

# Caring Contexts of Rural Seniors

## Phase I - Technical Report

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## Caring Context of Rural Seniors Phase 1 – Technical Report

### 1 Background

In Canada there has been little research on how rural communities might differ in their capacity to care for seniors or the ways in which the independence of seniors in these communities is affected by their relationships with the formal and family/friend networks of support. Veterans Affairs Canada (VAC) has a clear commitment to the care and support of older Canadian veterans. Many of Canada's veterans served in the Second World War and Korea and are now in their seventies and older. It is particularly challenging to develop policies and programs to support those living in rural areas where small, dispersed populations mean that urban models of care and support may not be appropriate. VAC is committed to maintaining its position as a leader in Canada in evidence-based policy making for our aging population. Towards this goal, VAC has partnered with Canadian researchers to investigate the question, "Is rural Canada a good place to grow old?"

In the first phase of this project, we examine our research question from a community-level perspective. We draw on key assumptions from human ecology theory as outlined in our report on the conceptual framework for the project (Keating, Chapman, Eales, Keefe, & Dobbs, 2004). The importance of context is central to this project. We argue that in order to understand whether rural Canada is a good place to grow old, we must take into account the environments or contexts in which seniors live their lives. In this phase we consider the macro-environments of community, region and nation, as well as the more immediate physical and social environments of older adults in rural Canada.

Using data from the 2001 Canadian Census of the Population, we investigate how support provided to seniors differs by rural community characteristics. Key research questions are:

- How do rural communities in Canada differ on characteristics that may be important in determining community supportiveness to seniors?
- What is the relationship between characteristics of rural communities and their supportiveness to seniors?
- What is the set of characteristics that distinguishes rural communities that provide strong, moderate and weak levels of support to seniors?

This technical report begins by summarizing our understanding of the research literature on community characteristics that may influence support to seniors. In Chapter 2 we describe the methods employed to address our research questions and the analyses completed. Results are presented in Chapter 3 and the implications of our findings are discussed in Chapter 4.

#### *1.1 Literature Review*

Rural communities have been characterized as warm and friendly places to live. These characteristics suggest such communities would be good places to grow old – surrounded by community members that care about and care for, all of its citizens. An alternative, less positive, image of rural communities suggests isolation, lack of formal services, and physical features such as low population density may limit a rural community's responsiveness to its citizens in need of assistance. Unfortunately, there is limited evidence to test these competing perceptions. As Kendig (2003, p. 612) notes:

*...I would underscore the astonishing paucity of research on the macroenvironments of neighborhoods, regions, and urban-rural divides that are so significant in structuring experiences of aging.*

In the following section we review the existing literature on community characteristics that make them more or less supportive of seniors. Where research on support to seniors is focused on individuals, we draw inferences about how these findings might contribute to our understanding of community-level supportiveness. Congruent with the conceptual framework for this program of research (Keating et al., 2004), the literature review is organized into two parts: physical locality and social aspects of community. We add region of the country since it is an element of locality that is important in determining need for provincial and local policies and programs.

### *Physical Locality*

One aspect of rural communities is their physical locality. This concept refers to the physical features of a rural 'place' including population size, the land area of the community, the community population density and distance of the community from a service centre. These physical features of rural communities may be important in influencing their supportiveness.

*Population size.* It has long been speculated that "smaller is better" when it comes to the supportiveness of communities towards their senior population. Analysis of the 1996 Census of Canada showed that more people provided help to a senior in rural communities that ranged in size from less than 2,000 people up to 10,000 people, than in cities of 100,000 or more (Keating, Keefe, & Dobbs, 2001). Perhaps the small size of rural communities enables a greater familiarity among residents and contributes to building strong networks of family, friends and neighbours, who provide support to residents as they grow old.

*Population density.* Another factor that may influence community supportiveness is the population density of rural communities, which is a function of their size and land area. Low population density may be associated with decreased access to formal services. Economies of scale make it difficult to provide services such as acute care, home care, and nursing homes in rural settings because there are few potential users spread over a large geographic area. Rural areas have proportionately fewer health care professionals such as physicians (Society of Rural Physicians of Canada, 2002), and inadequate levels of home care and mental health services (Snustad, Thompson-Heisterman, Neese, & Abraham, 1993). Thus in less densely populated areas, particularly those with poor access to formal services, there may be an increased need for support from family members and friends.

*Distance from service centre.* Similarly, rural communities often are at a distance from a centre that has essential services. Distance is a good indicator of seniors' ability to gain access to needed services, particularly in a country in which distance can be intensified by severe climatic conditions. While seniors living in urban settings may take for granted essential services like a grocery store, post office, variety store, bank, doctor, drug store, beauty salon, or social club, these services may not be available or accessible to seniors living in rural communities (Hodge, 1987). In recent research on small rural communities in Canada, Halseth (2003) found that availability to essential services in one's immediate community has declined over the past five years. Given this, it is not surprising that transportation is a pervasive theme in research about rural seniors (Schoenberg & Coward, 1998).

In sum, while we speculate that physical aspects of rural communities are important in determining how supportive they can be to older residents, there has been little systematic evaluation of how population size, density and distance from service centres might influence community supportiveness.

### *Social Aspects of Community*

The supportiveness of rural communities to seniors is based in part on the availability of family to provide assistance. However, the likelihood of having proximate family members to rural seniors may be influenced by larger societal trends. The changing rural landscape has resulted in limited education and economic opportunities in many rural settings throughout Canada, both of which may contribute to out-migration and a declining volunteer base. Next, we consider how social aspects of community may be associated with the ability of rural communities to be supportive to seniors. Social aspects of community include age and gender composition; patterns of marital status, education, income, and employment status; migration patterns; and patterns of unpaid work.

*Age.* Older adults play an important role in providing support to others. Rural communities with a high presence of seniors have high levels of volunteerism and may be viewed as more supportive (Hodge, McKay, & Breeckmans, 1993). A study of rural and small town populations in Atlantic Canada also found a high level of volunteerism among seniors, especially among church groups. When seniors volunteered in various organizations, more support was provided by others in the community, especially others that were involved in those organizations (Bruce & Black, 2000). Similarly, retirement migrants to non-metropolitan areas of the United States demonstrated increased participation in the community, doing formal volunteer work for fellow retirees as well as long-time local residents (Bennett, 1993). Thus we might expect that rural communities that have a high proportion of seniors will be more supportive than communities with few seniors.

*Gender.* Women, rather than men, are commonly seen as the main providers of support and care to family members, neighbours and friends. Nearly 70% of all caregivers to seniors in Canada are women (Keating, Fast, Frederick, Cranswick, & Perrier, 1999). A recent study of helping relationships by rural Canadians found that giving assistance is largely characterized by women, regardless of the task (Keefe & Side, 2003). More specifically, sisters rather than brothers (McGhee, 1985), and daughters rather than sons (Kivett, 1988) are more likely to help a rural family member. Based on these findings on the helping relationships of individuals, it follows that rural communities with a higher proportion of women may be characterized as being more supportive.

*Marital status.* Community support to seniors may be influenced by the marital status of community residents. The nature of this relationship is not clear. If there are high proportions of married people, this may result in supportiveness by virtue of more people having a spouse available to assist them. A US study comparing rural and urban settings found that caregivers in rural areas were more likely to be spouses than were caregivers in small cities or urban centres (Dwyer & Miller, 1990). Similarly, a study of support systems for chronically ill persons in rural areas found that spouses were most relied upon for support compared to friends, neighbours or religious organizations (Weinert & Long, 1993). Yet being married may leave individuals with less time to provide support to others. Overall in Canada, individuals who were never-married or widowed provided more hours of care to seniors than those who were married (Keating et al., 1999). The relationship between marital status of community residents and support has yet to be determined.

*Living arrangements.* Similar to marital status, the relationship between living arrangement of residents and the community support to seniors is inconclusive. Keefe and Side (2003) report that rural residents who live alone are more likely to give assistance to others with instrumental activities of daily living than those rural residents who live with at least one person. Although this assistance was not specific to helping seniors, this finding may suggest that communities with a high proportion of single person households may be engaged in helping relationships with others in their community. Further investigation of this relationship between living arrangement and community supportiveness to seniors is merited.

*Education.* Little is known about the relationship between educational attainment of community members and community supportiveness. However, there is a link between education levels of the community and the number of individuals in the support network of seniors. Older adults living in communities with low to moderate levels of education report the highest number of helpers from the formal and family/friend sectors (Preston & Bucher, 1996). Preston and Bucher argue that these findings support “the conventional belief that low community levels of education deplete resources that tend to improve quality of life for the elderly” (1996, p. 77). Among rural seniors, smaller numbers of helpers among those with higher education may be due to the fact that they have fewer children, and greater distance between themselves and their adult children (Lin & Rogerson, 1995). Thus education levels may be confounded with distance from kin. Higher levels of education among the general population of a community may be a proxy for higher levels of community resources that may lead to support. Further, communities with higher levels of education may have more people with abilities to garner services and facilities that can help residents retain their independence. Clearly the links between community education levels and supportiveness have yet to be developed.

*Income.* Level of household income in communities may be related to community supportiveness. Researchers have found that civic engagement is more likely among households of higher socio-economic status (Williams & White, 2002), while poor areas may have limited participation (Small, 2002). Similarly, rural communities that are more affluent and younger have greater participation in community groups and activities (Bennett, 1993; Fagan & Longino, 1993). Thus more affluent communities may be more supportive if civic engagement leads to helping others such as seniors. In turn, more affluent communities may be in a better position to assist poor seniors who rely to a greater extent on formal services (Scott & Roberto, 1985).

*Employment status.* Providing support to others can be considered unpaid work (Dosman, Fast, Chapman, & Keating, in review). Thus, paid work could be considered a competing activity to the provision of support. One might speculate then, that communities with high proportions of individuals who are not in the labour force, or who are engaged in part-time or seasonal employment, might be more supportive to seniors, since these are communities in which citizens have more time available for such assistance. Research on support to seniors in Canada has shown that being employed is associated with providing significantly fewer hours of care to seniors than not being in the labour force (Keating et al., 1999). The relationship between community-level employment patterns and support warrants further consideration.

*Migration patterns.* Availability of family/friend support is affected by migration patterns as community circumstances influence in- and out-migration of persons. Overall, there has been a net migration of people moving into rural Canada (Rothwell, Bollman, Tremblay, & Marshall, 2002). In- and out-migration patterns in rural areas are affected by a number of demographic factors including opportunities for education and employment. For example, poor labour markets

and lack of opportunity in rural communities are primary incentives for the out-migration of young people (Dupuy, Mayer, & Morissette, 2000). Furthermore, there are substantive differences among the provinces in migration patterns (Rothwell et al., 2002). Ontario, Alberta and British Columbia have experienced higher rates of movement both in and out of their rural and small town areas with an overall net migration. Manitoba, Saskatchewan, Quebec and Newfoundland have had net out-migration from their rural areas. Prince Edward Island, Nova Scotia and New Brunswick had relatively low levels of net migration overall.

Provincial differences in migration patterns are attributable to differences in employment in primary industries such as farming, fishing, logging or mining. Resource towns that experience downturns in industries such as fishing and lumber may experience out-migration of young people (Keefe & Side, 2003). Out-migration may be associated with loss of support potential from younger family members. There is more community support available when family and friends live close by (Black, 1995; Blazer, Landerman, Fillenbaum, & Horner, 1995). In contrast, in-migration may or may not be associated with community supportiveness. Communities experiencing resource development will attract young people who may stay for short periods of time and not develop links with seniors in the community. In contrast, retirees moving into rural communities may stimulate economic development, and enhance the voluntary sector through their involvement in community organizations (Fagan & Longino, 1993). There is much more to be learned about how migration patterns might be associated with community supportiveness.

*Unpaid work.* Rural communities are portrayed as close-knit, caring communities stemming from their strong values about helping one another. In fact, rural residents aged 45 years and older spend significantly more time on unpaid work (which includes household work, care to others, and volunteer work) than their urban counterparts (Dosman et al., in review). Such support may be due in part to the dearth of formal services in rural communities. For example, Bruce and Black (2000) found that the decline of formal services such as banking, local businesses and health care services was compensated by an increase in volunteerism in the rural communities they studied. As well, volunteerism may be a means of building social ties in communities. For example, one study of individuals who migrated upon retirement to seven non-metropolitan coastal US counties found that 60% did more than 10 hours per month of formal volunteer work for long-time local residents (Bennett, 1993). Accordingly, rural communities that have a high proportion of people who participate in unpaid work, or who spend more time in unpaid work, may be more supportive of seniors.

### *Region of the Country*

Region of the country has emerged as an important determinant of availability of publicly funded programs. For example there is considerable variation in the eligibility for, services provided, and co-payments charged by provincial and territorial Home Care programs across Canada (Dumont-Lemasson, Donovan, & Wylie, 1999). Likewise region of the country moderates the economic impact of public policies on caregivers to seniors (Eales, Keating, & Fast, 2001; Keating, Eales, & Fast, 2001). There also are regional differences in the provision of support to elderly parents. Keefe (1997) found that in Atlantic Canada women in rural areas are more likely to assist elderly parents than are women in urban areas, while in BC urban women, rather than rural women, are more likely to assist elderly parents. Regional variations in socio-economic indicators such as income and also differences in provincial migration patterns previously discussed may influence community-level supportiveness. These regional differences highlight the importance of examining the physical locality and social aspects of rural communities at the national level as well as across regions of the country, to understand diversity in the ways in which contexts of rural communities may influence support to seniors.



### *1.2 Summary*

Rural communities in Canada are experiencing significant change as a result of social and economic forces influencing migratory patterns. Their demographic composition and proximity to service centres are likely to influence the experience of seniors in these communities.

Existing literature on aging and caregiving provides evidence that a number of social aspects of the community are expected to influence rural communities' support to seniors. Community-level characteristics related to age, gender, income and migration patterns are examples in which relationships with supportiveness to seniors are expected. At the same time, there are other social aspects of the community in which existing research is less clear regarding their relationship with supportiveness to seniors. These include marital status, living arrangement of residents and education. However, in the vast body of literature on aging and caregiving there are few studies at the community level to understand collective support to seniors, specifically in rural contexts, and the interplay among community characteristics. Moreover, current notions about rural communities that smaller is better and that reduced access to formal services due to distance from service centres results in increased family/friend support have not been empirically tested. Thus our understanding about community-level support to seniors, specifically in rural contexts remains limited.

Grounded in existing research, the analysis which follows attempts to address this paucity by undertaking community-level analysis to understand "is rural Canada a good place to grow old?"

## 2 Methods

In this chapter, we describe the data source, sample, dependent and independent variables including how these variables are operationalized, and analyses completed.

### 2.1 Data Source

Data for this report come from Statistic Canada's 2001 Census of the Population. The Census is conducted every five years to develop a demographic, social and economic portrait of Canada and its people. It provides statistical information not only for Canada but also for each province and territory, and for smaller geographic units (e.g., Census Sub-divisions). More than almost 12 million households completed a Census questionnaire in 2001 including all non-institutional Canadian citizens (at home or abroad), landed immigrants, persons with permits/Visas to study or work in Canada, and non-permanent residents together with family members who live with them. The Census does not include foreign residents or persons visiting Canada temporarily or persons residing in institutions. The Census involves two questionnaires – a short and a long form. The short questionnaire contains seven questions (e.g., Age, Sex, Marital Status, and Household Members) and is completed by 80% of the households. The long questionnaire is completed by 20% of the population. It contains the same questions as the short form, plus 52 additional questions on education, employment, income, mobility, and unpaid work.

#### *Sample*

The sample for this study is rural communities in Canada. Statistics Canada's Census Sub-division (CSD), which is a geographical unit, is used as a proxy for community. Statistic Canada's Rural and Small Town (RST) definition was used to select CSDs that comprise the subset of communities that are rural. Rural and Small Town refers to towns or municipalities outside the commuting zone of larger urban centres (which have populations of 10,000 or more). This definition was selected because it incorporates population size and density as well as distance from larger centres (du Plessis, Beshiri, Bollman, & Clemenson, 2002)

A first step in our analysis was to develop a sample of rural communities (Figure 1):

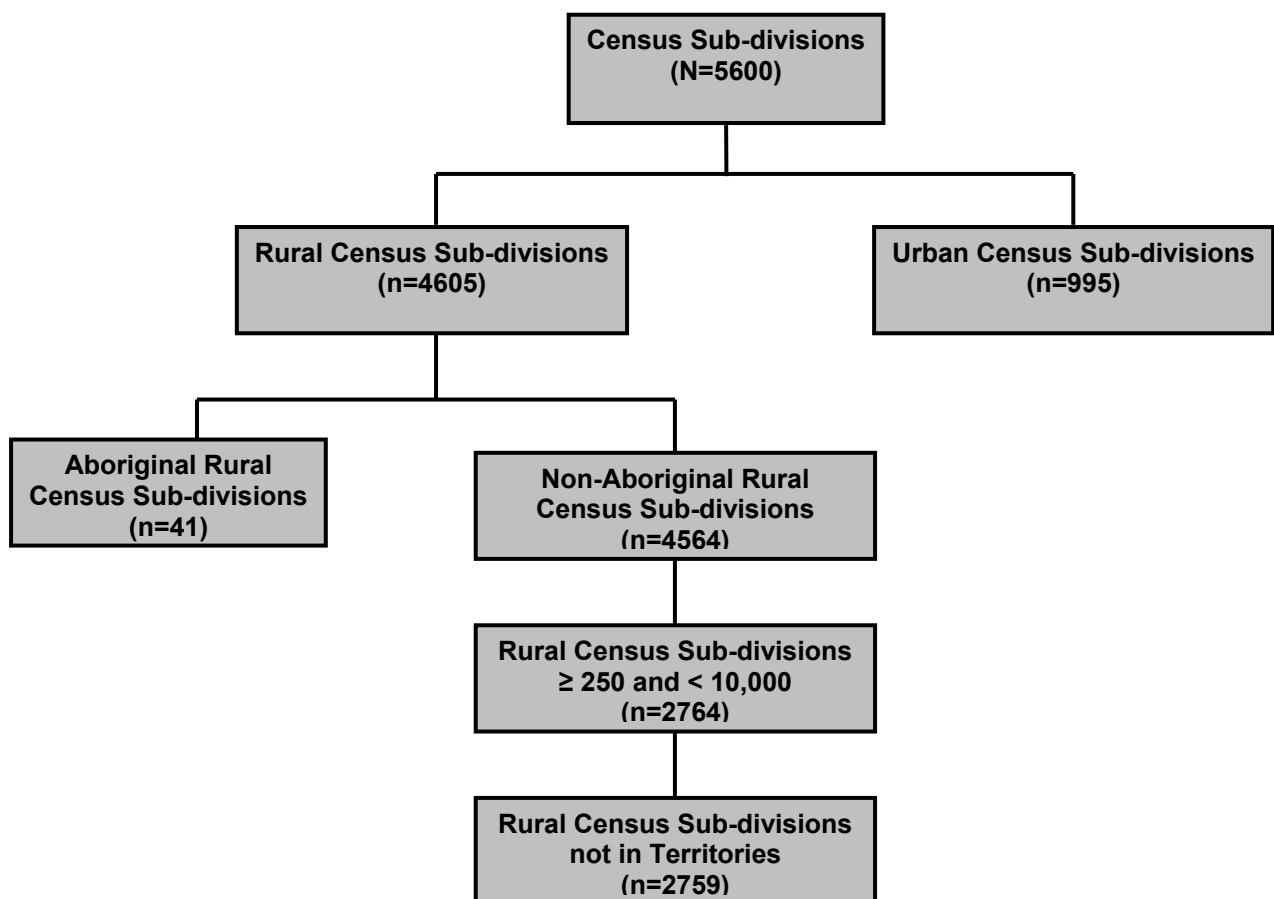
- Select communities in Canada. Canadian Census Subdivisions (CSDs) are a general term for municipalities (as determined by provincial legislation) or areas treated as municipal equivalents for statistical purposes (e.g., Indian reserves, Indian settlements and unorganized territories). In 2001, Statistics Canada reported 5600 CSDs.
- Select rural communities. From these CSDs the rural subset was selected in accordance with the RST definition drawing on the Statistical Area Classification (SAC) variable provided by Statistics Canada. The SAC is the geographic classification that allocates each CSD according to whether it is a component of a census metropolitan area, census agglomeration or census agglomeration influenced zone. There are 4605 rural CSDs.
- Select non-Aboriginal CSDs. Aboriginal communities were excluded due to potential differences in the interpretation of the question concerning support to seniors among the Aboriginal population. Differences may exist in understanding who is a senior based on lower life expectancy of Aboriginal Canadians and differences in culture, societal expectations and service systems between Aboriginal and non-Aboriginal populations.
- Select for population. Rural communities (CSDs) with a community population size of greater than 250 and less than 10,000 were selected. The lower cut off was chosen in

order to have sufficient population size to facilitate statistical applications and because Statistics Canada for confidentiality reasons does not make available population level data for certain variables at the CSD level for those less than 275 in size. Less than 10,000 was chosen as the upper limit for rural population size because these communities are a distinguishable category in terms of age structure, income levels, and availability of services (Hodge, 1993).

- Select for geography. Rural CSDs in the Territories (Yukon, Northwest Territories, and Nunavut) were excluded for two reasons. First, this analysis wanted to examine distance from service centres and care must be taken if applying the MIZ concept in the three territories. This is because CSDs in the territories are very large and sparsely populated which contributes to the instability in the place of work data upon which MIZ is constructed. Second, after applying the selection criteria, only five CSDs in the three territories remained and would not have supported statistical analysis as a separate region.

These criteria resulted in a sample of 2759 rural Census Sub-divisions hereafter referred to as *rural communities*.

Figure 1: Selection of the sample of rural communities



*Community Supportiveness (the Dependent Variable) and Community Characteristics (the Independent Variables)*

*Community supportiveness to seniors.* The dependent variable, community supportiveness, was created in two steps. First, we used the following question from the Census:

*Last week (refers to Sunday, May 6 to Saturday, May 12, 2001) how many hours did this person spend providing unpaid care or assistance to one or more seniors? (Some examples include providing personal care to a senior family member, visiting seniors, talking with them on the telephone, and helping them with shopping, banking or with taking medication).*

Response categories to this question were: None, Less than 5 hours, 5 to 9 hours, 10 to 19 hours, 20 hours or more. All respondents who reported some hours of care or assistance were deemed to have provided support.

Second, we divided the 2759 rural communities into weak, moderate and strong support groups based on the proportion of the community that provided assistance to a senior (Table 1). Types were created using plus and minus  $\frac{1}{2}$  the standard deviation (i.e., 6.7) of the median proportion of community members that provided support (i.e., 21.1). For example, the communities categorized as 'strong support' comprise those where 25% or more of the population provided care or assistance to a senior.

Table 1: Profile of rural communities by level of community supportiveness to seniors

	Range for level of supportiveness	Number of rural communities	Proportion of rural communities
Weak Support	0% to 18%	827	30%
Moderate Support	19% to 24%	1218	44%
Strong Support	25% to 56%	714	26%
Total	0% to 56%	2759	100%

*Community characteristics (Independent variables).* A number of variables addressing the two parts of this research – physical locality and social aspects of community - were analyzed in relation to the level of community support provided to seniors. The operationalization of these variables is presented below. All independent variables are constructed at the community (CSD) level.

*Physical Locality*

*Population size.* Population size is the total number of persons in each community as reported by Statistics Canada. (This variable was transformed into three groups for inclusion in the multivariate analysis, due to outliers, by taking plus or minus  $\frac{1}{2}$  the standard deviation of the mean).

*Land area.* Land area is the actual land area measured in square kilometers for each community.

*Population density.* The population density (persons per square kilometer) of each community was derived by dividing the total population by the land area.

*Distance from service centre.* The distance of each community from a service centre was determined on a scale of 0 (None) to 3 (Strong) by using the Metropolitan Influenced Zones (MIZ). Statistics Canada assigns each CSD to one of four groups by the following criteria:

- No MIZ (includes those CSDs with either fewer than 40 people in the resident labour force or no people commuting to work in any CMA/CA urban core);
- Weak MIZ (includes those CSDs with more than 0%, but less than 5% of the total labour force commuting to work in any CMA/CA urban core);
- Moderate MIZ (includes those CSDs with at least 5% but less than 30% of the total employed labour force living in the CSD but commuting to work in any CMA/CA urban core);
- Strong MIZ (includes those CSDs with at least 30% of the total employed labour force living in the CSD but commuting to work in any CMA/CA urban core).

*Region.* The region of the country was derived by grouping provinces as follows:

- Atlantic Canada (includes communities from Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick);
- Quebec (includes communities from Quebec);
- Ontario (includes communities from Ontario);
- Prairies (includes communities from Manitoba and Saskatchewan);
- Alberta (includes communities from Alberta);
- British Columbia (includes communities from British Columbia).

### *Social Aspects of Community*

*Age.* Age was measured by the proportion of seniors, and derived at a community level by dividing the total number of males and females 65 years and older by the total population.

*Gender.* Gender was measured by the proportion of females, and derived at a community level by dividing the total number of females by the total population.

*Marital status* had two measures: proportion of married/common-law persons, derived at community level by dividing the number of persons 15 years and older who are legally married or living common-law by the total population 15 years and older; and proportion of widowed persons, derived at community level by dividing the number of persons 15 years and older who are widowed by the total population 15 years and older.

*Living arrangements* had two measures: proportion of single person households, derived at community level by dividing the total number of one-person households by the total number of households; and proportion of households with four or more persons, derived at community level by aggregating households with 4-5 persons and households with 6 or more persons and then dividing by the total number of households.

*Education.* Community level of education was measured by the proportion of residents with some post-secondary education, and derived at the community level by dividing the total number of persons 15 years and older with at least some post-secondary education or more by the total population 15 years and older by highest level of schooling.

*Income.* Community-level income was measured by the median household income. Household income is the sum of the total incomes of all members of the household. [Note: income information for three CSDs was suppressed by Statistics Canada due to population sizes of 275 persons or fewer.]

*Employment.* Community employment status was measured by the proportion who worked part year/part time, and derived at the community level by dividing the total number of persons 15 years and older who worked for pay or were self-employed either part year (i.e., 48 weeks or less out of 52 weeks) or part time (i.e., 29 hours or less per week) by persons with employment income. [Note: employment income information for three CSDs was suppressed by Statistics Canada due to population sizes of 275 persons or less.]

*Long term residents (Migration patterns).* Community long term residents was measured by the proportion of residents who had not moved into the community in the previous five years. It was derived at the community level by dividing the number of persons who, on Census Day, were living at the same address as the one at which they resided five years earlier by the total mobility status five years ago. [Note: this does not include those who moved within the CSD or those who moved out of the CSD within previous five years]. This variable acts as a partial proxy for migration patterns as it considers non in-migrants only, which in turn may speak to the community's level of stability. For the remainder of the report, we use the term long term residents to indicate the aspect of migration considered.

*Unpaid work.* Three measures of unpaid work are used in this study. The first measure of unpaid work was the proportion who provided unpaid child care. It was derived at the community level by dividing the total number of persons 15 years and older who provided unpaid child care by the total population 15 years and older. This variable includes child care for members of one's own household or for other family members and friends and neighbors outside the household. It does not include unpaid child care provided through volunteer work or work without pay in the operation of a family farm, business, or professional practice.

The second measure of unpaid work was the average hours of unpaid housework. It was derived at the community level by aggregating the computed hours spent on housework by category of time. The number of persons who did 5 hours or less was multiplied by 2.5 hours; the number of persons who did 5 to 14 hours was multiplied by 9.5 hours; the number of persons who did 15 to 29 hours was multiplied by 22 hours; the number of persons who did 30 to 59 hours was multiplied by 44.5 hours; the number of persons who did 60 hours or more was multiplied by 62.5 hours. The total hours was then divided by the population 15 years and over by hours of unpaid housework. This variable includes housework, yard work, and home maintenance for members of one's own household or for other family members and friends and neighbors outside the household.

Method Note: The third measure of unpaid work was proportion of residents who provided unpaid assistance to seniors. It also was used as an independent variable for Section 3.1 to describe its distribution. In the analysis (Sections 3.2 and 3.3) it served as the dependent variable "community supportiveness to seniors" (Section 2.1.2).

## 2.2 Analyses

Three sets of analyses were undertaken. All use the community as the unit of analysis. The first set of analyses provides a detailed description of characteristics of rural communities across the country. We show the diversity of rural communities by presenting descriptive

statistics on each of the community characteristics (independent variables). Data on these independent variables also are presented by region. Analysis of variance was undertaken to determine whether there were statistically significant differences across regions in terms of community characteristics. These results are presented in Section 3.1.

The second set of analyses was focused on supportiveness of these rural communities. We determine whether characteristics of rural communities, described in the first set of analyses, are related to levels of supportiveness to seniors of these communities. Analysis of variance was undertaken to determine whether there were statistically significant differences among the three levels of supportive communities. A comparison of means was also undertaken for each independent variable by region to consider whether there were significant regional differences in supportiveness. These results are presented in Section 3.2.

The third set of analyses was undertaken to determine what set of community characteristics might account for differences in supportiveness. To control for the inter-relationships among the independent variables and better isolate the key variables that define different types of supportive communities, multivariate analyses using discriminant function procedure were done as follows:

First, correlations were run among all independent variables. Correlations in which Pearson's  $r$  coefficient was greater than or equal to .4 were excluded. Next, Discriminant Function Analysis was used to examine the relative importance of remaining variables with a goal of paring down the model to a smaller set of variables. All variables were entered first and examined. Next, a blocked approach was used to determine what variable could be used to represent a cluster of variables. For both exploratory models Wilks Lambda and F-value statistics were analyzed. Four variables remained. These were: population size, proportion of seniors, proportion of long term residents, and average hours of unpaid housework.

Finally, a Discriminant Function Analysis was used to examine the unique contribution of each of the four variables to the discrimination and classification of communities among the three levels of support (e.g., weak, moderate, and strong). Wilks Lambda, F-value, and percentage of classification ability were examined. It was not possible to examine whether region was important in distinguishing weak, moderate and strong support communities. Including Region in the model would have violated assumptions of the DF procedure, namely its sensitivity to non-continuous variables, so the above four variable model was analyzed for the Prairie region in comparison to other Regions to understand whether the model was regionally sensitive. These results are presented in Section 3.3.

### 3 Findings

In this chapter we present the findings from our analyses in three sections. In the first section we describe the diversity among rural communities and across regions in community characteristics that may influence support to seniors. In the second section we discuss the relationship between characteristics of rural communities and community support to seniors. In the third section we explore the set of community characteristics that distinguish among communities that provide strong, moderate and weak levels of support to seniors. Due to the variation in the independent variables, the scale range for the y-axis typically varies by 20% rather than 0 to 100%; the reader should be mindful of this when reviewing the figures in Sections 3.1 and 3.2.

#### 3.1 Diversity in Rural Communities

In this first section of our findings we present information that addresses the first research question:

- *How do rural communities in Canada differ on characteristics that may be important in determining community supportiveness to seniors?*

Taken together, these findings illustrate how the usual portrayal of rural as the default of urban masks the heterogeneity among rural communities themselves. Rural communities are not all the same. We describe the characteristics of and the diversity among rural communities and across regions in terms of physical locality (size, land area covered, population density and proximity to urban centres), and social aspects of community in terms of demographic characteristics (gender and age composition, marital status, and living arrangements), socio-economic status (educational attainment, household income, and part-year/part-time employment), migration patterns, and unpaid work (unpaid housework, unpaid child care, and help to seniors). Results of ANOVAs for community characteristics by regions are summarized in Appendix A.

##### *Physical Locality*

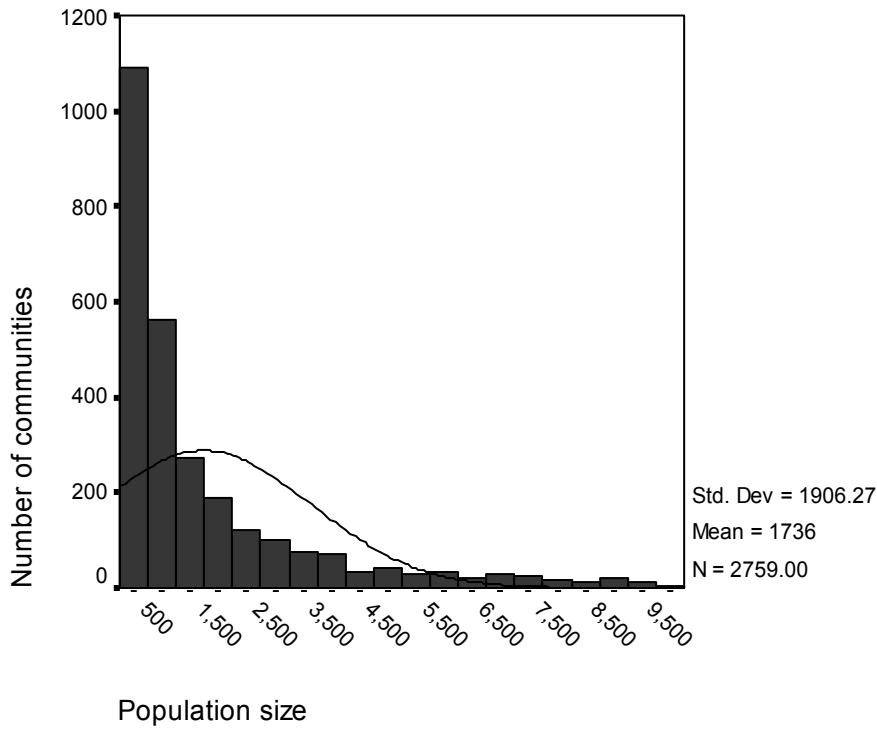
In this section, we describe the physical locality of rural communities, and highlight the diversity among regions in terms of population size, land area covered, population density and distance from service centre.

*Population size.* Rural communities differ considerably in population size. For this study, we set population boundaries around community size from 250 to 10,000 people. Actual population size is from 250 to 9,930 people with variance shown by the large standard deviation ( $\pm 1906.27$ ) (Figure 2a). Of interest is the fact that population size is skewed toward smaller communities. Average population size is 1736, with 52% of communities having fewer than 1000 residents.

Regional analyses show some differences in population size (Figure 2b). The Prairies have the smallest rural communities (average = 977 residents), whereas Ontario has the largest (average = 3530 residents). Differences in average population size of rural communities among regions are statistically significant ( $p < .05$ ), although Atlantic Canada and Quebec, and Alberta and British Columbia are similar.

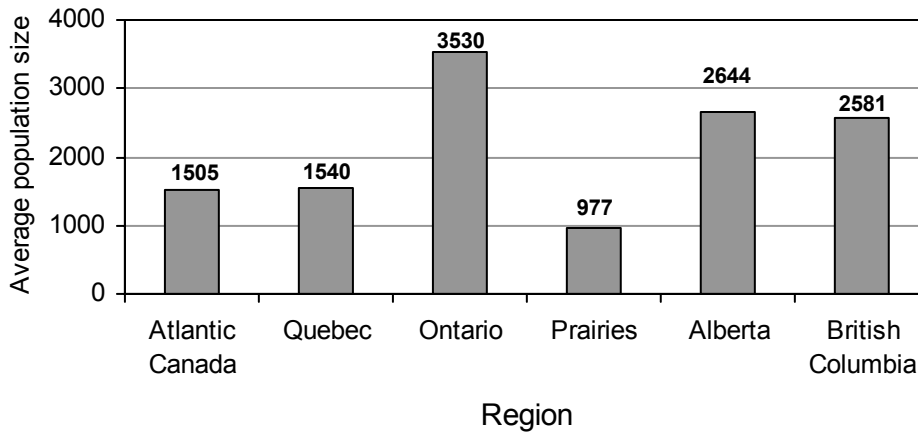


Figure 2a: Distribution of rural communities by their population size



Source: Rural Communities, Census 2001

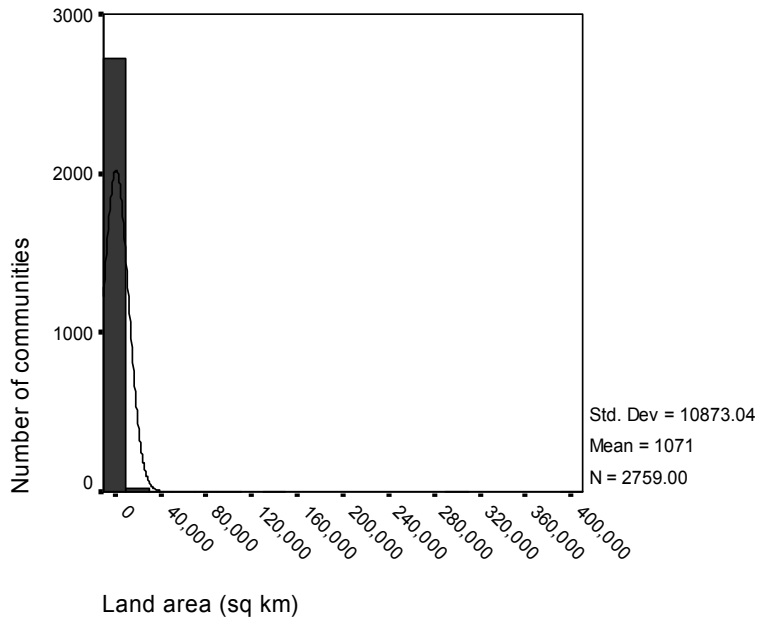
Figure 2b: Average population size of rural communities by region



Source: Rural Communities, Census 2001

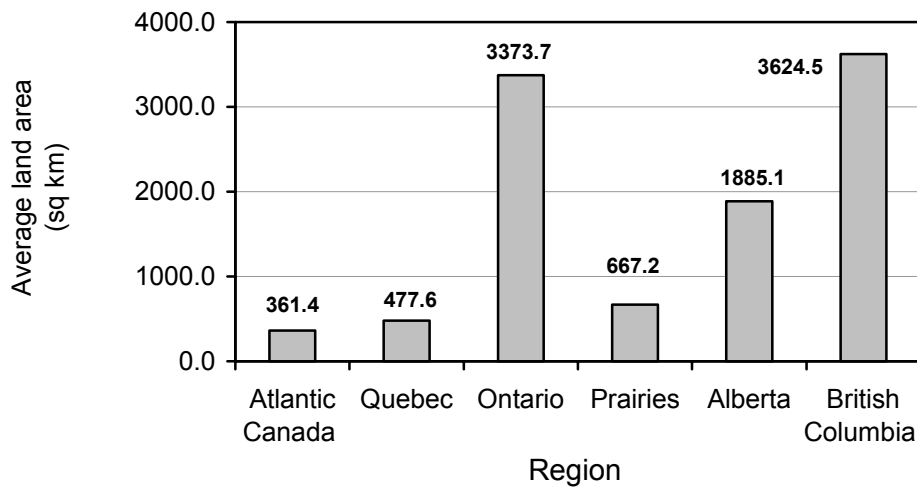
*Land area.* Most rural communities cover considerable land area (Figure 3a) with an average of 1071 km<sup>2</sup>. However, there are large differences as evidenced by the range from less than one to over 400,000 square kilometers (standard deviation of 10,873 km<sup>2</sup>). Similarly, land area of rural communities differs across regions of the country (Figure 3b). On average, the land area of rural communities is significantly greater in Ontario than Atlantic Canada, Quebec, and the Prairies. Likewise, the rural communities of British Columbia cover significantly greater land areas than Atlantic Canada and Quebec.

Figure 3a: Distribution of rural communities by their land area



Source: Rural Communities, Census 2001

Figure 3b: Average land area of rural communities by region

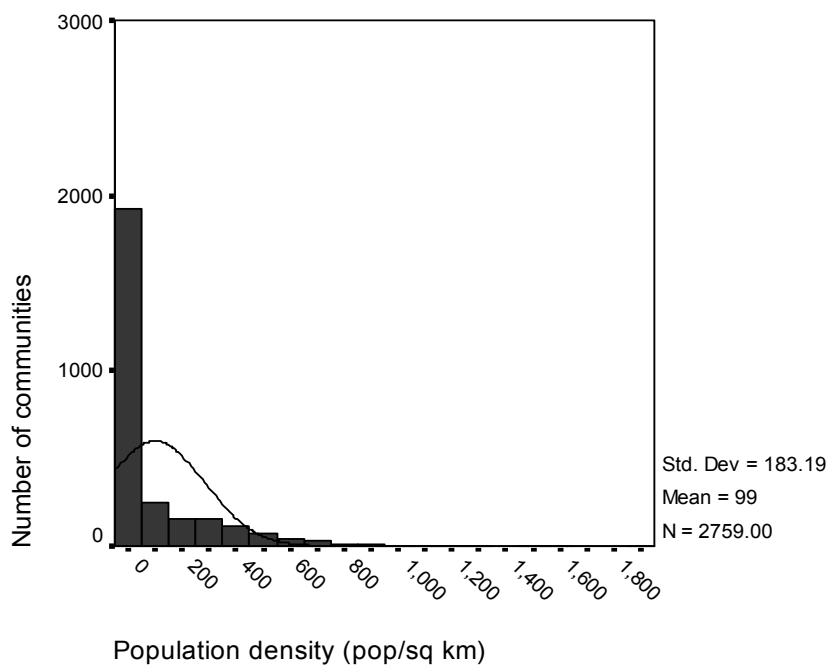


Source: Rural Communities, Census 2001

*Population density.* Diversity in population size and land area results in considerable differences in population density. On average, rural communities in Canada have 99 people per square kilometer (Figure 4a). However, almost one fifth of rural communities have a population density of one or fewer persons per square kilometer, while the top 20% have 174 or more people per square kilometer. Mean population density of rural communities also differs by region (Figure 4b). Population density in Alberta is significantly greater than in all other regions. The population density of rural communities in Atlantic Canada and Quebec are significantly smaller than the western regions. The low population density among most rural communities reinforces the challenges of service delivery to dispersed populations.

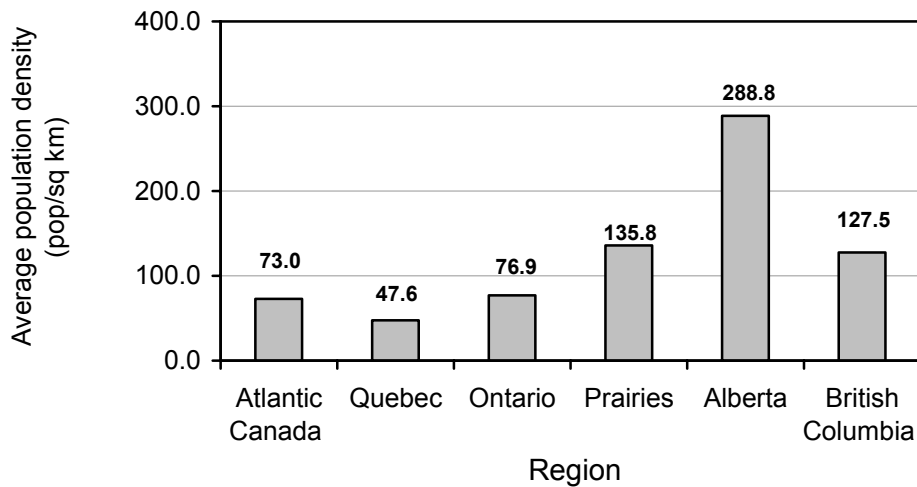
Together, population size, community land area, and population density (people per square kilometer) point to the great diversity in rural communities. Those that are small and sparsely populated may be at increased likelihood of having low levels of formal supports such as health care services, and amenities such as stores and banks (Hodge et al., 1993). It is important to note that not all rural communities are sparsely populated. Challenges in ‘economies of scale’ in terms of service delivery may be more prevalent in the smaller more sparsely populated areas in Atlantic Canada and Quebec. It should be noted, however, that regional differences in land area may be due in part to the differences in which Census Sub-divisions are defined across provinces and require more exploration at the community level.

Figure 4a: Distribution of rural communities by their population density



Source: Rural Communities, Census 2001

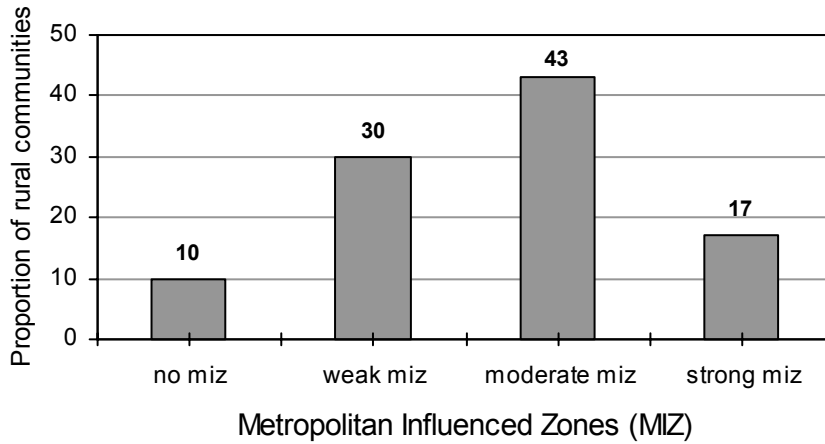
Figure 4b: Average population density of rural communities by region



Source: Rural Communities, Census 2001

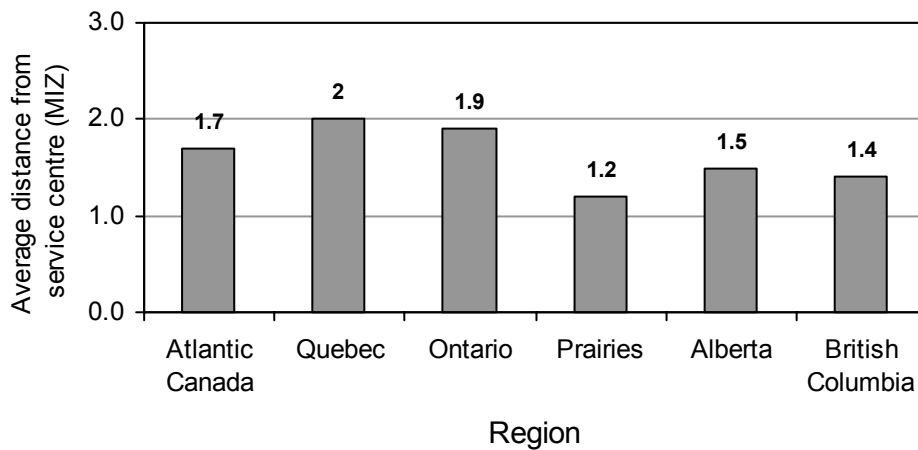
*Distance from service centre.* Some communities are more isolated than others. One measure of isolation is whether communities are within commuting distance of an urban centre also known as the metropolitan influence zone (MIZ). Figure 5a shows the proportion of rural communities that are either too far from an urban centre for anyone to commute to work (or have fewer than 40 people in the labour force) (no MIZ), those in which fewer than 5% commute (weak MIZ), those in which more than 5% but fewer than 30% commute (moderate MIZ), and those in which 30% or more but fewer than 50% commute to an urban centre (strong MIZ). Findings are that forty percent of rural communities are outside commuting distance of an urban centre as evidenced by having a weak or no metropolitan influence zone, while over 60% of rural communities are close enough to urban centres for some residents to commute for work. The latter group of rural communities may be advantaged by having access to services that may not be available in rural communities. As well, there are significant differences in proximity to an urban centre among regions of the country. Rural communities in Quebec and Ontario are significantly more likely to be closer to urban centres than are communities in any other regions (Figure 5b). Access to formal services has long been a concern in rural Canada. Diversity in distance to urban centres highlights the point that distance/access are not uniform challenges across the country and no single model of service delivery will resolve issues of service access for older adults.

Figure 5a: Proportion of rural communities by distance from service centre (MIZ)



Source: Rural Communities, Census 2001

Figure 5b: Average distance from service centre (MIZ) of rural communities by region



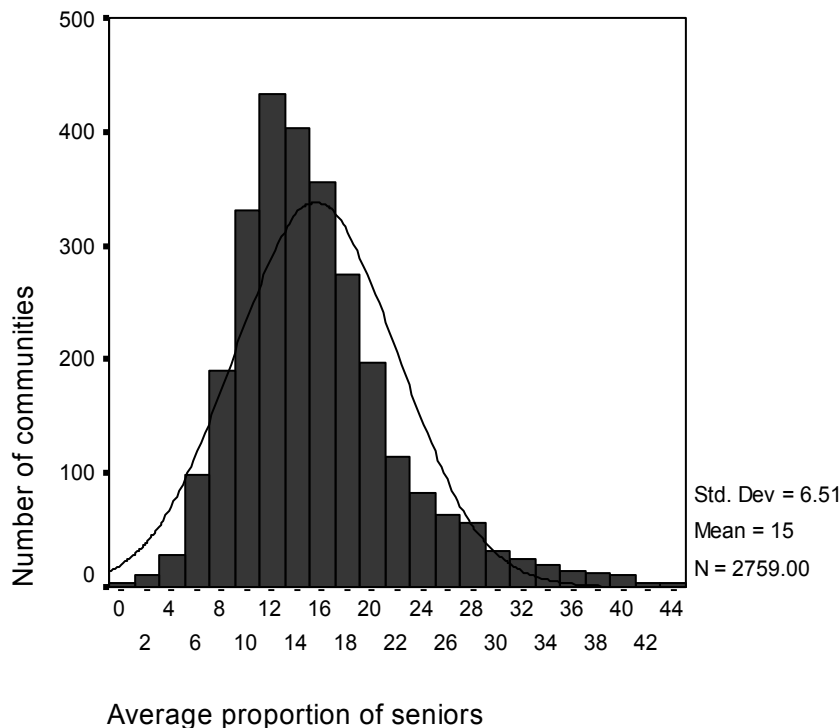
Source: Rural Communities, Census 2001

*Social Aspects of Community*

In this section, we describe the social aspects of rural communities, and highlight the diversity among regions in terms of community demographic characteristics (gender and age composition, marital status, and living arrangements), community economic characteristics (education, household income, and employment status) as well as community migration patterns and patterns of unpaid work.

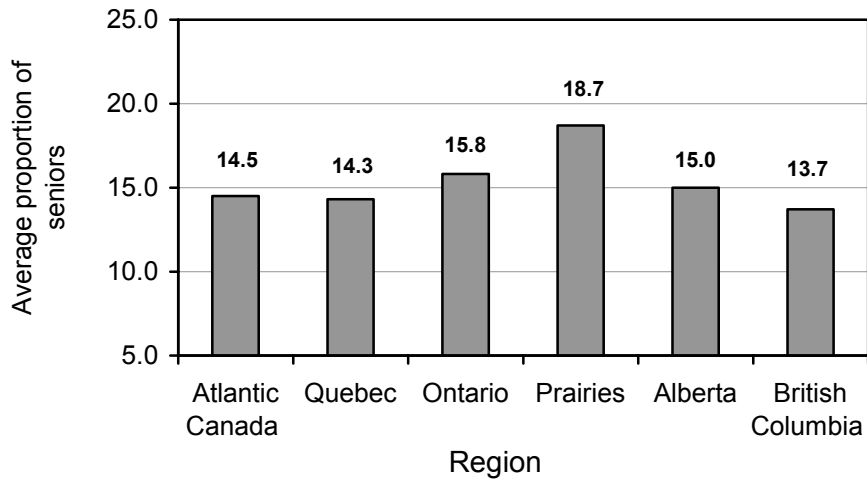
**Age.** On average, 15% of the population of rural communities in Canada is aged 65 and older. However, this average masks the tremendous diversity in rural Canada. When we look at rural communities we see that the proportion of seniors in rural communities varies widely from as low as 1%, to as high as 44% (Figure 6a). There also are strong regional differences (Figure 6b). The average proportion of seniors living in Prairie rural communities (18.7%) is significantly higher than in all other regions. In comparison, the average proportion of seniors living in British Columbia (13.7%) is significantly lower than that of Ontario and the Prairie region. Diversity in proportion of seniors living in rural communities may affect the availability of family/friend support. As noted in the literature review, rural communities with high proportions of older adults are more likely to have high levels of volunteerism (Hodge et al., 1993) and thus be more supportive to older adults. Visibility of older adults in rural communities may affect community supportiveness. Young communities may be more focused on services to young families, making these communities less senior-friendly.

Figure 6a: Distribution of rural communities by average proportion of seniors



Source: Rural Communities, Census 2001

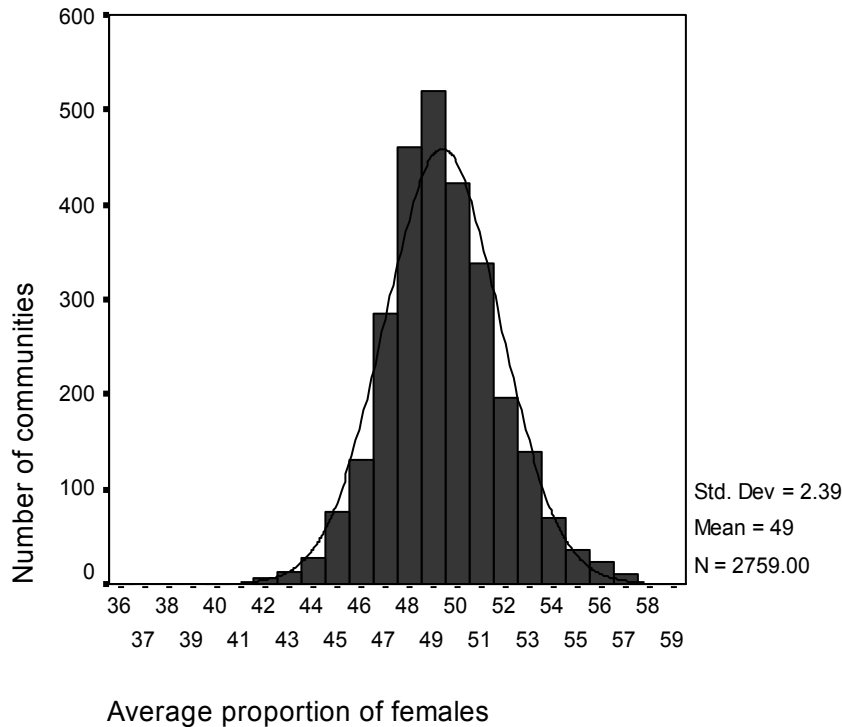
Figure 6b: Average proportion of seniors in rural communities by region



Source: Rural Communities, Census 2001

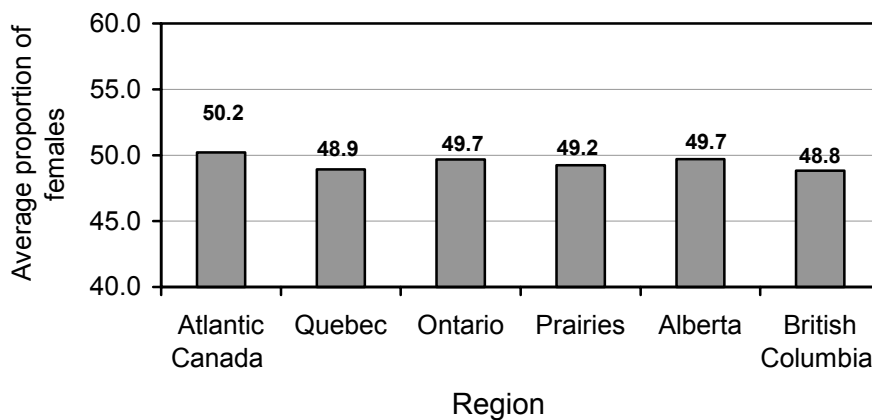
*Gender.* There is some variation in the proportion of females in rural communities across Canada. The average percentage of females in rural communities is 49%. However, the proportion of females in some rural communities is as low as 36% and as high as 59% in others (Figure 7a). The average proportion of females in rural communities across regions appears to be similar, although some regional differences are statistically significant (Figure 7b). On average, rural communities in Atlantic Canada have proportionately more females than the Prairies and British Columbia, whereas Quebec has proportionately fewer females than Atlantic Canada, Ontario and Alberta. Differences are not large and we cannot conclude that they are meaningful. It is possible that diversity in gender composition among rural communities and across regions in the proportion of female residents may impact the availability of family and friends to provide support.

Figure 7a: Distribution of rural communities by average proportion of females



Source: Rural Communities, Census 2001

Figure 7b: Average proportion of females in rural communities by region



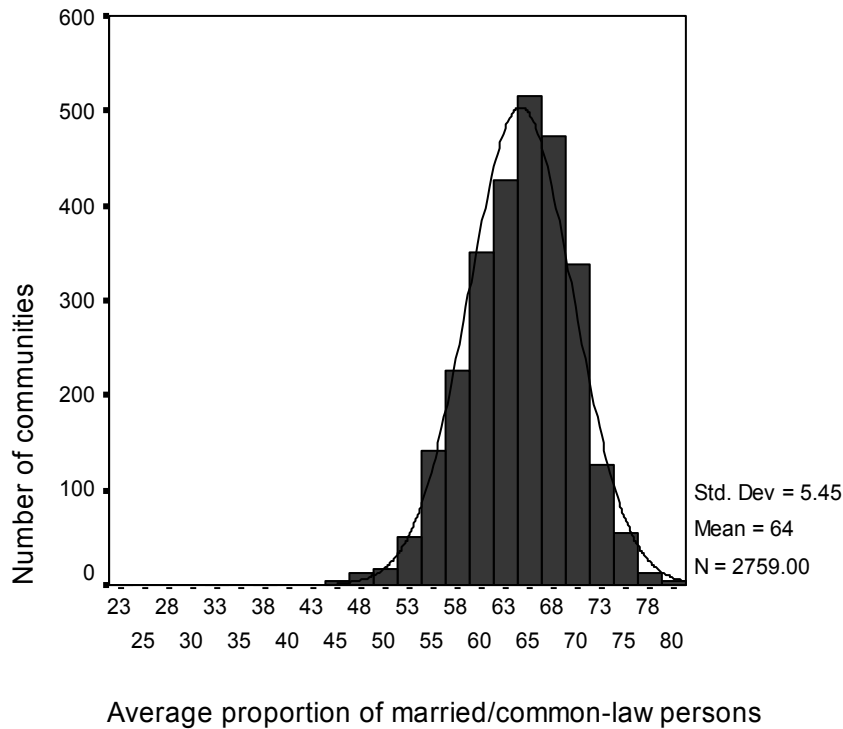
Source: Rural Communities, Census 2001

*Marital status.* Marital status is measured by the proportion of married/common-law persons in the community and by the proportion of widowed persons in the community. The average percentage of married persons in rural communities is 64%. However, the proportion of married persons in rural communities ranges from a low of 23% to a high of 81% (Figure 8a). Average proportion of married persons in rural communities is similar across regions, ranging from 63%



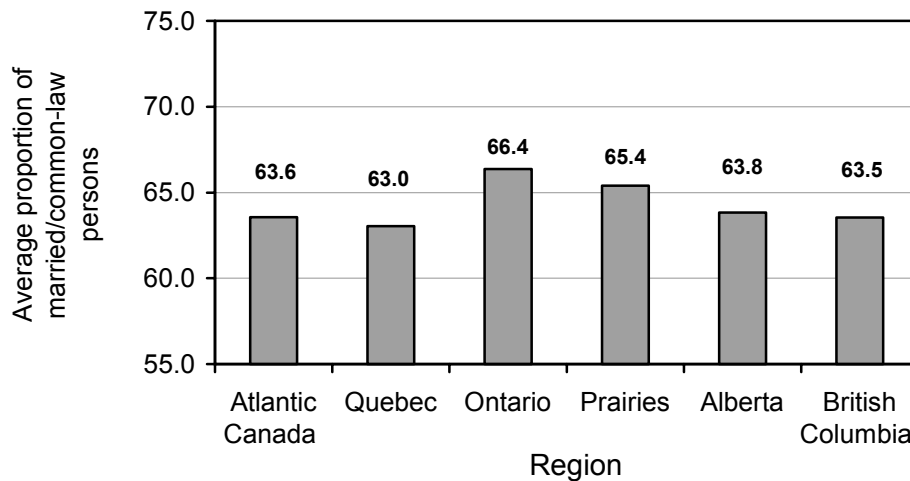
to 66% (Figure 8b). These differences are small though statistically significant, with higher proportions of married residents in rural communities in Ontario compared to all other regions except the Prairies.

Figure 8a: Distribution of rural communities by average proportion of married/common-law persons



Source: Rural Communities, Census 2001

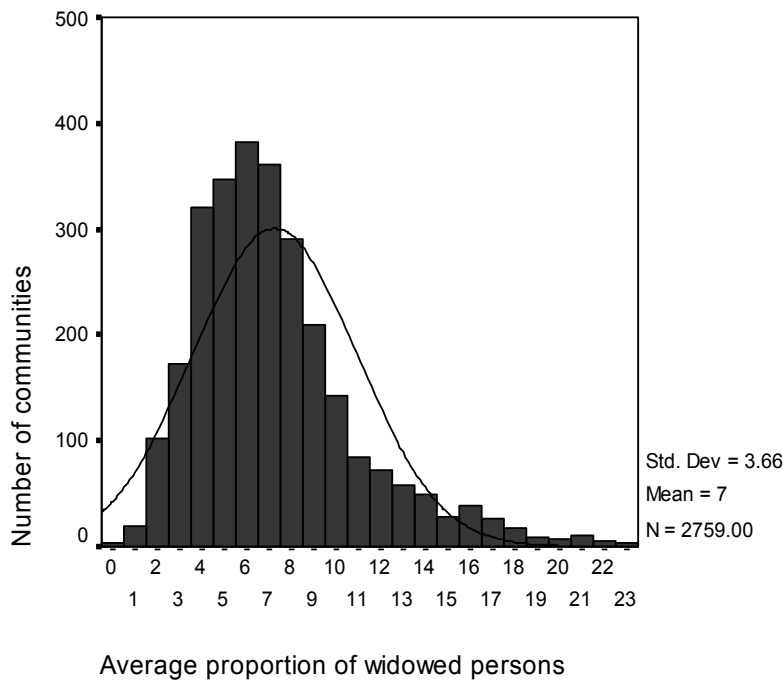
Figure 8b: Average proportion of married/common-law persons in rural communities by region



Source: Rural Communities, Census 2001

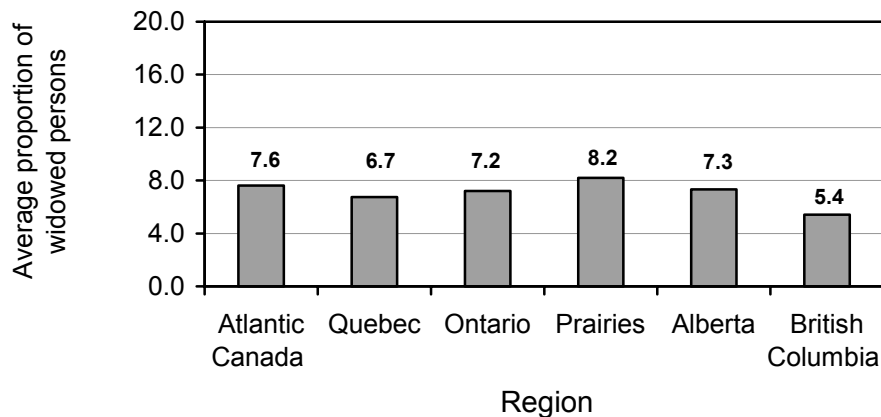
The average percentage of widowed persons in rural communities is 7%. However, the proportion of widowed persons in rural communities ranges from a low of 0% to a high of 23% (Figure 9a). Although the average proportion of widows in rural communities seems similar across regions (Figure 9b), there are statistically significant differences among some regions. On average, rural communities in British Columbia have proportionately fewer widowed persons than all other regions. Patterns of marital status in communities may influence their supportiveness. Never-married and widowed people in Canada provide more hours of support/care than do those who are married (Keating et al., 1999).

Figure 9a: Distribution of rural communities by average proportion of widowed persons



Source: Rural Communities, Census 2001

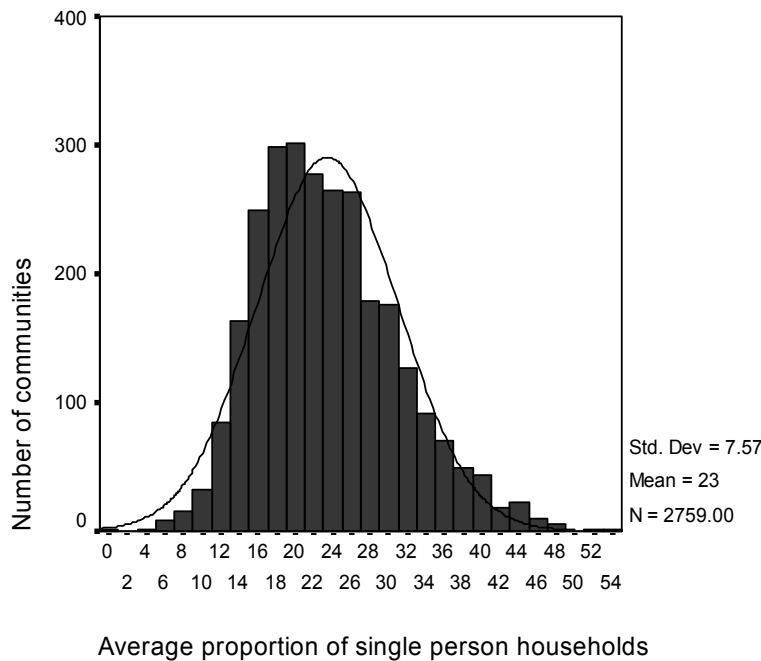
Figure 9b: Average proportion of widowed persons in rural communities by region



Source: Rural Communities, Census 2001

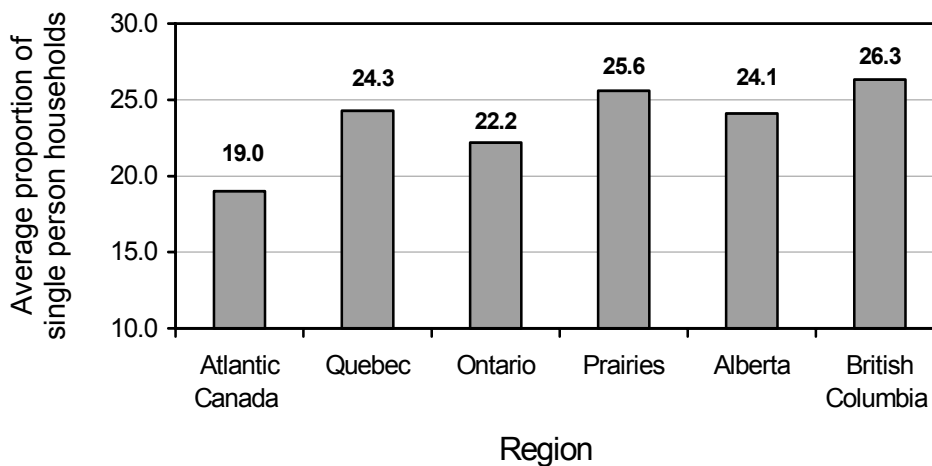
*Living arrangements.* Two types of living arrangements are used in our analysis: the proportion of single person households; and the proportion of households with four or more members. There is considerable variation in the living arrangements of those who reside in rural communities. The proportion of single person households in rural communities ranges from a low of 0% to a high of 54% (Figure 10a) with a national average of 23%. As shown in Figure 10b, the average proportion of persons living alone in rural communities varies across regions. Rural communities in Atlantic Canada have significantly fewer people living alone (19%) than in all other regions.

Figure 10a: Distribution of rural communities by average proportion of single person households



Source: Rural Communities, Census 2001

Figure 10b: Average proportion of single person households in rural communities by region

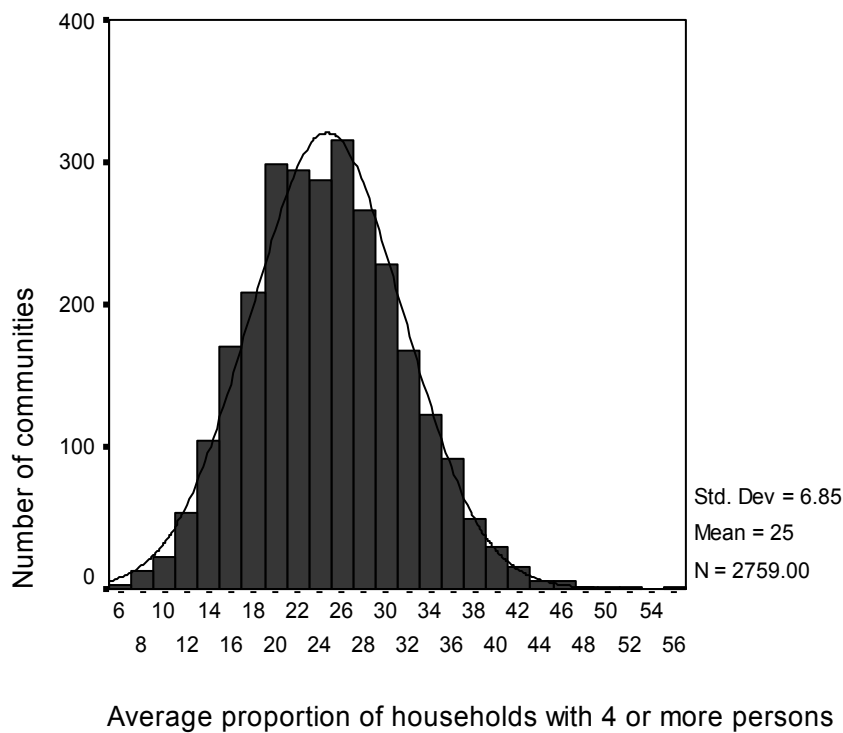


Source: Rural Communities, Census 2001

Similarly, there is considerable variation in proportions of older adults in rural communities that live in large households of four or more people from a low of nearly 6% to a high of 56% (Figure 11a). Overall the average percentage of persons living in households with four or more persons is 25%. Such variability is also observed at the regional level. The mean proportion of persons living in households with four or more members is significantly lower in British Columbia, than in all other regions. In comparison, in rural Atlantic Canada there are significantly larger households than in Quebec, the Prairies and British Columbia (Figure 11b).

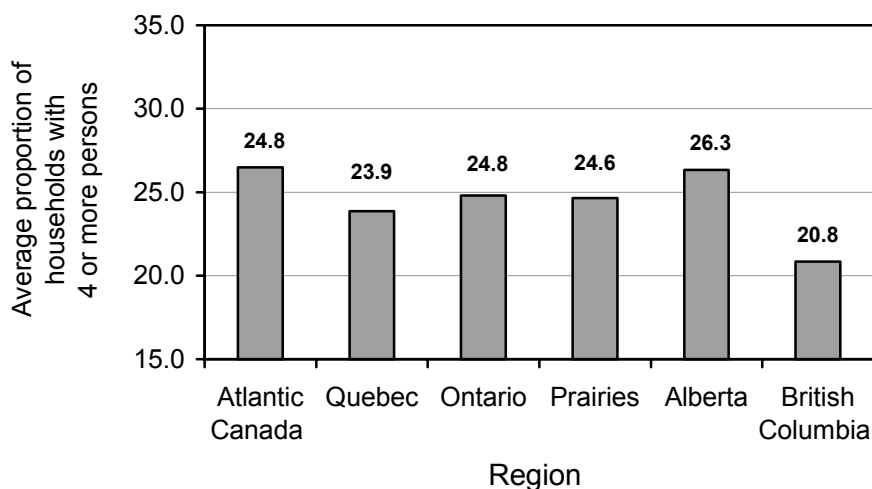
Previous research has suggested that living alone increases the probability that the person provides assistance to others (Keefe & Side, 2003). One explanation may be the increased time available for being supportive to others outside one’s own household. Conversely in households with four or more persons the person may be more likely to provide assistance to others within the household rather than outside the household. Regional differences in household composition may contribute to our understanding of the availability of persons to be supportive. For example, regions that have a higher proportion of households with four or more persons may have greater availability of support from family members.

Figure 11a: Distribution of rural communities by average proportion of households with 4 or more persons



Source: Rural Communities, Census 2001

Figure 11b: Average proportion of households with 4 or more persons in rural communities by region

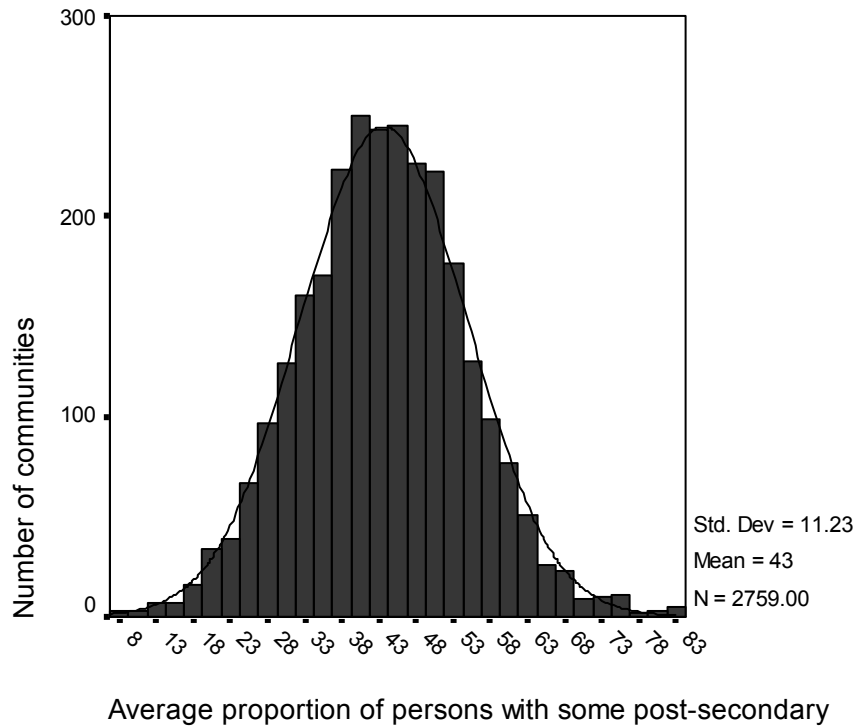


Source: Rural Communities, Census 2001

*Education.* The average percentage of persons with at least some post-secondary education in rural communities is 43%. However, the proportion of persons with at least some post-secondary education ranges from a low of 6% for some rural communities to a high of 83% for other rural communities (Figure 12a). At the regional level, the extent of persons in rural communities with at least some post-secondary education varies considerably. In British Columbia's rural communities, on average, 56% of residents have at least some post-secondary education (Figure 12b). Conversely, rural communities in Quebec have a significantly lower proportion of persons with at least some post-secondary education (39%) than in all other regions.

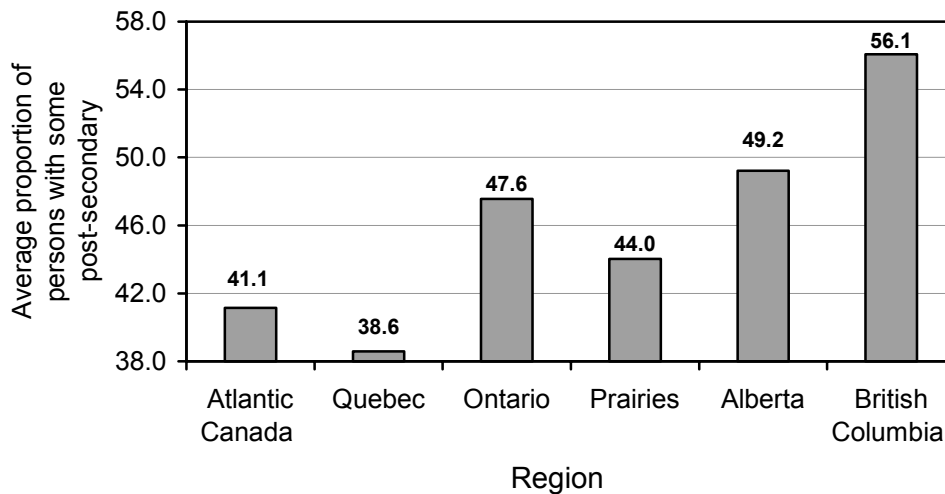
Preston and Bucher (1996) have reported that seniors who live in communities with low to moderate levels of education have the highest number of helpers from the formal and family/friend sectors. This suggests that the reliance on family and friends is higher in communities where there are fewer resources. At an individual level, persons with a higher level of educational attainment are more mobile (Rothwell et al., 2002), and may influence the establishment of longstanding support networks in their communities.

Figure 12a: Distribution of rural communities by average proportion of persons with some post-secondary education



Source: Rural Communities, Census 2001

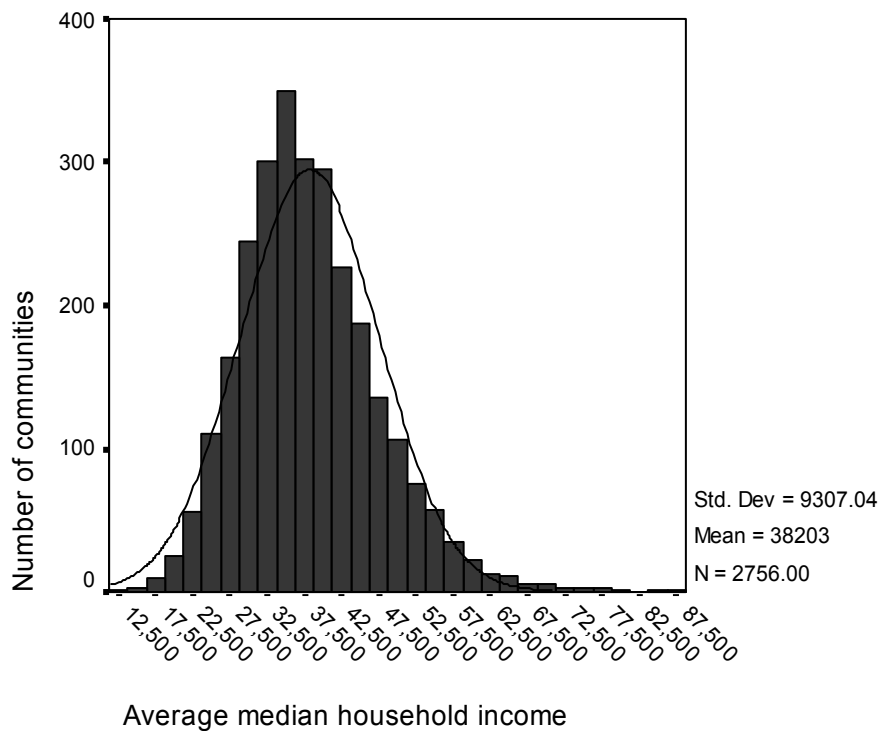
Figure 12b: Average proportion of persons with some post-secondary education in rural communities by region



Source: Rural Communities, Census 2001

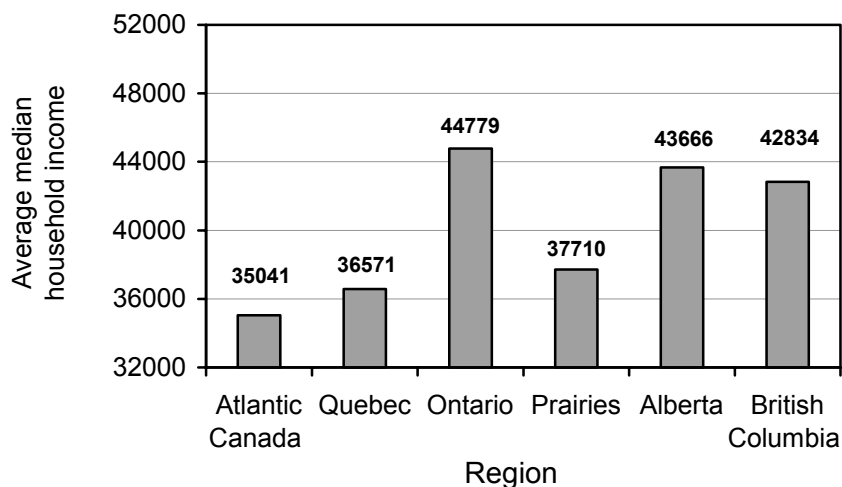
*Income.* There is considerable diversity in median household income among rural communities in Canada. On average, the median household income of rural communities is less than \$40,000. However, the median community household income ranges from a low of \$13,415 to a high of \$87,943 (Figure 13a). At the regional level, the average median household income varies considerably but is significantly lower in rural communities in Atlantic Canada (\$35,041) than in all other regions (Figure 13b). Conversely, the average median household income is significantly higher in rural Ontario (\$44,779) than in Atlantic Canada, Quebec and the Prairies. Income is related to civic engagement and participation in community activities. Communities in which there are higher socio-economic status households may be more likely to be involved (Williams & White, 2002), while poor areas may have limited participation (Small, 2002). Thus, more affluent communities may be more supportive to seniors if civic engagement leads to helping others such as seniors.

Figure 13a: Distribution of rural communities by their average median household income



Source: Rural Communities, Census 2001

Figure 13b: Average median household income in rural communities by region

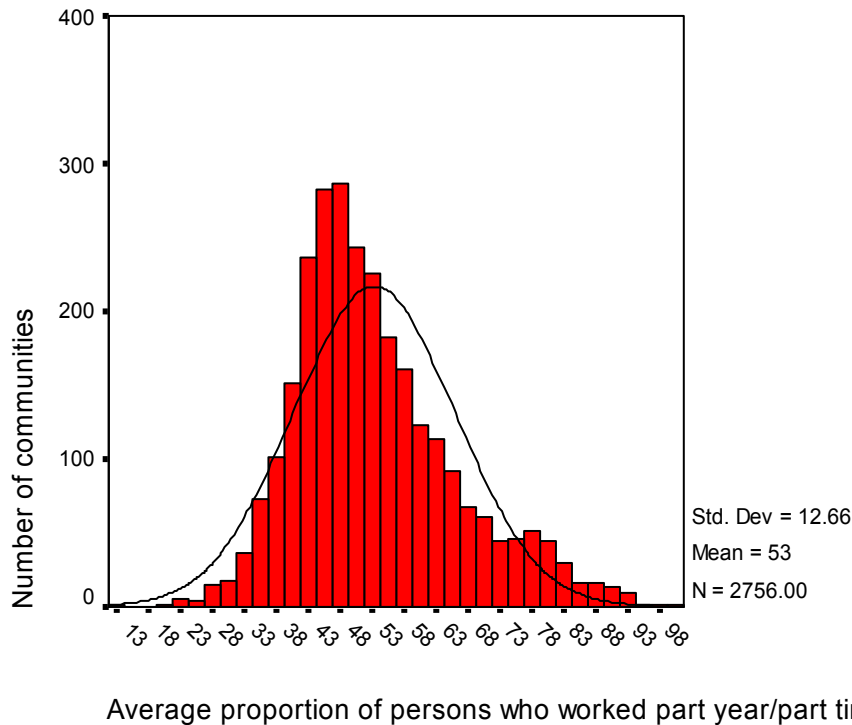


Source: Rural Communities, Census 2001

*Employment status.* There is diversity in the employment status of residents of rural communities in Canada (Figure 14a). At the national level, the average percentage of persons who are employed part year/part time in rural communities is 53%, perhaps an indication of the nature of employment in rural Canada. However, similar to other community characteristics, the proportion of persons with such employment ranges considerably, from almost 14% to 100%. There are significant differences among regions in the average proportion of persons employed part year/part time. The proportion of persons employed part year/part time is significantly higher in Atlantic Canada and British Columbia than all other regions, and significantly lower in the Prairies than all other regions. These regional differences may reflect the predominant resource-based industries in these areas. The fishing industry in Atlantic Canada and logging and mineral resource extraction in British Columbia are seasonal. A long tradition of supplementing farm income with off-farm employment may underlie higher levels of full time employment in the Prairie region. Communities with seasonal and part time workers may have more time available to provide support to seniors, at least at some times of the year, than communities in which higher proportions are employed full year/full time.

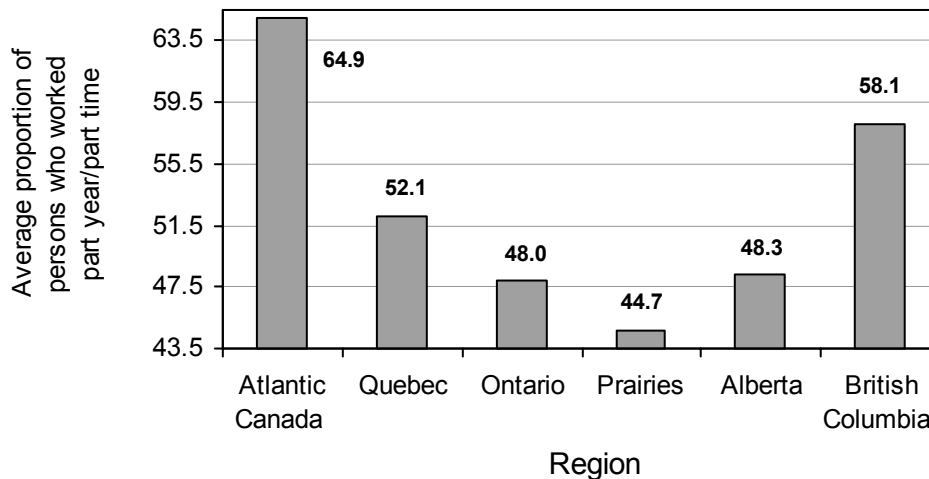


Figure 14a: Distribution of rural communities by average proportion of persons who worked part year/part time



Source: Rural Communities, Census 2001

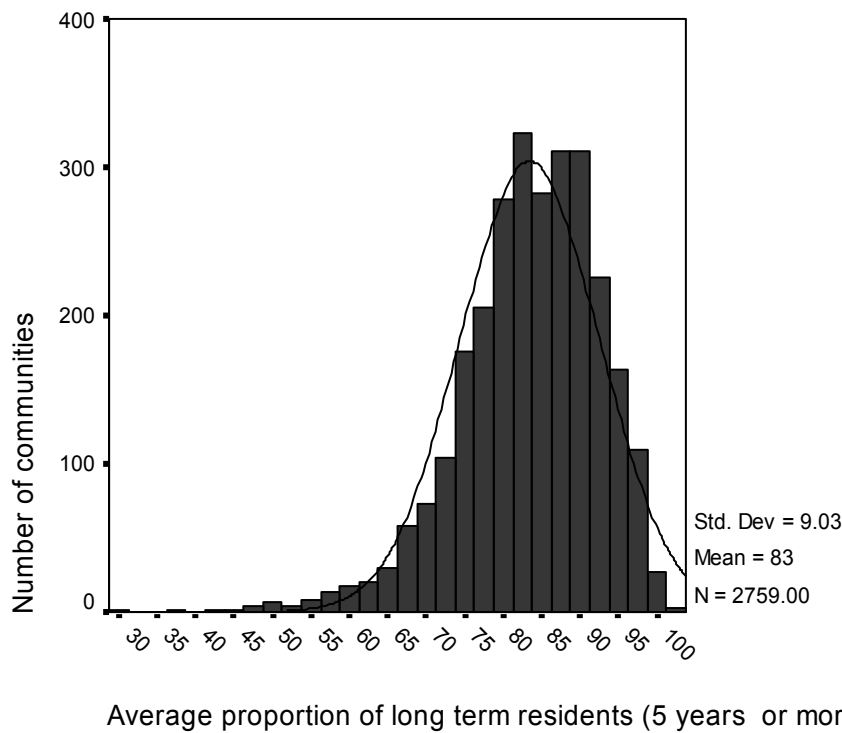
Figure 14b: Average proportion of persons who worked part year/part time in rural communities by region



Source: Rural Communities, Census 2001

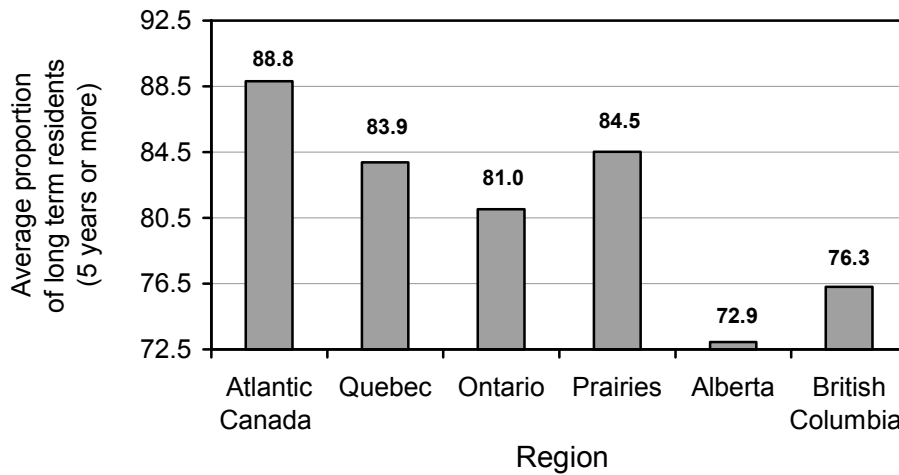
*Long term residents.* There is considerable diversity among rural communities in the stability of their population over time. At the national level, on average, 83% of the population had lived in their communities more than five years. The proportion of long term residents ranges from a low of 29% to a high of 100% (Figure 15a) with considerable diversity across regions (Figure 15b). The average proportion of long term residents in the last five years is significantly lower in Alberta (73%) and British Columbia (76%) than in all other regions. In contrast, the average proportion of long term residents in the last five years is significantly higher in Atlantic Canada (89%) and the Prairies (85%) in comparison to other regions. Population mobility may be a result of the economies of these regions. The observed diversity among rural communities and across regions in-migration patterns will likely affect how well community members know each other, and their willingness to provide support to a long standing friend/neighbour as needed.

Figure 15a: Distribution of rural communities by average proportion of long term residents (5 years or more)



Source: Rural Communities, Census 2001

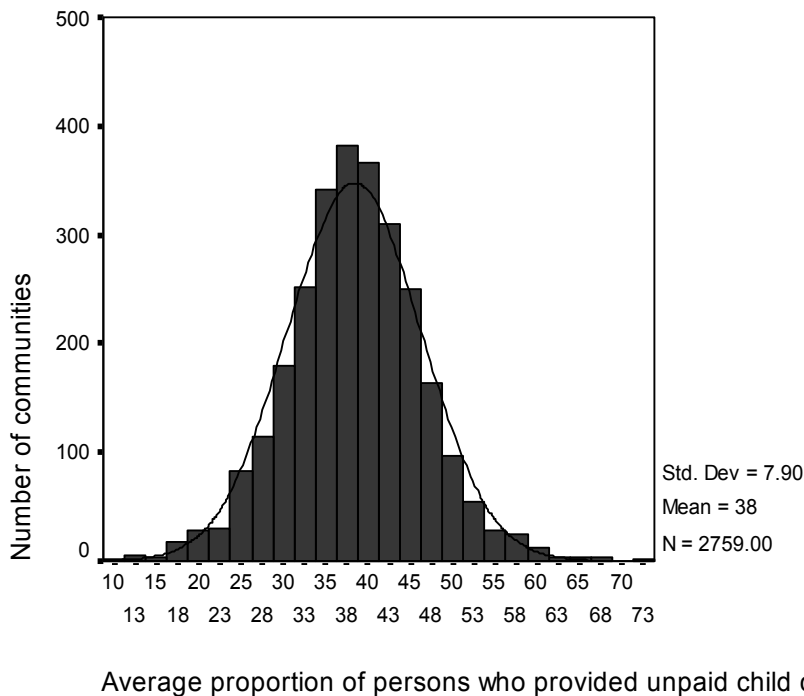
Figure 15b: Average proportion of long term residents in rural communities by region



Source: Rural Communities, Census 2001

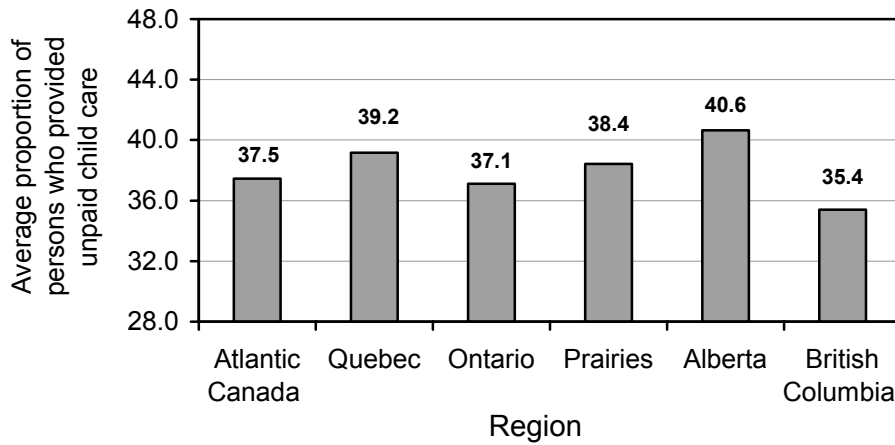
*Unpaid work.* The average percentage of persons in rural communities who provide unpaid child care is 38%, ranging from 9% to 73% (Figure 16a). There are some significant differences among regions (Figure 16b). The average percentage of persons providing unpaid child care is significantly higher in Alberta (41%) than in all other regions except Quebec (39%). In contrast, the mean proportion of persons providing unpaid child care in British Columbia is significantly lower (35%) than in Quebec, the Prairies, and Alberta.

Figure 16a: Distribution of rural communities by average proportion of persons who provided unpaid child care



Source: Rural Communities, Census 2001

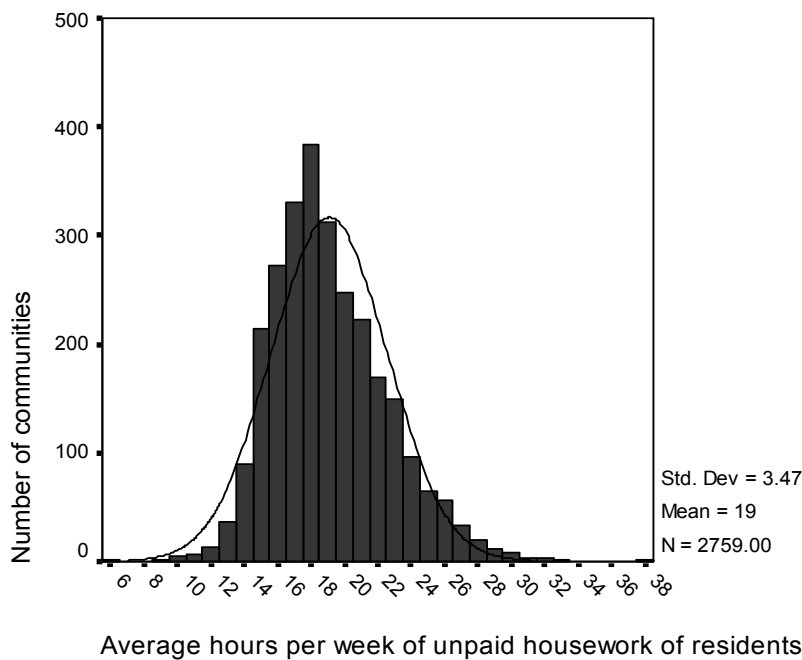
Figure 16b: Average proportion of persons who provided unpaid child care in rural communities by region



Source: Rural Communities, Census 2001

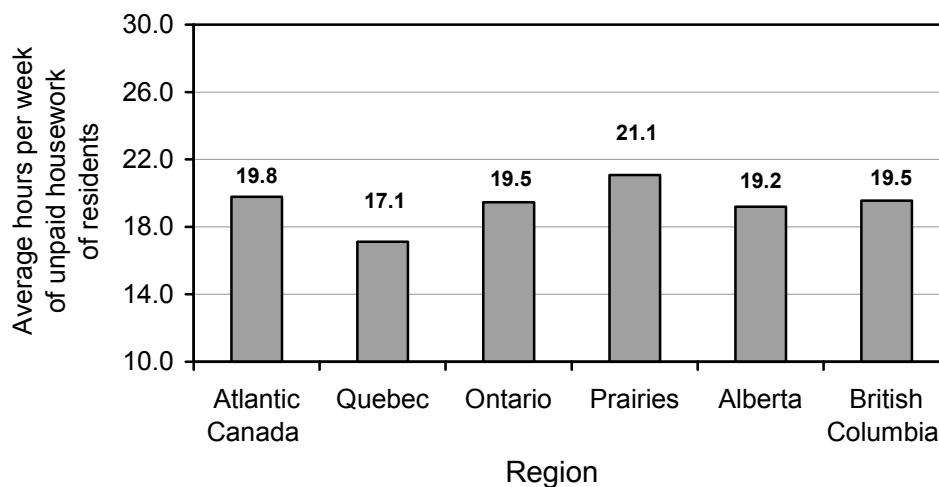
At the national level, the average time spent per week by residents of rural communities on unpaid housework is 19 hours, ranging from almost 6 hours to 38 hours (Figure 17a). Diversity among regions in the average number of hours spent on unpaid housework is evident (Figure 17b). Significantly more time, on average, is spent on unpaid housework in the Prairie region (21 hours per week) than in all other regions. In contrast, significantly less time is spent on unpaid housework in Quebec (17 hours per week) than in all other regions. There are significant differences among other regions as well.

Figure 17a: Distribution of rural communities by average hours per week of unpaid housework of residents



Source: Rural Communities, Census 2001

Figure 17b: Average hours per week of unpaid housework of residents in rural communities by region

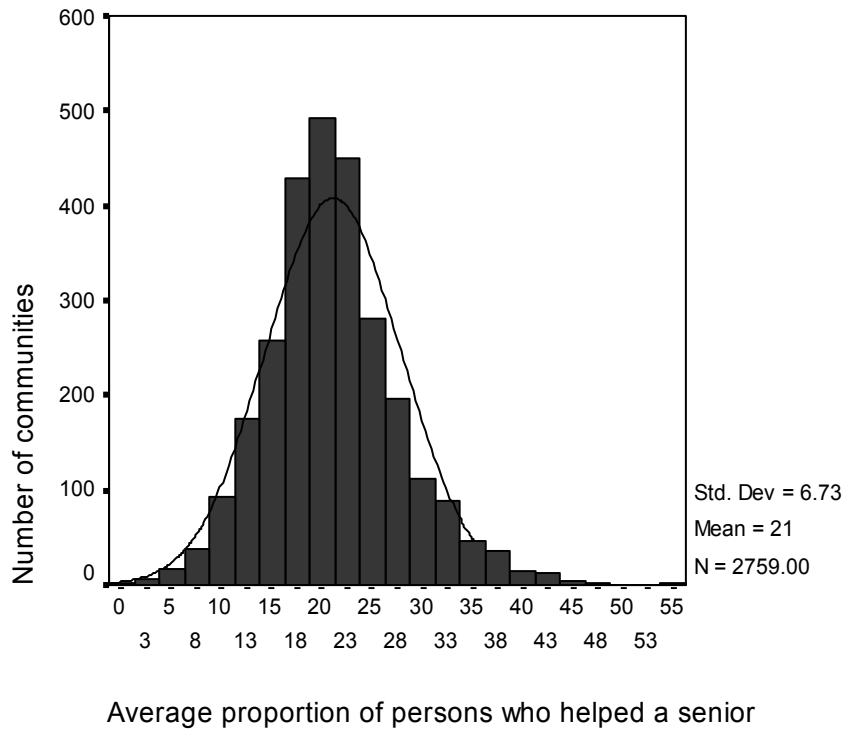


Source: Rural Communities, Census 2001

The average percentage of persons in rural communities who provided unpaid help to seniors is 21%. However, as shown in Figure 18a the proportion of rural communities providing support to seniors ranges from less than 1% to a high of over half the community (56%). There are significant regional differences. As shown in Figure 18b, the average percentage of persons providing support to seniors is significantly lower in British Columbia (17%) than all other regions. In comparison, the average percentage of persons providing support to seniors is significantly higher in the Prairie region (24%) than in all other regions. Differences may be a reflection of different proportions of seniors in rural communities in these areas. British Columbia has the lowest proportion of seniors and the Prairies the highest in the country (Figure 6b).

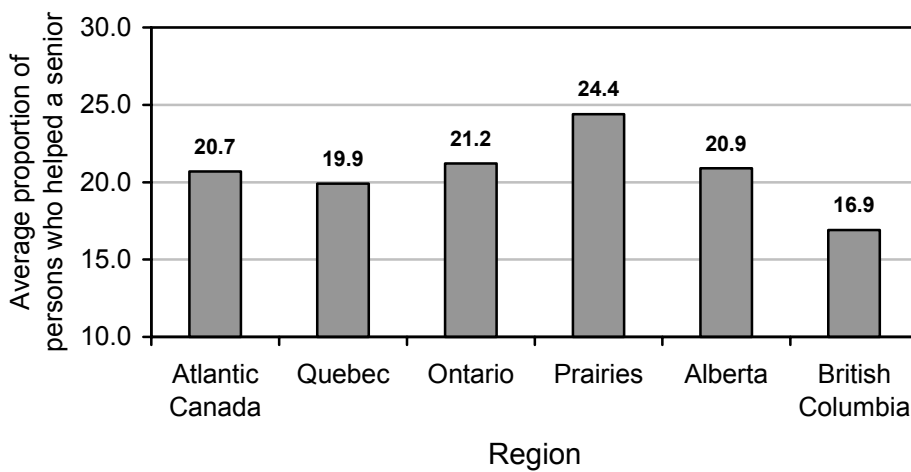
A community's supportiveness to seniors may stem from existing values about helping one another. Rural residents aged 45 and older spend significantly more time on unpaid work than their urban counterparts (Dosman et al., in review). And 60% of recent retirees to rural settings provided 10 hours or more per month of volunteer work for long term community residents (Bennett, 1993). At the same time, unpaid help with child care is often a competing responsibility with unpaid help to seniors (Keating et al., 1999). Thus communities in which residents participate in unpaid work, or who spent time in unpaid work, may be supportive to seniors, but those in which help with child care is strong may be less senior-friendly.

Figure 18a: Distribution of rural communities by average proportion of persons who helped a senior



Source: Rural Communities, Census 2001

Figure 18b: Average proportion of persons who helped a senior in rural communities by region



Source: Rural Communities, Census 2001

### *Summary of Diversity of Rural Communities*

Rural communities are diverse on many of the characteristics thought to influence their supportiveness: physical locality (population size, land area and population density), and social aspects of communities (proportion of seniors, community economic indicators, residents' tenure in the community). These differences provide the context for our subsequent discussion about differences in community supportiveness. For example, among physical locality issues, large variation in population size may underlie potential differences in community cohesion. The question of whether 'smaller is better' warrants further exploration. Similarly, large variations in proportions of seniors lead to questions about whether in some communities, seniors and their needs are less visible.

In these descriptions of rural communities we begin to see patterns of regional differences. Communities in Atlantic Canada, on average, have higher proportions of persons living with others, higher proportions of long term residents, lower household incomes, higher part-year/part-time employment and fewer persons with at least some post-secondary education. Conversely, rural communities in British Columbia differ from all other regions, as their communities on average, have a lower proportion of persons living with 4 or more others, lower proportion of widowed persons, higher education levels and lowest proportion of residents who provided unpaid help to seniors. The Prairies is the only other region with strong differences from all other regions. Their rural communities on average have the lowest levels of part-year/part-time employment, the highest proportion of seniors and the highest proportion of the population providing help to seniors.

Communities across the country differ substantially in their supportiveness to seniors. There are a number of communities in which less than 1% of the population support seniors and in others more than 50% support seniors. This variability also exists across regions. What accounts for these differences? In part, differences may be related to the composition of the community. An industrial type rural community which attracts and retains a younger working population may have a smaller population of seniors. Therefore, the proportion of residents supporting seniors may be lower. Conversely, rural communities with higher proportions of seniors, such as rural communities where seniors age in place or those that experience retiree in-migration, may result in a higher proportion of the community supporting seniors. Of course, health status and access to formal services are also important factors in determining social support need. To better understand how rural community diversity plays out in support to seniors, the next section examines a number of factors by the proportion of residents in a rural community who provided support or assistance to a senior.

### *3.2 Characteristics of Rural Communities and Community Supportiveness to Seniors*

Results presented in this section of the report address the second research question:

- *What is the relationship between characteristics of rural communities and their supportiveness to seniors?*

The extent to which rural communities are viewed as "supportive communities" may depend on many of the same factors that drive diversity. As the previous section illustrates rural communities differ considerably in elements of the physical locality such as population size, distance from service centre, and social aspects of community such as demographic characteristics, community economic indicators, migration patterns and unpaid work. Rural

diversity also may affect the availability of family/friend support networks that may provide much needed support in the absence of formal services.

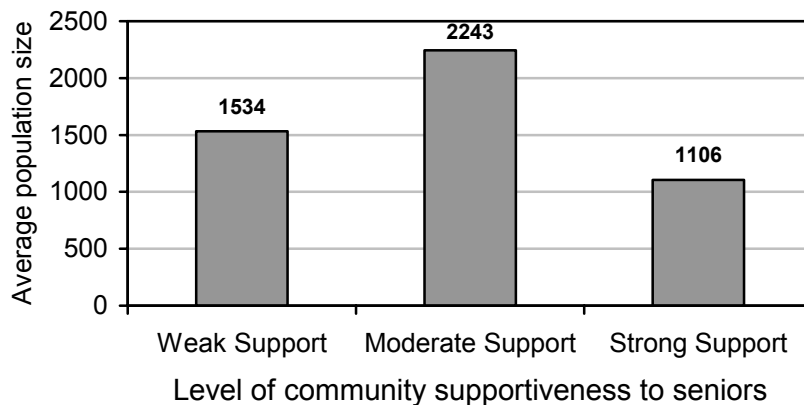
In this section we present the relationships between community supportiveness and the same community characteristics described in the previous section. Results of ANOVAs for significant differences among levels of supportiveness to seniors by community characteristics are summarized in Appendix B.

### *Physical Locality*

First we examine the relationship between the physical locality of rural communities (in terms of population size, land area, population density, and distance from service centre), and their supportiveness to seniors.

*Population size.* Population size is related to rural community supportiveness to seniors as illustrated in Figure 19. 'Strong support' communities are smaller in size ( $F=92.51$ ,  $p<.001$ ) than moderate and weak support communities, suggesting that people in smaller populated areas may be more familiar with one another's needs/circumstances which in turn facilitates a supportive response. However, the relationship between size and supportiveness is less clear for moderate and weak support communities. These findings provide some support for the long held belief that "smaller is better". However, further exploration of the relationship between size and supportiveness in weak and moderate support communities is warranted.

Figure 19: Average population size by level of community supportiveness to seniors

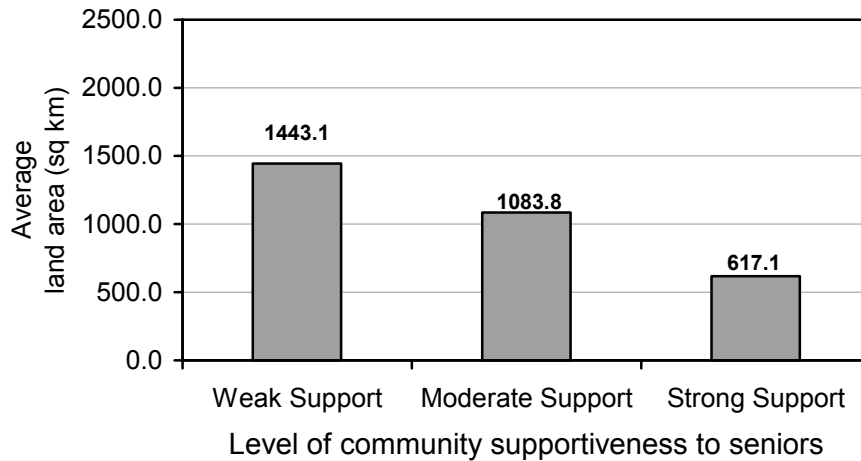


Source: Rural Communities, Census 2001



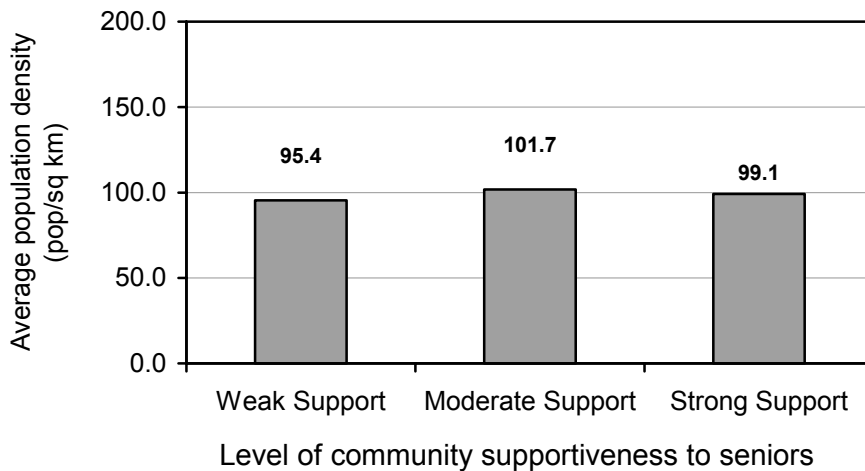
*Land area and population density.* While population size is related to supportiveness, population density and land area are not. There were no statistically significant differences among level of supportiveness to seniors by population density or land area (Figures 20 and 21). Thus, while formal services may be more difficult to access in sparsely populated areas, support from family and friends is not adversely affected by these factors.

Figure 20: Average land area by level of community supportiveness to seniors



Source: Rural Communities, Census 2001

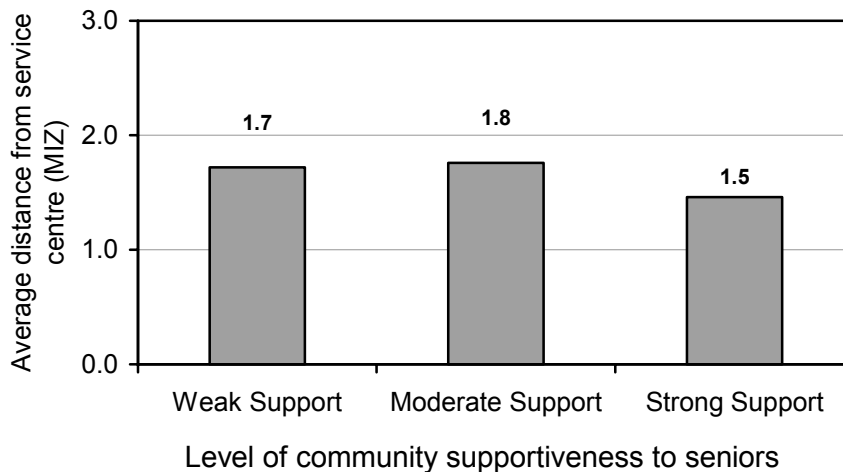
Figure 21: Average population density by level of community supportiveness to seniors



Source: Rural Communities, Census 2001

*Distance from service centre.* In contrast to land area and density, distance from a service centre is related to rural community supportiveness to seniors (Figure 22). Strong support communities are further from a service centre than moderate and weak support communities ( $F=27.69, p<.001$ ). This finding supports the assumption that rural communities that are further from service centres may compensate for lack of formal services through increased family/friend support.

Figure 22: Average distance from service centre (MIZ) by level of community supportiveness to seniors



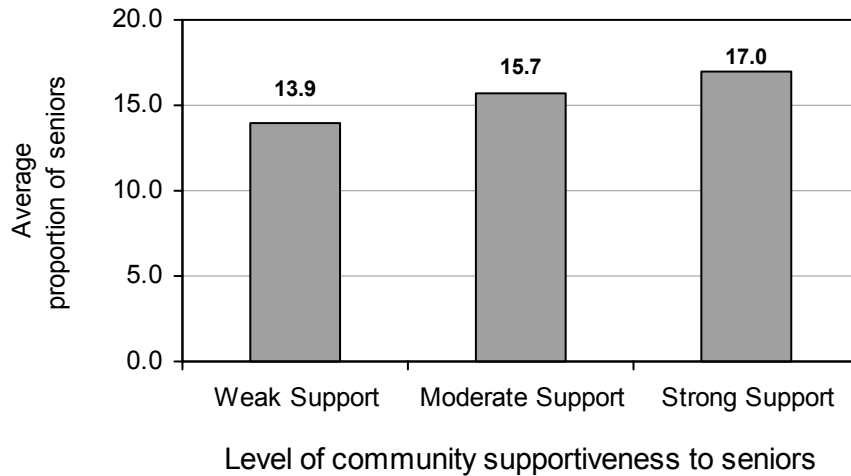
Source: Rural Communities, Census 2001

### *Social Aspects of Community*

In this section, we examine the relationship between the social aspects of community (in terms of demographic characteristics, living arrangements, socio-economic status, residency, and unpaid work) and their supportiveness to seniors.

*Age.* Presence of seniors is related to community supportiveness to seniors (Figure 23). As the average proportion of seniors in rural communities increases, so does the proportion who provide support to seniors ( $F=46.47, p<.001$ ). This finding may reflect the response of communities with high proportions of seniors to a greater need for support. At the same time, it may be a reflection of the fact that seniors themselves often are the providers of support (Bennett, 1993). Particularly in rural communities which have experienced significant in-migration of retirees, the younger and perhaps more active seniors may be supporting those seniors who are experiencing health difficulties.

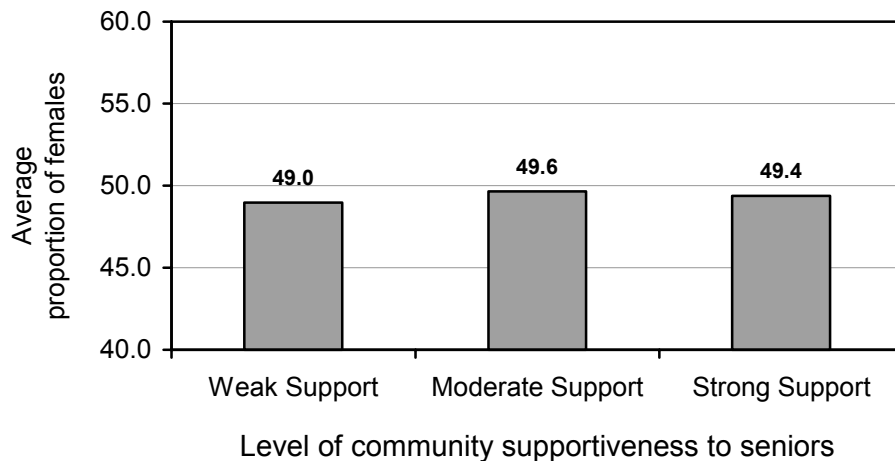
Figure 23: Average proportion of seniors in rural communities by level of community supportiveness to seniors



Source: Rural Communities, Census 2001

*Gender.* Presence of females is important in understanding supportiveness to seniors (Figure 24). Rural communities that provide weak support to seniors, on average, have a lower proportion of females compared to moderate and strong support rural communities ( $F=20.23$ ,  $p<.001$ ). This finding is congruent with society’s traditional expectation of who does the caring work for family and friends. A higher proportion of women than men are caregivers and they assist with more Activities of Daily Living tasks (Keating et al., 1999), therefore communities with a strong presence of females tend to have a higher proportion of caregivers.

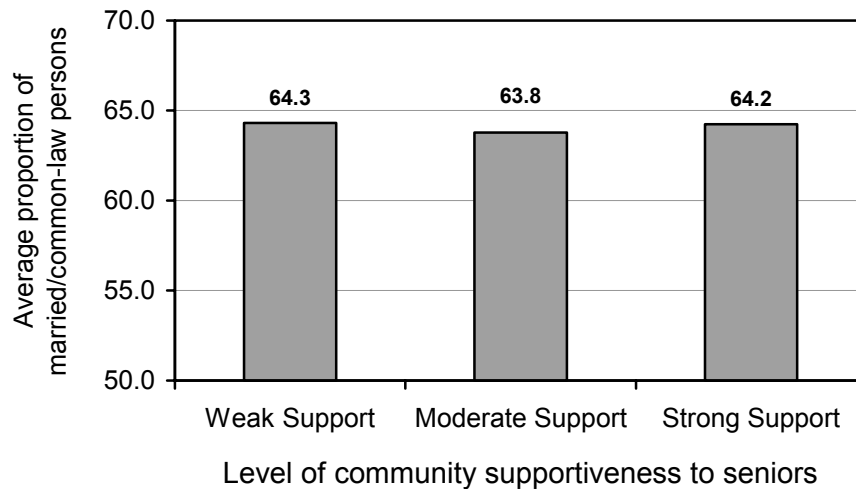
Figure 24: Average proportion of females in rural communities by level of community supportiveness to seniors



Source: Rural Communities, Census 2001

*Marital status.* There is no evidence of a relationship between the proportion of married persons in the community and community supportiveness to seniors (Figure 25). This finding may be related to the tendency for spousal support to go unrecognized and unreported unless the role changes to care provider (Keating et al., 1999). Ailing married seniors have someone in the household to provide support when required. Therefore, communities with a higher proportion of married seniors may provide a higher level of support to seniors than reported.

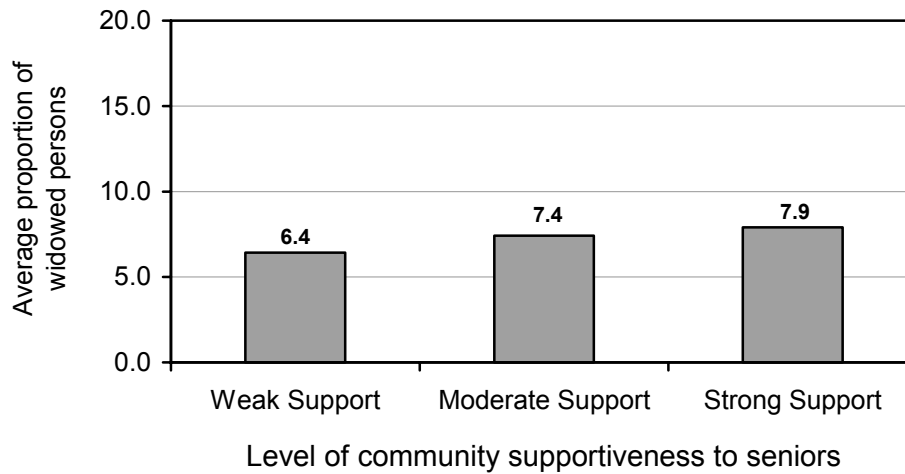
Figure 25: Average proportion of married/common-law persons in rural communities by level of community supportiveness to seniors



Source: Rural Communities, Census 2001

In contrast, there is a relationship between the proportion of widowed persons in the community and community supportiveness to seniors. As the average proportion of widowed persons increases in rural communities, so does the level of support to seniors as shown in Figure 26 ( $F=35.04$ ,  $p<.001$ ). This relationship may be a factor of demand for support as well as supply of support. A higher proportion of widows could be related to higher need. On the other hand, widowed persons (and never-married persons) provide more hours of care to seniors than those who are married (Keating et al., 1999). It may be that those who are widowed may have more time available to provide support.

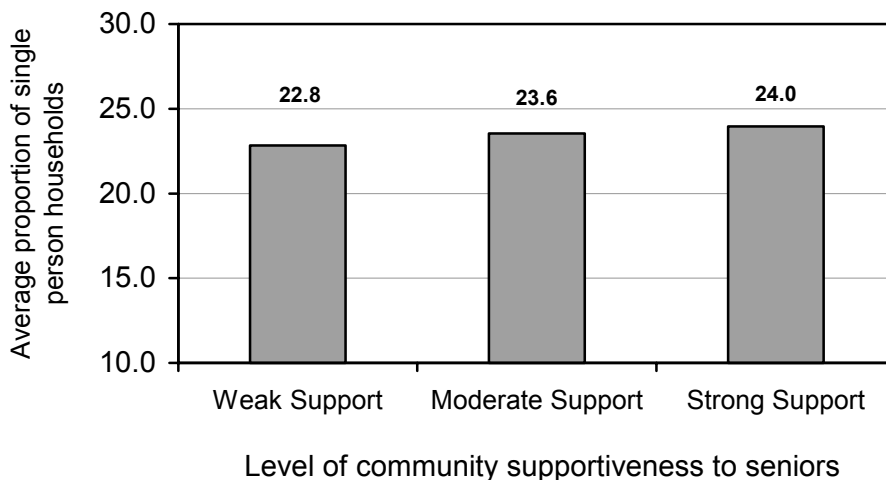
Figure 26: Average proportion of widowed persons in rural communities by level of community supportiveness to seniors



Source: Rural Communities, Census 2001

*Living arrangements.* The proportion of single person households in the community is related to community supportiveness to seniors. Rural communities which report weak levels of support to seniors are more likely to have a lower percentage of single person households than those rural communities which provide moderate and strong support to seniors as illustrated in Figure 27 ( $F=4.70$ ,  $p<.01$ ). Living alone has been found to increase the probability that the person provides assistance to others (Keefe & Side, 2003) possibly because the individual may have increased time available for being supportive to others outside one’s own household.

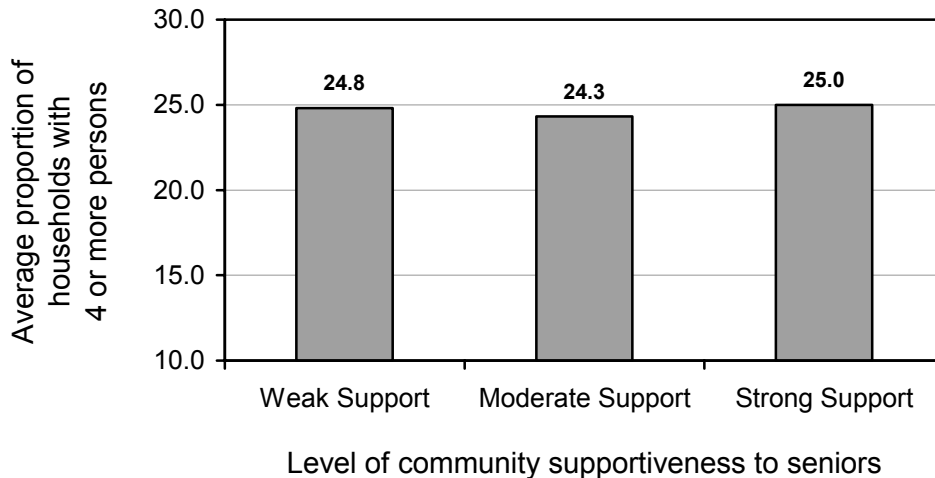
Figure 27: Average proportion of single person households in rural communities by level of community supportiveness to seniors



Source: Rural Communities, Census 2001

In contrast, there is no evidence of a relationship between the proportion of households with four or more persons in the community and supportiveness to seniors (Figure 28). A potential explanation is that among multiple person households, assistance may be concentrated to household members rather than to others in the community – such as seniors.

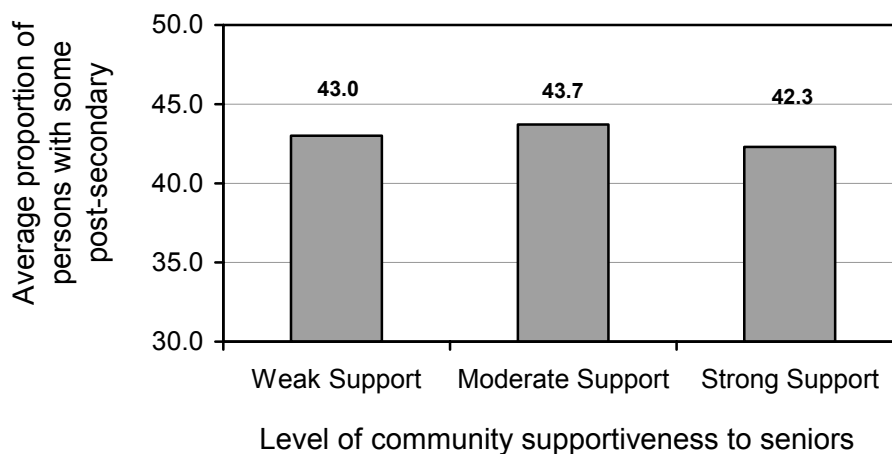
Figure 28: Average proportion of households with four or more persons in rural communities by level of community supportiveness to seniors



Source: Rural Communities, Census 2001

*Education.* Education is related to rural community supportiveness to seniors (Figure 29). Rural communities that provide strong levels of support are less likely to have a highly educated population ( $F=3.70, p<.05$ ). These findings are congruent with research showing that seniors living in communities with low to moderate levels of education report the highest number of helpers from the formal and family/friend sectors (Preston & Bucher, 1996).

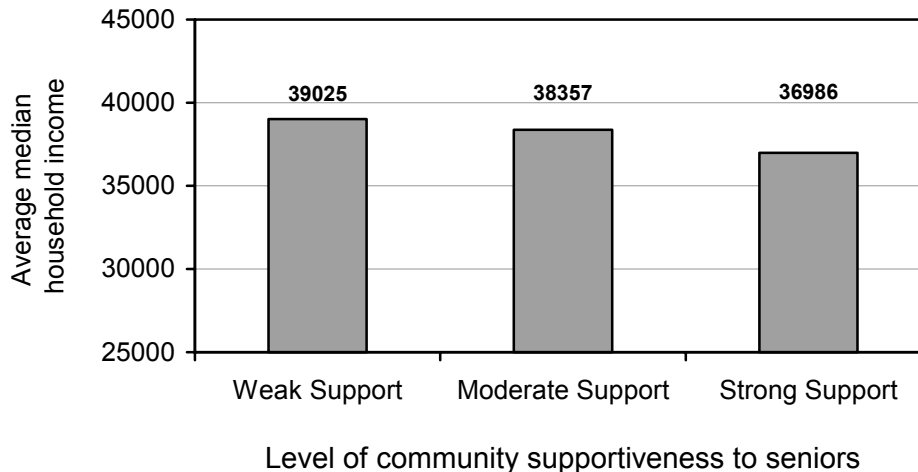
Figure 29: Average proportion of persons with some post-secondary education in rural communities by level of community supportiveness to seniors



Source: Rural Communities, Census 2001

*Income.* Like education, income is also related to rural community supportiveness to seniors (Figure 30). Rural communities which provide strong levels of support are more likely to have, on average, lower household incomes than weak and moderate supportive communities ( $F=9.53, p<.001$ ). This finding may be indicative of rural communities that have fostered a culture of helping others because of limited resources to purchase formal services. Through helping exchanges they have minimized others' reluctance to accept help and have accumulated social credit.

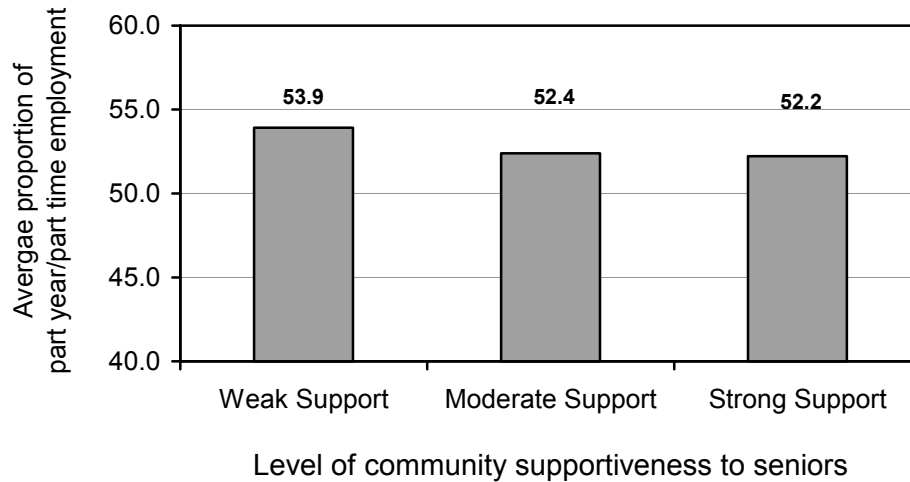
Figure 30: Average median household income in rural communities by level of community supportiveness to seniors



Source: Rural Communities, Census 2001

*Employment status.* Likewise, employment status is also related to community supportiveness to seniors (Figure 31). Rural communities that provide weak levels of supportiveness to seniors have a higher proportion of persons who work part time/part year than those moderate or strong support communities ( $F=4.72, p<.01$ ). Employment in rural areas is commonly associated with seasonal work (e.g., agriculture, fishing, tourism). The time frame in which the Census question was asked of rural residents (early May) would have been at the same time that such resource-based and tourism-based activities would be kicking into gear throughout rural Canada. Thus, the likelihood that residents of rural communities would have been available to provide support to others may have been hampered by the time of year.

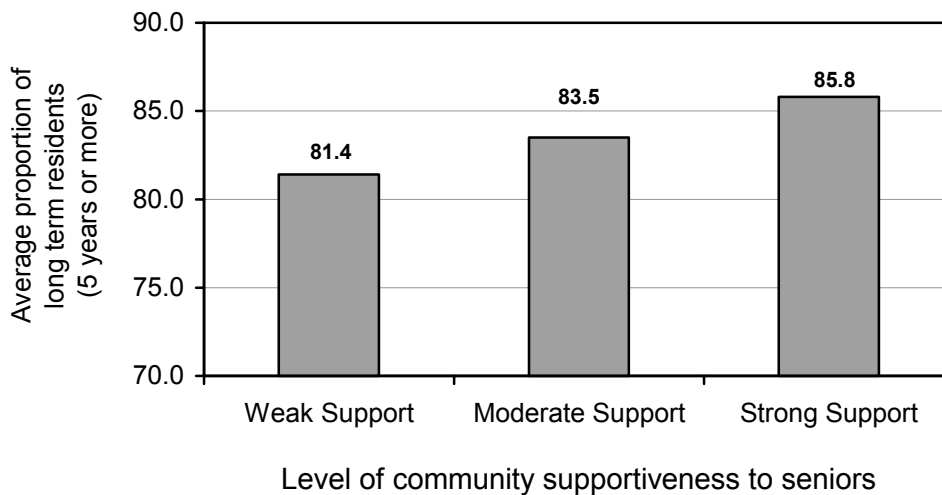
Figure 31: Average proportion of persons employed part year/part time in rural communities by level of community supportiveness to seniors



Source: Rural Communities, Census 2001

*Long term residents.* The proportion of long term residents in communities is important in understanding supportiveness to seniors. Findings indicate that there is a direct relationship between the proportion of long term residents in rural communities and supportiveness to seniors (Figure 32). Rural communities that provide moderate and strong support to seniors have a higher proportion of residents who have lived in their community for at least five years compared to weak support communities ( $F=46.24, p<.001$ ). Such residents who have longer tenure in a community may be more likely to know each other through shared community experiences and participation in activities. This increased familiarity and interaction among community members may contribute to stronger social cohesion of the community.

Figure 32: Average proportion of long term residents (5 years of more) in rural communities by level of community supportiveness to seniors

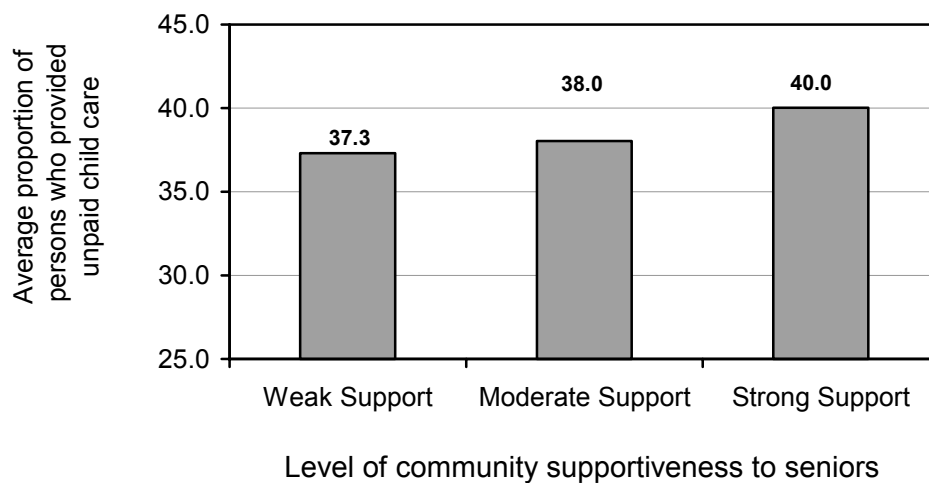


Source: Rural Communities, Census 2001



*Unpaid work.* The proportion of persons in rural communities providing unpaid child care is related to supportiveness to seniors (Figure 33). Rural communities providing strong levels of support to seniors are more likely to have a higher proportion of persons providing unpaid child care than moderate and weak support communities ( $F=23.84$ ,  $p<.001$ ). This finding is in contrast to the notion of child care as a competing responsibility with senior care (Keating et al., 1999). This may be explained, in part, by other inter-relationships that exist among the independent variables. For example, support for child care may be a function of the increased proportion of females in the community, a variable that also is associated with strong support to seniors.

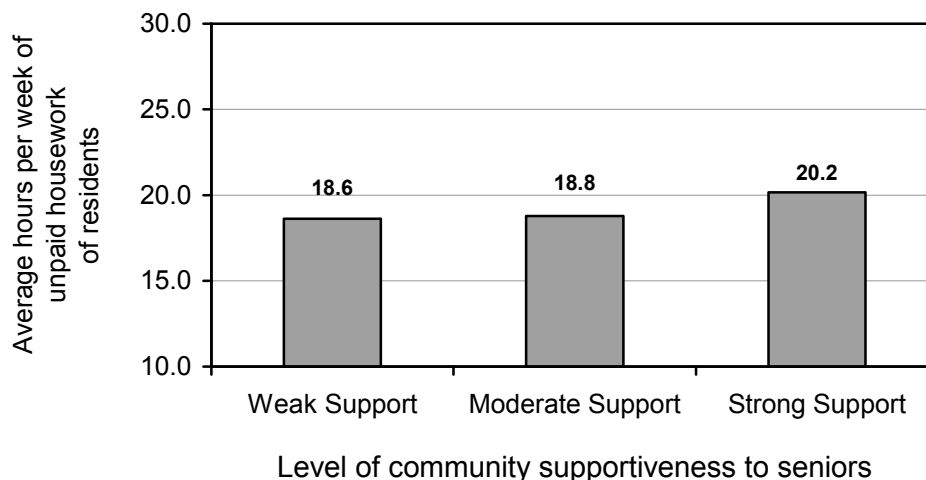
Figure 33: Average proportion of persons providing unpaid child care in rural communities by level of community supportiveness to seniors



Source: Rural Communities, Census 2001

Similarly, the average hours spent on unpaid housework by persons in rural communities is related to supportiveness to seniors. Rural communities providing a strong level of support to seniors are more likely to have persons providing, on average, greater hours of unpaid housework within their household and to outside households than moderate and weak support communities (Figure 34;  $F=47.55$ ,  $p<.001$ ). This finding may be related in part to the dearth of formal services in rural communities. A study of rural communities indicates that a decline in formal services such as banking, local businesses and health care services was compensated by an increase in volunteerism (Bruce & Black, 2000).

Figure 34: Average hours per week of unpaid housework of residents in rural communities by level of community supportiveness to seniors



Source: Rural Communities, Census 2001

#### *Region of Rural Canada and Community Supportiveness to Seniors*

The previous sections demonstrate that at the national level, rural communities' supportiveness to seniors is related to a number of physical features (such as population size, and distance from an urban centre) and social aspects of the communities themselves (such as proportion of seniors, females, and widowed persons). However, the relationship between these factors and supportiveness to seniors at the national level are not always mirrored at the regional level (Appendices C-H).

At the national level, rural communities in which a strong proportion of residents provide support to seniors are more likely to be smaller in size than moderate and weak support communities. On average, smaller population size is associated with strong community supportiveness to seniors in all regions except rural communities in British Columbia. Here, smaller population size is associated with weaker level of support to seniors ( $F=5.92$ ,  $p<.01$ ). Moreover, at the national level, rural communities in which a higher proportion of the population provides support to seniors are more likely to be further from a service centre than moderate and weak support communities. Across the region, the importance of distance from a service centre varies. For example, in Atlantic Canada, Ontario, Alberta and British Columbia, there are no statistically significant differences on communities' supportiveness to seniors by distance from a service centre. This may be related in part to the relative proximity of rural communities to an urban centre where formal services may be accessed. For example, services may not be available within a rural community due to service restructuring, but they may be proximate and within a 30 or 60 minute drive (Halseth, 2003). Alternatively it may, in part, be related to an established norm of helping one another at the community level whether or not access to formal services is hampered in these regions.

Other national-regional differences include the proportion of seniors and household income. At the national level, there is a strong positive relationship between presence of seniors and supportiveness to seniors. However, this relationship does not hold for each region. For example, in Atlantic Canada and Ontario, presence of seniors is not associated with community

supportiveness to seniors; there are no statistically significant differences between the average proportion of seniors in rural communities who provide weak, moderate or strong levels of support. This may be related to a higher old-old senior population in these rural communities who would be less able to provide assistance to others. And at the national level, rural communities providing strong levels of support are more likely to have, on average, lower household incomes. This relationship is mirrored in Quebec and Alberta, but not other regions. For example, in Atlantic Canada, Ontario and the Prairies median household income is not associated with communities' supportiveness to seniors. In British Columbia, the inverse relationship exists in which the highest average median household income is associated with strong levels of support ( $F=7.15$ ,  $p<.01$ ). This latter finding is consistent with retirees migrating to rural communities in British Columbia. These seniors are likely more affluent and younger enabling their support to others.

These findings confirm the diversity among rural communities across region especially in relation to supportiveness to seniors. While not all differences between the national trends and regions are easily explained, the differences highlighted suggest that examining national averages alone mask unique circumstances and conditions within specific parts of rural Canada that are important when considering program and policy development.

#### *Summary of the Relationship between Community Characteristics and Level of Community Supportiveness to Seniors*

This section has demonstrated that the diversity among rural communities extends to characteristics that are related to supportiveness to seniors. For example, rural communities which, on average, are smaller in population size, further from a service centre, have a greater proportion of seniors and widowed persons, lower household incomes, greater proportion of long term residents and greater proportion of persons providing unpaid child care will have a greater proportion of their residents providing support to seniors. These characteristics typify communities in which residents may have had opportunities over time to know one other and have established helping norms perhaps because of physical locality features such as size and remoteness. This national profile of supportive rural communities is not consistent across the regions. This may in part be due to the unique demographic composition of regions, especially age, and migratory patterns influenced by education and employment opportunities.

While these results are informative, it is important to remember that they are based on bivariate analyses and do not take into account any interrelationships that may exist among the independent variables. Given our assumption that contexts are interrelated, we would expect interrelationships among physical locality and social aspects of community. The following analysis provides a more comprehensive analysis which takes into account the interrelationships among the different community characteristics.

### *3.3 Characteristics that Differentiate Community Supportiveness*

In this section of the report we present findings that address the third research question:

- *What is the set of characteristics that distinguishes rural communities that provide strong, moderate and weak levels of support to seniors?*

The previous section has confirmed relationships exist between a number of community-level characteristics and community supportiveness to seniors. However, it is important to

control for the inter-play of relationships occurring among such characteristics. Thus, to understand the relative importance of respective independent variables in terms of community supportiveness to seniors, a series of multivariate models were examined. The purpose of these analyses was to determine the set of community characteristics that best distinguishes among high, medium and low support communities.

First correlations were run among all independent variables to exclude variables with moderate or strong inter-correlations (e.g., proportion of widowed, proportion of single person households, proportion who lived in four person or more households, proportion with at least some post-secondary education). The correlation matrix is presented in Appendix I. A few variables with moderate correlations remained at this stage, however, due to their perceived importance and function as a proxy for other higher correlated variables which were excluded (e.g., proportion of married persons, proportion of persons who provided unpaid child care). Ten variables were entered into the first model<sup>1</sup>. Variables that emerged as having greatest influence (F value  $\geq 30$ ) for understanding supportiveness to seniors were average population size, proportion of long term residents, average hours of unpaid work and proportion of seniors (Appendix J).

Next, a block approach was used in an effort to increase classification ability by minimizing remaining inter-relations and to limit the amount of variables in the model. This approach helped to sub-divide a number of variables described as “social aspects of community” into smaller units (e.g., demographic, socio-economic, unpaid work). The physical locality block contained population size and distance. The same variables which emerged as individual contributors emerged as the key variable of their block. For the physical features block, emerged stronger than distance (F=89.9 compared to 53.5). For the demographic block, proportion of seniors in the community emerged stronger than proportion of females (F=45.4 compared to 30.0). For the socio-economic status block, proportion of long term residents was stronger than proportion of persons employed part year/part time or median household income (F=47.4 compared to 29.1 and 22.4).<sup>2</sup> Finally, for the unpaid work block, average hours of unpaid work emerged stronger than proportion who performed unpaid child care (F=46.9 compared to 34.9).

This approach resulted in four representative variables emerging that best discriminate communities between those categorized as weak support to seniors, moderate support to seniors and strong support to seniors. They are population size, average hours spent on unpaid work, proportion of seniors, and proportion of long term residents. Because of collinearity issues among many of the independent variables, these four variables are representative of other community characteristics no longer in the model. For example, presence of seniors is correlated with presence of females, presence of widowed and income. Similarly, hours spent on unpaid work is related to proportion of married persons. So while the analysis has been narrowed to these four variables, they speak to other social aspects of rural communities.

This four-variable model helps distinguish communities categorized as weak, moderate or strong support to seniors in almost 50% of the cases (Table 2 and Appendix K). For example, weak support communities, those in which less than 19% of the population provide support to seniors, are those in which there is, on average, a lower proportion of long term residents, lower

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<sup>1</sup> Region was excluded because it is not a continuous variable, and land area also was excluded due to extreme skewness to avoid violation of assumptions of discriminant function analysis.

<sup>2</sup> Proportion of long term residents was included in the socio-economic status block to avoid a block with only one representative variable and because income and part year employment did not yield strong F-values when examined on an individual basis so were not expected to contribute significantly as a block.

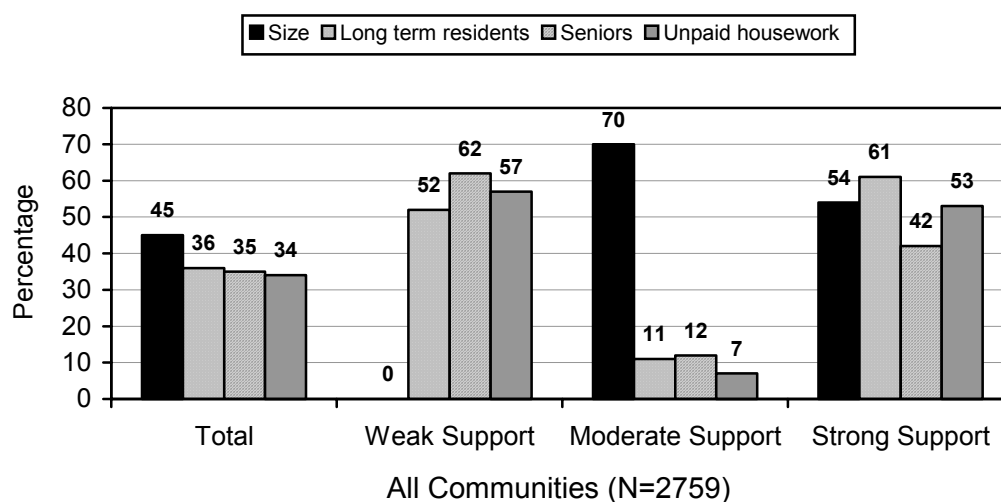
proportion of seniors and fewer hours spent on unpaid housework for others. Such communities may be characterized as resource-based rural communities which are younger and experiencing more in-migration perhaps for employment purposes. Conversely, strong support community, those in which at least 25% of its residents provided support to seniors, are those in which there is a higher proportion of long term residents, higher proportion of seniors, and greater number of hours spent on unpaid housework for others. In addition, these strong support communities are also more likely to be smaller in size which, coupled with increased stability and greater presence of seniors, portrays retirement communities or those where seniors are aging in place but still well enough to engage in supportive activities. Notable differences to distinguish moderate support communities (where 19-24% of the population provides support to seniors) are size and presence of seniors. Moderate support communities are more likely to be larger in population size than strong and weak support communities and have moderate presence of seniors.

Table 2: Set of community characteristics that distinguish level of community supportiveness to seniors

	Weak Support	Moderate Support	Strong Support
Average population size	1534	2243	1106
Average proportion of long term residents	81.4%	83.5%	85.0%
Average proportion of seniors	13.9%	15.7%	17.0%
Average hours of unpaid housework	18.6%	18.8%	20.2%

While the ability of the four key variables to discriminate among the study's rural community typology does occur, the accuracy of classifying communities into the study's typology is not overly strong (Figure 35 and Appendix K). The model accounts for almost 50% of rural communities to be accurately classified into weak, moderate or strong categories. At the variable level, population size is able to classify 45% of cases accurately and its classification success rate is stronger among communities identified as providing moderate and strong support to seniors rather than those identified as providing weak support to seniors (70% and 54% compared to 0%). Conversely, while the remaining three variables, long term residents, seniors, and unpaid housework, accurately classify more than one-third of cases (36%, 35%, and 34% respectively), they are better able to classify cases into the weak and strong communities and have low classification ability for the communities identified as moderate support to seniors. While this model offers some insight into characteristics that distinguish level of supportiveness to seniors, the classification ability of the model suggests that other important variables to help understand differences between communities are absent from this analysis. Such variables may include proximity of children, a more detailed measure of distance from/access to needed formal services, actual usage of formal support services, and a measure of health status/disability.

Figure 35: Classification ability (%) of discriminant function model for rural communities



Source: Rural Communities, Census 2001

### *Is Region of Rural Canada Still Important?*

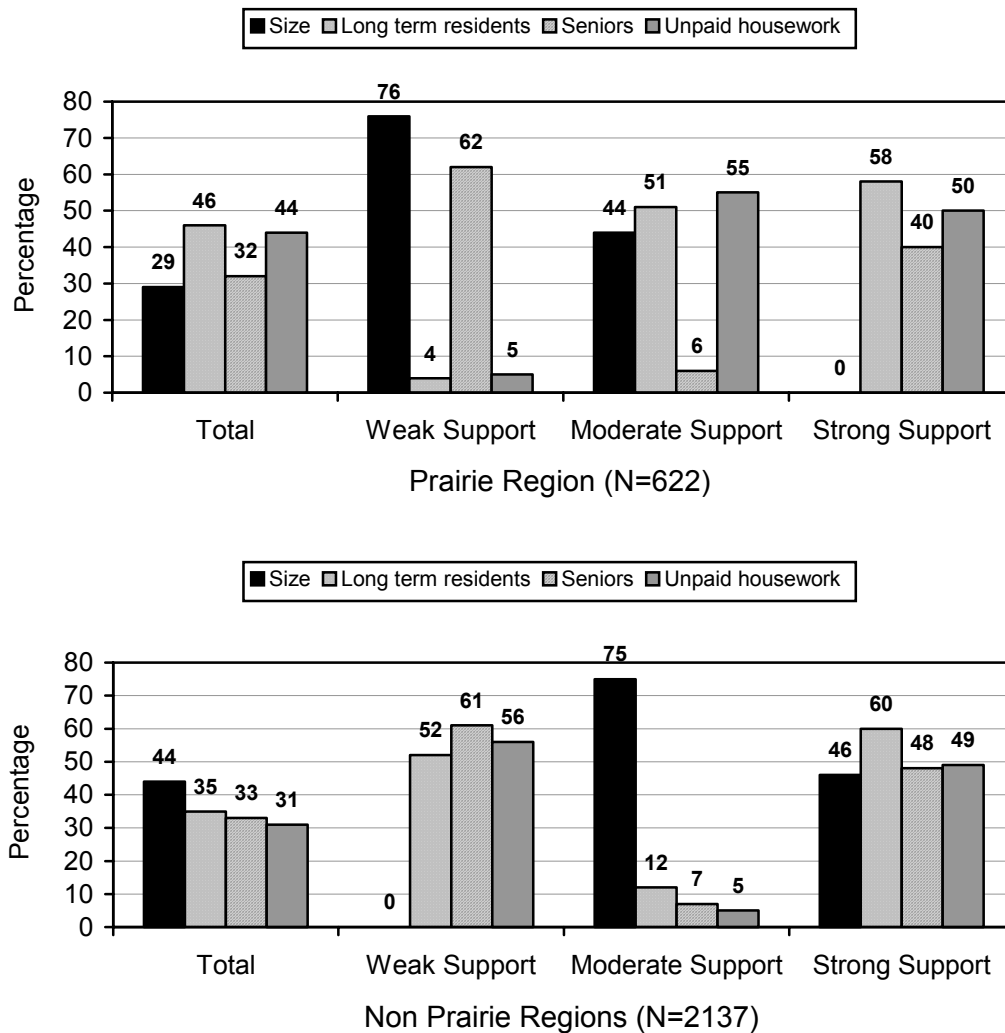
Throughout this research it has been suggested that examining national averages alone may be misleading due to the diversity among rural communities across the country. To further this point, the previous discriminant function analysis was repeated for the Prairie region in relation to all others. This region was selected as an illustration because the average supportiveness to seniors is higher in this region and the range of level of supportiveness is greater than other regions. Results support the message that understanding community supportiveness to seniors is important to consider at the regional level (Appendices L and M). Weak support communities in the Prairies are those which are smaller in size (than moderate) and have a lower proportion of seniors (than both moderate and strong communities). While these two patterns are similar for non Prairie regions, a few differences also exist. For non Prairie regions, weak communities are also characterized by a lower proportion of long term residents and lower average of hours spent on unpaid housework. Conversely, strong support communities in the Prairies are smaller in size (than moderate) and have a higher proportion of seniors (than weak). As well, these Prairie communities have higher proportion of long term residents (than moderate) and higher average of hours spent on unpaid work for others (than moderate). These patterns are similar for rural communities in non Prairie regions.

The classification ability of this model for the Prairie region versus other regions presents distinctive findings as well (Figure 36 and Appendices N and O). The model has weaker classification ability for the Prairie region than other regions when classifying communities into weak, moderate, or strong levels of support (42% compared to 47%). The only classification patterns that are similar between the regions pertain to proportion of seniors. Others differ. Population size has better classification ability for weak and moderate Prairie communities but for non Prairie communities the model does better for moderate and strong. Average hours of unpaid housework and proportion of long term residents, on the other hand, offer better classification ability for moderate and strong Prairie communities but do so for weak and strong communities in non Prairie regions. The model when examined at the regional level may not

generate the same results as at the national level. This suggests that other informing variables specific to a region or regions of rural Canada, not included here, should be analyzed to better understand regional differences in rural community supportiveness to seniors.

While the reasons for these differences with respect to the model and specifically, the proportion long term residents and average hours of unpaid housework, are not necessarily clear, these results point to the need that differences at regional level should be considered in any discussion of rural Canada.

Figure 36: Classification ability (%) of discriminant function model for rural communities of Prairie region compared to non Prairie regions



Source: Rural Communities, Census 2001

*Summary of the Set of Characteristics that Best Differentiates Community Supportiveness to Seniors*

This section has demonstrated the contribution of a particular set of characteristics in understanding community supportiveness to seniors. Both physical locality and social aspects of community are important to the level of community supportiveness to seniors. In particular, population size, proportion of seniors, proportion of long term residents and average hours of unpaid housework provided to others emerge as key variables. Strong support communities appear to benefit from having residents who have lived a longer time in the community, and being smaller in size which may facilitate familiarity and increased interaction with one another. Thus, these conditions may contribute to these communities having established helping norms, including help to seniors. In contrast, weak support communities are larger in population size and experience more fluctuation in terms of in migrants. Residents in such communities may be less engaged and familiar with the needs of their communities and therefore less inclined to participate.

This model cannot be applied consistently across the regions. An examination of rural communities in the Prairie region compared to other regions, suggests that this set of community characteristics operate differentially at the regional level. This furthers the support for the argument that rural Canada is diverse.



## 4 Discussion

In this report we have begun to address some of the assumptions about rural Canada and its' supportiveness to seniors. At the beginning of the report, we presented these assumptions as if they were in opposition to each other: rural Canada as either supportive because of values associated with helping one another, or unsupportive because of lack of access to needed services. Findings provide information through which we begin to challenge the apparent simplicity of these assumptions. When we look at national averages, we might conclude that the assumptions hold. On average, people in rural Canada do work together to provide assistance to seniors. Across the country an average of 21% of residents of rural communities provide support to the average of 16% of their citizens who are seniors. From these averages, one might conclude that older adults are embedded in networks of family, friends and community members. Similarly, access to services also seems to be a general problem in rural areas. On average, rural communities have fewer than 1000 residents with forty percent outside of commuting distance to an urban centre. Rural communities may be too small to provide basic services and too far from service centres for residents to have easy access to the services they need.

Yet once we shift the lens to considering diversity, we see that there are immense differences in rural communities and in their levels of supportiveness. This report has been about the explication of that diversity- in assistance provided by residents of rural communities across the country, and in the characteristics of communities that influence this supportiveness. In this final section of the report, we consider findings on these issues and point to further questions that arise from them.

We began our exploration of diversity in rural communities by presenting information that illustrates the differences in physical and social features of rural communities in Canada. We believe that this is the first such description of all communities in rural Canada, and that it will serve as a reference from which to fill in knowledge gaps and to address assumptions about the nature of rural communities. While many of these findings will resonate with Canadians, there are surprises. For example, at least in western Canada, British Columbia is seen as a 'retirement' province to which people move after exit from the labour force. Thus, the finding that rural communities in British Columbia have the smallest proportions of older adults of any region in Canada is unexpected. Yet the finding makes sense given that many small communities in British Columbia are resource-based and thus have a predominance of young workers. Findings from regional analyses are particularly useful in underlining the fact that communities are not homogeneous. Our research team is located in the Maritimes, Ontario and Alberta - parts of the country that differ considerably on characteristics such as the proportion of community members that work part time or part year (highest in the Maritimes); lower proportions of long term residents (Alberta), or highest median community income (Ontario). We have begun to better understand the places where we live and the influences that may shape their demographic composition and availability of health and social services.

The main focus of this report has been in diversity in community supportiveness to seniors. We have defined supportiveness as assistance to seniors by community members and measured it by the proportion of community members who said they provided unpaid care or assistance to a senior. The strength of this community-level approach lies with understanding the community context of older adults. We now have a better sense of what community characteristics are associated with supportiveness to seniors. However, the community-context definition of supportiveness also has its limitations. It provides us with no detail about the nature

or source of support given. Support given and received among older adults within rural communities provides the basis for our investigation in phase 2 of this program of research.

Communities range in supportiveness from less than 1% to more than 50% of community members reporting having helped a senior - compelling evidence against the assumption that rural communities all are close-knit and caring. It is evidence as well of potential differences in community cohesiveness. We hypothesized that communities that are high on supportiveness are ones in which there are greater links among citizens and that are highly cohesive. Characteristics of communities that are associated with supportiveness lead us to think that this may be the case. Small population size and higher proportions of long term residents likely serve to foster links among community members. As well, highly supportive communities have greater proportions of women, and their citizens do more hours of unpaid work. Previous research has shown that women are more likely than men to provide support to older adults and to be the kin-keepers and connecting persons in families. Thus it is not surprising that at the community level their presence is associated with higher levels of support. Hours of unpaid work may be evidence of 'supportive collection action'- "activities based on shared commitment to a group and its' members needs and interests" (Keating et al., 2004, p. 9) that is an indication of a community in which people are connected and working together. Finally, greater distance from an urban centre also is associated with supportiveness. Although we don't know what was the nature of support provided in these communities. It may be that family and friends help provide connections to needed services through providing transportation, or provide the service themselves if it is not accessible. We see shades here of rural values related to helping one another in the face of adversity.

Finally, highly supportive communities have higher proportions of seniors. There are at least two possible interpretations of this finding. Presence of seniors may be a proxy for need for support. Thus communities with high proportions of seniors and high levels of support are matched on need and assistance.<sup>3</sup> Alternately, communities with high proportions of seniors may have more support capacity. Research on the unpaid work of older adults suggests that may be the case. For example, after retirement, levels of unpaid work may increase. Compared to those still in the labour force, retired men are more likely to do volunteer work and to have higher volunteer hours. Women retain relatively high levels of volunteer work, also increasing their hours of work (Fast, Dosman, Chapman, & Keating, in review). It is important not to lose sight of the fact that older adults are contributors as well as receivers of support. In contrast to popular media perceptions that seniors are solely a drain on communities' resources, we recognize their potential value to creating supportive communities. We explore support given by seniors in the next phase of this project.

Of all of the community characteristics considered, four emerged as most important in discriminating among communities that have high, medium and low levels of support to seniors. Highly supportive communities are relatively small in size, have higher in proportions of older adults and of long term residents, and are typified by relatively higher hours of unpaid work done by residents. Together these characteristics provide a picture of communities in which people may have grown old together, have strong support networks, are known to community members and in which there is a strong ethic of helping.

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<sup>3</sup> A component of this research, not presented in this report, was the development and exploration of a typology based on presence of seniors (low, moderate and high; a proxy for need) and level of community supportiveness to seniors (weak, moderate and strong). The results of this analysis suggested that a greater understanding of supportiveness to seniors would be achieved by examining presence of seniors as an independent variable.

This report has provided a first step in understanding the caring contexts of rural communities. We now have a good picture of diversity in rural communities in Canada and what elements of physical locality and social aspects of the community are important in distinguishing communities in which residents assist older adults. Yet there is much more to be learned about how communities support their older residents. The focus in this phase of the project has been on support by those who are family members, friends and neighbours of older adults. From the information available on the Census, we have been unable to determine whether there are voluntary organizations that provide assistance to older residents, nor what capacity exists in the formal service sector. Thus these results likely underreport the extent of support available throughout rural Canada. Further, while these findings advance our understanding of community supportiveness to seniors, it is apparent from our multivariate analyses that there is more to be learned about what contributes to community supportiveness. Further, since data limitations required that we excluded Aboriginal communities and those in the Territories (Nunavut, NWT and Yukon), we are not able to comment on supportiveness in those communities.

The next step in this program of research is to move the lens away from communities as the context for support, to the older adults who live in rural Canada. Much more is to be learned about the experiences of older adults within rural communities, their views about the supportiveness of their communities and of their connections to personal networks of family and friends. We have yet to explore questions of differences among older adults in their proximity to children and other close kin who might provide support or of the nature of support provided by older adults themselves. Findings from this phase of the study suggest that supportive communities are those in which residents have lived for a long time. How then do retirement communities provide support to seniors who are recent arrivals? What are the support gaps in highly mobile resource communities? What fosters an attitude of community spirit seen in contributions of unpaid assistance to others? We need to keep sight of the ways in which older adults are supporters and to consider whether the provision of support gives seniors community credits to draw upon if their support needs increase.

In this report we have addressed some of the assumptions about growing old in rural Canada. We have begun to illustrate the ways in which the complexity of rural Canada might influence the ways in which rural communities support seniors. There are widely held perceptions about rural life which may mask our understanding of realities of growing old in rural Canada. Rural Canada is undergoing significant social and economic change, and this rate of change varies across the country. Such macro level influences are shaping communities' migratory patterns, demographic composition and availability of essential health and social services. These conditions present challenges for seniors who want to live out their lives as independently as possible. This community-level analysis, one part of a larger research program, clearly demonstrates that rural Canada is diverse in addressing; Is rural Canada is a good place to grow old?

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**6 Appendices**

	Atlantic Canada <sup>a</sup>	Quebec <sup>b</sup>	Ontario <sup>c</sup>	Prairies <sup>d</sup>	Alberta <sup>e</sup>	E C
Average population size	1505 <sup>cdef</sup>	1540 <sup>cdef</sup>	3530 <sup>abdef</sup>	977 <sup>abcef</sup>	2644 <sup>abcd</sup>	2
Average land area	361.4 <sup>cf</sup>	477.6 <sup>cf</sup>	3373.7 <sup>ab</sup>	667.2	1885.1	3
Average population density	72.97 <sup>def</sup>	47.56 <sup>def</sup>	76.87 <sup>de</sup>	135.78 <sup>abce</sup>	288.77 <sup>abcdf</sup>	1
Average distance from service centre	1.65 <sup>bcd</sup>	2.02 <sup>adef</sup>	1.91 <sup>adef</sup>	1.22 <sup>abce</sup>	1.46 <sup>bcd</sup>	1
Average proportion of seniors	14.5 <sup>d</sup>	14.3 <sup>d</sup>	15.8 <sup>df</sup>	18.7 <sup>abcef</sup>	15.0 <sup>d</sup>	1
Average proportion of females	50.2 <sup>bdf</sup>	48.9 <sup>ace</sup>	49.7 <sup>bf</sup>	49.2 <sup>a</sup>	49.7 <sup>bf</sup>	4
Average proportion of married/common-law	63.6 <sup>cd</sup>	63.0 <sup>cd</sup>	66.4 <sup>abef</sup>	65.4 <sup>abef</sup>	63.8 <sup>cd</sup>	6
Average proportion of widowed	7.6 <sup>bf</sup>	6.7 <sup>adf</sup>	7.2 <sup>df</sup>	8.2 <sup>bef</sup>	7.3 <sup>f</sup>	5
Average proportion of single person households	19.0 <sup>bcdef</sup>	24.3 <sup>acdf</sup>	22.2 <sup>abdf</sup>	25.6 <sup>abc</sup>	24.1 <sup>a</sup>	2
Average proportion of households with 4 or more persons	26.5 <sup>bdf</sup>	23.9 <sup>aef</sup>	24.8 <sup>f</sup>	24.6 <sup>af</sup>	26.3 <sup>bf</sup>	2
Average proportion with some post-secondary education	41.1 <sup>bcdef</sup>	38.6 <sup>acdef</sup>	47.6 <sup>abdf</sup>	44.0 <sup>abcef</sup>	49.2 <sup>abdf</sup>	5
Average median household income	\$35,041 <sup>cdef</sup>	\$36,571 <sup>cef</sup>	\$44,779 <sup>abd</sup>	\$37,710 <sup>acef</sup>	\$43,666 <sup>abd</sup>	\$
Average proportion who worked part year/part time	64.9 <sup>bcdef</sup>	52.1 <sup>acdef</sup>	48.0 <sup>abdf</sup>	44.7 <sup>abcef</sup>	48.3 <sup>abdf</sup>	5
Average proportion of long term residents	88.8 <sup>bcdef</sup>	83.9 <sup>acef</sup>	81.0 <sup>abdef</sup>	84.5 <sup>acef</sup>	72.9 <sup>abcdf</sup>	7
Average proportion who provided unpaid child care	37.5 <sup>be</sup>	39.2 <sup>acf</sup>	37.1 <sup>be</sup>	38.4 <sup>ef</sup>	40.6 <sup>acdf</sup>	3
Average hours of unpaid housework	19.8 <sup>bd</sup>	17.1 <sup>acdef</sup>	19.5 <sup>bd</sup>	21.1 <sup>abcef</sup>	19.2 <sup>bd</sup>	1
Average proportion who provided help to senior	20.7 <sup>df</sup>	19.9 <sup>df</sup>	21.2 <sup>df</sup>	24.4 <sup>abcef</sup>	20.9 <sup>df</sup>	1
N=2759 ***p<.001 **p<.01 *p<.05						
Source: Rural Communities, Census 2001						

*Appendix B: Results of ANOVAs for community characteristics by rural community supportiveness to seniors*



	Level of community supportiveness to seniors			
	Weak Support <sup>a</sup>	Moderate Support <sup>b</sup>	Strong Support <sup>c</sup>	F - Sc
Average population size	1534 <sup>bc</sup>	2243 <sup>ac</sup>	1106 <sup>ab</sup>	92
Average land area	1443.1	1083.8	617.1	1.1
Average population density	95.35	101.65	99.08	.29
Average distance from service centre	1.72 <sup>c</sup>	1.76 <sup>c</sup>	1.46 <sup>ab</sup>	27
Average proportion of seniors	13.9 <sup>bc</sup>	15.7 <sup>ac</sup>	17.0 <sup>ab</sup>	46
Average proportion of females	49.0 <sup>bc</sup>	49.6 <sup>a</sup>	49.4 <sup>a</sup>	20
Average proportion of married/common-law	64.3	63.8	64.2	3.0
Average proportion of widowed	6.4 <sup>bc</sup>	7.4 <sup>ac</sup>	7.9 <sup>ab</sup>	35
Average proportion of single person households	22.8 <sup>c</sup>	23.6	24.0 <sup>a</sup>	4.7
Average proportion of households with 4 or more persons	24.8	24.3	25.0	2.8
Average proportion with some post-secondary education	43.0	43.7 <sup>c</sup>	42.3 <sup>b</sup>	3.7
Average median household income	\$39,025 <sup>c</sup>	\$38,357 <sup>c</sup>	\$36,986 <sup>ab</sup>	9.5
Average proportion who worked part year/part time	53.9 <sup>bc</sup>	52.4 <sup>a</sup>	52.2 <sup>a</sup>	4.7
Average proportion of long term residents	81.4 <sup>bc</sup>	83.5 <sup>ac</sup>	85.8 <sup>ab</sup>	46
Average proportion who provided unpaid child care	37.3 <sup>c</sup>	38.0 <sup>c</sup>	40.0 <sup>ab</sup>	23
Average hours of unpaid housework	18.6 <sup>c</sup>	18.8 <sup>c</sup>	20.2 <sup>ab</sup>	47
N=2759 ***p<.001 **p<.01 *p<.05				
Source: Rural Communities, Census 2001				

*Appendix C: Community characteristics by level of community supportiveness to seniors, Atlantic Canada Region*

	Level of community supportiveness to seniors			
	Weak Support <sup>a</sup>	Moderate Support <sup>b</sup>	Strong Support <sup>c</sup>	Total
Average population size	1,341 <sup>b</sup>	1,856 <sup>ac</sup>	1,108 <sup>b</sup>	1,505
Average land area	575	307	164	361
Average population density	77	78	58	73
Average distance from service centre	1.6	1.7	1.7	1.6
Average proportion of seniors	14.2	14.8	14.6	14.5
Average proportion of females	50.1	50.5	50.0	50.2
Average proportion of married/common-law	64.6 <sup>bc</sup>	63.1 <sup>a</sup>	62.9 <sup>a</sup>	63.6
Average proportion of widowed	7.4	7.8	7.6	7.6
Average proportion of single person households	17.8 <sup>bc</sup>	19.6 <sup>a</sup>	19.6 <sup>a</sup>	19.0

Average proportion with some post-secondary education	39.9	42.6	40.2	41.1
Average median household income	\$34,949	\$35,270	\$34,764	\$35,041
Average proportion who worked part year/part time	65.2	63.2 <sup>c</sup>	67.5 <sup>b</sup>	64.9
Average proportion of long term residents	88.1 <sup>c</sup>	88.5 <sup>c</sup>	90.4 <sup>ab</sup>	88.8
Average proportion who provided unpaid child care	35.6 <sup>bc</sup>	37.7 <sup>ac</sup>	39.6 <sup>ab</sup>	37.5
Average hours of unpaid housework	20.1	19.5	20.0	19.8
N=564 ***p<.001 **p<.01 *p<.05				
Source: Rural Communities, Census 2001				

	Level of community supportiveness to seniors			
	Weak Support <sup>a</sup>	Moderate Support <sup>b</sup>	Strong Support <sup>c</sup>	Total
Average population size	1,370 <sup>b</sup>	1,859 <sup>ac</sup>	1,035 <sup>b</sup>	1,540
Average land area	1,086	175	143	478
Average population density	41	57	36	48
Average distance from service centre	2.1 <sup>c</sup>	2.0	1.9 <sup>a</sup>	2.0
Average proportion of seniors	13.3 <sup>bc</sup>	14.7 <sup>a</sup>	15.2 <sup>a</sup>	14.3
Average proportion of females	48.5 <sup>bc</sup>	49.1 <sup>a</sup>	49.1 <sup>a</sup>	48.9
Average proportion of married/common-law	63.9 <sup>bc</sup>	62.5 <sup>a</sup>	62.7 <sup>a</sup>	63.0
Average proportion of widowed	6.1 <sup>bc</sup>	7.0 <sup>a</sup>	7.2 <sup>a</sup>	6.7
Average proportion of single person households	23.9	24.6	24.2	24.3
Average proportion of households with 4 or more	24.2	23.6	23.8	23.9
Average proportion with some post-secondary education	38.5	39.4 <sup>c</sup>	36.7 <sup>b</sup>	38.6
Average median household income	\$37,150 <sup>c</sup>	\$36,949 <sup>c</sup>	\$34,543 <sup>ab</sup>	\$36,571
Average proportion who worked part year/part time	51.6 <sup>c</sup>	51.5 <sup>c</sup>	54.7 <sup>ab</sup>	52.1
Average proportion of long term residents	82.1 <sup>bc</sup>	84.4 <sup>a</sup>	85.8 <sup>a</sup>	83.9
Average proportion who provided unpaid child care	38.9 <sup>c</sup>	38.8 <sup>c</sup>	40.7 <sup>ab</sup>	39.2
Average hours of unpaid housework	16.9 <sup>c</sup>	17.0 <sup>c</sup>	17.9 <sup>ab</sup>	17.1
N=933 ***p<.001 **p<.01 *p<.05				
Source: Rural Communities, Census 2001				

Appendix E: Community characteristics by level of community supportiveness to seniors, Ontario Region

	Level of community supportiveness to seniors				F= Scheffe Test
	Weak Support <sup>a</sup>	Moderate Support <sup>b</sup>	Strong Support <sup>c</sup>	Total	
Average population size	2,752 <sup>b</sup>	4,212 <sup>ac</sup>	2,217 <sup>b</sup>	3,530	12.92***
Average land area	1,078	4,409	2,448	3,374	0.29
Average population density	119	74	46	77	1.65
Average distance from service centre	1.9	1.9	1.9	1.9	0.10
Average proportion of seniors	15.6	16.1	15.2	15.8	0.56
Average proportion of females	49.5	49.8	49.5	49.7	0.72
Average proportion of married/common-law	66.7	66.5	65.8	66.4	0.52
Average proportion of widowed	7.2	7.1	7.4	7.2	0.15
Average proportion of single person households	23.0	21.9	22.5	22.2	0.65
Average proportion of households with 4 or more persons	23.0 <sup>c</sup>	25.0	26.2 <sup>a</sup>	24.8	3.40*
Average proportion with some post-secondary education	49.3	47.6	45.7	47.6	2.08
Average median household income	\$45,893	\$44,414	\$44,810	\$44,779	0.35
Average proportion who worked part year/part time	47.7	48.0	48.3	48.0	0.66
Average proportion of long term residents	79.4 <sup>c</sup>	80.9	82.9 <sup>a</sup>	81.0	5.30**
Average proportion who provided unpaid child care	34.1 <sup>bc</sup>	37.2 <sup>a</sup>	39.6 <sup>a</sup>	37.1	7.31**
Average hours of unpaid housework	19.2	19.3 <sup>c</sup>	20.3 <sup>b</sup>	19.5	3.44*
N=244 ***p<.001 **p<.01 *p<.05					

	Level of community supportiveness to seniors				F= Scheffe Test
	Weak Support <sup>a</sup>	Moderate Support <sup>b</sup>	Strong Support <sup>c</sup>	Total	
Average population size	692 <sup>b</sup>	1,346 <sup>ac</sup>	806 <sup>b</sup>	977	18.22***
Average land area	643	714	641	667	0.11
Average population density	118	163	122	136	3.53*
Average distance from service centre	1.3	1.4 <sup>c</sup>	1.1 <sup>b</sup>	1.2	9.13***
Average proportion of seniors	16.4 <sup>bc</sup>	19.0 <sup>a</sup>	19.3 <sup>a</sup>	18.7	4.42*
Average proportion of females	48.6 <sup>b</sup>	49.8 <sup>ac</sup>	49.1 <sup>b</sup>	49.2	6.38**
Average proportion of married/common-law	66.0	64.9	65.6	65.4	1.46
Average proportion of widowed	6.8 <sup>bc</sup>	8.7 <sup>a</sup>	8.4 <sup>a</sup>	8.2	4.22*
Average proportion of single person households	24.1	26.2	25.6	25.6	1.58
Average proportion of households with 4 or more persons	26.2 <sup>b</sup>	23.7 <sup>a</sup>	24.8	24.6	3.84*
Average proportion with some post-secondary education	42.9	44.6	44.1	44.0	1.20
Average median household income	\$38,734	\$37,902	\$37,168	\$37,710	1.17
Average proportion who worked part year/part time	43.3	45.3	44.7	44.7	2.02
Average proportion of long term residents	84.2	82.8 <sup>c</sup>	85.9 <sup>b</sup>	84.5	7.80***
Average proportion who provided unpaid child care	37.4	37.5	39.5	38.4	3.69*
Average hours of unpaid housework	20.9	20.5 <sup>c</sup>	21.6 <sup>b</sup>	21.1	5.87**
N=622 ***p<.001 **p<.01 *p<.05 Source: Rural Communities, Census 2001					

	Level of community supportiveness to seniors				
	Weak Support <sup>a</sup>	Moderate Support <sup>b</sup>	Strong Support <sup>c</sup>	Total	F= Scheffe Test
Average population size	2,497	3,360 <sup>c</sup>	1,683 <sup>b</sup>	2,644	8.07***
Average land area	786 <sup>b</sup>	2,975 <sup>a</sup>	1,468	1,885	2.17
Average population density	367 <sup>b</sup>	234 <sup>a</sup>	282	289	6.00**
Average distance from service centre	1.6	1.4	1.4	1.5	0.84
Average proportion of seniors	13.4 <sup>c</sup>	14.7	17.5 <sup>a</sup>	15.0	5.03**
Average proportion of females	49.4	49.6	50.3	49.7	2.16
Average proportion of married/common-law	62.2 <sup>b</sup>	65.1 <sup>a</sup>	63.8	63.8	3.38*
Average proportion of widowed	6.6 <sup>c</sup>	7.0	8.6 <sup>a</sup>	7.3	3.97*
Average proportion of single person households	24.2	22.9	26.1	24.1	2.98
Average proportion of households with 4 or more	26.5	26.6	25.7	26.3	0.32
Average proportion with some post-secondary education	50.6	47.7	50.0	49.2	2.13
Average median household income	\$45,985 <sup>c</sup>	\$43,923	\$40,426 <sup>a</sup>	\$43,666	5.37**
Average proportion who worked part year/part time	48.9	47.5	49.0	48.3	1.15
Average proportion of long term residents	65.4 <sup>bc</sup>	76.4 <sup>a</sup>	76.5 <sup>a</sup>	72.9	27.81***
Average proportion who provided unpaid child care	39.4	40.4	42.4	40.6	2.05
Average hours of unpaid housework	17.6 <sup>bc</sup>	19.9 <sup>a</sup>	19.9 <sup>a</sup>	19.2	13.89***
N=212 ***p<.001 **p<.01 *p<.05 Source: Rural Communities, Census 2001					

	Level of community supportiveness to seniors				F= Scheffe Test
	Weak Support <sup>a</sup>	Moderate Support <sup>b</sup>	Strong Support <sup>c</sup>	Total	
Average population size	2,153 <sup>b</sup>	3,168 <sup>a</sup>	2,307	2,581	5.92**
Average land area	5,789	1,237	563	3,625	3.14*
Average population density	81 <sup>c</sup>	161	326 <sup>a</sup>	127	7.36**
Average distance from service centre	1.4	1.5	0.9	1.4	2.50
Average proportion of seniors	11.7 <sup>b</sup>	15.9 <sup>a</sup>	17.0	13.7	9.94***
Average proportion of females	48.2 <sup>bc</sup>	49.5 <sup>a</sup>	50.1 <sup>a</sup>	48.8	11.06***
Average proportion of married/common-law	63.6	63.2	65.4	63.5	0.86
Average proportion of widowed	4.5 <sup>bc</sup>	6.3 <sup>a</sup>	7.4 <sup>a</sup>	5.4	15.59***
Average proportion of single person households	26.2	26.6	25.6	26.3	0.19
Average proportion of households with 4 or more	21.5	19.9	21.0	20.8	1.74
Average proportion with some post-secondary education	55.1	57.3	56.3	56.1	1.03
Average median household income	\$45,128 <sup>b</sup>	\$39,332 <sup>a</sup>	\$46,970	\$42,834	7.15**
Average proportion who worked part year/ part time	58.4	58.3	54.1	58.1	1.7
Average proportion of long term residents	75.0 <sup>c</sup>	77.2	82.6 <sup>a</sup>	76.3	5.52**
Average proportion who provided unpaid child care	35.9	34.7	35.9	35.4	0.57
Average hours of unpaid housework	19.3	19.8	20.0	19.5	0.93
N=184 ***p<.001 **p<.01 *p<.05					
Source: Rural Communities, Census 2001					

Average population size (a)											
Average land area (b)	.08***										
Average population density (c)	.18***	-.05**									
Average distance from service centre (d)	.13***	-.02	-.06**								
Average proportion of seniors (e)	-.07***	-.08***	.35***	-.16***							
Average proportion of females (f)	.20***	-.06**	.49***	-.05**	.53***						
Average proportion of married/common-law (g)	-.09***	.06**	-.37***	.08***	-.40***	-.34***					
Average proportion of widowed (h)	-.02	-.08***	.45***	-.16***	.68***	.83***	-.58***				
Average proportion of single person households (i)	-.01	-.03	.41***	-.16***	.43***	.69***	-.62***	.73***			
Average proportion of households with 4 or more persons (j)	.02	.03	-.21***	.08***	-.34***	-.66***	.32***	-.56***	-.71***		
Average proportion with some post-secondary education(k)	.27***	.04*	.17***	.06**	.08***	-.09***	.06**	-.13***	.02	.01	
Average median household income (l)	.27***	.08***	-.02	.10***	-.22***	-.45***	.31***	-.44***	-.36***	.39***	.50***
Average proportion who worked part year/part time (m)	-.15***	-.01	-.08***	-.05**	.08***	-.01	-.14***	.08***	-.10***	-.05*	-.26**
Average proportion of long term residents (n)	-.14***	-.00	-.33***	-.13***	-.13***	-.09***	.07***	-.08***	-.29***	.23***	-.37**
Average proportion who provided unpaid child care (o)	.05**	.01	-.03	.06**	-.16***	-.46***	.17***	-.33***	-.35***	.56***	.04
Average hours of unpaid housework (p)	-.19***	.05**	-.19***	-.18***	-.18***	-.00	.37***	-.13***	-.24***	.09***	-.11**
N=2759 ***p<.001 **p<.01 *p<.05 Source: Rural Communities, Census 2001											



*Appendix J: Results of discriminant function analysis for non inter-correlated community characteristics*

	Lambda	F-value
Average population size	.939	89.9***
Average proportion of long term residents	.967	47.4***
Average hours of unpaid housework	.967	46.9***
Average proportion of seniors	.968	45.4***
Average distance from service centre	.980	27.9***
Average proportion who provided unpaid child care	.983	24.3***
Average proportion of females	.986	20.1***
Average median household income	.993	9.5***
Average proportion who worked part year/ part time	.997	4.7**
Average proportion of married/common-law persons	.998	3.0
N=2756 *** p<.001 ** p<.01 *p<.05		
Source: Rural Communities, Census 2001		

*Appendix K: Results of discriminant function analysis (stepwise) for set of community characteristics (all communities).*

	Lambda	F-value	Classification (cross validated)		
			Total	Weak-Mod	Strong
Average population size	.939	90.1***	45% overall;	0%, 70%,	54%
Average hours of unpaid housework	.967	47.5***	34% overall;	57%, 7%,	53%
Average proportion of seniors	.967	46.5***	35% overall;	62%, 12%,	42%
Average proportion of long term residents	.968	46.2***	36% overall;	52%, 11%,	61%
Overall classification ability (cross validated)=48%					
N=2769 ***p<.001 ** p<.01 *p<.05					
Source: Rural Communities, Census 2001					

*Appendix L: Results of ANOVAs for set of community characteristics by rural community supportiveness to seniors (Prairie region)*

	Level of community supportiveness to seniors			F=Sheffe Test
	Weak Support <sup>a</sup>	Moderate Support <sup>b</sup>	Strong Support <sup>c</sup>	
Average population size	1.3 <sup>b</sup>	1.6 <sup>ac</sup>	1.4 <sup>b</sup>	11.8***
Average proportion of seniors	16.4 <sup>bc</sup>	19.0 <sup>a</sup>	19.3 <sup>a</sup>	4.4*
Average proportion of long term residents	84.2	82.8 <sup>c</sup>	86.0 <sup>b</sup>	7.8***
Average hours of unpaid housework	20.9	20.5 <sup>c</sup>	21.6 <sup>b</sup>	5.9**
N=622 ***p<.001 **p<.01 *p<.05 Source: Rural Communities, Census 2001				

*Appendix M: Results of ANOVAs for set of community characteristics by rural community supportiveness to seniors (non Prairie region)*

	Level of community supportiveness to seniors			F=Sheffe Test
	Weak Support <sup>a</sup>	Moderate Support <sup>b</sup>	Strong Support <sup>c</sup>	
Average population size	1.8 <sup>b</sup>	2.1 <sup>ac</sup>	1.7 <sup>b</sup>	61.9***
Average proportion of seniors	13.5 <sup>bc</sup>	15.0 <sup>a</sup>	15.3 <sup>a</sup>	25.2***
Average proportion of long term residents	81.0 <sup>bc</sup>	83.6 <sup>ac</sup>	85.6 <sup>ab</sup>	40.2***
Average hours of unpaid housework	18.3 <sup>c</sup>	18.4 <sup>c</sup>	19.2 <sup>ab</sup>	11.8***
N=2137 ***p<.001 **p<.01 *p<.05 Source: Rural Communities, Census 2001				

*Appendix N: Results of discriminant function analysis (stepwise) for set of community characteristics (Prairie region).*

	Lambda	F-value	Classification (cross validated)		
			Total	Weak-Mod	Strong
Average population size	.963	11.8***	29% overall;	76%,	44%, 0%
Average hours of unpaid housework	.981	5.9**	44% overall;	5%,	55%, 50%
Average proportion of seniors	.986	4.4*	32% overall;	62%,	6%, 40%
Average proportion of long term residents	.975	7.8***	46% overall;	4%,	51%, 58%
Overall classification ability (cross validated)=42%					
N=622 ***p<.001 ** p<.01 *p<.05					
Source: Rural Communities, Census 2001					

*Appendix O: Results of discriminant function analysis (stepwise) for set of community characteristics (non Prairie regions).*

	Lambda	F-value	Classification (cross validated)
			Total Weak-Mod-Strong
Average population size	.945	61.9***	44% overall; 0%, 75%, 46%
Average hours of unpaid housework	.989	11.8***	31% overall; 56%, 5%, 49%
Average proportion of seniors	.977	25.2***	33% overall; 61%, 7%, 48%
Average proportion of long term residents	.964	40.2***	35% overall; 52%, 12%, 60%
Overall classification ability (cross validated)=47%			
N=2137 ***p<.001 ** p<.01 *p<.05			
Source: Rural Communities, Census 2001			