



Telephone Survey

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* Reference: Co-operative Innovation Project (January 2016), *Telephone Survey*. Part of Co-operative Innovation Project Final Report. Centre for the Study of Co-operatives, University of Saskatchewan.



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Introduction

From January-June 2015, the Co-operative Innovation Project (CIP) conducted two surveys in rural and Aboriginal† communities across the four western provinces: Manitoba, Saskatchewan, Alberta and British Columbia. The first survey was a telephone survey, conducted from January 8-March 15, 2015, targeting community members living in the study area. The second survey was a web-based survey, conducted from January-June 2015, targeting community administrators (e.g., mayor, chief, community administrative officers).

Both surveys aimed to: (1) develop a good understanding of the current status of rural and Aboriginal communities in western Canada across four dimensions: community needs, business capacity, social capacity, and knowledge of co-operatives; (2) reveal associations among needs and business and social capacities; (3) identify the similarities and differences between Aboriginal and rural communities; (4) capture the similarities and differences across the four western provinces; and (5) see if there was a difference in the perceptions/responses between citizens and community administrators.

The two surveys were administrated through the University of Saskatchewan Social Sciences Research Laboratories, Survey and Group Analysis Laboratory. This chapter reports on the methodology and results of the telephone survey questionnaire. The next chapter reports on the methodology and results of the web-based survey, while a third chapter in this section provides some discussion and considerations drawn from the two surveys. It should be noted that there is ample opportunity for more data analysis on our raw data; if interested, please contact the Centre for the Study of Co-operatives at the University of Saskatchewan.

Survey Questionnaire

Based on both our project objectives, as well as a literature review of the co-op, Aboriginal, and community and economic development literatures, the CIP team undertook the design of the telephone survey questionnaire. Following two pilot rural and Aboriginal community meetings (held in Maidstone, Saskatchewan and One Arrow First Nation in Saskatchewan), the survey questions were slightly adapted based on our experiences and knowledge gathered at those meetings.

The telephone questionnaire lists 16 services and programs, and asks respondents to rate them individually on a scale of poor, fair, good, and excellent. Our survey asked respondents to rate the quality of local programs and services, as a way to capture a comparative analysis of local need.

† The Co-operative Innovation Project uses the term “Aboriginal” to denote Canada’s First Nations, Métis, and Inuit communities. This usage reflects contemporary census and other documentation which provide source citations throughout this project. We honour and respect the identities of each of Canada’s communities.



From these results, we inferred that a poor rating represented a higher need, and a higher rating represented a lower need. The results compare well to the needs expressed during community meetings. (For an overview, please see the chapters Community Needs and Community Capacity in our final report).

These services and programs were classified for our purposes into three groups: (1) basic needs (e.g., housing, health care); (2) advanced needs (e.g., needs for seniors' and youth programs); and (3) needs for educational services (e.g., daycare, preschool, elementary, high school). If a service or program is not available in the community, respondents were able to answer "not available."

The business capacity measures include five questions concerning business skills and access to business development resources. The social capacity section contains 16 questions concerning the social aspects of the community, for example, the willingness and supportiveness of community members to take group action to address a common community need. The telephone survey also includes questions concerning the presence of co-operatives in the community and awareness of co-operatives.¹

The survey contains several questions that provide an understanding of the background of respondents, such as "How long have you stayed in the current community" and "Do you plan to live in the community in the near future", as well as various demographic questions relating to age, sex, race, education, income, and so on. See the Appendix for a copy of the telephone survey.

The telephone survey questionnaire was pretested and, as a result, minor changes were made to the wording of some questions.

Sampling Methods

Study Population

The telephone survey targeted residents aged 18 years and older in rural and Aboriginal communities in Manitoba, Saskatchewan, Alberta and British Columbia. According to Statistics Canada, in 2011 the total population in the study area was about 1.27 million, with around 8% residing in Aboriginal communities. See Table 1 for the breakdown of the population in our study areas.

Table 1 Population aged 18 and over in study areas, 2011

Community Type	Manitoba		Saskatchewan		Alberta		British Columbia		Western Canada	
	Persons	%	Persons	%	Persons	%	Persons	%	Persons	%
Aboriginal	33,180	14.8%	20,440	7.6%	24,540	5.8%	23,185	6.5%	101,345	8.0%
Rural	190,390	85.2%	248,005	92.4%	398,145	94.2%	333,100	93.5%	1,169,643	92.0%
Overall	223,570		268,445		422,685		356,285		1,270,988	

Source: Tabulated based on Statistics Canada, 2011 Census of Population.



Sample Size

Given the population in 2011, to enable a comparison across study provinces and community type, the CIP team decided to collect 500 samples in each study province,² with at least 10% (or 50) respondents from Aboriginal communities.³

Survey Procedures

A list of landline (e.g., not cellular) phone numbers in the study area was obtained by using rural postal codes as a criterion for selection. Random digit dialing was employed to ensure the randomness of the sample. Trained interviewers from the Social Sciences Research Laboratories, Survey and Group Analysis Laboratory carried out the calls. Since the four provinces are located in different time zones, to improve the participation rate, respondents were contacted between 4:00 pm to 8:00 pm Saskatoon time. Each interview took about 15 minutes.

The telephone survey was conducted in three rounds to obtain a demographically representative sample with the desired representation of the Aboriginal population. At the end of the first round of the telephone survey (in mid-February, 2015, about 1 month after the survey was initiated), we reviewed the age distribution of the respondents. We found that the sample obtained to date was relatively older than the study population. Given this, the CIP team decided to impose an age criterion that respondents must age from 18-55 years in the next two rounds of the survey to improve the representation of the younger population.

After completing the second round of the survey, the number of Aboriginal respondents was reviewed to determine if there were sufficient Aboriginal respondents in each provincial sample. The last round of the data collection was conducted by imposing an additional restriction that the respondent must be Aboriginal. Phone calls were made until the target was met.

Data Analysis Method

Data analysis for the telephone survey was conducted in two steps. The first step explored how the questions worked together.⁴ The second step helped to uncover the connections underlying the variables.⁵ The difference in the responses and the connections were then examined between Aboriginal and rural communities, and among the four study provinces.⁶ For a more detailed explanation, please see the footnotes section of this chapter, and our Research Design and Methodology chapter.

Telephone Survey Statistics

Data Screening

Data screening is a method of cleaning up the data to be sure that the responses can be compared for the purposes of the study.⁷ Data screening involved the deletion of problem responses. In total, 2,025 randomly selected respondents completed telephone interviews. 74 were found, by means of cross-referencing the postal codes they provided, to be living in an urban CSD and not a rural or Aboriginal CSD. These respondents were dropped from the analysis, resulting in 1,951 respondents



from rural and Aboriginal communities within our defined study area. The overall response rate was 21.2%.⁸

Of the remaining 1,951 respondents, 195 (10%) respondents were considered non-respondents as they answered either “don’t know” or “refused to answer” to more than 8 core questions. The final respondent sample consisted of 1,756, of whom 438 were from Manitoba, 432 were from Saskatchewan, 436 were from Alberta and 450 were from British Columbia. The response rate of the survey based on these numbers was 19.44%.⁹

Table 2 Number of respondents and margin of error at 95% confidence interval

Community Type	Manitoba	Saskatchewan	Alberta	British Columbia	Western Canada
Rural	353	382	384	395	1,514
Aboriginal	85	50	52	55	242
Overall	438	432	436	450	1,756
Margin of Error	4.68%	4.72%	4.69%	4.62%	2.34%

Source: Telephone survey, CIP 2015.

Facts and Statistics

Geographic Distribution

The 1,756 respondents lived in 373 CSDs, of which, according to Statistics Canada, 358 were rural CSDs and 15 were Aboriginal CSDs. However, a respondent’s self-identified community does not necessarily align with Statistics Canada’s definition of the type of CSD. For example, some respondents were placed in a rural CSD by Statistics Canada’s definition – yet, they indicated that they lived in an Aboriginal community. For consistency purposes, we the used respondents’ self-reported (or subjective) type of community for all analyses based on community type, rather than Statistics Canada’s definition, as shown in Table 3 and Figure 1.

Table 3 Census Subdivisions (CSDs) represented by telephone survey¹⁰

Self-Reported Community Type	Manitoba	Saskatchewan	Alberta	British Columbia	Western Canada
Rural	57	87	120	77	341
Aboriginal	24	21	28	34	107
Total	81	108	148	111	448

Source: Tabulated based on Statistics Canada’s Geographic Attribute File 2011.

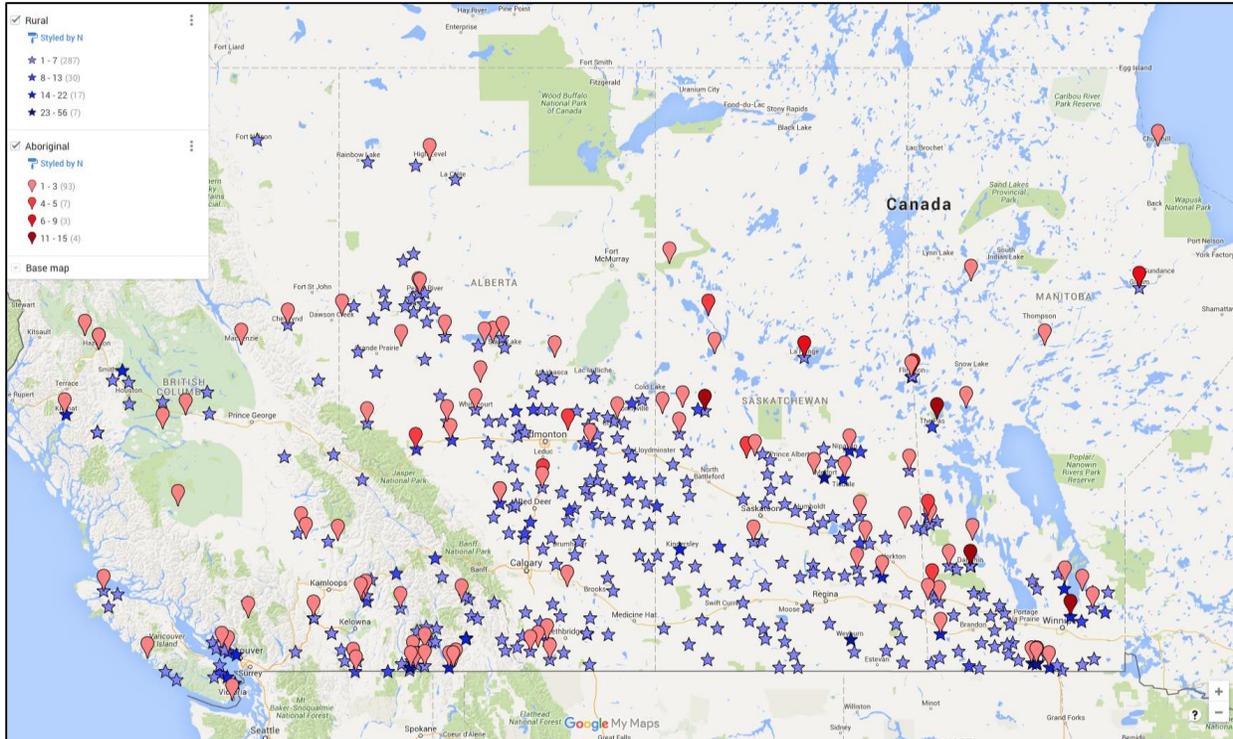


Figure 1 Geographic distribution of telephone survey respondents, by CSD and self-reported community type.

Figure 1 shows the geographic locations of respondents. Blue stars represent respondents who report they live in a rural community, and red markers represent those who report living in an Aboriginal community. The darker the marker, the more respondents contained in a particular CSD. As shown in Figure 1, respondents are widely spread throughout the study area, and the majority resided in the relatively densely populated southern part in each province.

Table 4 compares the average and median population of the 373 communities of respondents with the average and median population of the study area.

Table 4 A comparison in the population size of communities with telephone respondents¹¹

	Manitoba		Saskatchewan		Alberta		British Columbia		Western Canada	
	Sample Area	Study Area	Sample Area	Study Area	Sample Area	Study Area	Sample Area	Study Area	Sample Area	Study Area
Average	2,265	1,349	1,252	514	3,246	2,137	3,193	1,360	2,557	1,095
Median	1,340	843	806	327	2,253	865	2,655	509	1,498	462
Min.	254	5	25	10	151	10	113	5	25	5
Max.	10,670	10,670	10,484	10,484	12,278	12,359	10,234	10,234	12,278	12,359

Note: The populations of the areas are tabulated based on Census of Population 2011. If an Aboriginal community contains multiple CSDs, the population is combined accordingly.



Our telephone survey tended to generate responses from people living in somewhat larger communities. As a result, the sample generated from our telephone survey over-represents the larger communities in our study population, and caution should be exercised when generalizing the results to smaller communities.

Community Type

Out of the 1,756 respondents, 13.78% (or 242) said that they lived in an Aboriginal community.¹² The presence of Aboriginal respondents was the highest in Manitoba, close to 20%, while it was about 11-12% in the other three provinces.

Table 5 Respondents' reported community type.

Reported Community Type	Manitoba	Saskatchewan	Alberta	British Columbia	Western Canada
Rural	80.59%	88.43%	88.07%	87.78%	86.22%
Aboriginal	19.41%	11.57%	11.93%	12.22%	13.78%
Overall	100.00%	100.00%	100.00%	100.00%	100.00%

Source: Telephone survey CIP 2015.

Because the focus of this study was to understand respondents' perceptions about their communities, unless otherwise specified, in our analyses we use "Aboriginal respondents" or "Aboriginal responses" to refer to respondents or responses from those who reported that they resided in an Aboriginal community, and "rural respondents" or "rural responses" to refer to respondents or responses from those who reported to reside in a rural community. CIP recognizes that these identifications do not always reflect background or community.

As mentioned earlier, only 16 Aboriginal respondents (9%) were placed in Aboriginal CSDs, meaning that our Aboriginal respondents primarily lived in rural CSDs, instead of Aboriginal CSDs according to Statistics Canada. This fact results in difficulties in comparing Aboriginal respondents' demographics with the corresponding Aboriginal study population, and these results should be interpreted with caution.

Aboriginal Respondents

While 242 telephone survey respondents said that they lived in an Aboriginal community, overall 10% of respondents (or 177) identified themselves as a person of Aboriginal ancestry (Table 6).¹³ Overall, about 50% of such respondents also indicated that they lived in an Aboriginal community.¹⁴ Significant variations across study provinces were identified: the percentage ranged from 34% (British Columbia) to 71% (Saskatchewan).

Table 6 Distribution of self-identified Aboriginal respondents, by community type¹⁵

Self-Reported Community Type	Manitoba		Saskatchewan		Alberta		British Columbia		Western Canada	
	#	%	#	%	#	%	#	%	#	%
Rural	39	57.4	9	29.0	17	39.5	23	65.7	88	49.7
Aboriginal	29	42.6	22	71.0	26	60.5	12	34.3	89	50.3



Overall	68	31	43	35	177
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Source: Telephone survey, CIP 2015.

Age

Respondents were between 18-92 years old, with 70% of them in the 35-69 years old age range. Specifically, about 75% of rural respondents and 68% of Aboriginal respondents fell in this age category. The respondents' median age was 54 years old. There was a 6-year gap in the median age between the two groups: 54 years old for rural respondents, and 49 years old for Aboriginal respondents.

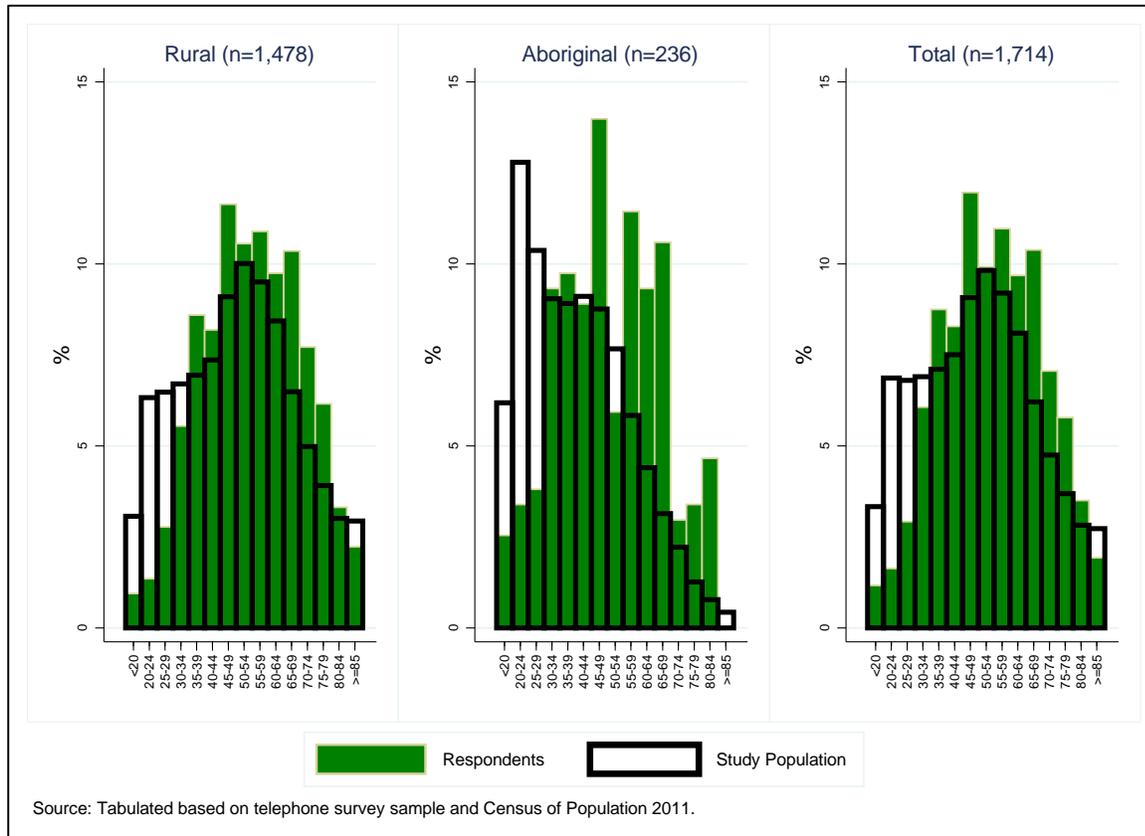


Figure 2 Age distribution of telephone respondents, by community type¹⁶

Figure 2 shows that Aboriginal respondents tended to be younger than the rural respondents. The percentage of young Aboriginal respondents (under 35 years old) was 8.5% higher than their rural counterpart, while the percentage of older Aboriginal respondents (70 and above) was about 8% below that of rural respondents. The percentages of respondents aged between 35-69 years old were comparable.

Figure 2 also compares the age distribution between respondents and the study population by using the information from Statistics Canada's Census of Population 2011.¹⁷ The green bars in the figure represent respondents and the uncolored bars represent the corresponding survey



population. As figure 2 illustrates, compared with the corresponding study population, the age distribution of respondents was older than the study population. This pattern is especially prominent for respondents from Aboriginal communities.

Figure 3 highlights the differences in respondents' ages across provinces. Compared with Manitoba, Saskatchewan and Alberta, British Columbia's respondents tended to be older. In fact, the median age of British Columbia's respondents was 59 years old, 5 years older than the median age of Manitoba's and Alberta's respondents, and 6 years older than Saskatchewan's respondents. Across all provinces, our sample respondents were older than the study population.

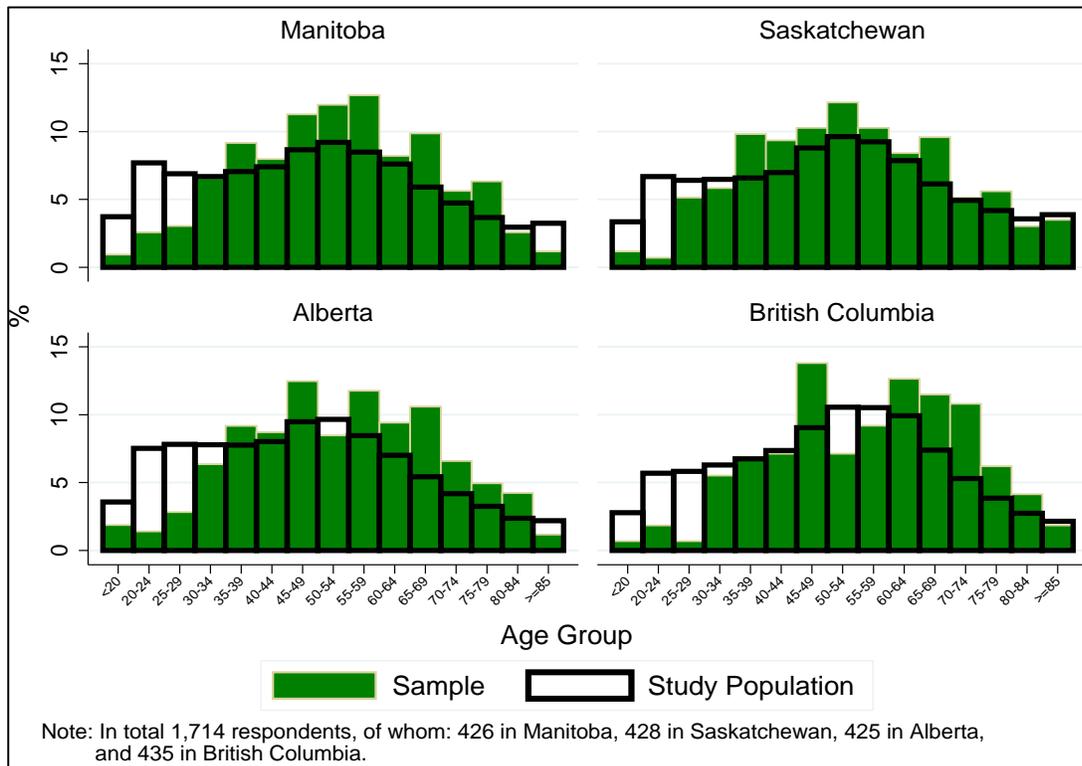


Figure 3 Respondents' age distribution, by province.

Gender

About 60% of the respondents were female. This pattern was the same across provinces and community type. It should be noted that the data on gender was noted by the survey team based on voice (which sounded male or female), not as an actual question in the survey. As a result, it may not be completely accurate.

Table 7 Respondent Distribution by sex (%)

Community Type	Manitoba		Saskatchewan		Alberta		British Columbia		Western Canada	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Rural	46	54	39	61	39	61	41	59	40	60
Aboriginal	39	61	48	52	48	52	29	71	42	58



Overall	43	57	37	63	40	60	40	60	40	60
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Source: Telephone survey, CIP 2015.

Household Size

As shown in Figure 4, 57% of respondents reported that there were only 1 or 2 persons in their households, 30% reported 3-4 persons, and 13% reported 5 or more. Aboriginal respondents tended to report larger numbers of individuals in each household than rural respondents. No noticeable differences were observed among the four provinces.

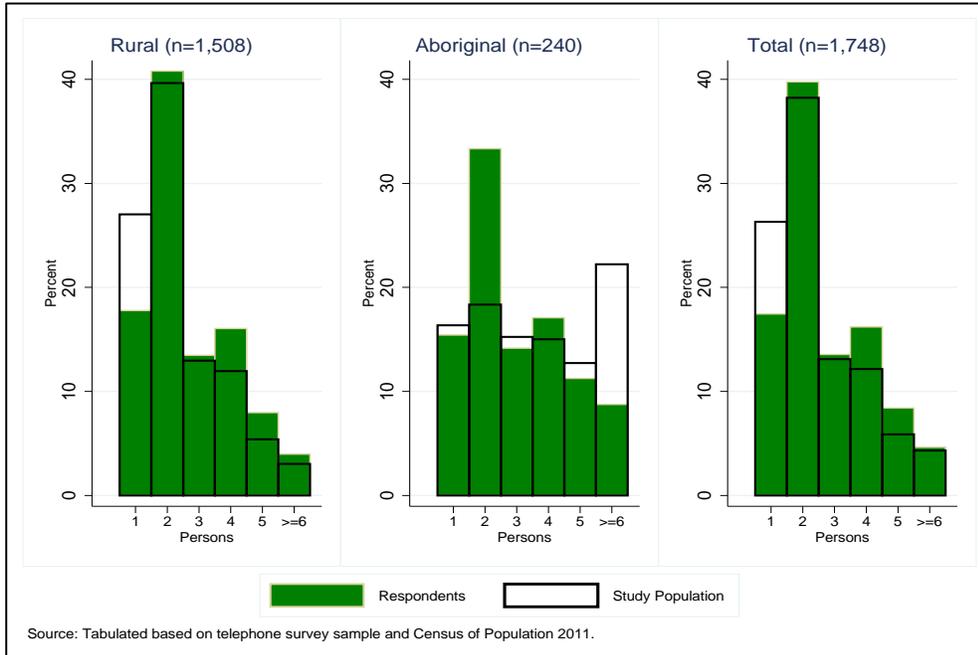


Figure 4 Household size, reported by respondents, by community type

Figure 4 also compares the respondents' household size with that of the study population. Overall, the respondents tended to have larger households relative to the study population. However, different patterns between the two groups were captured: rural respondents tended to have relatively larger households, while Aboriginal respondents tended to live in smaller households compared with the corresponding study populations; the difference between Aboriginal respondents and the Aboriginal study population was fairly large, though this could be due to the differences in our use of self-reported Aboriginal status based on the surveys versus Statistics Canada definitions of Aboriginal and rural CSDs.

Number of Minors in Household

The number of minors (17 years of age and under) in respondent households varied between 0 and 7. As shown in Figure 5, 58% of respondents reported that there were no minors in their households; 13% reported 1 minor, 17% reported 2 minors, 9% reported 3 minors, and only 3% reported more than 3 minors. Aboriginal respondents tended to have more minors living in their households. For this variable, we did not compare our sample to the study population.

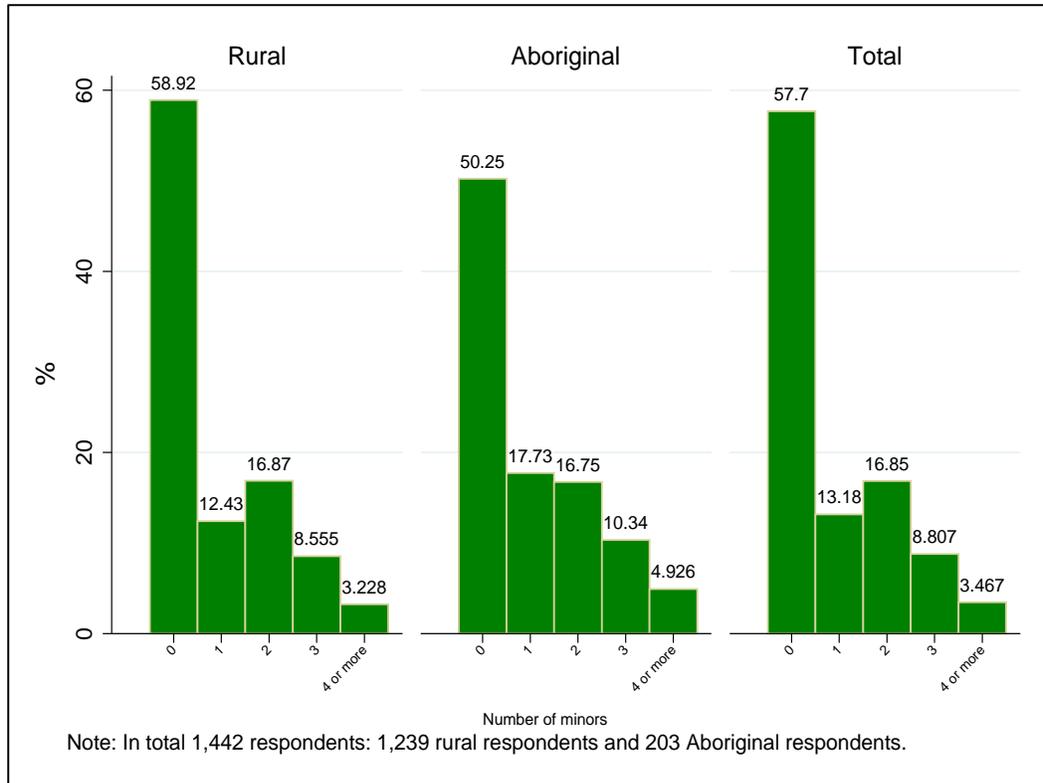


Figure 5 Number of minors in respondents' households, by community type

Education

Education by community type

Figure 6 presents the respondents' highest education achievement. In total, 67% received education above the high school level; 22% completed high school; and only 11% had education less than high school.

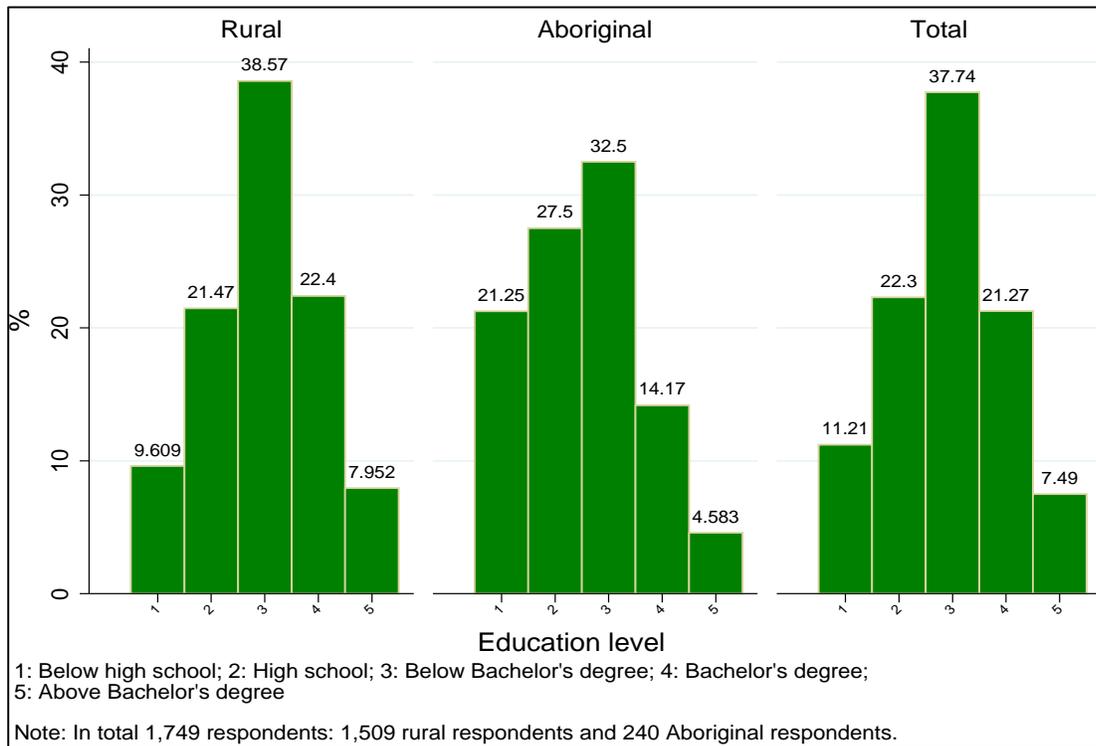


Figure 6 Respondents' education, by community type.

Separating respondents by self-reported community type shows differences in educational attainment across groups. As shown in Figure 6, Aboriginal respondents tended to have less formal education. Specifically, among them: 21% had less than high school education – more than twice the rural respondents; 28% had completed high school – 6% more than rural respondents; and 51% had some formal education above the high school level – about 20% lower than rural respondents. Moreover, the proportion of Aboriginal respondents in each category higher than the high school level was noticeably less than for rural respondents.

Education by province

Overall, British Columbia respondents tended to have higher education levels relative to respondents in the other three provinces. As shown in Figure 7, the percentages of British Columbia respondents with high school education or less were much lower than those in the other three provinces, while at the higher education levels, British Columbia reported higher percentages of the population with these educational levels.

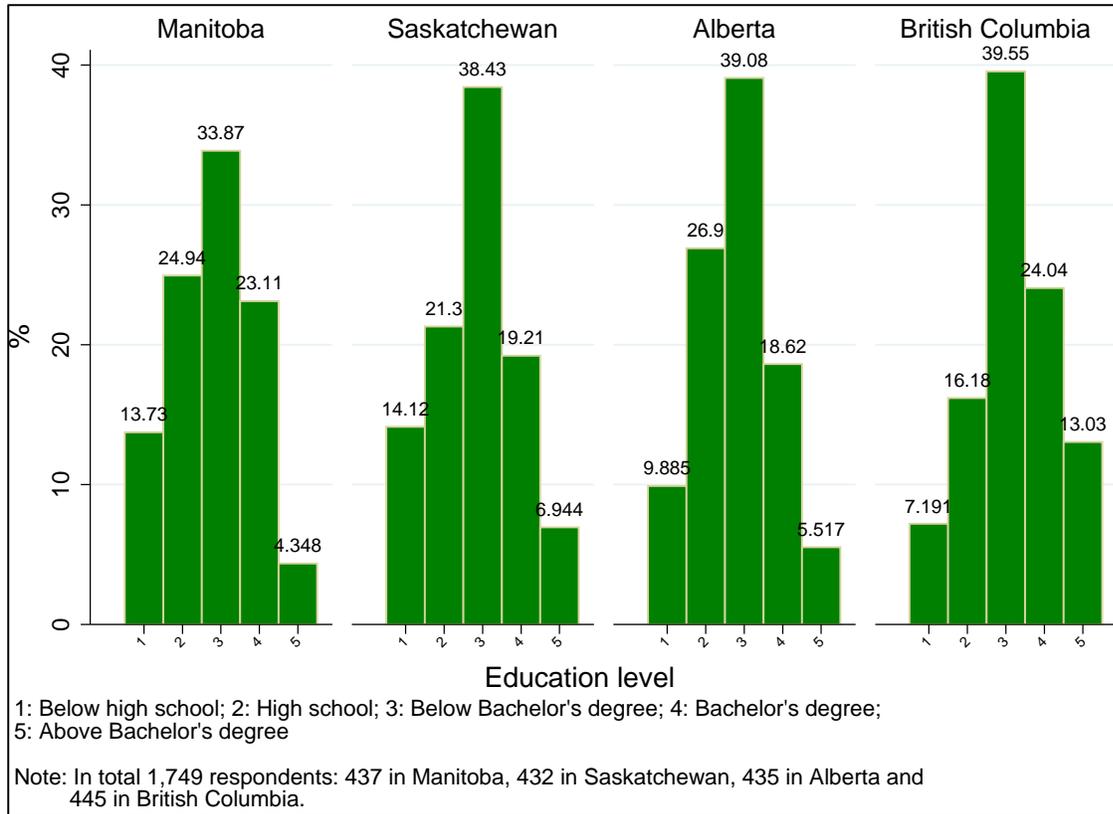


Figure 7 Respondents' education achievement, by province.

Comparing respondents' education to Statistics Canada

Due to the lack of census data, we can only examine the differences/similarities in educational attainment between respondents and the study population aged 25-64 years. In Figure 8, green bars represent respondents and uncolored bars represent the study population.

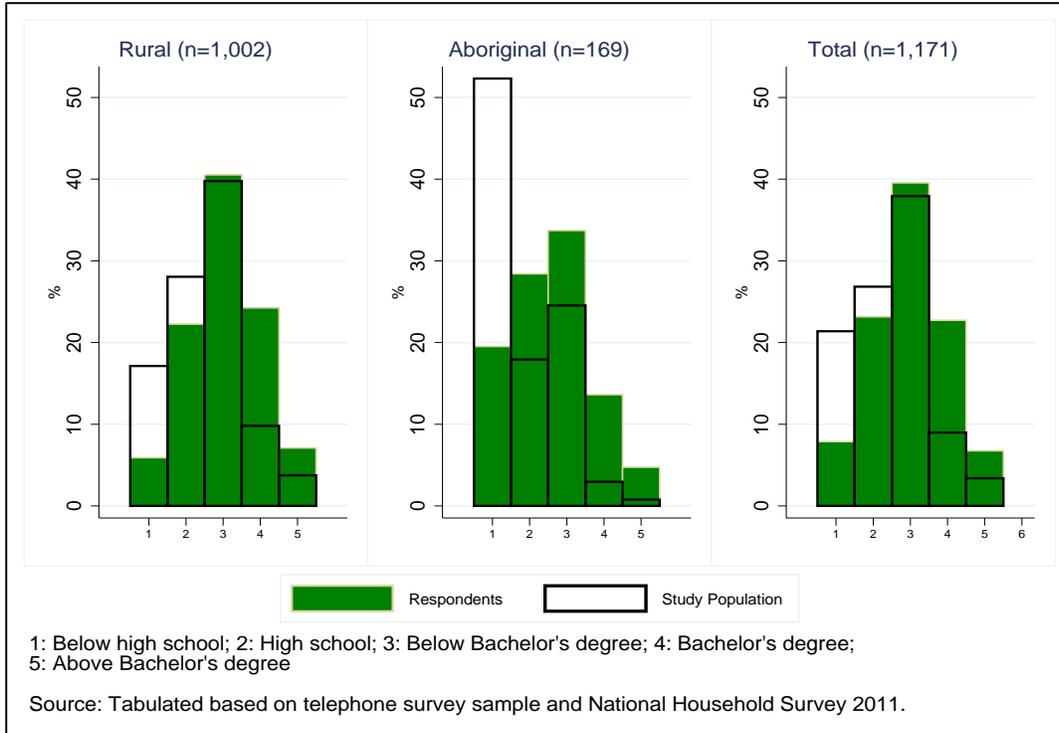


Figure 8 A comparison of education attainment between respondents and the study population, aged 25-64.

Figure 8 shows that CIP telephone survey respondents were much better educated than the corresponding study population. In particular, the proportion of respondents in rural communities with less than high school education was 6%, less than half of that of their respective corresponding study population (19%). The gap between Aboriginal respondents and the Aboriginal study population was large (33%).

Household Income in 2014

Out of 1,320 respondents who reported their household income in 2014, 10% reported an amount less than \$25,000, 58% reported an amount between \$25,000 and \$100,000, and 32% reported an amount above \$100,000. Overall, rural respondents tended to report a higher income than Aboriginal respondents (Figure 9).

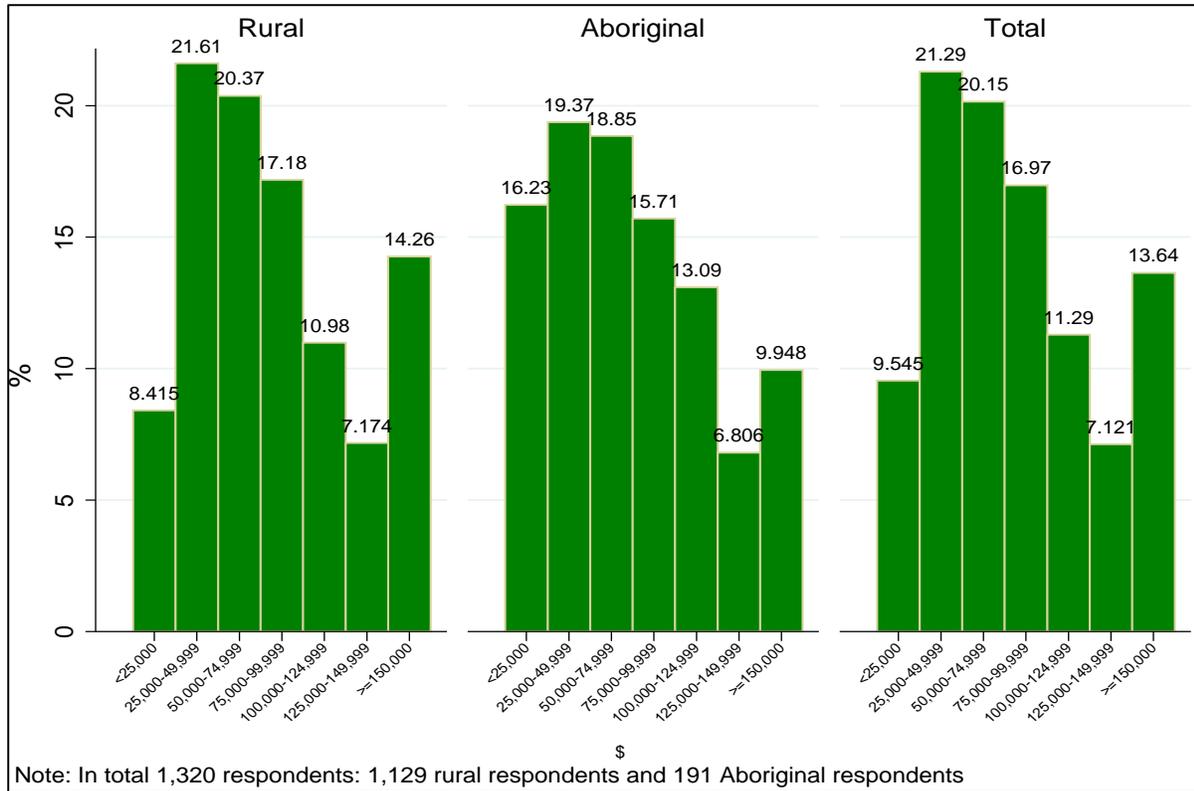


Figure 9 Household income in 2014, by community type.

There is no significant difference between Aboriginal respondents in across provinces. However, rural respondents' household income varied across provinces: as shown in Figure 10, the household income of Saskatchewan and Alberta respondents is higher than that of Manitoba and British Columbia respondents. We did not compare our sample population to the census data.

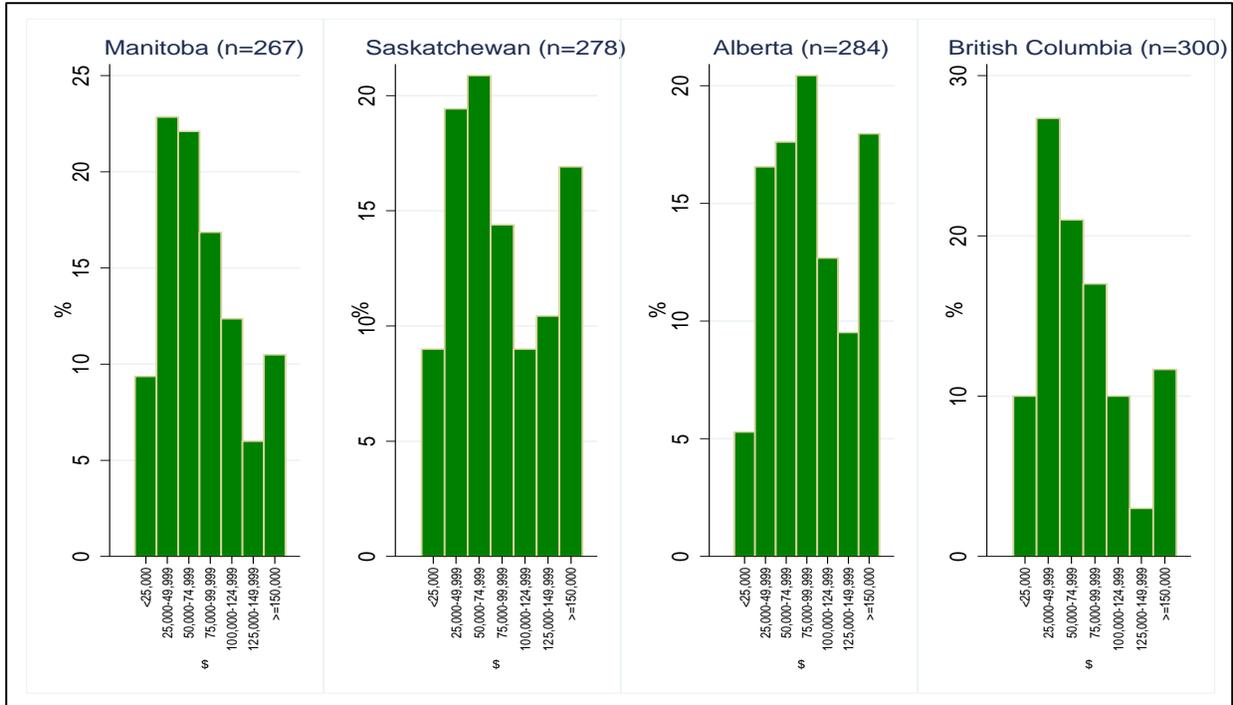


Figure 10 Rural respondents' household income in 2014, by province.

Years in the Community

When asked how long they had lived in their communities, about 80% of respondents answered 10 or more years, 18% answered 3-9 years, and less than 3% answered less than 2 years. There was no difference overall between rural respondents in the different provinces. Aboriginal respondents in Alberta have lived in their communities for a longer period of time, relative to Aboriginal respondents from other provinces. In Saskatchewan and British Columbia, rural respondents tended to have lived longer in their communities relative to Aboriginal respondents.¹⁸ Despite the variations, the majority of respondents would have a considerable amount of knowledge about their own communities and how they may have changed over time.

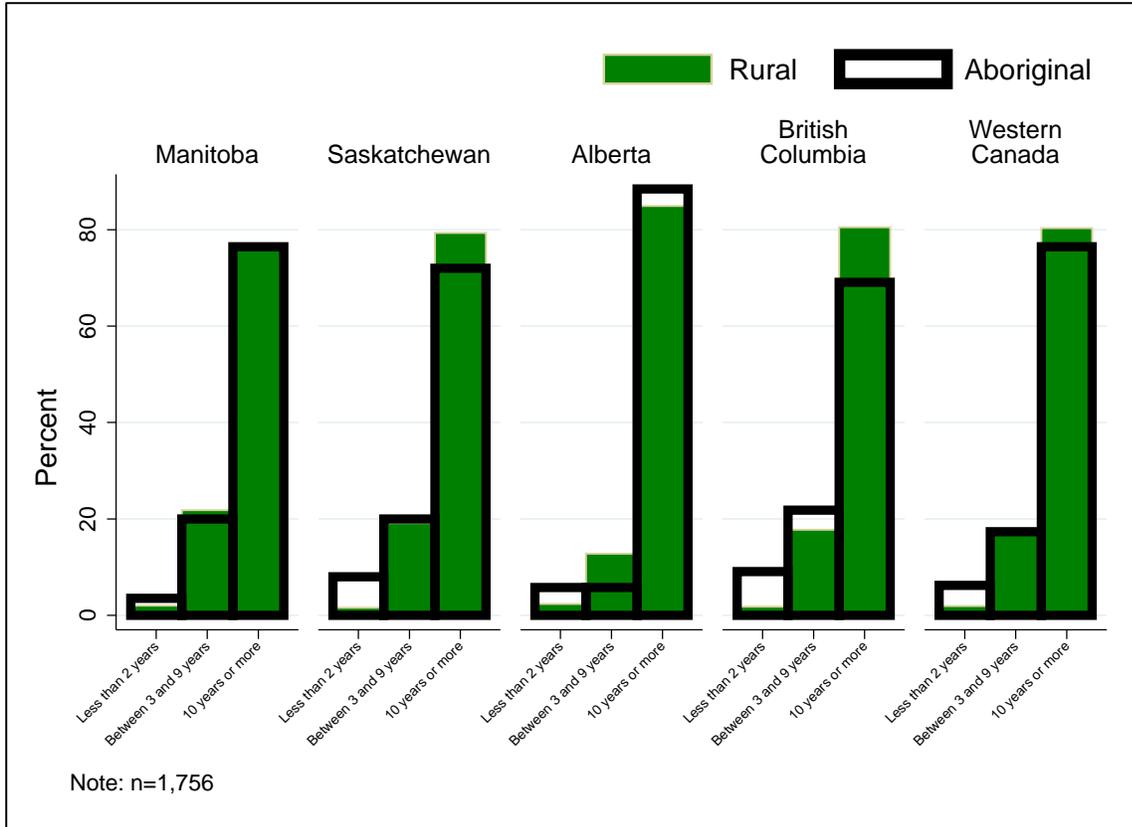


Figure 11 How long have you lived in your current community?

Plan to Remain in the Current Community

We asked respondents “Are you planning to remain in your community for the next XX years?” 5% answered “no”, 22% answered that they would stay for 1-5 years, 14% answered 6-10 years, and 59% answered they would stay for more than 10 years.

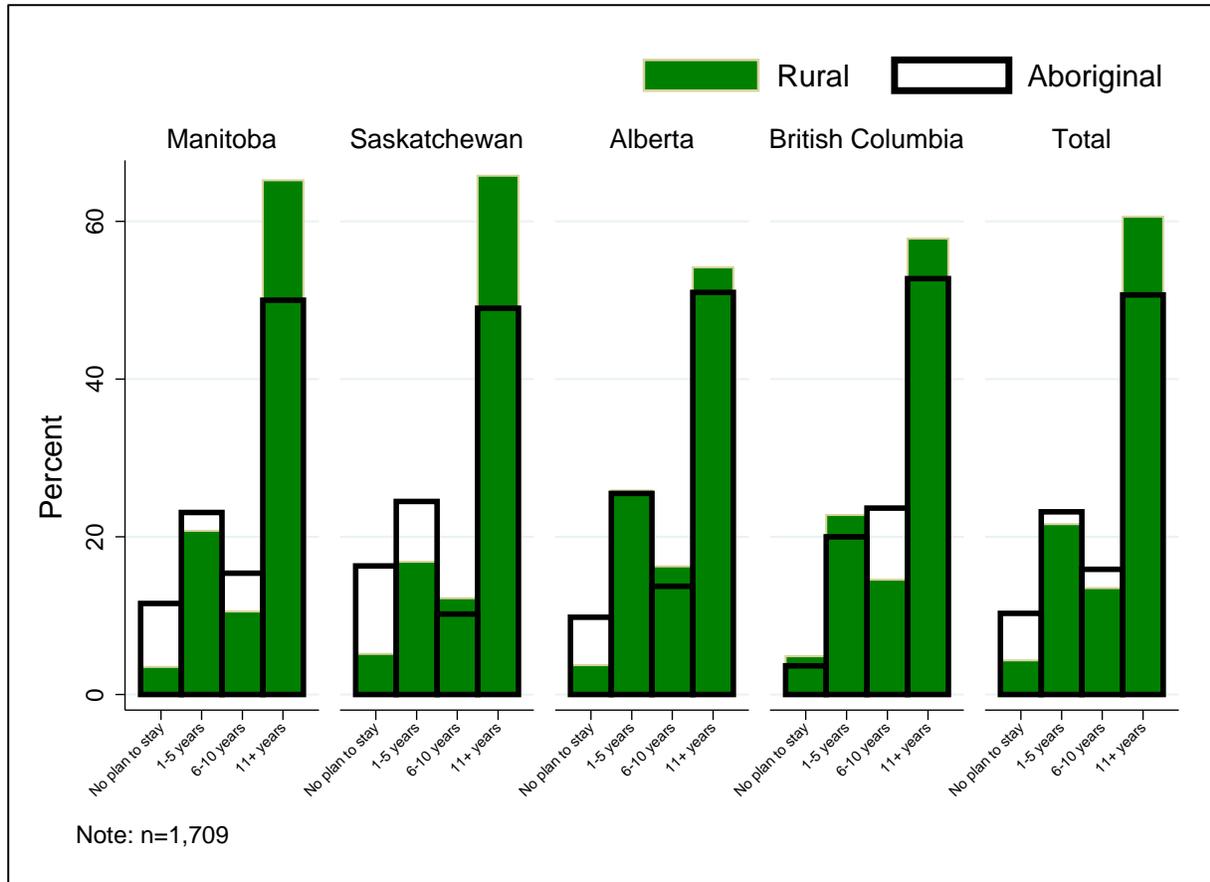


Figure 12 Are you planning to remain in your community for the next XX years?

As shown in Figure 12, there are significant differences between rural and Aboriginal respondents. In Manitoba and Saskatchewan, more Aboriginal respondents have no plan to stay in their communities than in British Columbia and Alberta. Compared with rural respondents in Manitoba, Saskatchewan and British Columbia, rural respondents in Alberta were more likely to intend to stay in their communities in the short term (1-5 years).

The reasons for leaving are diverse. Among the 87 respondents who indicated they had no plan to stay in their community, the most frequently cited reasons for leaving are: education (18); job, employment and opportunities (17); to be closer to family (11), and health and access to health care (7). Other reasons included retirement, weather, and lack of seniors’ programs. The top two reasons for leaving cited by rural respondents were family and education (employment was a close third). The top two reasons for leaving cited by Aboriginal respondents were employment and education.

Interactions with Neighbours

The majority of respondents reported frequent interactions with their neighbours (Figure 13). In Manitoba, Saskatchewan and British Columbia, Aboriginal respondents interacted with their neighbours less frequently than rural respondents. There is otherwise no difference between respondents across the provinces.

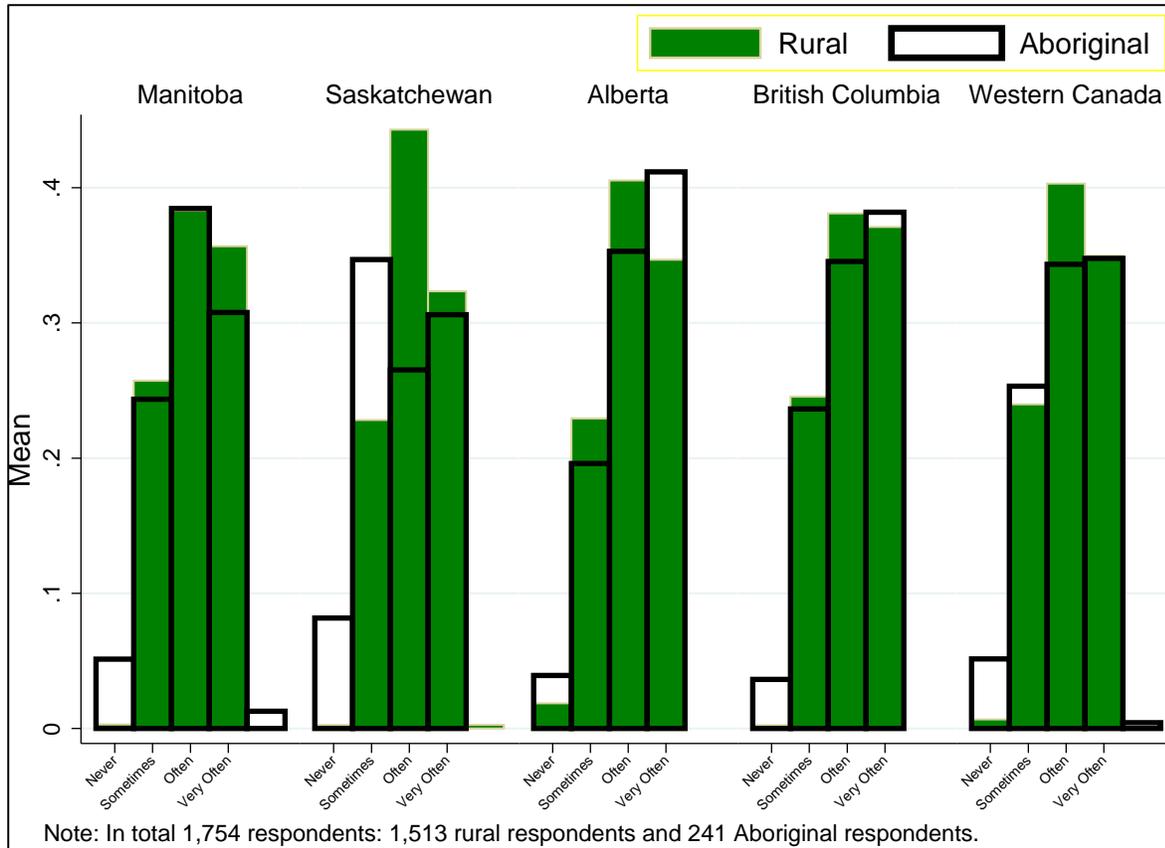


Figure 13 How often do you interact with your neighbor(s)?

Voting in the Last Local Election

When asked, “Did you vote in the last municipal or band election?” 24% of respondents said ‘no.’ Despite some variation, there is little difference between the provinces. However, rural and Aboriginal respondents differed significantly: compared with rural respondents, Aboriginal respondents’ non-voting rate was higher. This pattern holds across all four provinces, especially in British Columbia, where the non-voting rate of Aboriginal respondents was two times that of rural respondents.

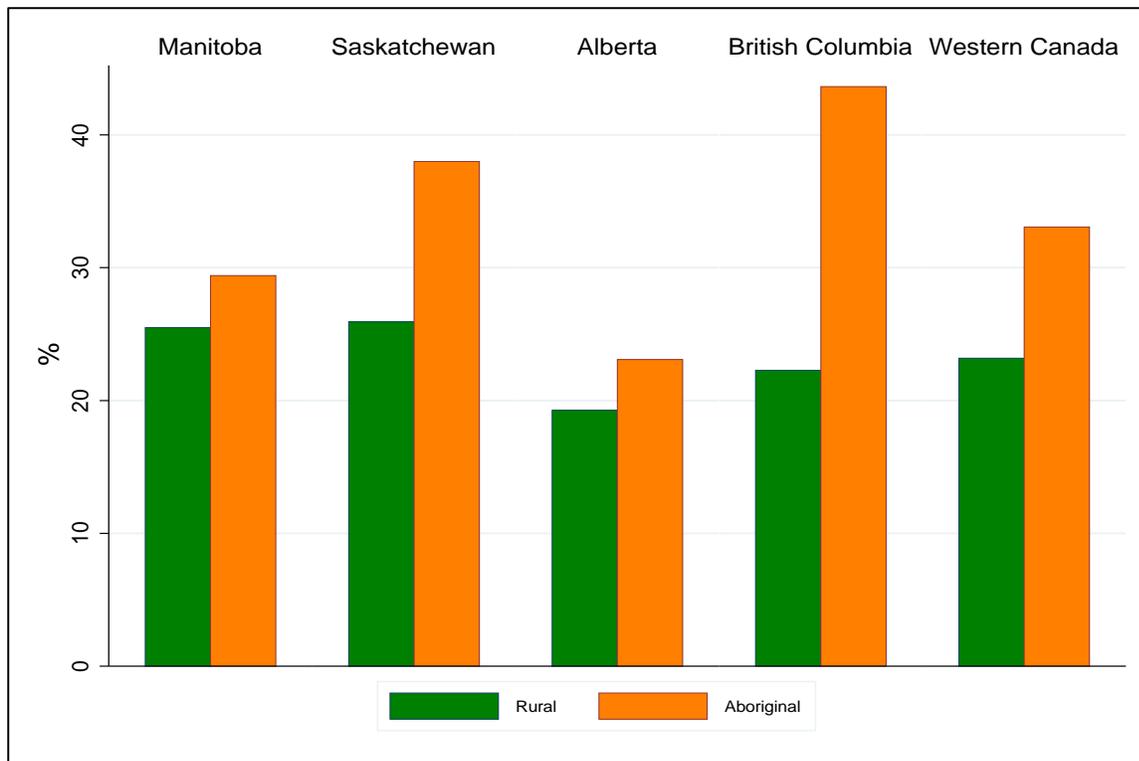


Figure 14 Percentage of respondents who answered 'no' to the question: "Did you vote in the last municipal or band election?"

CIP Telephone Survey Representativeness

In summary, the telephone survey conducted by the Co-operative Innovation Project was fairly representative of our study population. The study showed a slight bias toward an older, better educated demographic, with a smaller household size, and most respondents lived in somewhat larger communities. Most respondents had been living in their communities for a long period of time, and planned to stay in the intermediate to long run. They also interacted with their neighbours frequently.

Aboriginal respondents in our sample differed from rural respondents in several aspects (e.g., education and income). However, since the majority of our Aboriginal respondents mainly lived in rural CSDs, their responses differed from the Aboriginal study population based on CSD. The intention to remain in their communities was lower for Aboriginal respondents than rural respondents in Manitoba and Saskatchewan.

Overall, our data likely gives us a fairly thorough picture of the perceptions of individuals in our study population, and our respondents likely have a fairly strong understanding of the needs and capacities in their communities.



Community Needs

As indicated above, the survey included questions on 16 different measures of community need. One question from this section of the survey, regarding postsecondary training, was moved during the analysis phase to the business capacity section. The extent of the need for the remaining 15 services/programs varies.¹⁹ Table 8 ranks the survey responses for the 15 services/programs. They are listed from high to low by using the average scores. Overall, the top 15 needs for rural and Aboriginal respondents combined, from high to low, are: youth programs, roads, arts and culture programs, daycare, housing, health care, senior’s programs, physical activity programs, preschool, internet access, recycling, high school, sanitation and waste management, drinking water, and elementary schools.

There are some differences in the relative rankings between rural and Aboriginal communities. For instance, youth programs are the most important in rural communities, but are the second most important need in Aboriginal communities, after roads. Daycare is more important to rural respondents, ranking as the 4th highest amongst rural respondents and 7th highest among Aboriginal respondents. Drinking water, sanitation and waste management, and elementary school were the lowest-cited of the fifteen needs, across both rural and Aboriginal community respondents.

Table 8 Western Canada, Top 15 Community needs, Overall, Rural and Aboriginal.

Rank	Overall			Rural			Aboriginal		
	Need	N	Average score	Need	N	Average score	Need	N	Average score
1	Youth programs	1,604	2.63	Youth programs	1,378	2.59	Roads	241	2.93
2	Roads	1,753	2.62	Roads	1,512	2.56	Youth programs	226	2.85
3	Arts and culture programs	1,619	2.54	Arts and culture programs	1,396	2.50	Arts and culture programs	223	2.82
4	Daycare	1,410	2.45	Daycare	1,211	2.43	Housing	240	2.79
5	Housing	1,722	2.42	Health care	1,490	2.37	Seniors’ programs	218	2.77
6	Health care	1,727	2.42	Housing	1,482	2.36	Health care	237	2.73
7	Seniors’ programs	1,544	2.41	Seniors’ programs	1,326	2.36	Daycare	199	2.60
8	Physical activity programs	1,704	2.24	Physical activity programs	1,469	2.21	Physical activity programs	235	2.45
9	Preschool	1,405	2.17	Preschool	1,206	2.15	Internet access	231	2.39
10	Internet access	1,696	2.16	Internet access	1,465	2.12	Recycling	235	2.35
11	Recycling	1,731	2.12	Recycling	1,496	2.08	Preschool	199	2.29



12	High school	1,603	2.02	High school	1,375	1.98	High school	228	2.24
13	Sanitation and waste mgt	1,722	1.93	Sanitation and waste mgt	1,483	1.90	Drinking water	241	2.14
14	Drinking water	1,729	1.92	Element'y school	1,402	1.89	Sanitation and waste mgt	239	2.10
15	Element'y school	1,628	1.92	Drinking water	1,488	1.88	Elementary school	226	2.09
	Total N	1,756			1,514			242	

Source: CIP Telephone Survey, 2015.

Manitoba. In Manitoba, rural and Aboriginal communities exhibited very similar sets of needs: the top four needs are the same in both. Roads are the most important need, followed by arts and culture programs, youth programs, health care, housing, daycare and senior's programs. Recycling is identified as a much higher priority by Aboriginal residents, while elementary school receives less priority by Aboriginal than rural respondents.

Table 9 Manitoba, Top 15 Community Needs, Overall, Rural and Aboriginal.

Rank	Overall			Rural			Aboriginal		
	Need	N	Average score	Need	N	Average score	Need	N	Average score
1	Roads	438	2.73	Roads	353	2.65	Roads	85	3.05
2	Arts and culture programs	411	2.62	Arts and culture programs	331	2.54	Arts and culture programs	80	2.96
3	Youth programs	411	2.61	Youth programs	331	2.54	Youth programs	80	2.90
4	Health care	435	2.48	Health care	351	2.40	Health care	84	2.83
5	Housing	434	2.36	Daycare	311	2.28	Housing	83	2.77
6	Daycare	383	2.35	Housing	351	2.27	Seniors' programs	77	2.73
7	Seniors' programs	399	2.34	Seniors' programs	322	2.25	Daycare	72	2.67
8	Physical activity programs	428	2.26	Physical activity programs	344	2.23	Physical activity programs	84	2.39
9	Preschool	354	2.21	Preschool	285	2.16	Preschool	69	2.39
10	Internet access	423	2.20	Internet access	342	2.15	Internet access	81	2.37
11	High school	405	1.98	High school	325	1.94	Recycling	83	2.29
12	Drinking water	435	1.93	Element'y school	331	1.86	Drinking water	85	2.24
13	Element'y school	412	1.91	Drinking water	350	1.86	Sanitation and waste mgt	85	2.14
14	Recycling	434	1.91	Recycling	351	1.82	High school	80	2.11



15	Sanitation and waste mgt	433	1.87	Sanitation and waste mgt	348	1.80	Elementary school	81	2.11
	Total N	438			353			85	

Saskatchewan. Like Manitoba, roads, arts and culture programs, and youth programs are the top 3 needs overall in Saskatchewan communities, followed by seniors' programs, health care, housing and physical activity programs. Rural communities called for arts and culture programs first, while Aboriginal communities in Saskatchewan called for seniors' programs first; however for both, roads were virtually tied for first.

Saskatchewan is the only province where daycare is not among the top seven needs; daycare is replaced by physical activity programs. Drinking water is presented as a slightly more important need by rural than Aboriginal respondents; sanitation and waste management are more important in Aboriginal communities.

Table 10 Saskatchewan, Top 15 Community needs, Overall, Rural and Aboriginal.

Rank	Overall			Rural			Aboriginal		
	Need	N	Average score	Need	N	Average score	Need	N	Average score
1	Roads	431	2.70	Arts and culture programs	334	2.66	Seniors' programs	47	3.04
2	Arts and culture programs	378	2.69	Roads	381	2.66	Roads	50	3.04
3	Youth programs	388	2.66	Youth programs	339	2.63	Youth programs	49	2.88
4	Seniors' programs	364	2.57	Seniors' programs	317	2.50	Arts and culture programs	44	2.86
5	Health care	422	2.46	Health care	372	2.44	Housing	50	2.86
6	Housing	422	2.44	Housing	372	2.38	Health care	50	2.64
7	Physical activity programs	406	2.38	Physical activity programs	359	2.34	Physical activity programs	47	2.64
8	Daycare	355	2.34	Daycare	314	2.33	Recycling	48	2.54
9	Recycling	423	2.29	Recycling	375	2.26	Daycare	41	2.39
10	Internet access	415	2.07	Internet access	367	2.05	Sanitation and waste mgt	49	2.20
11	Preschool	350	2.02	Preschool	309	2.02	Internet access	48	2.19
12	Drinking water	427	2.00	Drinking water	377	1.99	High school	48	2.13



13	Sanitation and waste mgt	428	1.98	Sanitation and waste mgt	379	1.95	Preschool	41	2.07
14	High school	403	1.88	High school	355	1.85	Drinking water	50	2.06
15	Element'y school	406	1.84	Element'y school	358	1.82	Element'y school	48	1.98
	Total N	432			382			50	

Alberta. In Alberta, both rural and Aboriginal respondents identified arts and culture programs as the number one priority for their communities. Youth programs, daycare and roads are the next top three needs overall, followed by seniors' programs, housing and health care. Alberta's Aboriginal community respondents identified daycare as the second most important need, followed by seniors' programming. Both Aboriginal and rural communities placed drinking water, sanitation, and elementary school as the lowest priorities, which mirrors the western Canada-wide response.

Table 11 Alberta, Top 15 Community Needs, Overall, Rural and Aboriginal

Rank	Overall			Rural			Aboriginal		
	Need	N	Average score	Need	N	Average score	Need	N	Average score
1	Arts and culture programs	403	2.67	Arts and culture programs	354	2.62	Arts and culture programs	49	2.98
2	Youth programs	405	2.61	Youth programs	356	2.60	Daycare	37	2.86
3	Daycare	324	2.55	Roads	384	2.53	Seniors' programs	46	2.85
4	Roads	436	2.55	Daycare	287	2.51	Housing	52	2.85
5	Seniors' programs	384	2.40	Seniors' programs	338	2.34	Health care	50	2.74
6	Housing	429	2.40	Housing	377	2.34	Roads	52	2.71
7	Health care	428	2.35	Health care	378	2.30	Youth programs	49	2.65
8	Physical activity programs	427	2.27	Physical activity programs	376	2.26	Internet access	50	2.50
9	Internet access	422	2.22	Internet access	372	2.18	Recycling	50	2.42
10	Recycling	428	2.21	Recycling	378	2.18	Physical activity programs	51	2.37
11	Preschool	360	2.12	Preschool	316	2.11	High school	47	2.32
12	High school	397	2.00	High school	350	1.96	Preschool	44	2.18
13	Drinking water	425	1.95	Drinking water	374	1.93	Drinking water	51	2.12
14	Sanitation and waste mgt	422	1.93	Sanitation and waste mgt	371	1.92	Sanitation and waste mgt	51	2.00



15	Element'y school	403	1.89	Elementary school	357	1.88	Element'y school	46	1.93
	Total N	436			384			52	

British Columbia. In British Columbia, the differences between rural and Aboriginal communities may be the most stark of the four western Canadian provinces. The top three overall needs are youth programs, daycare and roads, followed by housing, health care, senior's programs, and preschool. It is noted that arts and culture programs are far less important overall in British Columbia compared to the other three provinces, although it was the second need noted in rural communities.

In British Columbia's Aboriginal communities, respondents recorded youth programs, roads, and housing as the top three needs. In fact, housing is listed as a top three need in BC's Aboriginal communities; it is 4th in Alberta's Aboriginal communities, and 5th in both Manitoba and Saskatchewan. In rural communities in British Columbia, housing is 9th on the list, indicating a clear gap between rural and Aboriginal perspectives.

Rural respondents in British Columbia, unlike the other three provinces, indicate a much higher need for attention to drinking water and sanitation and waste management issues, while Aboriginal respondents in BC relegate those issues to the bottom of their priority list.

Table 12 British Columbia, Top 15 Community Needs, Overall, Rural and Aboriginal.

Rank	Overall			Rural			Aboriginal		
	Need	N	Average score	Need	N	Average score	Need	N	Average score
1	Youth programs	400	2.64	Seniors' programs	349	2.33	Youth programs	48	2.94
2	Daycare	348	2.59	Arts and culture programs	377	2.20	Roads	54	2.87
3	Roads	448	2.49	Physical activity programs	390	2.03	Housing	55	2.69
4	Housing	437	2.46	Youth programs	352	2.60	Health care	53	2.66
5	Health care	442	2.37	Drinking water	387	1.75	Internet access	52	2.50
6	Seniors' programs	397	2.35	Sanitation and waste mgt	385	1.92	Daycare	49	2.49
7	Preschool	341	2.32	Recycling	392	2.06	Seniors' programs	48	2.48
8	Arts and culture programs	427	2.22	Roads	394	2.44	Physical activity programs	53	2.45
9	High school	398	2.22	Housing	382	2.43	High school	53	2.45



10	Internet access	436	2.15	Health care	389	2.33	Preschool	45	2.42
11	Physical activity programs	443	2.08	Internet access	384	2.10	Arts and culture programs	50	2.40
12	Recycling	446	2.07	Daycare	299	2.61	Element'y school	51	2.29
13	Element'y school	407	2.02	Preschool	296	2.30	Recycling	54	2.20
14	Sanitation and waste mgt	439	1.94	Element'y school	356	1.98	Drinking water	55	2.09
15	Drinking water	442	1.79	High school	345	2.18	Sanitation and waste mgt	54	2.02
	Total N	450			395			55	

Western Canada: The four western provinces display similarities in their top needs. First, youth programs appear to be the most important need, as this shows up among the top 3 needs overall in all the four provinces, except in Aboriginal communities in Alberta, where they are the 7th highest need. This finding is particularly interesting considering that, overall, the telephone survey respondents tended to be from an older demographic.

Health care, housing and seniors' programs are also important needs, since they are always among the top seven needs. Considering the demographic differences between rural and Aboriginal communities, where in general Aboriginal communities have a more youthful population and rural communities tend to have a more senior population, it could be assumed that Aboriginal communities would be more likely to prioritize youth programs, and rural communities to prioritize seniors' programs. In fact, with the exception of British Columbia, the opposite is true: Aboriginal communities call for seniors' programs first, and rural communities look to support their youth first.

There are differences between the four provinces: (1) daycare seems to be in a higher need in Alberta and British Columbia than in Manitoba and Saskatchewan; (2) roads are more important in Manitoba and Saskatchewan than in Alberta and British Columbia; (3) health care is more important in Manitoba, Saskatchewan and British Columbia than in Alberta.

Although rural and Aboriginal communities seem to have similar needs, they differ in the extent or severity of the needs: for each need on the list, in general, Aboriginal communities tend to display a higher average score, indicating a higher level of need. Given persistent social and economic gaps between Aboriginal and rural communities, this finding is not surprising.

Table 13 Aboriginal communities have higher needs, compared with rural communities

Need	Manitoba	Saskatchewan	Alberta	British Columbia	Western Canada
Need for Programs:					
1. Seniors' Programs	Higher	Higher	Higher	No Difference	Higher



2. Arts and Culture Programs	Higher	No Difference	Higher	No Difference	Higher
3. Physical Activity Programs	No Difference	Higher	No Difference	Higher	Higher
4. Youth Programs	Higher	No Difference	No Difference	Higher	Higher
Need for Basic Services:					
1. Drinking Water	Higher	No Difference	No Difference	Higher	Higher
2. Sanitation and Water Management	Higher	Higher	No Difference	No Difference	Higher
3. Recycling	Higher	No Difference	No Difference	No Difference	Higher
4. Roads	Higher	Higher	No Difference	Higher	Higher
5. Housing	Higher	Higher	Higher	Higher	Higher
6. Health Care	Higher	No Difference	Higher	Higher	Higher
7. Internet Access	Higher	No Difference	Higher	Higher	Higher
Need for Educational Services:					
1. Daycare	Higher	No Difference	Higher	No Difference	Higher
2. Preschool	Higher	No Difference	No Difference	No Difference	Higher
3. Elementary School	Higher	Higher	No Difference	Higher	Higher
4. High School	No Difference	Higher	Higher	Higher	Higher

Not all the above services and programs are being provided in every community. Although lack of availability does not necessarily create a need or dissatisfaction with the service (because people may be able to source their needs in another place), an analysis of the lack of availability of the program or service is likely worthwhile.²⁰

The following two tables summarizes the lack of availability of selected services and programs in Manitoba and Saskatchewan, then in Alberta and British Columbia, against western Canada.

Table 14 Percentage of respondents who answered that a particular service was not available in their communities: Manitoba, Saskatchewan and western Canada.

Service/Program	Manitoba		Saskatchewan		W Can	
	Aboriginal (85)	Overall (438)	Aboriginal (50)	Overall (432)	Aboriginal (242)	Overall (1756)
	Rural (353)		Rural (382)		Rural (1514)	



Post-Secondary Training	27.2	10.6	24.0	22.5	12.0	21.3	26.0	11.6	24.0
Senior's Programs	8.8	5.9	8.2	14.9	6.0	13.9	11.4	7.9	10.9
Youth Program	4.8	5.9	5.0	8.6	2.0	7.9	7.4	6.2	7.2
Arts and Culture Programs	5.1	3.5	4.8	7.9	10.0	8.1	5.5	5.8	5.6
High School	2.8	2.4	2.7	2.9	0	2.5	3.8	0.8	3.4
Daycare	1.1	1.2	1.1	3.4	0	3.0	3.0	2.1	2.8

Table 15 Percentage of respondents who answered that a particular service was not available in their communities: Alberta, British Columbia and western Canada.

Service/Program	Alberta		British Columbia			W Can			Overall (156)
	Rural (384)	Aboriginal (52)	Overall (436)	Rural (395)	Aboriginal (55)	Overall (450)	Rural (1514)	Aboriginal (242)	
Post-Secondary Training	31.5	15.4	29.6	23.0	9.1	21.3	26.0	11.6	24.0
Senior's Programs	11.7	9.6	11.5	10.1	10.9	10.2	11.4	7.9	10.9
Youth Program	6.5	5.8	6.4	9.4	10.9	9.6	7.4	6.2	7.2
Arts and Culture Programs	6.0	3.8	5.7	3.3	7.3	3.8	5.5	5.8	5.6
High School	3.1	0	2.8	6.3	0	5.6	3.8	0.8	3.4
Daycare	4.7	7.7	5.0	2.5	0	2.2	3.0	2.1	2.8

Post-secondary training²¹ was cited the most frequently (24%) as being unavailable in the community. In particular, 29.6% of Alberta respondents noted the absence of this service, followed by Manitoba (24%), and Saskatchewan and British Columbia (21.3%). There is a gap in the provision of this service between rural and Aboriginal communities, with Aboriginal respondents reporting the unavailability of the service at half of the rate of rural respondents; in other words, there is more post-secondary training available in Aboriginal than rural communities. This pattern is observed in each province.

Senior's programs are the second least available service: 10.9% of respondents answered that there are no such programs in their communities. The gap between rural and Aboriginal communities is the largest in Saskatchewan, where the respective percentages were 14.9% and 6% for rural and Aboriginal respondents, respectively.

Youth programs were reported to be unavailable in the community by 7.2% of western Canadian respondents. The percentage of respondents varies from 9.6% in British Columbia to 5% in Manitoba. There isn't a significant difference between rural and Aboriginal respondents.

Rural respondents in all provinces note that some communities do not have a local high school. In British Columbia, 6.3% of respondents indicated that there was no local high school. In Aboriginal communities in Saskatchewan, Alberta, or British Columbia, none of the respondents noted that their communities were missing a local high school; however, 2.4% of Aboriginal respondents in Manitoba pointed out the absence of this service.



Business Capacity

Rural and Aboriginal communities differed in their reported business capacities. The telephone survey asked respondents several questions relating to perceptions of local business capacity. These questions asked about general business skills, access to financing, access to technology, local labour force, and networking opportunities. For an overview of the questions, please see the telephone survey questionnaire in the Appendix.

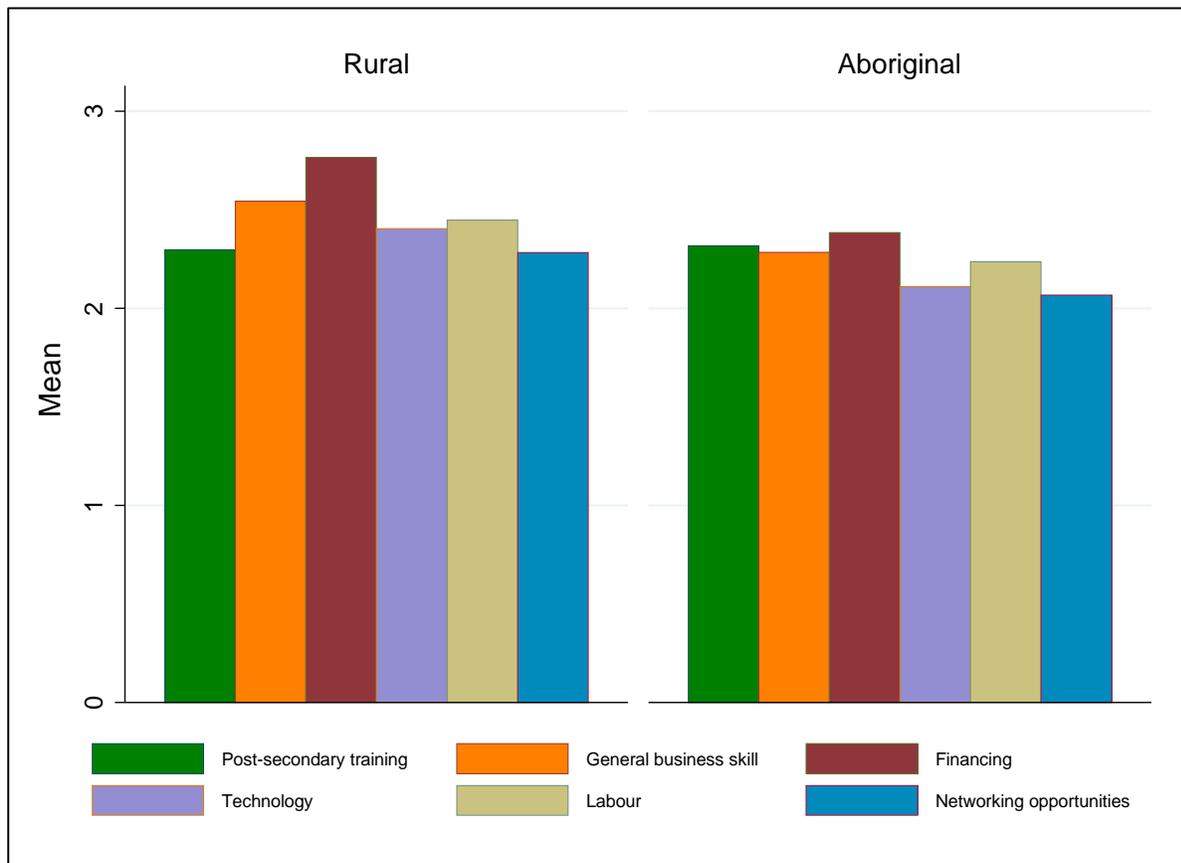


Figure 15 Variables related to business capacity

As shown in Figure 15, rural communities appear to be stronger in their ability to finance business ventures. They also report strength in the availability of general business skills and the stock of skilled labour. Respondents report relative weakness in the areas of technology, post-secondary training and networking opportunities. In contrast, Aboriginal communities didn't display clear strengths or weakness across any of the areas.

Rural communities generally report higher levels of business capacity than Aboriginal communities in all categories, except in post-secondary training, where no significant difference between the two groups is observed. In particular, the gap in financing between the two groups appears to be the



largest, although access to technology and networking opportunities is also considerably lower in Aboriginal communities.

Social Capacity

Social capacity is the ability of people in a community to work together, and the willingness of the community to allow people to do so. Figure 16 presents the respondents scores related to co-operation, volunteerism, and working with other communities.

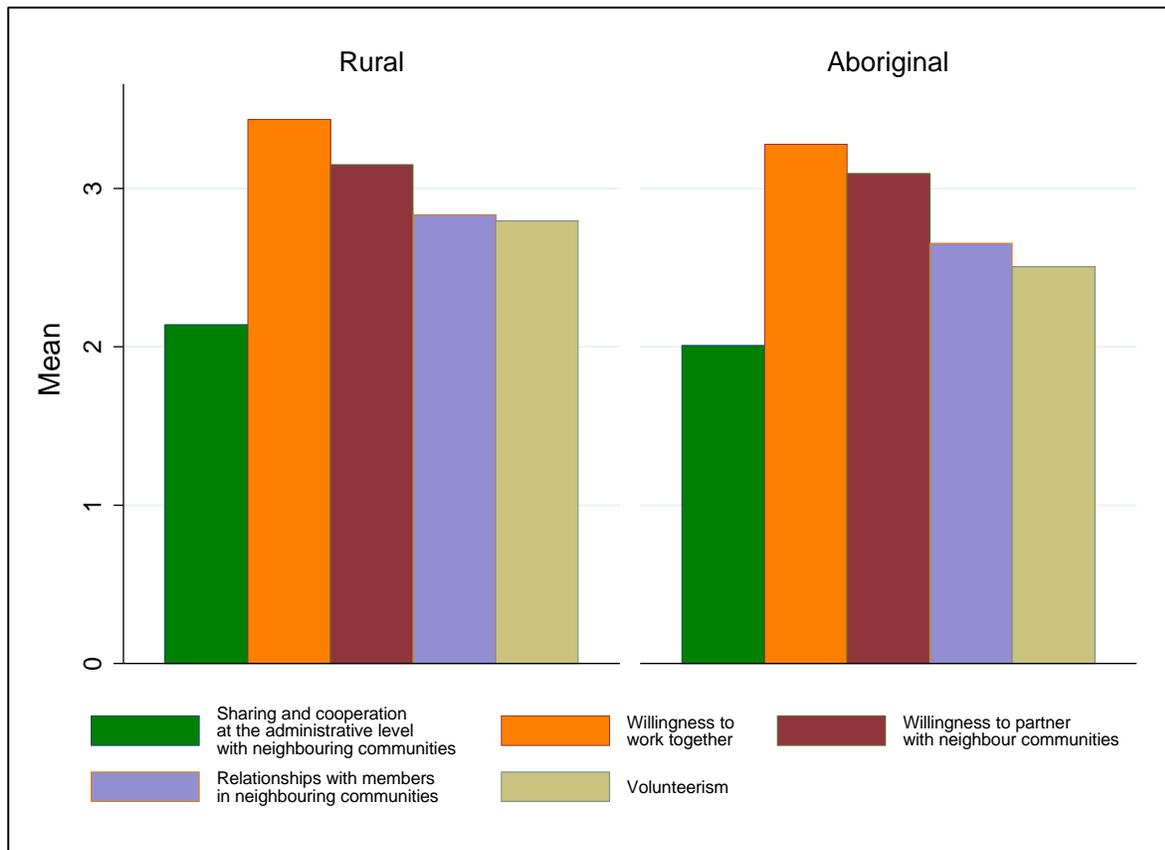


Figure 16 Variables related to willingness to work together

As shown in Figure 16, both rural and Aboriginal respondents are willing to work together with other members in their own communities to address the common issues they are facing. However, although they are also willing to co-operate with members in nearby communities, there is a perception that the relationship with other communities is not as strong as the willingness to work with them. Sharing and cooperation with neighbouring communities at the administrative level showed the lowest score. The level of volunteerism in communities is not high in either rural or Aboriginal western Canada, although respondents reported a slightly higher level in rural than Aboriginal communities.



Although similar patterns were identified for both rural and Aboriginal communities, there are differences: rural communities tend to report higher co-operation than Aboriginal communities.

Social capacity may be affected by many factors, such as feelings of safety and security in the community. Feeling unsafe or insecure may either deter people from, or drive people toward, working together.

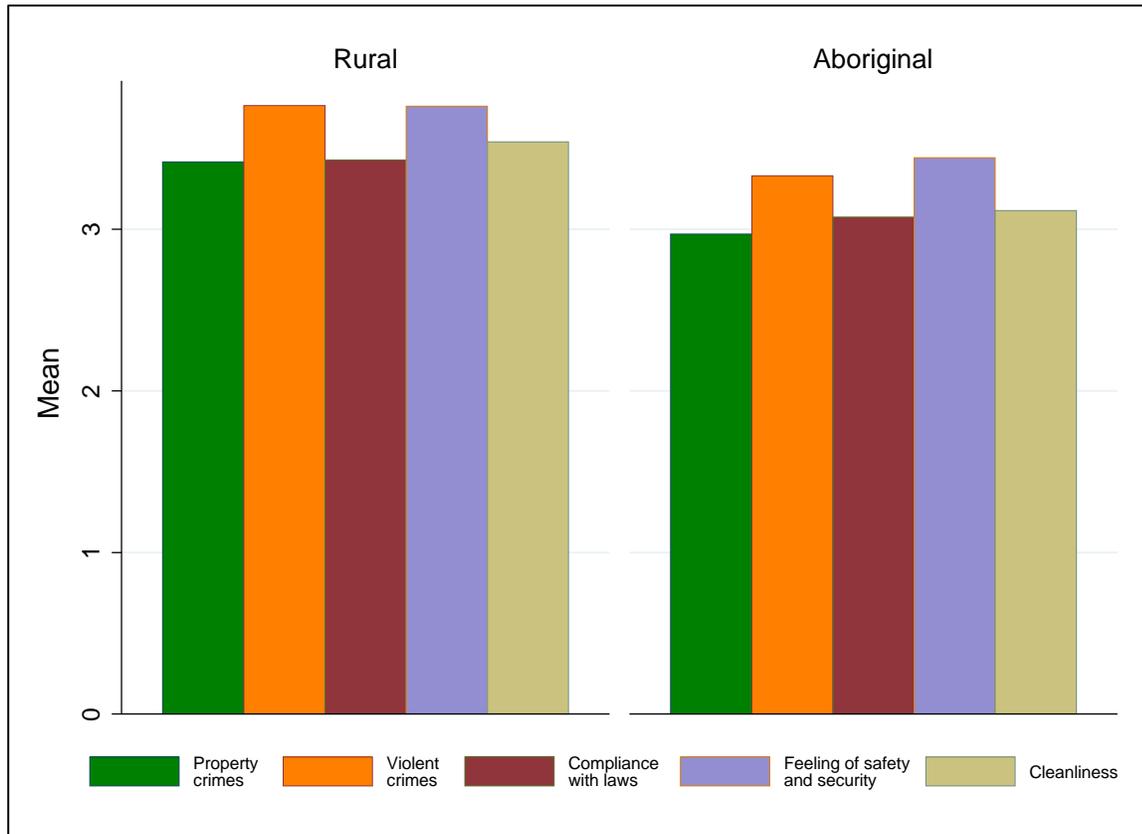


Figure 17 Variables related community compliance to laws, absence of property or violent crimes, safety and security, and community cleanliness

The survey results suggest that respondents in rural communities tend to feel safer than those in Aboriginal communities: Aboriginal respondents report non-compliance with laws, and higher incidence of property crimes and violent crimes. Aboriginal respondents also reported the cleanliness of their communities to be less satisfactory.

Social capacity may also be affected by community diversity. Greater diversity may make it difficult for members to build and develop favourable relationships and trust, and thus may discourage people from working together. The telephone survey results indicate that respondents in rural and Aboriginal communities believe that the demographic similarities in age, race, religion, language, income, and type of work have not changed much over time.



Knowledge of Co-operatives

In this section, we investigate an additional dimension important for the adoption of the co-operative model to address community needs: knowledge of co-operatives.

When asked “do you know what a co-operative is?”, out of 1,756 respondents, 446 or 25.4% of respondents answered either “no” or “don’t know”, indicating limited knowledge of the co-operative model. Moreover, there is a significant gap between rural and Aboriginal respondents: 23% of rural respondents and 41% of Aboriginal respondents answered either “no” or “don’t know.” The gap between Aboriginal and rural respondents is identified in each province as shown in Figure 18.

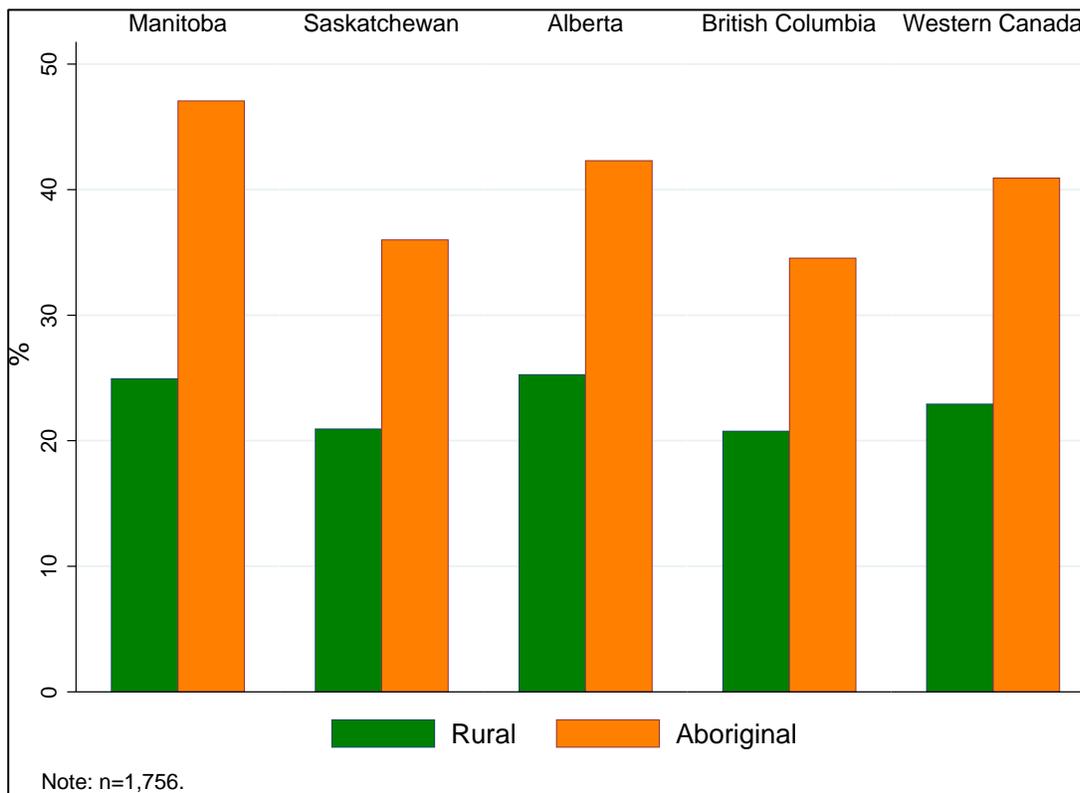


Figure 18 Percentage of respondents who answered "No" or "Don't Know" to the question, "Do you know what a co-operative is?"

Among the 1,310 respondents who claimed to know what a co-operative is, 100 (or 7%) indicated that there were either no co-operatives present in their communities, or they didn’t know if there were co-operatives/credit unions in their communities. As shown in Figure 19, the percentage is much higher in Aboriginal communities, particularly in Saskatchewan and Alberta, whereas in British Columbia, the difference between rural and Aboriginal is insignificant.

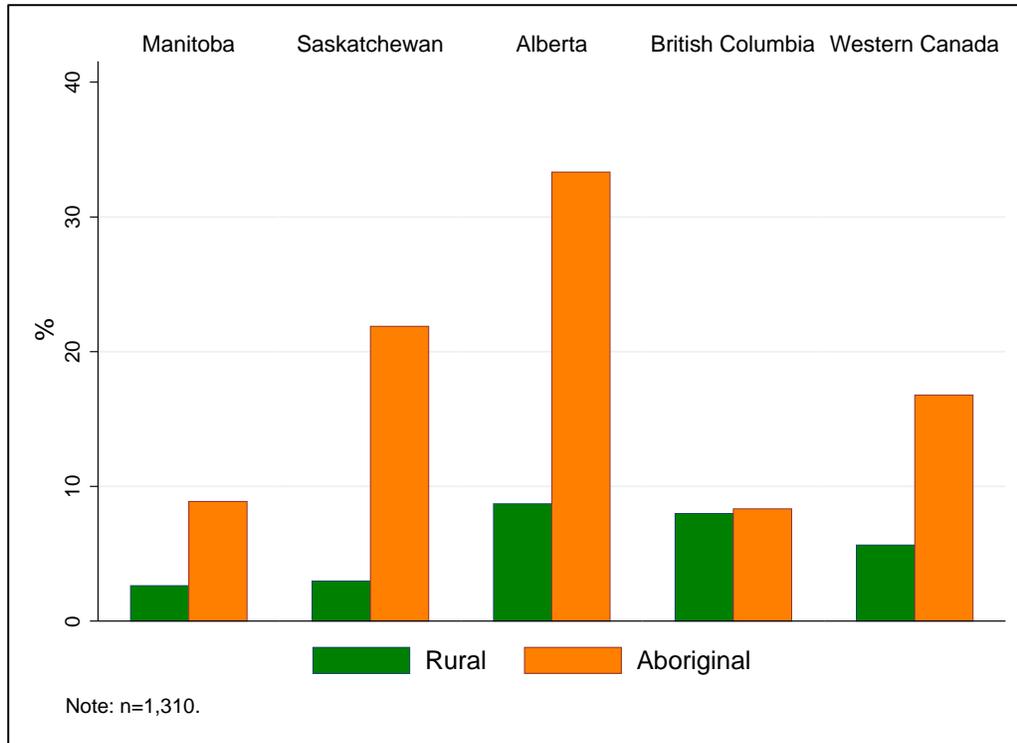


Figure 19 Percentage of respondents who answered "No" or "Don't Know" to the question, "Are there currently co-operatives and/or credit unions in your community?"

The 1,210 respondents who indicated that there were co-operatives in their communities were asked to describe the type(s) of the co-operative(s) operating in their communities. Multiple answers were allowed for this question. Table 16 summarizes the types of co-operatives respondents said were available in communities:

Table 16 Types of Co-operatives present in communities (%)

	Manitoba			Saskatchewan			Alberta			British Columbia			Western Canada		
	Rural	Aboriginal	Total	Rural	Aboriginal	Total	Rural	Aboriginal	Total	Rural	Aboriginal	Total	Rural	Aboriginal	Total
Financial	92	95	92	87	100	88	86	75	85	92	85	91	89	90	89
Retail	79	71	78	83	76	83	66	65	66	39	39	39	66	62	66
Housing	23	39	25	27	40	28	21	40	22	34	36	34	26	39	28
Preschool/ Daycare	21	20	21	32	32	32	16	20	16	19	15	18	22	21	22
Arts and Crafts	11	20	12	9	12	9	12	10	12	30	39	31	15	22	16
Workers	14	15	14	12	16	12	9	25	10	14	12	14	12	16	13
Marketing	9	7	9	14	20	14	13	10	13	9	15	10	11	13	11



As shown in the table, the most common type of co-operatives perceived by respondents are financial co-operatives or credit unions, with 89% of 1,210 respondents indicating that they have financial co-operatives in their communities. The retail co-operative was perceived as the second most common type (66%). The housing co-operative and preschool/daycare co-operative were third and fourth, respectively, followed by arts and crafts co-operatives, workers co-operatives and marketing co-operatives.

Further Analysis

The Co-operative Innovation Project team also completed an exploratory factor analysis of the data.²² In a factor analysis, a set of variables is examined to see which ones are most strongly correlated with each other. The variables that are grouped together are known as a factor. These factors are important because they provide a way of summarizing, via a factor, a set of variables that are closely connected.

A detailed overview of the technical aspects of these tests, including a table that shows the statistical results, can be found in the Research Design and Methodology chapter.

Community Need Factors

In the examination of community need, three factors were identified – one to do with the need for programs, one to do with the need for basic services, and one to do with the need for educational services. For each factor, a score was calculated that indicated the importance that respondents attached to the variables that made up the factor.

Need for Programs Factor. The average score for this factor is 2.45, indicating a high need for programs such as seniors' programs or youth programs, across all four western provinces. There are differences across community type in each province: Aboriginal communities tend to have a higher need for programs than rural communities.

Provincial differences are observed only among rural communities: in particular, the need for programs in rural British Columbia is significantly lower than in Manitoba, Saskatchewan and Alberta.

Need for Basic Services Factor. The average score for this factor is 2.23, making it the second highest among the three need factors that we analyzed. The ranking of this factor was the same across rural and Aboriginal communities., although Aboriginal communities have a higher score than do than rural communities. No differences were observed at the province level.

Need for Educational Services Factor. The average score for the need for educational services factor is the lowest (2.13) among the three need factors. Community differences are observed only in Manitoba and Alberta, where Aboriginal communities have a higher need than rural communities.

Significant differences at the provincial level are observed for rural communities only: rural British



Columbia communities tend to have a higher need for educational services, relative to the rural communities in the other three western provinces.

Overall, our analysis of the telephone survey responses indicates that community members believe the need for programs is higher than the need for basic services which in turn is higher than the need for educational services. The results indicate that Aboriginal communities tend to have a higher level of need than rural communities.

Business Capacity

Only one factor was identified for business capacity. The average score for business capacity is 2.44. Aboriginal respondents in Manitoba, Saskatchewan and Alberta reported a higher level of business capacity than did respondents in British Columbia. Rural respondents in Alberta had a statistically higher score than those in British Columbia, with Saskatchewan and Manitoba in the middle (and with no statistical difference from either Alberta or British Columbia).

Social Capacity

Three factors were identified in the area of social capacity. One of the factors concerned the willingness to work together, a second captured a sense of safety and security, and a third captured demographic similarities. For each factor, a score was calculated that indicated the importance that respondents attached to the variables that made up the factor.

Willingness to Work Together. The average score for this factor is 2.75, suggesting that on average, a high potential for collective action exists in rural and Aboriginal communities in western Canada. Difference between rural and Aboriginal communities exist in Manitoba and Saskatchewan, where respondents from Aboriginal communities appear to be less willing to co-operate than those in rural communities. Provincial differences also exist among Aboriginal communities: Aboriginal respondents in British Columbia tend to be more willing to co-operate with others than those in Manitoba and Saskatchewan, while the attitude of those in Alberta is in the middle.

Sense of Safety and Security. The average score for this factor is 3.53, suggesting that overall respondents feel safe and secure in their communities. Although Aboriginal respondents tend to feel less safe and secure than rural respondents, the average score for Aboriginal communities (3.19) indicates that Aboriginal respondents also generally feel safe and secure in their communities, just to a lesser extent when compared with their rural counterparts.

Differences among provinces are observed in rural communities only: British Columbia respondents feel safer and more secure than those in Alberta. Manitoba and Saskatchewan respondents are placed in the middle of the two.

Demographic Similarities. The average score for this factor is 2.97, indicating that respondents felt that their communities had changed slightly over time, becoming somewhat less similar and more varied in their background. In Saskatchewan, Aboriginal community respondents indicated that their communities have become slightly more diverse, but Aboriginal residents in the other provinces perceive more similarity. Rural respondents perceived some slight differences between provinces: over time, communities have become less similar and more diverse in British Columbia



than in Saskatchewan, Alberta and Manitoba.

Correlations between Seven Factors

One of the starting points for the CIP research was to investigate whether there are any connections between community need, business capacity and social capacity – i.e., do communities that score high on one element tend to score high (or low) on another element. To examine this question, the correlations between the various factors were explored. It is important to note that the presence of correlations does not indicate direct causation. For instance, a correlation between business capacity and social capacity could be the result of a direct link from social capacity to business capacity, a direct link from business capacity to social capacity, the presence of other variables that influence both social capacity and business capacity, or any combination of these possibilities.

The seven factors we investigate are: need for programs, need for basic services, need for educational services, business capacity, willingness to work together, sense of safety and security, and community similarity. Please view the chapter on Research Design and Methodology for a more complete explanation of these techniques, including factor tables.

Need vs. Business Capacity and Social Capacity

a. Need vs. Business Capacity²³

As shown in Figure 20, a community with a high need for basic services tends to have low business capacity, and vice versa. This result is not surprising, as a community with high needs tends to be less developed, facing unfavorable social and economic conditions. Thus such communities often have difficulties in retaining persons with business skills, technologies, expertise and experience or attracting external resources to serve their unmet needs. In turn, without the required business capacity, members in such communities may not be able to meet the need they have identified in a sustainable way.

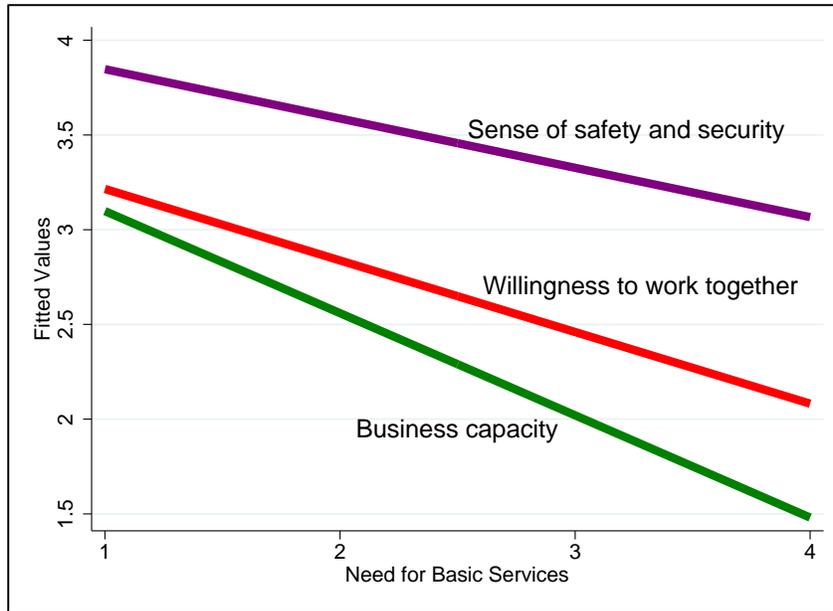


Figure 20 Relationship between need for basic services, business capacity, willingness to work together, and sense of safety and security.

The correlations between business capacity and need for basic services differ significantly between rural and Aboriginal communities: there is a stronger negative relationship between business capacity and needs among Aboriginal responses than rural responses.

b. Need vs. Social Capacity

As illustrated in Figure 20, need factors are also negatively correlated with social capacity factors. Thus, communities with high needs tend to have low social capacity, and vice versa.

This finding is also consistent with our expectations. A higher level of social capacity enables community members to have more opportunities and channels to communicate and interact with each other efficiently. They can comfortably talk about their needs and discuss possible solutions with other members. Such communications offer the possibilities of identifying new needs and getting more community members to share ideas and address the need. At the same time, a community with high needs tends to face many economic and social challenges that may prevent its members from working together to effectively address the needs.

There is no significant difference in the correlations between rural and Aboriginal communities, except for the case of basic services versus demographic similarities. In this case, a somewhat stronger negative correlation in Aboriginal responses is found, although the correlation between the factors is still weak.

The negative associations between community needs and business capacity are generally stronger than those between community needs and social capacity, suggesting a closer relationship between community needs and business capacity.



Business Capacity vs. Social Capacity

As would be expected given the results presented in Figure 20, the business capacity factor is positively correlated with the social capacity factors. In particular, the correlation between business capacity and willingness to work together is moderate, while the correlations between business capacity and sense of safety and security, and demographic similarities, are weaker. These results suggest that a community with strong business capacity tends to have strong social capacity and vice versa. This may be because strong social capacity makes pooling and sharing of resources possible and facilitates information flow and decision-making, thus enhancing the business capacity of the community as a whole. It may also be because some other set of variables (such as education, as an example), affect both of these variables.

The correlation coefficients between business capacity and willingness to work together differ between rural and Aboriginal communities; specifically, a stronger relationship between the factors is observed in Aboriginal communities.

To conclude, a community with high need tends to be associated with low business capacity and low social capacity, and vice versa; and rural and Aboriginal communities do exhibit some differences in the strength, but not the direction (e.g., positive or negative) of these relationships.

Quality of Life

The telephone survey included a question about the respondent's sense of the quality of life in the community. The average score for quality of life in the community is 2.8 (out of 4), indicating a moderate to high level of quality of life. Rural and Aboriginal communities differ in their perceptions of quality of life: the average score for rural communities is 2.9, while the average score for Aboriginal communities is 2.4. This pattern is observed in each of the four western provinces, as shown in Figure 21.

No significant difference in quality of life was observed when the responses from Aboriginal communities in different provinces were compared. In rural communities, the quality of life is higher in British Columbia than in Manitoba, Saskatchewan and Alberta.

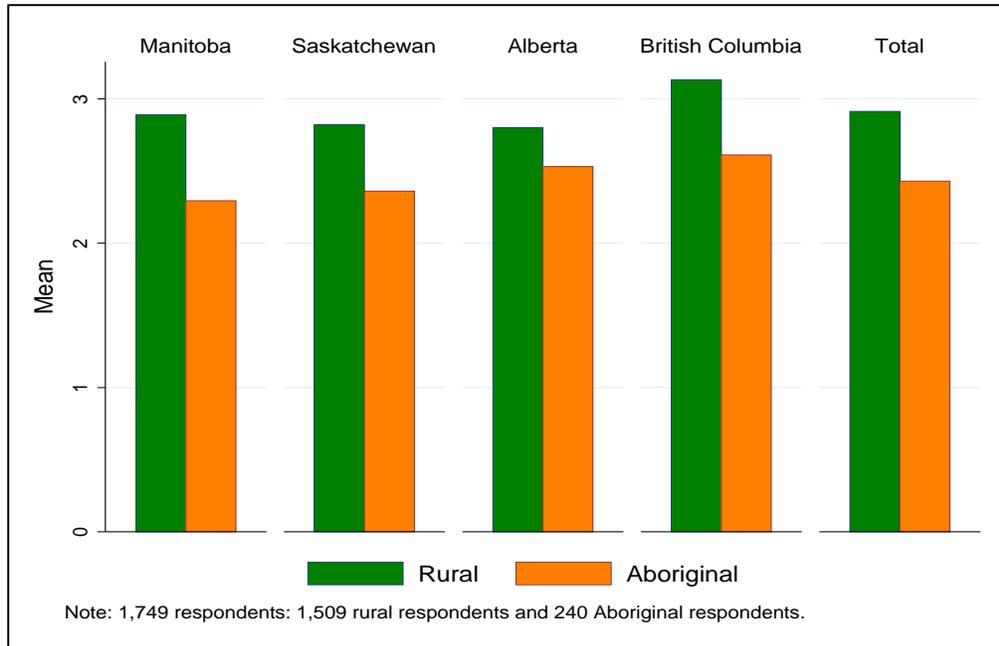


Figure 21 Quality of life, by province, rural and Aboriginal communities

There are some interesting correlations between quality of life and the factors identified earlier. Quality of life is negatively correlated with the three need factors, and positively correlated with business capacity and willingness to work together; these correlations are all moderate. Quality of life is also positively correlated with sense of safety & security, and demographic similarity; however, these correlations are very weak. These results imply that the quality of life is likely to be high in communities with a low need, high business capacity and strong willingness to work together (see Figure 22).



Figure 22 Quality of life vs. need for basic services, business capacity, willingness to work together, and sense of safety and security.

Conclusion

The Co-operative Innovation Project conducted an extensive telephone survey aimed at rural and Aboriginal respondents across western Canada. This survey was conducted between January and June 2015 and asked a series of pre-set questions regarding potential needs. Over 2,000 people completed the survey; for the purposes of our study, we analyzed only those who gave complete or fairly complete responses (in other words, there were few questions left unanswered in the survey). The final sample consisted of 1,756 responses, of which 438 were from Manitoba, 432 were from Saskatchewan, 436 were from Alberta and 450 were from British Columbia.

The results of this survey reveal some interesting views about what community-level residents feel are the most important community needs across western Canada, and provide an interesting comparative perspective both between the four western provinces, and between rural and Aboriginal communities.

Overall, the top fifteen needs noted by respondents, from high to low, were: youth programs, roads, arts and culture programs, daycare, housing, health care, senior's programs, physical activity programs, preschool, internet access, recycling, high school, sanitation and waste management, drinking water, and elementary schools.

There are important correlations between these needs. Community members in our telephone survey indicate lower quality programs than either basic services or educational services. It may be time to put additional attention into providing local programs to support a better quality of life in rural and Aboriginal communities.



From a co-operative development perspective, there are some disturbing numbers: over twenty percent of rural respondents, and double that for Aboriginal respondents, declared no knowledge of the co-operative model. For those who did know about co-operatives, many report no co-operative businesses in their home community. Clearly, knowledge and presence of co-operatives, once thought to be commonplace in western Canada, is in jeopardy.

Finally, our survey revealed interesting correlations between a community's business and social capacity, and its local needs. The higher the local needs, the lower the community's business and social capacity factors. Local needs, business capacity and social capacity were also correlated with quality of life, with respondents that reported fewer needs, greater business capacity and more social capacity also reporting a higher quality of life.

The Co-operative Innovation Project hopes to delve deeper into these findings at the regional and community level to discover what it may be that communities already have, or what they may need, in order to improve their quality of life.



Endnotes

¹ Based on advice from staff at the SSRL, to make response options manageable for respondents over the telephone, we chose to use a 4-point Likert scale for most perception questions. An exception was made for the demographic similarity questions, where a 5-point Likert scale was used because the middle option denoted no change.

² The minimum sample size would be 384 for each province to achieve the desired margin of error. This is calculated based on the population aged 18 years and over in 2011 from Census of Population 2011: $\text{minimum sample size} = (Z\text{-score})^2 \times \text{standard of deviation} \times (1 - \text{standard of deviation}) / (\text{margin of error})^2$, where the research team chose 95% confidence level, 0.5 standard deviation and a margin of error (confidence interval) of $\pm 5\%$.

³ In 2011, the Aboriginal population aged 18 years and over accounted for about 14.8%, 7.6%, 5.8%, and 6.5% of the population in the rural and Aboriginal communities in Manitoba, Saskatchewan, Alberta and British Columbia, respectively.

⁴ While we theoretically developed particular questions to measure each of our constructs of interest, in the first stage we performed an exploratory factor analysis (EFA) to determine the underlying structure of the variables (or questions). In this study, we have 39 variables, which interact with each other. For instance, respondents' rating of a service could be either an indicator for a need for that service or an indicator for the business capacity or social capacity. Post-secondary service provides a good example. Dissatisfaction may imply a need for improving the depth or width of the post-secondary training in the community. On the other hand, it may also indicate a low level of human capital, and thus a low business capacity. Given the large number of variables and the interactions among them, a clearer understanding of the underlying relationships among variables is desirable. EFA is a tool that can help attain this end.

EFA is a powerful multivariate statistical technique that is useful for dealing with a large number of variables intended to measure a smaller number of overarching constructs. By examining the pattern of correlations between the variables, EFA brings a large number of intercorrelated variables together under a smaller number of more general factors that are unknown and often unknowable variables to explain the covariance among the measured variables. In theory, these factors are the underlying causes of the measured variables. More specifically, factor analysis attempts to reduce the "dimensionality of the original space and to give an interpretation to the new space, spanned by a reduced number of new dimensions which are supposed to underlie the old ones" (Rietveld & Van Hout, 1993, p.254), or to create factors to explain the variance in the observed variables. Therefore, factor analysis enables researchers, by analyzing the multivariate patterns of the data, to have a clearer view of the data and replace observed variables with a smaller number of factors in subsequent analysis.

⁵ We decided to use common factor analysis, the technique best suited to identifying underlying factors that summarize an original set of variables. To deal with missing data, we followed the approach suggested by Truxillo (2005), which allows the use of maximum likelihood with the expectation-maximization (EM) algorithm to deal with missing data in the estimation of the covariance matrix, and then to factor analyze the imputed correlation matrix to obtain a solution.

In the second stage, we examined the construct on the basis of the EFA result, and then calculated and analyzed factor scores. Although the derived factor scoring weights can produce reliable and accurate factor scores in the sample, as Gorsuch (1983) points out, unit weighting for all of the variables with high loadings on the factors can yield factor scores that are virtually as accurate in the sample as using the factor score weights, and more importantly, unit weights will outperform the factor scoring weights in any new samples. Therefore, in this stage, rather than relying on the factor scoring weights and the predicted factor scores, we computed the factor scores by assigning equal weights to all variables, whether they loaded highly in our factors or not.

⁶ Analysis of means (ANOM) was performed on all our factors to identify the differences between the Aboriginal and rural communities and among the four study provinces. Because the random digit dialing technique was used, it is likely to have generated more than one response in one particular geographic location/community (CSD). The responses may be intercorrelated, as randomly selected respondents from the same location are likely to respond more similarly than respondents randomly selected from different locations. We take this into account when analyzing the data because if we do not, the standard errors of the



estimates may be underestimated, resulting in invalid significance tests. The existence of correlations between observations violates the assumption of independent observations on which the estimation of standard errors is based. Given this, we used clustered robust standard errors in the analysis of means. Associations among factors were analyzed by means of correlation coefficients. Fisher's z transformation was performed to investigate whether the associations differ between rural and Aboriginal communities. Differences in factor associations between provinces were not investigated.

All data analysis was conducted using Stata/SE 13.1.

⁷ Before screening the data, we used the postal codes provided by respondents to identify the CSDs where they lived. However, postal codes do not always align to CSD boundaries, and sometimes two or more CSDs share the same postal code. In such cases, we systematically placed respondents in the CSD associated with the town or the village in the postal code. If the respondents expressed that they were from an Aboriginal community, we systematically place them to the Aboriginal CSD using that postal code. With the CSD information, we were able to pull the census information from Statistics Canada to compare the respondents with the study population, and to cluster respondents from the same community.

⁸ This is the maximum response rate, calculated as follows: completed interviews (1,951)/refusals (7,013)+interviewer terminations (5)+respondent terminations (221)+completed interviews (1,951). The SSRL made 62,389 phone calls in total. 7,013 persons refused to participate, resulting in a refusal rate of 11% (refusal (7,013)/total number of attempts (62,389)).

⁹ The margin of error (MOE) was +2.34% at the 95% confidence interval (see Table 2).

¹⁰ n=1,756.

¹¹ n=373.

¹² 34 respondents didn't answer this question. Relying on the CSD census information, they were treated as from rural communities.

¹³ 10 respondents either didn't answer this question or answered that they didn't know.

¹⁴ According to Statistics Canada's definition for Aboriginal CSDs, only 16 (or 9%) self-identified Aboriginal respondents actually lived in Aboriginal CSDs based on the postal code respondents provided.

¹⁵ n=177.

¹⁶ n=1,714.

¹⁷ The comparisons between respondents who reported to live in an Aboriginal community with the Aboriginal study population should be treated with caution. As mentioned earlier such respondents were more likely to be from a rural CSD rather than an Aboriginal CSD. Therefore, according to Statistics Canada, the majority of such respondents should be part of the rural population, instead of the Aboriginal population. Despite this weakness, the comparison between the Aboriginal respondents with the Aboriginal population still sheds light on the differences or similarities between our sample and the study population.

¹⁸ Note that this finding may not be consistent with census information, because our sample of Aboriginal respondents is based on self-reported community type. Most of these respondents were actually living in rural communities as defined by Statistics Canada based on the postal code they provided.

¹⁹ Descriptive Statistics: As a low level of satisfaction toward a service/program in the community is likely to signal a high need for it, we renamed 15 variables related to satisfaction toward a service/program in the community to the need for it, reversed their scores and recoded them accordingly as: 1 for a very low need, 2 for a low need, 3 for a high need and 4 for a very high need. We also reversed the scores of two variables related to the occurrence of property and violent crimes and recoded as: 1 for not safe at all, 2 for somewhat unsafe, 3 for somewhat safe, and 4 for very safe. All the "Not Available", "Don't Know" and "Refused" responses were treated as missing for the purposes of this particular analysis.

²⁰ Both the rating of satisfaction and the needs results should be interpreted with caution because "Unavailable" was not directly listed as an option in the telephone survey; rather the respondent was able to state that a particular service was unavailable when asked to rate their satisfaction with it. Given this, some respondents may have rated satisfaction with a service as poor, even if it was unavailable, so the unavailability of the service in a community may be underestimated.

²¹ This service, according to the EFA result, is more related to the business capacity, and thus will be analyzed with business capacity variables in the next section.

²² Overall, the Exploratory Factor Analysis result seems satisfactory. The statistical results corresponded with the overarching theoretical constructs intended to be measured in our survey. The construct is simple, as no variable loads highly on more than one variable. However, three variables didn't load on any factors. They are



housing, health care and Internet access. In an EFA, the common strategy is to drop such variables from the data set, as their contribution to the variability of the data is very small. However, these services - health care in particular - are necessities that have an important impact on daily life. In fact, health care and housing have been among the most critical concerns in many communities. Given their importance, we decided to include them, together with Internet access, in the need for basic services factor in further analysis.

²³ Each community need factor is moderately negatively correlated with the business capacity factor.