

**The Community Well-Being (CWB) Index:
Disparity in Well-Being Between First Nations and Other
Canadian Communities Over Time**

by

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The views expressed in this paper are those of the authors and do not necessarily represent the views of Indian and Northern Affairs Canada (INAC). While the research and analysis in the report are based on data from Statistics Canada, the opinions expressed do not represent the views of Statistics Canada.

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1. Introduction

The Community Well-Being (CWB) Index is a means of examining the relative well-being of communities in Canada. It was developed in response to the growing concern over the substandard socio-economic conditions that are perceived to exist among Canada's First Nations.

The 2001 CWB did indeed reveal a marked disparity between First Nations communities and other communities within Canada. It also, however, revealed that both types of communities span a broad range of the well-being continuum.

These results, while interesting, represent only a first stage in our attempt to understand the gap in well-being between First Nations and other Canadian communities. The significance of the disparity cannot be understood without an assessment of whether it has increased, decreased or remained stable over time. The current report, which includes analyses of three census periods - 1991, 1996 and 2001 - addresses this issue.

2. The Community Well-Being (CWB) Index

The CWB index combines several key indicators of socio-economic well-being into a single number or "CWB score". A score is generated for each community in Canada, allowing an "at-a-glance" look at the relative well-being of those communities. CWB scores may fall anywhere between 0 and 1 (with one being the highest) and are reported herein to two decimal points.

The CWB index consists of four equally weighted components¹.

2.1 Education

This component is comprised of two indicators: functional literacy and high school plus. The former is afforded a weight of 2/3 of the education component and is operationalized as the proportion of a community's population, 15 years and over, that has completed at least a grade 9 education. The latter is defined as the proportion of the population, 20 years and over, that has graduated from high school.

¹ Unless otherwise noted, the indicators comprising each component of the CWB are equally weighted.

2.2 Labour Force

This component is also comprised of two indicators: labour force participation and employment rate. The former is operationalized as the proportion of the population, 20 years and over, that is involved in the labour force. Employment rate refers to the employed labour force expressed as a percentage of the total labour force, aged 15 years and over.

2.3 Income

This component is defined as “income per capita”: a community’s total income divided by its total population. To make them amenable to inclusion in the CWB index, community income averages had to be converted into income scores running from 0 to 1. The following formula was used to this end:

$$\frac{\text{Log (income per capita)} - \text{Log (2,000)}}{\text{Log (40,000)} - \text{Log(2,000)}}$$

The theoretical minimum and maximum (\$2,000 and \$40,000, respectively), were derived from the actual range of income per capita across Canadian communities. The log function was incorporated into the income component to account for the “diminishing marginal utility of income”. According to this principle, those who occupy the lower income strata will benefit more from additional income than those at higher income levels.

2.4 Housing

This component is comprised of indicators of both housing quantity and quality. The former is operationalized as the proportion of the population living in dwellings that contain no more than one person per room. The latter is defined as the proportion of the population living in dwellings that are not in need of major repairs.

Additional information pertaining to the methodology of the CWB index is available in McHardy and O’Sullivan, (2004). While that report also provides a lengthy discussion of the limitations of the CWB model, the main issues should be highlighted here. First, the CWB focuses primarily on the socio-economic aspects of well-being. Limitations of the Canadian census prevented the incorporation into the model of equally important aspects of well-being such as physical, psychological and cultural health. It is also important to note that the socio-economic indicators of

which the index is comprised may not capture fully the reality of the economic situation in First Nations. Many Aboriginal people are still heavily involved in traditional economic pursuits, which, although contributing to their material well-being, are not manifested in monetary income or paid employment.

3. The Data

The CWB indices were constructed using data drawn from the 1991, 1996 and 2001 Censuses of Population^{2,3,4}. As indicated above, the CWB is calculated at the community level. Communities are defined in this study in terms of census subdivisions (CSDs). CSD is the term applied to municipalities (as determined by provincial legislation) or their equivalent (i.e. Indian reserves, Indian settlements and unorganized territories) (Statistics Canada, 2002: 224).

This study categorizes CSDs into First Nations and other Canadian communities. The distinction is based on Indian and Northern Affairs Canada's 2001 geography hierarchy defined by INAC (2002a). The INAC listing of communities includes the legal list of Indian reserves and Indian settlements as well as a selection of other CSD types selected from Saskatchewan, Yukon and Northwest Territories and is the same as the listing used by the department to report on reserve population counts from the Census.

INAC's complete list of First Nations communities includes:

- land reserved under the Indian Act;
- land set aside for the use and benefit of Indian people;
- areas where activities on the land are paid or administered by INAC or;

² Census data were collected either from 100% of the population or on a sample basis (i.e. from a random sample of one in five households) with the data weighted up to provide estimates for the entire population. The information in this report was collected on a 20% sample basis and weighted up to compensate for sampling. On Indian reserves and in remote areas, all data were collected on a 100% basis. (Statistics Canada, 2002:279; Statistics Canada, 1999:356-357; Statistics Canada, 1992: 24,32).

³ Missing information on individual records is imputed during the processing phase of the census data. Each missing value is replaced by the corresponding entry for a "similar" record.

⁴ The original data source for the CWB was a limited selection of un-rounded, unsuppressed micro-data which was accessed through a memorandum of understanding between INAC and Statistics Canada.

- areas listed in the Indian Lands Registry System held by Lands and Trust Services at INAC.

INAC's legal list of First Nations communities includes the following CSD types: Indian Government Districts⁵ (IGD), Reserves (R), Indian Settlements (S-E), Terre Reservées (TR)⁶, Nisga'a Lands (NL), Nisga'a Villages (NVL) and Teslin Lands (TL). A selection of the following CSD types are also regarded as First Nations: Chartered Community (CC), Hamlet (HAM), Northern Hamlet (NH), Northern Village (NV), Settlement (SET), Town (T) and Village (VL).

As this study involves the evaluation of communities across time, steps had to be taken to ensure the comparability of those communities. Most obviously, inflation affects the comparability of income values. Accordingly, the income portions of the CWB indices were adjusted using the Consumer Price Index (CPI) from Statistics Canada (2004). These adjustments, which are described in detail below, permit the comparison of income values from 1991, 1996 and 2001.

Where 1992 = 100, the CPI value for 1990 is 93.3 and the value for 2000 is 113.5⁷ (Statistics Canada, 2004). These values were transformed to make 1995 = 100, establishing the 1996 income values as the "baseline". To render them comparable to this baseline, 1991 and 2001 income data were multiplied by 1.117 and 0.918, respectively.

Another factor which affects the comparability of CSDs over time relates to changes to the CSDs themselves that may occur between censuses. For example, a CSD may gain a large portion of land and its associated population. In other cases, a block of population previously considered to belong to one CSD may be reassigned to another. In order to legitimately compare a community across time, one must be assured that one is indeed assessing the same entity. To illustrate, consider the result if a very wealthy community was absorbed by a less affluent one between census years: the overall well-being of the latter will appear to have improved even though the population of which it was originally comprised may not have improved at all - it may have even declined.

⁵ E.g. Sechelt in British Columbia.

⁶ E.g. Chisasibi in Quebec.

⁷ As income represents one's total income in the full year prior to the census year, income values are adjusted using inflation rates from the years preceding any given census year.

As such, the current CWB analyses are based upon only those 399 First Nations and 3,443 other Canadian communities deemed as “consistent entities” from 1991 through 2001⁸. The following criteria were used to designate a CSD as consistent:

1. the CSD existed in each census year⁹;
2. the CSD did not gain or lose more than 5% of its population;
3. where a CSD gained no more than 5% but more than 2% of its population from another geographical entity, the difference in their CWB scores in the census year prior to the change was no greater than 0.1.

The final criteria was instituted to ensure that even where the population gained by a given CSD was very small, its characteristics were not dissimilar enough to significantly affect the well-being score of the CSD that received it.

In addition to meeting these criteria, in order to be included in our analyses, a CSD had to have a CWB score in each census year and to have had a population of at least 65 in each census year. Summaries of each of the data sets are provided in Table 1.

⁸ Note, however, that CWB scores for non-comparable CSDs have still been calculated and may be useful for specific types of time series analyses.

⁹ Typically, a CSD was identified across time by its CSD code. In a small number of cases, a CSD code changed without affecting the population associated with that name and number. In these cases, the “old” and “new” CSDs are regarded as a single entity.

Table 1
Census Database Details, 1991-2001

Census Year	CSDs for which CWB Score was Calculated ¹	Incompletely Enumerated Reserves	CSDs Excluded Owing to Data Quality	CSDs with Population 65 and Over		CSDs included in 1991-2001 Time Series Analyses	
				First Nations ²	Other Canadian Communities	First Nations	Other Canadian Communities
1991	5,693	78	51	485	4,697	399	3,443
1996	5,585	77	49	541	4,579		
2001	5,188	30	98	541	4,144		

Notes:

¹ Includes all CSDs present on the 2B micro-databases.

² As previously indicated, for the purposes of the time series analyses, CSDs were divided into First Nations and other Canadian communities based on INAC's 2001 geography hierarchy (Indian and Northern Affairs Canada, 2002a). For the purposes of this table, however, the 1996 INAC hierarchy was used to identify the number of First Nations in 1996. As the 1996 INAC hierarchy (Indian and Northern Affairs Canada, 2002b) is the earliest one that exists, it was also used to identify the number of First Nations in 1991. Six CSDs in the 1991 database, which did not exist in 1996 but which were INAC legal reserve CSD "types" (five Reserves (R) and one Indian settlements (S-E) have also been counted as First Nations for the purposes of this table.

4. Results

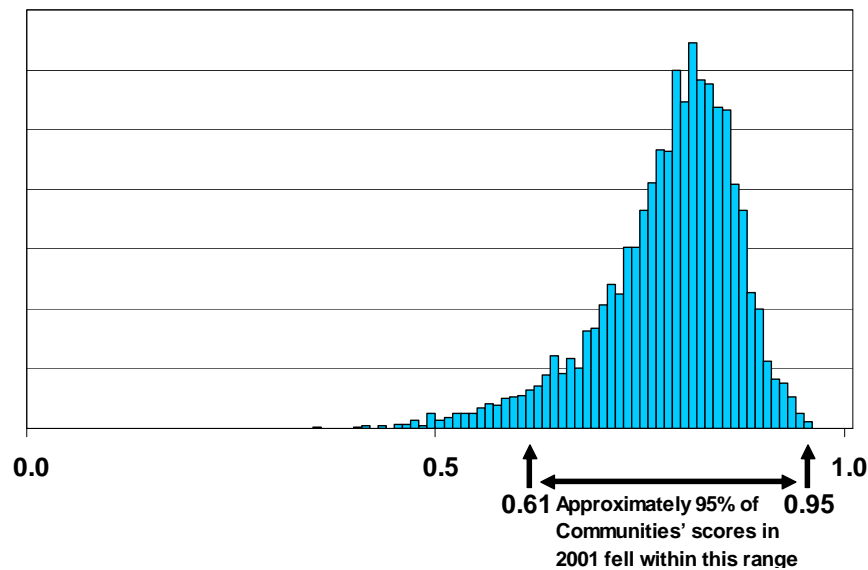
The precise number of CWB points that represent a practically significant increase or decrease in quality of life is an empirical question that will require further analysis. The descriptive statistics in Table 2, however, provide some context to the subsequent comparisons of the relative CWB results for First Nations and other Canadian communities.

Table 2
Descriptive Statistics of the CWB Index Across Time for All Canadian Communities (N = 3,842)

Census Year	Minimum CWB Score	Maximum CWB Score	Average CWB Score	Standard Deviation
1991	0.24	0.97	0.75	0.09711
1996	0.28	0.96	0.76	0.08730
2001	0.35	0.95	0.78	0.08849

In all three census years, the CWB index has a negatively skewed, normal distribution. As such, using the means and standard deviations from each year, we can estimate that approximately 95% of communities have scores between 0.55 and 0.94 in 1991, 0.59 and 0.93 in 1996 and 0.61 and 0.95 in 2001. Simply, excluding the more extreme cases, higher and lower scoring Canadian communities have scores within a range of less than 40 points on the 100 point scale between 0 and 1. The relatively small range between communities on the lower and higher ends of the well-being spectrum suggests that smaller CWB increments may reflect significant “real” differences in quality of life. Figure 1, which shows the distribution of CWB scores for 2001, is illustrative.

Figure 1
CWB Score Distribution for All Canadian Communities, 2001 (N=3,842)



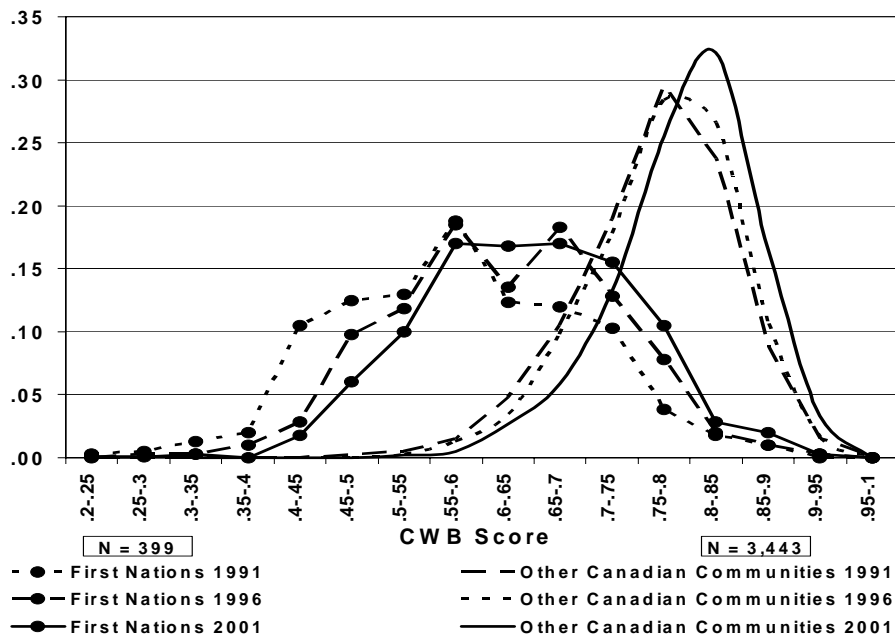
As demonstrated in Table 3, the average CWB score for both First Nations and other Canadian communities increased over the three census periods. Notably, the disparity between First Nations and other Canadian communities decreased between 1991 and 1996, but remained static over the subsequent intercensal period.

Table 3
Average CWB Score for First Nations and Other Canadian Communities in Canada, 2001

Census Year	Average CWB Score		Difference
	First Nations	Other Canadian Communities	
1991	0.58	0.77	0.19
1996	0.62	0.77	0.15
2001	0.65	0.80	0.15

Figure 2 demonstrates that CWB scores for First Nations were lower than other Canadian communities in each of the three census years, but that scores for both community types were distributed widely across the CWB spectrum. The graph also reveals that CWB scores for both types of communities increased between 1991 and 2001. Moreover, the shapes of the CWB distributions and their wholesale shifts to the right of the graph indicate that scores have increased “across the board” for both community types. It is not the case, for example, that the mean CWB of First Nations is being drawn upwards by the removal of a few communities to the extreme high end of the CWB continuum.

Figure 2
A Comparison of First Nations’ and Other Canadian Communities’ CWB Distributions Over Time: 1991-2001



In addition to changes in the means and distributions of the CWB, it is important to examine the movement of individual communities across CWB strata through time. This permits us to distinguish between a scenario where all communities experience a “slow but steady” increase in well-being over time and a scenario wherein communities experience erratic periods of “boom and bust”.

Table 4 demonstrates the movement of individual communities across CWB levels between 1991 and 2001. In this table, the CWB is divided into four equidistant strata¹⁰: 0.2-0.4, 0.4-0.6, 0.6-0.8, 0.8-1.0. Strata for 1991 lies on the vertical axis. Strata for 2001 lies on the horizontal axis. Each cell represents the proportion of communities which moved from its corresponding CWB stratum in 1991 to its corresponding stratum in 2001. To illustrate, the cell in Table 4 that is located at the point where “0.2 – 0.4” on the vertical axis and “0.4 – 0.6” on the horizontal axis interact represents the percentage (3%) of communities whose CWB score moved from between 0.2 and 0.4 in 1991 to between 0.4 and 0.6 in 2001.

Table 4
Movement of First Nations and Other Canadian Communities Across CWB Strata, 1991-2001

			CWB 2001				Total
			0.2 - 0.4	0.4 - 0.6	0.6 - 0.8	0.8 - 1.0	
First Nations	CWB 1991	0.2 - 0.4	1	13	2	0	16
			0%	3%	1%	0%	4%
		0.4 - 0.6	0	123	96	0	219
			0%	31%	24%	0%	55%
		0.6 - 0.8	0	3	139	11	153
		0%	1%	35%	3%	38%	
	0.8 - 1.0	0	0	2	9	11	
			0%	0%	1%	2%	3%
	Total		1	139	239	20	399
			0%	35%	60%	5%	100%
Other Canadian Communities	CWB 1991	0.2 - 0.4	0	2	0	0	2
			0%	0%	0%	0%	0%
		0.4 - 0.6	0	11	65	0	76
			0%	0%	2%	0%	2%
		0.6 - 0.8	0	10	1,489	694	2,193
		0%	0%	43%	20%	64%	
	0.8 - 1.0	0	0	77	1,095	1,172	
			0%	0%	2%	32%	34%
	Total		0	23	1,631	1,789	3,443
			0%	1%	47%	52%	100%

¹⁰ As no CSDs occupied the lowest strata, it is excluded from the tables.

The diagonal line of uncoloured cells includes those CSDs which occupied the same stratum in both census years. The light gray cells above the diagonal include CSDs whose CWB scores have moved to a higher stratum between the census years in question. The dark gray cells below the diagonal include CSDs whose CWB scores have moved to a lower stratum.

Table 4 demonstrate that the majority of both First Nations and other Canadian communities, 68% and 75%, respectively, occupied the same stratum in 2001 as they did in 1991. Declines were similar between the two types of communities, with 1% of First Nations and 3% of other Canadian communities occupying a lower stratum in 2001 than in 1991. The proportion of First Nations that climbed to a higher stratum between 1991 and 2001, however, is substantially larger than that of other Canadian communities: 31% versus 22%. Overall, these numbers indicate that well-being has improved gradually in Canadian communities and at a faster rate among First Nations.

Like the comparison of relative means across census years, however, Table 5 and 6 indicate that while the well-being gap between First Nations and other Canadian communities narrowed between 1991 and 1996, it remained fairly static in the subsequent intercensal period.

Table 5
Movement of First Nations and Other Canadian Communities Across CWB
Strata, 1991-1996

			CWB 1996				Total
			0.2 - 0.4	0.4 - 0.6	0.6 - 0.8	0.8 - 1.0	
First Nations	CWB 1991	0.2 - 0.4	4	12	0	0	16
			1%	3%	0%	0%	4%
		0.4 - 0.6	2	154	63	0	219
			1%	39%	16%	0%	55%
		0.6 - 0.8	0	5	144	4	153
			0%	1%	36%	1%	38%
	0.8 - 1.0	0	0	2	9	11	
	0%	0%	1%	2%	3%		
Total			6	171	209	13	399
			2%	43%	52%	3%	100%
Other Canadian Communities	CWB 1991	0.2 - 0.4	0	2	0	0	2
			0%	0%	0%	0%	0%
		0.4 - 0.6	0	27	48	1	76
			0%	1%	1%	0%	2%
		0.6 - 0.8	0	25	1,841	327	2,193
			0%	1%	53%	9%	64%
	0.8 - 1.0	0	1	162	1,009	1,172	
	0%	0%	5%	29%	34%		
Total			0	55	2,051	1,337	3,443
			0%	2%	60%	39%	100%

Table 6
Movement of First Nations and Other Canadian Communities Across CWB
Strata, 1996-2001

			CWB 2001				Total
			0.2 - 0.4	0.4 - 0.6	0.6 - 0.8	0.8 - 1.0	
First Nations	CWB 1996	0.2 - 0.4	1	5	0	0	6
			0%	1%	0%	0%	2%
		0.4 - 0.6	0	126	45	0	171
			0%	32%	11%	0%	43%
		0.6 - 0.8	0	8	191	10	209
			0%	2%	48%	3%	52%
	0.8 - 1.0	0	0	3	10	13	
		0%	0%	1%	3%	3%	
Total			1	139	239	20	399
			0%	35%	60%	5%	100%
Other Canadian Communities	CWB 1996	0.2 - 0.4	0	0	0	0	0
			0%	0%	0%	0%	0%
		0.4 - 0.6	0	13	41	1	55
			0%	0%	1%	0%	2%
		0.6 - 0.8	0	10	1,468	573	2,051
			0%	0%	43%	17%	60%
	0.8 - 1.0	0	0	122	1,215	1,337	
	0%	0%	4%	35%	39%		
Total			0	23	1,631	1,789	3,443
			0%	1%	47%	52%	100%

Between 1991 and 1996, 20% of First Nations versus only 11% of other Canadian communities moved to a higher CWB stratum. Conversely, a slightly larger percentage of other Canadian communities moved to a lower stratum: 5% versus 3% of First Nations.

Between 1996 and 2001, however, a slightly lower percentage of First Nations moved to a higher CWB stratum: 15% versus 18% of other Canadian communities. This minor relative loss on the part of First Nations was somewhat offset by the slightly larger percentage of other Canadian communities that experienced a decline: between 1996 and 2001, 3% of First Nations versus 4% of other Canadian communities moved to a lower CWB stratum.

5. Regional Analyses

The 2001 cross-sectional CWB report demonstrated that well-being in First Nations communities, as well as the disparity between First Nations and other Canadian Communities, varies from region to region. As demonstrated in Table 7, the pattern of variation was consistent between 1991 and 2001: average CWB scores for First Nations were lower in the Prairie provinces and highest in British Columbia and the North. Disparity in well-being between First Nations and other Canadian communities was greatest in the Prairie provinces and least in the North¹¹ and Atlantic region.

Interestingly, the narrowing of the well-being gap between 1991 and 2001 was fairly similar across all regions. The smallest relative improvement occurred in the North, where the gap decreased by 0.03. The greatest relative improvement occurred in Saskatchewan and Quebec, where the gap decreased by 0.05.

In accordance with the overall trend, First Nations in most regions experienced greater relative CWB gains between 1991 and 1996 than in the subsequent intercensal period. Notably, however, reduction in the gap between First Nations and other Canadian communities did occur in some regions. Ontario, Saskatchewan and the North attained a significant portion of their relative gains between 1996 and 2001, indicating that First Nations' progress was not entirely dormant during that period.

¹¹ The disparity in CWB scores in the North may be misleading. Many Inuit communities are not regarded as First Nations by INAC. None of the CSDs in Nunavut, for example, are classified as reserves though the majority of that Territory's population is Inuit. As such, it is important to reiterate that this report describes the disparities between First Nations and Non-First Nation communities, not between Aboriginal and non-Aboriginal communities.

Table 7
Changes in the CWB for First Nations and Other Canadian Communities, 1991-2001: A Regional Analysis

Region		Average CWB Score			Gap Between First Nations and Other Canadian Communities			CWB Change 1991-2001	Gap Closure 1991-1996	Gap Closure 1996-2001	Gap Closure 1991-2001 ¹
		1991	1996	2001	1991	1996	2001				
Atlantic	First Nations (N=21)	0.62	0.67	0.69	0.10	0.06	0.07	0.07	0.04	0.00	0.04
	Other Canadian Communities (N=722)	0.72	0.73	0.75				0.03			
Quebec	First Nations (N=25)	0.55	0.60	0.64	0.20	0.16	0.15	0.09	0.04	0.01	0.05
	Other Canadian Communities (N=1,122)	0.75	0.76	0.79				0.03			
Ontario	First Nations (N=32)	0.62	0.64	0.68	0.20	0.18	0.16	0.06	0.02	0.02	0.04
	Other Canadian Communities (N=231)	0.82	0.82	0.84				0.02			
Manitoba	First Nations (N=50)	0.51	0.55	0.58	0.26	0.23	0.22	0.06	0.03	0.01	0.04
	Other Canadian Communities (N=200)	0.78	0.78	0.80				0.02			

¹ Owing to rounding, this column may not always be equal to the sum of the previous two columns.

Table 7 (concluded)
Changes in the CWB for First Nations and Other Canadian Communities, 1991-2001: A Regional Analysis

Region		Average CWB Score			Gap Between First Nations and Other Canadian Communities			CWB Change 1991-2001	Gap Closure 1991-1996	Gap Closure 1996-2001	Gap Closure 1991-2001 ¹
		1991	1996	2001	1991	1996	2001				
Saskatchewan	First Nations (N=84)	0.50	0.55	0.58	0.28	0.24	0.23	0.08	0.03	0.02	0.05
	Other Canadian communities (N=686)	0.78	0.80	0.81				0.03			
Alberta	First Nations (N=31)	0.51	0.56	0.57	0.30	0.26	0.26	0.07	0.04	0.00	0.04
	Other Canadian Communities (N=300)	0.81	0.81	0.83				0.03			
British Columbia	First Nations (N=124)	0.64	0.69	0.70	0.19	0.16	0.15	0.05	0.04	0.01	0.04
	Other Canadian Communities (N=144)	0.84	0.84	0.84				0.01			
North	First Nations (N=32)	0.65	0.69	0.73	0.03	0.02	0.01	0.08	0.01	0.02	0.03
	Other Canadian Communities (N=38)	0.68	0.72	0.74				0.05			

¹ Owing to rounding, this column may not always be equal to the sum of the previous two columns.

6. Discussion

At first glance, the results of these analyses have bittersweet implications for First Nations in Canada. Well-being certainly improved in First Nations between 1991 and 2001 and they did move toward equality with other Canadian communities. However, while there is nothing to suggest that First Nations will not continue to improve, the decline in their progress relative to other Canadian communities between 1996 and 2001 suggests that the well-being gap may persist.

It is extremely important to note, of course, that neither the good nor the bad implications of these analyses are beyond question. Additional data points (i.e. census years) will be required to ascertain not only the persistence of the overall trend towards improvement, but of the interval over which such trends should be examined. For example, well-being in First Nations and other Canadian communities may improve in an irregular and unsynchronized manner. If that is the case, it may be that the decline in relative improvement of First Nations between 1996 and 2001 is insignificant and that only the overall decrease in disparity between 1991 and 2001 is important.

7. Future Research

The research potential of the CWB is practically limitless. As indicated earlier, it was deliberately comprised of data that has been available in previous censuses and that promises to be available from subsequent ones. Currently, efforts are being made to construct a CWB from 1981 census data. In addition, protocols are being developed which will permit the production of CWB indices for future censuses as they become available. Each additional point in time for which a CWB index is constructed will provide greater insight into well-being trends in First Nations and other Canadian communities.

Detecting overall trends, however, is only one minor function of the CWB. The real value of the index lies in its ability to identify causes and correlates of well-being. It may be used as a dependent and even an independent variable in a myriad of research projects, allowing a quick and cost-effective way to better understand how to improve quality of life in Canadian First Nations. Within the Canadian census alone, for example, there are a number of indicators whose association (or lack thereof) with the well-being of a community would be extremely telling. Is it the case, for example, that communities which receive more government support are better off? Or is the opposite the case? The CWB, however, can also be used in conjunction with innumerable other data sources, including Aboriginal People's Survey (APS) from Statistics Canada (2001). The marriage of the CWB with the

APS could address such issues as the effect of cultural decline on community prosperity. Significantly, a better understanding of these sorts of issues could give rise to more comprehensive indices of well-being – indices that expand upon the CWB's socio-economic focus.

Attempts are also underway to use the CWB as a tool in program and policy evaluation. As the CWB index is calculated over additional census years, it will become a more powerful tool for measuring the efficacy of specific programs. Conversely, the CWB can identify those particularly prosperous First Nations whose strategies merit exploration and the struggling communities that could benefit from adopting similar tactics.

8. Conclusion

The Community Well-Being Index represents an important first step in understanding the disparity in quality of life that exists between First Nations and other communities in Canada. This time series analysis reiterates the original cross sectional analyses from 2001: First Nations, taken as a group, do exist in substandard conditions. The CWB also demonstrates, however, that the variation in well-being between First Nations is extremely wide and that several of them rank among the country's most prosperous communities.

The contribution of this time series to the original CWB analyses is the demonstration that First Nations in Canada are improving gradually and that their disadvantage relative to other Canadian communities did decline in the decade between 1991 and 2001. Whether First Nations will continue to prosper and whether they will continue to close the gap between themselves and the rest of Canada, is a question that only time and additional research can answer.

References

Indian and Northern Affairs Canada, 2002a. "2001 Census Linkage Files", Corporate Information Management Directorate, First Nations and Northern Statistics Section, Gatineau, Quebec.

_____. 2002b. "1996 Census Linkage Files", Corporate Information Management Directorate, First Nations and Northern Statistics Section, Gatineau, Quebec.

McHardy, Mindy and Erin O'Sullivan. 2004. "First Nations Community Well-Being in Canada: The Community Well-Being Index (CWB), 2001", Catalogue No. R2-344/2001E, Indian and Northern Affairs Canada, Strategic Research and Analysis Division.

Statistics Canada. 2004. "Consumer Price Index, Historical Summary. Ottawa, ON: Statistics Canada. February 17, 2004.
<http://www.statcan.ca/english/Pgdb/econ46.htm>.

_____. 2002. "2001 Census Dictionary", Ottawa, Minister of Industry, 2002. 2001 Census of Canada. Catalogue No. 92-378-XPE, p. 224, p. 279.

_____. 2001. "Aboriginal Peoples Survey" (APS), Housing and Social Statistics Division, Ottawa.

_____. 1999. "1996 Census Dictionary", Ottawa, Minister of Industry, 1999. 1996 Census of Canada. Catalogue No. 92-351-UPE, pages 356-357.

_____. 1992. "1991 Census Handbook", Ottawa, Minister of Industry, Science and Technology, 1991 Census of Canada, Catalogue No. 92-305E, p.24, p.32.