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The Changing Well-Being of Older Adult Registered Indians: An Analysis Using the Registered Indian Human Development Index

Martin Cooke,^{1,2} Eric Guimond,³ and Jennifer McWhirter²

RÉSUMÉ

Le vieillissement de la population des Indiens inscrits laisse croire que les conditions socioéconomiques et l'état de santé des aînés revêtiront une importance de plus en plus grande pour les collectivités et les responsables de l'élaboration des politiques. Nous avons adapté l'indice du développement humain du Programme des Nations Unies pour le développement à l'aide des données provenant du Recensement du Canada et du Registre des Indiens afin de voir si les améliorations observées au niveau des connaissances, du niveau de vie et de la santé de la population des Indiens inscrits entre 1981 et 2001 sont également observées au sein de la population des Indiens inscrits plus âgés. Nous constatons que les niveaux absolus de bien-être des Indiens inscrits plus âgés se sont améliorés, mais que les écarts avec les autres aînés canadiens se sont accentués, notamment en ce qui a trait au revenu et à l'espérance de vie des hommes.

ABSTRACT

The demographic aging of the Registered Indian population suggests that the social, economic, and health conditions of older Registered Indians will be increasingly important for communities and policymakers. We have adapted the United Nations Development Program's Human Development Index using data from the Census of Canada and the Indian Register to measure whether improvements seen in the knowledge, standard of living, and health of the Registered Indian population between 1981 and 2001 are also observed among Registered Indians of older ages. The absolute levels of well-being of older Registered Indians were found to have improved, but gaps with other older Canadians had widened, particularly in terms of income and male life expectancy.

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Introduction

For some time, issues related to children and youth have been important priorities for Aboriginal communities and organizations, governments, and academics.¹ High fertility and mortality have meant that Aboriginal populations are younger than the general Canadian population, with a significantly higher proportion of children and youth. Young Aboriginal

people are at higher risk of victimization and poverty than other Canadians, and a focus on youth recognizes the importance of the conditions of childhood as determinants of well-being later in life, and the challenges of trying to serve a growing and youthful Aboriginal population.

In contrast, a significant amount of the public-policy discourse in Canada is focused on the challenges

associated with an aging population, including providing care and social support and ensuring an adequate standard of living for older people. Although Aboriginal populations are demographically younger than the rest of the Canadian population, they too are aging. Declines in fertility and mortality since the 1960s (Latulippe-Sakamoto, 1971; Loh et al., 1998; Piché & George, 1973; Romaniuk, 1981) are taking effect; although older people are not currently a large proportion of the Aboriginal population, large cohorts of people who are currently in their 40s and 50s will soon swell their numbers. Policies will increasingly have to consider the growing number of older people in Aboriginal and other communities.

An important part of the context of these demographic changes, and the policy challenges they imply, are the continued disparities between Aboriginal peoples and other Canadians. These have changed considerably in the past several decades and, insofar as the conditions of Aboriginal peoples may have improved, recent and future cohorts may be reaching older ages with higher levels of financial and human capital, and better health. Previous research has investigated how the overall well-being of Registered Indians, people who are registered under the *Indian Act*, has improved between 1981 and 2001 (Cooke, Beavon, & McHardy, 2004; O'Sullivan, 2006). Within the Aboriginal population, Registered Indians are of particular policy and research interest. A majority of people living in reserve or First Nations communities are Registered Indians (85.2% in 2001), and the provision of education, health, and social services to the Registered Indian population falls to the federal government, rather than to the provinces or territories.²

This paper examines the well-being of older Registered Indians in order to determine whether improvements that seem to have occurred in the knowledge, standard of living, and health expectancy of the whole Registered Indian population have resulted in better conditions for older Registered Indian adults, both in absolute terms and relative to other older Canadians. In addition, by examining how the well-being of various cohorts has changed as they have moved through mid-adulthood and into older ages, what the conditions for those currently in their 40s and 50s might be as they move into their 60s and 70s may become clearer.

Background: Growth and Well-Being of Older Aboriginal Populations

It has been recognized for some time that, although still young in demographic terms, the Aboriginal

population is aging (Labillois, Frideres, & Mussell, 1994). Due to declines in mortality and fertility, the proportions of First Nations, Inuit, and Métis people of older ages have grown in recent decades. According to the 2001 Census of Canada, 5.4 per cent (39,680) of Canadians who self-identified as Aboriginal were aged 65 years or over, an increase from 4.8 per cent in 1996.³ The number of Aboriginal persons aged 65 years and older is expected to triple over the course of the succeeding 20 years, with their proportion reaching 10.2 per cent in 2021 (INAC, 2008). Within the Aboriginal population, the number of Registered Indians in older adult ages has also grown since the 1980s, and is expected to grow even more as large cohorts of people who are now in their 40s and 50s move into retirement ages.

As is the case with the aging of the Canadian population, demographic aging of the Aboriginal population should be seen as the result of various successes, although it does have potential to create challenges. The aging of the population can be associated with an increasing standard of living, which has contributed to the reductions in mortality and fertility. However, population aging presents challenges to social and economic policies, including the allocation of resources and the provision of services to various segments of the population, and potential implications for economic productivity. For Aboriginal peoples, a growing population of older adults may be uniquely challenging. Communities and organizations that are accustomed to focusing on a young population, and on facilitating education and transitions into the labour market, may be increasingly required to consider the needs of older people, such as support for transitions to retirement, maintenance of independence and in-home care, and provision of services related to health and disability in later life.

Demographic aging also directs our attention to the issue of the social, economic, and physical conditions of this growing older population. Despite acknowledgement of demographic change (Labillois et al., 1994; Statistics Canada, 2007), there has been relatively little research into the health and well-being of older Aboriginal peoples in Canada. There are reasons to be concerned about the older Aboriginal population. In many ways, the cumulative effects of experiences at younger ages can be seen in health and financial well-being at older ages, and the generally poorer conditions of Aboriginal populations place older members of these groups at greater risk of poverty and poor health (Bienvenue & Havens, 1986; Blandford & Chappell, 1990).

Evidence suggests that older Aboriginal people are indeed less healthy and more likely to be poor than older people in the general population (Goins & Manson, 2006; Goins, Spencer, Roubideaux, & Manson, 2005; Weibel-Orlando, 1989). The 1997 First Nations Regional Health Survey (RHS) and the 2001 Aboriginal Peoples Survey (APS) found a higher prevalence of chronic diseases, such as hypertension, cancer, diabetes, arthritis, and rheumatism, among older First Nations peoples than among other Canadian seniors (Statistics Canada, 2007; Young et al., 1998). Older Aboriginal people have also been found to be much less likely to have "good" self-rated health than other older Canadians (Blandford & Chappell, 1990; Statistics Canada, 2007).

Aboriginal peoples have lower rates of employment and lower incomes than the non-Aboriginal Canadian population, increasing the risk of poverty in later years. According to the 2001 APS, 13 per cent of Aboriginal seniors living off-reserve were living in households with incomes under the low income cut-off (LICO) in 2000, twice the percentage of other older Canadians (Statistics Canada, 2007). Blandford and Chappell (1990) found that the poorer subjective well-being of older Aboriginal adults is, in large part, explained by differences in socio-economic status, including housing quality.

Transfers such as the Canada/Quebec Pension plans (CPP/QPP), Old Age Security, and the Guaranteed Income Supplement (OAS/GIS) are important components of income for older Canadians, and have been responsible for reducing poverty among seniors (Myles, 2000). As a result of lower private pensions, older Aboriginal people are more likely to rely on transfers, particularly the income-tested OAS/GIS (Gyimah, White, & Maxim, 2004; Statistics Canada, 2007). Those earning tax-exempt income on reserves have only been able to contribute to the CPP/QPP since 1989, resulting in lower average incomes for Aboriginal peoples in older age (Gyimah et al., 2004).

The well-being of older Aboriginal adults should be considered in the context of improvements in overall social and economic conditions. Higher incomes and education and better health in the general population should also be reflected in better conditions among older adults. Indeed, previous research found improvements in the overall conditions of the Registered Indian population between 1981 and 2001 in terms of life expectancy and education (Cooke et al., 2004; O'Sullivan, 2006). These improvements have taken place both on- and off-reserve, and have also been observed when measured at the level of First Nations communities (O'Sullivan, 2006). We would expect that the relatively better conditions

that more recent cohorts have experienced while in younger and mid-adulthood, including higher incomes, greater education, and better health, will result in better outcomes in older adulthood.

However, these improvements in the conditions of the Registered Indian population have not been consistent, especially when compared to changes in the general Canadian population. Average individual incomes of Registered Indians did not improve consistently over the entire time period, and the gap relative to other Canadians actually widened between 1981 and 1996 (Cooke et al. 2004). Furthermore, projections indicate that recent improvements in the overall well-being of First Nations communities might not continue into the future (O'Sullivan, 2006).

Given these uneven overall improvements in the social, economic, and health conditions of the Registered Indian population as a whole, important questions are whether the conditions of older Registered Indians have also improved in recent years, and whether the differences between older Registered Indians and other older Canadians have also been narrowing.

Methodology

In previous research, we have used the United Nations Development Program's (UNDP) Human Development Index (HDI) as a framework to examine the changing knowledge, standard of living, and health conditions of the Registered Indian population as a whole (Beavon & Cooke, 2003; Cooke et al., 2004). The HDI framework was used because of its profile in international development studies, as well as its modest data requirements and theoretically important inclusion of health and education, along with income, in a measure of well-being (UNDP, 1990). In this paper, we propose an adaptation of the Registered Indian HDI in order to compare the well-being of Registered Indians and other Canadians aged 60 years and over. Table 1 presents the details of the calculations of the knowledge, standard of living, and health sub-indices of the Registered Indian HDI. Each is calculated as the difference between the observed score and a theoretical minimum, relative to the difference between the theoretical minimum and maximum. These three dimensions of well-being are combined with equal weights to create the overall HDI, which ranges between 0 and 1.

UNDP's original HDI uses two indicators of knowledge; a measure of adult literacy, and the combined primary, secondary, and tertiary enrolment rates, which measure the "flow" of education into the population (UNDP, 2003). For the Registered Indian

Table 1: Older adult Registered Indian Human Development Index (HDI) calculations

	Measure	Minimum	Maximum	Index Formula	
Knowledge Index	Adult literacy proxy: 2/3 weight	Proportion with grade 9 or higher education	0.0	1.0	$I_{Literacy} = \frac{X_{actual} - X_{min}}{X_{max} - X_{min}}$
	Higher educational attainment: 1/3weight	High-school certificate or some post-secondary, trade, or technical education	0.0	1.0	$I_{Education} = \frac{X_{actual} - X_{min}}{X_{max} - X_{min}}$
Standard of Living Index	Mean household income	\$200 (year 2000)	\$80,000 (year 2000)	$I_{Income} = \frac{\log(X) - \log(X_{min})}{\log(X_{max}) - \log(X_{min})}$	
Health Index	Life expectancy at specific ages	Age 50: 16.73 Age 55: 13.52 Age 60: 10.47 Age 65: 7.96 Age 70: 5.86 Age 75: 4.26 Age 80: 3.13	Age 50: 26.11 Age 55: 31.43 Age 60: 36.78 Age 65: 22.22 Age 70: 17.75 Age 75: 13.51 Age 80: 9.77	$I_{LEB} = \frac{X_{actual} - X_{min}}{X_{max} - X_{min}}$	
Older Registered Indian HDI				$I_{HDI} = \frac{[I_{LEB} + (\frac{1}{3}I_{Literacy} + \frac{2}{3}I_{Education}) + I_{Income}]}{3}$	

HDI, we have used the proportion of the population with grade nine education or higher as a proxy for adult functional literacy. Although this measure does not adequately capture literacy in Aboriginal languages or education that takes place outside of formal institutions, it is the only measure of literacy available for this population, given the current data sources. We have used the proportion of the population with high-school completion or *at least* some post-secondary education as a measure of the degree of higher educational attainment in the population. This includes those who did not complete high school, but have some trade, technical, college, or university training, whether or not they hold a post-secondary degree or diploma. The knowledge index gives the adult functional-literacy proxy two thirds weight and the “high-school plus” proxy one third weight.

While previous versions of the Registered Indian HDI have used per capita annual total income, for this study we used the total annual household income for households with an individual in a particular age group, averaged over the number of individuals in that age group. Household income reflects the money resources available – and therefore material standard of living – more accurately than average individual income. It is acknowledged although that this indicator does not capture various non-money resources available to older people, such as instrumental support from friends, family, or community, or the proceeds from hunting, fishing, or trapping. Following the UNDP’s original method, income is

transformed using a log formula to reflect the decreasing marginal utility of income (Table 1). While the original Registered Indian HDI used a minimum of \$100 and a maximum of \$40,000 for the individual income indicator, we have doubled these values to reflect the higher expected incomes within a household.

Whereas the HDI uses life expectancy at birth as a measure of overall health status and a “long and healthy life”, here, age-specific life expectancies are derived from the life tables for Registered Indians (Verma, Michalowski, & Gauvin, 2003).⁴ Estimates for other Canadians are taken from the Canadian life tables (Statistics Canada, 1984, 1988, 1990, 1995, 2006), and pro-rated to remove the contribution of Registered Indian mortality.⁵

UNDP’s HDI uses 25 and 85 years as the theoretical minimum and maximum life expectancies at birth, respectively. The age-specific life expectancies shown in Table 1 have been taken from the model life tables produced by Coale and his colleagues (Coale & Demeny, 1965; Coale & Guo, 1989). For a lower limit of health, the “South, Level 3” tables have been used. These represent a mortality regime in which female life expectancy is 25 years, the minimum value for life expectancy in the HDI. For a maximum value of the health indicator (a minimum mortality rate), the “West, Level 27” life table has been used. This reflects a female life expectancy of 85 years, the maximum in the original HDI calculations.

Data

As with previous applications of the HDI, we have used Census data on education and income, and life-expectancy estimates from the Indian Register and Canadian vital statistics to compare the overall well-being of older Registered Indians and other Canadians, and how it has changed over time. In this case, we have examined the index scores for those in five-year age groups from 50 to 79 years, and those 80 years and older, for the census years 1981, 1986, 1991, 1996, and 2001.

Although the Census of Canada and the Indian Register are the only sources of data that can be used to calculate and track an HDI over time for Registered Indians and other Canadians, there are some problems with these data. The Census, from which education and income data have been taken, is subject to an ongoing problem of under-coverage of the Registered Indian population due to both individual and community non-participation, the degree of which varies between years. The Census also relies on self-reporting of Registered Indian status, resulting in varying degrees of discrepancy between the Census and the Indian Register between 1981 and 2001 (Guimond, Kerr, & Beaujot, 2004). It should also be noted that the Census population universe does not include people living in institutions; this may have had an impact on our measurements of well-being, especially if the rates of institutionalization of older

people differ between the two populations. However, the degree to which this may have affected our results is unknown.

The Indian Register data, from which the life expectancy estimates have been calculated (Verma et al., 2003), also suffer from some problems, but the data used have been adjusted for late-reporting of births and late- and under-reporting of deaths. As well, the *Indian Act* was amended in 1985 to correct previous gender discrimination in the registration rules, adding over 110,000 people, mostly women living off-reserve, to the Registered Indian population between 1985 and 2001 (Clatworthy, 2003).

An important limitation of this method is that it is subject to *truncation*, or the exclusion of those who have already died. Those who die at younger ages are likely different on various dimensions related to mortality. They are certainly different in terms of health and life expectancy, and the life-expectancy estimates used here should be interpreted as the average life expectancy, conditional on surviving to a specific age.

Results

The HDI is a composite of the separate scores for education, income, and life expectancy, as described above, and presents a picture of the overall well-being of the older population on these three dimensions.

Table 2: Human Development Index scores for Registered Indians (RI) and other Canadians (OC) aged 50 years and older, Canada, 1981–2001.

Age (Years)	Group	1981	1986	1991	1996	2001
50–54	RI	0.501	0.518	0.597	0.659	0.716
	OC	0.731	0.753	0.805	0.834	0.876
	RI – OC	–0.231	–0.235	–0.208	–0.175	–0.160
55–59	RI	0.478	0.485	0.547	0.608	0.660
	OC	0.712	0.728	0.772	0.798	0.848
	RI – OC	–0.234	–0.243	–0.225	–0.190	–0.188
60–64	RI	0.471	0.474	0.517	0.563	0.622
	OC	0.692	0.707	0.745	0.766	0.810
	RI – OC	–0.221	–0.233	–0.228	–0.203	–0.188
65–69	RI	0.468	0.461	0.512	0.535	0.579
	OC	0.668	0.690	0.730	0.745	0.776
	RI – OC	–0.200	–0.229	–0.218	–0.210	–0.197
70–74	RI	0.450	0.451	0.498	0.524	0.544
	OC	0.649	0.677	0.723	0.731	0.767
	RI – OC	–0.199	–0.226	–0.225	–0.197	–0.223
75–79	RI	0.441	0.434	0.462	0.496	0.521
	OC	0.642	0.666	0.717	0.721	0.763
	RI – OC	–0.201	–0.232	–0.255	–0.225	–0.243
80 and over	RI	0.417	0.406	0.429	0.459	0.380
	OC	0.655	0.670	0.718	0.700	0.768
	RI – OC	–0.238	–0.264	–0.289	–0.241	–0.388

As Table 2 shows, the overall HDI scores for older Registered Indians have improved between 1981 and 2001 in all age groups, except for those 80 years and older; however, the gaps between Registered Indians and other Canadians on these indicators have widened for some age groups, particularly those aged 70 years and older. The greatest improvements, and the smallest gaps, were seen for individuals under 60 years of age. As we will see, much of this improvement has been driven by the increasing educational attainment of younger cohorts of Registered Indians and, to a lesser extent, by improvements in income and life expectancy.

The HDI provides some encouraging evidence about the well-being of the older Registered Indian population. In the following sections, each of the health, standard of living (income), and knowledge components of the HDI are examined separately, as well as gender differences, to understand better the changes in the overall well-being of Registered Indians aged 60 years and over.

Health

Previous research using the Registered Indian HDI has reported increasing life expectancy for Registered Indians and reductions in the differences between Registered Indians and other Canadians on this measure (Cooke et al. 2004). By 2001, there was less than a six-year difference in life expectancy at birth between Registered Indians and other Canadians, falling from a nearly ten-year gap in 1981. However, estimates of life expectancy at birth obscure the age pattern of mortality and leave the question of whether mortality has improved for any particular age group unanswered.

Figure 1 presents the life expectancies at specific ages for male Registered Indians and other Canadians aged 60 years and over. As expected, life expectancy has improved the most at the younger ages of this older-adult population. In each of these age groups, the improvements for older Registered Indian men were, however, less than among other Canadians, resulting in a widening of the gap between these populations. Life expectancy for Registered Indian men at age 60 years gained a full year between 1981 and 1991, increasing from 16.2 to 17.2 years. In comparison, the life expectancy for other Canadian men in the same age group increased nearly three times as much, from 18.0 to 20.9 years. As a result, the gap in life expectancy between the two populations doubled between 1981 and 1991 to 3.7 years.

The difference in life expectancy between Registered Indians and other Canadians was larger for older

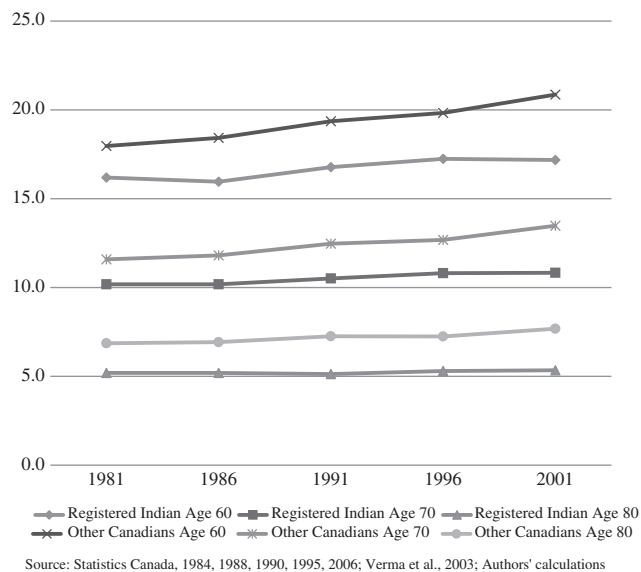


Figure 1: Life expectancy at exact ages 60, 70, and 80, registered Indians and other Canadian men, Canada, 1981–2001

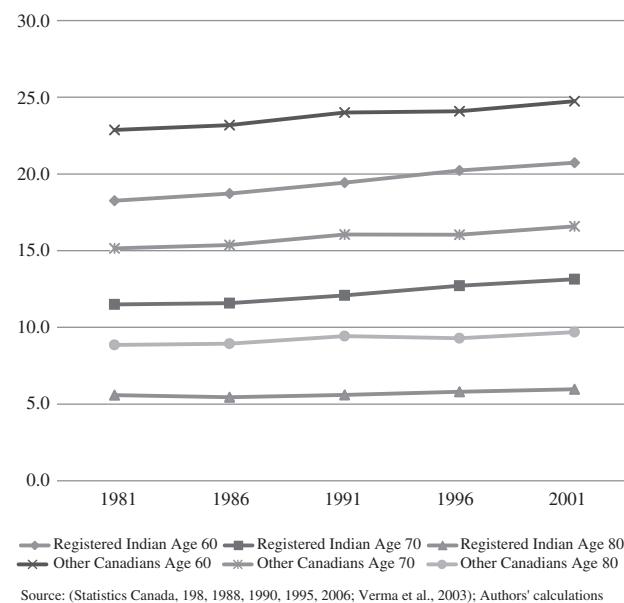


Figure 2: Life expectancy at exact ages 60, 70, and 80, registered Indians and other Canadian women, Canada, 1981–2001

women than for older men. One possible explanation may be the cumulative health effects of higher age at maternity for Registered Indian women. Whereas the difference between Registered Indians and other older Canadian men increased over the period, this was not the case for older women. As Figure 2 illustrates, the estimated life expectancy for older Registered Indian women at age 60 years increased from 18.3 to 20.7

Table 3: Average annual household income for Registered Indians (RI) and other Canadians (OC) aged 50 years and older, constant 2000 dollars, Canada, 1980–2000

Age (Years)	Group	1980	1985	1990	1995	2000
50–54	RI	39,556	36,190	40,959	42,524	46,657
	OC	70,223	68,728	75,417	72,535	79,882
	RI – OC	–30,667	–32,538	–34,458	–30,011	–33,225
	RI as % of OC	56.3%	52.7%	54.3%	58.6%	58.4%
55–59	RI	35,345	32,344	34,327	37,305	39,296
	OC	62,570	62,378	67,106	63,543	71,748
	RI – OC	–27,225	–30,034	–32,779	–26,238	–32,452
	RI as % of OC	56.5%	51.9%	51.2%	58.7%	54.8%
60–64	RI	31,516	30,274	33,469	32,725	35,614
	OC	52,364	52,183	57,013	53,747	59,230
	RI – OC	–20,848	–21,909	–23,544	–21,022	–23,616
	RI as % of OC	60.2%	58.0%	58.7%	60.9%	60.1%
65–69	RI	31,349	31,656	33,501	32,475	33,916
	OC	43,708	44,904	49,827	48,086	51,917
	RI – OC	–12,359	–13,248	–16,326	–15,611	–18,001
	RI as % of OC	71.7%	70.5%	67.2%	67.5%	65.3%
70–74	RI	30,121	31,468	32,314	32,917	32,326
	OC	38,449	40,404	45,187	44,568	48,835
	RI – OC	–8,328	–8,936	–12,873	–11,651	–16,509
	RI as % of OC	78.3%	77.9%	71.5%	73.9%	66.2%
75–79	RI	28,239	31,821	30,173	32,487	32,985
	OC	35,701	36,721	41,990	41,358	45,104
	RI – OC	–7,462	–4,900	–11,817	–8,871	–12,119
	RI as % of OC	79.1%	86.7%	71.9%	78.6%	73.1%
80 and over	RI	30,164	32,232	32,197	38,461	33,551
	OC	36,931	37,164	40,427	39,077	42,007
	RI – OC	–6,767	–4,932	–8,230	616	–8,456
	RI as % of OC	81.7%	86.7%	79.6%	101.6%	79.9%

Source: Statistics Canada, 1981, 1991, and 2001 Census of Canada, custom tabulations.

Note: Does not include those living in institutions.

years, while that of other Canadian women increased from 22.9 to 24.7, with the difference falling from 4.6 to 4 years.

Standard of Living

Looking at trends in household income for older Registered Indian adults and other Canadians, it appears that the average standard of living for older Registered Indians rose between 1980 and 2000. Table 3 presents the average annual household incomes of Registered Indians and other Canadians in older age groups, in year 2000 constant dollars. Although the average household incomes of Registered Indians increased, they did not, for the most part, increase relative to incomes of other Canadians.

The gaps in household income between the two populations are smaller for those older than 65 years, probably reflecting the greater importance of transfer income and the decreased importance of employment

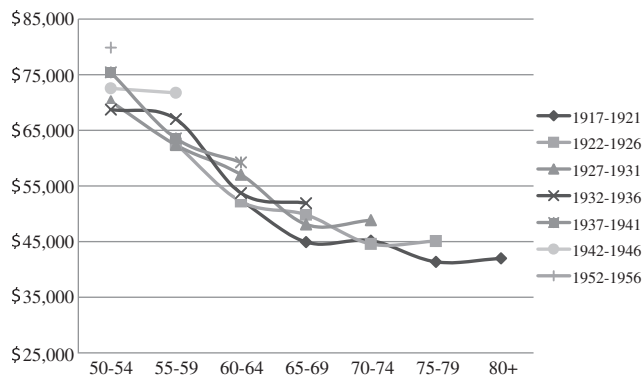
income. Among those aged 50–54 years, Registered Indian household income in 2000 was 58 per cent of the figure for other Canadians, having increased from 56 per cent in 1980 (Table 3). Among those aged 65 to 69 years, Registered Indian income was 65 per cent of that of other Canadians, and Registered Indians aged 80 years and older had household incomes that were 80 per cent of the incomes of other Canadians in this age group.

Although there was a small improvement in the income gap for those under 60 years, the income gap between older Registered Indians and other Canadians generally widened during this period. Registered Indians aged 65–69 years had average household incomes that were nearly 72 per cent of the average for other Canadians in 1980, but this figure decreased to 65 per cent by 2000. While the household incomes of other Canadians in each of the age groups from 65 to 79 years increased by approximately \$10,000 between 1981 and 2001, the income for Registered Indians in these age groups

grew much less: approximately \$2,500 for those 65–69 years, \$2,200 for those 70–74 years, and \$4,700 for those 75–79 years. As a result, the income gap between older Registered Indian adults and other Canadians increased (see Table 3).

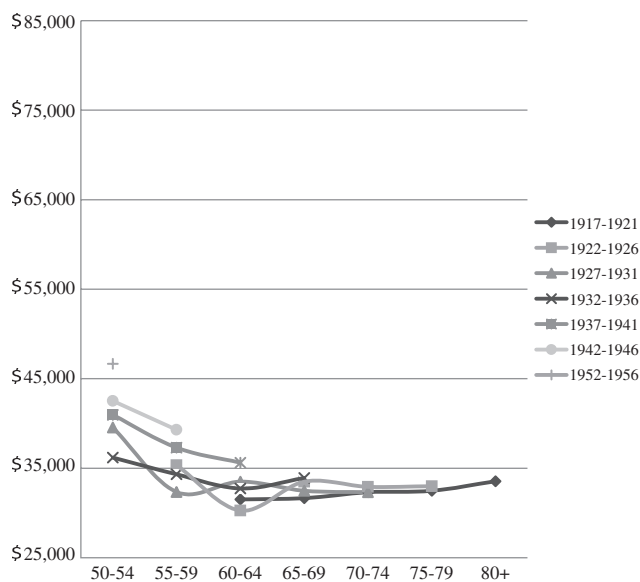
These data can also be displayed to show how the average incomes of different birth cohorts have changed as these cohorts have passed through older adult ages. With data on those aged 50 and older, we have examined seven five-year birth cohorts as they moved through the 1980–2000 periods. Figures 3 and 4 show the average household income trajectories for these cohorts, beginning with those born between 1917 and 1921 (aged 60–64 years in 1981) and ending with those born between 1952 and 1956 (aged 50–54 years in 2001). The curves are smoothed to compensate for the discrete measurements and to direct attention to the overall pattern. For other Canadians (Figure 3), they show the expected pattern of declining household income with age, as these cohorts move from their 50s through to their 80s. Note that because these average household incomes are not adjusted for household size, the decline with age is at least partly due to widowhood and the associated loss of household income. Regardless, a clear pattern of decline is evident through the ages, levelling off after age 65 years, an age by which most Canadians have retired. In general, the income curves for other Canadians appear to have moved up with successive cohorts, indicating improvements to this dimension of well-being.

Figure 4 presents the same income-by-age graph for cohorts of Registered Indians. Again, it shows a decline in income as age increases, but much less steep than that for other Canadians. The improvements in income before age 65 years that have been seen in each successive cohort are not reflected in similar improvements after age 65 years. Taken together, Figures 3 and 4 suggest that the higher incomes that successive cohorts of other Canadians have received during their working lives have translated into higher incomes in older age, through savings or pensions. On the other hand, each successive cohort of Registered Indians has seen only slightly higher incomes at age 50–54 years, reflecting small improvements in incomes at working ages. These small increases in income in mid-adulthood have not been translated into higher incomes at older ages, which have remained fairly constant for successive cohorts. This indicates that the improvements in income during working life have not been sufficient to translate into higher incomes during retirement, a problem that may have been compounded by the restrictions on



Source: Statistics Canada, 1981, 1986, 1991, 1996 and 2001 Census of Canada, custom tabulations
Note: Does not include those living in institutions.

Figure 3: Average annual household income for other Canadians at ages 50 and older by birth cohort; constant 2000 dollars, Canada



Source: Statistics Canada, 1981, 1986, 1991, 1996 and 2001 Census of Canada, custom tabulations
Note: Does not include those living in institutions.

Figure 4: Average annual household income for registered Indians at ages 50 and older by birth cohort; constant 2000 dollars, Canada

CPP/QPP contributions described above (Gyimah et al., 2004).

Knowledge

Formal education is mainly attained in youth, and so fairly constant educational attainment of a cohort after age 60 years and a gradual improvement in the average educational attainment of successive cohorts were expected. Indeed, the adult functional-literacy proxy, the proportion of people with grade nine education or higher, improved with successive

Table 4: Proportion of the population with grade nine education or higher, Registered Indians (RI) and other Canadians (OC) aged 50 years and older, Canada, 1981–2001.

Age (Years)	Group	1981	1986	1991	1996	2001
50–54	RI	0.271	0.335	0.484	0.637	0.781
	OC	0.681	0.726	0.804	0.861	0.916
	RI – OC	–0.410	–0.391	–0.320	–0.224	–0.135
55–59	RI	0.212	0.235	0.359	0.505	0.647
	OC	0.647	0.673	0.737	0.791	0.862
	RI – OC	–0.435	–0.438	–0.378	–0.286	–0.215
60–64	RI	0.190	0.193	0.262	0.372	0.529
	OC	0.612	0.637	0.682	0.724	0.795
	RI – OC	–0.422	–0.444	–0.420	–0.352	–0.266
65–69	RI	0.173	0.141	0.238	0.280	0.395
	OC	0.558	0.605	0.650	0.673	0.729
	RI – OC	–0.385	–0.464	–0.412	–0.393	–0.334
70–74	RI	0.123	0.123	0.211	0.259	0.311
	OC	0.494	0.558	0.626	0.642	0.681
	RI – OC	–0.371	–0.435	–0.415	–0.383	–0.370
75–79	RI	0.114	0.093	0.151	0.204	0.249
	OC	0.437	0.501	0.582	0.621	0.650
	RI – OC	–0.323	–0.408	–0.431	–0.417	–0.401
80 and over	RI	0.091	0.078	0.125	0.152	0.199
	OC	0.410	0.442	0.512	0.565	0.618
	RI – OC	–0.319	–0.364	–0.387	–0.413	–0.419

Source: Statistics Canada, 1981, 1991 and 2001 Census of Canada, custom tabulations.

Note: Does not include those living in institutions.

cohorts, and the difference between older Registered Indians and other Canadians was reduced (Table 4).

Table 5 presents the proportion of the population with high-school or some post-secondary or trade education. For those individuals aged between 50 and 64 years, the difference between Registered Indians and other Canadians has declined, while the gaps have widened in the older age groups. This is contrary to expectations, but can be better understood if successive cohorts are examined as they moved through older ages.

Figures 5 and 6 show the proportion of the population with high-school or higher educational attainment for seven birth cohorts as they move through older ages. The steadily improving education of successive cohorts of other Canadians is immediately obvious (Figure 5). Just over 75% of those born between 1952 and 1956 had high-school or higher education by their 50s, compared to approximately 44 per cent of those born between 1927 and 1931. Figure 6 shows the same data for older Registered Indians. The low educational attainment of the cohorts born early in the 20th century is clear, although educational attainment has increased with each subsequent cohort. These increases have occurred at a somewhat faster pace than among other Canadians, especially after the cohort born in 1932–1936.

The other pattern observable in the Registered Indian data is the improvement in average educational attainment of cohorts at older ages. Although it has been found that Registered Indians tend to complete their education at older ages than other Canadians (Hull, 2005), it seems far more likely that the observed improvements after age 50 years are due to aspects of the Census data. These problems may include the changes in response and participation described above, as well as the possibility of higher mortality of those with the lower education. This differential mortality would leave cohorts increasingly composed of those with higher educational attainment. However, the improvement (an upward slope) occurs for each cohort beginning with the 1986 census data (Figure 6). It therefore seems likely that at least part of the observed increase in educational attainment of individual cohorts over time is due to the addition of C-31 registrants, who may have higher average educational attainment than other Registered Indians, following the 1985 changes to the *Indian Act* (Clatworthy, 2003).

Discussion and Conclusions

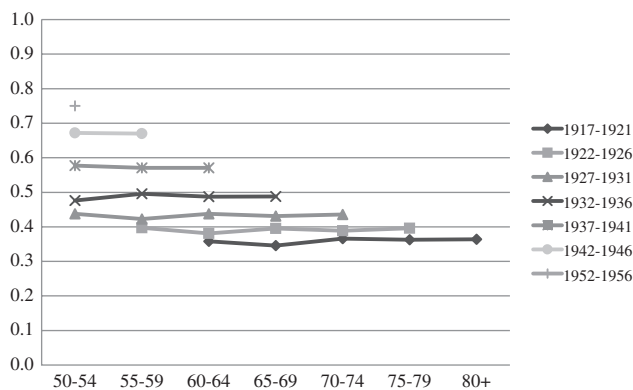
Overall, we conclude that the well-being of older Registered Indians has indeed improved between 1981 and 2001, although there are important causes for concern. In general, Registered Indians who were

Table 5: Proportion of the population with high-school or some post-secondary or trade education, Registered Indians (RI) and other Canadians (OC) aged 50 years and older, Canada, 1981–2001.

Age (Years)	Group	1981	1986	1991	1996	2001
50–54	RI	0.158	0.180	0.304	0.438	0.557
	OC	0.438	0.476	0.577	0.672	0.750
	RI – OC	-0.280	-0.296	-0.273	-0.234	-0.193
55–59	RI	0.098	0.121	0.215	0.318	0.441
	OC	0.397	0.423	0.496	0.571	0.670
	RI – OC	-0.299	-0.302	-0.281	-0.253	-0.229
60–64	RI	0.089	0.095	0.145	0.221	0.339
	OC	0.358	0.381	0.438	0.487	0.571
	RI – OC	-0.269	-0.286	-0.293	-0.266	-0.232
65–69	RI	0.076	0.062	0.129	0.152	0.234
	OC	0.317	0.346	0.395	0.431	0.488
	RI – OC	-0.241	-0.284	-0.266	-0.279	-0.254
70–74	RI	0.048	0.047	0.110	0.132	0.153
	OC	0.277	0.312	0.366	0.389	0.436
	RI – OC	-0.229	-0.265	-0.256	-0.257	-0.283
75–79	RI	0.046	0.032	0.076	0.088	0.141
	OC	0.244	0.276	0.332	0.363	0.396
	RI – OC	-0.198	-0.244	-0.256	-0.275	-0.255
80 and over	RI	0.033	0.036	0.052	0.075	0.105
	OC	0.214	0.240	0.293	0.328	0.364
	RI – OC	-0.181	-0.204	-0.241	-0.253	-0.259

Source: Statistics Canada, 1981, 1991 and 2001 Census of Canada, custom tabulations.

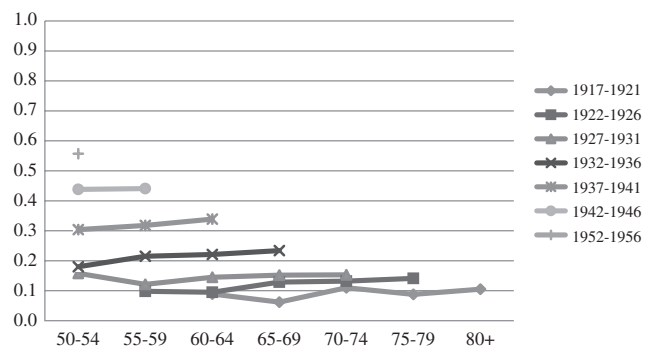
Note: Does not include those living in institutions.



Source: Statistics Canada, 1981, 1986, 1991, 1996 and 2001 Census of Canada, custom tabulations
Note: Does not include those living in institutions.

Figure 5: Proportion with high school or some post-secondary education for ages 50 and older by birth cohort, other Canadians, Canada

aged 60 years and older in 2001 had improved knowledge (educational attainment), a higher standard of living (household income), and better health (life expectancy) compared to people in these same age groups in the 1980s and 1990s. We have also found that cohorts of Registered Indians who were in their 50s in 2001 had higher educational attainment, higher income, and longer life expectancy than previous cohorts at the same ages, suggesting that these more



Source: Statistics Canada, 1981, 1986, 1991, 1996 and 2001 Census of Canada, custom tabulations
Note: Does not include those living in institutions.

Figure 6: Proportion with high school or some post-secondary education for ages 50 and older by birth cohort, registered Indians, Canada

recent cohorts will probably be even better off in older age, on average, than previous cohorts.

Despite optimism that these absolute measures of the well-being of older Registered Indians are improving and that this will likely continue from generation to generation, there are causes for concern about their progress relative to that of other Canadians. The rising life expectancy seen by other older Canadian men has

not been matched in the Registered Indian population. More recent cohorts of older Registered Indians have reported higher income before age 65 years than previous cohorts, but there has been almost no improvement in income after age 65 years. As a result, the relative income gap between older Registered Indians and other Canadians has widened considerably.

As we have acknowledged in this paper and elsewhere (Cooke, 2007), the HDI measure presents only a crude representation of well-being. It does not address important subjective aspects of quality of life, some of the material aspects of well-being such as in-kind transfers or non-money income and wealth, or cultural aspects such as access to traditional lands and activities, or the preservation of indigenous languages and knowledge. Clearly, Aboriginal and non-Aboriginal peoples will differ in many of these unmeasured dimensions. Moreover, our comparison to the general Canadian population is not meant to imply that meeting the non-Aboriginal average is the measure of success for Aboriginal populations. We do, however, think the comparison is informative, and we hope and expect that the gaps between Registered Indians and others on these indicators will decrease, given the size of the current differences in health, income, and education. Despite these limitations, the HDI does provide a picture of how three important dimensions of well-being for older Registered Indians have changed over time, and suggests how they might continue to change in the future.

One perspective that may be useful for understanding these results and for framing future research is that of the life course (e.g., Elder, 1994). A currently popular interdisciplinary perspective, the life course focuses attention on how experiences earlier in life affect outcomes at older ages. Considering individual lives as trajectories through education, work, family, and careers, this framework helps us to connect the current health or economic situation of older people to the accumulation or depletion of various types of resources over their lifetimes. It also highlights the interconnectedness between these various "domains", including health, work and education, and family careers, and between the lives of those who are "linked" through families or communities. Perhaps most importantly for the purposes of considering the well-being of Aboriginal populations, a life-course perspective also demands consideration of how lives are shaped by broader social structures, such as gender, race/ethnicity (Marshall & Mueller, 2003), as well as by Aboriginal identity.

Interpreted from this perspective, the finding that older Registered Indians have lower income and

poorer health than other older Canadians is perhaps to be expected. Poorer conditions throughout life and lower lifetime incomes, on average, are likely to result in poorer health and fewer financial and other resources at older ages. Concretely, these resources may include lower retirement pensions and fewer savings, poorer housing quality, and housing that is less adaptable to the needs of older people. For some older people, this may mean reduced capacity – physical or financial – to deal with health or other crises as they arise.

The finding that the household incomes of older Registered Indians have not improved much, relative to others, suggests the importance of rising incomes during typical working ages for the improvement of incomes at older ages. As well, the likely contribution that the previous restriction of CPP/QPP contributions for income earned on-reserve made to lower retirement incomes for Registered Indians points to one of the ways that the various provisions of the *Indian Act* may contribute to differences in the life course of Registered Indians, and therefore to resources in older ages. Another example may be the recently rescinded *Matrimonial Real Property* rules that controlled the way on-reserve property was divided on dissolution of a marriage, and which affected women living both on- and off-reserve (Abbott, 2004).

Further research is needed to understand how these changes and others will affect the conditions of future cohorts of older First Nations adults. Research that links the conditions experienced at young ages to those experienced at older ages might provide insight into the conditions that the large cohorts that are now young, may experience in older ages. Quantitative and qualitative research aimed at understanding how Aboriginal peoples and other Canadians differ in terms of the accumulation and depletion of health, financial, and social resources across the life course may help provide knowledge and information that will facilitate improved conditions for the growing population of older Aboriginal people.

Notes

- 1 Canadian Aboriginal peoples include Métis, Inuit, and First Nations peoples. Registered or "status" Indians are people registered under the *Indian Act* of Canada, and are most often of First Nations descent.
- 2 An exception to this is the shared responsibility between the federal and Quebec governments, under the terms of the James Bay and Northern Quebec agreements.
- 3 Statistics Canada, 1996, 2001; custom tabulations, authors' calculations.

- 4 Where life expectancy estimates are not centred on Census years, they are linearly interpolated to those years.
- 5 This was done by multiplying each population's life expectancy at birth by its size to estimate the contribution of Registered Indians to total life-years to be lived by the total Canadian population, subtracting that contribution, and calculating an estimated life expectancy for the Canadian population who are not Registered Indians.

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