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Using the UNDP Indices to Examine Gender Equality and Well-being

Martin Cooke (with the assistance of Kate Hano)

Introduction: Gender Equality and Well-being

As we have explained in Chapter 2, the Human Development Index (HDI), as developed by the United Nations Development Program (UNDP), compares countries' average scores on what the UNDP has identified as three main dimensions of well-being; education, income, and health. Of course, considering only the national average scores is limited, and our application of the HDI methodology to Aboriginal populations in Canada has been premised on the understanding that national-level measures hide important differences in the social conditions experienced by different groups in Canadian society.

One dimension which the UNDP does specifically examine in its annual Human Development Report (1990; 1995; 2004) is gender. Gender inequality is important in the context of international development, but it also remains a key dimension of income, employment, and health inequality in Canada, despite dramatic changes in recent decades. This chapter uses the HDI indicators as a means to examine the changes in gendered inequality between 1981 and 2001, and to measure the gender differences in the Registered Indian population and among other Canadians. We also introduce adaptations of two UNDP measures of gender inequality, the Gender-Related Development Index (GDI) and the Gender Empowerment Measure (GEM), and evaluate their use in examining changing patterns of gender equality in the Registered Indian population and among other Canadians.

Background: Gender Equality in Canada

It is worth pointing out the dramatic changes that gender relations in the general Canadian society have undergone in the past several decades. By 2001, women's labour force participation rate had closed to within ten percentage points of that of men (Statistics Canada, 2006), and women have surpassed men in terms of university enrolment and graduation (Statistics Canada, 2003; Christofides, Hoy, and Yang, 2006). Women's representation in business and political organizations has improved considerably over the past few decades, and leadership roles are now much more likely to be occupied by women than was the case in the past. But despite these changes, gender remains an important dimension of de facto inequality in Canadian society on a number of measures, generally to the

disadvantage of women. Women's labour force participation does remain lower than men's, partly due to absences from the paid labour force to care for children and others. Women earn less than men on average, even among full-time, full-year employees (Drolet, 2001). Canadian women have been under-represented among high-status, high-paying jobs and professions, and over-represented in short-term service work providing low wages and few benefits (Armstrong, 1994). Women, including employed women with spouses, remain responsible for the bulk of unpaid household work, (Beaujot, 2000: 194). These factors, as well as discrimination in the labour market, leave Canadian women at increased risk of living in poverty, particularly as lone parents (Christopher et al., 2002).

In development studies, gender equality has long been identified as an important factor in social and economic development. In the context of industrializing countries, for which the UNDP created the HDI measures, women's education and health have been found to have important and beneficial effects on infant and child mortality (e.g. Caldwell, 1979). Women's roles in families and communities mean that their education and physical and economic well-being has crucial implications for the health and well-being of others, and this has been found in Canada as well as in developing countries (e.g. Chen and Millar, 1999).

Of course, gender equality is an important goal for its own sake, in addition to its implications for the well-being of others. To that end, the UNDP has identified gender equality as a critical dimension of an expanded conception of human development (UNDP, 1995). In the Canadian context, less is known about the relative equality of men and women in Aboriginal populations, and how this has changed in recent decades. There are reasons to believe that gender may be observed differently in Aboriginal and non-Aboriginal populations. Some authors have pointed to the important leadership roles traditionally held by women in some Aboriginal cultures, forming a different basis of gender relations than that in European cultures (Fiske, 1991). Aboriginal women have also had different experiences with the Canadian state than have other Canadian women, particularly in relationship to Registered Indian status and the *Indian Act*. Prior to 1985, the *Act* discriminated against Registered Indian women, who lost registration status when they married non-Registered men, whereas the reverse did not occur (Fiske, 1995). In many cases this loss of status meant loss of band membership and claims on band resources such as housing. This was partly addressed by Bill C-31, although Registered Indian women may still be subject to a somewhat different gender regime than are other Canadian women. In particular, the division of matrimonial real property among Registered Indians on-reserve is not governed by provincial or territorial laws, leaving women less able to claim property after the dissolution of a marriage (Abbott, 2003).¹

Aboriginal women also tend to live in different family forms than other Canadian women, with implications for their economic and physical well-being. Higher fertility rates and earlier childbearing in Aboriginal populations means that Aboriginal women on average spend more time living with young children, resulting

in lower labour force participation rates (Peters and Rosenberg, 1995: 88). Aboriginal women are also much more likely to be the heads of single parent families than are other Canadian women, affecting employment opportunities as well as income (Hull, 2001b). However, the effects of having children at home on women's employment and education may also be less for Registered Indian women than for other women, possibly reflecting greater support available in Aboriginal communities or the success of targeted transfer programs (Hull, 2001b, White et al., 2003).

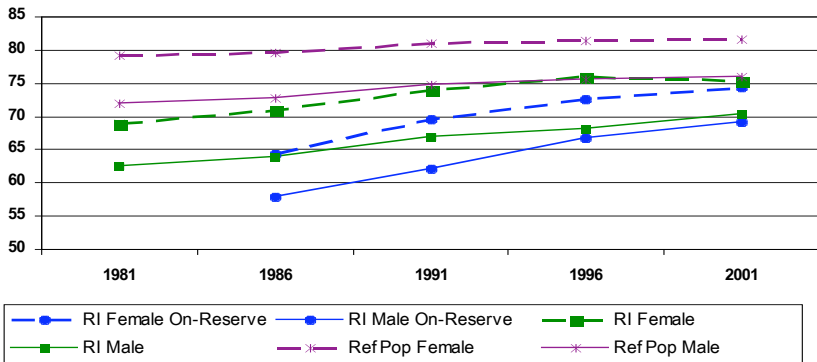
There has been some empirical research about the changing social and economic situation of Aboriginal women relative to Aboriginal men and non-Aboriginal women. Census data from 1996 and 2001 show that Aboriginal women had lower labour force participation and incomes than Aboriginal men, at all educational levels. Nonetheless, Aboriginal women tended to have higher educational attainment than men, at least in recent years (Hull, 2001a, 2005). However, it is somewhat unclear how gender inequality has changed in recent decades, and whether Aboriginal populations have seen the same kinds of changes that have occurred in the general Canadian population. In order to study these changes, we examined the gender differences on the HDI indicators presented in Chapter 3, as well as the results of two of the measures of gender inequality found in the Human Development Report.

Gender and the Human Development Indicators

In the remainder of this chapter, we use our adaptation of the UNDP's HDI to examine the different levels of attainment for men and for women in the Registered Indian population and amongst other Canadians. As well, we present the results from two indices of gender equality. In its 1995 *Human Development Report*, the UNDP presented new indicators to incorporate gender equality into its measurement of human development. In its "engendered development model," the UNDP asserted that countries' scores on measures of "human development" should be discounted to reflect the extent to which men and women have not shared equally in that development. To that end, the UNDP introduced the Gender-Related Human Development Index (GDI), which discounts a country's HDI scores by the degree to which men and women's scores on the individual indicators differ. The calculation of the GDI involves calculating separate male and female scores for each of the education, life expectancy, and income measures, and combining them into a new measure, discounted by the amount of inequality on each of the indicators.²

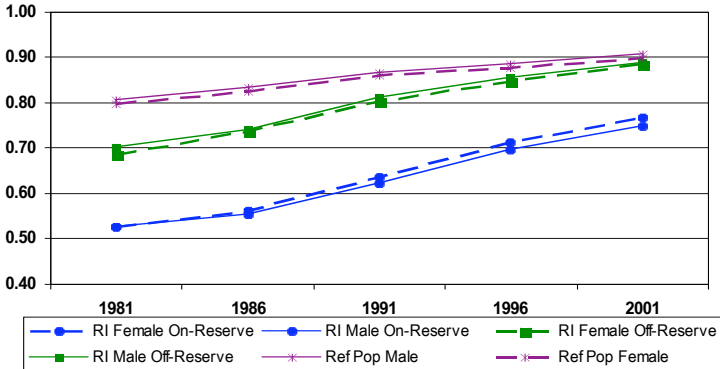
The Gender Empowerment Measure (GEM) was also introduced in the 1995 Human Development Report. Whereas the HDI/GDI methodology focuses on the relative level of attainment of men and women in education, health, and income, the GEM attempts to measure the participation of men and women in political and economic decision-making. Within the GEM, "empowerment" is measured

Figure 4.1: Life Expectancy at Birth, Registered Indian and Reference Population Males and Females, 1981–2001



Note: Separate life expectancy estimates are not available for on- and off-reserve populations for 1981.
Source: Statistics Canada, 1984, 1990, 1995, 1998, 2005; Rowe and Norris, 1995; Nault et al., 1993; Norris, Kerr, and Nault, 1996; DIAND, 1998; Verma, Michalowski, and Gauvin, 2003; authors' calculations.

Figure 4.2: Proportion of Population 15 and Older With Grade 9 +, 1981–2001



Source: Statistics Canada, Census of Canada, 1981-2001.; author's calculations.

by men's and women's representation in parliamentary bodies, within professions and technical occupations (UNDP, 1995). While the HDI includes average total income, the GEM includes men's and women's shares of average income from employment, as a measure of economic empowerment.³

In the following sections, we present the trends in the HDI indicators for men and women in the Registered Indian and reference populations, for 1981–2001, and use the GDI methodology to discount the HDI scores for gender inequality. We then use the adapted GEM to examine the trends in men's and women's participation in economic and organizational decision-making. We conclude by pointing out the important trends in gender inequality in the Registered Indian population, and some of the limitations of these measures.

Gender Differences in the HDI/GDI 1981–2001

As described in previous chapters, the HDI incorporates three dimensions of well-being. These are health, measured by life expectancy at birth; education, measured by the proportions with grade 9 or higher and high school or higher; and material standard of living, measured by total average income. In this section we present the trends in gender inequality using these indicators for the Registered Indian on- and off-reserve and the reference population from 1981 to 2001. We will also demonstrate the effect of applying the GDI methodology for discounting these measures to account for gender inequality.

Life Expectancy at Birth

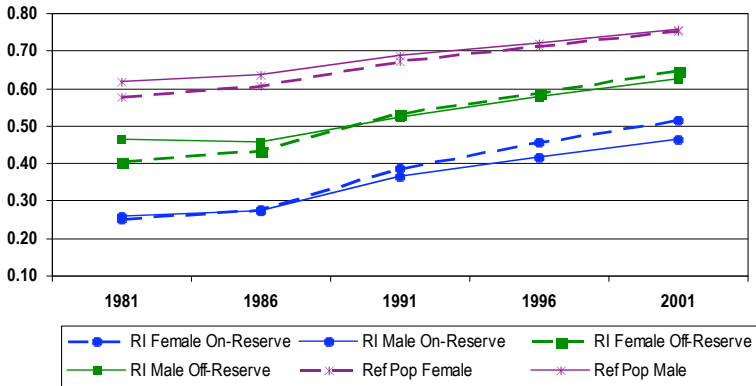
One area in which women have consistently out-scored men in industrialized countries is in life expectancy at birth, and in Canada this is true for the Registered Indian population as it is for other Canadians. **Figure 4.1** shows the life expectancy estimates for Registered Indians living on- and off-reserve and for other Canadians, from 1981 to 2001. As described in previous chapters, life expectancy has improved for each of these populations, and the gap between Registered Indians and other Canadians declined over the 1981–2001 period. In terms of gender differences in life expectancy, the female advantage has also declined. In 1981, life expectancy for male and female Registered Indians was estimated at 57.8 and 64.2 respectively, a seven-year difference. This difference declined to five years in 2001, when life expectancy was 70.3 for males and 75.4 for females. This five-year gap was similar for the reference population, despite longer life expectancy of 75.9 years for men and 81.5 years for women. A similar gender difference is observed in the on-reserve Registered Indian population, for whom life expectancy was 69.2 years for men and 74.3 years for women, in 2001.

Education

As described above and in previous chapters, the first education measure on the HDI, the proportion of the population 15 and older with grade 9 or higher, serves as a proxy for adult literacy, or the minimal standard of education required for participation in society. **Figure 4.2** shows the scores on this measure for 1981–2001. In the Registered Indian population, the general pattern is towards equal scores and a slight, but increasing, advantage among women on-reserve. About 53% of both men and women living on-reserve had grade 9 or higher in 1981, compared to 70% of men and 68% of women living off-reserve. However, by the end of the period, women on-reserve had slightly higher attainment on this indicator (77%), compared to men (75%). In the off-reserve population, male advantage disappeared over the period, and 89% of both men and women had grade 9 or higher in 2001. In the reference population, the male advantage on this indicator remained fairly constant, at less than one percent.

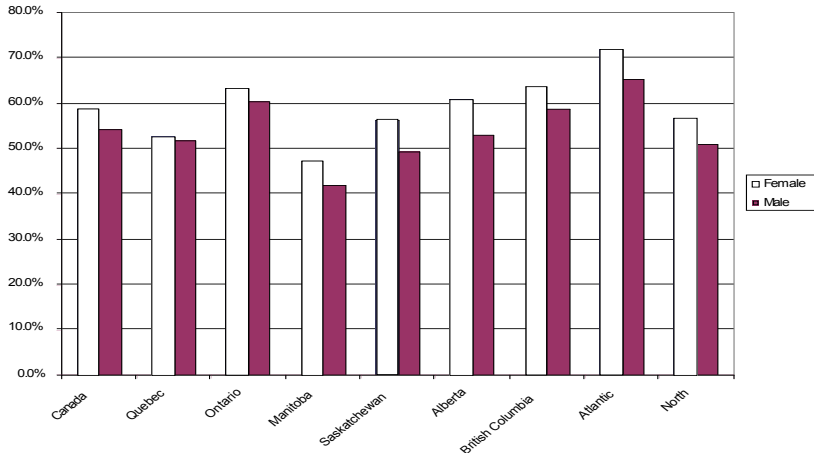
These gender differences on this indicator are of a small magnitude, and one should not make too much of the trend toward higher scores for women. However,

Figure 4.3: Proportion of those 19 and Older With High School +, 1981–2001



Source: Statistics Canada, Census of Canada, 1981–2001; authors’ calculations.

Figure 4.4: Proportion 19 and Older With High School + by Region, Registered Indians, 2001



Source: Statistics Canada, Census of Canada, 1981–2001; authors’ calculations.

women’s outstripping of male educational attainment among Registered Indians is more clearly shown in the other measure of educational attainment, the proportion of the population aged 19 and older with high school or higher education. The 1981–2001 scores on this indicator are shown in **Figure 4.3**. As with the other indicator, men began the period with higher average scores than did women, both among Registered Indians and the reference population. However, while women in the reference population had caught up to men in 2001, among Registered Indians, women’s scores had passed men’s by 1991. By 2001, 51% of Registered Indian women living on-reserve had high school, or some technical, college, or university education, compared to 46% of men. Among off-reserve Registered Indians the gender gap was smaller but the trend was similar, and by 2001, 65% of women living off-reserve had high school or higher education, compared to 62% of men. In the rest of the Canadian population, male advantage on this educational

Table 4.1: Education Index Scores, Men and Women 1981–2001

		Educational Attainment Index (HDI)			Discounted Education Index (GDI)
		Male	Female	Total	
On-reserve	1981	0.436	0.433	0.434	0.434
	1986	0.460	0.467	0.463	0.463
	1991	0.535	0.552	0.543	0.543
	1996	0.603	0.626	0.614	0.614
	2001	0.653	0.683	0.668	0.667
Off-reserve	1981	0.590	0.622	0.604	0.604
	1986	0.635	0.646	0.639	0.639
	1991	0.713	0.715	0.714	0.714
	1996	0.760	0.764	0.762	0.762
	2001	0.805	0.799	0.802	0.802
Reference Population	1981	0.743	0.724	0.733	0.733
	1986	0.765	0.751	0.759	0.758
	1991	0.807	0.798	0.802	0.802
	1996	0.830	0.823	0.826	0.826
	2001	0.856	0.850	0.853	0.853

Source: Statistics Canada, 1981–2001 Census of Canada, author's Calculations

attainment indicator also decreased over the period, with men and women very nearly equal by 2001.

This pattern of higher female educational attainment among the Registered Indian population is generally found in all provinces and territories, although to different degrees. As **Figure 4.4** illustrates, the gender gaps were largest in Saskatchewan and Alberta, where there was more than 7% difference, and lowest in Quebec, where registered Indian women had an advantage of only 0.6%. As well, the general pattern of higher female advantage among those on-reserve, compared to off-reserve, held in most regions, although those data are not presented here.

As in the previous chapters, scores on these two measures are combined to form the Educational Attainment Index. **Table 4.1** presents the education index scores for men and women, as well as the discounted education index, according to the GDI methodology. The two-thirds weight given to the proportion with grade 9 or higher reduces the difference between men's and women's HDI scores, but the general pattern of higher scores for Registered Indian women is evident. By 2001, the combined HDI score for the on-reserve population (0.668) masked a relatively large difference between women's and men's separate index scores. However, when combined according to the GDI methodology, they do not result in observable discounting of the HDI scores, at least to three decimal places.

Table 4.2: Average Annual Income and Income Index Scores, 1980–2000 (Year 2000 \$)

		Average Annual Total Income			Income Index (HDI)	Discounted Income Index (GDI)
		Male Income	Female Income	Male-Female		
On-reserve	1980	7,857	4,441	3,416	0.669	0.668
	1985	7,846	4,587	3,259	0.679	0.671
	1990	7,980	5,482	2,498	0.692	0.688
	1995	8,445	6,781	1,574	0.713	0.712
	2000	8,651	8,145	506	0.728	0.728
Off-reserve	1980	11,300	5,572	5,728	0.723	0.604
	1985	9,335	6,159	3,176	0.693	0.532
	1990	11,236	8,431	2,805	0.752	0.744
	1995	11,280	9,015	2,265	0.758	0.756
	2000	13,215	10,487	2,728	0.784	0.782
Reference Population	1980	23,380	9,822	13,558	0.834	0.820
	1985	24,557	11,850	12,707	0.856	0.841
	1990	26,018	14,259	11,759	0.873	0.865
	1995	25,228	14,905	10,323	0.873	0.865
	2000	27,931	17,225	10,706	0.892	0.886

Source: Statistics Canada, 1981–2001 Census of Canada, author's Calculations

Average Total Income

Although women generally surpassed men in terms of educational attainment by the end of the 1981–2001 period, quite a different pattern is evident when we examine trends in income. As described in earlier chapters, our adaptation of the HDI methodology uses total annual income averaged over the entire population as a measure of material standard of living, or access to goods and services in the market. In the HDI methodology this income is discounted using a log formula to account for the decreasing marginal utility of income. For simplicity, **Table 4.2** presents the untransformed average incomes for males and females, among the on- and off-reserve Registered Indian population and the reference population, in year 2000 dollars.

For each of these populations, men had an advantage in average total income over the entire period. This is much more clearly the case in the reference population than in the Registered Indian population. In 1980, the average income of reference population men was \$23,380 or 2.4 times that of reference population women (**Table 4.2**). Women's average incomes improved fairly steadily over the entire period, while male incomes declined between 1990 and 1995, due to the economic recession. The end result was that the male-female gap closed to \$10,300 by 1995, but widened again between 1995 and 2001, as male incomes recovered.

Table 4.3: Human Development and Gender-related Development Index Scores, 1981–2001

		HDI Scores				GDI Score
		Male	Female	Total	Male-Female	Total
On-reserve	1981	-	-	-	-	-
	1986	-	-	-	-	-
	1991	0.643	0.663	0.669	-0.02	0.621
	1996	0.676	0.710	0.693	-0.03	0.669
	2001	0.707	0.742	0.725	-0.04	0.700
Off-reserve	1981	-	-	-	-	-
	1986	-	-	-	-	-
	1991	0.764	0.774	0.749	-0.01	0.746
	1996	0.785	0.790	0.777	-0.01	0.760
	2001	0.793	0.810	0.802	-0.02	0.782
Registered Indian Total	1981	0.625	0.622	0.626	0.00	0.606
	1986	0.637	0.656	0.644	-0.02	0.625
	1991	0.688	0.720	0.706	-0.03	0.686
	1996	0.718	0.757	0.739	-0.04	0.718
	2001	0.750	0.780	0.762	-0.03	0.746
Reference Population	1981	0.808	0.793	0.806	0.02	0.779
	1986	0.825	0.817	0.823	0.01	0.799
	1991	0.850	0.849	0.852	0.00	0.828
	1996	0.861	0.861	0.863	0.00	0.840
	2001	0.887	0.883	0.880	0.00	0.863

Source: Statistics Canada, 1984, 1990, 1995, 1998, 2005; Statistics Canada 1981–2001 Census of Canada data; Rowe and Norris, 1995; Nault et al., 1993; Norris, Kerr, and Nault, 1996; Verma, Michalowski, and Gauvin, 2003, authors' calculations.

Registered Indian women living on-reserve also saw their average annual incomes increase over the period, from an average of about \$4,400 in 1980 to about \$8,150 in 2000. However, the incomes of on-reserve men were basically flat between 1980 and 1990, and rose only slightly thereafter. As a result, the gender gap in incomes on-reserve closed to about \$500 by 2000 (**Table 4.2**). Among those living off-reserve, the gender gap in average annual income also closed between 1980 and 2000. In 1980, off-reserve women had an average income of \$5,600, compared to \$11,300 for men. Because male incomes were about the same in 1995 as in 1980, the increase in female incomes over this period closed the gap. By 2000, the average income for off-reserve males was only \$2,730, or 26%, higher than that of off-reserve women.

Table 4.2 (page 76) also presents the income index discounted for gender inequality, according to the GDI methodology. Unlike the discounted education index, gender differences in total average income do result in lower

Table 4.4: Gender Empowerment Measure Scores and Components, Registered Indian and Reference Population, 1991–2001.

	Women's Population Proportion	Female Proportion of Public Sector Managers & Legislators	Female Proportion of Private Sector Managers	Female Proportion of Professional and Technical Employment	Female Share of Employment Income	Gender Empowerment Measure Score	
Registered Indian	1991	0.54	0.31(-.23)	0.49(-.05)	0.55(+.01)	0.48(-.06)	0.751
	1996	0.54	0.31(-.23)	0.51(-.03)	0.57(+.03)	0.48(-.06)	0.756
	2001	0.54	0.39(-.15)	0.49(-.05)	0.58(+.04)	0.47(-.07)	0.801
On-reserve	1991	0.50	0.27(-.23)	0.40(-.10)	0.50(0.0)	0.44(-.06)	0.707
	1996	0.49	0.28(-.21)	0.43(-.06)	0.52(+.04)	0.46(-.03)	0.728
	2001	0.50	0.35(-.15)	0.46(-.04)	0.55(+.05)	0.47(-.03)	0.773
Off-reserve	1991	0.60	0.43(-.17)	0.53(-.07)	0.59(+.01)	0.50(-.10)	0.804
	1996	0.58	0.41(-.17)	0.56(-.02)	0.61(+.03)	0.51(-.07)	0.807
	2001	0.57	0.47(-.10)	0.50(-.07)	0.60(+.07)	0.48(-.09)	0.834
Reference Population	1991	0.51	0.26(-.25)	0.31(-.20)	0.45(-.06)	0.41(-.10)	0.773
	1996	0.51	0.28(-.23)	0.32(-.19)	0.46(-.05)	0.40(-.11)	0.801
	2001	0.51	0.35(-.16)	0.36(-.15)	0.46(-.05)	0.40(-.11)	0.865

Source: Statistics Canada, 1991–2001 Census of Canada, Author's Calculations. Income data are for 1990, 1995, 2000. The difference between female population share and indicator share is shown in parentheses.

discounted index scores. This effect was greatest in the reference population, but is also seen in the Registered Indian scores, especially off-reserve. However, the declining gender gap in total income among the Registered Indian population meant that by 2000 the discounting formula had very little effect, reducing off-reserve scores by only 0.002 (Table 4.2).

Human Development Index Scores

As we described in Chapter 2 , the HDI methodology combines life expectancy, education, and income indicators into Human Development Index scores for each of these populations. The combined HDI, as well as separate scores for men and women are shown for 1981 to 2001, in **Table 4.3** (page 77). As well as the HDI scores, we have presented the Gender-Related Development Index Scores (GDI) which represent the HDI scores discounted for the disparity between men and women on each of the indicators.

In both the Registered Indian and reference populations, women's HDI scores improved, relative to those of men. Among Registered Indians, women's scores were higher than men's in 1981, and this difference increased between 1981 and 2001, while in the reference population the gap between men's and women's scores declined. By 2001, Registered Indian women on-reserve had an HDI score of 0.742, compared to 0.707 for men (**Table 4.3**). For those living off-reserve, women's scores were 0.810, compared to 0.793 for men.

When combined into discounted GDI scores, the gender differences in life expectancy, education, and income resulted in considerably reduced index scores. As shown in **Table 4.3**, among Registered Indians on-reserve, the discounted score was 0.700, compared to an HDI of 0.725 in 2001. Among those living off-reserve, the discounting effect was even stronger, from 0.802 to 0.700 in 2001. However, it should be noted that the GDI methodology results in a lower score regardless of whether it is men or women who have an advantage on any particular indicator. Some of the implications of this are presented in the conclusion to this chapter.

The Gender Empowerment Measure (GEM)

Whereas the HDI/GDI indicators measure the average level of well-being of men and women, the Gender Empowerment Measure (GEM) attempts to capture the relative empowerment of men and women in terms of political and economic decision-making. As described above, the UNDP captures these dimensions of equality by examining male and female shares of parliamentary seats, representation among professionals, managers, and technical occupations, and male and female shares of earned income. In our adaptation to the Canadian case, we use Census data on occupation and industries, and income from employment. Below, we present the results of these indicators for the 1991–2001 period, for the Registered Indian and reference populations.

Table 4.4 shows the main components of the Gender Empowerment Measure for the Registered Indian and reference populations from 1991 to 2001. Because of a change to Statistics Canada's classifications of occupations and industries, we have not calculated GEM scores for 1981 or 1985. The GEM methodology compares men's and women's representation in public administration and private sector management, and shares of employment income to their representation in the population. For example, perfect equality would require that women's share

of professional and technical occupations would be exactly the same as women's representation in the population. Note that women make up slightly more than half of the reference population, and 54% of the Registered Indian population. This is due to several factors including men's lower life expectancy and the effects of Bill C-31 re-registration (Clatworthy, 2003). Registered Indian women are over-represented among Registered Indians living off-reserve because of the registration of off-reserve women under Bill C-31, as well as higher migration rates among women (Norris et al., 2004).

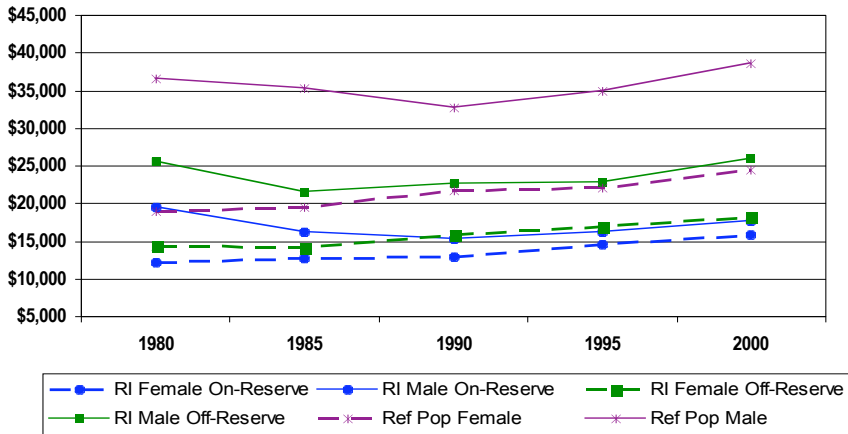
Women's under-representation among legislators and managers in public administration was greater in the reference population than in the Registered Indian population in the 1991–2001 period.⁴ In 2001, women accounted for only 35% of reference population managers, and 39% of the Registered Indian public administration managers. Women's representation among public sector managers was highest in the off-reserve Registered Indian population, in which women occupied 47% of these jobs in 2001. This was still 10% lower than women's share of the total off-reserve population, however. Nonetheless, women's share of public administration management jobs increased between 1991 and 2001, in each of the study populations (**Table 4.4** – page 78).

Women were much better-represented among Registered Indians in private sector management positions. Although reference population women's representation increased from 31% to 36% over the decade, women accounted for roughly half of all Registered Indians in private sector management occupations over the period. Unlike public-sector management, women's representation in these occupations was higher among on-reserve Registered Indians than among those living off-reserve by 2001. Although women were 50% of off-reserve Registered Indians in these occupations in 2001, the high proportion of women among the off-reserve population meant that representation was better on-reserve. Moreover, while women's relative representation in management positions on-reserve improved over the period, off-reserve it was the same in 1991 and 2001, after improving in 1996 (**Table 4.4**).

The proportion of women in professional or technical employment shows a much different pattern for the Registered Indian and reference populations. Although reference population women are somewhat under-represented in this category, it is men who were under-represented in the Registered Indian population to an increasing degree over the 1991–2001 period. It is important to note that this is a very broad category, and includes highly paid professions such as doctors and lawyers, as well as less well-paid professionals such as teachers and nurses. The technical occupations in the category included, for example, dental hygienists and computer operators. The over-representation of Registered Indians in these occupations is due at least partly to employment in the technical occupations in this category.

Lastly, the GEM incorporates men's and women's relative shares of employment income, as a measure of economic power in the market. **Table 4.4** presents

Figure 4.5: Average Annual Employment Income by Gender, Registered Indians and Reference Population, 1980–2000 (Year 2000 \$)



Source: Statistics Canada, Census of Canada, 1981–2001; authors' calculations.

the female share of total employment income, from Census data, for each of the study populations. In no case do women receive a greater proportion of employment income than do men. However, the difference between men and women is least among Registered Indians on-reserve, where relative equality was nearly achieved in 2001, while it is greatest among the reference population.

As described in the 1995 *Human Development Report* (UNDP, 1995), the income measure in the GEM captures both the shares of employment income received by men and women, and the absolute level of income, in its calculation. **Table 4.4** presents men's and women's shares of average employment incomes and **Figure 4.5** shows the trends in average income between 1980 and 2000. The figure shows improvement in the gap between men and women in these populations, although some of the improvement has been due to declines in men's incomes, rather than higher employment incomes for women. In the on-reserve Registered Indian population, men received an average of \$19,400 in employment income in 1980, \$7,200 more than the average for women. By 2000, this gap had decreased to \$1,800. However, most of the decline was due to the drop in men's employment income between 1985 and 1990. Although female income rose steadily over the 1980–2000 period, the gap between male and female income widened between 1995 and 2000, as male incomes recovered somewhat.

A similar pattern is observed in the off-reserve Registered Indian and the reference populations. Among Registered Indians living off-reserve, male average employment incomes fell from \$25,500 to \$21,100 between 1980 and 1985 (**Figure 4.5** – page 81). Male incomes had recovered to \$25,800 by 2000, while female incomes increased fairly steadily, from \$14,300 to \$18,100 between 1980 and 2000. The result was that the gender gap in average annual employment income fell for most of the period, but rose slightly between 1995

and 2000. This pattern is also evident in the reference population, in which male employment incomes fell between 1980 and 1990, and then recovered, resulting in a widening of the gender gap between 1995 and 2000. In both of these populations, these results are observed in a slightly decreasing female share of employment income between 1995 and 2000 (**Table 4.4** – page 78).

These measures are combined in the Gender Empowerment Measure presented in **Table 4.4**. The higher level of average employment income results in a higher GEM score for the reference population, despite higher degrees of gender inequality on most indicators. However, the trend for the GEM indicators was to increase between 1991 and 2001, for all of the study populations. This suggests that the relative equality of men and women, at least in terms of the “empowerment” measured by these indicators is increasing. As discussed below, this obscures the different patterns on each of these indicators and the fact that the gender disparity on some of these measures has increased.

Conclusions

What can we conclude from the use of these indicators to examine gender differences in the Canadian context, both in terms of the patterns of gender inequality in the Registered Indian population, and the utility of these measures? In general, the evidence of improving gender equality is mixed. Women’s scores have improved on nearly all of the indicators, including income, education, and representation in management and professional and technical occupations, for both the Registered Indian and reference populations. On several of these measures, this resulted in women narrowing the gap with men, particularly in representation among management occupations. The gender gap in life expectancy, the indicator on which women tend to score higher, also decreased among Registered Indians and other Canadians as improvements were made in men’s mortality (Manuel and Hockin, 2000; DesMeules, Manuel, and Cho, 2004).

Registered Indian women’s incomes improved over the period, both in terms of average employment income and average total income, resulting in a narrowing of the total income gap with men. However, some of these gender gaps widened, as was the case with employment income between 1995 and 2000. Moreover, at least some of the improvement that was seen before 1995 was due to stagnation or decline in men’s incomes, as women’s incomes continued to improve. This would seem to indicate that further progress in closing this gap is uncertain. It may be that as Registered Indian employment incomes rise, especially off-reserve, the gender gap in income will approach that seen in the rest of the Canadian population.

However, the trends are not all the same in the Registered Indian and reference populations. The increasing advantage of Registered Indian women in primary and secondary education is unmatched among other Canadians, although previous research has found that women have indeed outstripped men in terms of attainment of university degrees and higher education for some time (Christofides, Hoy,

and Yang, 2006). It may be that the processes that lead to female advantage in higher levels of education among the total Canadian population is evident at lower levels in the Registered Indian population, again because of the lower average level of attainment.

Regardless of potential similarities in process, and any hypotheses about whether the gender differences in the two populations may converge in the future, current trends in gender equality in the Registered Indian population may have important implications for research and policy. It is clearly important to understand why it appears that Registered Indian men are falling behind in terms of educational attainment, especially on-reserve. At the same time, it is important to ask why the improvements in women's educational attainment and representation in management, professional, and technical occupations, have not resulted in dramatic improvements in employment income, relative to that of men.

The Gender-Related Development Index (GDI) and the Gender Empowerment Measure (GEM) were developed by the UNDP in the context of international development studies, in which the concern is generally improving women's health, well-being, and empowerment, and to close the gap with men. As we have seen, in the case of the Registered Indian population, several of the GDI/HDI and GEM indicators favour women over men. In general, judging by the individual HDI scores shown above, Registered Indian women had a higher level of overall well-being than did men, because of higher life expectancy and education, and relatively small gaps in income. These differences are lost when only the total HDI is examined. As well, the different trends in gender difference on the life expectancy, education, and income indicators led to inconsistent results when the GDI methodology was used. Women's decreasing advantage in life expectancy was offset by their increasing advantage in education and inconsistent changes in income, making the interpretation of the GDI unclear. As with the GEM, the GDI composite index is probably not as useful to examine gender inequality as is the examination of the individual index components.

Endnotes

- 1 Those interested in exploring the issue of identity in relation to Bill C-31, including the legislation's roots and consequences, should refer to the fifth volume in our series on Aboriginal public policy research, a compilation of articles from the 2006 APRC Conference: White, J.P., et al. (Eds.). 2007. *Aboriginal Policy Research: Moving Forward, Making a Difference*, vol. 5, Toronto: Thompson Educational Publishing, Inc.
- 2 In the GDI, each of the life expectancy, education, and income indicators in the HDI are discounted according to the formula:

$$EDI = [\text{female population share (female index}^{1-\varepsilon})] + [\text{male population share (male index}^{1-\varepsilon})]$$
 where ε is the aversion to inequality parameter, and set to $\varepsilon=2$.
 The GDI methodology also sets higher minimum and maximum life expectancy values for women, to account for a natural advantage (UNDP, 2004: 261).
- 3 For each of the indicators on the GEM, an Equally Distributed Equivalent Percentage is calculated, which is the harmonic mean of the male and female indicators, weighted by the male and female shares in the population (UNDP, 2004: 261).
- 4 Public administration includes occupations in municipal, provincial, federal, and Aboriginal governments.

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