institutions that have resources not available within the community). Bullen and Onyx (1999) offer an interesting simile, "(J)ust as confident children expand their social world to the local community, so too confident groups and communities expand their social world to the wider society at regional, state and national level." The ideas of bridging and linkage social capital extend the notion of mutual acquaintance and recognition to relationships between the community and other communities, the government or state, corporations, etc.

iv) This notion of social capital can incorporate a multi-dimensional model of social capital.

The above-mentioned considerations of horizontal and vertical relations open the requirement for a multi-dimensional notion of social capital. Narayan (1999) postulates two dimensions, bonding and bridging. As Woolcock (1999) indicates "different combinations of these dimensions might yield different outcomes." He exemplifies with

the suggestion that "while the poor may possess some forms of social capital, they may well be lacking in others, particularly those providing access to formal institutions." In words of Briggs (1998) "the poor typically have an abundance of 'bonding' social capital, which they leverage to 'get by'." The problem according to Woolcock and Narayan (2000) is that they are sorely lacking in 'bridging' social capital, which is needed to 'get ahead'. For example, without access to employment information networks, residents of inner city ghettoes find themselves trapped into low-wage jobs. In the recent literature there is increasing reference to these two distinct dimensions, 'bonding' and 'bridging' social capital (Gittell & Vidal, 1998; Narayan, 1999). Others have also stressed that social capital also has a vertical dimension (Fox, 1996; Heller, 1996) (for example if poverty is also a function of exclusion, a key task for development practitioners is ensuring that the activities of the poor not only 'reach out', but are also 'scaled up'). This vertical dimension has been called 'linkages'. According to Woolcock (1999) "the three basic dimensions of social capital –bonds, bridges, and linkages- are necessary for generating sustainable economic development." Bourdieu's understanding of social capital, decomposable in the components of 'social relationships itself that allow individuals to claim access to resources possessed by their associates', and the 'amount and quality of those resources', can be incorporated in each of the three dimensions. Before presenting the social capital framework, a distinction with related concepts is first pertinent.

4.1.2. Distinctions with related concepts

A major issue with the use of social capital in population health research has frequently been the lack of a clear distinction from related concepts, or of not identifying the areas where there may be overlaps. The following is a brief review of related but distinct terms: social cohesion, social support and social networks.

4.1.2.1. Social cohesion

The term most often found in conjunction with social capital is social cohesion. Wilkinson (1997), who has popularized the latter concept as a health determinant, acknowledges that "what social cohesion means and involves is far from clear." The following quote exemplifies Wilkinson's (1996, p. 4) use of the concept and it's link to that of social capital:

> "Looking at a number of different examples of healthy egalitarian societies, an important characteristic they all seem to share is their social cohesion. They have a strong community life. Instead of social life stopping outside the front door, public space remains a social space. The individualism and the values of the market are restrained by a social morality. People are more likely to be involved in social and voluntary activities outside the home. These societies have more of what has been called 'social capital' which lubricates the workings of the whole society and economy…in short, the social fabric is in better condition."

This quote demonstrates a common feature among many authors, the almost synonymous use of social capital and social cohesion. Muntaner and Lynch (1999), in a thoughtful

critical appraisal of Wilkinson's research program, indicate that "it is unfortunate that he does not attempt a more rigorous definition of the construct of social cohesion." It is troubling that some epidemiological empirical studies do not clarify the commonalities and distinctions between the concepts of social cohesion and social capital (Kawachi & Kennedy, 1997a; Lavis & Stoddart, 1998). A paper authored by Jane Jenson (1998) offers an inventory of theoretical approaches to social cohesion. It maps out five dimensions of the concept: belonging, inclusion, participation, recognition, legitimacy. According to Jenson and colleagues,

> "for some, social cohesion means primarily the capacity to construct a collective identity, a sense of belonging. For others, the focus is a society's commitment and capacity to assure equality of opportunity by including all its citizens and reducing marginality. Social cohesion is also discussed in relation to democratic practices... (S)ocial cohesion is sometimes interpreted in terms of society's capacity to mediate conflict over access to power and resources, to accept controversy without trying to shut it down."

Buckner (1986; 1988) operationalizes social cohesion as follows. "A neighborhood high in cohesion refers to a neighborhood where residents, on average, report feeling a strong sense of community, report engaging in frequent acts of neighboring, and are highly attracted to live in and remain residents of the neighborhood. Just the opposite would hold for a neighborhood low in cohesion."

This brief review of social cohesion suggests both overlapping aspects and distinctions with the understanding of social capital previously formulated. Social cohesion closely approximates the dimension of bonding social capital, in particular the trust and

association components. However, it does not refer to socially invested resources and networks. In this sense, social cohesion can be considered a concept with overlapping aspects to social capital, or a subset of social capital. The latter perspective would locate social cohesion mostly, though not exclusively, within the dimension of bonding social capital. This interpretation does not correspond to that of leading epidemiological researchers that have used the construct of social capital. For example, Kawachi and Berkman (2000) argue precisely the opposite. After stating that "social cohesion refers to the extent of connectedness and solidarity among groups in society", they indicate that a cohesive society "is also one that is richly endowed with stocks of social capital." In their view social capital "forms a subset of the notion of social cohesion."[35] Their basis for this argument is that social cohesion refers to two broader, intertwined features of society, the absence of latent conflict; and the presence of strong social bonds. According to Kawachi and Berkman, the latter is "measured by levels of trust and norms of reciprocity (i.e., social capital)." The difference in interpretation can be explained by how broadly or narrowly social capital is conceptualized. Kawachi and Berkman follow Putnam's ideas of social capital constituted essentially by two dimensions, trust and norms of reciprocity. Conversely, the framework that will be presented in this study broadens the scope of social capital as constituted by three dimensions, and three components within each dimension. The two dimensions of Putnam are located in two of these components.

Finally, there is a distinction that from a theoretical perspective might be the strongest in favour of social capital. The description of a community from the level of its

[35] Other authors as well, as Berger-Schmitt (2000) who considers social capital as a dimension of social cohesion.

cohesiveness conveys a closed systems perspective of societies. At the very least, it does not include in its construct the interactivity with other communities or institutions. A multidimensional notion of social capital articulates the reality of communities as open systems, and takes into account the consequent dynamics.

4.1.2.2. Social support

According to Hallgren (1988), the concept of social support "emerged as a popular focus of inquiry in the 1970's with the recognition of its potential significance as a mediating factor in the stress-illness relationship and ...(the) acknowledgement of the important role played by the social environment in human health and well-being." Cobb (1976) conceives social support as information belonging to one or more of the following three classes: 1) information leading the subject to believe that s/he is cared for and loved; 2) information leading the subject to believe that s/he is esteemed and valued; 3) information leading the subject to believe that s/he belongs to a network of communication and mutual obligation. Among the various definitions of social support, some focus on specific aspects of support such as exchanges of information or material aid (Carveth & Gottlieb, 1979) availability of a confidant (Lowenthal & Haven, 1968) and gratification of basic social needs (Kaplan, et al., 1977). A more comprehensive definition is that of Wallston and colleagues (1983), "social support describes the comfort, assistance, and/or information one receives through formal and informal contacts with individuals or groups." Lin and colleagues (1981) provide a useful distinction between instrumental and expressive support. The former includes the

provision of material aid and information, whereas the latter includes serving as a confidant and providing acceptance and understanding.

A main difference between social support and social capital relates to what they each characterize. If we consider social capital as an attribute of individuals or families, then there can be some significant overlapping with social support. Social support in some respect shares with social capital (more so than social cohesion) the notion of resources and networks. However, contrary to social capital, social support is not a notion that has been formulated as an attribute of a community. The availability of social support appears more individually or family based and proximal, than social capital. As Kawachi and Berkman (2000) state "social cohesion and social capital are both collective, or ecological , dimensions of society ... to be distinguished from the concepts of social networks and social support, which are characteristically measured at the level of the individual."

Again, as with social cohesion, most of the conceptual overlapping would be related to bonding social capital. However, an interesting parallel can also be formulated for the other dimensions of social capital. If we look at the community as an individual or family, both the bridging and linkage dimensions of social capital would correspond to social support functions. In particular the " ... assistance and/or information one receives through formal and informal contacts ... "(Wallston et al., 1983).

4.1.2.3. Social networks

According to Berkman and Glass (2000) "Barnes (1954) and Bott (1957) developed the concept of social networks to analyze ties that cut across traditional kinship, residential, and class groups ... The development of social network models provided a way to view the structural properties of relationships among people with no constraints or expectations that these relationships occurred only among bounded groups defined a priori." They quote Wellman (1993) who identifies an "egocentric network approach to social network analysis in which the structure and function of networks are assessed from the perspective of an individual." In the words of Berkman and Glass (2000), "the strength of social network theory rests on the testable assumption that the social structure of the network itself is largely responsible for determining individual behavior and attitudes by shaping the flow of resources which determine access to opportunities and constraints on behavior." The similarity with Durkheim is "the view that the structural arrangement of social institutions shapes the resources available to the individual and hence that person's behavioral and emotional responses."

Wellman (1988) argues that the essence of community is its social structure, not its spatial structure. By assessing actual ties between network members, one can empirically test whether community exists and whether that community is defined on the basis of neighborhood, kinships, friendship, institutional affiliation, or other characteristics. Rogers and Kincaid (1981, p. 90) credit Barnes with having provided this turning point in shifting the network concept from metaphor to analysis.

The concept of social networks presents several common notions with social capital. First, as was examined in the concept analysis, "network" is a component of each dimension of social capital. In this sense, the idea of social networks fits well within social capital. The vast literature and empirical studies on social networks can provide a wealth of information for further conceptual, measurement and empirical inquiries of social capital. Second, the concept of social networks shares with social capital the double capacity of being an attribute of individuals and families (the "egocentric network approach"), and of being an attribute of a society. However, it is possible to argue as Kawachi and Berkman do (2000), that it makes little sense to measure an individual's social capital. The main distinction between social capital and social networks is that the former includes a "resources" component (socially invested resources[36]). The concept of social networks focuses on "the medium," whereas social capital is composed of "the medium and the message" (Woolcock, 1998b). More so, social capital encompasses the possibility of the medium being the message. As Burt (1992) states "social capital is at once the resources contacts hold and the structure of contacts in a network. The first term describes whom you reach. The second describes how you reach." This notion is further pursued by Lin (2001, p. 75) when he postulates, within the theory of social capital, that in social networks interacting actors carry varying types of resources, and that "most of the resources are embedded in others with whom each actor is in contact...or they are embedded in structural positions each actor occupies or is in contact with." Three tentative conclusions emerge. First, that there are significant commonalities between social networks and social capital. Second, that social capital vis à vis social networks simultaneously incorporates the "medium" (networks) and the "message" (resources),

[36] According to our study's framework to be presented later in the chapter.

thus being a more comprehensive concept. Third, that social capital can make important use of social network analysis methodology in shifting (as Barnes did with social networks) (1954; 1972) the concept of social capital from a metaphor to an analytical construct.

4.2. First Nations communities' social capital framework

This section, after presenting the social capital framework for First Nation's communities, fleshes it out as a narrative and then revisits the conceptual framework as iteration between theory and qualitative evidence.

4.2.1. Social capital framework

Based on the above discussion, social capital has been formulated as constituted by three dimensions: bonding social capital, bridging social capital, and linkage social capital. Each dimension will be postulated as including three mutually dependent components: socially invested resources, culture, and social networks. The above analysis alluded to but did not resolve the following question: Is social capital "social" because "capital" is collectively owned, or is it social because the "social" is the "capital"? The identification in this model of "socially invested resources" (the first premise in the question) and of "networks" (the second premise in the question) in a mutually dependent relationship, via cultural enablers or inhibitors, arrives to an understanding of social capital that resolves this apparent ambiguity. This model considers social capital as a feature of communities,

with the caveat that the crux to its understanding as such is that the community of which it is a feature must be clearly delimited (e.g., communities can be areal/spatial, of interest, etc.). Table 5 presents the framework with its dimensions, components and descriptors, to be explained next.

A brief definition of each dimension follows. **Bonding social capital** refers to within community relations. It addresses the networks, culture, and socially invested resources inside the particular society, community or group in question, i.e., the intra-community ties. **Bridging social capital** is essentially a horizontal metaphor, implying connections between societies, communities or groups, i.e., the inter-community ties. **Linkage social capital** refers to a vertical dimension. In words of Woolcock (2001) "(T)he capacity to leverage resources, ideas, and information from formal institutions beyond the community."

As was previously explained, social capital in this study refers to that of the community as a whole. As Narayan (1999) indicates "cross-cutting networks, associations and related norms based on everyday social interactions lead to the collective good of citizens, whereas networks and associations consisting of primary social groups without cross-cutting ties lead to the betterment of only those groups." Admittedly, the authors that formally introduced the notion of bridging social capital (Narayan and Woolcock), thought of it mostly from a "within community" perspective, in which different groups within the community "bridge" connections. For the present study, however, the

"bridging" notion between groups within a community resides in the bonding dimension, freeing the term "bridging" to describe the inter-community connections.

In Woolcock's (2001) words "a multidimensional approach allows us to argue that it is different combinations of bonding, bridging and linking social capital that are responsible for the range of outcomes we observe … and to incorporate a dynamic component in which optimal combinations change over time." Grannovetter's (1985) idea that firms are distinguished by structures of personal relations and networks of relations between and within firms is paralleled here, but in the case of our study it relates to features of communities. There are at least two other important advantages to this multidimensional approach. First, that it allows for the operationalization of the concept from an open system view of communities[37], accounting for the fact that communities exist in interaction with other communities and institutions. Second, that it provides a conceptual deterrence to the use of the notion of social capital as a way of "blaming the community" (Muntaner et al., 2000), because bridging and linkage are factors of at least two players (e.g., linkage between the community and a sector of the government).

Table 5 summarizes the social capital framework, showing each dimension as consisting of three components and component descriptors. These are: **Socially Invested Resources (SIR)** - The scope of the nature of these invested resources includes **physical**, **symbolic**, **financial**, **human** and **natural**. The central notion is that these resources be socially invested, i.e., that they be potentially accessed by, or of potential future benefit to, any

[37] Open systems perspective implies that communities or organizations are embedded in, and therefore dependent on and influenced by, the environments in which they exist or operate.

member of the specific community. **Culture -** The term culture as a component of social capital is used in a more particular, albeit related, sense than that of its more common use[38]. It encompasses notions of **trust**, **norms of reciprocity**, **collective action**, and **participation**. **Networks -** Networks are understood as "structures of recurrent transactions" (Aldrich, 1982), and are described according to their **diversity**, **inclusiveness**, and **flexibility**[39].

4.2.2. Social capital narrative

Having outlined the dimensions and components of social capital, this sub-section will flesh out these ideas against the backdrop of the three First Nations communities that participated in the study. It will describe, using the preliminary framework, current community features that could be considered as descriptors of higher or lower stocks of social capital. This will enable a more concrete understanding of what would constitute social capital in First Nations communities, and will culminate in a final revision and explanation of the model in the last subsection. As Nunnally and Bernstein (1994, p. 311) indicate, "it is important that an investigator at least be able to describe the properties of

[38] Culture has been defined as "all that which is non-biological and socially transmitted in a society, including artistic, social, ideological, and religious patterns of behavior, and the techniques for mastering the environment." (Winick, 1969, p. 144)

[39] Fernandez Kelly (1995, p. 220) includes multiplexity as an important characteristic of a network. She defines it as the "degree to which it may be composed of persons with differing social status, linked in a variety of ways, who play multiple roles in several fields of activity. A diversity of linkages and roles facilitates institutional overlap. The integration of groups of various sizes into the whole which we call society takes place through personal connections. Higher degrees of multiplexity increase the probability that information about resources (such as jobs) and knowledge (such as entrepreneurial know-how) will reach individuals on the basis of their ascriptive characteristics." The framework in this study considers the inclusion of multiplexity somewhat redundant because higher degrees of flexibility, inclusiveness and diversity of a network are equivalent to higher degrees of multiplexity. Consequently, Fernandez Kelly's description of the value of multiplexity is applicable to the previous three characteristics of a network.

the attribute that is to be measured." Table 5, social capital framework, presents the structure for the following presentation.

Bonding Social Capital

Socially Invested Resources

This component of the Bonding dimension relates to **within** community resources. To qualify as belonging to this component these resources must express a social investment. Because types of resources can be mutable, the five descriptors (Physical, Symbolic, Financial, Human, and Natural) capture the invested resources at the point in time when they are that category of resource. Physical refers to tangible resources produced by human beings. Symbolic refers to resources that pertain to the identity of the community as such, and for the most part are intangible. Financial are monetary resources in its different forms. Human resources mean human capacity as a product of formal and informal education. Natural resources are those provided by nature, shaped with or without human intervention. The examples that follow illustrate these categories.

Physical

A consistent example of a socially invested physical resource across the three communities was Band investment in roads. Community A interviewees identified that better road development[40] within the community would increase accessibility for students

[40] When, in cases like this, part of the funding may have come from external institutional funding sources, there is an overlap with Linkage socially invested resources.

to classes during periods of bad weather, because in rainy periods or during spring meltdown, many community roads are not suitable for vehicular traffic. According to Community B health officials, the community has seen a reduction in respiratory problems of children since major roadways inside the community were paved, due to a significant decrease of road dust during non-winter months. Significant physical resource investment in the last five years is illustrated by Community B's construction of a series of buildings for public use. Among them are the new Band administration building, a shopping mall, a community health centre, and Child and Family Services offices. As well, a new school building is under construction. An important feature of this structure, from the social capital point of view, is that it will include several gymnasiums and a theatre that will be accessible to any community group. An example of a decrease in the degree of these resources being socially invested could be if school authorities would deny access to school facilities for after-hours activities (which apparently had occurred several years ago with one of their schools). On a similar vein, a consistent theme that came across in interviews from the three communities was the fact that priorities for housing may be based on favouritism. If this were to be the case, the degree of social investment would be lower because of differential access to housing not based on fair assessments of need. A recent development in Community C, setting up internet access through the school and having "internet nights" three days a week in the evening for anyone in the community to participate, illustrates well a socially invested physical resource.

Symbolic

For First Nations communities, aboriginal culture and language appear to be central themes of this resource. Cultural camps for children and youth that Community C used to organize illustrate well an investment in symbolic resources. As an interviewee explained, in these camps:

> "(T)hey'd show the kids how to snare, trap beaver, skin beaver, rats, muskrats, moose anything that tracks. Anything they can pick up and they would always talk Cree. And they would make bannock over the fire, make soup over the fire. Get water in the ice…you know, what the people used to do a long time ago that's what they did with the kids."

Current positive examples would be the cultural camps that Community A holds for children in the summer, or the incorporation of a native studies program from kindergarten to high school in Community C, that seeks to increase the exposure to Cree cultural traditions, including Cree language. In Community B there has been an increased development in recent years (of) "our own culture in relation to sweat lodges, ceremonies, etc., and that has played a part in the healing journeys of many people in this community…" In Community C and Community B their Band offices run radio stations with extensive programming in Cree. On the negative side, Community A, for example, lost a teacher three years ago from the community that taught Ojibway language and culture at the school and no replacement has yet been made. Interviewees in Community A consistently mentioned that "young kids can't even talk our language…oh some understood it…now it's changed…kids don't understand it, you can't even talk to them."

Financial

An expression of this descriptor would be that funds owned by the community, whatever the amount, be invested in a relatively sound way, and parts of these funds be accessible for community projects or development initiatives of community groups. Community B exemplified this well with the creation of a Trust Fund[41]. This Trust "manages and protects the Settlement Proceeds (Flood Agreement[42], etc.) received from Canada, Manitoba and Hydro Manitoba for Community B and members." The Trust "gives the Band Membership the authority to decide at the Community Approval Process public meetings which projects and programs should be funded." The Implementation Agreement that established the Trust determined a "minimum capital amount" required to be in Trust at the end of each fiscal year, thus guaranteeing that the Trust will "exist to future years." An interviewee from Community A exemplified what could be negative financial socially invested resources.

> "Right now I think we make (thousands of dollars) annually on leasing the land...all that money they give it to individuals, imagine that money if they were to put that into a pot for some kind of employment or (economic) spin-offs."

The following quote illustrates the lack of financial socially invested resources in Community C.

> "Well basically you just have to try to follow as closely as possible the basic principles of trying to sustain a micro-economy in a small isolated community like this...(and) number one (problem is that) the money that comes into the community leaves the community...even if the money isn't generated from within the community at least or the very least the first thing they could work on

[41] Name of the Trust has been withheld to avoid identifying the community.
[42] Correct name of the Agreement has been withheld to avoid identifying the community.

> is trying to have that money stay in the community…they could do that in several ways…one is by having a half-decent restaurant, where prices aren't inflated and where the quality is normal…so that people can feel like they can go somewhere in leisurely fashion…to spend their money in the community."

Community A interviewees expressed similar ideas "every thing we buy, groceries, clothing, appliances, vehicles, the materials for the houses we build, everything is spent outside the reserve, everything…" The fact that a large percent of family income is spent outside of the communities is a clearly negative factor from a financial socially invested resources point of view.

Human

All three communities presented examples of social investments in human resources. Community A has a Post Secondary program that sponsors students for post-secondary education. The program includes financial and advisory support. Community B sponsors a number of activities like minor hockey, recreational community league hockey, junior hockey league, curling, volleyball, gym nights. There are also drop-in sports at the Veteran's centre for kids, and little league baseball and summer day camps. Community A has baseball and hockey teams for children, but according to some community members, kids with lower resources do not participate. Having these teams can be understood as socially invested resources, but the fact that they do not appear to be equally accessible suggests that these resources are limited in how socially invested they are. A similar comment was made in Community B in relation to hockey opportunities for children. An interesting example of human socially invested resources is the band funded justice program in Community C. It seeks, among other objectives,

> "to ensure the availability of community resources for community members in the administration of justice…to require offenders to make some measures of restitutions or reparation to those members of the community who have been affected by the offender…"

Community B has summer employment programs for students, as well as job training programs for adults. Community C has a drop-in centre for children and youth funded by the band. However, there is very little that appears to exist in terms of organized recreational activities and youth programming in general. Many interviewees considered this as an important deficit. The lack of public libraries in all three communities could also be understood as a lack of investment in human resources.

Natural

The use by Community A of land claim funds to buy land, thus increasing the community's access to natural resources, can be seen as an example of increased natural socially invested resources. This would help compensate what had been a considerable loss of natural resources experienced by the community[43], "the bush" that was ""bulldozed…in the 50's…no wild life (anymore), (no) rabbit and deer and duck…all the wild game is gone." Some individuals in Community C have been working on the idea of starting an eco-tourism business,

> "you can advertise it on our web site to German tourists, Japanese tourists and start out small and have it so its not doing any damage to our culture or to our habitat here…and do outfitting…to just experience our culture…because there's

[43] The sources of the loss relate to the Linkage dimension.

quite a few people here that still live on the trap line and live by hunting and fishing."

A requirement for the success of this "business" opportunity would be the existence of different types of investments for the preservation of the land, forest, waters, and wildlife (opportunity costs due to this preservation should also be computed as investment). Management of trap lines and of fishing programs in Community B by the Trappers Association and the Fishermen's Co-op demonstrated responsible management of natural resources, thus preserving it as a social investment.

Culture

This component of the Bonding dimension refers to **within** community relations. The term Culture that names this component expresses the idea of the existence of a culture of trust, norms of reciprocity, collective action, and participation. Trust is self-explanatory in that it means that community members trust one another as well as community leaders. Existence of norms of reciprocity, although feasible of being considered a neutral notion, conveys for this framework the idea that the reciprocity is of a positive nature[44]. Collective action represents the fact that community members may pursue actions that seek the benefit of the collective. Finally, a culture of participation implies the willingness of community members to be involved with others in common activities. The difference with collective action is that the main reason for participation is that of the individual's interest, with no explicit purpose of a collective good.

[44] Reciprocity refers to a future obligation to return "the favour". However, this obligation might not be explicit in the sense that it must be born by the individual. In First Nations communities, this obligation could be born by the community and not necessarily by the individual.

Trust

A clear example of trust is provided by an interviewee from Community B, "you can go down this hallway and say I really need 10 or 20 dollars…I would get that $20 just like that...no strings attached…I'll pay you two weeks from now…yes, fine. I need a ride, my car wouldn't start, can you drive me to the garage? Yeah, OK. I think this community is very good in that way. Nobody is ever stuck, I don't think." In Community C several interviewees commented that trust occurred within small groups, "I trust people, but I will open to a certain extent. I don't see that in all people. A lot of people don't trust, especially when they have issues of sexual abuse and domestic violence." In Community A one interviewee was adamant about lack of trust:

> "Some of these people don't trust…I mean the whole reserve is like that. It's like, even if you have one little problem, it's hard to find somebody you can trust and just, you know, to have a shoulder to cry on and talk to somebody without the fear of whatever it is you're having a problem with being spread out in the community. It's a big problem."

In the three communities there were comments that conveyed both trust and mistrust in Chief and Council. The following quote exemplifies the latter:

> "And we have doctored minutes and these are public records… so the people in the community cannot go to the official record and find the truth at all… what form of government conducts itself in that way, except a deceitful one. And it's the fundamental breach of trust that's occurring that affects our mentality…how we look at each other… one of the elders says that we're always looking out each other in the corner of our eyes."

On the other hand, this comment from a Community B interviewee describes trust in the community's leadership: "Another thing I see happening…in…Chief and Council administration, they support people's ideas…"

Norms of reciprocity

An illustration of what norms of reciprocity means comes from the following comment from Community B:

> "There are norms in our community where people do things for other people. It's not written down in stone anywhere, it's just part of the culture. If someone is building a house and says, I need a screw-gun, yeah I have a box, go to my shed and get it. And that person later, the one who loaned the thing may say, I need to borrow an axe of him, and goes back to the guy that borrowed from him. It's sort of a trade, no money passes through the hands, but the good deed is returned in another way…and it may not happen within the year or a week, it can happen 10 years later."

A more generic expression of norms of reciprocity is what one interviewee from Community A described as having existed in the past and that appears to have been lost, "(that) everybody had a purpose and meaning within the community…everybody had a place." Adding "We've become very individual thinking too…they forgot how to be a community, they forgot how to be a brother and a sister." On a similar vein, another interviewee said "We've become very individual, we can't see that we have a responsibility as individuals to contribute and we have a responsibility to every child and every adult that is abused, every senior and every elder." The relations between generations repeatedly appeared as significant topic in terms of norms of reciprocity. The

following interviewee from Community A describes a common perception among adults from all three communities.

> "In my time I was taught to respect adults...now there is respect lacking in that area by youth...youth have too much time in their hands...adults are too wrapped up in their own things and not taking care of youth...that's why there is lots of vandalism, car thefts, break and enters, destroying of public property."

A common norm that was mentioned in different interviews in Community B and Community C was the sharing of wild meat and fish with elders, widows and neighbours. An individual from Community C explains,

> "well the way we've been taught is first are the elders, like the first piece (of wild meat) that I give out will be to the elder and then sometimes to the widow that don't have nobody to hunt for her." "Because she is an elder (interviewees mother), she always receives traditional food, like meat, fish, as gifts from others. This tradition of sharing traditional food with elders seems to be quite alive here...they go around and give wild food to the elders."

In Community B an interviewee mentions, "(H)e (her husband) brings home lots, he usually gives it out to neighbors...even when he kills moose, he likes to share his things that he kills...he gives them to the elderly and who ever comes and asks him." Another norm mentioned in Community C was that families in the community take care of other people's kids. The following comments from the same community exemplify norms of reciprocity from a negative perspective.

> "I find our people are more weak, I don't know if it's just me or I'm thinking funny or not. It's just that we try to pull each other down for the good that we do. Like say that he is doing really good, and I'm envious of him, I'll do anything

> and say anything to bring him down…We're here to work together and why are we fighting against each other."

Or an interviewee from Community B saying that "today you can't leave even your ski-do sitting outside, somebody will steal it or they smash it" could also be an expression of lack of norms of reciprocity in the positive sense. The lack of reciprocity is related to the idea that destroying the property of a neighbour indicates the lack of acknowledgement of the other in a positive reciprocal relation.

Collective action

Collective action could easily be confused with participation, the difference being that participation does not necessarily imply the idea of being involved for the purpose of achieving some collective goal. The following comments from Community A reflect this idea: "I've seen Community A work together as a community…that promotes community wellness when you can achieve things that give you hope." Or

> "We have a lot of issues but if we all start working together and we start taking the same approach with our mind – you know for this year or for these six months we're going to start working on what real parenting is out here. That means there is going to be a lot of work that needs to be done – a lot of co-operation, structure to make the families better in this community."

Another community member lamented a perceived loss of a spirit of collective action:

> "At harvest time they got together…they helped each other…all the women would gather and make our meals for all…that's right everybody helped

> everybody...nobody helps anybody today...unless you do it for a buck or whatever."

An interviewee from this community commented on what could be seen as an indicator of collective action:

> "Well one thing I like about Community A is if a Chief isn't doing too good we get him out of there...and on other reserves they don't have that same luxury because Community A is a very vocal group within their own community...like I see other reserves protesting at Indian Affairs picketing, Community A doesn't really have to picket they'll vote their Chief out."

In Community B an interviewee expressed the idea of collective action as "people having a vision here, wanting to better their community, make a difference, and there again in Community B I see that happening..." As another community member described "None of the things that we have is from Manitoba Hydro, it is from good thinking, by people working together, and by working together, we got things done." A school bus driver in Community C made a fitting description:

> "It's the air over at the school, I'm a bus driver and there's an air in there that wants to proceed, wants to help educate these children...I think there is a change happening with this school and everybody, the teachers, the children, everybody's excited...it more less the school implanted itself in the community and in the people...everybody is like showing it, it's a positive thing."

Or the following comment: "But, I can say this really positive about people from Community C, when we do band together we all are working as one, you can't stop us...we just roar in, we do it and we have that goal and we focus on it and we confront it." A concrete example of collective action given by several interviewees was the protest

that enabled Community C to get funding for more housing several years ago. A community group marched in protest to Winnipeg and camped at a public place in the city for weeks, until the funding was obtained (interestingly, the neighbourhood in Community C where these houses are located was named after the public place where they had protested). A negative example from the same community is the description of the relations between Chief and Council and different community agencies.

> "I don't know, like everything is up in the air....like a balloon floating...it's very hard to describe it...so that's affecting things...like the whole community itself through those organizations there's not enough working together, to make a circle I guess...they used to do that before...they used to stand out here in a circle and talk about things...now its just one disbanded."

Another comment signaled low collective action, "thats what I find with Aboriginal communities and all the politics involved...I find there is so much competition it's a high stakes game to try to get into employment position with the Band..."

Participation

Willingness to participate and actual participation of community members in community activities, essentially on a volunteer basis, is the main thrust of this descriptor. For example Community A created an Election Act Task Force that is working on reforming the election act. It held several community workshops for consultation, and was expected to hold a referendum on the new act. Attendance to the workshops would reflect levels of participation, as well as voting rates in the referendum. These two examples would share aspects of "collective action" if the involvement of people was for the purpose of a collective goal. The

assumption for them to be considered participation, was that the individuals were participating without this collective goal in mind. As can be seen, the distinction may be open to interpretation, thus the interpretation criterion needs to be made explicit.

The following comment suggests a low level of participation in Community A: "It's hard to get people to volunteer, at least in some work areas, maybe the Health Centre has a group of volunteers. We tried to form a Justice Committee but they all wanted to be paid." Another interviewee from this community lamented that "it would be really good to see more activities organized and more parents participating in the activities with their children." Community B prides itself for the many community volunteers it has during Pow Wows and Festival days. As well there are people that sit on committees and work through the year, like the Pow Wow committee and the Bingo committee. A Community B interviewee agreed that "it's pretty OK with our volunteers...(we) have to recruit properly, letting them know what the job description is...in minor leagues the parents volunteer." In this First Nation, voting participation for Chief and Council appears to be quite high, with approximately 80% of voter turnout. The importance of participation was clearly stated by a community member, "(T)he leaders need people to attend public meetings, and to voice their opinions." Other interviewees from this First Nation expressed the need for more community events for the whole community like...having the winter and summer games...where everybody's involved." Some lamented that

> "we have lost the interaction, the community activities...whenever there was a festival, or anything of that sort that went on in the community, people got together,

and they celebrated, they ate together, they just loved to be together...and now, you know, it's very difficult to get people interested in socializing."

Some school staff also mentioned that "we need parent volunteers to help us out...parents in meetings say they will help, but then in reality they won't help…they even expect money…"

Networks

This component of the Bonding dimension refers to **within** community networks. It seeks to capture the existence of structures of recurrent transactions that can be characterized as inclusive (that are relatively open to newcomers or to the exchange with newcomers), diverse (that the community possesses a diversity of networks capable of interacting in a meaningful way), and flexible (that community networks adjust to new or changing requirements).

Inclusive

Networks are information channels, and the way job opportunity information is handled is a visible marker of inclusiveness or exclusiveness of networks. Community B apparently has a good employment program together with an open system for advertising job opportunities. This would speak of inclusiveness. However, according to some community members some exclusiveness persists, "some people have several job opportunities while others do not have any." Even with volunteerism, there was a complaint about lack of inclusiveness "I know when you go and ask do you need

volunteers, they say no, we already have volunteers, and when you see that stuff happening they don't have anybody." Lack of inclusiveness would be suggested by certain groups not acknowledging other groups, is conveyed in the following quote from a Community A interviewee "The smaller families...really have lost their voice already...what they call a lions share of everything...(are for) the bigger families." Sometimes the exclusivity of networks might have a generational character, "and it feels like the youth (are) the forgotten ones like the elders...I don't think they're made to feel welcome or whatever... the young, it's like there isn't an effort to bring them in." A comment from Community C offers an interesting illustration of a possible lack of inclusiveness based on religious lines

> "there's no tolerance for the different kinds of religions they have now...it's going to be apart like the Roman Catholics play on this side and those on this side...separating things and I think it's very important to have a community where they can come together..."

Also along religious lines, Community B offers an expression of increased inclusiveness through interdenominational prayer meetings held every Monday, where the different religious groups in Community B get together. According to community members, this seems to have decreased existing conflicts between the different groups. Expressions of networks' inclusiveness could be the degree that different community groups or families interact, or if certain groups or families are shut out from being acknowledged in their concerns. Cross-generational networks could also be an important marker of inclusiveness or lack of thereof.

Flexible

Flexible networks imply that people from a community network are willing and able to establish new networks or incorporate over time new structures of interaction. Families not interacting with other families because of old disputes would be a good example of inflexible networks. This is illustrated by a comment from Community A

> "You hear a lot of animosities that are carried forward from years back…I've also heard so and so and his family did so and so to this family and so we are not talking to so and so. There is a lot that is carried on for quite a few years."

A similar comment was made in Community C,

> "I think what we also need in this area is a mediator to iron out little, silly little differences….some stem back to silly, silly things from childhood, like you pushed me in the deep end and I nearly drowned. You know silly things like that. I still remember you didn't help me. So therefore you hold grievances."

The following quote from the same community expresses lack of flexible networks in relation to work opportunities "Yes, it's like a class system, because it's always the same people that are recycled for different jobs." Similarly, but from a religious network aspect, another comment from Community C illustrates this as well:

> "Because the Catholics run the show and what they say goes around here…if you are not Roman Catholic you don't belong here…and yet, the sad reality is, we have young people that are going out of the community, they are still students that go out for their education to other towns, cities, that have ventured out of the box, out of this little place, and people change…so you have youngsters with new world views, and yet they can't exercise them, they're limited, restricted here, to come and exercise what they've learned, especially when it comes to religion."

Lack of flexibility can be seen with networks between families, as this interviewee from Community C observes:

> "Well, they are in their own little groups, I think…like there's not the wide spread visiting like there used to be and I see a lot of families sticking really close in their family grouping…sometimes I think that is unhealthy…you know it's just that that's your whole world, just your family, you have no other outside interests."

Flexibility of networks was evidenced by comments from Community B that described how new activities through the recreation centre had expanded relations among community members.

Diverse

Interaction of diverse networks is the main marker for this descriptor. As an example, a a monthly newspaper now being published by Community A has the potential to increase communication between diverse networks within the community. Another illustration of possible increase in diversity was suggested by an interviewee from Community A; "(M)ore elders coming to the school…having more one on ones with the elders...kind of like big brothers and sisters…". Elders tend to be part of a common network in Community A, but the interaction with other generational networks appears somewhat limited. This lack of interaction between diverse networks is illustrated by the following comment from the same community:

> "It's easier for (community members) to hang out with someone in the same situation or social class or whatever…like you know in society outside reserves, the poor, the middle class and the wealthy…well on a reserve there is no middle, its either you have a good job or you're in poverty…"

Also within more formal community networks, like those structured around community agencies, the interaction across diverse networks needs to be considered. For example in Community B, a comment frequently made was the need for better communication among directors and staff from different programs as well as with community members at large, "so people will know what is happening and can help to solve things." Similarly in Community C:

> "You know all the agencies coming together to see what can be done to make the community better you know we need help yeah...they should be more involved with the school system...they should involve more of the elders, a lot of the elders have a lot of oral tradition, the knowledge, the wisdom they should be using them in their council."

Bridging Social Capital

Socially Invested Resources

This component of the Bridging dimension relates to **between** community resources. To qualify as belonging to this component these resources must express a social investment. Because types of resources can be mutable, the five descriptors (Physical, Symbolic, Financial, Human, and Natural) capture the invested resources at the point in time when they are that category of resource. Physical refers to tangible resources produced by human beings. Symbolic refers to resources that pertain to the identity of the community as such, and for the most part are intangible. Financial are monetary resources in its different forms. Human resources mean human capacity as a product of formal and

informal education. Natural resources are those provided by nature, shaped with or without human intervention. The examples that follow illustrate these categories.

Physical

Community C is not accessible via an all-season road. There is a lobbying effort to have this road built. However, if this lobbying were to occur together with other communities that might also benefit, as well as with support from First Nations organizations, it would be an expression of bridging physical socially invested resources. Housing is also a common problem for the three communities in this study. The more collaboration there is between communities and with organizations like the Assembly of Manitoba Chiefs and/or Tribal Councils to improve on this situation, the more it would be an expression of this component of social capital. Cooperation between Community A and a nearby urban centre to improve health care access also illustrated this category.

Symbolic

A cultural camp held for a week that brought in 30 elders from numerous First Nations communities from across Canada to Community A is a good illustration of bridging symbolic socially invested resources. That it is bridging is exemplified by the fact that these elders came from other First Nations communities. The purpose of the camp was to take in traditional teachings, as well as to revitalize traditional practices like sweats, etc. Similarly, a group of adults from Community B spent a number of years being educated in traditional ways. They participated in many ceremonies in other communities and learned from elders from other communities (both from Canada and the US).

"We learned something to help our youth...and we're still doing that...and it's very rewarding also...maybe not financially but in other ways...and in terms of the actual power itself we have the community's support and we have the leadership support like its all there."

In Community C "an elder from Ontario comes for culturally appropriate healing and traditional culture. There is an evening on traditional healings. Especially young people come interested." As well, "medicine men and traditional healers" are brought to the community to teach. The collaboration of the Manitoba Association of Native Languages with Community A to get more people to learn to speak Ojibway is another example. Community B's Festival Days[45] is organized and held in collaboration with neighbouring communities. As well, Community A's annual Pow-Wow brings together participants from a large number of First Nations communities, even from out of province and the U.S., as well as people from towns and cities.

Financial

Access to credit from Tribal Councils or First Nation's credit unions or Trusts, would be an expression of financial socially invested resources. Peace Hills Trust and Median Credit Union are specific examples. Financial partnerships between First Nations or through First Nations organizations would also provide some evidence of this component.

Human

Community A has benefited from its contact with the Manitoba First Nations Education Resource Center, "because they come right out to the communities and talk." As well,

[45] Specific name of the event has been excluded to avoid identifying the community.

Community A community members have access to the Adult Education program at the Community A Training Center and an Education Co-operative for at-risk students. They are for tribal members and non-band members that reside in a nearby urban centre and Community A. The Tribal Council to which Community A belongs sponsors students for post-secondary education. As well, some post-secondary students are able to get into low rental housing through the Tribal Council Housing Authority. Community A nonetheless presents a negative example of bridging human socially invested resources, as illustrated by the following comment: "I know that in (nearby urban centre), through their Baby First program they have parenting (workshops) ...it would be nice if we could network...cause... we can't access it." Health programs of different Tribal Councils, to which Community A and Community C belong, are positive examples of bridging human socially invested resources. An interviewee from the latter community did illustrate however, what could constitute lower bridging social capital, indicating that it took four years for the prenatal nutrition program to finally receive the funds it was entitled to from the Tribal Council.

Natural

A clear example of bridging natural socially invested resources is the existence of a Natural Resources Secretariat within a First Nations organizations in Manitoba that represents 27 communities, to which Community B and C belong. Among the main purposes of this Secretariat is to represent the interests of its membership in land and natural resource use and protection. A particular illustration is the assistance provided by this First Nations organization to Community C in conducting traditional land use and

traditional knowledge research and mapping, as well as supporting outstanding claims related to the environmental impact of hydroelectric development.

Culture

This component of the Bridging dimension refers to **between** community relations. The term Culture that names this component expresses the idea of the existence of a culture of trust, norms of reciprocity, collective action, and participation between communities. Trust is self-explanatory in that it means that community members trust people from other communities or urban centres. Existence of norms of reciprocity, although feasible of being considered a neutral notion, conveys for this framework the idea that the reciprocity is of a positive nature. Collective action represents the fact that community members may pursue actions with members of other communities or organizations representative of First Nations communities that seek the benefit of the collective. Finally, a culture of participation implies the willingness of community members to be involved with other communities in common activities. The difference with collective action is that the main reason for participation is that of the individual's interest, with no explicit purpose of a collective good.

Trust

The openness between First Nations communities in terms of exchanging knowledge and experience in dealing with common issues is an expression of trust. Community A band administrators have been for the most part successful in learning from some initiatives of

other First Nations communities. "..(O)ther (First Nations) communities, they are very open, but depending upon what issues it is..." Apparently there were some instances in which the trust was not there. An issue that came out of interviews and that is closely linked to the experience of trust between First Nations community members and people from nearby towns or cities, was the experience of racism. The following comment from Community A describes this experience. "Some of that maybe is the fear of being discriminated, like racially, like if you go to (nearby small urban centre), am I going to be accepted? Am I going be hurt, you know, emotionally. I think that is a big fear because it is out there, you know...it would be good to have some positive interaction." A similar message is conveyed by an interviewee from Community C, "I guess it's staff too...well everywhere you go you meet a person that's racist and you bump into a lot of that. Even when I go to (small urban centre) and (large urban centre)." Interactions with outside people have sometimes a history laden with understandable mistrust, as exemplified by the following quote from Community C, specifically related to outside research initiatives:

> "I think that the problem with those people is that they don't trust people. They don't exactly like people who come to do surveys, because there are so many other people that came into the community and then did similar things and then they used that against us with I don't know what agencies and stuff like that. Bad listed us, so I think that's where the distrust comes from. They use the knowledge that they gain and use it in a negative way, which they thought was for a positive. So I think that's where the distrust comes from."[46]

[46] This can also belong to the Linkage dimension if surveys were conducted, for example, by Statistics Canada, or by a university team with no partnership with a First Nations organization.

Another aspect of trust to consider is the confidence community members put in organizations like Tribal Councils or the Assembly of Manitoba Chiefs.

Norms of reciprocity

In a broad sense, these refer to similar norms of reciprocity as in the bonding dimension, the difference being that in the bridging dimension they are in relation to people outside the community, from other First Nations communities or from towns or cities. An expression of this would be how community people experience their relations with people from urban centres. Experiences of racism could have shaped certain patterns of reciprocity. As one community member from Community A expressed, "the expectations are different when you move from a reserve local to an urban area." Expectations of reciprocity between people from different First Nations communities are of importance. Sometimes these can take negative connotations, like was the case between young people from Community B and a nearby First Nation community where rivalry was high, resulting several times in mutual acts of aggression. Apparently, this rivalry diminished in its violent expression over the last ten years. Also, an important aspect of bridging norms of reciprocity are the relations between band administrations among different communities, that can be collaborative or conflictive. Norms of reciprocity within our framework would imply the existence of reciprocal norms of collaboration between communities.

Collective action

The following detailed example about Child and Family Services from Community B exemplifies bridging collective action:

> "What's happening now is that the Chiefs, the Assembly of Manitoba Chiefs and MKO are working with the provincial government and federal government and there are two processes going on right now. One is called Free American Agreement Initiative and that's to work on bilateral agreements, where MKO and AMC will be working on developing First Nations legislation, just taking over jurisdiction of...supposedly...10 programs. One is Child and Family Services...so that's work of the First Nation's political organization's with their technicians and staffing and working with the communities on changing to make more culturally appropriate laws and legislation and program standards."

By their very nature, organizations like AMC, Tribal Councils, etc., are institutional forms of collective action. Collective action can also be seen when two communities work together to confront certain common issues like environmental damage, substance abuse, economic development, etc. The act of communication between communities around common issues can be an aspect of collective action, as expressed by this comment from Community B

> "when there's a protest going on like some of the native leaders will send to all Chiefs and Councils for support...usually when something like that happens like if a letter comes in here or fax, some high profile person is going to go from here...so there's support."

Participation

The presence of people from neighbouring cities or towns in events organized by Community A, like its annual Pow-Wow, is a good marker of bridging participation.

> "There are some people from (nearby small urban centre) that visit, like that have friends. You see a fair number of people from (nearby small urban centre) out at the Pow-Wow...we have been trying to advertise it as a unique opportunity to come and see the culture and stuff like that."

A lack of bridging participation is expressed in this comment from an interviewee "...a lot of our people can't see beyond the boundaries of Community A...", implying that there can be a large segment of the community that does not participate in activities with other First Nations community members or people from the nearby city. A clear example of bridging participation comes from Community B, "...even people from out of town, as far away as from the U.S, e.g, professional paddlers, come to participate during FestivalDays[47] and Pow Pows."

Networks

This component of the Bridging dimension refers to **between** community networks. It seeks to capture the existence of structures of recurrent transactions between communities that can be characterized as inclusive (that are relatively open to newcomers or to the exchange with newcomers), diverse (that a diversity of networks are capable of interacting in a meaningful way), and flexible (that adjust to new or changing requirements).

[47] Specific name of the event has been excluded to avoid identifying the community.

Inclusive

Inclusive bridging networks involve the existence of structured interactions between the First Nation community members and nearby town or city residents. Lack of inclusiveness would be seen if these networks are almost exclusively among aboriginal people, which could indicate lack of access to connections with non-aboriginals. Obstacles to the access of certain information (e.g., job opportunities) could be an example of lack of inclusiveness. Similarly, the lack of inclusiveness could be seen if a particular First Nation appears to be "out of the loop" (as described by a Community C interviewee) of important information from its Tribal Council or other First Nations organizations. Awareness of what happens in other First Nations communities, would demonstrate inclusiveness in the connections between these communities.

Flexible

A woman from (nearby small urban centre) is part of a mentorship program this year and she is currently mentoring a high school student from Community A…"so I'm going to bring her to Toastmasters…I'm actually taking her to this Credit Union because I belong to the Credit Union board of directors." This is a specific example of flexible bridging networking, because it implies the creation of new potential networks quite different from more traditional ones for a Community A youth. The following quote could be a description of lack of flexibility of networks in Community A:

> "Well, I think that it is parents that don't have a lot of education themselves, you know, so they don't see the value of or maybe they do…maybe it is in part that they don't want their kids to get an education and leave…want to keep your family at home in the community kind of a thing…I've heard comments 'oh they left and

> they are gone' and it is seen as a negative…like you moved to Alberta you are not really a part of us anymore. Even though that person…maybe has very strong ties to their family and a lot of emotional and stuff…but it's almost seems like a controlling thing…they want you here; you have to be here to be part of Community A."

So the possibility of establishing new acquaintances outside the community is an expression of flexibility of networks. On the other hand, long-term resentfulness with people from other communities could signify the opposite.

Diverse

A good example of diversity is the following from Community A, where band administration staff is able to seek advice from diverse communities:

> "Like (a nearby First Nation community)...we went down there and saw their finance…the way they did their operating…then we went to (another First Nation community)…about their radio station…we did a tour…they are willing to send somebody over here to help set up, like a disc jockey to practice whoever we identify…they gave us their by-laws…and we've compared notes with (a third First Nation community) on organizational issues."

An example of lack of diversity could be what some students face when going to the city to study, when

> "they don't have the support systems in place, in the urban areas…they don't have the relatives there which is usually the support system on the reserve…(where) you've got lots of relatives that are going to help you, if you run into any kind of problems."

According to several interviewees Community B appears to access a diversity of networks that are useful for their agencies' staff, "we (frequently) go to workshops with other communities, where we network." Diversity could also be related to frequency of contacts with one community, like the case of Community B and a neighbouring community, "we're in contact with (a particular First Nation community) people a lot." Simultaneously, diversity could imply contacts with specific people from diverse communities. Such is the case when Community B community members connected with others on traditional practices,

> "(we go to) Alberta…South Dakota, North Dakota, Montana and all the way down there visiting communities but most of the time go out there to do ceremonies so it brings people together. Brings out that native pride I guess. Aboriginal togetherness all over the place we go around and do that."

The following is a good example from Community C of the importance of diversity of bridging networks:

> "Like I had a lot of communication with a (First Nation) community. They actually had the (internet) services of the same company...They also have a satellite service set-up in their community. Because they had the same internet problems as we had…so their solution to that problem was also the same thing we're looking for…so when I obtained the services of (the communications company) I made a special deal with them, and I said there's about three other companies we could get and some of them are cheaper than you guys…I said I'll get your services if you guys hire the guy from (a particular First Nation community) as a consultant to come over here with you guys to help me set it up properly…"

Another individual from Community C expressed concern over the lack of diverse bridging networks,

> "We have to learn how to network with one another…even network with our First Nations, even the ones that are the most successful, that have all those facilities in their First Nations. How did you do it? Can you lend us a hand over here. There is not too much communication with other communities. I've never been to (a First Nation community) I've never been in (another First Nation community), that's another thing that doesn't happen…it's like going to a different country, except you're in the same country…crossing borders so to speak. And I don't know why, that's just the way things happened. Where we all ended up in different places, in isolation."

A nurse from Community C expressed similar concerns,

> "(We need) to see what works in (mentions four First Nations communities). Cause you apply sometimes, you know some thing works really well and you share it with other people…that's something that has to be worked on…like even as nurses we don't travel out very much cause there's, well there's not enough people here you know to be able to go out…they should be able to go out to the different workshop and services."

Linkage Social Capital

Socially Invested Resources

This component of the Linkage dimension relates to community **and** extra community institutional (governments, corporations) resources. To qualify as belonging to this component these resources must express a social investment. Because types of resources can be mutable, the five descriptors (Physical, Symbolic, Financial, Human, and Natural) capture the invested resources at the point in time when they are that category of resource. Physical refers to tangible resources produced by human beings. Symbolic refers to resources that pertain to the identity of the community as such, and for the most part are intangible. Financial are monetary resources in its different forms. Human resources mean human capacity as a product of formal and informal education. Natural resources are those provided by nature, shaped with or without human intervention. The examples that follow illustrate these categories.

Physical

An example from Community A of physical socially invested resources of the linkage dimension is the construction of their health centre and the paving of the highway. It is linkage because capital resources for these investments were essentially a product of the relationship with federal and provincial government departments. A negative example from Community B is Indian Affairs, reluctance to increase allocation per unit for housing…"there is a fixed amount for housing (capital funds) that is allocated from the

Federal Government." The relatively recent instalment of a water treatment plant in Community C is another positive example.

Symbolic

A historical view helps understand the nature of symbolic socially invested resources within the Linkage dimension. Regretfully, some of the most clear illustrative examples are seen from what could be called disinvestments, as the following dialogue from Community A demonstrates:

> "My older sister never spoke (Dakota), she could never speak...my mother could understand and I could understand a little....but when we were going to school you more or less spoke English first...when the kids spoke (their language) in regular residential school they got punished for it and so she wanted us four to speak English...so I learned English in the public school, my Dakota was totally lost..."

This story from Community C reflects the same issue:

> "My parents were the first ones to go to the residential school...then they sent us...like at that time it was a crime, you had to send your kids to a residential school...so we learned a little bit of Cree at home...because by the time my younger brothers and sisters went they we're speaking total English at home...they completely lost their language."

A Community B elder states the importance of this investment, "I guess the thing we need to look at is to get our identity back, and that's the language, customs, traditions...the government should encourage to go after our own languages, because it is God given." A positive example is the following from Community C:

"...before the Cree language program started it was through volunteer work that I worked for two years to start up the program...after that Indian Affairs gradually took over...so that's when payroll started coming...it started building up since than...it started in 84, then kept going till now and it's recognized as the programs that you have to take to get credits."

The above examples show the powerful impact (negative and positive) on symbolic socially invested resources of external institutional links.

Financial

From Community A this observation on the relationship with banks evidences difficulties in this area: "with the majority of native people I think its either you have poor credit, no credit or bankrupt...and because of that a lot of Band members have limited access or no access to funding to start their own businesses." Also Band administration credit ratings are an example. As was pointed out in Community C: "Well...we weren't conquered, that's why these treaties were made...(and) we also have the opportunity that the government has provided extra ways we can help ourselves...but what's happening is a lot of communities are taking that help and that money but they are not using it to better themselves", i.e., not being socially invested.

Human

The linkage with external institutions is particularly relevant for human socially invested resources that relate to formal education. A positive example mentioned in Community A is the training offered through the Access Program of the University of Winnipeg and the University of Manitoba. Similarly, Brandon University is starting a Northern Teachers

Education program. Community B has a "First Nations Family Justice" program that is a mediation program that runs on a peace-making model and is funded through the province and the federal government and channelled through a provincial First Nations organization into Child and Family Services. Lack of adequate health care access, as mentioned in some Community B interviews would suggest a negative investment "there are problems with the dialysis machine unit…it stopped because of lack of funding for personnel." An interviewee from Community C explained an interesting initiative relevant to human invested resources:

> "Out of the national child tax benefit...what the government has done…they take a percentage out…I won't even recognize that it's gone…very little is taken from your check…and that happens to all the social recipients, and at the end of the year that adds up, it's a reinvestment program…where you can actually use those dollars to reinvest in your community, in your First Nation[48] …this past year there was some monies left over, and they used it for the hot lunch program…and it was $100,000, so what we did is we broke it down and based in on a budget on a once a month budget, where we would spend $10,000 a month on groceries. We ordered a supply out of town, and that's how we fed the kids."

The lack of grades 11 and 12 at the school in Community C signals a lack of investment.

> "Speaking as a parent I could say the education system is poorly under funded…I don't think these students in the Northern Communities are getting the education that other students get in the south…I think we're being cheated when it comes to education…We can't get specialists for special education, for example for the reading recovery program…We can't go with the same funding for special

[48] This aspect is also Bonding financial socially invested resources.

> education that other schools have, because there are so many more special needs here."

Another example that was brought up by an interviewee from Community C was the issue of nutrition.

> "Nutrition, the school would need federally funded snacks. There are lots of starches and sugars in the food kids normally eat at home (or subsidies for healthy food would be needed)...Nutrition is a big factor...the Health Authority speaks of a diabetes epidemic...we need nutrition programs in the school, so we can start when they are young..."

This interviewee mentioned that ironically there is a pop machine at the school. The above quotes illustrate how relevant are the links with government departments to the increase or decrease of stocks of human socially invested resources.

Natural

An interviewee from Community A describes the loss of this investment as follows:

> "(A)s a result from some of that push for agricultural development most of the reserve's natural environment such as the bush and where people used to cut logs for their firewood and everything...all that was bulldozed down...to make room for agricultural development...so large stretches of bush disappeared, so did the wildlife...I used to be able to hunt oh within a 100 yards of my house, deer, grouse, prairie chicken, ducks, rabbits and other kinds of eatable foods...and we used to be able to pick berries behind my house...but that was all destroyed."

Or in Community B "The other thing that needs to happen is to preserve our environment. Not to have it dictated by Manitoba Hydro, Manitoba Government." A negative investment mentioned in Community C,

"Yes, it was blue like (the water), (now) in the summer time you see a lot of those bubbly things like when you're doing laundry...and this one year we had, when they first made sewer and water there was raw sewage going down to our lake...which we didn't even know about because of the way they built the system...so there was a lot of our kids that were getting like skin diseases or rashes."

Another interviewee from Community C continued to illustrate this point,

"Survey took away the soil now, but can you imagine the type of soil ground that we have, like there is a runoff...it goes into the lake, so I am sure that it is affecting the food chain too, like the fish, the wild animals that eat the plants...each reserve had these hydro plants in their reserves for the power...Hydro's done a lot of damage to mother earth, so the people can't use that...I don't know about here, but some places you are not allowed to eat the organ meats of the animals because there is so much pollution here...There's too much mercury in the fish."

The above examples clearly show the impact of external corporations on natural socially invested resources, mostly in a negative way.

Culture

This component of the Linkage dimension refers to community **and** extra community institutional (governments, corporations) relations. The term Culture that names this component expresses the idea of the existence of a culture of trust, norms of reciprocity, collective action, and participation between communities and institutions like government departments and public or private corporations. Trust is self-explanatory in that it means

that community members trust these institutions or their staff. Existence of norms of reciprocity, although feasible of being considered a neutral notion, conveys for this framework the idea that the reciprocity is of a positive nature. Collective action represents the fact that community members may pursue actions with institutions that seek the benefit of the collective. Finally, a culture of participation implies the willingness of community members to be involved with institutions in common activities. The difference with collective action is that the main reason for participation is that of the individual's interest, with no explicit purpose of a collective good.

Trust

The experience of trust or lack of trust with institutions emerges from direct experience of individuals with representatives of these institutions (agents, administrators, service providers, etc.) or indirectly through the experience of the community leadership with these institutions. This comment from Community A speaks of lack of trust based on individual experiences, "I've heard people make comments that they don't feel the doctors listen to them sometimes or they don't feel that they are treated properly when they go to the hospital…like you know to the emergency department and stuff like that." Similar concerns were brought up in Community B "bad attitude (of doctors) towards the people." From Community C there is a description of lack of trust between community leadership and the federal government: " (the interaction between) aboriginal people and the federal government…seems to be a political, I don't know, clash for every thing, red tape…it's for ever going and going…once in a while we get some answers but most of the time it's like there's not enough for the people to go on." On the other hand, an individual from

Community C involved in negotiating possible development opportunities with staff from Indian Affairs, talked highly of a staff person he was dealing with, suggesting a trusting relationship. Consequently, experience of trust or lack of thereof with federal/provincial governments and agents, banks and corporations, can be both from an institutional level (e.g., Chief and Council) and a community member level.

Norms of reciprocity

The following comments illustrate sentiments related to norms of reciprocity between communities and institutions, in these examples mostly related to Indian and Northern Affairs. "I think Indian Affairs made people helpless and it takes a long time to break that mould" was the interpretation of a community member from Community A of historical reciprocal relations. A Band worker from Community B, talking about inland communities indicated that Indian and Northern Affairs takes advantage of them in their negotiations

> "(I)t is really sad what they have to go through, they don't have the resources, they have nothing, and that is the way policies are set up at INAC, that is the way they are treated." "You know, we can't survive by ourselves, we need to do it with both governments...we have to work in cooperation, cooperate with each other, and maybe the government will be sensitive in a lot of areas the people are demanding...because we were lords of this land at one time, and now we have to beg, and humiliate ourselves which shouldn't be the case. No. We shouldn't bow down to that."

In summary, evidence of norms of reciprocity would be seen if there is experience of fair treatment with federal/provincial governments, banks, corporations, and lower levels of tension and conflict.

Collective action

Collective action between Community B and the government can be seen through the following statement:

> "So right now we're restricted just to on reserve residences but on reserve that's not our agreement right now…so we need an agreement (signed by) council (and) the provincial government and federal government…that we use the Manitoba Child and Family Services Act to do the work…and then Indian Affairs provides the funding to the agency because it's all based on population, registered children on reserve and that's our funding."

The experience of working together with federal/provincial government agencies, as with corporations, in collaborative ventures and for mutual benefit, would be evidence of linkage collective action.

Participation

The following comment from Community B, would imply lack of participation at a linkage level: "…(T)he last Indian Agent here was years ago, but still our Chief and Council takes direction from the Department of Indian Affairs. They're the governing body here." The loss of participation at a linkage level was made graphic by this interviewee's statement:

> "Yes, I guess part of our practice, part of our culture is doing a lot of community consultation...and the federal government slashed that piece of it...we used to have community co-ordinators who would do the consultation, set up workshops to inform the people about the changes...the federal government argued what we were doing too much consultation."

Key indicators of participation for the participation in the linkage dimension would be voting rates in federal and provincial elections.

Networks

This component of the Linkage dimension refers to community **and** extra community institutional (governments, corporations) networks. It seeks to capture the existence of structures of recurrent transactions between communities and institutions that can be characterized as inclusive (that are relatively open to newcomers or to the exchange with newcomers), diverse (that a diversity of networks are capable of interacting in a meaningful way), and flexible (that adjust to new or changing requirements).

Inclusive

Inclusiveness relates to interactions with institutions, which can be from a Band Administration perspective or from a community member's perspective. An example of the former from Community C is the following statement from a band official

> "So I contacted the company representing Indian Affairs ...so I dealt with...a gentleman by the name of...a really good guy to deal with...and he was

> extremely co-operative with all my ideas… providing very useful information that saved money and helped upgrade educational services."

A similar case was the ability to establish a deal with a computer company and the Education Authority to allow the school to have a computer lab. This deal was possible because of the inclusive interactions that had been established between the institutional players. The other aspect, relates to the experience of community members with institutional agencies that operate in the community (school, hospital/nursing station), RCMP, and outside the community. The openness of the school in providing information or enhancing parent involvement would be an expression of inclusiveness. Similarly would be the access of individual members to federal and provincial government information.

Flexible

As with inclusive networks, these relate to interactions from community members' experience and from Band institutional levels. Flexibility would be expressed by school staff and authorities being open to change how they relate with community members, and vice versa, continually adjusting to new situations. Similarly with Hospital and/or nursing stations. At a band institutional level, the lack of significant change in modes of interaction with government departments and corporations, would signal lack of flexible networks for the linkage dimension.

Diverse

Lack of diversity of networks from a band institutional level would be constituted by the reliance on very few sources of contact with government departments, corporations and

banks. This would be similar from a community member's view, for example with school and hospital/nursing station staff and authorities.

4.2.3. Revisiting the framework

The previous subsection brought the social capital framework to life through a discussion of examples of different dimensions of social capital in the case of three First Nations communities in Manitoba, and to the extent possible, sought to provide categories that can be extrapolated to other First Nations. It presented supporting evidence grounding and revising the framework. This subsection is also the result of the iteration between theory and qualitative evidence in the shaping of the conceptual framework. It offers the framework as it applies to First Nations communities and provides direction to the development of the measurement tool.

Bonding social capital refers to within a community interactions, Bridging social capital refers to between communities, and Linkage social capital to links between communities and institutions. Consequently, the identification of each dimension first requires a delimitation of what constitutes community. Communities can be defined spatially, ethnically, by interest, etc. In the case of First Nations communities, we have a double specification. Due to treaties signed, the Crown set apart land reserves for the Bands party to the treaty, which created a defined geographical boundary. This spatial delimitation of communities was particularly artificial at the time the treaties were signed, because aside from bands losing extensive areas of traditional land and in many

cases being relocated to other areas, in some instances different bands were brought together within the same reserve. Nonetheless, First Nations communities can be delimited through band membership and treaty rights, including some degree of self-government. This combination of geographical, ethnic, and administrative boundaries provides a clear delimitation for each community, albeit with some complexity. In many cases, the number of band members living outside of the reserve is high compared to that of the population on reserve. As well, reserve populations are composed of numerous members from other bands and non-native individuals. These proportions can vary significantly across reserves, but depending on the view we take, both band members not living on reserve and non-band members living on reserve can be considered part of the community. As mentioned above, for the purposes of the study it is essential to clarify what we define as First Nations community. This study centres its understanding of First Nations communities as those delimited by the political unity of a reserve, but including all inhabitants, both band members and non-band members. In this sense they can be considered communities of place (Flora, 1997). However, this definition does not exclude those living off reserve, but considers them part of the community through their connections with on reserve community members. Consistent with these notions, bonding social capital refers to relations within each First Nations community. Bridging refers to horizontal links with other communities, be they other First Nations communities, or other communities of place (e.g., urban centres). Linkage refers to connections between a particular First Nation and institutions like federal/provincial government departments and public/private corporations (e.g., Manitoba Hydro, banks).

The framework includes in each dimension three components, socially invested resources, culture, and networks. However, valences[49] are required to assess the stocks of social capital. These valences are what the framework calls descriptors (and should not be considered sub-components). In the case of culture and networks, they are straightforward in the framework. These descriptors purposely are positive valences. Consequently, for example in the case of culture, higher levels of trust would ultimately entail, *ceteris paribus*, higher stocks of social capital. However, this is more indirect for the descriptors of SIR, where the valence is actually the degree to which the resources are socially invested, and the descriptors are specifications of types of resources. Nonetheless, the combined degree to which each specification of SIR is socially invested speaks, other elements being equal, to higher stocks of social capital.

Let us examine more carefully each component. Resources can be consumed, stored or invested, and capital is a resource that is invested to create new resources. Socially invested resources are considered aspects of social capital in this framework, precisely because they are resources that are socially invested. A central consideration for being socially invested is that these resources have the potential to benefit the community as a whole, and not some privileged few. Thus, socially invested resources should be assessed by a combination of the amount of resources invested and the degree to which they are socially invested. This is problematic, because a low amount of invested resources could be an expression of lack of community commitment (e.g., to share resources) or simply of a lack of resources. Insomuch that it is the latter, it would not be accurate to compare

[49] Valence: the degree of attractiveness an individual, activity, or object possesses as a behavioral goal (Merriam-Webster Inc, 1989)

communities that might have significantly different amounts of resources as indicators of social capital. Consequently, it is the degree of social investment that matters most. The framework of this study includes five resource descriptors (Physical, Symbolic, Financial, Human, and Natural). Each descriptor captures the resource investment at that specific stage of being a resource. Resources are essentially mutable, for example a financial resource becomes a physical resource when money is used to build houses, or a human resource becomes a financial resource when income is earned due to an education degree. Consequently, these five descriptors seek to capture the different facets of socially invested resources at a given point in time.

As was already indicated, the cultural descriptor in this framework relates to the degree of the existence of a culture of trust, norms of reciprocity, collective action, and participation within the community. First Nations with higher levels of trust between community members as well as with community authorities, with stronger positive norms of reciprocity between individuals and groups, with more potential for collective action, and with a higher willingness to participate in community activities, would be considered as possessing higher stocks of social capital. The culture component would express the quality of relations, and the network component would describe the quality of the networks.

Networks, defined as structures of recurrent transactions, can be characterized by how inclusive, diverse, and flexible they are. Higher degrees of these three characteristics would imply higher levels of social capital. Inclusiveness of networks refers to the notion

that these structures of interactions are relatively open to the possibility of newcomers and to the exchange of information with newcomers. While there is room for subgroups with high levels of interaction (e.g., communities of interest within a community of place), communities require the existence of diverse networks for higher levels of social capital of the community as a whole. Diversity implies the co-existence of networks that differ from one another, composed of distinct elements or qualities, but that are capable of interacting in a meaningful way. Flexibility of networks implies a ready capability to adapt to new, different, or changing requirements. Inclusiveness, diversity and flexibility are actually interrelated qualities. They are different aspects of a same phenomenon. In general, a correlation among these three descriptors of networks should be expected. Both bonding and bridging networks refer to horizontal relations. The idea is that lateral learning is critical in networks, communities learn best from each other. The difference between bonding and bridging networks is that the latter refers to within community relations, whereas the former to between community relations. Networks for the Linkage dimension refer to the links of the community to provincial, federal government departments and public/private corporations. Though horizontal links (bonding and bridging) could acquire more or less vertical characteristics due to power inequality dynamics, they still are considered horizontal in nature, whereas linkage refers to relations vertically constituted, because of the power hierarchy is instituted as vertical (consequently it is possible for these linkages to be more or less horizontal, but from a given vertical nature). However, whatever the dimension the same ideas apply in the assessment of the networks.

In summary, social capital would be assessed by the combination of its three dimensions and each dimension by the combination of each component (by the degree to which its resources are socially invested, the degree to which there is a culture of trust, norms of reciprocity, collective action, and participation, and the degree to which its networks are inclusive, flexible and diverse). This brings us to the operational definition of Social Capital for this study: *Social capital characterizes a First Nation community based on the degree that its resources are socially invested, that it presents a culture of trust, norms of reciprocity, collective action, and participation, and that it possesses inclusive, flexible and diverse networks. Social capital of a community is assessed through a combination of its bonding (within group relations), bridging (inter-community ties), and linkage (interactions with formal institutions) dimensions.*

This section ends with a quote from the Royal Commission on Aboriginal Peoples, that referring to aboriginal societies of the past, offers a clear description of communities that could be understood as possessing high stocks of social capital:

> "The economic relations embedded in traditional cultures emphasized conservation of renewable resources, limiting harvesting on the basis of need, and distributing resources equitably within the community, normally through family networks. Since families and clans owned rights to resources and since everyone was connected in a family, no one was destitute and no one was unemployed."(Royal Commission on Aboriginal Peoples, 1996b).

CHAPTER 5

Instrument Development Results

This chapter presents the results of the psychometric analyses that assessed the reliability and validity of the survey instrument. It addresses the second main objective of the study. Initial sections discuss measurement issues and "don't know" rates and non-responses.

5.1. Measurement issues and construct validation hypotheses

To develop the questionnaire, this study has worked "from concepts, models and hypotheses to colloquial questions that stimulate responses to provide the data necessary to measure key variables." (Rose, 1997) Thus, as this author indicates, "once data is collected there is a clear idea of how it ought to be analyzed, and how the results can be interpreted in ways relevant to public policy." This chapter will report on the psychometric analyses results of the piloted questionnaire of social capital. However, the decision to use a survey for the measurement of social capital is based on assumptions that simultaneously require certain cautions. Although the last chapter will more fully discuss the implications of these issues, several specific concerns need to be identified at this point. To do so, we will mainly follow what Schuller and colleagues (2000) have identified as measurement challenges of social capital.

These authors identify three central issues: the methodological challenges of measuring social capital; the problems of explanation across time; and the problem of aggregation of

data from individual levels to social structural levels. The first challenge, "appropriate techno-methodologies" refers to the deployment of techniques that the quality or quantity of the data available cannot sustain. The main point that these authors make is that research requires careful acknowledgement of limitations of the validity of the data, and their call is for an appropriate mixture of quantitative and qualitative approaches. In a sense, it was precisely this challenge that defined the goals of our study and shaped the entire research plan. "Temporal issues" is a second challenge, that requires securing a long enough timescale for measuring change. To some extent this is not of direct concern to our study, given that it is a one-time snapshot, although it would have important implications if the instrument developed here were to be used in longitudinal research (or even more problematic if it were used in inquiries that match cross-sectional with longitudinal analysis). The requirement would be that the timescale for measuring change should be clearly hypothesized. However, the specific implications of this challenge for our study relate to the wording of certain questionnaire items and to test-retest stability analyses. The assumption was that social capital as a community trait[50] would be stable for a minimum period of a few years. Consequently, some items were worded that compared perceived change within the last five years, and test-retest administration was to be done within a matter of several weeks. The third challenge identified by Schuller and colleagues is "circularity", where social capital has been used both as an explanatory variable and as a descriptor for that same phenomenon. Because the purpose of our study is to develop a conceptual framework of social capital and measures for use as explanatory variables for population health studies, the issue of circularity does not arise.

[50] "Measures that have high temporal stability are called 'trait measures', and measures which have low temporal stability are called 'state measures', although the distinction is a continuum." (Nunnally et al., 1994, p. 235) Social Capital would be a "trait measure".

However, a caution related to circularity is sensible for the ranking of the three communities in their levels of social capital for construct validation purposes. We will return to this in a few paragraphs. The use of a survey of individuals whose scores will be aggregated to measure a community level attribute falls within the challenge of "aggregation." The assumption is that a measure of social capital can be aggregated up, or more precisely like in the case of our study, that the data provided by individuals can be aggregated up to an ecological level measure of social capital. Added to this is the issue that many questionnaire items are actually prompting responses of individual perception. At this point it is enough to signal that these are key assumptions at play, implications of which will be discussed in the last chapter. A final possible measurement difficulty specific to our study is that despite the conceptual framework providing discrete categories that questionnaire items seek to tap into, some observations may have some applicability to more than one category.

For construct validation purposes, this chapter will hypothesize that Community B will perform better on the Bonding dimension of social capital, Community A will perform better on the Bridging dimension, and Community B will perform better on the Linkage dimension[51]. How and why these hypotheses were formulated will be explained next, as well as addressing the possible flaw of circularity. The questions to answer are: What is the evidence from which these hypotheses are derived? What were the sources of the evidence?

[51] Following what Spector (1992) calls "known-group validity" studies.

The methods chapter (Chapter 3) explained how the three communities came to participate in the study. Their participation was both a factor of self-selection (which in itself could be described as a community level bias, unavoidable for ethical and political reasons) and of choice made by Health Information and Research Committee members based on research criteria and best judgment. The criteria for selecting three communities was as much as possible that they be of different size, geographic regions, economic development and cultural representation. The selected communities met these criteria for differences. After the communities were chosen, during a meeting of the Health Information and Research Committee, possible indicators of social capital were discussed and applied to describe these communities. These indicators were based on the opinion of committee members: Their view of community internal relations, development, cultural strength, relations with other communities, urban centres, First Nations' organizations, with federal and provincial government, and with corporations. Similar opinions were sought in conversations with other First Nations informants (that were not members of any of the three communities) that were consultants during the study. This constituted the first source of evidence. The second source was information gathered during the ethnographic phase of the study, both through interviews and observations. Questions seeking to compare communities based on the above indicators were purposely asked on occasions. The two complementary sources of evidence enabled the emergence of a picture in which Community B would be expected to possess higher stocks of social capital at the Bonding and Linkage dimensions, and Community A at the Bridging dimension.[52] There is no doubt that these conclusions were tentative at best, but the

[52] An explanation of the process used to establish these external criteria for construct validation follows. The indicators were: quality of community internal relations; degree of community development; cultural

corroborating evidence from the different sources provided enough confidence to formulate these hypotheses. Nonetheless, concerns regarding circularity should be taken into consideration. In fact, the possible circularity flaw would have two separate origins. First, it relates to the fact that the ranking comes in part from the same data sources that were used to create the questionnaire items (the ethnographic study). Second, that some of the indicators used to determine the ranking (e.g. community development) could be considered a function of social capital. Consequently, validation results will need to be interpreted with these notes of caution.

5. 2. "Don't know" responses and non-response rates

Although other implications of study limitations will be discussed in the next chapter, one issue with analytical implications merits attention at this point, the percentage of non-respondents or of respondents that chose the "don't know" answer category. Given the, in some cases, high percentages, a detailed assessment of this matter is presented in Appendix 5-II. What follow are the main conclusions and implications of this assessment.

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strength; quality and extent of relations with other communities, urban centres, with First Nations organization, with federal and provincial government, and with corporations. Communities were ranked high, medium or low for each indicator based on the opinion of three types of key informants: members of the Health Information and Research Committee; other First Nations informants that were not members of any of the three communities participating in the study but that knew these communities; community interviewees from the ethnographic phase of the study. The former two types of key informants totaled 12 individuals, and the latter 18 among the three communities. Observations from this phase of the study were also considered when determining the final ranking. Community B was ranked high for aspects of the indicators relevant to the Bonding and the Linkage dimension by 80% of the key informants. Community A was ranked high for aspects of the indicators relevant to the Bridging dimension by 60% of the key informants, thus being the evidence less conclusive in this case. Based on this evidence, final rank order for construct validation purposes was established the day the training of surveyors was completed in August of 2001, just before the pilot survey started.

An important challenge to the assessment of the psychometric qualities of the social capital instrument was the relatively high rates of non-responses and "don't know" responses in a number of items (Tables 6a, 6b, 6c, 6d). A positive finding was that the order of questions did not noticeably affect response rates, which minimized the concern about interviewee fatigue. Based on the relatively low rate of respondents choosing the "not applicable" response, it could be argued that interviewees considered most questions applicable. Nonetheless, improvement in wording of some items could be warranted to make sure respondents understand that non-applicability refers to community circumstances, and not necessarily to their individual choices or needs. The choice of "prefer not to respond" had a different connotation. It was a clear statement that, for whatever the reason, the respondent did not feel comfortable answering the question. It possibly tapped into sensibilities that could be both individual and community related. An interesting finding was that there appeared to be systematically higher rates of "prefer not to respond" in one of the communities (Community B). Consequently, an inference about community factors playing a role is not unreasonable, and to some extent these could be factors related to social capital (e.g., higher mistrust, more difficult internal political climate, etc.). Nonetheless, the instrument as presently designed did not allow for further empirical examination of this issue, but it should be an avenue to consider for future developments of the tool. High "don't know" rates were problematic and went to the heart of the issue of meaningfulness of items and limitation of results. Let us examine this now.

There were three separate but associated issues to consider. First, the absolute percentage of "don't know." Second, the difference between communities in "don't know" rates. Third, the difference in "don't know" percentages between scales. The former relates to item meaningfulness, the second issue to differing community factors that may have impacted these rates, and the latter to distinct appropriateness of survey data for the different dimensions of social capital. There is no doubt that the very high percentage of "don't know" responses to some items puts into question their intrinsic usefulness. However, the fact of substantial differences in rates between communities precluded any simple decision of discarding these items from further analyses. Consequently, despite possible limitations, the choice was made not to discard items based on these "don't know" rates (nor for non-response rates). An added difficulty would have been to decide on a standard to use to discard items. Admittedly, this is an issue to examine in further refinements of the instrument, but at present it was considered that the assumption of item meaningfulness should be less stringent for a questionnaire consisting of items about society than for questionnaires about self. Nonetheless, several attempts were made to better account for "don't know" rates (and in some cases non-response rates as well). One attempt was to determine if demographic characteristics could account for "don't know" rates. The results suggested mostly a community effect. The overall message appeared to be that "don't know" rates did not seem to be strongly determined by age, educational level, marital status, number of children living at home, or employment status, and only somewhat by years living in the community for the Bonding scale and by sex for the Bridging scale.

The following factors appeared as plausible explanations for higher rates: tangible nature of questions (how concrete the question was); wording of items; questions about self, about direct experience, or about community; interviewer bias; lack of that particular resource or of knowledge about the existence of that resource in the community; and political sensibility/mistrust. Implications of these factors are different. The first two factors would require a re-examination in the wording of the more problematic items, to improve their comprehension by interviewees. The issue of questions about self, direct experience or community is relatively non-resolvable given the nature of the construct that the instrument seeks to measure, and for that reason a less stringent criterion for consideration of item meaningfulness is required. Interviewer bias was not entirely ruled out, although it appeared to be unsystematic enough as to not invalidate the results. It did however draw enough attention to the issue, making it advisable for future survey implementations to increase interviewer training and monitoring. The latter two factors are interesting because they offer insights into more creative item development and analytical methods. A first option is to include items specifically designed for each dimension to examine "prefer not to respond" and "don't know" rates as markers themselves of levels social capital (e.g., as direct indicators of mistrust, political sensibilities, of lack of information, etc). A supplementary option is to use analytical methods like the imputation of items in the way described in Appendix 5-III. Finally, higher rates of "don't know" answers in the Bridging and Linkage scales may signal the pertinence of supplementing individual survey data with ecological level data in developing composite measures of social capital. This will be discussed in the final chapter. In summary, somewhat elevated non-response rates, and particularly high "don't

know" percentages for a number of items placed limitations on psychometric analyses results, but simultaneously provided paths for further instrument improvement[53].

In conducting psychometric analyses, non-responses ("prefer not to respond" and "not applicable" options) were strictly considered missing data and left out of the analyses (the reason being that respondents were making a clear statement that they did not want to respond or that they thought that it was not an applicable question, thus asserting their right to have their information excluded from the study). "Don't know" responses were imputed by giving them the mean value of the community where the respondent belonged.[54] Nonetheless, for methodological assurances, key analyses were performed in parallel considering "don't know", "prefer not to respond" and "not applicable" as missing data, with no substantive differences in results (because of redundancy, these results are not reported in the study). A supplementary analytical option was also taken. For some analyses, dummy variables (one category being those who responded along the Likert scale and the second category those who responded "don't know") were incorporated.

[53] There is a tradition among authors on psychometrics recommending that questionnaires not include the "don't know" option. The valuable information that this option provided to our study counters this prevailing opinion. Nonetheless, future iterations of the instrument should assess this possibility.
[54] The advice on how to treat missing data is somewhat conflicting. Cohen (1983, p. 292) suggests "plugging with means." On the other hand Obeng-Manu (2001) states that "unconditional mean substitution leads to an underestimation of the variance, and thus a small standard error and a possibility of Type 1 error."

5.3. Psychometric Analyses

The social capital framework proposed in this study specifies three dimensions, bonding, bridging and linkage. It is theoretically contemplated that a community may possess a high degree of one dimension and lower degrees of the others, or any other combination. There is no assumption that the dimensions be correlated, and hence no expectation of a correlation between items that tap into different dimensions. In fact, low correlations could well be expected. Despite the questionnaire being administered as one entity (Appendix 5-I reproduces the questionnaire, that may be of convenience to consult throughout this chapter) the analysis goals for the assessment of reliability and validity of the instrument assumes three separate scales, one for each dimension. Consequently, all analyses were performed separately for each dimension. As well, when pertinent, some item analyses were also performed separately for each of the three dimension components.

5.3.1 Analysis goals and plan

Primary *goals* in the development of this instrument were to produce a measurement device made up of internally consistent scales, good test-retest reliability, good construct validity, and good discriminatory power among First Nations communities.

1) *To find those items that form an internally consistent scale and to eliminate those items that do not.* Internal consistency item analyses were done by subscale. Items with very low item-total scale (subscale) reliability (0.20) were discarded, subject

to further evidence from factor analysis evidence. The scales that comprise the instrument should evidence a relatively high degree of internal consistency (Cronbach's Alpha coefficients >0.75). (The latter was done both before and after step 2).

2) *The social capital instrument should show discriminatory power (sensitivity) when social capital of markedly different First Nations communities is assessed.* One-way analyses of variance tests should be significant (F, $p < 0.20$) when respondents' scores within communities (the dependent variable) are compared between communities (the independent variables). Chi Square tests for differences between communities in score distributions of non-discriminatory items should not be significant if items are to be discarded.

3) For the *instrument to show good test-retest stability*, analyses performed on individual-level data should show reliability coefficients for the scales in excess of $r = 0.80$.

4) For the *social capital instrument to evidence construct validity*, the scores it produces in each dimension for the three communities should correspond to the hypothesized order.

5) *To examine if there is empirical support to justify the multidimensional conceptualization underlying the instrument*, factor analysis results should demonstrate that items intended for the same scale cluster together, in general, to form separate factors.

6) *To account for the variance in social capital combining all three communities (i.e., to examine to what extent individuals' social capital score can be explained*

by demographic variables) stepwise multiple regression analyses with social capital as outcome variable, was performed. Similar analyses were done with main factors derived from the factor analyses as outcome variables.

7) *To explore for sub-group differences within communities*, stepwise multiple regression analyses were performed with each community analyzed separately.

5.3.2. Internal Consistency, Discriminatory Power, Test-Retest Stability, and Construct Validity

The purpose of an item analysis is to find those items that form an internally consistent scale and to eliminate those items that do not. Internal consistency is a measurable property of items that implies that they measure the same construct. The item analysis should provide information about how well each individual item relates to the other items of the scale. This is reflected by the item-remainder (item-total) coefficient calculated for each item (Spector, 1992, p. 29). On the other hand, coefficient alpha (Cronbach alpha) is a measure of the internal consistency of a scale. It is a direct function of both the number of items and their magnitude of intercorrelation. Coefficient alpha can be raised by increasing the number of items or by raising their intercorrelation. (Spector, 1992, p. 31). Nunnally and Bernstein (1994, p. 249) indicate that scales used to contrast groups need not be as reliable as those used to make decisions about individuals. They also pose the question of "how high is up?" and state that the importance of high reliability is often exaggerated. "Limited reliability is not the major reason limiting test validity, and, unfortunately, the search for reliable measures often causes people to replace relatively

valid but somewhat unreliable measures with less valid measures." Decisions about items based on the analyses that follow treaded this difficult balance. To be retained, items would have to meet two criteria, that they form an internally consistent scale, and that they show discriminatory power (i.e., satisfying analysis goals 1 and 2).

As already explained, each scale (Bonding, Bridging, Linkage) was composed of three subscales (SIR, Culture, Networks). The item analysis provided information about how well each individual item related to the other items in its subscale. This was reflected by the item-total coefficient calculated for each item. It is the correlation of each item with the sum of the remaining items in each subscale. Those items with the highest coefficients were the ones to be retained, and a criterion of 0.20 was set for the coefficient. Items with a corrected coefficient of less than 0.20 were to be initially discarded subject to further evidence. Based on this criterion, eight items (Q19, Q63, Q70, Q81, Q82, Q83, Q90, Q128) of the Bonding, seven items (Q31, Q42, Q43, Q46, Q53, Q60, Q61) of the Bridging scale, and three items (Q105, Q108, Q124) of the Linkage scale would need to be discarded. An initial factor analysis (Principal Component Analysis – Oblique rotation) for each scale was done to further assess if these items should be eliminated. Only one item (Q128) of the above listed Bonding items loaded above 0.30 on any of the initial five factors, thus confirming that it would be appropriate to discard all items, with the possible exception of Q128. Upon observation of the item, it is a question of direct experience (Did you vote in the last election for Chief and Council?) and that from a conceptual perspective is highly relevant, thus its sacrifice, while slightly increasing the scale's reliability, would constitute a clear cost to

its validity. In the Bridging scale, items Q60 and Q61 loaded highly (0.75 and 0.80) on factor 3, suggesting that it may not be wise to discard these items given their relevance to a potential construct factor. However, Q60 had a –0.03 item-total correlation, seriously weakening the rationale to retain it. Q124 of the Linkage scale loaded highly (0.88) on factor 2, putting in doubt the convenience of discarding this item. Consequently, items Q128, Q61, and Q124 were left in their respective scales subject to further analyses.

Another test of the acceptability of items was whether or not they could discriminate differences between communities. Ideally, the mean values for each item should be significantly different across communities (or discriminating one community from the other two). Tables 7a, 7b and 7c show mean comparisons and one-way analysis of variance tests results (one-way Anova's were computed with each item value serving as the dependent variables and community as independent variable). For the purposes of our study 0.20 was chosen as the F-ratios' significance level deemed the cut-off point to reject an item[55]. For the Bonding scale five of the items that had met the item-total coefficient criterion for internal consistency, did not discriminate differences across communities (Q22, Q78, Q87, Q88, Q89). In the Bridging scale 11 items did not discriminate differences (Q29, Q30, Q36, Q38, Q48, Q50, Q52, Q54, Q55, Q57, Q59). The Linkage scale had only two non-discriminating items (Q111, Q112). The issue of item discrimination between communities is based on the assumption that differences do exist between communities, as was discussed in a previous section. Consequently, items

[55] The choice of 0.20 as cut-off criterion for F-ratios was an operative decision that reflected the need to tread the difficult balance between achieving discriminatory power without sacrificing too much potential information. Given the developmental nature of the study it was deemed better to use a less stringent criterion for excluding items based on their discriminatory power.

that did not discriminate at the statistical significance level of 0.20 would be discarded from the questionnaire and from any further analyses. However, mean scores for single items may disguise differences in score distributions between communities that may suggest that some of the above listed items were in fact able to tap into differences between communities, despite not discriminating via mean scores. Chi Square tests for cross-tabulations between communities and the five potential item scores were computed to determine if a significantly different score distribution existed between communities. Three items had statistically significant different distributions, Q22 (0.03) of the Bonding scale, and Q50 (0.02) and Q54 (0.04) of the Bridging scale. The distribution of scores for each item was observed, showing 10% to 15% differences between score distributions of one community and the other two, suggesting that these items to some extent seemed to have tapped into response differences between communities that had been masked by the score average. Nonetheless, given that this study bases its assessment of community differences on differential mean scores, these items need not be retained. Two issues are worth mentioning however. First, that average scores appeared to have masked community differences in only three items, which speaks positively about the remaining items. Second, that these three items should be earmarked for possible rewording and inclusion in future iterations of a social capital instrument.

Based on the combined evidence of the internal consistency analyses, the initial factor analyses, and the Anova results, the following decisions were made about item exclusion. For the Bonding scale 12 items (Q19, Q22, Q63, Q70, Q78, Q81, Q82, Q83, Q87, Q88, Q89, Q90) would be excluded, leaving a total of 32 items (Q128 among them). For the

Bridging scale 17 items (Q29, Q30, Q31, Q36, Q38, Q42, Q43, Q46, Q48, Q50, Q52, Q53, Q54, Q55, Q57, Q59, Q60) would be excluded, leaving a total of 19 items (Q61 among them). Finally, four items of the Linkage scale (Q105, Q108, Q111, Q112) would be discarded, leaving 32 items (Q124 among them). Tables 8a, 8b, and 8c summarize the corrected item-total sub-scale correlation coefficients of the items retained in the questionnaire. A check of the internal consistency of the final scales showed the following coefficient alphas: 0.84 for the Bonding scale; 0.73 for the bridging scale; and 0.81 for the Linkage scale. This evidenced good reliability for the Bonding and Linkage scales, and acceptable internal consistency for the Bridging scale.

A consequence of these initial results and corresponding item decisions was that the Bridging scale lost the most items in absolute and proportional terms (17 of 36), followed by the Bonding scale (12 of 44), and the Linkage scale (4 of 36). In relation to the subscales, the Network subscales of both the Bonding and Bridging scales were the worst performing, suffering the loss of approximately half of their items. The final item tally for each scale was: Bonding 32, Bridging 19, and Linkage 32. Table 9 presents a correlation matrix of the mean scores of the final nine sub-scales, and Table 10 of the final three scales. The Bonding and Linkage scales show somewhat higher correlations within their sub-scales than the Bridging scale. There were also relatively high correlations between components of different dimensions. Between scales, Bonding and Linkage presented the highest correlation.

The Methods chapter explained why the study was not able to achieve a proper sample to assess the test-retest stability of the instrument. Only 18 interviewees were re-tested, and the length of time between both administrations of the questionnaire was in some cases of almost four months. This meant it was not possible to use evidence from test-retest assessment to make decisions about individual items. The following were results obtained using Kappa statistics, averaging item values for each sub-scale: Bonding-SIR 0.48; Bonding-Networks 0.47; Bonding-Culture 0.66; Bridging-SIR 0.56; Bridging-Networks 0.52; Bridging-Culture 0.57; Linkage-SIR 0.42; Linkage-Networks 0.49; Linkage-Culture 0.47. These results suggested only acceptable test-retest stability, with the Linkage scale showing the lowest values. However, for the reasons mentioned above, no decisions can be made from this information.

For construct validation purposes, hypotheses in relation to the ranking of differences between communities were formulated. Based on information presented in a previous section, expectations in relation to levels of social capital by dimension were hypothesized as follows: Community B would be expected to perform better on the Bonding and on the Linkage dimensions, whereas Community A would perform better on the Bridging dimension. Let us observe Tables 7a, 7b and 7c to assess the evidence from each scale. For the Bonding scale, of the 32 items left, Community B ranked first on 25 items (78%) and second on six items (19%). Table 11 summarizes this information and also shows the break down by subscales. Culture subscale items appeared to be somewhat less well performing with 62% of items ranking first, and 31% ranking second. In general, the significant difference in item means between communities appeared to be

between rank order two and three (Tables 7a, 7b, 7c), which justified the consideration of the first two ranks when looking at community performance. In so doing, we can conclude that 97% of items of the Bonding scale suggested some evidence of construct validity (100% in the SIR sub-scale; 93% in the Culture sub-scale; 100% in the Network sub-scale). For the Bridging dimension, of the 19 items left after discarding items, 95% of items ranked in the predicted order for Community A (88% in the SIR sub-scale; 100% in the Culture sub-scale; 100% in the Network sub-scale). Of the 32 items for the Linkage dimension, 84% of them were in the predicted rank for Community B (72% SIR subscale; 100% Culture subscale; 90% Network subscale). These results provided some evidence for the construct validity of the items, although the evidence cannot be considered conclusive. The reasons for this lack of conclusiveness are that a number of items that did not behave in the predicted order, that these results did not take into account the "don't know" answers, and that the predicted community ranking, despite being based on the best available information, was ultimately hypothetical.

5.3.3. Assessment of the Dimensionality of the Instrument

The next series of statistical analyses consisted of factor analyses, to examine whether empirical support could be found that would justify the multi-component conceptualization of each dimension of social capital underlying the design of the instrument. Supporting evidence would include such things as items that correlated highest with the scale for which each was intended and the finding of moderate scale inter-correlations. Results from a factor analysis could also support the initial

conceptualization of items intended for the same scale clustered together, in general, to form separate factors. Nunnally and Bernstein (1994, p. 450) explain that the distinction between exploratory and confirmatory factor analysis "is a continuum rather than a sharp dichotomy." The following factor analyses are more confirmatory in nature than exploratory, given that a hypothesized structure has been developed, and it seeks to observe how well it fits the data. However, to use more specific confirmatory factor analytic methods, a much more developed theoretical framework (including path analysis specifications) would have been necessary. As Kline (2000, p. 151) suggests, there is another approach to confirmatory analysis, performing a simple structure rotation and seeking to find if there is or not congruence between simple structure analysis and the hypothesized structure.

As with all other analyses, the factor analyses were done separately for the Bonding, Bridging and Linkage scales. The first analyses that were run were factor analyses of the 32 items of the Bonding scale, 19 items of the Bridging scale, and 32 items of Linkage scale. To help determine if the propensity to answer "don't know" was a factor in itself or if it correlated with other factors, the highest contrasting item across communities between "don't know" and scored answers in each scale was also included in the factor analyses using a dummy variable. Only one dummy variable was included for each scale because of the assumption that dummy variables would tend to correlate, thus providing little added information. Factors were initially extracted using the method of principal component analysis[56], and the number of factors to rotate was determined by observing

[56] Principal Axis Factoring analysis with iteration, which has the advantage of distinguishing between common and unique variance because the main diagonals of the correlation matrix are replaced with

the Scree plots. Tables 12a, 12b, and 12c list their eigenvalues and the percentage of variance explained by each factor. Ten factors with eigenvalues higher than 1.00 explained 63% of the variance for the Bonding scale, seven factors explained 61% for the Bridging scale, and 10 factors explained 67% for the Linkage scale. This is represented graphically with the Scree plots shown in graphs 1a, 1b, and 1c.

Since components of the instrument could be presumed to correlate, a method of oblique rotation (Direct Oblimin) was selected in order to interpret the factors. Of the factors showing eigenvalues of 1.00 or more, only the first seven factors explaining 53% of the variance in the Bonding scale were retained, the first five factors of the Bridging scale explaining 51% of the variance of the Bridging scale were retained, and the first seven factors explaining almost 56% of the Linkage sale were retained. The structure matrixes for the oblique rotation of the factors are provided in tables 13a, 13b, and 13c, and the factor correlation matrixes in tables 14a, 14b, and 14c.

Factor analysis results for the Bonding dimension (Table 13a) confirmed to only some extent that items belonging to a particular sub-scale tend to cluster together as a factor. Most SIR items tended to cluster on Factor 1, with the exception of Symbolic SIR's that clearly appeared as a factor on their own, Factor 2. The Culture sub-scale items presented more mixed results, but with numerous items loading highly on Factor 3 and three (collective action descriptor) on Factor 4. Two Network sub-scale items loaded strongly

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communality estimates before factoring, and has been suggested as more appropriate for confirmatory type of studies, were also performed, but with no considerable differences in results. Consequently, Kline's (2001, p. 130) advice, that Principal Components analysis, Scree test, and rotation of significant factors by Direct Oblimin is the most efficient method for obtaining simple structure, was followed.

on Factor 5. The dummy variable (DUMQ126) representing proportion of "don't know" answers loaded highest on Factor 6, together with two Network items that loaded negatively on this factor (the more people answered, the less diverse the networks). Based on these results it is hard to clearly identify the meaning of these factors. SIR appears to be meaningful as a single factor (Factor 1), but without Symbolic items, which form a separate factor (Factor 2). Factor 4 could be described as the Culture factor, and the fact that several SIR items also loaded on this factor speaks to a commonality between Culture and SIR. Factor 4 appeared as the Culture-Collective Action factor, and Factors 5 and 6 could be considered Network factors, but with distinct characteristics. Correlations between factors were quite low, with the highest correlation, 0.32 between Factor 1 and Factor 3 (Table 14a).

In the Bridging dimension (Table 13b), SIR items loaded on two separate factors, positively on Factor 1 and Factor 3, the latter Physical and Symbolic, and the former Financial and Human. Culture items loaded quite evenly on several factors, Factors 2, 5, and 1. Factor 2 could be considered a Network and Culture factor. DUMQ26 loaded on Factor 4, together with Q61 that tapped into diversity of networks (the more people answered the more they communicate on a regular basis with friends in different First Nations communities). The evidence seemed to suggest that Culture could not be well identified as a unique factor in the Bridging dimension. Correlations between factors (Table 14b) were low, with the highest correlation (0.20) being between Factors 1 and 3.

Culture items in the Linkage dimension loaded mainly on Factor 1, with two items loading very highly on Factor 5 (Table 13c). Network items loaded mostly on Factor 3. SIR items, with the exception of symbolic items that loaded negatively on Factor 6, loaded on numerous factors. Factor 7 was mostly a SIR factor, and two SIR items loaded highly on Factor 2. DUMQ99 loaded on Factor 4, together with three Network items and three SIR items. The message here seems to be that the more people answer, the more they appear to have access to external information, consider that school authorities listen, and have a positive perception of the existence of resource investments from institutions. In summary, there is some suggestion of Networks being a factor unto itself (Factor 3). However, Culture and SIR share commonalities (Factor 1). Correlations between factors (Table 14c) were low, with the highest correlation being between Factors 1 and 3 (0.28).

In summary, the results appeared to justify, although not strongly, a multi-component conceptualization of each dimension of social capital. However, items did not always cluster together to form separate factors in the way originally predicted. Another important issue was that in all three dimensions a relatively high number of factors were required to explain most of the variance, contrary to what would have been desirable.

5.3.4. Accounting for the variance in social capital scores

Table 15 presents overall community social capital means, standard deviations and Anova[57] results for each dimension.

Table 15
Community Social Capital Mean Scores

Bonding Scale	Mean	Std Dev	F-Ratio	Sig.
Community B	3.46|*	0.32	35.45	0.00
Community A	3.18|*	0.43		
Community C	3.04|*	0.40		

Bridging Scale	Mean	Std Dev	F-Ratio	Sig.
Community A	3.38|*	0.39	23.20	0.00
Community B	3.26|*	0.27		
Community C	3.09|*	0.41		

Linkage Scale	Mean	Std Dev	F-Ratio	Sig.
Community B	3.27|*	0.26	22.21	0.00
Community A	3.14|*	0.37		
Community C	2.97|*	0.40		

(|* Statistically significant difference with the other two communities at 0.05 Tukey's HSD)

Anova results suggested that there were statistically significant mean differences between communities in the three dimensions, and in the predicted order, providing further construct validity evidence. However, a question worth exploring was if social capital scores across the three communities could be accounted for by some of the demographic variables. To answer this question stepwise (backward) multiple regression analyses were run with social capital mean scores as outcome variables for each dimension and with demographic data as explanatory variables. Variables initially incorporated in the model were the same variables used for the logistic regression analyses described in Appendix

[57] The reason for using Anova was first to determine if statistically significant mean scores differences would be found between any of the three communities. When differences were found, Tukey's HSD were used to understand between which specific communities these differences existed.

5-II. Before the stepwise regression analyses, multiple regressions with all seven demographic variables and the two dummy variables representing the communities were run to check if assumptions for using regression techniques were violated by the existent data. For the three scales, the normal probability plots and the histograms of residuals of social capital mean scores suggested that we were dealing with a normal distribution (Appendix 5-IV). The plots of residuals versus predicted suggested that there were no non-linearity problems (an expanding error variance is not observed) and consequently a linear model was appropriate.

Stepwise regressions were run for the combined sample of the three communities with seven demographic variables (Age, Sex, Employment status, Marital status, Education level, Number of children living at home, Years of living in the community) and the two community dummy variables to control for community effect (Tables 16a, 16b, 16c). The dependent variable was the mean social capital score for each dimension. For the Bonding scale, after six iterations, the model retained only four variables, the two community variables (statistically significant), age and employment status (although not statistically significant, the probability level of 0.20 was the cut-off point for inclusion), and this model accounted for 15% of the variance. This suggested that demographic characteristics of study participants did not seem to play a major role in how they responded to the survey. When regressions were run for each community separately (Table 17a), no variable was retained (even at 0.20) for Community C and Community B. Employment status (0.04) and education (0.19) were retained for Community A, explaining 3% of the variance.

Stepwise regression results for the Bridging scale retained four variables, the two community variables, marital status and number of children at home, explaining 10% of the variance. Both community variables were statistically significant, again suggesting respondents' community as contributing to the difference in scores. When regressions were run for each community (Table 17b) sex of respondent was retained in the model at 0.14 for Community C and 0.10 in Community B, explaining 2% of the variance for both cases. Number of children at home was the only significant variable retained in the model for Community A (0.06), explaining 2% of the variance.

After eight iterations, the Linkage scale stepwise regression analysis only retained the two community variables, explaining 9% of the variance. For this dimension the results suggested quite strongly that demographic characteristics of respondents did not play a role in type of responses. Results of stepwise regressions for each community (Table 17c) showed age of respondent in Community C to be the only demographic variable to be statistically significant. Using 0.20 as the cut-off point for inclusion the model, some differences were observed between communities. For Community C, age, employment status and educational level were retained and explained 6% of the variance. In Community B, education and years living in the community were retained, explaining 4% of the variance. For Community A, employment status and education were left in the model and explained 3% of the variance.

The above examination was related to overall social capital mean scores. However, factor analysis results provided evidence of separate factors in each dimension. A similar

exploration as above was thus warranted, to seek to account for the variance in the mean scores of these factors. Table 18 summarizes mean scores, standard deviations and Anova results of the three main factors in each dimension by community. For the Bonding scale, three factors were given the name of BOSIRCUL (Bonding-Socially Invested Resources/Culture), BOSIRSYMB (Bonding-Socially Invested Resources-Symbolic), and BOCULSIR (Bonding-Culture/Socially Invested Resources). The factors for the Bridging dimension were named BRSIRCUL (Bridging-Socially Invested Resources/Culture), BRCULNET (Bridging-Culture/Networks), and BRSIRFH (Bridging-Socially Invested Resources-Financial/Human). Finally, the factors in the Linkage scale were called LCULSIRN (Linkage-Culture/Socially Invested Resources/Networks); LSIRN (Linkage-Socially Invested Resources/Networks), and LNETCUL (Linkage-Networks/Culture).

Table 18 – Community Factors Mean Scores

Bonding Scale

BOSIRCUL	Mean	Std Dev	F-Ratio	Sig.
Community B	3.59|*	0.45	53.03	0.00
Community A	3.29|*	0.59		
Community C	2.88|*	0.56		
BOSIRSYMB	**Mean**	**Std Dev**	**F-Ratio**	**Sig.**
Community B	3.50|*	0.66	21.15	0.00
Community A	3.00	0.67		
Community C	3.13	0.74		
BOCULSIR	**Mean**	**Std Dev**	**F-Ratio**	**Sig.**
Community B	3.72|*	0.50	31.13	0.00
Community A	3.23	0.67		
Community C	3.17	0.70		

(\|* Statistically significant difference with the other two communities at 0.05 Tukey's HSD)

Bridging Scale

BRSIRCUL	Mean	Std Dev	F-Ratio	Sig.
Community B	3.54|*	0.36	19.17	0.00
Community A	3.35|*	0.59		
Community C	3.10|*	0.68		
BRCULNET	**Mean**	**Std Dev**	**F-Ratio**	**Sig.**
Community B	3.09|*	0.46	18.39	0.00
Community A	3.25|*	0.56		
Community C	2.89|*	0.48		
BRSIRFH	**Mean**	**Std Dev**	**F-Ratio**	**Sig.**
Community B	2.77	0.45	11.89	0.00
Community A	3.07|*	0.66		
Community C	2.80	0.69		

(\|* Statistically significant difference with the other two communities at 0.05 Tukey's HSD)

Linkage Scale

LCULSIRN	Mean	Std Dev	F-Ratio	Sig.
Community B	3.04|*	0.33	57.36	0.00
Community A	2.82|*	0.43		
Community C	2.44|*	0.56		
LSIRN	**Mean**	**Std Dev**	**F-Ratio**	**Sig.**
Community B	3.09	0.39	0.97	0.38
Community A	3.14	0.42		
Community C	3.16	0.44		
LNETCUL	**Mean**	**Std Dev**	**F-Ratio**	**Sig.**
Community B	3.47	0.34	16.03	0.00
Community A	3.35	0.39		
Community C	3.19|*	0.45		

(\|* Statistically significant difference with the other two communities at 0.05 Tukey's HSD)

In the Bonding scale, results for the three factors followed the predicted pattern, with Community B showing the higher scores (the difference was statistically significant). In the Bridging scale, Community A, which had shown the highest overall bridging mean score, performed in that way with the BRCULNET and BRSIRFH, but Community B had the highest score for BRSIRCUL. The differences were significant. For the Linkage scale, LCULSIRN and LNETCUL performed in the predicted order, with Community B showing the highest score and the difference being significant with at least one of the communities. However Community B's mean score was the lowest of the three for LSIRN, although the differences were not statistically significant. Despite some minor disagreements, factor mean scores performed in the predicted order, providing some further construct validity evidence. The final section will continue this discussion.

Stepwise multiple regression analyses with the same nine explanatory variables were run, with the predictor variables for each model being the mean scores of the three initial factors from factor analysis results for each scale (see above table). After seven iterations, three variables were retained in the model that accounted for BOSIRCUL mean differences (explaining 20% of the variance), the two community variables and sex of respondents (the first two statistically significant) (Table 19a). For BOSIRSYMB the two community variables and years living in the community were kept in the model (explaining 9% of the variance), although only the former two were significant. The stepwise regression for BOCULSIR retained the community variables (significant) and two demographic variables, education (significant) and sex of respondent (not significant). This model explained 13.4%. For the Bridging scale (Table 19b), the

stepwise regression analysis for BRSIRCUL retained the community variables (both significant) and accounted for 8% of the variance. For BRCULNET four variables were kept in the model (13% of the variance), education and the community variables (all three were significant), and marital status (not significant). The model for BRSIRFH accounted for 7% of the variance and retained one statistically significant variable (a community variable) and three non significant, number of children living at home, employment status and education. The stepwise regressions for the Linkage dimension presented the following results (Table 19c). With LCULSIRN as predictor variable, the two community variables were highly significant and were the only variables retained in the model, accounting for 20% of the variance. The model for LSIRN retained four variables, the two community variables and years living in the community and age. None were significant and explained only 1% of the variance. Three variables (the two community variables and education) were retained in the model for LNETCUL, and the three were statistically significant, explaining 8% of the variance.

The above results suggested, both for overall social capital mean scores and for factors mean scores, that knowledge of what community a person is from will explain a greater percentage of the variance then will knowledge of specific demographic variables. No demographic variable achieved statistical significance in the models for social capital mean scores with the combined sample of the three communities. When analyses were run for each community, only employment status reached significance for the Bonding scale in Community A. Number of children accounted for some of the variance for the Bridging Scale in Community A, and possibly sex of respondent in Community B and

Community C. For the Linkage scale, demographic characteristics of respondents appeared to play slightly more of a role compared to the other scales (which makes sense given the nature of this dimension). When factor means were regressed for the Bonding factors, no demographic characteristic was significant in accounting for some of the variance. For BRCULNET education explained some of the variance. For all factors, community variables accounted for most of the variance. In summary, despite characteristics of respondents sometimes accounting for some of the variance, this did not appear to be problematic given that community of respondent appeared to be a better predictor of results. As well, no important sub-group differences within communities emerged.

5.4. Summary of results

The first section of this chapter addressed the issue of high "don't know" percentages in item responses, identifying that this placed limitations on the results. At the same time, analytic options were suggested to deal with this matter. The first analysis goal was to find those items that formed an internally consistent scale and eliminate those that did not. The difficult balance between excluding unreliable items while not sacrificing too many potentially valid items was pursued. The results of the item analyses (item-total scale correlation), supplemented with evidence from an initial factor analysis, resulted in the decision to discard seven items from the Bonding scale, six of the Bridging scale, and two of the Linkage scale. Another analysis goal was to determine if items had discriminatory power on social capital scores between the three communities that were

assumed to have different levels of social capital. One-way analysis of variance test results identified items that discriminated differences among communities and items that did not. A significance level of 0.20 of the F-ratios was chosen to be the cut-off point to reject an item. Based on these results, a further five items from the Bonding scale, 11 from the Bridging scale, and two from the Linkage scale, were discarded. Consequently the scales were left with 32, 19, and 32 items respectively. The internal consistency of each scale presented coefficient alphas of 0.84 (Bonding), 0.73 (Bridging), and 0.81 (Linkage). In regards to the third goal, due to reasons explained in the Methods chapters, the study was not able to achieve a proper sample to assess the test-retest stability of the scales and hence achieve this goal.

The qualitative phase of the study had hypothesized that Community B would be expected to perform better on the Bonding and Linkage scales, and Community A on the Bridging scale. For construct validation purposes, the fourth analysis goal, results were expected to correspond with these predictions. 97% of items from the Bonding scale, 95% of items from the Bridging scale, and 84% from the Linkage scale were in the predicted rank order. These results were deemed to provide evidence of the construct validity of the scales. However, this evidence must be considered as tentative due to several limitations.

To examine whether empirical support could be found to justify the multi-component conceptualization of each dimension of social capital (fifth analysis goal), factor analyses were run for each scale. Results for the Bonding dimension only partially confirmed that

items belonging to a particular sub-scale tended to cluster together as a factor. SIR items mostly clustered around Factor 1, except for Symbolic SIR that clustered on Factor 2. Culture and Network sub-scale items did not provide a clear factor pattern as would have been expected. The Bridging scale presented SIR items loading on two distinct factors, and similarly Network items loaded on two factors. Culture items loaded quite evenly on several factors. Quite the opposite, Culture items in the Linkage scale loaded mostly on one factor (Factor 1), as did Network items (Factor 3). SIR items loaded evenly on several factors, with the exception of symbolic items that loaded negatively on Factor 6. Results justified the multi-component conceptualization of each dimension of social capital, but only to a relative extent as to what was predicted in the framework. These results demand that the framework be revisited to better understand the conceptual and empirical implications.

The final two steps of the analysis sought to determine if demographic characteristics of respondents accounted for the variance in social capital mean scores and in Factor mean scores combining all three communities. Sub-group differences within communities were also examined. For these goals, stepwise multiple regression analyses were conducted. Summary mean scores and Anova results were, however, first presented. With overall mean scores communities performed as predicted (Table 15), and with mean scores of seven of the nine factors examined (Table 18). Regression results for the Bonding scale evidenced that demographic characteristics of respondents did not account for the variance in social capital mean scores. Within each community, employment status in Community A was the only significant demographic variable. When Factor mean scores

were regressed, sex of respondents accounted for some of the variance in BOSIRCUL, but no demographic variables were significant for BOSIRSYMB, and only education was significant for BOCULSIR. Bridging scale results also suggested that demographic characteristics did not account much for the variance in mean scores. When communities were analyzed separately, number of children at home was the only significant variable and only for Community A. For Factor mean scores, education was the only significant demographic variable and for BRCULNET. For the Linkage scale, overall regression results strongly suggested that demographic characteristics did not play a role. Age of respondent was the only significant community specific (Community C) demographic variable, and education for Factor specific (LNETCUL) regressions. Consequently, the characteristics of respondents, despite not being able to be totally ruled out as having some impact on scores, did not appear problematic in that respondents' community was in most cases a better predictor. This is an important finding in that it validates the idea that social capital scores may vary over and above sub-group differences within communities.

Despite various imperfections and areas that require further assessment and development, the study presents a final version of the social capital instrument (see Appendix 5-V). A comparison between scales suggests that the Bonding scale performed the best in the above assessment, with lower "don't know" percentages, and better reliability and validity, followed by the Linkage scale and finally the Bridging scale. The context and limitations of their use will be discussed in the final chapter.

CHAPTER 6

Discussion

To a certain extent the goals of this study were straightforward, to formulate a conceptual framework of social capital for First Nations communities, and to develop an instrument, culturally appropriate for First Nations communities, for the measurement of social capital. This chapter will discuss to what extent these goals have been achieved, and will debate research and policy implications of the findings.

6.1. Findings

The current study resulted from the need to scientifically characterize and measure social capital in First Nations communities, for subsequent theorization and empirical testing of its potential as a health determinant. Both conceptual and measurement findings faced a series of challenges that require further discussion. As well, numerous decisions were based on assumptions that must still be examined. Through the literature review, the importance of clarifying the extent of the arena in which social capital has meaning and the level/s of which it is a feature, was identified as essential to proper construct development. An arena encompassing economic and political dynamics was proposed, as was the understanding that social capital can characterize a community. This proposition would enable the resolution of apparently competing interpretations of possible health determinant pathways of social capital, a psychosocial interpretation versus a neo-material interpretation.

Based on differential criteria of size, geographic regions, economic development and cultural representation, the Health Information and Research Committee of the Assembly of Manitoba Chiefs chose three Manitoban First Nations communities to be part of the study from seven that had volunteered to participate. The first phase of the study used ethnographic methodology with two aims, to contribute to the development of the conceptual framework and to generate an initial list of instrument items. Over a period of approximately three weeks in each community, primary data collection techniques involved a combination of in-depth interviews, informal focus groups, participant observation, archival research, and unobtrusive observations. The total number of interviewees reached 89 individuals. Based on the concept analysis and on the results of the ethnographic study, dimensions of social capital were identified for measurement and a list of questionnaire items was composed. The major finding of the first phase of the study was the development of a conceptual framework of social capital for First Nations communities, which was summarized with the following operational definition: *Social capital characterizes a First Nation community based on the degree that its resources are socially invested, that it presents a culture of trust, norms of reciprocity, collective action, and participation, and that it possesses inclusive, flexible and diverse networks. Social capital of a community is assessed through a combination of its bonding (within group relations), bridging (inter-community ties), and linkage (interactions with formal institutions) dimensions.*

The second phase sought to develop a measurement tool and assess its reliability and validity. After extensive feedback and seven drafts, a final version of the questionnaire

was pilot-tested. A total sample of 462 respondents from the three communities was achieved (Community A - 204, Community B - 135, Community C -123). Primary analysis goals were to produce a measurement device that had good discriminatory power among First Nations communities, was made up of internally consistent scales, and had good construct validity. Simultaneously, results from these analyses would provide evidence to assess the validity of the framework itself. Paldam and Svendsen (1999) describe how theory and measurement develop in a simultaneous way, "theory suggests what to measure, but once it is measured theory changes, creating new suggestions about measurement." This is the itinerary of our discussion.

The instrument, a survey questionnaire, was composed of three scales, each tapping into a different dimension of social capital. Consequently, its psychometric qualities were assessed separately. After discarding unreliable and non-discriminatory items, the Bonding and the Linkage scales evidenced good internal consistency while the Bridging scale showed acceptable internal consistency. This meant that the questionnaire developed on the basis of findings from the first phase of the study was reliable (although test-retest stability was not established due to sample limitations) and discriminated between communities. A further important result was that these differences occurred in the hypothesized order, providing good initial evidence for the construct validity of the instrument. The fact that these individual level data were expected to be aggregated to a community level variable (social capital) meant that we had to determine if individual characteristics of respondents accounted for the variance more than hypothesized community level characteristics. Despite some exceptions, the overall picture was clear

that respondents' community was a better predictor of scores in regression analyses than individuals' characteristics. The importance of this finding was that it validated the idea that social capital scores represent real differences between communities rather than sub-group differences within communities. So much for the instrument, but what did the evidence suggest about the multidimensional conceptual framework? The main question in this regard was to determine if there was empirical support to justify the multidimensional conceptualization.

The social capital framework formulated two levels of multi-dimensionality (Table 5). The first one was the distinction between Bonding, Bridging, and Linkage dimensions. These dimensions were not empirically examined given the conceptual notion that they could vary forming different combinations (i.e., high scores in one dimension, low in the other two), with no expectation that they should correlate. Factor analytical assessments, to establish the empirical support to the multidimensional conceptualization, were actually performed for the second level dimensions, what the framework calls components within each dimension (Socially Invested Resources, Culture, Networks). Let us formulate what would have constituted ideal confirmatory results. That for each scale, three factors would have explained most of the variance, and that each of these factors would correspond to each of the three components (Socially Invested Resources, Culture, Networks). Further, that there would be a moderate correlation between the three factors. Results for the three scales had varying degrees of disagreement with this ideal. First, a relatively high number of factors were required to explain the variance, which raises questions about the uniformity of each component, suggesting different factors

within each component. Second, the correlation between factors was relatively low in the three scales. Third, the correspondence of factors with components was somewhat mixed. These results in themselves do not invalidate the framework, although they do cast doubts on its structure. Let us examine more carefully the implications of lack of good correspondence between factors and components. The main implication, from a construct perspective, appears to be that the framework's structure offers dimensional distinctions that are not as distinct as predicted. It puts into question the validity of the components as formulated in the framework, although not enough to outwardly discard its usefulness. They do appear to be addressing different aspects of the construct, but do not provide enough confidence about the uniqueness of each component. On the other hand, factor analysis results did not provide enough evidence to enable a clear reformulation of framework components. We are then faced with an instrument that appears to be reliable and valid, but at the same time with a construct that has been only to some extent validated, and with questions raised about its component structure. Before we tackle the theoretical and measurement implications of these results, we will first address assumptions and methodological limitations of the study.

6.2. Assumptions, Limitations and Strengths

This study developed a measurement of social capital based on several assumptions. The main ones were that individual scores could be meaningfully aggregated to a community level score, that individuals' perception could be used as evidence, that social capital is a community trait, i.e., with temporal stability, and that results could be generalized to

other First Nations communities[58]. The first two assumptions are closely related, the idea behind them being that asking individual respondents questions about their experience of living in the community will reflect real characteristics of the community[59]. The study's conceptual formulation of social capital allowed for these assumptions, although the higher "don't know" rates in the Bridging and Linkage scales suggested limitations. At the same time, regression analysis results indicated that individual characteristics of respondents did not affect scores, providing confidence about the use of individual level data for community level scores. The main implication of the assumption of social capital as a community trait is that it is a temporally stable feature and change should be expected over a number of years. To date there is no empirical research on this assumption[60]. A close look at the components within the framework developed in our study confirms the idea that, barring some sort of dramatic impact on the community, there should be no reason to expect a sharp change in the levels of social capital in a short time period. The assumption of generalizability is based on the understanding that despite a sample of only three communities, they represented communities of differential size, geographic regions, economic development and cultural representation. There is no doubt

[58] Two further assumptions merit brief attention, that individuals understand the boundaries of community in the same way, and that all community members' views should be weighted equally. The quite clear geographic and political delimitation of First Nations communities provides reasonable assurances in relation to the first assumption. In terms of the second assumption, the aggregation of individual scores to community level scores requires that the experience of different individuals be considered of equal relevance. As will be described later, it is only for structural scales where this assumption may not apply.
[59] A further complication is the possibility of mismeasurement of personal networks as collective networks, i.e., the potential for clan and family bias. This means that the individual's experience of the community only refers to her/his experience of her/his clan or sub-network, and not of the community as a whole. The study sought to control for this in several ways. First, the model itself contains different components, thus questions of "culture" where these differential experiences may not be distinguishable can be compensated by questions of the "network" component that precisely tap into these possible differential experiences. Second, a number of questionnaire items were specifically designed to tap into family/clan experience, and others into non-family/clan experience, providing relative confidence that this potential bias was minimized.
[60] Despite criticism of Putnam's idea that social capital of southern Italian regions was path dependent back several centuries (Woolcock, 1998a).

that, ideally, the inclusion of other communities from different provinces would have ensured higher confidence to its external validity, but this would have required a study of much wider scope and more resources. Nonetheless, the study as is provided a good set of guarantees in that at the very least its results can be generalized to First Nations communities in Manitoba.

In terms of limitations, this study faced several of varying degrees of severity. First, it could be argued that because communities participating in the study were partially self-selected (the three communities were chosen from seven that had volunteered to participate) there was a community bias. Given the nature of the construct, the expected direction of the bias would be towards communities with higher levels of social capital participating in the study. However, the fact that the survey did discriminate among communities suggests that this did not constitute a serious flaw. Nonetheless, a concern can be raised in relation to the qualitative evidence used to develop the framework, in the sense that the study might have been working with a certain type of community and excluding others, thus affecting how the framework and the questionnaire items were developed. A related concern, referring to within community representation, could be the possibility of family and clan bias in the gathering of qualitative information. The procedure for selecting interviewees had the criterion of maximum variety of family/clan representation at its forefront, thus minimizing as much as possible this potential bias. A second source of limitation was the difficulty in fulfilling an ideal sampling process. Although sample frames were developed by random selection, field realities did not allow for the entire sample to come from these sample frames (as was reported in Chapter

3). This had some impact on the overrepresentation of females and under-representation of some age groups. The community mostly affected was Community B. Although these difficulties raise caution, they do not appear to be severe enough to invalidate study findings. A further issue in relation to the sample was the use of draw prizes to encourage participation. The main question to answer is what type of bias might this have introduced. The study sought a representative sample, meaning in relation to social capital that respondents would be constituted by population segments with varying degrees of willingness to participate or have opinion about community is sues. Thus, if no incentive would have been introduced, it is sensible to think that individuals more concerned with community issues would have been more prone to answer the survey than others with less interest. This would have created a particularly serious bias for a concept like social capital. On the contrary, the offer of a draw prize counteracted this bias, by providing an incentive to participate other than the interest in community issues. Given that there was no evidence that the draw prize turned anyone off from participating in the study, this incentive may have played a crucial role in minimizing bias. The possibility of interviewer bias in relation to "don't know" responses was examined, and some tentative evidence for one interviewer from Community B was found. There is no denying that the relatively high percentages of non-responses, and particularly of "don't know" answers, put into question the meaningfulness of the questionnaire. A detailed examination of this matter was offered in Chapter 5 and Appendix 5-II. The main message appeared to be that individual respondents lacked enough knowledge about certain community issues. This in itself is an important piece of evidence for further instrument refinement. It could be argued that this was the main flaw for the psychometric assessment of the

questionnaire. Several analytical options were used to take it into account, and initial findings did not show a major impact on social capital scores. Nonetheless, the issue should not be minimized, and will need to be corrected as much as possible in future developments of the instrument. In terms of reliability, an important limitation was the impossibility of conducting test-retest stability analyses. Specific to construct validation, the possible flaw of circularity has been previously mentioned. The use of different sources of evidence to hypothesize the rank order of community's social capital was the way to correct as much as possible for this potential limitation. However, we need to recognize the inherent and unavoidable difficulty at this stage of the development of the concept of social capital, of a process of construct validation that simultaneously tests the theory and the measure. Finally, in relation to the conceptual framework itself, the study was aware that despite the discrete nature of the categories, some qualitative evidence was applicable, depending on the interpretation, to more than one category. This problem was however limited to a few components of the framework, and can be addressed with further use of the framework.

As study limitations should be mentioned, particular strengths also merit attention. This inquiry combined methodological rigour with an effective partnership between First Nations organizations and communities and university-based researchers. From an ethical, political and scientific perspective, this proved invaluable.[61] Another strong point was that the research path pursued led from theory to measurement, providing a clear

[61] Forbes and Wainwright (2001) talk about one of the fundamental limitations of survey data, that "while it is often assumed that surveys provide neutral accounts of social activity they are in fact as value bound as any other research instrument and the resulting data are as much determined by the values of those who originally posed the questions as it is by the respondents." The process followed by our study sought to neutralize this limitation.

antidote against the sometimes too frequent use of a "shotgun empiricism" approach (Nunnally et al., 1994, p. 317). This path combined conceptual analysis, theory development grounded to qualitative evidence, and empirical quantitative evidence. As well, the cultural appropriateness of the framework and the instrument were strongly emphasized. Finally, specifically to measures of social capital, this study is one among the very few that have made a serious attempt to assess their reliability and validity.

6.3. Further measurement solutions

A final version of the questionnaire is offered in Appendix 5-V. As is, the questionnaire can be used in further studies, but the confidence for this use varies between the three scales. The main issue in terms of confidence in the scales pertains to the relatively high percentage of "don't know" answers to a number of items. This was particularly the case for the Bridging and the Linkage scales. What follow are ideas based on the findings for further refinements of the measurement tool.

First, let us explore ways the questionnaire itself could be improved in future refinements. Items where "not applicable" responses were comparatively high could benefit from some rewording, to make it less ambiguous that the question refers to community circumstances, and not to respondents' individual choices or needs. The thorough training of surveyors before commencing the fieldwork should be supplemented by a closer monitoring of their work and by training reinforcements, to decrease the potential for systematic errors. The last recommendation would require more

development and testing, the idea of introducing items that use the rates of "prefer not to respond" and of "don't know" as scores in themselves. The logic behind this would be, for example, that higher rates of "prefer not to respond" to a specifically designed question could indicate lower levels of trust, or higher rates of "don't know" responses would express less access to information. Item evidence from the study offers a solid base from which to pursue this refinement.

We now have an instrument that evidenced fewer limitations for the Bonding scale and more for the Bridging and Linkage scales. The detailed analysis of non-responses and "don't know" rates (Appendix 5-II) demonstrated that they were closely linked to direct or non-direct experience of the respondent with the issue inquired by the item. Within community issues would be expected to relate more to individuals' day to day experience, whereas intercommunity and institutional topics somewhat less. The differential rates between the Bonding scale and the other two scales were consistent with this expectation. The main consequence appears to be that the use of individual survey data should be supplemented with other sources of evidence to improve the measurement of social capital as conceptually specified in our study. In this sense, further social capital measurement tools would benefit from the development of composite measures, where aggregate data from this questionnaire would be combined with what could be called ecological level data [62]. The latter could come from two sources, from key informants survey, and from community level data. These sources would constitute a structural scale.

[62] What Kawachi and Berkman (2000) call "integral" variables, Lochner and colleagues (1999) refer to as "intrinsic" measures, and Roger and Kincaid term "global" variables (1981, p. 240).

Let us examine this recommendation with evidence from the study and with ideas from other researchers.

The conceptual framework would again be the basis from where to develop the measures. The measurement of the Bridging and Linkage dimensions in particular would benefit from this supplementary information. Because these dimensions are about interactions with other communities and institutions, and many of these interactions are at an institutional level, individuals involved on a more frequent basis with these issues would be particularly suited to provide this information. These key informants (e.g., band administration staff, band council, chiefs, agency staff, informal community leaders, challengers to current band officials) could be surveyed using existing and new questionnaire questions. Given that they would be surveyed based on their role, this data would be considered community level and not individual level. Albeit within another context, this idea was also introduced by other authors (Flora et al., 2000), who suggested the development of "group-level indicators" via questionnaires to elected and appointed officials of communities. The other source would be community level indicators. There are some examples within social capital research, as well as ideas that come from related areas of study[63]. However, the development of these indicators should be done following a similar process as that offered by the present study. In fact, results from our study

[63] Helliwell and Putnam (1995) included as regional level indicators timeliness of budgets, legislative innovation, and speed and accuracy of responses to requests for information, newspaper readership, number of sports and cultural organizations, turnout in referenda, etc. Other interesting measurement and methodological ideas are found in reports of the Pembina Institute for Appropriate Development (Anielski, 2001) (Pembina Institute for Appropriate Development, 2001) on genuine progress indicators, in a study that developed reliable measures of place using site survey checklists (Weich et al., 2001; Flora et al., 2000), using network analysis of community organizational networks (in fact the use of network analysis methods particularly for the Network component of the study's framework is an important avenue to pursue), among others. Specific to First Nations communities, Chandler & Lalonde (1998) offer the best ideas.

already provide a good guidance for this further expansion. The simplest route would be to identify questionnaire items, particularly of the Bridging and Linkage scale, for which to develop alternative ways of obtaining that information via key informants or through the collection of comparable existing data (e.g., administrative data). The final goal would be, as Nunnally and Bernstein (1994) state, "to allow data from several fallible measures to be combined into a more meaningful index." Specifically, then, the instrument would address the three dimensions (Bonding, Bridging, and Linkage) and their respective components, and would be composed of measures derived from the aggregation of individual questionnaire scores, measures derived from key informant surveys, and measures derived strictly from community level data.

6.4. Construct evidence

Following Messick (1980), we understand construct validation as "a process of marshaling evidence to support the inference that an observed response consistency has a particular meaning...(and) that at any point new evidence may dictate a change in construct, theory, or measurement." The study offered two main sources of evidence. First, the ethnographic study that enabled a grounded formulation of the conceptual framework of social capital for First Nations communities. After developing a tentative framework based on previous literature, qualitative data analyses guided its refinement and adjustment, resulting in it being operationalized for measurement. In essence, via an iterative process, the framework was tested by qualitative evidence. The second source of evidence was provided by analyses of pilot survey data that examined if there was

empirical support to justify the multi-component conceptualization. A discussion of these results follows in order to decipher if there is the need to reformulate the construct, and if so to what extent.

The conceptual framework of social capital (Table 5) was formulated as composed of three dimensions (Bonding, Bridging, and Linkage) and each dimension containing three components (Socially Invested Resources, Culture, and Networks) with a series of descriptors. For the Bonding dimension, socially invested resources made good sense as a distinct component, with the exception of symbolic socially invested resources that clustered in a separate factor. The culture component also performed quite well as a distinct dimension, but its collective action descriptor formed a separate factor, and with interesting overlaps with some socially invested resources descriptors. The network component appeared polarized in two separate factors, suggesting problems with the descriptors (or the questions). For the Bridging dimension, socially invested resources emerged as two distinct factors, one with physical and symbolic descriptors, and the other with financial and human descriptors. The network component performed relatively well as a separate factor. Culture did not emerge as a clear separate factor, appearing somewhat split across diverse factors. For the Linkage dimension, the network component showed relatively clear evidence of being a unique factor. Culture tended to load onto a separate factor, with the particular exception of two participation items, that formed a factor unto themselves (these were closely related questions about voting in government elections). Socially invested resources was the component with least supporting evidence. A few conclusions can be reached based on these results. First, that

support was found for the multiple-component structure of the framework. Second, that factor loadings in a number of cases did not correspond with the discrete distinctions between components. Third, that evidence for the component structure varied across the three dimensions, opening the possibility that a further reformulation of the framework could include a distinct component structure for each dimension.

The main issue to discuss is whether to reformulate the framework, and if so how and when. Before answering this, a comment by French philosopher Henri Bergson (1911) can help put this question into perspective. While discussing the curve of life, he explained how a very small section of a curve is very close to being a straight line so that the curve might be thought of as being made up of a series of very small straight lines. They are so small that they are like small points. "...but these points are, in fact, only views taken by a mind which imagines stops at various moments of the movement that generates the curve. In reality, life is no more made up of physicochemical elements than a curve is composed of straight lines." The same idea can be applied to the framework. The components and descriptors cannot be considered on their own, but in relation to the whole framework. The main notion is that the construct of social capital is more than the sum of its parts, and thus there is the possibility of varying consistencies among components. Nonetheless, the evidence suggests that some components were not what they were expected to be, and consequently require revision. The evidence from the present study calls for a cautious (and not necessarily substantial) reformulation of the framework. Factor analytical results provide guidance for this revision. However, the study also raised measurement issues that could understandably be affecting these results.

For that reason, the cautious approach would be to first pursue a refinement of the measurement instrument (as suggested in the previous section) and obtain new evidence with this improved tool, before proceeding to rework the construct. An integral part of this process would also involve the participation of community representatives in the interpretation and discussion of results, both for instrument refinement and construct reformulation purposes.

6.5. Study implications

Paraphrasing two communication networks authors (Rogers and Kincaid, 1981, p. 91) our study sought to provide methodological advances to move the field of social epidemiology of First Nations communities from talking about social capital as a loose metaphor, to using social capital concepts as analytical tools. Against this backdrop we should assess research and policy implications of the findings. First however, let us consider what the idea of social capital formulated in this study can add to the understanding of First Nations communities' health determinants. It presents a dynamic way of characterizing communities that enables comparability based on features that encompass both internal and external relations. It captures social elements with varying degrees of tangibility, although all of them of importance from First Nations communities perspective. Finally, it offers a meaningful structure from where to hypothesize and empirically study potential pathways to health of social environmental factors. This is enabled by seeking to understand the social energy of communities[64], precisely because it

[64] "The extent that people are invested in each other"(Uphoff, 2000) is an excellent summary statement for this.

is based on the assumption that communities cannot be understood as the sum of their parts, but as entities that possess global dynamics, both internal and in relation to other social entities. Consequently, a First Nation community may assess itself, both internally and in relation to other communities and institutions, by how well its resources are socially invested, by how good a culture of trust, norms of reciprocity and collective action it possesses, and by how inclusive, flexible and diverse its networks are.

6.5.1 Research implications

The study provided a rigorous effort in developing and operationalizing the construct of social capital, and of creating a measurement tool. This was achieved, but with limitations. Study results offered both a framework and a tool that can be used in social epidemiological studies (which does not exclude its potential use in other research fields), and at the same time supplied the basis from which to proceed for further conceptual and instrument refinement. Two research implications emerge. The line of inquiry that leads to the theoretical development and empirical testing of population health determinants pathway models that incorporate ecological level factors requires precise conceptual formulations of social environmental variables and the use of valid measures. The present study has taken an important step in fulfilling these requirements for First Nations health research. Thus, the first implication, that we now have an initial tool with which to advance along this line of research.[65] We are to some extent better placed to proceed, using a nature analogy, to theoretically formulate and empirically examine the ecology of

[65] In fact the 2002 wave of the Manitoba First Nations Longitudinal Health Survey has already incorporated a significant segment of the Bonding scale in their survey.

the forest as a determinant of species health based on the understanding that the forest is much more than the sum of trees. Nonetheless, as was repeatedly reiterated throughout the study, construct and measurement validation are part of an ongoing process, which brings us to the second implication, the use of study findings to continue developing the construct of social capital (and maybe other constructs) and improving the tools for its measurement.

A research agenda that would continue this line of inquiry would require the following. First, one further round of measurement refinement and validation, as suggested in the measurement solutions section. Second, based on findings from our current study and from findings from a future study using the revised tools, make further adjustments to the conceptual framework. Third, commence the formulation of theoretical models of social capital as a determinant of population health. Fourth, conduct empirical inquiries to test the hypothesis of social capital as determinant of health in First Nations communities. Notwithstanding, results from the current study allow for initial steps of the latter, by using the current questionnaire in longitudinal studies for example, with all the cautions already identified. This research agenda would continue to require an effective partnership between First Nations communities, First Nations organizations and academic centres in a research process that on a ongoing basis combines conceptual analysis, grounded theory development, and quantitative evidence.

6.5.2 Policy implications

Labonte's (1999) warning that social capital could be a "Trojan horse" for colonization from any side of the ideological spectrum has particular relevance within the First Nation's context. Given the history of relations between First Nations communities and European descendents and their institutions, the risk of furthering colonization by new means merits careful attention. Consequently, policy implications of the study need to be considered from three points of view. First is the innate political nature of the concept of social capital, second the political utilization of the concept, and third the potential of policy to impact social capital.

Inherent to the way social capital was conceptualized in our study is the notion of community as an entity of empirical inquiry and policy. The idea of higher or lower levels of community social capital is not value free, given that it presupposes the good of the community as a whole as a base criterion. This is particularly noticeable when framework component descriptors are observed: degree to which resources are socially invested; degree of a culture of trust, norms of reciprocity, collective action, and participation; and degree of inclusiveness, flexibility and diversity of networks. As Demo (1985, pp. 13-14) argues, social sciences are intrinsically ideological, meaning that ideology exists in reality itself because social reality is inevitably historical and political. The implication is that empirical inquiries that incorporate the construct of social capital need to make this fact explicit in interpreting their findings. Thus, there is no valid knowledge generated by studies using this construct if both the methods and the findings

have not been a product of First Nations communities' and organizations' interpretation. This also relates to the second area for consideration, the political use of the concept. The assumption is that findings in this area must be subject to First Nations community and organizations representatives' interpretation. Consequently, the policy decisions would derive from their interpretation of the findings. Last, if social capital can be a source of inquiry, then the effects of policy on the social capital of communities could and should be monitored, if not considered from the start. The construct here developed suggests that policy decisions from different levels of government, corporations, and First Nations leadership, may intentionally or unintentionally impact community social capital stocks for better or for worse. In essence, it highlights the fact that policies that are in the hands of several parties can have profound impacts on First Nations communities, and consequently on the health and well-being of their populations.

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TABLES

Table 1
Social Capital Definitions

James Coleman (1990) (1988). Social capital is a variety of different entities having two characteristics in common: they all consist of some aspect of a social structure, and they facilitate certain actions of individuals who are within the structure. Social capital inheres in the structure or relations between persons and among persons. It is lodged neither in individuals nor in physical implements of production. Two elements are critical to social capital: the level of trustworthiness of the social environment, which means that obligations will be repaid, and the actual extent of obligations held. Social structures differ in both of these dimensions, and actors within a particular structure differ in the second. As an attribute of the social structure in which a person is embedded, social capital is
Pierre Bourdieu (1983). Social capital is the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition – i.e., to membership in a group- which provides each of its members with the backing of the collectivity-owned capital, a "credential" which entitles them to credit, in the various senses of the word. These relationships may exist only in the practical state, in material and/or symbolic exchanges which help to maintain them. They may also be socially instituted and guaranteed by the application of a common name (the name of a family, a class, a tribe, a school, a party, etc.) and by a whole set of instituting acts.
Glenn Loury (1992). "Now consider all of these processes associated with naturally occurring social relationships among persons, which promote or assist the acquisition of skills and traits valued in the market place. They constitute an economic resource which I have called social capital, an asset which may be as significant as financial bequests in accounting for the maintenance of inequality in our society, especially inequality between ethnic groups."
Robert Putnam (Putnam et al., 1993) (Putnam, 1993). Social capital refers to features of social organization, such as trust, norms, and networks, that can improve the efficiency of society by facilitating coordinated actions.
Alejandro Portes (1995). Social capital is the ability to command scarce resources by virtue of membership in networks or broader social structures.
Ronald Burt (1992). Social capital is at once the resources contacts hold and the structure of contacts in a network. The first term describes whom you reach. The second describes how you reach.
Francis Fukuyama (1995). Social capital is the component of human capital that allows members of a given society to trust one another and cooperate in the formation of new groups and associations.
The World Bank (Edwards, 1997). The World Bank's working definition: Social capital refers to the "glue" that holds societies together, being a composite of social networks and institutions, social norms (such as co-operation), and social values or attributes (especially trust).
Michael Woolcock (1998). "Social capital…the nature and extent of a community's personal and institutional relationships."
James Midgley (Midgely & Livermore, 1998). Social capital is defined as social infrastructure. Infrastructural development for social purposes not only provides the material amenities needed for community development but also creates the community-held assets that bring people together and enhance their commitment to local development.
Pamela Paxton (1999). Social capital involves two components: 1) Objective associations between individuals. –There must be an objective network structure linking individuals. This component indicates that individuals are tied to each other in social space. 2) A subjective type of tie. –The ties between individuals must be of a particular type –reciprocal, trusting, and involving positive emotion.
Deepa Narayan (1999) Social capital is defined as the norms and social relations embedded in the social structures of society that enable people to co-ordinate action and to achieve desired goals.
Falk & Filpatrick (1999) Social capital is the product of social interactions with the potential to contribute to the social, civic or economic well-being of a community-of-common-purpose. The interactions draw on knowledge and identity resources and simultaneously use and build stores of social capital. The nature of social capital depends on various qualitative dimensions of the interactions in which it is produced, such as the quality of the internal-external interactions, the historicity, futuricity, reciprocity, trust and
Richard Rose (1997) Social capital consists of informal social networks and formal organizations used by individuals and households to produce goods and services for their own consumption, exchange or sale.
Adler & Kwon (1999) relations.
Schuller, Baron & Field (2000) Social capital-broadly, social networks, the reciprocities that arise from them, and the value of these for achieving mutual
Nan Lin (2001) Social capital consists of resources embedded in one's network or associations.

Table 2
Sample - Population Comparison (Age 18 and over)
Sex and Age by Community

Community	Age Category					Chi-Sq	
	18 - 29	30 - 44	45 - 59	>60	Total	Age-Cat	Sex
Community C							
Male							
Sample Count	22	33	2	4	61	7.11	
% sample	17.9	26.8	1.6	3.3	49.6		
% population	*23.0*	*19.6*	*7.0*	*3.4*	*53.0*		
Female							
Sample Count	27	25	6	4	62	1.53	
% sample	22.0	20.3	4.9	3.3	50.4		
% population	*19.7*	*16.7*	*5.2*	*5.3*	*47.0*		
Total							
Sample Count	49	58	8	8	123		2.25
Community B							
Male							
Sample Count	17	16	8	3	44	6.79	
% sample	12.6	11.9	5.9	2.2	32.6		
% population	*17.8*	*19.2*	*9.4*	*4.6*	*51.0*		
Female							
Sample Count	25	43	22	1	91	17.40*	
% sample	18.5	31.9	16.3	0.7	67.4		
% population	*17.3*	*17.9*	*9.0*	*4.8*	*49.0*		
Total							
Sample Count	42	59	30	4	135		13.00*
Community A							
Male							
Sample Count	32	34	20	5	91	1.80	
% sample	15.7	16.7	9.8	2.5	44.6		
% population	*20.6*	*18.1*	*7.5*	*2.7*	*48.9*		
Female							
Sample Count	30	49	27	7	113	8.45*	
% sample	14.7	24.0	13.2	3.4	55.4		
% population	*21.8*	*17.3*	*8.1*	*3.9*	*51.1*		
Total							
Sample Count	62	83	47	12	204		0.64
Total Sample	**153**	**200**	**85**	**24**	**462**		

* Statistically significant

Table 3
Summary of Respondents Characteristics

Variable		Percentages		
		Community C	Community B	CommunityA
Sex				
	Male	49.6	32.6	44.6
	Female	50.4	67.4	55.4
Age				
	18 - 29	39.8	31.1	30.4
	30 - 44	47.2	43.7	40.7
	45 - 59	6.5	22.2	23.0
	>60	6.5	3.0	5.9
Marital Status				
	Married/Common Law	39.0	60.4	52.0
	Separated/Divorced/Widowed	8.4	9.0	12.9
	Single	52.5	30.6	35.1
Children Under 18 Living at Home				
	0	30.9	17.8	33.8
	1 - 4	55.3	72.6	60.3
	5 - 9	13.8	9.6	5.9
Highest Level of Education				
	Elementary	9.8	6.0	8.3
	Some High School	42.6	33.6	24.6
	Graduated High School	12.3	13.4	6.9
	Trade/Technical school	4.1	9.0	9.4
	College/University	18.1	25.4	43.4
	No response	13.1	12.7	7.4
Working For Pay				
	Yes	26.0	51.1	48.0
	No	74.0	48.9	52.0
Speak First Nation language				
	Not at all/A few words	18.9	11.2	60.2
	With Effort	10.7	12.7	12.4
	Relatively Well/Fluently	69.7	76.1	25.8
	No response	0.8	0.0	1.5
Understand First Nation Language				
	Not at all/A few words	16.3	5.9	46.1
	With Effort	9.8	8.1	8.3
	Relatively Well/Fluently	72.4	85.9	45.5
	No response	1.6	0.0	0.0
On Social Assistance				
	Yes	47.2	36.3	27.0
	No	52.8	63.7	73.0
Income				
	$ 1 - 19,999	27.7	13.5	32.7
	$ 20,000 - 49,999	11.7	27.0	26.6
	$ 50,000 and more	3.6	8.0	8.5
	No income	3.6	3.2	1.0
	No Response	53.6	48.5	31.1

TABLE 4
SOCIAL CAPITAL DEFINITION ANALYSIS

Author	What it is	Components
Coleman	Aspect of the social environment	Trustworthiness of the social environment/Actual extent of obligations held
Bourdieu	Aggregate of actual or potential resources	Durable network of relationships of mutual acquaintance and recognition
Loury	An economic resource	Processes associated with naturally occurring social relationships among persons
Putnam	Features of social organization	Trust/Norms/Networks
Portes	Ability to command scarce resources	Membership in networks of broader social structures
Burt	Resources and structure	Resources contacts hold/Structure of contacts in a network
Fukuyama	Component of human capital	
World Bank	Glue that holds society together	Social networks/Institutions/Social norms/Social values or attributes
Woolcock	A community's personal and institutional relationships	Nature of relationships/Extent of relationships
Midgley	Social infrastructure	
Paxton		Objective associations between individuals (network)
		A subjective type of tie (reciprocal, trusting, with positive emotion)
Narayan	Norms and social relations embedded in the social structures	Norms/Social relations
Falk & Filpatrick	Product of social interactions	Internal-external interactions/Historicity/Futuricity/Reciprocity/
		Trust/Shared values and norms
Rose	Networks and organizations	Informal social networks/Formal organizations
Adler & Kwon	A resource	Network of social relations
Schuller et al.	Social networks	Reciprocities/Values
Lin	Resources	Networks or associations

TABLE 4
SOCIAL CAPITAL DEFINITION ANALYSIS

Author	Functions
Coleman	Facilitate actions of indviduals
Bourdieu	Provides members with backing of the collectivley owned capital
Loury	Promote or assist the acquisition of skills and traits valued in the market place
Putnam	Improve the efficiency of society by facilitating coordinated actions
Portes	To command scarce resources
Burt	
Fukuyama	Allows members of society to trust one another and cooperate
World Bank	Hold societies together
Woolcock	
Midgley	Community development/Bring people together/Enhance their commitment to local development
Paxton	
Narayan	Coordinate action/Achieve desired goals
Falk & Filpatrick	Contribute to the social, civic or economic well-being of a community
Rose	Produce goods and services
Adler & Kwon	A resource for individual and collective actors
Schuller et al.	Achieving mutual goals
Lin	

Table 5
SOCIAL CAPITAL OF A COMMUNITY
Framework

Bonding			Bridging			Linkage		
SIR*	**Culture**	**Networks**	**SIR**	**Culture**	**Networks**	**SIR**	**Culture**	**Networks**
Physical	Trust	Inclusive	Physical	Trust	Inclusive	Physical	Trust	Inclusive
Symbolic	Norms of Reciprocity	Flexible	Symbolic	Norms of Reciprocity	Flexible	Symbolic	Norms of Reciprocity	Flexible
Financial	Collective Action	Diverse	Financial	Collective Action	Diverse	Financial	Collective Action	Diverse
Human	Participation		Human	Participation		Human	Participation	
Natural			Natural			Natural		

This model of Social Capital is constituted by 3 dimensions (Bonding, Bridging, Linkage) and each dimension by 3 components (Socially Invested Resources, Culture, Networks). There are a series of descriptors for each component (SIR has 5, Culture has 4, and Networks has 3).

The measurement is of the following (higher degree = higher stock of community social capital):

-Degree to which SIRs are socially invested

-Degree of existence of a culture of trust, norms of reciprocity, collective action, and participation

-Degree of inclusiveness, flexibility and diversity of networks

As the model shows, the three dimensions have each the same three components and the same descriptors. Survey items have consequently been structured following the complete framework. Survey questions of course differ from dimension to dimension.

SIR* = Socially Invested Resources

Table 6a
Response Percentages

Item	Percentages											
	Community A				Community B				Community C			
	Responded	Don't know	Prefer not respond	N/A	Responded	Don't know	Prefer not respond	N/A	Responded	Don't know	Prefer not respond	N/A
Q13 BO-SIR-S	66.5	28.5	3.5	1.5	60.9	30.8	8.3	0.0	74.0	20.3	3.3	2.4
Q14 BO-SIR-S	65.7	30.8	2.0	1.5	57.9	33.8	7.5	0.8	70.5	22.1	4.1	3.3
Q15 BO-SIR-S	69.5	25.5	3.5	1.5	57.9	33.1	9.0	0.0	74.8	20.3	2.4	2.4
Q16 BO-SIR-S	68.5	27.0	3.0	1.5	59.0	35.1	6.0	0.0	70.5	26.2	1.6	1.6
Q17 BO-NET-D	98.5	0.0	1.5	0.0	97.0	0.0	3.0	0.0	97.5	0.0	0.8	1.6
Q18 BO-NET-D	97.0	1.0	1.5	0.5	94.8	1.5	3.0	0.7	95.9	1.6	1.6	0.8
Q19 BO-NET-D	96.5	1.0	2.0	0.5	94.7	1.5	3.0	0.8	94.3	3.3	1.6	0.8
Q20 BO-SIR-P	99.0	0.5	0.5	0.0	97.0	1.5	1.5	0.0	97.5	0.0	0.8	1.6
Q22 BO-CUL-P	93.5	1.5	3.5	1.5	93.3	0.0	3.7	3.0	85.2	6.6	6.6	1.6
Q23 BO-CUL-P	99.0	0.5	0.0	0.5	96.3	0.0	1.5	2.2	94.3	0.0	3.3	2.5
Q24 BO-CUL-C	95.0	2.0	1.0	2.0	92.5	0.8	6.0	0.8	88.5	4.1	5.7	1.6
Q62 BO-SIR-P	91.6	7.4	1.0	0.0	83.0	4.4	11.9	0.7	88.4	5.8	5.0	0.8
Q63 BO-SIR-F	80.3	10.8	3.9	4.9	64.4	18.5	11.9	5.2	74.0	9.8	6.5	9.8
Q64 BO-SIR-F	75.2	19.8	3.9	1.0	73.3	21.5	3.7	1.5	77.2	12.2	7.3	3.3
Q65 BO-SIR-H	82.8	16.7	0.5	0.0	77.0	11.9	11.1	0.0	90.2	4.9	3.3	1.6
Q66 BO-SIR-H	85.7	14.3	0.0	0.0	81.3	10.4	8.2	0.0	91.9	6.5	0.8	0.8
Q67 BO-SIR-H	81.3	17.2	1.5	0.0	75.6	17.8	5.2	1.5	91.1	6.5	1.6	0.8
Q68 BO-SIR-N	85.2	11.8	2.9	0.0	78.5	16.3	4.4	0.7	84.6	12.2	2.4	0.8
Q69 BO-SIR-N	86.7	11.3	1.5	0.5	69.6	20.7	9.6	0.0	89.4	7.3	2.4	0.8
Q70 BO-SIR-N	86.7	3.9	8.8	0.5	88.1	4.4	6.7	0.7	92.7	4.1	2.4	0.8
Q71 BO-CUL-T	91.6	5.9	2.5	0.0	80.7	10.4	8.9	0.0	93.5	3.3	3.3	0.0
Q72 BO-CUL-T	90.6	6.4	3.0	0.0	88.9	6.7	4.4	0.0	92.6	4.9	2.5	0.0
Q73 BO-CUL-T	87.2	6.4	5.9	0.5	82.1	9.0	8.2	0.7	91.0	5.7	3.3	0.0
Q74 BO-CUL-NO	90.6	4.9	3.9	0.5	92.6	1.5	5.9	0.0	94.3	1.6	4.1	0.0
Q75 BO-CUL-NO	90.5	7.0	2.0	0.5	94.8	2.2	3.0	0.0	97.5	2.5	0.0	0.0
Q76 BO-CUL-NO	92.1	0.5	5.4	2.5	93.3	2.2	4.4	0.0	94.3	3.3	2.5	0.0
Q77 BO-CUL-NO	95.1	3.0	1.5	0.5	90.4	3.0	6.7	0.0	93.4	4.1	2.5	0.0
Q78 BO-CUL-CA	92.1	2.0	3.9	2.0	93.3	1.5	5.2	0.0	94.3	0.0	4.9	0.8
Q79 BO-CUL-CA	80.8	10.8	7.4	1.0	72.6	14.8	11.9	0.7	86.1	4.1	7.4	2.5
Q80 B0-CUL-CA	95.1	0.5	3.9	0.5	83.7	2.2	13.3	0.7	92.6	0.8	4.9	1.6
Q81 BO-CUL-PA	96.6	2.0	1.5	0.0	98.5	0.7	0.7	0.0	98.4	0.0	0.8	0.8
Q82 BO-NET-I	87.7	9.4	2.5	0.5	92.6	4.4	3.0	0.0	94.3	1.6	3.3	0.8
Q125 BO-SIR-F	89.6	8.9	1.0	0.5	76.9	16.4	6.7	0.0	93.5	3.3	3.3	0.0
Q126 BO-CUL-T	87.7	4.9	2.9	4.4	60.4	34.3	4.5	0.7	86.2	7.3	5.7	0.8
Q127 BO-SIR-F	84.7	12.8	1.5	1.0	71.4	21.8	6.8	0.0	91.1	6.5	2.4	0.0
Q128 BO-CUL-PA	93.1	1.5	3.4	2.0	92.6	3.0	3.7	0.7	94.3	0.0	4.9	0.8
Q83r BO-NET-I	84.2	10.3	4.9	0.5	81.5	12.6	5.2	0.7	85.4	6.5	6.5	1.6
Q84r BO-NET-I	95.6	0.0	2.0	2.5	93.3	0.7	6.0	0.0	90.2	1.6	7.3	0.8
Q85r BO-NET-I	86.2	12.3	1.0	0.5	85.2	13.3	1.5	0.0	87.0	5.7	6.5	0.8
Q86r BO-NET-F	87.7	8.9	2.5	1.0	81.5	15.6	3.0	0.0	91.1	4.1	4.1	0.8
Q87r BO-NET-F	91.1	1.5	5.9	1.5	88.1	3.0	8.9	0.0	90.2	1.6	5.7	2.4
Q88r BO-NET-F	80.8	15.3	2.9	1.0	79.3	15.6	4.4	0.7	82.9	8.9	5.7	2.4
Q89r BO-NET-F	95.1	0.5	2.9	1.5	91.9	2.2	5.2	0.7	94.3	0.0	4.9	0.8
Q90r BO-NET-D	87.2	3.4	7.4	2.0	84.4	5.9	8.9	0.7	87.0	2.4	8.9	1.6

Table 6b
Response Percentages

Item	Percentages											
	Community A				Community B				Community C			
	Responded	Don't know	Prefer not respond	N/A	Responded	Don't know	Prefer not respond	N/A	Responded	Don't know	Prefer not respond	N/A
Q25 BR-SIR-P	72.3	23.8	3.4	0.5	56.0	37.3	5.2	1.5	79.7	17.1	2.4	0.8
Q26 BR-SIR-P	71.3	26.2	2.5	0.0	36.6	56.0	6.0	1.5	82.0	14.8	2.5	0.8
Q27 BR-SIR-S	68.8	28.2	3.0	0.0	43.3	51.5	5.2	0.0	76.2	19.7	3.3	0.8
Q28 BR-SIR-S	70.3	28.7	1.0	0.0	50.0	46.3	3.7	0.0	68.3	26.6	2.4	2.4
Q29 BR-SIR-S	65.5	32.0	2.5	0.0	35.1	59.7	5.2	0.0	74.0	22.8	2.4	0.8
Q30 BR-SIR-S	97.0	2.0	0.5	0.5	89.5	4.5	4.5	1.5	91.7	4.1	4.1	0.0
Q31 BR-SIR-F	92.6	1.0	5.4	1.0	87.3	2.2	7.5	3.0	90.2	0.0	5.7	4.1
Q32 BR-SIR-F	69.0	23.6	5.4	2.0	31.3	56.0	4.5	8.2	64.5	26.4	5.0	4.1
Q33 BR-SIR-F	58.1	35.0	4.9	2.0	22.4	63.4	6.0	8.2	62.5	27.5	5.0	5.0
Q34 BR-SIR-H	74.4	24.6	1.0	0.0	42.5	51.5	4.5	1.5	72.1	23.0	4.1	0.8
Q35 BR-SIR-H	67.7	31.3	1.0	0.0	41.8	53.0	4.5	0.7	66.4	28.7	3.3	1.6
Q36 BR-SIR-N	73.8	23.8	2.5	0.0	46.3	49.3	4.5	0.0	81.0	13.2	4.1	1.7
Q37 BR-CUL-T	84.2	9.9	4.9	1.0	66.4	23.9	9.7	0.0	81.1	10.7	6.6	1.6
Q38 BR-CUL-T	79.8	14.8	5.4	0.0	65.4	25.6	9.0	0.0	76.2	16.4	5.7	1.6
Q39 BR-CUL-T	85.6	10.4	3.9	0.0	48.1	34.6	2.5	15.0	81.1	11.5	3.3	4.1
Q40 BR-CUL-NO	96.1	1.5	2.0	0.5	78.4	9.7	9.7	2.2	84.3	9.9	5.8	0.0
Q41 BR-CUL-NO	96.1	1.0	2.9	0.0	82.8	11.2	6.0	0.0	92.6	5.7	1.6	0.0
Q42 BR-CUL-NO	96.5	0.5	3.0	0.0	94.7	3.0	1.5	0.8	96.7	0.8	1.6	0.8
Q44 BR-CUL-CA	72.9	24.1	2.9	0.0	42.5	53.0	4.5	0.0	70.5	24.6	3.3	1.6
Q45 BR-CUL-CA	91.6	5.9	2.5	0.0	73.9	17.9	7.5	0.7	91.0	4.9	3.3	0.8
Q46 BR-CUL-CA	92.1	1.5	4.9	1.5	78.5	5.2	14.8	1.5	90.2	3.3	5.7	0.8
Q48 BR-CUL-PA	88.7	1.5	4.4	5.4	80.3	4.5	7.6	7.6	84.4	4.1	4.9	6.6
Q49 BR-CUL-PA	90.1	1.5	4.4	3.9	76.9	3.0	10.4	9.7	80.8	1.7	10.8	6.7
Q50 BR-CUL-PA	96.5	0.5	1.5	1.5	93.3	2.2	3.7	0.7	92.6	3.3	1.6	2.5
Q53 BR-NET-I	83.3	11.3	4.4	1.0	63.7	28.9	5.9	1.5	79.5	15.6	4.9	0.0
Q60 BR-NET-D	96.6	1.0	1.0	1.5	93.3	1.5	1.5	3.7	88.5	1.6	6.6	3.3
Q61 BR-NET-D	94.6	2.0	1.5	2.0	91.9	1.5	2.2	4.4	90.2	1.6	5.7	2.5
Q43r BR-CUL-NO	68.0	30.0	2.0	0.0	52.2	41.8	6.0	0.0	70.2	24.0	4.1	1.7
Q51r BR-NET-I	94.6	1.0	2.5	2.0	88.9	3.7	5.2	2.2	84.4	2.5	8.2	4.9
Q52r BR-NET-I	83.6	5.5	5.4	5.4	49.6	23.7	15.6	11.1	76.7	11.7	10.0	1.7
Q54r BR-NET-F	91.6	2.5	4.4	1.5	89.6	4.4	3.7	2.2	89.3	4.1	6.6	0.0
Q55r BR-NET-F	90.1	2.5	4.4	2.9	80.7	10.4	5.2	3.7	77.9	9.8	9.8	2.5
Q56r BR-NET-F	97.0	0.5	2.0	0.5	91.0	3.0	3.7	2.2	88.4	2.5	5.8	3.3
Q57r BR-NET-F	95.6	1.5	2.0	1.0	92.5	1.5	5.2	0.7	94.3	1.6	3.3	0.8
Q58r BR-NET-D	97.5	0.5	1.5	0.5	94.8	0.0	2.2	3.0	94.2	0.0	5.0	0.8
Q59r BR-NET-D	90.6	3.9	4.9	0.5	91.1	1.5	5.2	2.2	88.4	3.3	7.4	0.8

Table 6c
Response Percentages

Item	Percentages											
	Community A				Community B				Community C			
	Responded	Don't know	Prefer not respond	N/A	Responded	Don't know	Prefer not respond	N/A	Responded	Don't know	Prefer not respond	N/A
Q91 L-SIR-S	65.0	30.5	4.0	0.5	48.9	45.2	5.9	0.0	66.7	30.1	2.4	0.8
Q92 L-SIR-S	69.3	28.7	2.0	0.0	76.3	20.7	3.0	0.0	83.7	12.2	3.3	0.8
Q93 L-SIR-S	47.8	48.8	2.9	0.5	31.1	63.0	5.9	0.0	60.2	35.8	3.3	0.8
Q94 L-SIR-S	44.8	52.2	2.9	0.0	31.1	65.9	2.2	0.7	62.6	32.5	3.3	1.6
Q95 L-SIR-S	42.9	53.2	3.4	0.5	26.7	71.9	0.7	0.7	59.3	35.8	3.3	1.6
Q96 L-SIR-H	74.9	24.6	0.5	0.0	76.3	21.5	1.5	0.7	91.1	6.5	2.4	0.0
Q97 L-SIR-H	67.5	28.6	2.9	1.0	39.3	57.8	2.2	0.7	76.2	21.3	2.5	0.0
Q98 L-SIR-H	59.6	36.9	2.9	0.5	36.3	60.0	3.0	0.7	68.3	25.2	5.7	0.8
Q99 L-SIR-N	40.9	54.7	1.0	3.4	51.1	34.1	14.8	0.0	83.6	12.3	2.5	1.6
Q100 L-SIR-N	45.8	51.2	2.0	1.0	38.8	50.7	10.4	0.0	74.0	21.1	3.3	1.6
Q101 L-CUL-T	73.1	21.4	5.4	0.0	39.3	39.3	18.5	3.0	80.5	10.6	5.7	3.3
Q102 L-CUL-T	69.7	25.4	4.5	0.5	40.7	43.0	14.1	2.2	81.3	14.6	1.6	2.4
Q103 L-CUL-NO	75.4	21.2	3.4	0.0	43.7	42.2	14.1	0.0	83.7	11.4	3.3	1.6
Q106 L-CUL-CA	61.1	35.5	3.4	0.0	40.7	49.6	9.6	0.0	74.8	18.7	4.9	1.6
Q107 L-CUL-CA	57.1	38.9	2.9	1.0	41.5	50.4	8.1	0.0	69.1	25.2	4.1	1.6
Q108 L-CUL-CA	66.7	30.8	2.5	0.0	33.1	56.4	9.8	0.8	71.3	23.8	4.1	0.8
Q109 L-CUL-PA	93.1	3.9	2.9	0.0	88.8	6.7	4.5	0.0	88.6	2.4	8.1	0.8
Q115 L-NET-F	71.1	23.4	4.5	1.0	68.1	24.4	7.4	0.0	83.7	10.6	4.9	0.8
Q116 L-NET-F	77.3	19.2	2.9	0.5	68.9	22.2	8.9	0.0	92.7	4.9	1.6	0.8
Q117 L-NET-F	70.3	23.8	4.4	2.0	72.4	19.4	6.7	1.5	81.3	13.0	3.3	2.4
Q118 L-NET-D	74.3	16.3	3.9	5.4	67.2	26.9	3.7	2.2	74.0	17.9	5.7	2.4
Q119 L-NET-D	77.2	10.4	4.9	7.4	76.1	16.4	6.0	1.5	83.7	10.6	4.1	1.6
Q120 L-NET-D	86.2	8.9	2.9	2.0	67.9	25.4	9.0	0.7	86.2	9.8	2.4	1.6
Q121 L-NET-D	73.3	21.8	3.0	2.0	45.1	48.9	5.3	0.8	71.3	23.8	4.9	0.0
Q122 L-SIR-P	88.1	10.9	0.5	0.5	92.5	3.7	1.5	2.2	96.7	1.6	1.6	0.0
Q123 L-SIR-P	82.7	14.9	1.5	1.0	85.8	10.4	3.7	0.0	96.7	2.4	0.8	0.0
Q124 L-SIR-P	92.6	5.4	1.5	0.5	82.1	14.9	3.0	0.0	96.7	1.6	1.6	0.0
Q129 L-CUL-PA	92.6	2.0	4.9	0.5	86.6	6.7	6.7	0.0	89.4	3.3	7.3	0.0
Q130 L-CUL-PA	92.1	3.0	4.4	0.5	82.1	9.7	8.2	0.0	85.4	5.7	8.9	0.0
Q104r L-CUL-NO	55.7	41.9	2.0	0.5	30.4	59.3	10.4	0.0	74.0	18.7	7.3	0.0
Q105r L-CUL-NO	54.2	42.4	2.5	1.0	28.1	61.5	10.4	0.0	63.4	30.1	5.7	0.8
Q110r L-NET-I	71.9	12.8	6.4	9.3	76.3	11.9	8.1	3.7	80.3	9.8	4.9	4.9
Q111r L-NET-I	79.3	10.8	5.9	3.9	72.6	18.5	7.4	1.5	86.1	9.8	2.5	1.6
Q112r L-NET-I	63.1	16.3	7.8	13.2	68.9	15.6	5.9	9.6	71.3	18.9	2.5	7.4
Q113r L-NET-I	65.3	19.3	6.4	9.4	56.3	31.9	6.7	5.2	69.4	19.0	8.3	3.3
Q114r L-NET-F	63.9	28.2	6.4	2.0	37.8	51.9	10.4	0.0	78.0	13.0	7.3	1.6

Table 6d
Response Percentages

Item	Percentages											
	Community C				Community B				Community A			
	Responded	Don't know	Prefer not respond	N/A	Responded	Don't know	Prefer not respond	N/A	Responded	Don't know	Prefer not respond	N/A
Q12 HEALTH	95.1	1.6	3.3	0.0	100.0	0.0	0.0	0.0	96.1	2.0	1.5	0.5
Q47 PERSONALITY	99.2	0.0	0.0	0.8	97.8	1.5	1.5	0.7	99.0	0.5	0.5	0.0

Table 7a

Means, Standard Deviations, F-Ratios and Sig. for Bonding Items by Community

Item	Mean			Standard Deviation			F-Ratio	Sig.
	Com C	Com B	Com A	Com C	Com B	Com A		
Q13 BO-SIR-S	3.27	3.68	3.17	1.04	0.87	0.86	12.01	0.00
Q14 BO-SIR-S	3.08	3.36	2.85	0.97	0.82	0.90	12.25	0.00
Q15 BO-SIR-S	3.02	3.52	2.98	1.03	0.83	0.89	14.38	0.00
Q16 BO-SIR-S	3.19	3.44	2.99	0.88	0.89	1.01	8.71	0.00
Q17 BO-NET-D	4.08	3.93	3.78	1.04	1.08	1.19	2.74	0.07
Q18 BO-NET-D	3.33	3.40	3.07	1.04	1.07	1.02	4.59	0.01
Q19 BO-NET-D	2.50	2.49	2.20	1.10	0.98	0.95	4.70	0.01
Q20 BO-SIR-P	2.54	4.76	3.99	1.12	0.63	1.02	174.48	0.00
Q22 BO-CUL-P	3.15	3.21	3.21	1.50	1.38	1.37	0.06	0.94
Q23 BO-CUL-P	3.28	3.29	4.01	1.45	1.42	1.13	16.69	0.00
Q24 BO-CUL-C	2.56	1.97	2.29	1.39	1.44	1.38	5.27	0.01
Q62 BO-SIR-P	1.88	2.25	2.45	0.96	1.30	1.20	8.73	0.00
Q63 BO-SIR-F	2.47	2.02	2.26	1.00	0.94	0.91	6.13	0.00
Q64 BO-SIR-F	2.47	3.67	3.22	1.15	1.02	1.00	39.13	0.00
Q65 BO-SIR-H	2.26	2.88	2.88	1.04	1.09	1.09	13.98	0.00
Q66 BO-SIR-H	2.87	3.20	2.97	1.29	1.10	1.15	2.65	0.07
Q67 BO-SIR-H	3.67	3.79	3.36	1.08	0.76	1.04	8.35	0.00
Q68 BO-SIR-N	2.88	3.59	3.24	1.10	0.85	1.01	15.74	0.00
Q69 BO-SIR-N	2.95	3.77	3.45	1.30	0.86	1.02	18.01	0.00
Q70 BO-SIR-N	4.28	4.05	4.07	0.74	0.66	0.67	4.41	0.01
Q71 BO-CUL-T	2.92	3.94	3.45	1.37	0.91	1.09	24.83	0.00
Q72 BO-CUL-T	3.19	3.77	3.02	1.10	0.87	1.08	21.61	0.00
Q73 BO-CUL-T	2.39	2.99	2.49	0.97	0.91	0.95	14.55	0.00
Q74 BO-CUL-NO	3.10	3.42	2.97	1.09	0.96	0.94	8.01	0.00
Q75 BO-CUL-NO	3.87	4.12	3.34	1.03	0.93	1.06	25.01	0.00
Q76 BO-CUL-NO	3.93	4.30	3.72	1.05	0.81	0.99	14.03	0.00
Q77 BO-CUL-NO	1.93	1.72	1.74	0.98	0.81	0.86	2.24	0.11
Q78 BO-CUL-CA	4.23	4.20	4.16	0.69	0.55	0.61	0.37	0.69
Q79 BO-CUL-CA	3.90	3.72	3.72	0.86	0.83	0.81	1.77	0.17
Q80 B0-CUL-CA	3.95	3.75	3.75	0.79	0.83	0.95	2.12	0.12
Q81 BO-CUL-PA	4.54	4.56	4.53	0.61	0.70	0.60	0.06	0.94
Q82 BO-NET-I	3.81	3.90	3.70	0.87	0.84	0.87	2.30	0.10
Q125 BO-SIR-F	2.45	4.06	3.53	1.13	1.30	0.92	68.65	0.00
Q126 BO-CUL-T	3.13	3.44	3.39	0.90	0.78	0.98	4.12	0.02
Q127 BO-SIR-F	3.05	3.99	3.53	1.02	0.62	0.76	41.16	0.00
Q128 BO-CUL-PA	3.64	4.39	4.16	1.90	1.42	1.62	6.57	0.00
Q83r BO-NET-I	2.05	2.03	2.11	0.84	0.89	0.79	0.43	0.65
Q84r BO-NET-I	3.32	3.32	3.14	0.97	0.96	0.98	1.72	0.18
Q85r BO-NET-I	2.59	2.61	2.41	0.95	0.93	0.86	2.35	0.10
Q86r BO-NET-F	2.29	2.63	2.32	0.82	0.91	0.75	7.02	0.00
Q87r BO-NET-F	2.99	2.88	2.98	1.15	1.05	1.12	0.39	0.68
Q88r BO-NET-F	2.77	2.77	2.78	1.02	0.87	0.91	0.00	1.00
Q89r BO-NET-F	2.99	2.99	3.00	1.03	0.99	1.02	0.00	1.00
Q90r BO-NET-D	3.72	3.92	3.83	0.80	0.91	0.82	1.65	0.19

Table 7b

Means, Standard Deviations, F-Ratios, and Sig. for Bridging Items by Community

Item	Mean			Standard Deviation			F-Ratio	Sig.
	Com C	Com B	Com A	Com C	Com B	Com A		
Q25 BR-SIR-P	2.78	3.63	3.38	1.20	0.75	0.91	25.82	0.00
Q26 BR-SIR-P	2.88	3.51	3.34	1.06	0.60	0.90	17.14	0.00
Q27 BR-SIR-S	3.38	3.52	3.29	0.96	0.52	0.90	3.04	0.05
Q28 BR-SIR-S	3.25	3.84	3.34	0.99	0.59	0.81	20.46	0.00
Q29 BR-SIR-S	3.09	3.23	3.16	1.03	0.66	0.92	0.80	0.45
Q30 BR-SIR-S	4.05	3.92	4.00	0.66	0.77	0.75	1.10	0.34
Q31 BR-SIR-F	3.33	2.25	4.11	1.14	0.96	0.87	135.27	0.00
Q32 BR-SIR-F	2.64	3.07	3.09	1.09	0.69	1.10	7.82	0.00
Q33 BR-SIR-F	2.69	2.93	2.97	0.98	0.58	0.91	3.85	0.02
Q34 BR-SIR-H	3.37	2.82	3.45	1.09	0.86	0.96	17.54	0.00
Q35 BR-SIR-H	3.22	2.54	3.22	1.00	0.81	0.94	24.75	0.00
Q36 BR-SIR-N	3.56	3.76	3.62	1.21	0.77	0.95	1.34	0.26
Q37 BR-CUL-T	2.13	2.45	2.58	0.86	0.76	0.99	8.90	0.00
Q38 BR-CUL-T	2.88	2.93	2.80	0.96	0.79	0.92	0.81	0.45
Q39 BR-CUL-T	2.85	3.08	3.32	1.06	0.85	1.05	8.18	0.00
Q40 BR-CUL-NO	3.16	3.22	3.51	1.03	0.97	0.93	5.85	0.00
Q41 BR-CUL-NO	3.51	3.57	3.78	0.90	0.82	0.68	5.27	0.01
Q42 BR-CUL-NO	4.69	4.57	4.63	0.64	0.55	0.67	1.20	0.30
Q44 BR-CUL-CA	3.41	3.68	3.44	0.91	0.72	0.81	4.52	0.01
Q45 BR-CUL-CA	4.04	4.14	4.23	0.92	0.74	0.73	2.28	0.10
Q46 BR-CUL-CA	3.65	3.17	3.47	0.84	1.17	1.02	6.60	0.00
Q48 BR-CUL-PA	3.29	3.18	3.36	0.95	1.11	1.07	1.09	0.34
Q49 BR-CUL-PA	2.69	2.99	3.28	0.98	1.17	1.10	9.58	0.00
Q50 BR-CUL-PA	3.78	3.69	3.78	0.88	0.93	0.78	0.50	0.61
Q53 BR-NET-I	3.04	3.27	2.96	0.88	0.79	0.87	5.11	0.01
Q60 BR-NET-D	3.15	3.05	3.43	0.99	1.18	1.03	5.53	0.00
Q61 BR-NET-D	3.41	2.90	3.56	0.90	1.21	0.91	17.38	0.00
Q43r BR-CUL-NO	2.98	3.01	3.09	0.89	0.88	0.87	0.65	0.52
Q51r BR-NET-I	3.41	3.51	3.72	0.96	0.89	0.95	4.19	0.02
Q52r BR-NET-I	2.91	2.88	2.89	0.97	0.98	1.07	0.03	0.97
Q54r BR-NET-F	3.78	3.72	3.91	0.97	1.05	0.96	1.53	0.22
Q55r BR-NET-F	3.59	3.47	3.49	0.98	1.06	1.08	0.44	0.64
Q56r BR-NET-F	2.60	2.65	2.92	0.98	1.03	1.14	4.18	0.02
Q57r BR-NET-F	2.89	2.79	2.75	1.01	1.09	1.09	0.62	0.54
Q58r BR-NET-D	3.36	3.63	3.49	1.01	0.92	1.01	2.28	0.10
Q59r BR-NET-D	3.68	3.82	3.71	0.85	0.90	0.91	0.87	0.42

Table 7c

Means, Standard Deviations, F-Ratios and Sig. for Linkage Items by Community

Item	Mean			Standard Deviation			F-Ratio	Sig.
	Com C	Com B	Com A	Com C	Com B	Com A		
Q91 L-SIR-S	2.56	2.83	3.04	0.91	0.85	0.91	10.52	0.00
Q92 L-SIR-S	3.17	3.56	2.79	1.19	0.92	1.05	21.30	0.00
Q93 L-SIR-S	2.47	3.17	2.99	0.87	0.60	0.71	30.49	0.00
Q94 L-SIR-F	2.45	3.52	2.54	0.96	0.53	0.73	85.39	0.00
Q95 L-SIR-F	2.58	3.31	2.62	0.95	0.49	0.71	44.01	0.00
Q96 L-SIR-H	3.74	3.92	3.07	1.13	0.61	1.05	36.01	0.00
Q97 L-SIR-H	3.67	3.06	3.31	0.78	0.68	0.83	19.21	0.00
Q98 L-SIR-H	3.45	2.94	3.34	0.89	0.68	0.76	15.69	0.00
Q99 L-SIR-N	1.96	2.70	2.99	0.96	0.86	0.65	60.54	0.00
Q100 L-SIR-N	2.04	2.62	2.78	0.93	0.79	0.64	34.82	0.00
Q101 L-CUL-T	1.96	2.47	2.41	0.91	0.71	0.94	12.03	0.00
Q102 L-CUL-T	2.16	2.71	2.65	0.94	0.73	0.86	15.55	0.00
Q103 L-CUL-NO	2.36	2.85	2.57	1.17	0.72	0.89	8.06	0.00
Q106 L-CUL-CA	2.82	3.40	3.28	0.99	0.65	0.70	19.28	0.00
Q107 L-CUL-CA	2.98	3.46	3.29	0.83	0.62	0.72	13.79	0.00
Q108 L-CUL-CA	3.44	3.34	3.29	0.97	0.68	0.71	1.30	0.28
Q109 L-CUL-PA	3.82	4.13	4.17	1.03	0.78	0.78	6.62	0.00
Q115 L-NET-F	3.17	3.26	2.68	1.04	0.74	0.91	19.03	0.00
Q116 L-NET-F	3.42	2.95	3.37	1.04	0.86	0.87	10.37	0.00
Q117 L-NET-F	2.82	3.22	3.08	1.01	0.85	0.89	5.89	0.00
Q118 L-NET-D	3.36	3.47	3.60	0.84	0.77	0.73	3.36	0.04
Q119 L-NET-D	3.49	3.73	3.68	0.83	0.70	0.72	3.56	0.03
Q120 L-NET-D	3.56	3.67	3.84	0.79	0.66	0.55	7.08	0.00
Q121 L-NET-D	2.67	3.10	2.83	0.92	0.67	0.88	8.35	0.00
Q122 L-SIR-P	4.04	4.38	4.24	0.92	0.85	0.70	5.48	0.00
Q123 L-SIR-P	4.52	3.23	3.70	0.81	1.21	0.97	53.53	0.00
Q124 L-SIR-P	4.55	2.66	4.30	0.74	1.21	0.77	170.21	0.00
Q129 L-CUL-PA	2.64	3.59	3.20	1.94	1.85	1.97	7.29	0.00
Q130 L-CUL-PA	2.41	3.65	3.13	1.86	1.79	1.97	12.75	0.00
Q104r L-CUL-NO	2.15	3.27	2.69	0.88	0.62	0.75	64.20	0.00
Q105r L-CUL-NO	2.45	3.39	3.04	0.75	0.48	0.73	59.29	0.00
Q110r L-NET-I	3.26	3.52	3.09	0.88	0.90	0.88	8.47	0.00
Q111r L-NET-I	3.26	3.26	3.37	0.90	0.84	0.89	0.87	0.42
Q112r L-NET-I	3.00	3.00	3.06	0.91	0.91	0.95	0.21	0.81
Q113r L-NET-I	2.77	2.95	2.77	0.94	0.71	0.80	1.94	0.15
Q114r L-NET-F	2.21	3.04	2.62	0.85	0.52	0.74	39.43	0.00

Table 8a
Internal Consistency Analysis of the 32 Bonding Scale Items

Item	Item-Total Sub-Scale Correlation Coefficient
SIR Sub-scale	
Q13 BO-SIR-S	0.33
Q14 BO-SIR-S	0.40
Q15 BO-SIR-S	0.36
Q16 BO-SIR-S	0.33
Q20 BO-SIR-P	0.43
Q62 BO-SIR-P	0.31
Q64 BO-SIR-F	0.54
Q65 BO-SIR-H	0.58
Q66 BO-SIR-H	0.48
Q67 BO-SIR-H	0.31
Q68 BO-SIR-N	0.58
Q69 BO-SIR-N	0.57
Q125 BO-SIR-F	0.54
Q127 BO-SIR-F	0.47
Culture Sub-scale	
Q23 BO-CUL-P	0.23
Q24 BO-CUL-C	0.21
Q71 BO-CUL-T	0.43
Q72 BO-CUL-T	0.52
Q73 BO-CUL-T	0.55
Q74 BO-CUL-NO	0.50
Q75 BO-CUL-NO	0.29
Q76 BO-CUL-NO	0.52
Q77 BO-CUL-NO	0.21
Q79 BO-CUL-CA	0.34
Q80 B0-CUL-CA	0.26
Q126 BO-CUL-T	0.30
Q128 BO-CUL-PA	0.19
Network Sub-scale	
Q17 BO-NET-D	0.21
Q18 BO-NET-D	0.27
Q84r BO-NET-I	0.25
Q85r BO-NET-I	0.36
Q86r BO-NET-F	0.29
Total number of items = 32	
Coefficient Alpha = 0.84	

Table 8b
Internal Consistency Analysis of the 19 Bridging Scale Items

Item	Item-Total Sub-Scale Correlation Coefficient
SIR Sub-scale	
Q25 BR-SIR-P	0.52
Q26 BR-SIR-P	0.46
Q27 BR-SIR-S	0.39
Q28 BR-SIR-S	0.35
Q32 BR-SIR-F	0.50
Q33 BR-SIR-F	0.46
Q34 BR-SIR-H	0.51
Q35 BR-SIR-H	0.54
Culture Sub-scale	
Q37 BR-CUL-T	0.37
Q39 BR-CUL-T	0.33
Q40 BR-CUL-NO	0.24
Q41 BR-CUL-NO	0.39
Q44 BR-CUL-CA	0.33
Q45 BR-CUL-CA	0.22
Q49 BR-CUL-PA	0.35
Network Sub-scale	
Q61 BR-NET-D	0.16
Q51r BR-NET-I	0.39
Q56r BR-NET-F	0.48
Q58r BR-NET-D	0.40
Total number of items = 19	
Coefficient Alpha = 0.73	

Table 8c
Internal Consistency Analysis of the 32 Linkage Scale Items

Item	Item-Total Sub-Scale Correlation Coefficient
SIR Sub-scale	
Q91 L-SIR-S	0.37
Q92 L-SIR-S	0.41
Q93 L-SIR-S	0.46
Q94 L-SIR-F	0.34
Q95 L-SIR-F	0.34
Q96 L-SIR-H	0.43
Q97 L-SIR-H	0.33
Q98 L-SIR-H	0.30
Q99 L-SIR-N	0.22
Q100 L-SIR-N	0.28
Q122 L-SIR-P	0.29
Q123 L-SIR-P	0.29
Q124 L-SIR-P	0.17
Culture Sub-scale	
Q101 L-CUL-T	0.40
Q102 L-CUL-T	0.48
Q103 L-CUL-NO	0.46
Q106 L-CUL-CA	0.43
Q107 L-CUL-CA	0.35
Q109 L-CUL-PA	0.22
Q129 L-CUL-PA	0.44
Q130 L-CUL-PA	0.41
Q104r L-CUL-NO	0.23
Network Sub-scale	
Q115 L-NET-F	0.43
Q116 L-NET-F	0.35
Q117 L-NET-F	0.50
Q118 L-NET-D	0.52
Q119 L-NET-D	0.44
Q120 L-NET-D	0.32
Q121 L-NET-D	0.32
Q110r L-NET-I	0.41
Q113r L-NET-I	0.36
Q114r L-NET-F	0.29
Total number of items = 32	
Coefficient Alpha = 0.81	

Table 9
Sub-Scales Correlation Matrix
(Pearson Correlation)

		Bonding Scale			Bridging Scale			Linkage Scale		
		BOSIR	BOCUL	BONET	BRSIR	BRCULT	BRNET	LSIR	LCUL	LNET
Bonding	BOSIR	1								
	BOCUL	0.55**	1							
	BONET	0.22**	0.23**	1						
Bridging	BRSIR	0.45**	0.29**	0.10*	1					
	BRCUL	0.43**	0.43**	0.18**	0.46**	1				
	BRNET	0.05	0.15**	0.19**	0.05	0.20**	1			
Linkage	LSIR	0.56**	0.40**	0.22**	0.43**	0.43**	0.06	1		
	LCUL	0.39**	0.38**	0.17**	0.22**	0.30**	0.05	0.31**	1	
	LNET	0.48**	0.33**	0.23**	0.35**	0.38**	0.12**	0.53**	0.30**	1
	** Correlation is significant at 0.01 level (2-tailed).									
	* Correlation is significant at 0.05 level (2-tailed).									

Table 10
Scales Correlation Matrix
(Pearson Correlation)

	Bonding Scale	Bridging Scale	Linkage Scale
Bonding	1		
Bridging	0.50**	1	
Linkage	0.65**	0.49**	1
** Correlation is significant at the 0.01 level (2-tailed).			

Table 11
Construct Validity Tables

Bonding

1	Com B	=25/32	=0.78	=0.97
2	Com B	=6/32	=0.19	
3	Com B	=1/32	=0.03	

1	SIR-Com B	=13/14	=0.93	=1.00
2	SIR-Com B	=1/14	=0.07	
1	CUL-Com B	=8/13	=0.62	=0.93
2	CUL-Com B	=4/13	=0.31	
1	NET-Com B	=4/5	=080	=1.00
2	NET-Com B	=1/5	=0.20	

Bridging

1	Com A	=12/19	=0.63	=0.95
2	Com A	=6/19	=0.32	
3	Com A	=1/19	=0.05	

1	SIR-Com A	=4/8	=0.50	=0.88
2	SIR-Com A	=3/8	=0.38	
1	CUL-Com A	=6/7	=0.86	=1.00
2	CUL-Com A	=2/7	=0.14	
1	NET-Com A	=3/4	=0.75	=1.00
2	NET-Com A	=1/4	=0.25	

Linkage

1	Com B	=19/32=	=0.59	=0.84
2	Com B	=8/32	=0.25	
3	Com B	=5/32	=0.16	

1	SIR-Com B	=4/13	=0.30	=0.72
2	SIR-Com B	=5/13	=0.42	
1	CUL-Com B	=8/9	=0.89	=1.00
2	CUL-Com B	=1/9	=0.11	
1	NET-Com B	=7/10	=0.70	=0.90
2	NET-Com B	=2/10	=0.20	

Table 12a
Factor Analysis
Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	6.71	20.35	20.35	6.71	20.35	20.35	5.22
2	2.56	7.75	28.10	2.56	7.75	28.10	2.99
3	2.24	6.79	34.89	2.24	6.79	34.89	4.41
4	1.73	5.26	40.15	1.73	5.26	40.15	1.94
5	1.54	4.67	44.81	1.54	4.67	44.81	2.42
6	1.44	4.35	49.17	1.44	4.35	49.17	1.54
7	1.35	4.09	53.25	1.35	4.09	53.25	1.65
8	1.19	3.60	56.86	1.19	3.60	56.86	1.37
9	1.10	3.34	60.20	1.10	3.34	60.20	1.50
10	1.04	3.14	63.34	1.04	3.14	63.34	1.41
11	0.98	2.97	66.31				
12	0.92	2.80	69.11				
13	0.81	2.44	71.56				
14	0.76	2.30	73.85				
15	0.76	2.29	76.14				
16	0.73	2.21	78.35				
17	0.67	2.04	80.39				
18	0.61	1.84	82.23				
19	0.59	1.80	84.04				
20	0.59	1.78	85.82				
21	0.51	1.55	87.37				
22	0.49	1.49	88.85				
23	0.45	1.37	90.23				
24	0.41	1.24	91.47				
25	0.40	1.20	92.67				
26	0.39	1.18	93.85				
27	0.38	1.14	94.99				
28	0.35	1.07	96.06				
29	0.31	0.95	97.01				
30	0.28	0.86	97.87				
31	0.26	0.79	98.66				
32	0.24	0.73	99.38				
33	0.203	0.62	100				

Extraction Method: Principal Component Analysis

Table 12b
Factor Analysis
Total Variance Explained

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings			Rotation
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	3.82	19.08	19.08	3.82	19.08	19.08	2.89
2	2.18	10.89	29.97	2.18	10.89	29.97	1.97
3	1.60	7.98	37.95	1.60	7.98	37.95	2.49
4	1.34	6.71	44.66	1.34	6.71	44.66	1.41
5	1.17	5.84	50.50	1.17	5.84	50.50	1.45
6	1.06	5.30	55.81	1.06	5.30	55.81	1.69
7	1.00	5.02	60.83	1.00	5.02	60.83	1.79
8	1.00	4.98	65.81				
9	0.89	4.44	70.25				
10	0.81	4.05	74.30				
11	0.78	3.89	78.19				
12	0.69	3.47	81.66				
13	0.63	3.15	84.81				
14	0.61	3.04	87.85				
15	0.54	2.71	90.56				
16	0.49	2.43	92.99				
17	0.45	2.23	95.22				
18	0.39	1.93	97.15				
19	0.35	1.74	98.90				
20	0.22	1.10	100.00				

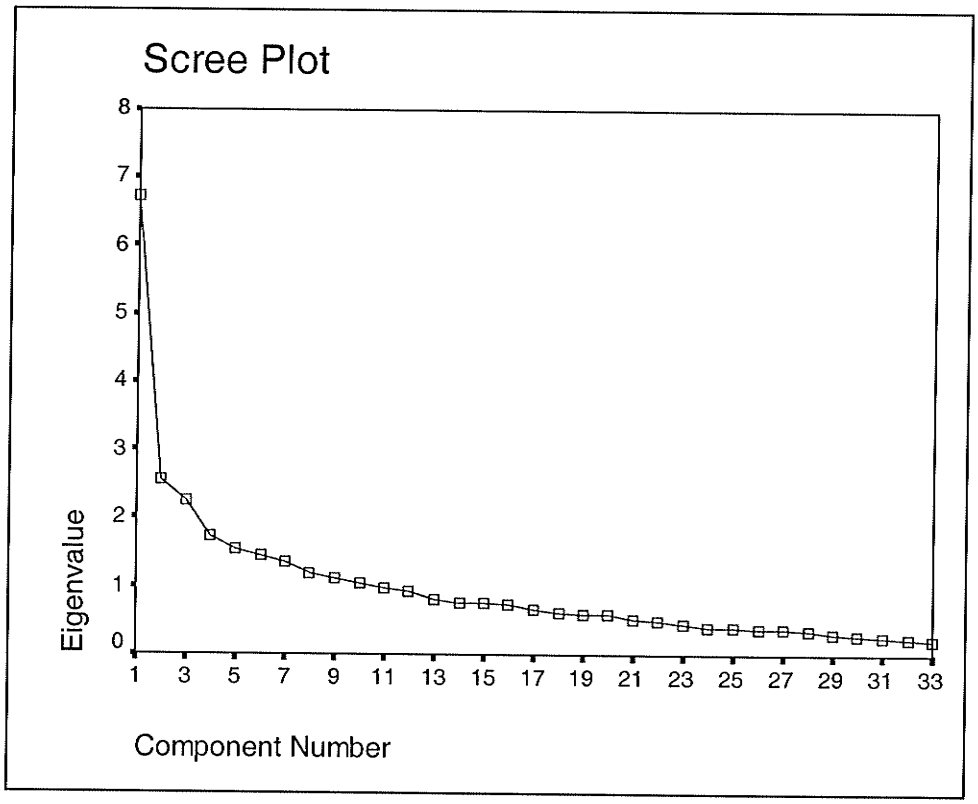
Linkage

Principal Component Analysis
Direct Oblimin

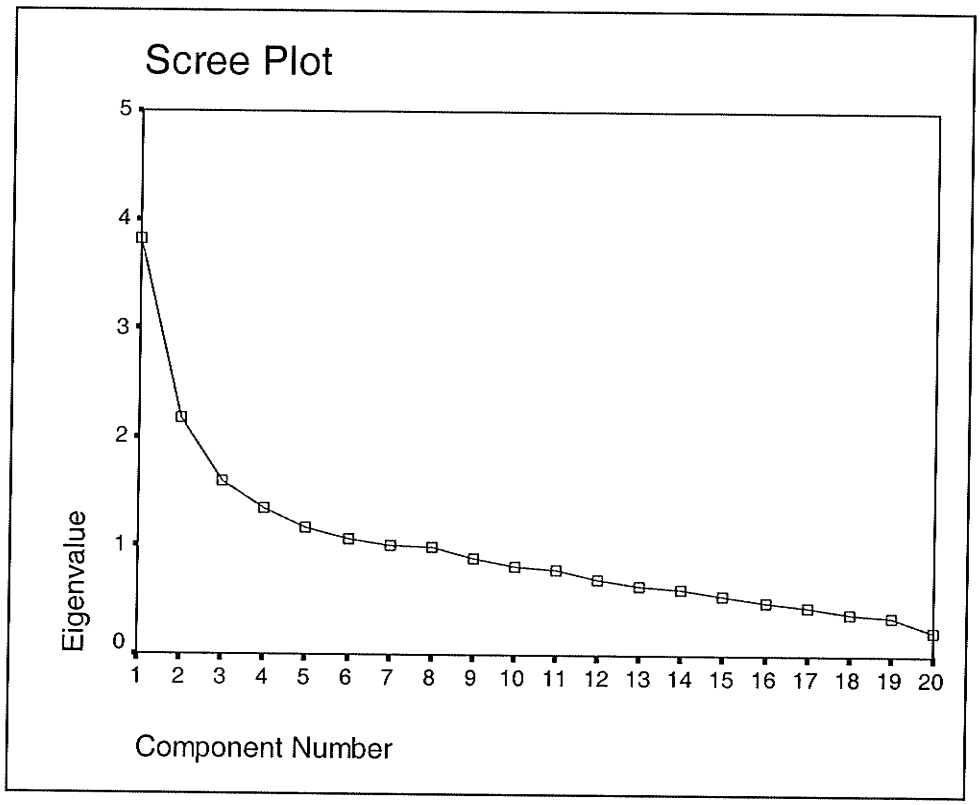
Table 12c
Factor Analysis
Total Variance Explained

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings			Rotation
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	6.26	18.96	18.96	6.26	18.96	18.96	4.22
2	3.16	9.58	28.54	3.16	9.58	28.54	2.27
3	2.32	7.02	35.56	2.32	7.02	35.56	3.05
4	2.06	6.25	41.81	2.06	6.25	41.81	2.65
5	1.80	5.47	47.28	1.80	5.47	47.28	2.13
6	1.56	4.74	52.01	1.56	4.74	52.01	2.72
7	1.43	4.33	56.34	1.43	4.33	56.34	2.08
8	1.22	3.70	60.04	1.22	3.70	60.04	2.68
9	1.17	3.54	63.58	1.17	3.54	63.58	2.90
10	1.09	3.30	66.88	1.09	3.30	66.88	1.92252
11	0.93	2.83	69.71				
12	0.87	2.63	72.34				
13	0.80	2.42	74.76				
14	0.76	2.30	77.07				
15	0.75	2.27	79.33				
16	0.72	2.17	81.51				
17	0.63	1.92	83.43				
18	0.57	1.73	85.16				
19	0.55	1.68	86.84				
20	0.51	1.55	88.40				
21	0.49	1.48	89.88				
22	0.42	1.28	91.15				
23	0.38	1.16	92.31				
24	0.37	1.13	93.44				
25	0.35	1.06	94.50				
26	0.33	1.00	95.50				
27	0.30	0.91	96.41				
28	0.27	0.81	97.22				
29	0.24	0.73	97.95				
30	0.22	0.67	98.62				
31	0.19	0.58	99.19				
32	0.17	0.51	99.70				
33	0.099	0.30	100				

Graph 1a
Factor Analysis
Scree Plot



Graph 1b
Factor Analysis
Scree Plot



Graph 1c
Factor Analysis
Scree Plot

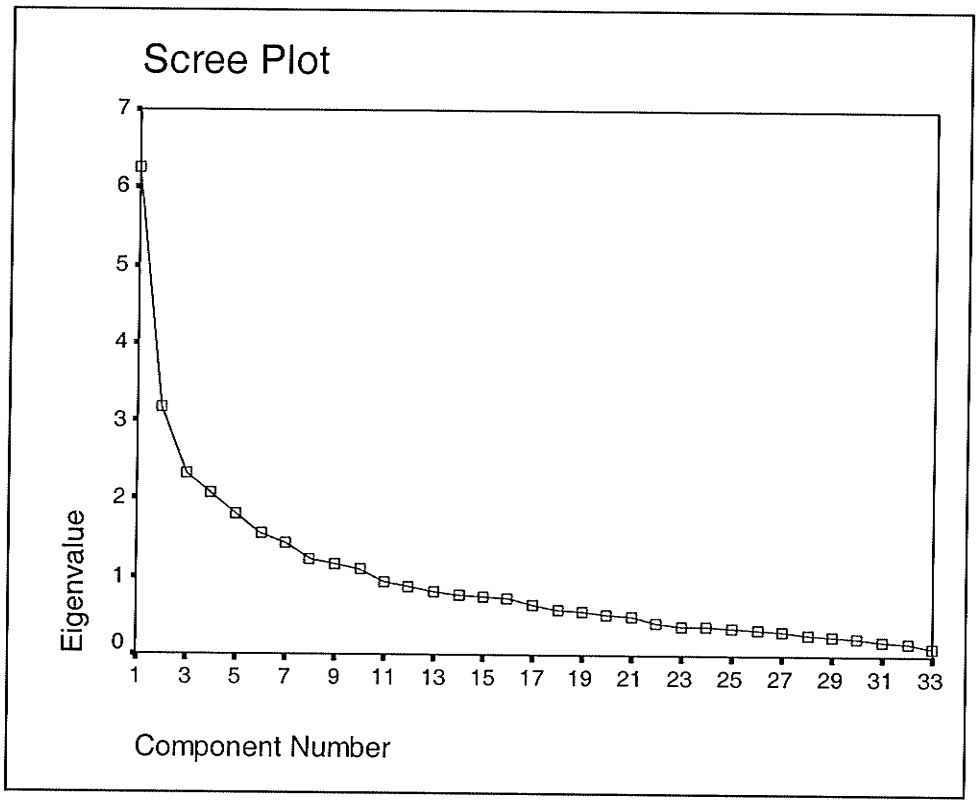


Table13a
Factor Analysis
Rotated Component Matrix

Item	Factor						
	1	2	3	4	5	6	7
Q13 BO-SIR-SYMBOLIC In the	0.11	0.71	0.04	-0.04	0.18	-0.01	0.05
Q14 BO-SIR-SYMBOLIC In the	0.16	0.87	0.06	0.07	0.09	-0.10	0.09
Q15 BO-SIR-SYMBOLIC In the	0.17	0.81	0.10	0.00	0.15	0.00	-0.07
Q16 BO-SIR-SYMBOLIC In the	0.16	0.74	0.15	-0.07	0.03	-0.14	-0.01
Q17 BO-NET-DIVERSE Turn to	0.02	0.18	0.03	0.23	-0.13	-0.55	0.08
Q18 BO-NET-DIVERSE Turn to	0.04	0.04	0.15	0.26	0.09	-0.62	-0.02
Q20 BO-SIR-PHYSICAL Condit	0.76	0.11	0.14	-0.16	0.14	0.01	-0.10
Q23 BO-CUL-PARTICIPATION	0.30	0.05	-0.02	0.24	0.18	0.24	-0.35
Q24 BO-CUL-COLLECTIVE AC	0.00	-0.03	-0.01	0.66	0.06	-0.07	-0.14
Q62 BO-SIR-PHYSICAL Peopl	0.37	0.09	0.01	0.07	0.33	0.30	0.46
Q64 BO-SIR-FINANCIAL Know	0.65	0.23	0.24	0.05	0.14	-0.02	0.05
Q65 BO-SIR-HUMAN Job traini	0.70	0.22	0.26	0.05	0.07	-0.01	0.30
Q66 BO-SIR-HUMAN Recreatic	0.54	0.09	0.40	0.13	0.17	0.00	0.44
Q67 BO-SIR-HUMAN Day care	0.34	0.11	0.39	0.25	-0.05	-0.08	0.48
Q68 BO-SIR-HUMAN Could rec	0.65	0.18	0.34	0.08	0.24	-0.01	0.36
Q69 BO-SIR-NATURAL Chief a	0.74	0.12	0.45	0.12	0.15	0.08	0.16
Q71 BO-CUL-TRUST Chief anc	0.74	0.06	0.45	0.21	0.17	0.11	0.01
Q72 BO-CUL-TRUST People in	0.39	0.12	0.79	0.16	0.13	-0.03	0.16
Q73 BO-CUL-TRUST Most peo	0.36	0.19	0.69	0.23	0.24	0.03	0.01
Q74 BO-CUL-SOCIAL NORMS	0.33	0.23	0.80	0.10	0.17	0.03	0.07
Q75 BO-CUL-SOCIAL NORMS	0.16	0.07	0.73	-0.10	0.06	-0.13	0.27
Q76 BO-CUL-SOCIAL NORMS	0.33	0.02	0.69	0.19	0.08	0.09	-0.13
Q77 BO-CUL-SOCIAL NORMS	0.09	0.00	0.29	0.21	-0.02	0.47	0.09
Q79 BO-CUL-COLLECTIVE AC	0.06	-0.09	0.28	0.65	0.00	-0.05	0.03
Q80 BO-CUL-COLLECTIVE AC	-0.07	0.02	0.05	0.65	-0.06	0.00	-0.06
Q84r BO-NET-INCLUSIVE Out	-0.02	0.13	-0.05	0.16	0.13	-0.26	-0.49
Q85r BO-NET-INCLUSIVE Diffe	0.12	0.17	0.18	0.03	0.84	-0.07	0.04
Q86r BO-NET-FLEXIBLE Peop	0.19	0.09	0.13	0.02	0.81	0.04	-0.02
Q125 BO-SIR-FINANCIAL Com	0.75	0.22	0.10	-0.01	0.16	0.05	-0.08
Q126 BO-CUL-TRUST If you co	0.45	0.22	0.15	0.19	0.19	0.33	-0.03
Q127 BO-SIR-PHYSICAL In pa	0.65	0.06	0.35	-0.03	0.07	0.02	0.10
Q128 BO-CUL-PARTICIPATIO	0.13	-0.16	0.20	0.23	-0.29	0.24	-0.44
DUMQ126	-0.12	-0.08	-0.20	0.31	-0.20	0.45	0.11

Table 13b
Factor Analysis
Rotated Component Matrix

Item	Factor				
	1	2	3	4	5
Q25 BR-SIR-PHYSICAL Our co	0.78	-0.01	0.24	0.01	0.07
Q26 BR-SIR-PHYSICAL FN org	0.75	0.05	0.11	0.02	0.01
Q27 BR-SIR-SYMBOLIC Visit o	0.62	0.05	0.16	0.02	0.17
Q28 BR-SIR-SYMBOLIC Work	0.54	-0.05	0.18	0.15	0.37
Q32 BR-SIR-FINANCIAL Could	0.34	0.15	0.61	-0.04	0.49
Q33 BR-SIR-FINANCIAL Could	0.17	-0.01	0.71	-0.06	0.34
Q34 BR-SIR-HUMAN Could rec	0.36	-0.15	0.72	0.24	-0.11
Q35 BR-SIR-HUMAN Could rec	0.29	-0.02	0.77	0.22	-0.15
Q37 BR-CUL-TRUST Most peo	0.15	0.42	0.40	0.23	0.04
Q39 BR-CUL-TRUST Tribal cou	0.55	0.10	0.29	0.24	0.13
Q40 BR-CUL-SOCIAL NORMS	-0.15	0.52	0.26	0.05	0.15
Q41 BR-CUL-SOCIAL NORMS	0.07	0.24	0.14	0.17	0.55
Q44 BR-CUL-COLLECTIVE AC	0.51	-0.15	0.31	0.00	0.49
Q45 BR-CUL-COLLECTIVE AC	0.27	-0.17	-0.04	0.36	0.49
Q49 BR-CUL-PARTICIPATION	0.22	0.59	-0.06	0.35	0.05
Q51r BR-NET-INCLUSIVE Only	-0.06	0.69	-0.11	-0.17	0.15
Q56r BR-NET-FLEXIBLE Only	0.09	0.69	-0.03	0.01	0.05
Q58r BR-NET-DIVERSE Mostly	-0.03	0.40	-0.22	-0.29	0.54
Q61 BR-NET-DIVERSE Comm	0.12	0.11	-0.01	0.76	0.03
DUMQ26	-0.14	-0.01	0.25	0.55	0.10

Linkage

Table 13c
Factor Analysis
Rotated Component Matrix

Principal Component Analysis
Direct Oblimin

Item	Factor						
	1	2	3	4	5	6	7
Q91 L-SIR-SYMBOLIC Hospita	0.22	0.05	0.07	-0.04	0.28	-0.36	0.58
Q92 L-SIR-SYMBOLIC School	0.13	0.07	0.11	0.63	-0.01	-0.29	0.29
Q93 L-SIR SYMBOLIC Federal/	0.30	-0.12	0.40	0.14	0.13	-0.53	0.49
Q94 L-SIR-FINANCIAL Banks I	0.39	-0.34	0.25	0.32	0.05	-0.67	0.12
Q95 L-SIR-FINANCIAL Federal	0.33	-0.27	0.20	0.30	0.02	-0.74	0.12
Q96 L-SIR-HUMAN The school	0.23	0.26	-0.01	0.68	-0.11	-0.25	0.19
Q97 L-SIR-HUMAN Justice sys	0.03	0.19	0.03	0.25	-0.12	0.06	0.67
Q98 L-SIR-HUMAN Justice sys	0.04	0.15	-0.07	0.03	-0.15	-0.04	0.74
Q99 L-SIR-NATURAL Manitoba	0.69	0.02	0.22	-0.21	0.16	-0.08	0.18
Q100 L-SIR-NATURAL Federal	0.76	0.01	0.22	-0.16	0.18	-0.06	0.19
Q101 L-CUL-TRUST Federal/p	0.75	-0.11	0.11	0.15	0.02	-0.26	0.14
Q102 L-CUL-TRUST Federal/p	0.83	-0.10	0.20	0.13	0.00	-0.27	0.12
Q103 L-CUL-SOCIAL NORMS	0.76	-0.17	0.13	0.20	0.02	-0.29	0.10
Q104r L-CUL-SOCIAL NORMS	0.23	-0.61	-0.01	0.05	0.19	0.02	-0.15
Q106 L-CUL-COLLECTIVE AC	0.51	0.24	0.35	-0.07	0.23	-0.52	0.18
Q107 L-CUL-COLLECTIVE AC	0.41	0.15	0.38	0.05	0.17	-0.58	0.26
Q109 L-CUL-PARTICIPATION	0.19	-0.08	0.32	0.04	0.24	0.07	0.14
Q110r L-NET-INCLUSIVE Hard	0.07	-0.02	0.33	0.59	-0.02	0.02	0.31
Q113r L-NET-INCLUSIVE Hard	0.36	-0.32	0.34	0.42	0.03	0.23	0.44
Q114r L-NET-FLEXIBLE Relati	0.60	-0.30	0.26	0.20	0.16	-0.07	0.15
Q115 L-NET-FLEXIBLE School	0.22	0.20	0.35	0.60	0.08	-0.16	0.18
Q116 L-NET-FLEXIBLE Hospita	0.17	0.51	0.43	0.20	0.14	0.14	0.21
Q117 L-NET-FLEXIBLE Child a	0.40	-0.02	0.51	0.19	0.17	-0.16	0.29
Q118 L-NET-DIVERSE Can ge	0.18	0.13	0.75	0.14	0.13	-0.06	0.12
Q119 L-NET-DIVERSE Can ge	0.16	0.07	0.77	0.02	0.06	-0.23	0.02
Q120 L-NET-DIVERSE Can ge	0.07	0.12	0.69	0.05	0.06	-0.11	-0.05
Q121 L-NET-DIVERSE Informa	0.38	-0.25	0.47	0.20	-0.16	0.08	0.16
Q122 L-SIR-PHYSICAL In past	0.19	0.13	0.36	0.20	0.24	-0.08	0.21
Q123 L-SIR-PHYSICAL In past	-0.02	0.70	0.04	0.41	-0.07	-0.04	0.12
Q124 L-SIR-PHYSICAL In past	-0.03	0.74	0.19	0.07	0.01	0.13	0.16
Q129 L-CUL-PARTICIPATION	0.04	-0.06	0.03	-0.03	0.92	-0.03	-0.06
Q130 L-CUL-PARTICIPATON	0.04	-0.07	0.07	0.04	0.92	-0.03	-0.08
DUMQ99	-0.18	-0.02	-0.03	0.55	0.08	0.13	-0.11

Table 14a
Factor Analysis
Factor Correlation Matrix

Factor	1	2	3	4	5	6	7
1	1.00						
2	0.18	1.00					
3	0.32	0.07	1.00				
4	0.08	0.01	0.14	1.00			
5	0.19	0.15	0.08	0.00	1.00		
6	0.08	-0.08	-0.02	0.05	0.00	1.00	
7	0.07	0.03	0.11	-0.05	0.00	-0.01	1.00

Table 14b
Factor Analysis
Factor Correlation Matrix

Factor	1	2	3	4	5
1.00	1.00				
2.00	-0.01	1.00			
3.00	0.20	0.02	1.00		
4.00	0.10	0.03	0.13	1.00	
5.00	0.15	0.10	0.09	0.02	1.00

Table 14c
Factor Analysis
Factor Correlation Matrix

Factor	1	2	3	4	5	6	7
1	1.00						
2	-0.11	1.00					
3	0.28	0.04	1.00				
4	0.10	0.01	0.15	1.00			
5	0.11	-0.02	0.15	-0.02	1.00		
6	-0.21	-0.01	-0.08	-0.05	-0.04	1.00	
7	0.22	0.09	0.17	0.15	0.02	-0.08	1.00

Table 16a
Stepwise Regression Report

Iteration 6: Unchanged				
In	Variable	Standard Coefficient	T-Value	Prob Level
Yes	Age	0.06	1.33	0.18
Yes	Employment Status	-0.07	-1.63	0.10
Yes	Community Variable A	-0.33	-6.30	0.00
Yes	Community Variable C	-0.42	-7.84	0.00
No	Sex		-0.02	0.98
No	Education Level		0.29	0.77
No	Marital Status		-0.25	0.81
No	Number of Children at Home		0.44	0.66
No	Number of Years in the Community		0.68	0.50

R-Squared = 0.15 Sqrt(MSE) = 0.39

List of Variables Selected:
Age, Employment Status, Community Variable A, Community Variable C

Table 16b
Stepwise Regression Report

Iteration 6: Unchanged				
In	Variable	Standard Coefficient	T-Value	Prob Level
Yes	Community Variable A	0.16	2.94	0.00
Yes	Community Variable C	-0.21	-3.80	0.00
Yes	Marital Status	-0.07	-1.45	0.15
Yes	Number of Children at Home	0.06	1.37	0.17
No	Sex		-0.28	0.78
No	Age		0.46	0.64
No	Number of Years in the Community		-0.67	0.51
No	Education Level		1.04	0.30
No	Employment Status		-1.24	0.21

R-Squared = 0.10 Sqrt(MSE) = 0.36

List of Variables Selected:
Community Variable A, Community Variable C, Marital Status, Number of Children at Home

Table 16c
Stepwise Regression Report

Iteration 8: Unchanged				
In	Variable	Standard Coefficient	T-Value	Prob Level
Yes	Community Variable A	-0.17	-3.23	0.00
Yes	Community Variable C	-0.36	-6.65	0.00
No	Age		1.14	0.25
No	Sex		0.88	0.38
No	Employment Status		-0.44	0.66
No	Education Level		1.11	0.27
No	Marital Status		0.73	0.46
No	Number of Children at Home		-0.27	0.79
No	Number of Years in the Community		1.20	0.23

R-Squared = 0.09 Sqrt(MSE) = 0.35

List of Variables Selected:
Community Variable, Community Variable C

Table 17a

Stepwise Regression Report by Community

Community C

Iteration 7: Unchanged				
In	Variable	Standard Coefficient	T-Value	Prob Level
No	Education Level	-0.11	-1.21	0.23

R-Squared = 0.01 Sqrt(MSE) = 0.40

List of Variables Selected:

Community B

Iteration 7: Unchanged				
In	Variable	Standard Coefficient	T-Value	Prob Level
No	Age	0.08	0.94	0.35

R-Squared = 0.007 Sqrt(MSE) = 0.32

List of Variables Selected:

Community A

Iteration 6: Unchanged				
In	Variable	Standard Coefficient	T-Value	Prob Level
Yes	Employment Status	-0.15	-2.12	0.04
Yes	Education Level	0.10	1.33	0.19

R-Squared = 0.03 Sqrt(MSE) = 0.43

List of Variables Selected:

Employment Status, Education Level

Table 17b

Stepwise Regression Report by Community

Community C

Iteration 7: Unchanged				
In	Variable	Standard Coefficient	T-Value	Prob Level
Yes	Sex	-0.14	-1.47	0.14

R-Squared = 0.02 Sqrt(MSE) = 0.40

List of Variables Selected:

Sex

Community B

Iteration 7: Unchanged				
In	Variable	Standard Coefficient	T-Value	Prob Level
Yes	Sex	0.15	1.64	0.10

R-Squared = 0.02 Sqrt(MSE) = 0.27

List of Variables Selected:

Sex

Community A

Iteration 7: Unchanged				
In	Variable	Standard Coefficient	T-Value	Prob Level
Yes	Number of Children at Home	0.14	1.92	0.06

R-Squared = 0.02 Sqrt(MSE) = 0.38

List of Variables Selected:

Number of Children at Home

Table 17c
Stepwise Regression Report by Community

Community C

Iteration 5: Unchanged				
In	Variable	Standard Coefficient	T-Value	Prob Level
Yes	Age	0.18	1.98	0.05
Yes	Employment Status	0.15	1.63	0.11
Yes	Education Level	-0.12	-1.32	0.19

R-Squared = 0.06 Sqrt(MSE) = 0.40

List of Variables Selected:

Age, Employment Status, Education Level

Community B

Iteration 6: Unchanged				
In	Variable	Standard Coefficient	T-Value	Prob Level
Yes	Education Level	0.14	1.59	0.12
Yes	Number of Years in the Community	0.12	1.40	0.16

R-Squared = 0.04 Sqrt(MSE) = 0.26

List of Variables Selected:

Education Level, Number of Years in the Community

Community A

Iteration 6: Unchanged				
In	Variable	Standard Coefficient	T-Value	Prob Level
Yes	Employment Status	-0.13	-1.80	0.07
Yes	Education Level	0.11	1.54	0.13

R-Squared = 0.03 Sqrt(MSE) = 0.37

List of Variables Selected:

Employment Status, Education Level

Table 19a

Factors Stepwise Regression Report

BOSIRCUL	Iteration 7: Unchanged			
In	Variable	Standard Coefficient	T-Value	Prob Level
Yes	Sex	-0.08	-1.48	0.14
Yes	Community Variable A	-0.32	-5.12	0.00
Yes	Community Variable C	-0.73	-10.40	0.00
No	Age		0.93	0.35
No	Employment Status		-1.17	0.24
No	Education Level		-0.65	0.52
No	Marital Status		-0.78	0.44
No	Number of Children at Home		-0.25	0.81
No	Number of Years in the Community		1.16	0.25

R-Squared = 0.20 Sqrt(MSE) = 0.54

List of Variables Selected:

Sex, Community Variable A, Community Variable C

BOSIRSYMB	Iteration 7: Unchanged			
In	Variable	Standard Coefficient	T-Value	Prob Level
Yes	Community Variable A	-0.37	-6.56	0.00
Yes	Community Variable C	-0.23	-4.32	0.00
Yes	Number of Years in the Community	-0.06	-1.32	0.19
No	Age		0.75	0.45
No	Sex		0.17	0.86
No	Employment Status		0.52	0.61
No	Education Level		-0.59	0.56
No	Marital Status		0.22	0.83
No	Number of Children at Home		0.54	0.59

R-Squared = 0.09 Sqrt(MSE) = 0.68

List of Variables Selected:

Community Variable A, Community Variable C, Number of Years in the Community

BOCULSIR	Iteration 6: Unchanged			
In	Variable	Standard Coefficient	T-Value	Prob Level
Yes	Community Variable C	-0.39	-7.29	0.00
Yes	Community Variable A	-0.36	-6.79	0.00
Yes	Sex	-0.06	-1.35	0.18
Yes	Education Level	-0.09	-2.07	0.04
No	Marital Status		-0.21	0.83
No	Employment Status		-0.72	0.47
No	Number of Children at Home		-0.31	0.76
No	Number of Years in the Community		0.90	0.37
No	Age		0.61	0.54

R-Squared = 0.134 Sqrt(MSE) = 0.63

List of Variables Selected:

Community Variable C, Community Variable A, Sex, Education Level

Table 19b
Factors Stepwise Regression Report

BRSIRCUL		Iteration 8: Unchanged		
In	Variable	Standard Coefficient	T-Value	Prob Level
Yes	Community Variable A	-0.16	-2.98	0.00
No	Community Variable C	-0.33	-6.18	0.00
Yes	Marital Status		-1.03	0.30
No	Employment Status		-0.64	0.52
No	Number of Children at Home		0.86	0.39
No	Age		0.49	0.62
No	Sex		-0.69	0.49
No	Education Level		-0.90	0.37
No	Number of Years in the Community		-0.95	0.34

R-Squared = 0.08 Sqrt(MSE) = 0.56

List of Variables Selected:

Community Variable A, Community Variable C

BRCULNET		Iteration 6: Unchanged		
In	Variable	Standard Coefficient	T-Value	Prob Level
Yes	Education Level	0.23	5.06	0.00
Yes	Community Variable A	0.12	2.35	0.02
Yes	Community Variable C	-0.15	-2.75	0.01
Yes	Marital Status	-0.07	-1.50	0.13
No	Number of Children at Home		0.27	0.79
No	Employment Status		-0.47	0.64
No	Age		-0.11	0.91
No	Sex		-1.15	0.25
No	Number of Years in the Community		-0.26	0.79

R-Squared = 0.13 Sqrt(MSE) = 0.50

List of Variables Selected:

Education Level, Community Variable A, Community Variable C, Marital Status

BRSIRFH		Iteration 6: Unchanged		
In	Variable	Standard Coefficient	T-Value	Prob Level
Yes	Community Variable A	0.24	5.08	0.00
Yes	Education Level	-0.06	-1.34	0.18
Yes	Employment Status	-0.07	-1.51	0.13
Yes	Number of Children at Home	0.08	1.74	0.08
No	Community Variable C		0.51	0.61
No	Age		-0.07	0.94
No	Marital Status		-0.81	0.42
No	Sex		-0.18	0.86
No	Number of Years in the Community		-0.69	0.49

R-Squared = 0.07 Sqrt(MSE) = 0.61

List of Variables Selected:

Education Level, Community Variable A, Employment Status, Number of Children at Home

Linkage

Table 19c

Factors Stepwise Regression Report

LCULSIRN		Iteration 8: Unchanged		
In	Variable	Standard Coefficient	T-Value	Prob Level
Yes	Community Variable A	-0.22	-4.39	0.00
Yes	Community Variable C	-0.53	-10.60	0.00
No	Education Level		-0.89	0.38
No	Age		-0.59	0.55
No	Sex		0.62	0.53
No	Employment Status		0.26	0.79
No	Marital Status		-0.68	0.50
No	Number of Children at Home		0.54	0.59
No	Number of Years in the Community		0.35	0.73

R-Squared = 0.20 Sqrt(MSE) = 0.44

List of Variables Selected:

Community Variable A, Community Variable C

LSIRN		Iteration 6: Unchanged		
In	Variable	Standard Coefficient	T-Value	Prob Level
Yes	Number of Years in the Community	0.08	1.45	0.15
Yes	Community Variable A	0.09	1.55	0.12
Yes	Community Variable C	0.07	1.30	0.19
Yes	Age	-0.08	-1.53	0.13
No	Sex		0.35	0.73
No	Employment Status		-0.27	0.79
No	Marital Status		0.29	0.77
No	Number of Children at Home		-0.92	0.36
No	Education Level		1.15	0.25

R-Squared = 0.01 Sqrt(MSE) = 0.42

List of Variables Selected:

Community Variable A, Community Variable C, Number of Years in the Community, Age

LNETCUL		Iteration 7: Unchanged		
In	Variable	Standard Coefficient	T-Value	Prob Level
Yes	Community Variable A	-0.16	-2.94	0.00
Yes	Community Variable C	-0.29	-5.44	0.00
Yes	Education Level	0.10	2.06	0.04
No	Marital Status		0.86	0.39
No	Sex		0.86	0.39
No	Employment Status		0.53	0.59
No	Number of Children at Home		-0.20	0.84
No	Age		0.24	0.81
No	Number of Years in the Community		0.86	0.39

R-Squared = 0.08 Sqrt(MSE) = 0.39

List of Variables Selected:

Community Variable A, Community Variable C, Education Level

APPENDICES

Appendix 3-I
Interview Guide

Common Questions (not quoted verbatim)

Description of the community
Description of how people relate to each other in the community
Positives and negatives of the community
Participation of people in community events, volunteering, etc.
Trust among people within the community
Interactions with people outside the community
Experiences outside the community
Relations between the community and outside institutions/governments
Comparison with other communities
Interactions among families/groups in the community
Resources in the community

Examples of Unique Questions (not quoted verbatim)

Intergenerational relations
Changes in the community
Interactions with Chief and Council
Interactions among community agencies
History of the community
Specific issues of concern of the interviewee
How to ask specific questions in a survey

Appendix 3-II
Document List

Annual Plan # 1 (2001) Community B. Proposal for the Use of Funds Available from the Community Development Account of (name withheld) Trust

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Appendix 3-III
List of Consulted Questionnaires

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Time Use Survey. General Social Survey. Statistics Canada. 1998.

The Winnipeg Area Study, 1981-1996. Department of Sociology, University of Manitoba. 1999.

Appendix 3-IV
Instructions, Participant Information, Survey Consent Form

Social Capital Questionnaire
Instructions, Participant Information and Survey Consent Form

Study Team

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First name and surname (Community C)
First name and surname (Community A)
First name and surname (Community B)

Manitoba First Nations Health Information and Research (HIR) Committee:
Doreen Sanderson, Health Advisor, Assembly of Manitoba Chiefs
Assembly of Manitoba Chiefs, HIR Committee
200 – 260 St. Mary Avenue
Winnipeg, MB, R3C 0M6
Ph. (204) 956-0610

Purpose of the Study

This survey (Social Capital as a Determinant of Health in First Nations Communities) **is a joint project of the Assembly of Manitoba Chiefs and Centre for Aboriginal Health Research at the University of Manitoba**. The purpose of the project is to develop new measures of health determinants that are consistent with First Nation cultural beliefs.

The objective of this survey questionnaire is to develop a better understanding of the determinants of community health and well-being from First Nation perspectives. **The results of this study will be used to ensure that further development of health survey research and health information systems are culturally appropriate.**

Study Procedures

In this survey questionnaire, we would like to ask you a number of questions about your life in this community. We would like to assure you that all information you provide in this questionnaire will be kept strictly confidential and will only be used to create a general picture.

Your name will be kept separate from the questionnaire data to ensure that you will not be identified in any way. Access to this personal information and to the questionnaire data will be restricted to project personnel and secured electronically and physically from public access. No staff from First Nation organizations or communities will have direct access to either personal information or interview data. Students and other researchers at a later time may use the questionnaire data for a research project. The same confidentiality will be provided. This study will take place between August, 2001 to October, 2001.

Costs

The surveys are conducted at no cost to you. As well, you will receive no payment or reimbursement for any expense related to taking part in this study.

Benefits

Information from this study will benefit First Nation peoples through the development of health research methods and health information systems that are consistent with First Nation culture.

Confidentiality

Information gathered in this research study may be published or presented in public forums; however, your name will not be used or revealed. Despite efforts to keep your personal information confidential, absolute confidentiality cannot be guaranteed. Your personal information may be disclosed if required by law. Organizations, such as the University of Manitoba Research Ethics Board, may inspect and/or copy your research records for quality assurance.

Voluntary Participation/Withdrawal from the Study

Your participation in this study is strictly voluntary. You may refuse to participate or you may withdraw from the study at any time. Your decision to not participate or to withdraw from the study will not affect the health care you receive.

Questions

You are free to ask any questions that you may have about your rights as a research participant. If any questions come up during or after the study, contact the research team: John O'Neil of the University of Manitoba, Centre for Aboriginal Health Research at (204) 789-3250.

For questions about your rights as a research participant, you may contact the University of Manitoba – Bannatyne Campus Research Ethics Board at (204) – 789-3389.

Do not sign this consent unless your have had a chance to ask questions and have received satisfactory answers to all of your questions.

Statement of Consent

I have read this consent form. I have had the opportunity to discuss this research study with the community researcher. I have had my questions answered by them in the language I understand. The risk and benefits have been explained to me. I understand that I will be given a copy of this consent form after signing it. I understand that my participation in this study is voluntary and that I may choose to withdraw at any time. I freely agree participate in this research study.

I understand that information regarding my personal identity will be kept confidential, but that confidentiality is not guaranteed. I authorize the inspection of my records that relate to this study by the University of Manitoba Research Ethics Board for quality assurance purposes.

By signing this consent form, I have not waived any of the legal rights that I have as a participant in a research study.

Participant Signature _____ Date: _____

Participant Printed Name _____

I agree to participate or to be approached for a follow-up interview: Yes___ No___

Community Researcher/Research Staff

I, the undersigned, have fully explained the relevant details of this research study to the participant named above and believed that the participant has understood and has knowingly given their consent.

Research Staff signature: _____ Date: _____

Research staff name: _____

Role in the study: _____

THIS COPY IS TO BE KEPT BY STUDY PARTICIPANT

Do not sign this consent unless your have had a chance to ask questions and have received satisfactory answers to all of your questions.

Statement of Consent

I have read this consent form. I have had the opportunity to discuss this research study with the community researcher. I have had my questions answered by them in the language I understand. The risk and benefits have been explained to me. I understand that I will be given a copy of this consent form after signing it. I understand that my participation in this study is voluntary and that I may choose to withdraw at any time. I freely agree participate in this research study.

I understand that information regarding my personal identity will be kept confidential, but that confidentiality is not guaranteed. I authorize the inspection of my records that relate to this study by the University of Manitoba Research Ethics Board for quality assurance purposes.

By signing this consent form, I have not waived any of the legal rights that I have as a participant in a research study.

Participant Signature _____ Date: _____

Participant Printed Name _____

I agree to participate or to be approached for a follow-up interview: Yes___ No___

Community Researcher/Research Staff

I, the undersigned, have fully explained the relevant details of this research study to the participant named above and believed that the participant has understood and has knowingly given their consent.

Research Staff signature: _____ Date: _____

Research staff name: _____

Role in the study: _____

<u>THIS COPY IS TO BE KEPT BY RESEARCH STAFF</u>

Confidential Information

Thank you for agreeing to participate in this survey. The first few questions that I will read ask you to identify yourself. To protect your identity, this page will be removed and stored separately from the rest of the questionnaire.

First and last name: _____

(D2) Present place of residence (mailing address)

(D3) Name of First Nation home community: _____

(D4) Study Identifier Number_____

Appendix 3-V
Draw Prize List

SOCIAL CAPITAL RESEARCH

PRIZES TO BE WON

Your participation in the research project is to test the survey questionnaire. For those individuals who are participate and complete a questionnaire, their name is entered to be eligible to win one of the eleven prizes:

13 inch color television	VCR	Tool set
Tent, 4 person	Sleeping bag	Toaster Oven
Set of dishes	Coffee pot	Ceiling Fan
Portable CD Cassette player	Fishing gear: rod and reel	

For those individuals who complete the first questionnaire, and agree to and complete a second questionnaire, their name will be entered into the draw a second time.

We will need approximately one hour of your time to complete a questionnaire. We will attempt to interview you at your convenience (morning, afternoon or early evening).

The research is conducted at no cost to you. As well, you will receive no payment or reimbursement for any expense related to taking part in this research. Your participation is strictly voluntary. You may refuse to participate, you may refuse to answer any question, or you may withdraw from the study at any time.

Please phone the Health Center and leave a message for the research assistants, tell us where you live and provide a phone number. One of the research assistants will then visit you at your home or phone to make arrangements to interview you. Meegwetch!

Appendix 3-VI
Sample Brochure

How to Participate

We would like to assure you that all information you provide in the questionnaire will be kept strictly confidential.

Your name will be kept separate from the questionnaire data to ensure that you will not be identified in any way.

Information gathered in this research may be published or presented in public forums, however, your name will not be used or revealed.

Please phone the Health Center and leave a message for the research assistants, tell us where you live and provide a phone number.

One of the research assistants will then visit you at your home or phone to make arrangements to interview you.

Prizes to be Won

For those individuals who are participate and complete a survey, their name will be entered into a draw and be eligible to win one of eleven prizes. There are 11 prizes to be won:

1. 13 inch color television
2. VCR
3. Tool set
4. Tent, 2 person
5. Sleeping bag
6. Portable CD Cassette player
7. Set of dishes
8. Cutlery
9. Toaster Oven
10. Jig Saw
11. Skill Saw

For those individuals who complete the first survey, agree to and complete a second survey, their name will be entered into the draw a second time.

Please call and/or appointment reminder:

Name of Research Assistant:
Date and Time:

Social Capital Research

Social Capital as a determinant (cause) of Health in First Nations Communities Study

Phase 2

August 15 to ~~December 15, 2001~~
JAN. 31, 2002

Research Team:

[illegible]

Principal Researcher

[illegible]

Research Assistant

[illegible]

Research Assistant

[illegible]

For information, please call us at:

[illegible]

252-2369

WHAT IT IS ABOUT?

The Social Capital Research project is set up in **partnership with Chief** [illegible] **and Council**, through the Assembly of Manitoba Chiefs, and the University of Manitoba.

The objective of this research is to develop a better understanding of the components of community health and well-being.

There are 3 Manitoba First Nations involved in this research: [illegible], [illegible], and [illegible].

We will ask questions about your life in this community, your interactions with neighbors, friends, and family, about activities you do with other community members, and how our community works together to enhance our well-being as individuals, families, and community.

WHY PARTICIPATE?

Your participation in the research project is to test the questionnaire.

The results of this study will be used to ensure that further development of health survey research and health information systems are culturally appropriate (that is, *research that is designed by our people for our people*).

- **Benefits:**
- improve the quality of population health research plans
- create awareness of population health needs and cultural realities of our communities and governments
- contribute to the development of policy in First Nations
- increase the capacity of health planners to use in program planning
- the results of the research will be used in First Nation health policy in Manitoba and across Canada

WHAT WE DO

We will need approximately one hour of your time to complete a questionnaire.

We will attempt to interview you at your convenience (morning, afternoon or early evening). We will come to your office, or your home, or you may come in to the health center.

The research is conducted at no cost to you. As well, you will receive no payment or reimbursement for any expense related to taking part in this research.

The research plan and the information gathered will be used to develop a general picture of population health.

Your participation is strictly voluntary. You may refuse to participate, you may refuse to answer any question, or you may withdraw from the study at any time.

Appendix 5-I
Initial Social Capital Individual Questionnaire

_____

Surveyor: _____

SOCIAL CAPITAL INDIVIDUAL QUESTIONNAIRE
Questions

I am now going to ask you questions, beginning with your date of birth

1) Birth date: _____ _____ _____
(day) (month)(year)

2) Sex: Female____ Male___

3) Present Marital Status:
(a) Married..... ___
(b) Common law..... ___
(c) Separated..... ___
(d) Divorced..... ___
(e) Widowed..... ___
(f) Single..... ___

4) Number of children under 18 living at home:____

5) Total number of people living in your home:____

6) How many years have you lived in this community? _____

7) How long have you been a Band member? _____

→
8) How well do you speak English? *(To be asked only to those individuals requiring translation) (Check only one)*

(+)	1	2	3	4	5	(-)	6	7	9
	Fluently	**Relatively well**	**With effort**	**A few words**	**Not at all**		***Don't know***	***I prefer not to respond***	***Not applicable***

9) How well do you understand English? *(To be asked only to those individuals requiring translation)*

(+)	1	2	3	4	5	(-)	6	7	9
	Fluently	**Relatively well**	**With effort**	**A few words**	**Not at all**		***Don't know***	***I prefer not to respond***	***Not applicable***

10) How well do you speak your First Nation language? *(Check only one)*

(+)	1	2	3	4	5	(-)	6	7	9
	Fluently	**Relatively well**	**With effort**	**A few words**	**Not at all**		***Don't know***	***I prefer not to respond***	***Not applicable***

(11) How well do you understand your First Nation language?

(+)	1	2	3	4	5	(-)	6	7	9
	Fluently	**Relatively well**	**With effort**	**A few words**	**Not at all**		*Don't know*	*I prefer not to respond*	*Not applicable*

→

12) In general, would you say that your health is:

(+)	1	2	3	4	5	(-)	6	7	9
	Excellent	**Very good**	**Good**	**Fair**	**Poor**		*Don't know*	*I prefer not to respond*	*Not applicable*

→

Thinking of the past five years, do you feel there have been any changes in your community in the following areas?

13) Use of traditional healers

(+)	1	2	3	4	5	(-)	6	7	9
	Much more	**More**	**No change**	**Less**	**Much less**		*Don't know*	*I prefer not to respond*	*Not applicable*

14) Presence of First Nation spiritual teachings

(+)	1	2	3	4	5	(-)	6	7	9
	Much more	**More**	**No change**	**Less**	**Much less**		*Don't know*	*I prefer not to respond*	*Not applicable*

15) Occurrence of traditional ceremonial activities

(+)	1	2	3	4	5	(-)	6	7	9
	Much more	**More**	**No change**	**Less**	**Much less**		*Don't know*	*I prefer not to respond*	*Not applicable*

16) Cultural awareness in school(s) and/or community programs

(+)	1	2	3	4	5	(-)	6	7	9
	Much more	**More**	**No change**	**Less**	**Much less**		*Don't know*	*I prefer not to respond*	*Not applicable*

→

If you were in need of support of any kind, to what extent would you turn to the following people for help?

17) Family and relatives

(+)	1	2	3	4	5	(-)	6	7	9
	Always	**Almost always**	**Sometimes**	**Almost never**	**Never**		*Don't know*	*I prefer not to respond*	*Not applicable*

18) To the same friends and/or acquaintances

(+)	1	2	3	4	5	(-)	6	7	9
	Always	Almost always	Sometimes	Almost never	Never		*Don't know*	*I prefer not to respond*	*Not applicable*

19) To different friends and/or acquaintances

(+)	1	2	3	4	5	(-)	6	7	9
	Always	Almost always	Sometimes	Almost never	Never		*Don't know*	*I prefer not to respond*	*Not applicable*

→

20) Compared to five years ago, how would you rate the general conditions of the roads in your community?

(+)	1	2	3	4	5	(-)	6	7	9
	A lot better	A little better	Much the same	A little worse	A lot worse		*Don't know*	*I prefer not to respond*	*Not applicable*

21) Have you lived in this house for the past five years? Yes___ No___
(If yes) Compared to five years ago, the physical condition of your house is now:

(+)	1	2	3	4	5	(-)	6	7	9
	A lot better	A little better	Much the same	A little worse	A lot worse		*Don't know*	*I prefer not to respond*	*Not applicable*

(If no) Have you lived in a previous house in this community? Yes___ No___
(If yes) Compared to the previous house you lived in, the physical condition of your current house is:

(+)	1	2	3	4	5	(-)	6	7	9
	A lot better	A little better	Much the same	A little worse	A lot worse		*Don't know*	*I prefer not to respond*	*Not applicable*

→

22) In the past year have you called, sent a letter, or met personally with a band councillor to address any issue

(+)	1	2	3	4	5	(-)	6	7	9
	More than 5 times	Between 2 and 5 times	Only once	Thought of doing but didn't	Never attended		*Don't know*	*I prefer not to respond*	*Not applicable*

→

23) In the past year have you attended any of the following events: Pow Wow, Fundraising event, Competitions, Community festivities, other (specify) _____:

(+)	1	2	3	4	5	(-)	6	7	9
	More than 5 times	Between 2 and 5 times	Only once	Thought of going but didn't	Never attended		*Don't know*	*I prefer not to respond*	*Not applicable*

→

24) In the last two years, on average, have you done volunteer work in this community?

(+) 1	2	3	4	5 (-)	6	7	9
Once a week	Once a month	Once every 6 months	Once a year	Never	*Don't know*	*I prefer not to respond*	*Not applicable*

Statements

→

Please indicate how much you agree with the following statements:

25) Our community works with other First Nations to improve the physical development of our communities (e.g., buildings, roads, houses, etc.)

(+) 1	2	3	4	5 (-)	6	7	9
Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	*Don't know*	*I prefer not to respond*	*Not applicable*

26) First Nations organizations like the Assembly of Manitoba Chiefs (AMC), the Assembly of First Nations (AFN), and Tribal Councils help our community to get resources to improve our physical development (e.g., buildings, roads, houses, etc.)

(+) 1	2	3	4	5 (-)	6	7	9
Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	*Don't know*	*I prefer not to respond*	*Not applicable*

27) Many people in this community visit other First Nations communities to learn more about their traditional ways

(+) 1	2	3	4	5 (-)	6	7	9
Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	*Don't know*	*I prefer not to respond*	*Not applicable*

28) Our community works together with other communities to organize Pow Wows (or other traditional ceremonies or events)

(+) 1	2	3	4	5 (-)	6	7	9
Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	*Don't know*	*I prefer not to respond*	*Not applicable*

29) First Nations organizations like the Assembly of Manitoba Chiefs (AMC), the Assembly of First Nations (AFN), and Tribal Councils help our community to support our traditional language and/or traditional culture

(+) 1	2	3	4	5 (-)	6	7	9
Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	*Don't know*	*I prefer not to respond*	*Not applicable*

30) I can listen to radio and/or watch TV programs about aboriginal issues

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

31) I spend most of my money outside this community

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

32) If I wanted to start a small business, I could borrow money from tribal organizations

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

33) If I wanted to start a small business, I could borrow money from Peace Hills Trust and/or Median Credit Union

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

34) If myself, or someone in my family, wanted to continue with school (e.g., completing Elementary school, High School, college, technical training, university) we could receive support from a First Nations organization outside this community

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

35) If myself, or someone in my family, wanted to receive job training, we could receive financial support from a First Nations organization outside this community

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

36) First Nations organizations like the Assembly of Manitoba Chiefs (AMC), the Assembly of First Nations (AFN), and Tribal Councils pressure governments or corporations to protect our land and water

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

37) Generally speaking, most people from the city can be trusted

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

38) Generally speaking, most people from other First Nations communities can be trusted

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

39) Tribal councils try to do the best for my community

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

40) Generally speaking, people in the city treat me in a fair way (e.g., stores, restaurants, people on the street, etc.)

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

41) Generally speaking, people from other First Nations communities treat me in a fair way

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

42) I am proud of my aboriginal heritage

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

43) There is tension and conflict between our community and other First Nations communities

(+) |____1____|____2____|____3____|____4____|____5____|(-) |____6____|____7____|____9____|

1	2	3	4	5	6	7	9
Strongly agree	**Agree**	**Neither agree nor disagree**	**Disagree**	**Strongly disagree**	***Don't know***	***I prefer not to respond***	***Not applicable***

44) My community works together with other First Nations to improve the situation of First Nations people

(+) |____1____|____2____|____3____|____4____|____5____|(-) |____6____|____7____|____9____|

1	2	3	4	5	6	7	9
Strongly agree	**Agree**	**Neither agree nor disagree**	**Disagree**	**Strongly disagree**	***Don't know***	***I prefer not to respond***	***Not applicable***

45) I think it is important that Chief and Council participate in First Nations organizations like the Assembly of Manitoba Chiefs (AMC), the Assembly of First Nations (AFN), and Tribal Councils

(+) |____1____|____2____|____3____|____4____|____5____|(-) |____6____|____7____|____9____|

1	2	3	4	5	6	7	9
Strongly agree	**Agree**	**Neither agree nor disagree**	**Disagree**	**Strongly disagree**	***Don't know***	***I prefer not to respond***	***Not applicable***

46) I often talk with friends and/or family from other First Nations communities about problems we face

(+) |____1____|____2____|____3____|____4____|____5____|(-) |____6____|____7____|____9____|

1	2	3	4	5	6	7	9
Strongly agree	**Agree**	**Neither agree nor disagree**	**Disagree**	**Strongly disagree**	***Don't know***	***I prefer not to respond***	***Not applicable***

47) I enjoy meeting new people

(+) |____1____|____2____|____3____|____4____|____5____|(-) |____6____|____7____|____9____|

1	2	3	4	5	6	7	9
Strongly agree	**Agree**	**Neither agree nor disagree**	**Disagree**	**Strongly disagree**	***Don't know***	***I prefer not to respond***	***Not applicable***

48) I am involved in activities with people from other First Nations communities

(+) |____1____|____2____|____3____|____4____|____5____|(-) |____6____|____7____|____9____|

1	2	3	4	5	6	7	9
Strongly agree	**Agree**	**Neither agree nor disagree**	**Disagree**	**Strongly disagree**	***Don't know***	***I prefer not to respond***	***Not applicable***

49) I am involved in activities with people from the city

(+) |____1____|____2____|____3____|____4____|____5____|(-) |____6____|____7____|____9____|

1	2	3	4	5	6	7	9
Strongly agree	**Agree**	**Neither agree nor disagree**	**Disagree**	**Strongly disagree**	***Don't know***	***I prefer not to respond***	***Not applicable***

50) I follow the news of what happens in other First Nations communities

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

51) In the city I only interact with aboriginal people

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

52) I have a hard time obtaining useful information (about jobs, etc.) from Tribal Councils and other First Nations organizations outside my community

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

53) I know what is happening in other First Nations communities

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

54) In the last five years I have not made any new acquaintances outside this community

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

55) There are people in other communities whom I won't talk with even if I need information or support

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

56) I only visit people in the city whom I have known for a long time

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

57) I only visit people in other First Nations communities whom I have known for a long time

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

58) Outside of this community I mostly interact with people of my own age

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

59) I only visit people from other First Nations communities that think like me

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

60) I have relatives in different First Nations communities with whom I communicate on a regular basis

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

61) I have friends in different First Nations communities with whom I communicate on a regular basis

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

62) My experience is that people in this community have equal access to housing

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

63) If I wanted to start a small business, I could borrow money from friends or acquaintances

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

64) If I wanted to start a small business and needed to borrow money, I know that there are funding opportunities through the band office

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

65) Job training opportunities are *equally available* to people in this community

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

66) Recreation and sports activities are *equally available* to people in this community

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

67) Day care is *equally available* to children in this community who need it

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

68) If myself, or someone in my family, wanted to receive job training, we could receive support within this community

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

69) Chief and Council works to protect our land and its resources for future generations

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

70) I am willing to make some efforts to protect the land and water

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

71) Chief and Council try to do the best for my community

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

72) Generally speaking, most people in this community try to be helpful to each other

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

73) Generally speaking, most people in this community can be trusted

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

74) People in this community are friendly to each other

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

75) People in this community respect Elders

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

76) I am proud of the community I live in

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

77) Theft is not a problem in our community

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

78) I am willing to help make my community better

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

79) Overall, I have some influence in making my community a better place to live

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

80) I often talk with friends and/or family about problems in my community

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

81) People should make every effort to vote when there is a Band election for Chief and Council

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

82) It is easy for people in this community to have different groups of friends

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

83) The concerns of certain groups of people in this community are heard more than those of other groups

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

84) Outside of my family I visit mostly with people of my age

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

85) I find that different groups in this community don't mingle much with each other

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

86) People in this community tend to always associate with the same group of people

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

87) There are people in this community whom I won't talk with even if I need information or help

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

88) Once people are part of a group in this community, they don't associate much with others outside of the group

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

89) I only visit with people in this community that I have known for a long time

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

90) Outside of my family, I don't feel comfortable dealing with people from this community who have much more or much less money than me

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

91) The hospital/nursing station/health centre has incorporated traditional healing in their practice

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

92) The school has more resources than before to teach our children our First Nations language

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

93) There is support from federal or provincial government departments to organize First Nations cultural events

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

94) Banks lend money to businesses in our community (e.g., trappers, fisherman, farming, stores, tourism, etc.)

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

95) Federal or provincial government agencies lend money to businesses in this community (e.g., trappers, fisherman, farming, stores, tourism, etc.)

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

96) Compared to five years ago, the school seems to have more resources now

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

97) The justice system has incorporated traditional methods and approaches for aboriginals

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

98) Healing lodges for aboriginal offenders are used by the justice system

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

99) In the past five years Manitoba Hydro has worked on restoring the land and/or water from existing environmental damages

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

100) In the past five years, the federal/provincial governments have invested resources to restore the land and/or water from existing environmental damages

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

101) Generally speaking, the federal/provincial governments can be trusted

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

102) Generally speaking, the federal/provincial governments try to do the best for my community

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

103) This community can expect fair treatment from the federal and provincial governments

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

104) There is tension and conflict between our community and the federal and provincial governments

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

105) There is tension and conflict between our community and outside businesses

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

106) My community works together with the federal and/or provincial governments to improve our situation

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

107) My community works together with outside businesses to improve our situation

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

108) The Assembly of Manitoba Chiefs (AMC) and the Assembly of First Nations (AFN) are generally successful in pressuring the federal and provincial governments to support First Nations communities

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

109) People should make every effort to vote when there are federal or provincial elections

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

110) I have a hard time obtaining information from the school

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

111) I have a hard time obtaining information from the Hospital/nursing station/health centre

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

112) I have a hard time obtaining information from Child and Family Services

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

113) I have a hard time obtaining information from federal and/or provincial government departments

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

114) Relations between the federal and/or provincial governments and Chief and Council never seem to improve

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

115) School authorities listen to people in our community

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

116) Hospital/nursing station/health centre authorities listen to people in our community

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

117) Child and Family Services authorities listen to people in our community

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

118) I can get in contact with different school authorities if I need to

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

119) I can get in contact with Child and Family Services authorities if I need to

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

120) I can get in contact with different hospital/nursing station/health centre authorities if I need to

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

121) Information from the federal and/or provincial governments is easily available

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

Questions

I am now going to ask you a few more questions before we finish:
→
122) Thinking about the past five years, do you feel that there has been any progress with improving water and sewage in the entire community?

(+)	1	2	3	4	5	(-)	6	7	9
	Good progress	Some progress	No progress	Situation worse	Situation much worse		*Don't know*	*I prefer not to respond*	*Not applicable*

123) Thinking about the past five years, do you feel that there has been any progress with improving the school facilities in the community?

(+)	1	2	3	4	5	(-)	6	7	9
	Good progress	Some progress	No progress	Situation worse	Situation much worse		*Don't know*	*I prefer not to respond*	*Not applicable*

124) Thinking about the past five years, do you feel that there has been any progress with improving hospital/nursing station/health centre facilities in the community?

(+)	1	2	3	4	5	(-)	6	7	9
	Good progress	Some progress	No progress	Situation worse	Situation much worse		*Don't know*	*I prefer not to respond*	*Not applicable*

→

125) Compared to five years ago, how would you rate the economic situation of your community (e.g., jobs, employment, prosperity, etc.) ?

(+)	1	2	3	4	5	(-)	6	7	9
	A lot better	A little better	Much the same	A little worse	A lot worse		*Don't know*	*I prefer not to respond*	*Not applicable*

→

126) Thinking about the future, and if you continue living in this community, overall do you think that you and your household will be:

(+)	1	2	3	4	5	(-)	6	7	9
	Much better off	Somewhat better off	About the same	Somewhat worse off	Much worse off		*Don't know*	*I prefer not to respond*	*Not applicable*

→

127) Thinking about the past five years, has there been any improvement in the recreation facilities in the community?

(+)	1	2	3	4	5	(-)	6	7	9
	Much improvement	Some improvement	No improvement	Situation worse	Situation much worse		*Don't know*	*I prefer not to respond*	*Not applicable*

→

128) Did you vote in the last election for Chief and Council?

Yes ___

No ___

(6) Don't know

(7) I prefer not to respond

(9) Not applicable

129) Did you vote in the last Federal election?

Yes ___

No ___

(6) Don't know

(7) I prefer not to respond

(9) Not applicable

130) Did you vote in the last Provincial election?

Yes ___

No ___

(6) Don't know

(7) I prefer not to respond

(9) Not applicable

→

131) What is the highest level of schooling you have completed?

a) Some elementary school..... ____
b) Elementary school graduation..... ____
c) Some high school..... ____
d) High school graduation diploma..... ____
e) Some trade, technical, or vocational school..... ____
f) Some community college or university..... ____
g) Community college or university graduation diploma..... ____
h) Don't know..... ____
i) I prefer not to respond..... ____

→

132) Are you currently working for pay (wages, salary, self-employment)?

Yes ___ *(If yes, answer 133 and then skip to 137)*
No ___ *(If no go to question 134)*

133) On average, how many hours per week do you usually work?

Number of hours ___

134) Are you on social assistance?

Yes ___
No ___

135) Have you worked for pay at any time in the past 12 months? *(If yes skip to 137)*

Yes ___
No ___

→

136) What are the main reasons that kept you from working at a job in the past 12 months? *(Choose what applies to you)*

a) Do not want a job..... ___
b) No jobs available in the area where I live..... ___
c) Not qualified for available jobs..... ___
d) Overqualified for available jobs..... ___
e) Insufficient information about available jobs..... ___
f) Retired..... ___
g) Family responsibilities..... ___
h) Due to health reasons..... ___
i) Going to school..... ___
j) Discrimination because First Nation..... ___
k) Other (please specify below)..... ___ _____
l) Don't know..... ___
m) I prefer not to respond..... ___

→

137) For the year ending December 31, 2000, please think of the total income, before deductions, from all sources, for all household members, including yourself. Please look at this list and tell me which range it falls into *(Interviewer: mark response below. Check only one income category)*

a) No income or income loss ___
b) $1 - $9,999 ___
d) $10,000 - $19,999 ___
f) $20,000 - $29,999 ___
h) $30,000 - $39,999 ___
i) $40,000 - $49,999 ___
j) $50,000 - $59,999 ___
k $60,000 - $69,999 ___
l) $70,000 - $79,999 ___
m) $80,000 and over ___
n) Don't know ___
o) I prefer not to respond ___

This concludes our list of questions. Thank you very much for your co-operation.

Start time: _____

End time: _____

Date: _____

Appendix 5-II
Assessment of "Don't Know", "Prefer not to Respond" and "Not Applicable" rates

Tables 6a, 6b, 6c and 6d summarize the information on "don't know", "prefer not to respond" and "not applicable" answers for each dimension item and the two control items. According to some authors, missing response rates should be considered a measure of item meaningfulness (Schuessler, 1982, p. 133-4) because "they provide an objective basis for rating scales by relevance to respondents." Our questionnaire has three response options that could be considered missing responses, and each should be interpreted somewhat differently (Appendix 5-I). We will first examine options "7" (prefer not to respond) and "9" (not applicable). Unless otherwise specified, this section will refer jointly to "7" and "9" as non-responses. Option "6", "don't knows" will always be considered separately from the former two. In terms of "not applicable" all questions should, in theory, have been applicable to residents of the three communities (with the exception of questions 32 and 39 that ask about tribal organizations, and given that Community B is not part of a tribal council, these questions could have limited applicability to this community). However, there was the possibility that respondents might not agree with that assumption, so "not applicable" was always included as a response option. "(P)refer not to respond" was an important option to insert given the potential for some of the questions to be perceived as sensitive by study participants. An examination of the tables suggests the following. The two control questions showed very low percentages of non-responses (Table 6d). Items for all three dimensions with higher non-responses appeared to share the common characteristic of being questions that may not necessarily relate to the direct experience of all respondents or that request their perception of community issues. On the contrary, questions related to direct self-experience, showed lower non-responses. As we will see later, the same pattern applies to "don't know" answers. A positive finding is that the pattern of non-responses and don't knows, was not affected by the order of the questions (this was a concern given the length of the questionnaire). For example, questions 128 (Table 6a), 129 and 130 (Table 6c) were located almost at the end of the questionnaire. These questions asked if the respondent had voted in the last elections, i.e., a direct experience, and the non-response rates were relatively low, suggesting that interviewees' non-responses were more related to direct or non-direct experience than to item order.

In comparison to "prefer not to respond" and to "don't know" answers, "not-applicable" responses were usually the lowest percentage for all three dimensions and communities. The item for the Bonding scale (Table 6a) with highest "not applicable" percentage across the three communities was Q63. This makes sense because respondents could have interpreted the not applicability of the question to having no intention of starting a small business. For the Bridging scale (Table 6b), item Q39 had the highest "not applicable" percentage (15%) for Community B, which is consistent to the possible not applicability of this question to this particular community. Q48 was the only item with a higher percentage of "not applicable" responses than "prefer not to respond" or "don't knows" in this scale. It may signal the idea that for the

respondent it was not applicable due to their lack of need to have contact with people from other First Nations communities. Of the Linkage dimension items, Q112 was the most questionable. Again, it appears that this could be related to the interpretation that access to this resource (Child and Family Services) was not applicable to their particular case. Despite these observations, overall, "not applicable" responses appeared to be the least problematic of the missing responses, and sensible explanations could be found to explain the higher percentages.

"Prefer not to respond" percentages across the three communities and the three scales were consistently higher (with exceptions) than "not applicable" percentages. If we choose the somewhat arbitrary cut-off point of 8%, an interesting pattern emerges in that Community B shows numerous items with 8% or higher "prefer not to respond" percentages than the other two communities, in all three scales. For the Bonding dimension (Table 6a), Community B presents 13 items with 8% or more (13.3% being the highest), compared to only one item for the other two communities. The Bridging scale (Table 6b) shows 6 items in Community B (the highest being 15.6%), three for Community C (10.8% the highest) and none for Community A. The Linkage dimension (Table 6c) reinforces the above two patterns, with Community B presenting 15 items with "prefer not to respond" rates higher than 8% (the highest being 18.5%), Community C three items, and Community A none. The central theme appears to be the difference between communities, in particular between Community B and the other communities. An examination of the content of some of these items may provide plausible explanations. Q90 (Table 6a) is the item with consistently higher percentages across the three communities (PK 8.9%, NH 8.9%, LP 7.4%). Some personal discomfort may have been provoked by this question, which could in part explain the pattern. Looking at items for which 11% or more of Community B interviewees chose the "prefer not to respond" option (items Q62, Q65, Q79, Q80), it is not unreasonable to consider that respondents could have interpreted these questions as somewhat politically sensitive and might have preferred to respond with caution. The explanation for Q63 was alluded to earlier in the section. Items Q37, Q38, Q40 and Q55 could be understood as tapping into some sensitivities which may explain the higher percentages on "prefer not to respond" in Community B for the former three and in Community C for the latter. It is difficult to discern a possible reason for higher percentages for Q46, Q49 and Q52. A somewhat clear pattern emerged from Community B respondents' relatively high percentages of "prefer not to respond" in the linkage scale. All items with higher than 8% appear to be somewhat more politically loaded than almost all items with lower than 8%. This could speak of more reluctance by Community B study participants to answer what they may consider politically sensitive questions. The fact that no single item in the linkage domain showed a pattern of high "prefer not to respond" percentages across the three communities, suggests that political sensitivities could be community specific. Admittedly, this could be understood as some marker of social capital, however the conceptual framework and the study design does not allow for more empirical evidence along this route. The above considerations may be used to complement item evidence when interpreting overall results. However, given that respondents were making a clear statement that they did not want to respond or that

they thought that it was not an applicable question, those non-responses were considered missing data for the analyses.

Before considering "don't know" percentages of the bonding, bridging and linkage scales, a joint mention of "don't know" and non-response rates of the control items is (Table 6d) advisable. The consistently low percentages across the three communities for these two items is in line with what other authors have indicated, that "responses about self tend to draw fewer missing responses than scales consisting of items about society" (Schuessler, 1982, p. 134). More importantly, for the purposes of our study, the lack of any particular pattern in these two control items decreases the concern for possible interviewer bias. Nonetheless, given the consistent pattern of higher rates for most items for Community B, an examination of possible interviewer bias was pertinent. This analysis will be presented after reviewing the overall "don't know" response rates.

Table 6a shows "don't know" rates for the Bonding scale. Considering a 15% of "don't know" responses as the lower cut-off a few patterns emerge. First, that items Q13 to Q16 consistently had more than 15% of "don't know" responses (the lowest percentage is 20.3 and the highest is 35.1) across the three communities, suggesting that there is something about these questions that prompt this type of answer. No other items in the Bonding scale showed this consistency across communities. Second, that Community B was the community with the highest number of items where "don't know" responses were 15% or more (of a total of 44 items: Community A, 8 items; Community B, 12 items; Community C, 4 items). In relation to the bridging scale, Community B again showed the highest number of items above 15% or more "don't know" responses (of a total of 36 items: Community A, 12 items; Community B, 17 items; Community C, 12 items). Although with less proportional difference than the other two communities in the number of items with 15% or more "don't know" rates as in the Bonding scale, what was observable was that Community Bs' percentages more than doubled, for some items, that of Community A or Community C. At the same time, there was a general consistency of higher "don't know" rates across communities for the same items. The fact that there were "don't know" percentages as high as 63% has important implications for item meaningfulness that will later be discussed. In the Linkage scale, Community A and Community B present more items with 15% or more "don't know" responses than items with less than 15% (of a total of 36 items: Community A 26; Community B, 29 items; Community C, 15 items). Again there was a general correspondence across communities of items with higher or lower rates of "don't know" answers, and the similar pattern of Community B presenting higher percentages than the other two communities, followed by Community A.

It is important to elucidate the issue of meaningfulness or not of items with such high levels of "don't know" answers. We will thus look at some specific items to help unravel this question. Starting with the Bonding scale, the rate of "don't know" for items Q13, Q14, Q15, Q16 were consistently more than 20% for the three communities. These questions asked about observed changes in the community in the

use of traditional healers, presence of First Nations spiritual teachings, occurrence of traditional ceremonial activities, and existence of cultural awareness programs. It is sensible to infer that respondents found changes in these areas difficult to observe, and consequently did not feel adequately informed to respond with confidence. The consistency among the three communities strengthens this interpretation. A look at items with consistently low "don't know" rates across the three communities (Q17, Q18, Q19, Q20, Q22, Q23, Q24, Q70, Q72, Q74, Q75, Q76, Q77, Q78, Q80, Q81, Q128, Q84, 87, Q89, Q90) shows that the majority of these questions inquired about direct experience of respondents. Higher "don't know" percentages for Q63 and Q64 might be explained by the not clear applicability of the question to the direct experience of respondents (i.e., idea of starting a small business). Items like Q125, Q126 and Q127 that showed some variability between communities open another avenue for interpretation of "don't know" answers. These "don't know" responses could be implying that the interviewee does not know how to answer the question because there is a low observable effect at the community level of that issue, precisely providing as such some information about the level of that item. For this interpretation to be valid, the conceptual framework should provide some logic that may justify it. This is not the case for the bonding dimension, but may have some feasibility for the bridging and linkage dimensions.

Broadly speaking, items could be categorized as asking about self and about community. Using this categorization to compare items with lower and higher "don't know" percentages items in the bridging scales we find the following. All items asking about community showed relatively high "don't know" rates (Q25, Q26, Q27, Q28, Q29, Q36, Q37, Q38, Q39, Q43, Q44) and a majority of items asking about self exhibited relatively low percentages (Q30, Q31, Q40, Q41, Q42, Q45, Q46, Q48, Q49, Q50, Q51, Q54, Q55, Q56, Q57, Q58, Q59, Q60, Q61). Interestingly, however, there are six items that can be categorized as asking about self that presented relatively high rates (Q32, Q33, Q34, Q35, Q52, Q53). These high levels could be interpreted two ways. First, that because the respondent lacked that direct experience they did not think they had enough information to properly respond. Second, that the fact itself of respondents not knowing what to respond could suggest less availability of these resources or less community information, i.e., lower levels of the aspect of social capital those items seek to tap into. Using the above mentioned categorization of self and community items, the linkage scale shows more items of the latter type, which in part would explain the higher number of items with relatively high "don't know" rates. An interesting exception appears with items Q122, Q123 and Q124 that have low "don't know" percentages, which may be explained by the more tangible nature of the questions. Conversely, "don't know" rates of four items that could be categorized as asking about self in this scale (Q113, Q118, Q119, Q120) are relatively high. A possible explanation is the lack of direct experience by respondents about what the question seeks information of.

Given the above evidence, it is apparent that for the type of community level information we are seeking it is necessary to accept a higher level of "don't know" rates than might be the case, for example, for psychological questionnaires. Many of

the questions are necessarily not about self and are bound to be of lesser relevance for some of the respondents. Consequently, the criteria for assessing their "meaningfulness" should not be too stringent, otherwise we would be losing too many items that are potential sources of information. From an analytical and interpretative perspective, the following were options considered to deal with the "don't know" rates, and the non-responses.

To better compare "don't know" rates across communities, dummy variables were created, with "don't know" responses as 1, and any other response as 2 ("prefer not to respond" and "not applicable" were considered missing data). Appendix 5-VI presents this data for each dimension as cross-tabulations between items and communities, together with Chi-Square tests to determine statistical significance. For the bonding dimension 12 items were significant at 0.05, suggesting that in one of the communities "don't know" answers were significantly higher (9 of the items for Community B and 3 for Community A). Simultaneously, all these items, except three, showed acceptable discriminatory power in Table 7a. For the bridging dimension, 21 out of 36 items were statistically significant, and in all cases Community B presented the highest proportion of "don't know" answers. Particularly problematic were items Q26, Q27, Q29, Q32, Q33, Q34, Q35, Q36 and Q44, where in Community B a higher proportion of interviewees responded "don't know" rather than providing an answer to the question. However, all of these particularly problematic items, with the exception of two, presented acceptable discriminatory power in Table 7b. In the linkage scale, 29 items out of 26 were significant.

Two final considerations, the potential for interviewer bias towards "don't know" responses, and the possibility that the variances in "don't know" percentages could be accounted for by demographic characteristics. The rationale for the former would be that some interviewers, because of their interviewing styles, may have intentionally or unintentionally rushed interviewees into answering, consequently increasing the tendency to respond "don't know" because of respondents' less thinking time. Appendix 5-VII shows the results of Chi-square statistics examining "don't know" responses compared to scored responses, by community and interviewer. In the Bonding scale, there could be some evidence of bias for 10 items in Community A (with the same surveyor accounting for the difference in all items except one), eight items in Community B (with one of the two surveyors showing more "don't know" answers in all these items) and six items in Community C (no clear pattern for any one surveyor in particular). For the Bridging scale some evidence in six items in Community A (with the same surveyor accounting for the difference in all items except one), five items in Community B (with the same surveyor showing more "don't know" answers in all these items) and 10 items in Community C (no clear pattern for any one surveyor in particular). In the Linkage scale potential bias in 13 items in Community A (with the same surveyor showing more "don't know" answers in all these items), seven items in Community B (with the same surveyor showing more "don't know" answers in all but one of these items) and eight items in Community C (no clear pattern for any one surveyor in particular).

To assess if demographic characteristics of respondents may have accounted for the variances in "don't know" rates, logistic regression analyses were run with the highest contrasting dummy variable of each dimension (Bonding, DUMQ126; Bridging, DUMQ26; Linkage, DUM99). The demographic variables included in the model were Age, Sex (Male/Female), Employment status (Currently Employed/Currently Not employed), Education (Elementary-Some high school/High school graduation-Postsecondary education), Children living at home, Number of years living in the community, Marital Status (Single, Widowed, Separated, Divorced/Married, Common Law), and dummy variables representing the communities (LPCOMMVA and PKCOMMVA; Community B was the criterion community, with a value of 0 in both variables). For the Bonding scale (Appendix 5-VIIIa) both community variables were highly significant, suggesting that being from Community C or Community A increased the odds of knowing the responses to the questions (4.6 and 5.6 respectively). Number of years living in the community variable was statistical significance (0.01), suggesting that length of time living in the community played some role in knowing responses to the bonding scale of the questionnaire (1.02 odds ratio per year lived in the community of knowing the answer to the question). Appendix 5-VIIIb shows the results for the Bridging scale. Community variables again were highly significant (odds ratio 4.24 for Community A and 7.59 for Community C). Sex almost achieved statistical significance with 0.06 probability level, suggesting that being a woman decreased the odds of knowing the response to the question (0.66). The only statistically significant variable in the Linkage model was one of the community variables. However, the other community variable, marital status and age were close to significance. Being from Community C clearly increased the odds of knowing the responses (5.65), and to some extent being older and being married or living in common law (Appendix 5-VIIIc). Being from Community A decreased the odds of knowing the answer (0.65).

There are two separate but related issues to consider. One is the absolute percentage of "don't know." The other is the difference between communities in "don't know" percentages. The former relates to possible meaningfulness of the item, the latter, to possible underlying factors accounting for the fact that one community tended to respond with higher "don't know" than the others. Consequently, it was decided that items with high percentages of "don't know" answers would not be discarded. Among possible explanations, interviewer bias may have played a role, but as was shown previously, with not enough consistency as to warrant it a major factor. Another explanation could be the existence of unknown community factors that may or may not be related to social capital. An option for exploring this idea would be to impute items where "don't know" response rates could have, following the conceptual framework, a logical potential of providing information about levels of social capital within the bridging and linkage dimensions. Despite not pursuing this option here, the notion is explained in Appendix 5-III, presenting its rationale and methodology.

Appendix 5-III

There is a basic assumption behind the idea of imputing variables based on "don't know" rates. It is that for some items, the fact that respondents do not know the answer may, in itself, be indicating a differential level of that aspect of social capital. For example, if a higher rate of interviewees in Community A are more unaware of certain information than respondents from Community B, it could be inferred that it is a factor of differential access to information, and consequently lower social capital. Given this assumption, only certain items could be meaningfully imputed. Based on the conceptual framework, a review of the items from our instrument suggests that only some Bridging and Linkage questions could qualify for this type of imputation (Q27. Q28, Q29, Q32, Q33, Q,34, Q35, Q36, Q44, Q91, Q92, Q94, Q95, Q97, Q98, Q99, Q100, Q106, Q107, Q108, Q121). The imputation process will be exemplified with Q27. The "don't know" rates for this item by community were as follows:
Community C: 19.7%
Community B: 51.5%
Community A: 28.2%

To take a conservative approach, the actual change in values would commence above the 25% rate, as shown with the next calculations. The first 25% would be given the value of 3 (of the scale of 1 to 5), the second 25% a value of 2, the third 25% a value of 1 (the lower the score the lower the level of social capital).

Community C
19.7%
For values less than 25% a mean of 3 will be imputed **X = 3.00**

Community B
51.5%

51.5 - 25.0 = 26.5	51.5 is to 100	
26.5 - 25.0 = 1.5	25 is to X = 48.5%	3x48.5% = 1.46
	51.5 is to 100	
	25 is to X = 48.5%	2x48.5% = 0.98
	51.5 is to 100	
	1.5 is to X = 2.9%	1x2.9% = 0.30
		X = 2.74

Community A
28.2%

28.2 - 25.0 = 3.2	28.2 is to 100	
	25 is to X	3x88.7% = 2.66
	28.2 is to 100	
	3.2 is to X	2x11.3% = 0.23
		X = 2.89

Appendix 5-IVa

Multiple Regression Report

Regression Equation Section						
Independent Variable	Regression Coefficient	Standard Error	T-Value (Ho: B=0)	Prob Level	Decision (5%)	Power (5%)
Intercept	3.36	0.07	45.04	0.00	Reject Ho	1.00
Age	0.00	0.00	0.93	0.35	Accept Ho	0.15
Sex	0.00	0.04	-0.11	0.92	Accept Ho	0.05
Employment Status	-0.05	0.04	-1.33	0.19	Accept Ho	0.26
Education Level	0.02	0.04	0.57	0.57	Accept Ho	0.09
Marital Status	-0.01	0.04	-0.23	0.82	Accept Ho	0.06
Community Variable A	-0.25	0.04	-5.54	0.00	Reject Ho	1.00
Community Variable C	-0.34	0.05	-6.88	0.00	Reject Ho	1.00
Number of Children at Home	0.00	0.01	0.43	0.66	Accept Ho	0.07
Number of Years in the Community	0.00	0.00	0.73	0.47	Accept Ho	0.11

R-Squared = 0.14

Model

3.360089+ 1.498441E-03*AGE-3.880932E-03*REGRSEX-4.986357E-02*REGRWORK+ .0223581*REGREDUC-8.772183E-03*REGMARIT-.2480797*LPCOMMVA-.3364685*PKCOMMVA+ 4.389823E-03*REGCHILD+ 8.912605E-04*REGYEARS

R-Squared Section					
Independent Variable	Cumulative Sequential	Incremental Sequential	Incremental Last	Simple	Partial
Age	0.01	0.01	0.00	0.01	0.00
Sex	0.01	0.00	0.00	0.00	0.00
Employment Status	0.01	0.00	0.00	0.01	0.00
Education Level	0.01	0.00	0.00	0.00	0.00
Marital Status	0.02	0.00	0.00	0.00	0.00
Community Variable A	0.03	0.02	0.06	0.01	0.07
Community Variable C	0.13	0.10	0.10	0.05	0.10
Number of Children at Home	0.13	0.00	0.00	0.00	0.00
Number of Years in the Community	0.14	0.00	0.00	0.01	0.00

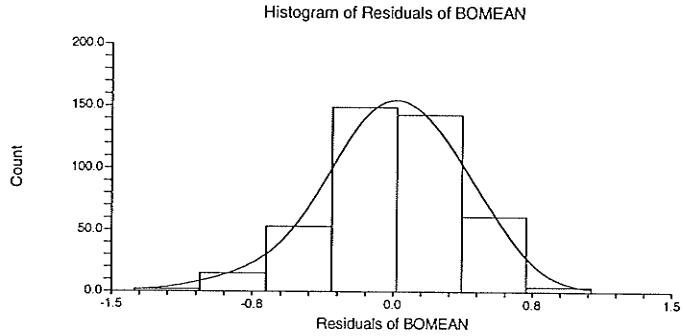
Multicollinearity Section				
Independent Variable	Variance Inflation	R-Squared Vs Other X's	Tolerance	Diagonal of X'X Inverse
Age	1.28	0.22	0.78	0.00
Sex	1.07	0.06	0.94	0.01
Employment Status	1.05	0.05	0.95	0.01
Education Level	1.08	0.08	0.92	0.01
Marital Status	1.13	0.12	0.88	0.01
Community Variable A	1.60	0.38	0.62	0.02
Community Variable C	1.50	0.33	0.67	0.02
Number of Children at Home	1.14	0.12	0.88	0.00
Number of Years in the Community	1.31	0.24	0.76	0.00

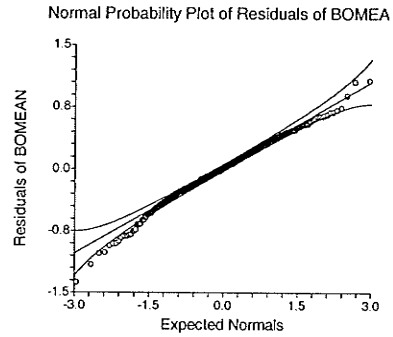
Eigenvalues of Centered Correlations				
No.	Eigenvalue	Incremental Percent	Cumulative Percent	Condition Number
1	1.79	19.90	19.90	1.00
2	1.44	16.01	35.91	1.24
3	1.30	14.44	50.35	1.38
4	1.11	12.34	62.69	1.61
5	0.95	10.51	73.21	1.89
6	0.84	9.36	82.57	2.13
7	0.62	6.92	89.48	2.88
8	0.57	6.29	95.78	3.16
9	0.38	4.22	100.00	4.71

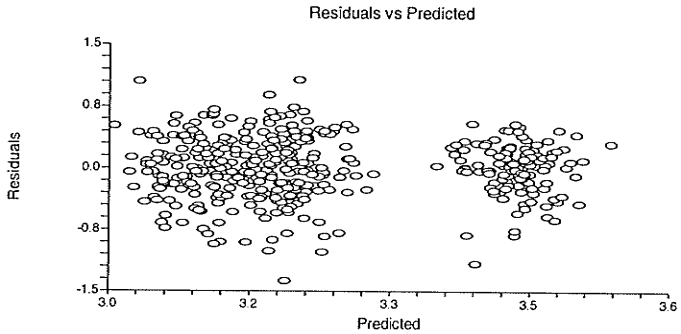
All Condition Numbers less than 100. Multicollinearity is NOT a problem.

Appendix 5-IVa
Multiple Regression Report

Plots Section







Appendix 5-IVb

Multiple Regression Report

Regression Equation Section						
Independent Variable	Regression Coefficient	Standard Error	T-Value (Ho: B=0)	Prob Level	Decision (5%)	Power (5%)
Intercept	3.14	0.07	44.77	0.00	Reject Ho	1.00
Age	0.00	0.00	1.30	0.19	Accept Ho	0.26
Sex	0.01	0.03	0.26	0.80	Accept Ho	0.06
Employment Status	-0.05	0.03	-1.48	0.14	Accept Ho	0.31
Education Level	0.03	0.04	0.82	0.41	Accept Ho	0.13
Marital Status	-0.03	0.03	-0.99	0.32	Accept Ho	0.17
Community Variable A	0.19	0.04	4.66	0.00	Reject Ho	1.00
Community Variable C	-0.07	0.05	-1.49	0.14	Accept Ho	0.32
Number of Children at Home	0.02	0.01	1.74	0.08	Accept Ho	0.41
Number of Years in the Community	0.00	0.00	-1.04	0.30	Accept Ho	0.18

R-Squared = 0.13

Model

3.138647+ 1.939613E-03*AGE+ 8.734395E-03*REGRSEX-5.088693E-02*REGRWORK+ .0293625*REGREDUC-.034204*REGMARIT+ .1909717*LPCOMMVA-6.765904E-02*PKCOMMVA+ 1.619373E-02*REGCHILD-1.165045E-03*REGYEARS

R-Squared Section					
Independent Variable	Cumulative Sequential	Incremental Sequential	Incremental Last	Simple	Partial
Age	0.01	0.01	0.00	0.01	0.00
Sex	0.01	0.00	0.00	0.00	0.00
Employment Status	0.01	0.01	0.00	0.01	0.01
Education Level	0.02	0.01	0.00	0.01	0.00
Marital Status	0.02	0.00	0.00	0.00	0.00
Community Variable A	0.12	0.10	0.04	0.11	0.05
Community Variable C	0.12	0.00	0.00	0.06	0.01
Number of Children at Home	0.13	0.01	0.01	0.00	0.01
Number of Years in the Community	0.13	0.00	0.00	0.01	0.00

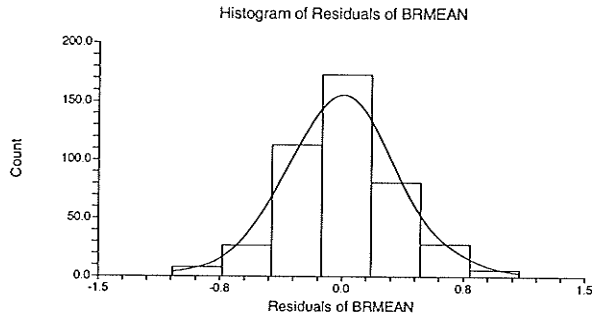
Multicollinearity Section				
Independent Variable	Variance Inflation	R-Squared Vs Other	Tolerance	Diagonal of X'X Inverse
Age	1.29	0.23	0.77	0.00
Sex	1.06	0.05	0.95	0.01
Employment Status	1.04	0.04	0.96	0.01
Education Level	1.08	0.08	0.92	0.01
Marital Status	1.13	0.12	0.88	0.01
Community Variable A	1.59	0.37	0.63	0.01
Community Variable C	1.50	0.34	0.66	0.02
Number of Children at Home	1.13	0.12	0.88	0.00
Number of Years in the Community	1.32	0.24	0.76	0.00

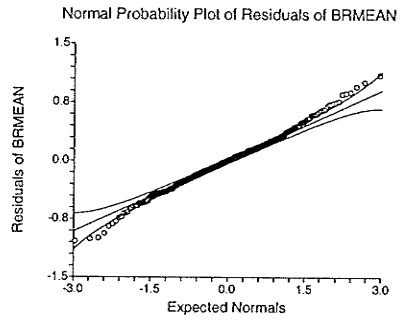
Eigenvalues of Centered Correlations				
No.	Eigenvalue	Incremental Percent	Cumulative Percent	Condition Number
1	1.78	19.81	19.81	1.00
2	1.44	16.04	35.85	1.23
3	1.30	14.48	50.32	1.37
4	1.11	12.33	62.65	1.61
5	0.95	10.57	73.22	1.87
6	0.84	9.37	82.59	2.11
7	0.63	7.03	89.62	2.82
8	0.55	6.08	95.70	3.26
9	0.39	4.30	100.00	4.61

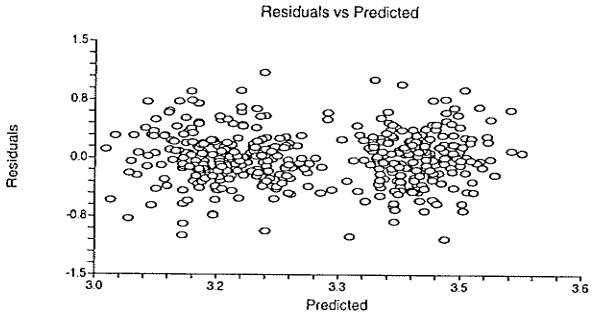
All Condition Numbers less than 100. Multicollinearity is NOT a problem.

Appendix 5-IVb
Multiple Regression Report

Plots Section







Appendix 5-IVc
Multiple Regression Report

Regression Equation Section						
Independent Variable	Regression Coefficient	Standard Error	T-Value (Ho: B=0)	Prob Level	Decision (5%)	Power (5%)
Intercept	3.19	0.07	45.45	0.00	Reject Ho	1.00
Age	0.00	0.00	0.43	0.67	Accept Ho	0.07
Sex	0.03	0.03	0.77	0.44	Accept Ho	0.12
Employment Status	-0.01	0.03	-0.39	0.70	Accept Ho	0.07
Education Level	0.04	0.04	1.05	0.29	Accept Ho	0.18
Marital Status	0.02	0.03	0.57	0.57	Accept Ho	0.09
Community Variable A	-0.13	0.04	-3.10	0.00	Reject Ho	0.87
Community Variable C	-0.30	0.04	-6.64	0.00	Reject Ho	1.00
Number of Children at Home	0.00	0.01	-0.36	0.72	Accept Ho	0.07
Number of Years in the Community	0.00	0.00	0.87	0.39	Accept Ho	0.14

R-Squared = 0.12

Model

3.187734+ 6.470901E-04*AGE+ 2.628134E-02*REGRSEX-1.341117E-02*REGRWORK+ 3.805628E-02*REGREDUC+ 1.979908E-02*REGMARIT-.1283893*LPCOMMVA-.2983304*PKCOMMVA-.0034439*REGCHILD+ 9.786577E-04*REGYEARS

R-Squared Section					
Independent Variable	Cumulative Sequential	Incremental Sequential	Incremental Last	Simple	Partial
Age	0.01	0.01	0.00	0.01	0.00
Sex	0.01	0.01	0.00	0.01	0.00
Employment Status	0.01	0.00	0.00	0.00	0.00
Education Level	0.02	0.01	0.00	0.01	0.00
Marital Status	0.02	0.00	0.00	0.01	0.00
Community Variable A	0.02	0.00	0.02	0.00	0.02
Community Variable C	0.12	0.09	0.09	0.08	0.09
Number of Children at Home	0.12	0.00	0.00	0.00	0.00
Number of Years in the Community	0.12	0.00	0.00	0.01	0.00

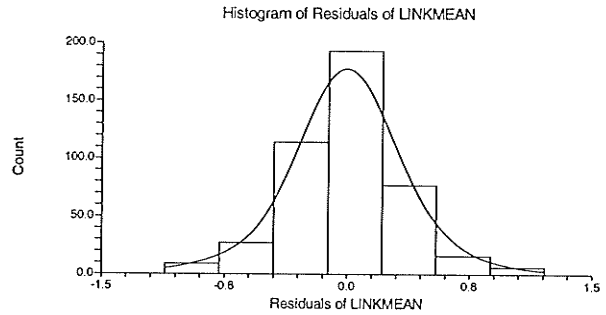
Multicollinearity Section				
Independent Variable	Variance Inflation	R-Squared Vs Other	Tolerance	Diagonal of X'X Inverse
Age	1.29	0.23	0.77	0.00
Sex	1.05	0.05	0.95	0.01
Employment Status	1.04	0.04	0.96	0.01
Education Level	1.08	0.07	0.93	0.01
Marital Status	1.12	0.11	0.89	0.01
Community Variable A	1.58	0.37	0.63	0.01
Community Variable C	1.48	0.32	0.68	0.02
Number of Children at Home	1.14	0.12	0.88	0.00
Number of Years in the Community	1.32	0.24	0.76	0.00

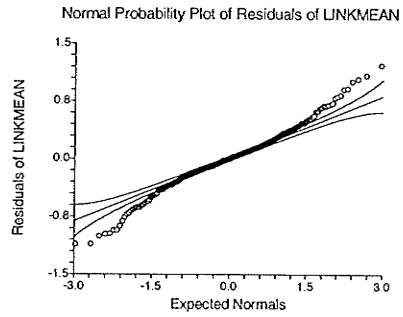
Eigenvalues of Centered Correlations				
No.	Eigenvalue	Incremental Percent	Cumulative Percent	Condition Number
1.00	1.77	19.67	19.67	1.00
2.00	1.43	15.93	35.60	1.23
3.00	1.29	14.31	49.91	1.37
4.00	1.12	12.46	62.37	1.58
5.00	0.95	10.53	72.90	1.87
6.00	0.85	9.41	82.31	2.09
7.00	0.65	7.23	89.54	2.72
8.00	0.56	6.19	95.73	3.18
9.00	0.38	4.27	100.00	4.60

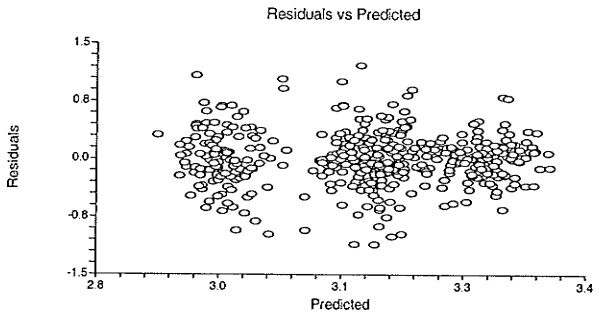
All Condition Numbers less than 100. Multicollinearity is NOT a problem.

Appendix 5-IVc
Multiple Regression Report

Plots Section







Appendix 5-V
Final Questionnaire

_____

Surveyor: _____

SOCIAL CAPITAL INDIVIDUAL QUESTIONNAIRE
Questions

I am now going to ask you questions, beginning with your date of birth

1) Birth date: _____ _____ _____
(day) (month)(year)

2) Sex: Female____ Male___

3) Present Marital Status:
(a) Married..... ___
(b) Common law..... ___
(c) Separated..... ___
(d) Divorced..... ___
(e) Widowed..... ___
(f) Single..... ___

4) Number of children under 18 living at home:____

5) Total number of people living in your home:____

6) How many years have you lived in this community? _____

7) How long have you been a Band member? _____

→
8) How well do you speak English? *(To be asked only to those individuals requiring translation)* *(Check only one)*

(+)	1	2	3	4	5	(-)	6	7	9
	Fluently	**Relatively well**	**With effort**	**A few words**	**Not at all**		***Don't know***	***I prefer not to respond***	***Not applicable***

9) How well do you understand English? *(To be asked only to those individuals requiring translation)*

(+)	1	2	3	4	5	(-)	6	7	9
	Fluently	**Relatively well**	**With effort**	**A few words**	**Not at all**		***Don't know***	***I prefer not to respond***	***Not applicable***

10) How well do you speak your First Nation language? *(Check only one)*

(+)	1	2	3	4	5	(-)	6	7	9
	Fluently	**Relatively well**	**With effort**	**A few words**	**Not at all**		***Don't know***	***I prefer not to respond***	***Not applicable***

(11) How well do you understand your First Nation language?

(+)	1	2	3	4	5	(-)	6	7	9
	Fluently	Relatively well	With effort	A few words	Not at all		*Don't know*	*I prefer not to respond*	*Not applicable*

→

12) In general, would you say that your health is:

(+)	1	2	3	4	5	(-)	6	7	9
	Excellent	Very good	Good	Fair	Poor		*Don't know*	*I prefer not to respond*	*Not applicable*

→

Thinking of the past five years, do you feel there have been any changes in your community in the following areas?

13) Use of traditional healers

(+)	1	2	3	4	5	(-)	6	7	9
	Much more	More	No change	Less	Much less		*Don't know*	*I prefer not to respond*	*Not applicable*

14) Presence of First Nation spiritual teachings

(+)	1	2	3	4	5	(-)	6	7	9
	Much more	More	No change	Less	Much less		*Don't know*	*I prefer not to respond*	*Not applicable*

15) Occurrence of traditional ceremonial activities

(+)	1	2	3	4	5	(-)	6	7	9
	Much more	More	No change	Less	Much less		*Don't know*	*I prefer not to respond*	*Not applicable*

16) Cultural awareness in school(s) and/or community programs

(+)	1	2	3	4	5	(-)	6	7	9
	Much more	More	No change	Less	Much less		*Don't know*	*I prefer not to respond*	*Not applicable*

→

If you were in need of support of any kind, to what extent would you turn to the following people for help?

17) Family and relatives

(+)	1	2	3	4	5	(-)	6	7	9
	Always	Almost always	Sometimes	Almost never	Never		*Don't know*	*I prefer not to respond*	*Not applicable*

18) To the same friends and/or acquaintances

(+)	1	2	3	4	5	(-)	6	7	9
	Always	Almost always	Sometimes	Almost never	Never		*Don't know*	*I prefer not to respond*	*Not applicable*

→

19) Compared to five years ago, how would you rate the general conditions of the roads in your community?

(+)	1	2	3	4	5	(-)	6	7	9
	A lot better	A little better	Much the same	A little worse	A lot worse		*Don't know*	*I prefer not to respond*	*Not applicable*

→

20) In the past year have you attended any of the following events: Pow Wow, Fundraising event, Competitions, Community festivities, other (specify) _____:

(+)	1	2	3	4	5	(-)	6	7	9
	More than 5 times	Between 2 and 5 times	Only once	Thought of going but didn't	Never attended		*Don't know*	*I prefer not to respond*	*Not applicable*

→

21) In the last two years, on average, have you done volunteer work in this community?

(+)	1	2	3	4	5	(-)	6	7	9
	Once a week	Once a month	Once every 6 months	Once a year	Never		*Don't know*	*I prefer not to respond*	*Not applicable*

Statements

→

Please indicate how much you agree with the following statements:

22) Our community works with other First Nations to improve the physical development of our communities (e.g., buildings, roads, houses, etc.)

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

23) First Nations organizations like the Assembly of Manitoba Chiefs (AMC), the Assembly of First Nations (AFN), and Tribal Councils help our community to get resources to improve our physical development (e.g., buildings, roads, houses, etc.)

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	**Agree**	**Neither agree nor disagree**	**Disagree**	**Strongly disagree**		***Don't know***	***I prefer not to respond***	***Not applicable***

24) Many people in this community visit other First Nations communities to learn more about their traditional ways

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	**Agree**	**Neither agree nor disagree**	**Disagree**	**Strongly disagree**		***Don't know***	***I prefer not to respond***	***Not applicable***

25) Our community works together with other communities to organize Pow Wows (or other traditional ceremonies or events)

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	**Agree**	**Neither agree nor disagree**	**Disagree**	**Strongly disagree**		***Don't know***	***I prefer not to respond***	***Not applicable***

26) If I wanted to start a small business, I could borrow money from tribal organizations

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	**Agree**	**Neither agree nor disagree**	**Disagree**	**Strongly disagree**		***Don't know***	***I prefer not to respond***	***Not applicable***

27) If I wanted to start a small business, I could borrow money from Peace Hills Trust and/or Median Credit Union

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	**Agree**	**Neither agree nor disagree**	**Disagree**	**Strongly disagree**		***Don't know***	***I prefer not to respond***	***Not applicable***

28) If myself, or someone in my family, wanted to continue with school (e.g., completing Elementary school, High School, college, technical training, university) we could receive support from a First Nations organization outside this community

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	**Agree**	**Neither agree nor disagree**	**Disagree**	**Strongly disagree**		***Don't know***	***I prefer not to respond***	***Not applicable***

29) If myself, or someone in my family, wanted to receive job training, we could receive financial support from a First Nations organization outside this community

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

30) Generally speaking, most people from the city can be trusted

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

31) Tribal councils try to do the best for my community

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

32) Generally speaking, people in the city treat me in a fair way (e.g., stores, restaurants, people on the street, etc.)

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

33) Generally speaking, people from other First Nations communities treat me in a fair way

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

34) My community works together with other First Nations to improve the situation of First Nations people

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

35) I think it is important that Chief and Council participate in First Nations organizations like the Assembly of Manitoba Chiefs (AMC), the Assembly of First Nations (AFN), and Tribal Councils

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

36) I enjoy meeting new people

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

37) I am involved in activities with people from the city

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

38) In the city I only interact with aboriginal people

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

39) I only visit people in the city whom I have known for a long time

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

40) Outside of this community I mostly interact with people of my own age

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

41) I have friends in different First Nations communities with whom I communicate on a regular basis

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

42) My experience is that people in this community have equal access to housing

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

43) If I wanted to start a small business and needed to borrow money, I know that there are funding opportunities through the band office

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

44) Job training opportunities are *equally available* to people in this community

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

45) Recreation and sports activities are *equally available* to people in this community

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

46) Day care is *equally available* to children in this community who need it

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

47) If myself, or someone in my family, wanted to receive job training, we could receive support within this community

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

48) Chief and Council works to protect our land and its resources for future generations

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

49) Chief and Council try to do the best for my community

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

50) Generally speaking, most people in this community try to be helpful to each other

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

51) Generally speaking, most people in this community can be trusted

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

52) People in this community are friendly to each other

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

53) People in this community respect Elders

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

54) I am proud of the community I live in

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

55) Theft is not a problem in our community

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

56) Overall, I have some influence in making my community a better place to live

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

57) I often talk with friends and/or family about problems in my community

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

58) Outside of my family I visit mostly with people of my age

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

59) I find that different groups in this community don't mingle much with each other

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

60) People in this community tend to always associate with the same group of people

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

61) The hospital/nursing station/health centre has incorporated traditional healing in their practice

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

62) The school has more resources than before to teach our children our First Nations language

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

63) There is support from federal or provincial government departments to organize First Nations cultural events

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

64) Banks lend money to businesses in our community (e.g., trappers, fisherman, farming, stores, tourism, etc.)

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

65) Federal or provincial government agencies lend money to businesses in this community (e.g., trappers, fisherman, farming, stores, tourism, etc.)

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

66) Compared to five years ago, the school seems to have more resources now

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

67) The justice system has incorporated traditional methods and approaches for aboriginals

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

68) Healing lodges for aboriginal offenders are used by the justice system

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

69) In the past five years Manitoba Hydro has worked on restoring the land and/or water from existing environmental damages

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

70) In the past five years, the federal/provincial governments have invested resources to restore the land and/or water from existing environmental damages

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

71) Generally speaking, the federal/provincial governments can be trusted

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

72) Generally speaking, the federal/provincial governments try to do the best for my community

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

73) This community can expect fair treatment from the federal and provincial governments

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

74) There is tension and conflict between our community and the federal and provincial governments

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

75) My community works together with the federal and/or provincial governments to improve our situation

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

76) My community works together with outside businesses to improve our situation

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

77) People should make every effort to vote when there are federal or provincial elections

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

78) I have a hard time obtaining information from the school

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

79) I have a hard time obtaining information from federal and/or provincial government departments

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

80) Relations between the federal and/or provincial governments and Chief and Council never seem to improve

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

81) School authorities listen to people in our community

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

82) Hospital/nursing station/health centre authorities listen to people in our community

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

83) Child and Family Services authorities listen to people in our community

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

84) I can get in contact with different school authorities if I need to

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

85) I can get in contact with Child and Family Services authorities if I need to

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

86) I can get in contact with different hospital/nursing station/health centre authorities if I need to

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

87) Information from the federal and/or provincial governments is easily available

(+)	1	2	3	4	5	(-)	6	7	9
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree		*Don't know*	*I prefer not to respond*	*Not applicable*

Questions

I am now going to ask you a few more questions before we finish:

→

88) Thinking about the past five years, do you feel that there has been any progress with improving water and sewage in the entire community?

(+)	1	2	3	4	5	(-)	6	7	9
	Good progress	Some progress	No progress	Situation worse	Situation much worse		*Don't know*	*I prefer not to respond*	*Not applicable*

89) Thinking about the past five years, do you feel that there has been any progress with improving the school facilities in the community?

(+)	1	2	3	4	5	(-)	6	7	9
	Good progress	Some progress	No progress	Situation worse	Situation much worse		*Don't know*	*I prefer not to respond*	*Not applicable*

90) Thinking about the past five years, do you feel that there has been any progress with improving hospital/nursing station/health centre facilities in the community?

(+)	1	2	3	4	5	(-)	6	7	9
	Good progress	Some progress	No progress	Situation worse	Situation much worse		*Don't know*	*I prefer not to respond*	*Not applicable*

→

91) Compared to five years ago, how would you rate the economic situation of your community (e.g., jobs, employment, prosperity, etc.) ?

(+)	1	2	3	4	5	(-)	6	7	9
	A lot better	A little better	Much the same	A little worse	A lot worse		*Don't know*	*I prefer not to respond*	*Not applicable*

→

92) Thinking about the future, and if you continue living in this community, overall do you think that you and your household will be:

(+)	1	2	3	4	5	(-)	6	7	9
	Much better off	Somewhat better off	About the same	Somewhat worse off	Much worse off		*Don't know*	*I prefer not to respond*	*Not applicable*

→

93) Thinking about the past five years, has there been any improvement in the recreation facilities in the community?

(+)	1	2	3	4	5	(-)	6	7	9
	Much improvement	Some improvement	No improvement	Situation worse	Situation much worse		*Don't know*	*I prefer not to respond*	*Not applicable*

→

94) Did you vote in the last election for Chief and Council?
Yes ___
No ___
(6) Don't know
(7) I prefer not to respond
(9) Not applicable

95) Did you vote in the last Federal election?
Yes ___
No ___
(6) Don't know
(7) I prefer not to respond
(9) Not applicable

96) Did you vote in the last Provincial election?
Yes ___
No ___
(6) Don't know
(7) I prefer not to respond
(9) Not applicable

→

97) What is the highest level of schooling you have completed?
a) Some elementary school..... ____
b) Elementary school graduation..... ____
c) Some high school..... ____
d) High school graduation diploma..... ____
e) Some trade, technical, or vocational school..... ____
f) Some community college or university..... ____
g) Community college or university graduation diploma..... ____
h) Don't know..... ____
i) I prefer not to respond..... ____

→

98) Are you currently working for pay (wages, salary, self-employment)?
Yes ___ *(If yes, answer 133 and then skip to 137)*
No ___ *(If no go to question 134)*

→

99) For the year ending December 31, 2000, please think of the total income, before deductions, from all sources, for all household members, including yourself. Please look at this list and tell me which range it falls into *(Interviewer: mark response below. Check only one income category)*

a) No income or income loss ___
b) $1 - $9,999 ___
d) $10,000 - $19,999 ___
f) $20,000 - $29,999 ___
h) $30,000 - $39,999 ___
i) $40,000 - $49,999 ___
j) $50,000 - $59,999 ___
k $60,000 - $69,999 ___
l) $70,000 - $79,999 ___
m) $80,000 and over ___
n) Don't know ___
o) I prefer not to respond ___

This concludes our list of questions. Thank you very much for your co-operation.

Start time: _____

End time: _____

Date: _____

Appendix 5-VI
Chi-Square
Don't Know Responses by Community

Item	Community						Chi-Square Tests		
	Comm C		Comm B		Comm A		Value	df	Asymp. Sig. (2-sided)
	1	2	1	2	1	2			
DQ13 BO-SIR-S	25	91	41	81	57	134	4.46	2	0.11
DQ14 BO-SIR-S	27	86	45	77	62	133	4.63	2	0.10
DQ15 BO-SIR-S	25	92	44	77	51	140	6.92	2	0.03
DQ16 BO-SIR-S	32	86	47	79	54	138	3.90	2	0.14
DQ17 BO-NET-D	0	119	0	131	0	201	0.00	0	0.00
DQ18 BO-NET-D	2	118	2	128	2	198	0.31	2	0.86
DQ19 BO-NET-D	4	116	2	126	2	196	2.34	2	0.31
DQ20 BO-SIR-P	0	119	2	131	1	202	2.34	2	0.31
DQ22 BO-CUL-P	8	104	0	125	3	189	13.46	2	0.00
DQ23 BO-CUL-P	0	115	0	129	1	200	1.22	2	0.54
DQ24 BO-CUL-C	5	108	1	123	4	193	3.56	2	0.17
DQ62 BO-SIR-P	7	107	6	112	16	186	1.03	2	0.60
DQ63 BO-SIR-F	12	91	25	87	23	163	6.64	2	0.04
DQ64 BO-SIR-F	15	95	29	99	41	152	3.55	2	0.17
DQ65 BO-SIR-H	6	110	16	104	35	148	9.54	2	0.01
DQ66 BO-SIR-H	8	113	14	109	30	174	4.86	2	0.09
DQ67 BO-SIR-H	8	112	24	102	36	165	9.37	2	0.01
DQ68 BO-SIR-N	15	104	22	106	25	173	1.59	2	0.45
DQ69 BO-SIR-N	9	110	28	94	24	176	13.00	2	0.00
DQ70 BO-SIR-N	5	114	6	119	8	177	0.06	2	0.97
DQ71 BO-CUL-T	4	115	14	109	13	186	6.09	2	0.05
DQ72 BO-CUL-T	6	113	9	120	14	183	0.58	2	0.75
DQ73 BO-CUL-T	7	111	12	110	13	178	1.52	2	0.47
DQ74 BO-CUL-NO	2	115	2	125	11	184	5.26	2	0.07
DQ75 BO-CUL-NO	3	119	3	128	15	181	6.91	2	0.03
DQ76 BO-CUL-NO	4	115	3	126	1	187	3.48	2	0.18
DQ77 BO-CUL-NO	5	114	4	122	6	194	0.35	2	0.84
DQ78 BO-CUL-CA	0	115	2	126	4	188	2.34	2	0.31
DQ79 BO-CUL-CA	5	105	20	98	22	165	8.79	2	0.01
DQ80 B0-CUL-CA	1	113	3	113	1	194	2.81	2	0.25
DQ81 BO-CUL-PA	0	121	1	133	4	197	2.97	2	0.23
DQ82 BO-NET-I	2	116	6	125	19	179	8.83	2	0.01
DQ125 BO-SIR-F	4	115	22	103	18	182	14.18	2	0.00
DQ126 BO-CUL-T	9	106	46	81	10	179	63.19	2	0.00
DQ127 BO-SIR-F	8	112	29	95	26	173	14.37	2	0.00
DQ128 BO-CUL-PA	0	115	4	125	3	190	3.71	2	0.16
DQ83r BO-NET-I	8	105	17	110	21	172	2.59	2	0.28
DQ84r BO-NET-I	2	111	1	125	0	195	3.29	2	0.19
DQ85r BO-NET-I	7	107	18	115	25	176	3.98	2	0.14
DQ86r BO-NET-F	5	112	21	110	18	179	9.81	2	0.01
DQ87r BO-NET-F	2	111	4	119	3	186	1.09	2	0.58
DQ88r BO-NET-F	11	102	21	107	31	165	2.73	2	0.26
DQ89r BO-NET-F	0	116	3	124	1	194	4.36	2	0.11
DQ90r BO-NET-D	3	107	8	114	7	178	2.28	2	0.32

1 = don't know responses
2 = all other responses

Appendix 5-VI

Chi-Square

Don't Know Responses by Community

Item	Community						Chi-Square Tests		
	Comm C		Comm B		Comm A		Value	df	Asymp. Sig. (2-sided)
	1	2	1	2	1	2			
DQ25 BR-SIR-P	21	98	50	75	48	147	16.52	2	0.00
DQ26 BR-SIR-P	18	100	75	49	53	145	62.47	2	0.00
DQ27 BR-SIR-S	24	93	69	58	57	140	35.12	2	0.00
DQ28 BR-SIR-S	33	84	62	67	58	143	15.43	2	0.00
DQ29 BR-SIR-S	28	91	80	47	64	132	46.06	2	0.00
DQ30 BR-SIR-S	5	111	6	119	4	196	2.23	2	0.33
DQ31 BR-SIR-F	0	111	3	117	2	188	3.13	2	0.21
DQ32 BR-SIR-F	32	78	75	42	49	140	49.45	2	0.00
DQ33 BR-SIR-F	33	75	85	30	72	118	51.45	2	0.00
DQ34 BR-SIR-H	28	88	69	57	51	151	36.39	2	0.00
DQ35 BR-SIR-H	35	81	71	56	64	136	23.24	2	0.00
DQ36 BR-SIR-N	16	98	66	62	49	149	44.96	2	0.00
DQ37 BR-CUL-T	13	99	32	89	21	171	15.39	2	0.00
DQ38 BR-CUL-T	20	93	34	87	31	162	7.23	2	0.03
DQ39 BR-CUL-T	14	99	46	64	22	173	46.72	2	0.00
DQ40 BR-CUL-NO	12	102	13	105	3	196	15.17	2	0.00
DQ41 BR-CUL-NO	7	113	15	111	2	196	17.93	2	0.00
DQ42 BR-CUL-NO	1	118	4	126	1	196	4.21	2	0.12
DQ44 BR-CUL-CA	30	86	71	57	49	149	37.30	2	0.00
DQ45 BR-CUL-CA	6	111	24	99	12	186	19.50	2	0.00
DQ46 BR-CUL-CA	4	110	7	106	3	188	4.70	2	0.10
DQ48 BR-CUL-PA	5	103	6	106	3	181	3.49	2	0.18
DQ49 BR-CUL-PA	2	97	4	102	3	184	1.43	2	0.49
DQ50 BR-CUL-PA	4	113	3	125	1	196	3.79	2	0.15
DQ53 BR-NET-I	19	97	39	86	23	170	19.13	2	0.00
DQ60 BR-NET-D	2	108	2	126	2	197	0.39	2	0.82
DQ61 BR-NET-D	2	110	2	124	4	193	0.09	2	0.96
DQ43r BR-CUL-NO	29	85	56	70	62	138	10.67	2	0.01
DQ51r BR-NET-I	3	103	5	120	2	193	3.08	2	0.21
DQ52r BR-NET-I	14	92	32	67	11	169	35.09	2	0.00
DQ54r BR-NET-F	5	109	6	121	5	187	1.17	2	0.56
DQ55r BR-NET-F	12	95	14	109	5	184	11.36	2	0.00
DQ56r BR-NET-F	3	107	4	122	1	198	3.70	2	0.16
DQ57r BR-NET-F	2	115	2	124	3	195	0.02	2	0.99
DQ58r BR-NET-D	0	114	0	127	1	199	1.21	2	0.55
DQ59r BR-NET-D	4	107	2	123	8	185	1.61	2	0.45

1 = don't know responses
2 = all other responses

Appendix 5-VI
Chi-Square
Don't Know Responses by Community

Item	Community						Chi-Square Tests		
	Comm C		Comm B		Comm A		Value	df	Asymp. Sig. (2-sided)
	1	2	1	2	1	2			
DQ91 L-SIR-S	37	82	61	66	61	131	10.66	2	0.01
DQ92 L-SIR-S	15	103	28	103	58	141	11.60	2	0.00
DQ93 L-SIR-S	44	74	85	41	99	98	21.77	2	0.00
DQ94 L-SIR-S	40	77	89	42	107	91	28.44	2	0.00
DQ95 L-SIR-S	44	73	97	36	109	87	31.56	2	0.00
DQ96 L-SIR-H	8	112	29	103	50	153	16.71	2	0.00
DQ97 L-SIR-H	26	93	78	53	59	137	44.47	2	0.00
DQ98 L-SIR-H	31	84	81	49	76	121	33.47	2	0.00
DQ99 L-SIR-N	15	102	46	69	112	83	60.41	2	0.00
DQ100 L-SIR-N	26	91	68	52	105	93	36.09	2	0.00
DQ101 L-CUL-T	13	99	53	53	44	147	43.54	2	0.00
DQ102 L-CUL-T	18	100	58	55	52	140	37.27	2	0.00
DQ103 L-CUL-NO	14	103	57	59	44	153	44.69	2	0.00
DQ106 L-CUL-CA	23	92	67	55	73	124	30.82	2	0.00
DQ107 L-CUL-CA	31	85	68	56	80	116	19.58	2	0.00
DQ108 L-CUL-CA	29	87	75	44	63	134	42.63	2	0.00
DQ109 L-CUL-PA	3	109	9	119	8	190	2.83	2	0.24
DQ115 L-NET-F	13	103	33	92	47	144	10.14	2	0.01
DQ116 L-NET-F	6	114	30	93	39	158	18.06	2	0.00
DQ117 L-NET-F	16	100	26	97	48	142	5.72	2	0.06
DQ118 L-NET-D	22	91	36	90	33	151	5.39	2	0.07
DQ119 L-NET-D	13	103	22	102	21	157	2.89	2	0.24
DQ120 L-NET-D	12	106	34	91	18	176	22.12	2	0.00
DQ121 L-NET-D	29	87	65	60	44	149	33.20	2	0.00
DQ122 L-SIR-P	2	119	5	124	22	179	12.80	2	0.00
DQ123 L-SIR-P	3	119	14	115	30	168	13.01	2	0.00
DQ124 L-SIR-P	2	119	20	110	11	188	19.10	2	0.00
DQ129 L-CUL-PA	4	110	9	116	4	189	5.35	2	0.07
DQ130 L-CUL-PA	7	105	13	110	6	188	7.40	2	0.03
DQ104r L-CUL-NO	23	91	80	41	86	113	50.41	2	0.00
DQ105r L-CUL-NO	37	78	83	38	87	110	33.27	2	0.00
DQ110r L-NET-I	12	98	16	103	26	146	1.02	2	0.60
DQ111r L-NET-I	12	105	25	98	22	162	6.12	2	0.05
DQ112r L-NET-I	23	87	21	93	33	128	0.26	2	0.88
DQ113r L-NET-I	23	84	43	76	39	132	8.25	2	0.02
DQ114r L-NET-F	16	96	70	51	57	129	50.91	2	0.00

1 = don't know responses
2 = all other responses

Appendix 5-VII

Chi-Square

Don't Know Responses by Researcher

Item	Researcher								Chi-Square Tests		
	A		B		C		D		Value	df	Asymp. Sig. (2-sided)
	1	2	1	2	1	2	1	2			
DQ13 BO-SIR-S	0	2	37	88	16	36	4	8	0.95	3	0.81
DQ14 BO-SIR-S	0	2	43	86	15	37	4	8	1.30	3	0.73
DQ15 BO-SIR-S	0	2	33	92	15	37	3	9	0.87	3	0.83
DQ16 BO-SIR-S	0	2	32	94	18	34	4	8	2.49	3	0.48
DQ17 BO-NET-D	0	2	0	129	0	57	0	13	0.00	0	0.00
DQ18 BO-NET-D	0	2	0	128	2	55	0	13	5.07	3	0.17
DQ19 BO-NET-D	0	1	0	127	1	56	1	12	7.43	3	0.06
DQ20 BO-SIR-P	0	2	0	131	1	56	0	13	2.57	3	0.46
DQ22 BO-CUL-P	0	2	1	123	1	53	1	11	4.10	3	0.25
DQ23 BO-CUL-P	0	2	0	129	1	56	0	13	2.54	3	0.47
DQ24 BO-CUL-C	0	2	3	122	1	56	0	13	0.42	3	0.94
DQ62 BO-SIR-P	0	2	6	125	9	47	1	12	7.28	3	0.06
DQ63 BO-SIR-F	0	2	10	107	10	45	3	9	5.34	3	0.15
DQ64 BO-SIR-F	0	2	18	109	21	30	2	11	16.71	3	0.00
DQ65 BO-SIR-H	1	1	13	118	19	38	2	11	16.80	3	0.00
DQ66 BO-SIR-H	0	2	13	118	15	43	2	11	8.49	3	0.04
DQ67 BO-SIR-H	0	2	18	110	15	43	3	10	4.46	3	0.22
DQ68 BO-SIR-N	0	2	8	122	14	40	3	9	15.55	3	0.00
DQ69 BO-SIR-N	1	1	10	119	11	45	2	11	8.18	3	0.04
DQ70 BO-SIR-N	0	2	4	116	4	47	0	12	2.44	3	0.49
DQ71 BO-CUL-T	0	2	7	122	5	50	1	12	1.02	3	0.80
DQ72 BO-CUL-T	0	2	5	126	8	43	1	12	7.99	3	0.05
DQ73 BO-CUL-T	0	2	6	120	6	44	1	12	3.12	3	0.37
DQ74 BO-CUL-NO	0	2	7	120	3	50	1	12	0.23	3	0.97
DQ75 BO-CUL-NO	0	2	8	119	3	51	4	9	10.66	3	0.01
DQ76 BO-CUL-NO	0	2	1	121	0	52	0	12	0.54	3	0.91
DQ77 BO-CUL-NO	0	2	4	124	2	55	0	13	0.52	3	0.91
DQ78 BO-CUL-CA	0	2	3	119	0	55	1	12	3.30	3	0.35
DQ79 BO-CUL-CA	0	2	15	108	6	44	1	11	0.43	3	0.94
DQ80 B0-CUL-CA	0	2	1	127	0	52	0	13	0.53	3	0.91
DQ81 BO-CUL-PA	0	2	2	127	1	56	1	12	2.35	3	0.50
DQ82 BO-NET-I	0	2	12	115	5	51	2	11	0.75	3	0.86
DQ125 BO-SIR-F	1	1	7	120	7	51	3	10	9.80	3	0.02
DQ126 BO-CUL-T	0	2	5	112	3	54	2	11	3.00	3	0.39
DQ127 BO-SIR-F	1	1	15	113	9	47	1	12	3.38	3	0.34
DQ128 BO-CUL-PA	0	2	3	125	0	50	0	13	1.55	3	0.67
DQ83r BO-NET-I	0	2	12	114	6	46	3	10	2.50	3	0.48
DQ84r BO-NET-I	0	2	0	124	0	56	0	13	0.00	0	0.00
DQ85r BO-NET-I	0	2	14	115	7	50	4	9	4.59	3	0.20
DQ86r BO-NET-F	0	2	8	117	6	51	4	9	8.79	3	0.03
DQ87r BO-NET-F	0	2	1	120	2	52	0	12	2.22	3	0.53
DQ88r BO-NET-F	0	2	17	108	11	45	3	10	1.97	3	0.58
DQ89r BO-NET-F	0	2	0	125	0	55	1	12	14.07	3	0.00
DQ90r BO-NET-D	0	2	4	118	2	48	1	10	1.02	3	0.80

1 = don't know responses
2 = all other responses

Appendix 5-VII

Chi-Square

Don't Know Responses by Researcher

Item	Researcher				Chi-Square Tests		
	A		B		Value	df	Asymp. Sig. (2-sided)
	1	2	1	2			
DQ13 BO-SIR-S	25	47	16	34	0.10	1	0.75
DQ14 BO-SIR-S	28	43	17	34	0.48	1	0.49
DQ15 BO-SIR-S	27	43	17	34	0.35	1	0.55
DQ16 BO-SIR-S	26	48	21	31	0.36	1	0.55
DQ17 BO-NET-D	0	75	0	56	0.00	0	0.00
DQ18 BO-NET-D	1	75	1	53	0.06	1	0.81
DQ19 BO-NET-D	2	73	0	53	1.44	1	0.23
DQ20 BO-SIR-P	1	76	1	55	0.05	1	0.82
DQ22 BO-CUL-P	0	72	0	53	0.00	0	0.00
DQ23 BO-CUL-P	0	74	0	55	0.00	0	0.00
DQ24 BO-CUL-C	1	69	0	54	0.78	1	0.38
DQ62 BO-SIR-P	4	61	2	51	0.34	1	0.56
DQ63 BO-SIR-F	14	47	11	40	0.03	1	0.86
DQ64 BO-SIR-F	15	59	14	40	0.57	1	0.45
DQ65 BO-SIR-H	13	54	3	50	4.84	1	0.03
DQ66 BO-SIR-H	12	58	2	51	5.35	1	0.02
DQ67 BO-SIR-H	17	55	7	47	2.27	1	0.13
DQ68 BO-SIR-N	17	56	5	50	4.44	1	0.04
DQ69 BO-SIR-N	20	50	8	44	2.93	1	0.09
DQ70 BO-SIR-N	3	66	3	53	0.07	1	0.79
DQ71 BO-CUL-T	10	60	4	49	1.36	1	0.24
DQ72 BO-CUL-T	5	68	4	52	0.00	1	0.95
DQ73 BO-CUL-T	8	63	4	47	0.39	1	0.53
DQ74 BO-CUL-NO	1	73	1	52	0.06	1	0.81
DQ75 BO-CUL-NO	3	74	0	54	2.15	1	0.14
DQ76 BO-CUL-NO	3	70	0	56	2.36	1	0.13
DQ77 BO-CUL-NO	3	68	1	54	0.58	1	0.45
DQ78 BO-CUL-CA	2	70	0	56	1.58	1	0.21
DQ79 BO-CUL-CA	17	49	3	49	8.26	1	0.00
DQ80 B0-CUL-CA	2	63	1	50	0.14	1	0.71
DQ81 BO-CUL-PA	1	78	0	55	0.70	1	0.40
DQ82 BO-NET-I	3	74	3	51	0.20	1	0.66
DQ125 BO-SIR-F	20	50	2	53	13.21	1	0.00
DQ126 BO-CUL-T	41	31	5	50	30.91	1	0.00
DQ127 BO-SIR-F	25	44	4	51	14.33	1	0.00
DQ128 BO-CUL-PA	3	73	1	52	0.44	1	0.51
DQ83r BO-NET-I	9	64	8	46	0.17	1	0.68
DQ84r BO-NET-I	0	73	1	52	1.39	1	0.24
DQ85r BO-NET-I	14	64	4	51	3.14	1	0.08
DQ86r BO-NET-F	16	60	5	50	3.39	1	0.07
DQ87r BO-NET-F	3	67	1	52	0.55	1	0.46
DQ88r BO-NET-F	16	57	5	50	3.76	1	0.05
DQ89r BO-NET-F	2	71	1	53	0.11	1	0.75
DQ90r BO-NET-D	5	65	3	49	0.09	1	0.76

1 = don't know responses
2 = all other responses

Appendix 5-VII

Chi-Square

Don't Know Responses by Researcher

Item	Researcher												Chi-Square Tests		
	A		B		C		D		E		F		Value	df	Asymp. Sig. (2-sided)
	1	2	1	2	1	2	1	2	1	2	1	2			
DQ13 BO-SIR-S	11	23	1	0	6	8	2	15	0	14	5	31	15.80	5	0.01
DQ14 BO-SIR-S	12	20	0	1	7	6	1	16	0	14	7	29	17.81	5	0.00
DQ15 BO-SIR-S	8	26	0	1	7	7	1	16	0	14	9	28	13.60	5	0.02
DQ16 BO-SIR-S	6	29	0	1	9	5	5	12	0	14	12	25	17.70	5	0.00
DQ17 BO-NET-D	0	36	0	1	0	13	0	16	0	14	0	39	0.00	0	0.00
DQ18 BO-NET-D	1	35	0	1	0	14	0	17	0	14	1	37	1.27	5	0.94
DQ19 BO-NET-D	3	32	0	1	0	14	0	17	0	14	1	38	4.64	5	0.46
DQ20 BO-SIR-P	0	35	0	1	0	14	0	17	0	14	0	38	0.00	0	0.00
DQ22 BO-CUL-P	5	29	0	1	0	10	0	17	1	13	2	34	5.22	5	0.39
DQ23 BO-CUL-P	0	33	0	1	0	14	0	17	0	13	0	37	0.00	0	0.00
DQ24 BO-CUL-C	1	29	0	1	3	11	0	17	0	14	1	36	11.40	5	0.04
DQ62 BO-SIR-P	2	31	0	1	0	13	1	16	0	14	4	32	3.38	5	0.64
DQ63 BO-SIR-F	3	25	0	1	3	7	2	15	0	13	4	30	5.14	5	0.40
DQ64 BO-SIR-F	4	27	0	1	3	9	2	15	1	12	5	31	1.93	5	0.86
DQ65 BO-SIR-H	2	32	0	1	1	12	1	16	0	13	2	36	0.99	5	0.95
DQ66 BO-SIR-H	2	34	0	1	1	13	1	16	0	14	4	35	1.99	5	0.85
DQ67 BO-SIR-H	1	35	0	1	2	12	2	15	0	14	3	35	4.06	5	0.54
DQ68 BO-SIR-N	5	31	0	1	3	11	1	16	0	13	6	32	4.11	5	0.53
DQ69 BO-SIR-N	3	33	0	1	0	14	3	14	0	14	3	34	4.89	5	0.43
DQ70 BO-SIR-N	1	35	0	1	1	12	0	17	0	14	3	34	3.29	5	0.66
DQ71 BO-CUL-T	0	37	0	1	0	14	1	16	0	13	3	34	5.16	5	0.40
DQ72 BO-CUL-T	2	34	0	1	1	12	1	16	0	14	2	36	1.04	5	0.96
DQ73 BO-CUL-T	2	33	0	1	1	12	1	16	0	14	3	35	1.28	5	0.94
DQ74 BO-CUL-NO	0	35	0	1	0	13	0	17	0	14	2	35	4.40	5	0.49
DQ75 BO-CUL-NO	1	36	0	1	0	14	0	17	0	14	2	37	2.33	5	0.80
DQ76 BO-CUL-NO	1	36	0	1	1	13	1	16	0	14	1	35	1.56	5	0.91
DQ77 BO-CUL-NO	3	33	0	1	0	13	1	16	0	14	1	37	3.11	5	0.68
DQ78 BO-CUL-CA	0	35	0	1	0	13	0	17	0	14	0	35	0.00	0	0.00
DQ79 BO-CUL-CA	1	32	0	1	1	12	0	16	0	14	3	30	3.52	5	0.62
DQ80 B0-CUL-CA	0	34	0	1	0	13	0	17	0	13	1	35	2.19	5	0.82
DQ81 BO-CUL-PA	0	37	0	1	0	14	0	17	0	13	0	39	0.00	0	0.00
DQ82 BO-NET-I	0	35	0	1	1	13	0	17	0	13	1	37	3.83	5	0.57
DQ125 BO-SIR-F	1	35	0	1	1	13	0	17	0	14	2	35	2.24	5	0.82
DQ126 BO-CUL-T	4	30	1	0	0	13	0	17	0	13	4	33	16.62	5	0.01
DQ127 BO-SIR-F	3	33	0	1	1	13	0	17	0	14	4	34	3.36	5	0.64
DQ128 BO-CUL-PA	0	36	0	1	0	12	0	16	0	14	0	36	0.00	0	0.00
DQ83r BO-NET-I	3	31	0	1	1	12	0	17	0	11	4	33	3.16	5	0.68
DQ84r BO-NET-I	0	32	0	1	0	13	0	17	0	14	2	34	4.36	5	0.50
DQ85r BO-NET-I	3	30	0	1	2	12	0	17	0	12	2	35	4.11	5	0.53
DQ86r BO-NET-F	1	34	0	1	2	11	0	17	0	13	2	36	5.57	5	0.35
DQ87r BO-NET-F	1	33	0	1	0	11	0	17	0	13	1	36	1.21	5	0.94
DQ88r BO-NET-F	3	33	0	1	1	9	0	17	0	13	7	29	7.29	5	0.20
DQ89r BO-NET-F	0	33	0	1	0	14	0	17	0	14	0	37	0.00	0	0.00
DQ90r BO-NET-D	1	32	0	1	0	10	0	17	0	14	2	33	2.37	5	0.80

1 = don't know responses
2 = all other responses

Appendix 5-VII
Chi-Square
Don't Know Responses by Researcher

Item	Researcher								Chi-Square Tests		
	A		B		C		D		Value	df	Asymp. Sig. (2-sided)
	1	2	1	2	1	2	1	2			
DQ25 BR-SIR-P	2	0	26	100	14	40	6	7	10.50	3	0.02
DQ26 BR-SIR-P	1	1	30	98	17	38	5	8	2.66	3	0.45
DQ27 BR-SIR-S	2	0	36	91	15	41	4	8	5.17	3	0.16
DQ28 BR-SIR-S	1	1	36	92	16	42	5	8	1.10	3	0.78
DQ29 BR-SIR-S	1	1	37	90	22	32	4	9	2.62	3	0.46
DQ30 BR-SIR-S	0	2	2	126	1	56	1	12	2.33	3	0.51
DQ31 BR-SIR-F	0	2	1	123	0	54	1	9	8.35	3	0.04
DQ32 BR-SIR-F	0	2	28	92	16	38	5	8	2.57	3	0.46
DQ33 BR-SIR-F	1	1	42	79	22	32	7	6	2.24	3	0.53
DQ34 BR-SIR-H	1	1	30	101	15	41	5	8	2.30	3	0.51
DQ35 BR-SIR-H	2	0	35	94	23	33	4	9	7.78	3	0.05
DQ36 BR-SIR-N	1	1	29	97	16	41	3	10	1.25	3	0.74
DQ37 BR-CUL-T	0	2	13	110	6	48	2	11	0.53	3	0.91
DQ38 BR-CUL-T	1	1	19	106	9	44	2	11	1.82	3	0.61
DQ39 BR-CUL-T	1	1	11	117	9	43	1	12	5.97	3	0.11
DQ40 BR-CUL-NO	0	2	2	128	0	54	1	12	4.21	3	0.24
DQ41 BR-CUL-NO	0	2	1	128	0	54	1	12	6.45	3	0.09
DQ42 BR-CUL-NO	0	2	1	128	0	54	0	12	0.53	3	0.91
DQ44 BR-CUL-CA	1	1	29	98	15	41	4	9	1.31	3	0.73
DQ45 BR-CUL-CA	0	2	4	124	7	48	1	12	6.42	3	0.09
DQ46 BR-CUL-CA	0	2	2	120	0	54	1	12	4.05	3	0.26
DQ48 BR-CUL-PA	0	2	1	119	2	51	0	90	2.18	3	0.54
DQ49 BR-CUL-PA	0	2	2	119	0	54	1	9	5.38	3	0.15
DQ50 BR-CUL-PA	0	2	1	126	0	57	0	11	0.55	3	0.91
DQ53 BR-NET-I	0	2	8	115	12	44	3	9	10.49	3	0.02
DQ60 BR-NET-D	0	2	1	125	1	57	0	13	0.51	3	0.92
DQ61 BR-NET-D	0	2	2	123	1	57	1	11	2.58	3	0.46
DQ43r BR-CUL-NO	1	1	38	92	18	37	5	8	0.94	3	0.82
DQ51r BR-NET-I	0	2	0	124	0	56	2	11	28.29	3	0.00
DQ52r BR-NET-I	0	1	7	112	2	48	2	8	3.83	3	0.28
DQ54r BR-NET-F	0	2	3	120	1	54	1	11	1.75	3	0.63
DQ55r BR-NET-F	0	2	3	117	1	54	1	11	1.72	3	0.63
DQ56r BR-NET-F	0	2	0	126	0	58	1	12	14.38	3	0.00
DQ57r BR-NET-F	0	2	2	123	1	57	0	13	0.25	3	0.97
DQ58r BR-NET-D	0	2	1	128	0	56	0	13	0.55	3	0.91
DQ59r BR-NET-D	0	2	5	120	1	53	2	10	5.54	3	0.14

1 = don't know responses
2 = all other responses

Appendix 5-VII

Chi-Square

Don't Know Responses by Researcher

Item	Researcher				Chi-Square Tests		
	A		B		Value	df	Asymp. Sig. (2-sided)
	1	2	1	2			
DQ25 BR-SIR-P	32	38	18	37	2.17	1	0.14
DQ26 BR-SIR-P	46	24	29	25	1.84	1	0.18
DQ27 BR-SIR-S	43	30	26	28	1.45	1	0.23
DQ28 BR-SIR-S	36	40	26	27	0.04	1	0.85
DQ29 BR-SIR-S	50	22	30	25	2.97	1	0.09
DQ30 BR-SIR-S	5	67	1	52	1.71	1	0.19
DQ31 BR-SIR-F	3	65	0	52	2.35	1	0.13
DQ32 BR-SIR-F	44	20	31	22	1.33	1	0.25
DQ33 BR-SIR-F	52	17	33	13	0.19	1	0.67
DQ34 BR-SIR-H	44	28	25	29	2.73	1	0.10
DQ35 BR-SIR-H	46	26	25	30	4.30	1	0.04
DQ36 BR-SIR-N	43	31	23	31	3.01	1	0.08
DQ37 BR-CUL-T	26	44	6	45	9.77	1	0.00
DQ38 BR-CUL-T	27	44	7	43	8.38	1	0.00
DQ39 BR-CUL-T	28	29	18	35	2.59	1	0.11
DQ40 BR-CUL-NO	10	58	3	47	2.23	1	0.14
DQ41 BR-CUL-NO	10	62	5	49	0.63	1	0.43
DQ42 BR-CUL-NO	3	74	1	52	0.43	1	0.51
DQ44 BR-CUL-CA	48	25	23	32	7.28	1	0.01
DQ45 BR-CUL-CA	12	58	12	41	0.58	1	0.45
DQ46 BR-CUL-CA	5	58	2	48	0.74	1	0.39
DQ48 BR-CUL-PA	3	57	3	49	0.03	1	0.86
DQ49 BR-CUL-PA	3	56	1	47	0.66	1	0.42
DQ50 BR-CUL-PA	2	73	1	52	0.08	1	0.77
DQ53 BR-NET-I	27	43	12	43	4.03	1	0.05
DQ60 BR-NET-D	2	72	0	54	1.48	1	0.22
DQ61 BR-NET-D	0	73	2	51	2.80	1	0.09
DQ43r BR-CUL-NO	37	36	19	34	2.74	1	0.10
DQ51r BR-NET-I	4	66	1	54	1.22	1	0.27
DQ52r BR-NET-I	16	31	16	36	0.12	1	0.73
DQ54r BR-NET-F	1	71	5	50	4.11	1	0.04
DQ55r BR-NET-F	10	59	4	50	1.51	1	0.22
DQ56r BR-NET-F	3	70	1	52	0.49	1	0.48
DQ57r BR-NET-F	1	72	1	52	0.05	1	0.82
DQ58r BR-NET-D	0	74	0	53	0.00	0	0.00
DQ59r BR-NET-D	1	70	1	53	0.04	1	0.85

1 = don't know responses
2 = all other responses

Appendix 5-VII

Chi-Square

Don't Know Responses by Researcher

Item	Researcher												Chi-Square Tests		
	A		B		C		D		E		F		Value	df	Asymp. Sig. (2-sided)
	1	2	1	2	1	2	1	2	1	2	1	2			
DQ25 BR-SIR-P	6	29	0	1	3	11	4	13	0	14	8	30	4.07	5	0.54
DQ26 BR-SIR-P	6	30	0	1	0	13	3	14	0	14	9	28	7.53	5	0.18
DQ27 BR-SIR-S	9	26	0	1	4	9	3	14	0	14	8	29	5.40	5	0.37
DQ28 BR-SIR-S	12	23	0	1	8	6	4	13	0	14	9	27	12.69	5	0.03
DQ29 BR-SIR-S	10	26	0	1	7	6	3	14	0	14	8	30	12.07	5	0.03
DQ30 BR-SIR-S	1	34	0	1	1	12	0	16	0	14	3	34	3.23	5	0.67
DQ31 BR-SIR-F	0	35	0	1	0	8	0	17	0	14	0	36	0.00	0	0.00
DQ32 BR-SIR-F	12	24	0	1	4	4	2	14	0	12	14	23	10.85	5	0.05
DQ33 BR-SIR-F	8	26	0	1	5	5	4	13	0	12	16	18	13.05	5	0.02
DQ34 BR-SIR-H	12	24	1	0	4	7	1	16	0	14	10	27	13.42	5	0.02
DQ35 BR-SIR-H	14	22	0	1	6	5	2	15	0	14	13	24	14.05	5	0.02
DQ36 BR-SIR-N	5	31	0	1	4	9	3	14	0	14	4	19	5.72	5	0.33
DQ37 BR-CUL-T	5	29	0	1	3	8	1	16	0	13	4	32	5.34	5	0.38
DQ38 BR-CUL-T	6	27	0	1	5	7	2	15	0	14	7	29	8.45	5	0.13
DQ39 BR-CUL-T	5	33	0	1	1	11	2	15	0	14	6	25	3.72	5	0.59
DQ40 BR-CUL-NO	4	31	0	1	5	7	0	17	0	14	3	32	16.29	5	0.01
DQ41 BR-CUL-NO	3	34	0	1	1	13	1	16	0	14	2	35	1.33	5	0.93
DQ42 BR-CUL-NO	0	37	0	1	0	14	0	17	0	13	1	36	2.24	5	0.82
DQ44 BR-CUL-CA	9	25	0	1	8	5	2	15	0	14	11	26	15.92	5	0.01
DQ45 BR-CUL-CA	2	34	0	1	1	11	0	17	0	14	3	34	2.67	5	0.75
DQ46 BR-CUL-CA	2	31	0	1	0	13	0	17	0	14	2	34	2.72	5	0.74
DQ48 BR-CUL-PA	2	29	0	1	1	9	0	17	0	14	2	33	2.53	5	0.77
DQ49 BR-CUL-PA	2	27	0	1	0	9	0	17	0	14	0	29	4.93	5	0.43
DQ50 BR-CUL-PA	2	34	0	1	1	11	0	17	0	14	1	36	2.57	5	0.77
DQ53 BR-NET-I	4	30	0	1	5	7	1	16	0	14	9	29	11.92	5	0.04
DQ60 BR-NET-D	0	34	0	1	0	12	0	16	0	13	2	32	4.55	5	0.48
DQ61 BR-NET-D	1	35	0	1	0	11	0	17	0	14	1	32	1.28	5	0.94
DQ43r BR-CUL-NO	9	24	0	1	6	7	3	14	0	14	11	25	9.16	5	0.10
DQ51r BR-NET-I	2	29	0	1	1	8	0	14	0	14	0	34	5.65	5	0.34
DQ52r BR-NET-I	4	27	0	1	5	5	2	15	0	14	3	30	14.61	5	0.01
DQ54r BR-NET-F	3	32	0	1	0	10	0	17	0	14	2	35	3.48	5	0.63
DQ55r BR-NET-F	4	29	0	1	1	7	1	16	0	13	6	29	3.53	5	0.62
DQ56r BR-NET-F	1	31	0	1	0	11	0	16	0	14	2	34	2.28	5	0.81
DQ57r BR-NET-F	1	34	0	1	0	12	0	17	0	14	1	37	1.23	5	0.94
DQ58r BR-NET-D	0	35	0	1	0	11	0	17	0	14	0	36	0.00	0	0.00
DQ59r BR-NET-D	0	33	0	1	0	11	0	17	0	14	4	31	9.01	5	0.11

1 = don't know responses
2 = all other responses

Appendix 5-VII
Chi-Square
Don't Know Responses by Researcher

Item	Researcher								Chi-Square Tests		
	A		B		C		D		Value	df	Asymp. Sig. (2-sided)
	1	2	1	2	1	2	1	2			
DQ91 L-SIR-S	0	2	35	90	22	31	4	8	4.08	3	0.25
DQ92 L-SIR-S	1	1	36	93	19	36	2	11	2.49	3	0.48
DQ93 L-SIR-S	1	1	57	72	35	19	6	6	6.48	3	0.09
DQ94 L-SIR-S	2	0	58	71	39	15	8	5	13.46	3	0.00
DQ95 L-SIR-S	2	0	60	66	38	17	9	4	9.88	3	0.02
DQ96 L-SIR-H	1	1	26	104	20	38	3	10	5.25	3	0.16
DQ97 L-SIR-H	0	2	33	92	24	32	2	11	7.33	3	0.06
DQ98 L-SIR-H	1	1	44	82	27	29	4	9	3.35	3	0.34
DQ99 L-SIR-N	1	1	65	60	40	16	6	6	6.31	3	0.10
DQ100 L-SIR-N	1	1	63	63	36	21	5	8	3.97	3	0.27
DQ101 L-CUL-T	2	0	20	103	18	35	4	9	13.87	3	0.00
DQ102 L-CUL-T	2	0	25	99	20	33	5	8	12.29	3	0.01
DQ103 L-CUL-NO	1	1	21	106	19	36	3	10	8.08	3	0.04
DQ106 L-CUL-CA	1	1	35	91	31	25	6	7	13.30	3	0.00
DQ107 L-CUL-CA	1	1	40	85	35	21	4	9	15.54	3	0.00
DQ108 L-CUL-CA	1	1	30	97	26	29	6	7	11.49	3	0.01
DQ109 L-CUL-PA	0	2	3	124	3	53	2	11	5.57	3	0.13
DQ115 L-NET-F	0	0	26	99	17	36	4	9	2.84	3	0.24
DQ116 L-NET-F	0	2	24	103	13	42	2	11	1.23	3	0.75
DQ117 L-NET-F	0	1	25	99	19	34	4	8	5.61	3	0.13
DQ118 L-NET-D	0	1	18	103	14	38	1	9	4.27	3	0.23
DQ119 L-NET-D	0	1	5	111	15	35	1	10	22.38	3	0.00
DQ120 L-NET-D	0	2	8	116	10	46	0	12	7.51	3	0.06
DQ121 L-NET-D	0	1	18	104	22	35	4	9	13.33	3	0.00
DQ122 L-SIR-P	0	2	12	117	8	49	2	11	1.42	3	0.70
DQ123 L-SIR-P	1	1	15	111	10	47	4	9	5.64	3	0.13
DQ124 L-SIR-P	0	2	6	121	4	53	1	12	0.63	3	0.89
DQ129 L-CUL-PA	0	2	4	122	0	52	0	13	2.17	3	0.54
DQ130 L-CUL-PA	0	2	6	121	0	52	0	13	3.27	3	0.35
DQ104r L-CUL-NO	1	1	45	82	33	24	7	6	8.78	3	0.03
DQ105r L-CUL-NO	1	0	42	84	37	19	6	7	19.44	3	0.00
DQ110r L-NET-I	1	1	14	99	10	35	1	11	4.75	3	0.19
DQ111r L-NET-I	0	2	10	110	9	40	3	10	5.21	3	0.16
DQ112r L-NET-I	1	1	17	85	12	34	3	8	3.18	3	0.37
DQ113r L-NET-I	0	1	19	93	14	32	6	6	9.03	3	0.03
DQ114r L-NET-F	0	1	32	91	20	30	5	7	4.43	3	0.22

1 = don't know responses
2 = all other responses

Appendix 5-VII

Chi-Square

Don't Know Responses by Researcher

Item	Researcher				Chi-Square Tests		
	A		B		Value	df	Asymp. Sig. (2-sided)
	1	2	1	2			
DQ91 L-SIR-S	36	39	25	27	0.00	1	0.99
DQ92 L-SIR-S	11	66	17	37	5.59	1	0.02
DQ93 L-SIR-S	50	23	35	19	0.19	1	0.66
DQ94 L-SIR-S	55	21	34	21	1.63	1	0.20
DQ95 L-SIR-S	59	18	38	18	1.26	1	0.26
DQ96 L-SIR-H	13	63	16	40	2.47	1	0.12
DQ97 L-SIR-H	52	26	26	27	4.06	1	0.04
DQ98 L-SIR-H	53	26	18	26	1.96	1	0.16
DQ99 L-SIR-N	32	30	14	39	7.56	1	0.01
DQ100 L-SIR-N	45	23	23	29	5.78	1	0.02
DQ101 L-CUL-T	36	20	17	33	9.69	1	0.00
DQ102 L-CUL-T	40	22	18	33	9.57	1	0.00
DQ103 L-CUL-NO	40	26	17	33	8.06	1	0.01
DQ106 L-CUL-CA	41	26	26	29	2.36	1	0.12
DQ107 L-CUL-CA	41	28	27	28	1.32	1	0.25
DQ108 L-CUL-CA	46	20	29	24	2.83	1	0.09
DQ109 L-CUL-PA	6	69	3	50	0.26	1	0.61
DQ115 L-NET-F	17	57	16	35	1.10	1	0.30
DQ116 L-NET-F	18	52	12	41	0.15	1	0.69
DQ117 L-NET-F	10	61	16	36	5.01	1	0.03
DQ118 L-NET-D	20	53	16	37	0.12	1	0.73
DQ119 L-NET-D	9	63	13	39	3.23	1	0.07
DQ120 L-NET-D	21	53	13	38	0.13	1	0.72
DQ121 L-NET-D	38	33	27	27	0.15	1	0.70
DQ122 L-SIR-P	2	72	3	52	0.64	1	0.42
DQ123 L-SIR-P	8	67	6	48	0.01	1	0.94
DQ124 L-SIR-P	11	64	9	46	0.07	1	0.79
DQ129 L-CUL-PA	4	68	5	48	0.69	1	0.41
DQ130 L-CUL-PA	7	63	6	47	0.06	1	0.81
DQ104r L-CUL-NO	50	18	30	23	3.81	1	0.05
DQ105r L-CUL-NO	53	16	30	22	5.03	1	0.03
DQ110r L-NET-I	7	58	9	45	0.88	1	0.35
DQ111r L-NET-I	16	54	9	44	0.64	1	0.42
DQ112r L-NET-I	11	54	10	39	0.23	1	0.64
DQ113r L-NET-I	25	45	18	31	0.01	1	0.91
DQ114r L-NET-F	39	28	31	23	0.01	1	0.93

1 = don't know responses
2 = all other responses

Appendix 5-VII

Chi-Square

Don't Know Responses by Researcher

Item	Researcher												Chi-Square Tests		
	A		B		C		D		E		F		Value	df	Asymp. Sig. (2-sided)
	1	2	1	2	1	2	1	2	1	2	1	2			
DQ91 L-SIR-S	12	24	1	0	8	5	7	10	0	14	9	29	16.02	5	0.01
DQ92 L-SIR-S	3	31	0	1	7	7	2	15	0	14	3	35	21.00	5	0.00
DQ93 L-SIR-S	12	24	0	1	9	5	9	8	0	12	14	24	14.12	5	0.02
DQ94 L-SIR-S	16	19	0	1	4	9	5	12	0	13	15	23	10.05	5	0.07
DQ95 L-SIR-S	19	18	0	1	4	8	6	11	0	12	15	23	11.00	5	0.05
DQ96 L-SIR-H	4	33	0	1	2	12	1	16	0	13	1	37	4.34	5	0.50
DQ97 L-SIR-H	10	28	0	1	5	9	2	15	0	13	9	27	7.16	5	0.21
DQ98 L-SIR-H	12	23	1	0	5	9	1	16	0	13	12	23	13.80	5	0.02
DQ99 L-SIR-N	4	31	0	1	2	12	3	14	0	13	6	31	2.88	5	0.72
DQ100 L-SIR-N	5	29	0	1	2	12	5	12	0	13	14	24	10.83	5	0.06
DQ101 L-CUL-T	4	29	0	1	2	12	2	15	0	12	5	30	2.06	5	0.84
DQ102 L-CUL-T	5	30	0	1	2	12	2	15	0	13	9	29	4.81	5	0.44
DQ103 L-CUL-NO	4	30	0	1	1	13	1	16	0	13	8	30	5.79	5	0.33
DQ106 L-CUL-CA	5	28	1	0	3	11	4	13	0	13	10	27	9.03	5	0.11
DQ107 L-CUL-CA	9	24	0	1	4	10	4	13	0	13	14	24	7.21	5	0.21
DQ108 L-CUL-CA	6	28	0	1	6	8	2	15	0	13	15	22	14.38	5	0.01
DQ109 L-CUL-PA	3	31	0	1	0	13	0	17	0	14	0	33	7.07	5	0.22
DQ115 L-NET-F	2	32	0	1	2	10	5	12	0	14	4	34	8.90	5	0.11
DQ116 L-NET-F	1	36	0	1	1	12	2	15	0	14	2	36	3.04	5	0.69
DQ117 L-NET-F	4	31	1	0	1	12	2	14	1	13	7	30	8.18	5	0.15
DQ118 L-NET-D	4	28	0	1	5	8	3	13	1	12	9	29	5.81	5	0.33
DQ119 L-NET-D	4	32	0	1	3	10	1	16	0	14	5	30	4.55	5	0.47
DQ120 L-NET-D	4	31	0	1	4	9	2	15	0	14	2	36	8.85	5	0.12
DQ121 L-NET-D	11	24	0	1	7	7	3	14	0	13	8	28	10.74	5	0.06
DQ122 L-SIR-P	1	35	0	1	0	14	0	17	0	14	1	38	1.25	5	0.94
DQ123 L-SIR-P	0	38	0	1	0	14	2	15	0	14	1	37	7.83	5	0.17
DQ124 L-SIR-P	1	36	0	1	0	14	0	17	0	14	1	37	1.25	5	0.94
DQ129 L-CUL-PA	2	33	0	1	1	11	0	17	0	14	1	34	2.54	5	0.77
DQ130 L-CUL-PA	2	32	0	1	1	11	1	16	1	13	2	32	0.19	5	1.00
DQ104r L-CUL-NO	6	29	0	1	4	9	2	15	0	13	11	24	8.14	5	0.15
DQ105r L-CUL-NO	12	23	0	1	6	7	3	14	0	12	16	21	11.12	5	0.05
DQ110r L-NET-I	2	31	0	0	5	7	1	16	0	13	4	31	14.52	5	0.01
DQ111r L-NET-I	3	31	0	0	4	9	1	16	0	14	4	35	7.97	5	0.09
DQ112r L-NET-I	7	28	0	0	6	8	3	11	1	12	6	28	5.69	5	0.22
DQ113r L-NET-I	8	25	0	0	6	7	1	16	1	12	7	24	8.78	5	0.07
DQ114r L-NET-F	8	25	0	1	2	11	2	15	0	12	4	32	5.24	5	0.39

1 = don't know responses
2 = all other responses

Appendix 5-VIIIa
Logistic Regression Report
(DUMYQ126)

Parameter Estimation Section					
Variable	Regression Coefficient	Standard Error	Chi-Square Beta=0	Prob Level	Last R-Squared
Intercept	-0.13	0.52	0.06	0.81	0.00
Age	0.00	0.01	0.12	0.73	0.00
Sex	-0.29	0.26	1.26	0.26	0.00
Employment Status	-0.09	0.26	0.12	0.73	0.00
Education Level	0.43	0.27	2.48	0.12	0.01
Marital Status	-0.07	0.27	0.07	0.79	0.00
Community Variable A	1.72	0.31	31.06	0.00	0.06
Community Variable C	1.54	0.33	21.47	0.00	0.05
Number of Children at Home	-0.06	0.07	0.76	0.38	0.00
Number of Years in the Community	0.02	0.01	6.06	0.01	0.01

Odds Ratio Estimation Section					
Variable	Regression Coefficient	Standard Error	Odds Ratio	Lower 95% Conf. Limit	Upper 95% Conf. Limit
Intercept	-0.13	0.52			
Age	0.00	0.01	1.00		
Sex	-0.29	0.26	0.75	0.45	1.25
Employment Status	-0.09	0.26	0.91	0.55	1.52
Educaton Level	0.43	0.27	1.53		
Marital Status	-0.07	0.27	0.93		
Community Variable A	1.72	0.31	5.60	3.06	10.26
Community Variable C	1.54	0.33	4.65	2.43	8.91
Number of Children at Home	-0.06	0.07	0.94		
Number of Years in the Community	0.02	0.01	1.02		

Model Summary Section			
Model R-Squared	Model D.F.	Model Chi-Square	Model Prob
0.10	9.00	50.98	0.00

Appendix 5-VIIIb
Logistic Regression Report
(DUMMYQ26)

Parameter Estimation Section					
Variable	Regression Coefficient	Standard Error	Chi-Square Beta=0	Prob Level	Last R-Squared
Intercept	-0.54	0.46	1.36	0.24	0.00
Age	0.01	0.01	1.59	0.21	0.00
Sex	-0.41	0.22	3.42	0.06	0.01
Employment Status	0.09	0.23	0.15	0.70	0.00
Education Level	-0.12	0.24	0.24	0.63	0.00
Marital Status	-0.24	0.23	1.07	0.30	0.00
Community Variable A	1.44	0.26	31.14	0.00	0.06
Community Variable C	2.03	0.31	43.80	0.00	0.09
Number of Children at Home	-0.06	0.06	1.01	0.32	0.00
Number of Years in the Community	0.00	0.01	0.22	0.64	0.00

Odds Ratio Estimation Section					
Variable	Regression Coefficient	Standard Error	Odds Ratio	Lower 95% Conf. Limit	Upper 95% Conf. Limit
Intercept	-0.54	0.46			
Age	0.01	0.01	1.01		
Sex	-0.41	0.22	0.66	0.43	1.02
Employment Status	0.09	0.23	1.09	0.70	1.70
Education Level	-0.12	0.24	0.89		
Marital Status	-0.24	0.23	0.79		
Community Variable A	1.44	0.26	4.24	2.55	7.04
Community Variable C	2.03	0.31	7.59	4.16	13.82
Number of Children at Home	-0.06	0.06	0.94		
Number of Years in the Community	0.00	0.01	1.00		

Model Summary Section			
Model R-Squared	Model D.F.	Model Chi-Square	Model Prob
0.14	9.00	75.79	0.00

Appendix 5-VIIIc
Logistic Regression Report
(DUMMYQ99)

Parameter Estimation Section					
Variable	Regression Coefficient	Standard Error	Chi-Square Beta=0	Prob Level	Last R-Squared
Intercept	-0.68	0.44	2.43	0.12	0.01
Age	0.02	0.01	2.90	0.09	0.01
Sex	-0.31	0.21	2.12	0.15	0.00
Employment Status	0.07	0.22	0.09	0.76	0.00
Education Level	0.12	0.23	0.27	0.60	0.00
Marital Status	0.40	0.22	3.31	0.07	0.01
Community Variable A	-0.44	0.25	3.15	0.08	0.01
Community Variable C	1.73	0.31	30.70	0.00	0.06
Number of Children at Home	-0.06	0.06	0.88	0.35	0.00
Number of Years in the Community	0.01	0.01	0.58	0.45	0.00

Odds Ratio Estimation Section					
Variable	Regression Coefficient	Standard Error	Odds Ratio	Lower 95% Conf. Limit	Upper 95% Conf. Limit
Intercept	-0.68	0.44			
Age	0.02	0.01	1.02		
Sex	-0.31	0.21	0.73	0.48	1.11
Employment Status	0.07	0.22	1.07	0.70	1.63
Education Level	0.12	0.23	-2.14		
Marital Status	0.40	0.22	1.49		
Community Variable A	-0.44	0.25	0.65	0.40	1.05
Community Variable C	1.73	0.31	5.65	3.06	10.43
Number of Children at Home	-0.06	0.06	0.95		
Number of Years in the Community	0.01	0.01	1.01		

Model Summary Section			
Model R-Squared	Model D.F.	Model Chi-Square	Model Prob
0.15	9.00	76.55	0.00