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MEASURING SUSTAINABLE DEVELOPMENT

APPLICATION OF THE GENUINE PROGRESS INDEX TO NOVA SCOTIA

A TALE OF TWO COMMUNITIES:

OBSERVATIONS ON SOME RESULTS FROM THE
GLACE BAY AND KINGS COUNTY GPI SURVEYS

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1. Introduction and Background

The purpose of this report is to present some key results from the GPI Community Health and Wellbeing Survey that was conducted in two Nova Scotia communities in 2002.

That survey was constructed with direct community input, and was based on indicators of wellbeing and progress identified and selected through extensive community consultations. In Kings County, for example, representatives of more than 40 community organizations met regularly for more than a year, under the auspices of Kings Community Economic Development Agency, to determine appropriate indicators of community wellbeing and to develop a questionnaire to gather the data needed for the index. That questionnaire includes a very wide range of questions on employment, voluntary work and caregiving, values, population health, peace and security, impacts on the environment, time use, and other key dimensions and determinants of wellbeing.

Funding for the project came from two key national sources and some subsidiary sources. In February, 2000, the National Crime Prevention Centre (NCPC) recognized that the GPI indicators could help communities identify the social and economic causes, costs and impact of crime, and develop annual benchmarks of progress towards creating more peaceful and secure communities. With initial funding from the NCPC's Business Action Program, the two community-level GPI projects were launched in March 2000 in rural Kings County in the Annapolis Valley and in Glace Bay, a former coal-mining town with very high unemployment, in industrial Cape Breton.

Following the launch of initial consultations and project planning with local development agencies and community groups, subsequent funding from the Canadian Population Health Initiative (CPHI) made it possible to administer more than 3,600 surveys in these two communities—1,900 in Kings County and 1,700 in Glace Bay. After the draft survey underwent detailed review by Statistics Canada experts, and was tested in both communities and revised, more than 20 residents of Glace Bay and Kings County gathered the necessary data for Canada's first community-level Genuine Progress Indicators. Overall response rates in both communities were extraordinarily high—70% in Kings County and 82% in Glace Bay. This was quite remarkable considering the length of the survey.

In addition to the primary NCPC and CPHI funding, supporting funding was also received from the Canadian Rural Partnership and the Kings County Council, with smaller grants and in-kind support also received from local community health boards, development agencies, district health authorities, and community groups.

Following the administration of the survey in 2001–2002, the data were entered into a unique new database designed by Dalhousie University's Population Health Research Unit. The database for the time use section of the survey was designed by St. Mary's University's Time Use Research Program. Data entry and data cleaning took place in 2002–2003. In the process, 20 unemployed Glace Bay residents were trained in data management skills. In 2003–2004, preliminary results for a few select components of the survey were analyzed and reported back to both communities in a series of workshops.

In 2004–2005, the Community GPI data were officially turned over to both communities, which created non-profit societies to function as owners and guardians of the data. The Glace Bay GPI data are now stored at Cape Breton University in Sydney and can be accessed through the data access guidelines available on the GPI Glace Bay website:

http://discovery.uccb.ns.ca/glacebay_gpi/dataaccess.html. The Kings County GPI data are stored at Acadia University in Wolfville and can be accessed through the data access guidelines on the GPI Kings website: <http://www.gpikings.org/>.

The data provide an extraordinarily rich source of key information on the determinants of health not previously available at the community level, and have the potential to spawn major research projects of value nationwide. In particular, the same residents were asked questions on a very wide range of health and wellbeing determinants, allowing many correlations to be drawn that are not possible when—as at the national level—separate survey instruments are administered on different subjects (e.g., employment, income, health, victimization, voluntary work, time use, environmental behaviours, etc.) As well, the survey sample size is large enough to allow two cross-tabulations with a very high degree of statistical validity (95% confidence with a margin of error of +/- 3%).

In 2007–2008, new funding was received from the Province of Nova Scotia and the Provincial Department of Health Promotion and Protection, Kings County Council, Cape Breton Regional Municipality, Enterprise Cape Breton Corporation, Cape Breton County Economic Development Agency, and Annapolis Valley District Health Authority for the purpose of compiling Community Profiles for Glace Bay and Kings County, based on a selected sample of key representative indicators, along with this short comparative report.

The purpose of this particular summary report is to provide a general perspective on a few select key results pertaining to wellbeing in the two communities. Unlike large-scale national surveys, the GPI Community Health and Wellbeing Survey provides an opportunity to examine the dynamics of community wellbeing in two contrasting communities that are located in the same political jurisdiction—the Province of Nova Scotia. While Glace Bay is an older industrial area that has experienced difficult economic conditions in recent times, Kings County is a more affluent community with a mixed economy that provides substantial employment in agriculture and manufacturing. Economic diversity is further enhanced by the location of a large military base and university within the County.

The population in Kings County is also somewhat younger than in Glace Bay, unemployment is lower, and there is a lower rate of single-parent families. In these, and several other ways, the two communities therefore represent contrasting socio-economic and demographic conditions, and the extensive set of data, based on large samples, provide a unique opportunity to examine community wellbeing within these contrasting contexts.

The final sample included 1,708 respondents from Glace Bay and 1,898 respondents from Kings County. Though respondents were randomly selected, the gender distribution of both samples had a somewhat larger proportion of females than males although there was no statistically significant difference between the two localities in this regard. The Glace Bay sample was more likely than that from Kings County to contain persons 45 and over, unemployed, retired, and in lower income households, and it was less likely to contain married persons (Table 1 and Table 2 below). In general,

the differences between the two samples were found to be consistent with the characteristics of the two communities from which they were drawn.

It should be noted that seniors were somewhat over-represented in both samples. According to the 2001 Census, a considerably higher proportion of the Glace Bay population (17.5%) and Cape Breton population (16%) was 65 and older than in Nova Scotia as a whole (13.9%) and Canada (13%).¹ In the 2002 Glace Bay GPI sample, however, 19.7% of respondents were 65 and older. In Kings County, the disparity was larger. According to the 2001 Census, 13.9% of the Kings County population was 65 and older—the same proportion as in Nova Scotia. However, 18% of the Kings County sample was 65 and older (Table 1 and Table 2 below).

Time and resources did not permit systematic age adjustment of the survey data, but it should be noted here that the over-representation of seniors in the sample will affect the results presented below. Future data analysis should apply weights that adjust the survey counts and proportions within each age category to the corresponding Census age counts and ratios.

Table 1. Demographic characteristics of Glace Bay and Kings County, 2002

Demographics	Glace Bay	Kings County	Chi-square
Gender			
Male	42.8	44.9	ns
Female	57.2	55.1	
Age			
15–19	3.6	5.5	X ² =42.49 df =6 p<.000
10–24	5.6	2.5	
25–34	10.7	10.1	
35–44	19.5	24.8	
45–54	24.6	22.9	
55–64	16.3	16.1	
65+	19.7	18.0	
Labour force activity			
Employed	34.5	50.2	X ² =132.09 df =5 p<.000
Unemployed	11.0	3.8	
Student	6.6	6.6	
Homemaker	14.2	12.6	
Retired	29.8	23.6	
Other	4.0	3.3	
Household income			
<20,000	28.0	14.1	X ² =222.64 df=4 p<.000
20,000–34,999	29.5	20.4	
35,000–49,999	20.0	21.8	
50,000–69,999	13.5	22.5	

¹Statistics Canada. 2001 Census. Cited in *Nova Scotia Community Counts*. Available from <http://www.gov.ns.ca/chartfx62/communitycounts/profiles/profile.aspx?ptype=&gnum=com1708&gname=Glace%20Bay&gnum2=com1708>ype=Province&yearid=&yearid2=&acctype=&chartid=&mapid=&dcol=&gnew=2&gview=1&sub=demographics>. Accessed May, 2008.

Demographics	Glance Bay	Kings County	Chi-square
70,000+	9.0	21.2	
Marital status			
Never married	19.7	13.9	X ² =76.36 df=3 p<.000
Married	60.4	73.6	
Separated / divorced	9.9	7.4	
Widowed	9.9	5.1	

Table 2. Glance Bay and Kings County GPI survey counts and distribution of demographic characteristics, 2002

Demographics			Survey location		Total	
			Glance Bay	Kings County		
Gender	Male	Count	730	850	1,580	
		% within survey	42.8	44.9	43.9	
	Female	Count	977	1,041	2,018	
		% within survey	57.2	55.1	56.1	
	Total	Count	1,707	1,891	3,598	
		% within survey	100	100	100	
Age (yrs)	15-19	Count	61	104	165	
		% within survey	3.6	5.5	4.6	
	20-24	Count	95	48	143	
		% within survey	5.6	2.5	4.0	
	25-34	Count	182	191	373	
		% within survey	10.7	10.1	10.4	
	35-44	Count	332	469	801	
		% within survey	19.5	24.8	22.3	
	45-54	Count	418	432	850	
		% within survey	24.6	22.9	23.7	
	55-64	Count	278	304	582	
		% within survey	16.3	16.1	16.2	
	65+	Count	336	340	676	
		% within survey	19.7	18	18.8	
	Total	Count	1,702	1,888	3,590	
		% within survey	100	100	100	
	Marital status	Never married	Count	335	262	597
			% within survey	19.7	13.9	16.6
Married		Count	1,028	1,388	2,416	
		% within survey	60.4	73.6	67.4	
Separated / divorced		Count	169	139	308	
		% within survey	9.9	7.4	8.6	
Widowed		Count	169	96	265	
		% within survey	9.9	5.1	7.4	
Total		Count	1,701	1,885	3,586	
		% within survey	100	100	100	
Household	<20,000	Count	431	253	684	

Demographics		Survey location		Total	
		Glace Bay	Kings County		
income		% within survey	28.0	14.1	20.5
	20,000–34,999	Count	453	367	820
		% within survey	29.5	20.4	24.6
	35,000–49,999	Count	307	391	698
		% within survey	20.0	21.8	20.9
	50,000–69,999	Count	208	404	612
		% within survey	13.5	22.5	18.4
	70,000+	Count	138	380	518
		% within survey	9.0	21.2	15.5
	Total	Count	1,537	1,795	3,332
% within survey		100	100	100	
Labour force activity	Employed	Count	588	947	1,535
		% within survey	34.5	50.2	42.8
	Unemployed	Count	187	71	258
		% within survey	11.0	3.8	7.2
	Student	Count	112	125	237
		% within survey	6.6	6.6	6.6
	Homemaker	Count	241	237	478
		% within survey	14.2	12.6	13.3
	Retired	Count	507	445	952
		% within survey	29.8	23.6	26.5
	Other	Count	68	62	130
		% within survey	4.0	3.3	3.6
Total	Count	1,703	1,887	3,590	
	% within survey	100	100	100	
Education	Primary to 8	Count	175	102	277
		% within survey	10.4	6.0	8.2
	9 to 12	Count	848	699	1,547
		% within survey	50.2	41.0	45.6
	College	Count	322	402	724
		% within survey	19.1	23.6	21.3
	University	Count	180	329	509
		% within survey	10.7	19.3	15.0
	Other	Count	163	174	337
		% within survey	9.7	10.2	9.9
Total	Count	1,688	1,706	3,394	
	% within survey	100	100	100	

2. Wellbeing

The GPI Community Health and Wellbeing Survey included two measures that will be used as subjective indicators of wellbeing within this report—self-rated happiness and self-rated life satisfaction. As reported in Table 3 below, Kings County respondents were somewhat more likely to report that they were “happy and interested in life,” but the extent of the difference between the two areas did not attain statistical significance.

There was also no significant difference in self-reported life satisfaction (Table 3 below).

Table 3. Self-rated happiness and life satisfaction, Glace Bay and Kings County, 2002

Wellbeing indicator	Glace Bay	Kings County	Total	Chi-square
Happy and interested	59.4	63.1	61.4	X ² =5.39 df=2 p<.07
Somewhat happy	33.5	30.9	32.1	
Unhappy	7.1	6.0	6.5	
Very satisfied	40.3	39.4	39.8	X ² =2.24 df=2 p<.32
Somewhat satisfied	50.4	52.4	51.4	
Dissatisfied	9.3	8.2	8.7	

These results were somewhat unexpected. The Glace Bay sample contains a larger proportion of individuals who were low-income, unemployed, and unmarried. These are all variables which, in other studies, have been found to be related to life dissatisfaction. Consequently, it might be expected that Glace Bay residents would be more likely to report higher levels of dissatisfaction.

Respondents were also asked if they agreed that their lives would be more satisfying if a variety of changes took place. As presented in Table 4 below, Glace Bay respondents were significantly more likely than those in Kings County to report that they would gain satisfaction from all of the changes. It is interesting, therefore, that Glace Bay respondents were more likely to see “room for improvement” in their level of life satisfaction than Kings County respondents, even though their current levels of life satisfaction were almost identical.

Over all, both groups were most apt to identify “stress reduction” as a key source of improved life satisfaction, followed by more financial security. It was also noteworthy that gains in financial security were much more important in both groups than simply having “more money” or “more possessions” (Table 4 below).

Table 4. Potential for improvement in life satisfaction, Glace Bay and Kings County, 2002

Percent who strongly agree	Glace Bay	Kings County	Chi-square
More satisfied if able to spend more time with family / friends	29.1	23.5	p<.001
More satisfied if there was less stress in my life	39.0	31.2	p<.000
More satisfied if I was doing more to make a difference to my community	11.7	8.7	p<.000
More satisfied if I had more money	24.7	14.5	p<.000
More satisfied if I had more possessions	8.7	3.3	p<.000
More satisfied if I were more financially secure	38.8	25.5	p<.000

These results suggest interesting questions for future research:

1. Do questions about “room for improvement” in life satisfaction provide a more accurate measure of wellbeing than self-reported life satisfaction? The results here suggested that Glace Bay residents may actually be somewhat less satisfied with their lives by virtue of the perceived “room for improvement,” despite almost identical ratings of life satisfaction.
2. The substantially higher rating given to financial security over more money and possessions as a potential source of enhanced life satisfaction may account for the non-linear relationship between income and life satisfaction that has often been reported in the literature, with the overall effects of income improvements diminishing with higher incomes. If financial security is more important than “more money” as a source of life satisfaction, it is possible that the actual gains in financial security decrease with each step of the income scale and, consequently, the gains in life satisfaction also decrease.

Glace Bay respondents were more likely to have lower incomes than the Kings County respondents. Consequently, it was not surprising that they were more likely than Kings residents to expect their levels of life satisfaction to increase if their material circumstances improved (more financial security, more money, and more possessions). It is noteworthy, however, that their actual ratings of satisfaction were not significantly different. This is consistent with a mounting body of research which suggests that income gains often do not meet people’s expectations in terms of life satisfaction gains². In other words, even though Glace Bay residents believe that they might be more satisfied if they had higher incomes, the actual experience of the Kings County residents (who do have higher incomes on average) suggests that their expectations may not be met. The economist Daniel Kahneman has referred to this phenomenon as the focusing illusion:

When people consider the impact of any single factor on their wellbeing—not only income—they are prone to exaggerate its importance. We refer to this tendency as the focusing illusion. [. . .] Despite the weak relation between income and global life satisfaction or experienced happiness, many people are highly motivated to increase their income.³

² Van de Stadt, H., A. Kapteyn, and S. van der Geer. “The Relativity of Utility: Evidence from Panel Data.” *Rev. Econ. Statistic.* 67:2, 1985, pp. 179–87.

³ Kahneman, D., AB. Krueger, D. Schkade, N. Schwarz, and AA. Stone. “Would You be Happier if You Were Richer? A Focusing Illusion.” *Science.* Vol 312. June 30, 2006, p. 1908.

3. Core Values

There is a significant research literature about the relationship between values and wellbeing. For example, a recent review of nineteen studies concluded that a negative relationship existed between materialism and wellbeing.⁴ More positive social values related to family, friends, and community contribution tend to be positively related to wellbeing.⁵

Respondents were provided with a list of ten core values and asked to rate their importance as guiding life principles on a scale of one to ten. They were then asked to rate the level of importance that they believed *other* Canadians ascribed to the same list of values.

Table 5 below presents the percentage of all respondents (in both Glace Bay and Kings County) who scored each value as 8, 9, or 10 (i.e., very important) on the 10-point scale.

It is noteworthy that respondents generally ranked social values such as family, responsibility, and friendship much more highly than career success and material wealth. The latter was rated highly by only 27.4% of the respondents (far fewer than for any other value). However, this was in sharp contrast to the ratings they ascribed to other Canadians, who were thought to value career success and material wealth much more highly than they did themselves.

Table 5. Importance of core values to self and others (%), 2002

Value rated 8 to 10	Self	Other Canadians	Chi-square
Family	94.9	55.9	p<.000
Responsibility	93.3	50.8	p<.000
Freedom	88.4	80.6	p<.000
Friendship	87.3	54.2	p<.000
Financial security	76.3	76.9	ns
Generosity	75.8	36.6	p<.000
Pleasure	69.6	76.1	p<.000
Spiritual	59.5	29.4	p<.000
Career success	62.8	92.4	p<.000
Material wealth	27.4	67.8	p<.000

In general, then, it might be concluded that respondents tended to view themselves as socially motivated individuals living in a materialistic and career-oriented society. They perceived a substantial gap between their own values and the values of most other Canadians.

⁴ Burroughs, JE and A. Rindfleisch. 2002. "Materialism and Wellbeing: A Conflicting Values Perspective." *J of Consumer Research* 29:348.

⁵ Dunn, E., LB Aknin, and M. Norton. 2008. "Spending Money on Others Promotes Happiness." *Science* 319:1687; and Seligman, M., T. Steen, U. Park, and C. Peterson. 2005. "Positive Psychology Progress." *American Psychologist*. July–August: 410.

The ranking of personal values was generally very similar in both Glace Bay and Kings County, with residents of both communities most likely to attach the highest importance to family, responsibility, freedom, and friendship. However, Glace Bay residents tended to rate material and career values, as well as spirituality and generosity, more highly than the Kings County residents (Table 6 below).

Table 6. Importance of own values (%), Glace Bay and Kings County, 2002

Value rated 8 to 10	Glace Bay	Kings County	Chi-square
Family	95.2	94.4	ns
Responsibility	93.2	93.2	ns
Freedom	87.5	89.1	ns
Friendship	88.4	86.4	ns
Financial security	80.6	72.4	p<.000
Generosity	78.4	73.4	p<.000
Pleasure	70.8	68.6	ns
Spiritual	67.2	52.5	p<.000
Career success	68.0	58.3	p<.000
Material wealth	32.4	22.8	p<.000

These results suggested that the ten values described in the questionnaire might cluster around two central dimensions—social values such as family, responsibility, friends, and generosity, and a more materialistic set of values related to material wealth and careers. To test this association, the data was factor-analyzed with two factors arising from the analysis, as indicated in Table 7 below. The first factor, labelled “social,” had high loadings for the family life, friendship, generosity, and spiritual value dimensions. The second factor, labelled “material,” had high loadings for material wealth, financial security, career success, and pleasure. Only one value—freedom—loaded on both factors.

Table 7. Factor loadings of value factors

Value	Factor 1: social	Factor 2: material
Family	.678	.179
Friendship	.780	.205
Generosity	.820	.133
Spiritual	.683	.004
Material wealth	.013	.678
Financial security	.156	.729
Career success	.111	.737
Pleasure	.211	.705
Freedom	.394	.406

To better understand these value dimensions, factor scores were computed for each respondent and then divided in quartiles. Each respondent was therefore given a score ranging from 1 (lowest quartile) to 4 (highest quartile), based on the combined and weighted score on each value dimension. If, for

example, a respondent scored four on the social values, this meant that he or she had scored high on the values which made up this dimension.

The relationship between these value scores and wellbeing was instructive. Table 8 below presents the results for self-rated happiness. Fifty percent of the respondents who scored in the lowest quartile on social values rated themselves as happy and interested in life. This percentage rose through each quartile to a high of 69.4% in the highest quartile. There was a significant relationship between these two variables.

There was not, however, a significant relationship between material value scores and self-rated happiness. In other words, there was a strong positive relationship between social values and self-rated happiness but no discernible relationship between material values and happiness. Thus, there appeared to be an implicit reward to social values that was not apparent in material values.

Table 8. Percent describing self as happy and interested in life, by scores for social versus material values, 2002

Value	Quartile value score				Chi-square
	Low	2	3	High	
Social values	50.2	59.5	65.3	69.4	p<.000
Material values	58.4	61.1	62.4	62.3	ns

A similar relationship existed between value orientation and self-reported satisfaction with life (Table 9 below). Once again, social values were strongly associated with life satisfaction while material values were not. In sum, respondents who placed a high value on values like family, friendship, generosity, and spirituality were much more likely to be satisfied with life, happy, and interested in life than respondents who gave high importance to career success, material wealth, and pleasure.

Table 9. Percent describing self as very satisfied with life, by scores for social versus material values, 2002

Value	Quartile value score				Chi-square
	Low	2	3	High	
Social values	30.1	36.2	45.4	46.5	p<.000
Material values	38.6	37.4	38.7	43.4	ns

A larger proportion of Glace Bay respondents than Kings County respondents scored higher on both value dimensions (Table 10 and Table 11 below). Further analysis is required to clarify the meaning of this result.

Table 10. Distribution of material value scores (%), Glace Bay and Kings County, 2002

Quartile value score	Glace Bay	Kings County	Chi-square
Low=1	22.5	27.3	$X^2=31.67$ $p<.000$
2	23.4	26.6	
3	25.1	24.9	
High=4	29.1	21.3	
Total	100.0	100.0	

Table 11. Distribution of social value scores (%), Glace Bay and Kings County, 2002

Quartile value score	Glace Bay	Kings County	Chi-square
Low=1	20.8	28.7	$X^2=37.37$ $p<.000$
2	24.5	25.4	
3	27.6	25.0	
High=4	27.1	20.8	
Total	100.0	100.0	

It may be that a higher proportion of Glace Bay residents in general scored higher on both dimensions *simultaneously*. That is, they were able to align the two value systems and overcome the apparent inconsistencies between them. They were able to give high ratings to family, friendship, generosity, career, and financial security without perceiving any contradiction between these value sets.

On the other hand, this result may be due to a greater split in the Glace Bay community in terms of perceived values—with larger groups of residents giving higher ratings to either one value dimension or the other, and with fewer residents overall giving mid-range ratings.

4. Health Status

Health status is an important determinant of wellbeing. Interestingly, self-rated health status did not differ significantly between the two communities (Table 12 below), although Glace Bay respondents were significantly more likely to report that their activities were restricted by pain (Table 13 below).

Table 12. Self-rated health status (%), Glace Bay and Kings County, 2002

Health status	Glace Bay	Kings County	Chi-square
Excellent	13.4	14.6	$X^2 = 6.78$ df=4 ns
Very good	34.0	36.8	
Good	32.9	30.7	
Fair	15.7	14.9	
Poor	4.0	3.1	

Table 13. Pain and activity restrictions (%), Glace Bay and Kings County, 2002

Pain	Glace Bay	Kings County	Chi-square
Percent usually free of pain / discomfort	64.0	66.3	$X^2 = 2.02$ df=1 ns
Severity of pain			
Mild	23.6	37.4	$X^2 = 38.07$ df=2 p<.000
Moderate	58.6	53.3	
Severe	17.8	9.3	
Activities restricted by pain			
None	20.1	31.1	$X^2 = 44.9$ df=3 p<.000
Few	31.4	36.3	
Some	26.4	21.9	
Most	22.1	10.7	

The higher rate of disabling pain among Glace Bay respondents may be due to the significantly higher rates of arthritis / rheumatism and back problems that were reported within that population (Table 14 below). The Glace Bay group reported higher rates of a number of chronic diseases, and these differences remained significant even after controlling for differences between the two populations in age and gender through conducting binary regression analyses that used location, age, and gender as independent variables. The Glace Bay group reported higher diagnosed rates of high blood pressure (though not heart disease), bronchitis / emphysema, sinusitis, cancer, ulcers, diabetes and glaucoma.

Kings County respondents were more likely to report food and other allergies. There were no significant differences between the groups on the reported prevalence of diagnosed asthma, migraines, heart disease, incontinence, bowel disorders, cataracts, or thyroid disease (Table 14 below).

Table 14. Chronic disease (%), Glace Bay and Kings County, 2002

Disease	Glace Bay	Kings County	Chi-square	Binary regression
Food allergies	3.3	5.8	p<.000	p<.000
Other allergies	12.4	15.1	p<.02	p<.01
Asthma	5.6	6.9	ns	ns
Arthritis / rheumatism	21.7	17.4	p<.001	p<.004
Back problems	19.1	15.8	p<.001	p<.01
High blood pressure	22.8	14.2	p<.000	p<.000
Migraine	6.7	8.4	ns	ns
Bronchitis / emphysema	3.5	2.2	p<.02	p<.03
Sinusitis	6.8	4.6	p<.004	p<.006
Heart disease	6.4	5.7	ns	ns
Cancer	2.4	1.4	p<.03	p<.03
Ulcer	9.0	3.0	p<.000	p<.000
Incontinence	2.6	1.8	ns	ns
Bowel disorders	3.2	2.2	ns	ns
Cataracts	3.5	2.2	ns	ns
Diabetes	7.6	5.5	p<.01	p<.01
Glaucoma	1.6	0.8	p<.03	p<.04
Thyroid	6.4	6.2	ns	ns
Other	11.8	11.1	ns	ns

There was no significant difference between the populations in the prevalence of obesity. Smoking rates were substantially higher in the Glace Bay group, despite the fact that a lower proportion of Glace Bay respondents reported that they had smoked at some time in their lives. The lower rates of current smoking in Kings County appeared to be attributable to much higher quit-rates within this group. Kings County respondents were significantly more likely to report involvement in sports and physical activities (Table 15 below).

Table 15. Risk factors (%), Glace Bay and Kings County, 2002

Risk factors	Glace Bay	Kings County	Chi-square
Obese	22.9	23.7	ns
Someone smokes in home	41.8	20.7	p<.000
Smoking status			
Daily	29.2	17.7	p<.000
Occasional	4.3	4.6	
Never	66.6	77.7	
Ever smoked	44.6	49.6	p<.01
Physical activities			
Sedentary Lifestyle	19.5	18.8	ns
Sports / physical activities last 3 months	72.2	83.2	p<.000

5. Stress

In the previous chapters, we noticed the somewhat puzzling phenomenon that rates of self-rated health, happiness, and life satisfaction were similar in Glace Bay and Kings County, despite the fact that Glace Bay residents had significantly higher rates of pain, discomfort, activity limitations, smoking, and a range of chronic diseases. This raises the intriguing question whether mental as well as physical health factors might play a significant role in respondents' assessments of their own health and wellbeing status.

This phenomenon has already been observed in other GPI population health studies at national and provincial levels. For example, residents of Newfoundland and Labrador and Prince Edward Island regularly report the highest rates of self-rated excellent and very good health in the country, despite the fact that their physical health profiles (including rates of chronic disease, longevity, and risk behaviours) are below average. Yet both provinces register the highest scores in the country on mental health factors and social supports, which may help explain their high rates of self-rated health, happiness, and life satisfaction.

Here, we explore differences in relation to only one, though highly significant, mental health factor—stress—and we find that, indeed, Kings County respondents were significantly more likely than those in Glace Bay to report that their lives were stressful (Table 16 below). This result was found despite the proven links between poverty and stress and the lower income profile of Glace Bay. While this finding may shed explanatory light on the comparable levels of self-rated health and wellbeing noted in the previous chapters, further investigative work clearly needs to be undertaken in this important area. The Glace Bay GPI asked several other questions on mental health and wellbeing—all of which might be investigated, separately and together, for their correlation with self-rated health, happiness, and life satisfaction assessments.

Table 16. Self-reported stress, (%), Glace Bay and Kings County, 2002

Life stress	Glace Bay	Kings County	Chi-square
Very stressful	46.3	53.7	$X^2 = 27.28$ $df = 3$ $p < .001$
Somewhat stressful	43.7	56.3	
Not very stressful	48.7	51.3	
Not at all stressful	56.7	43.3	

Not surprisingly, given the very different socio-economic and demographic profiles of the two communities, the sources of stress differed within the two populations. Higher rates of stress in Kings County appeared to be due to job-related time pressures—too many demands, too many hours of work, and insufficient autonomy. Kings County respondents were also substantially more likely to report stress due to interpersonal conflict. Glace Bay residents, by contrast, were more likely to report stress due to fear of layoffs, physical risks associated with work, and too few hours of work (Table 17 below).

Table 17. Sources of stress (%), Glace Bay and Kings County, 2002

Sources	Glace Bay	Kings County	Chi-square
Too many demands	27.5	38.3	$X^2 = 23.8$ df=1 p<.000
Too many hours	9.8	19.8	$X^2 = 34.0$ df=1 p<.000
Too few hours	13.9	9.9	$X^2 = 7.06$ df=1 p<.005
Insufficient autonomy	9.4	13.9	$X^2 = 8.4$ df=1 p<.004
Risk	12.3	8.2	$X^2 = 8.8$ df=1 p<.004
Interpersonal conflict	8.8	18.3	$X^2 = 33.4$ df=1 p<.000
Fear of layoffs	20.1	12.6	$X^2 = 19.2$ df=1 p<.000
Other	7.3	9.7	$X^2 = 3.1$ df=1 ns

This is the first time that such detailed information on sources of stress is available at the community level in Canada, and it enables policy planners, councillors, and health authorities more effectively to create programs designed to alleviate stress by targeting specific stressors and causal factors. Such action, in turn, can improve population health and wellbeing.

Substantial research has found that stress negatively affects health, weakens the immune system, and increases susceptibility to a wide range of illnesses.⁶ For example, one study found that those living in dangerous and high-stress neighbourhoods had higher hypertension levels than those living in low-stress neighbourhoods.⁷ In a wide-ranging review of the literature, the American Journal of Health Promotion found stress to be the most costly of all modifiable health risk factors.⁸

⁶ Chrousos, G.P., and P.W. Gold. 1992. "The Concepts of Stress and Stress System Disorders: Overview of Physical and Behavioral Homeostasis," *Journal of the American Medical Association* 267: 1244–1252.

⁷ Kabat-Zinn, Joh. "Psychosocial Factors: Their Importance and Management." In Ockene, Ira, and Judith Ockene. *Prevention of Coronary Heart Disease*. Boston: Little, Brown, and Company, 1992, p. 304.

⁸ Goetzel, Ron (ed). "The Financial Impact of Health Promotion." *American Journal of Health Promotion* 15 (5), May/June, 2001.

In sum, the data now available to Kings County and Glace Bay can not only be used to identify causes of stress and ill-health in those jurisdictions, and therefore the types of social programs that might effectively help alleviate such stress, but serve as an important model of the kind of information that would be useful to communities throughout the country. Again, it is noteworthy (see Table 4 above in Chapter 2) that residents of both Glace Bay and Kings County identified stress reduction as the most important factor in improving their life satisfaction.

Surprisingly, however, given the significant differences between the two communities on levels and sources of general life stress, the two groups did not differ significantly on most factors related to time stress in particular. Despite higher levels of stress, Kings County respondents were not significantly more likely to describe themselves as “workaholics,” to plan cutting down in the coming year, to cut back on sleep, to worry about not spending enough time with family and friends, or to feel trapped in a daily routine.

However, they were significantly more likely to report that they frequently had not accomplished what they wanted at the end of a day, that life was not fun anymore, and that they felt stressed when they did not have enough time to get things done—indicating that excessive work demands might well play a causal factor. Kings County residents were also significantly more likely to report that they wanted to spend more time alone (Table 18 below).

Table 18. Dimensions of stress (%), Glace Bay and Kings County, 2002

Dimensions	Glace Bay	Kings County	Chi-square
Plan to slow down in coming year	18.5	16.7	X ² =1.9 df=1 ns
Consider oneself workaholic	15.3	15.6	X ² =0.8 df=1 ns
Tend to cut back on sleep	42.1	43.4	X ² =0.6 df=1 ns
Not accomplish what I want at end of day	47.5	53.5	X ² =12.6 df=1 p<.000
Don't spend enough time with family and friends	37.7	40.6	X ² =3.2 df=1 ns
Stress from trying to accomplish more than I can handle	35.6	36.9	.57 df=1 ns
Feel trapped in daily routine	32.8	30.4	1.4 df=1 ns
Don't have time for fun anymore	25.2	28.6	5.3 df=1 p<.02
Feel stressed when I don't have enough time	47.8	53.1	10.1 df=1 p<.002
Want more time alone	21.6	24.6	4.6 df=1 p<.03

In addition to assessing and accurately understanding the sources and types of stress, it is essential—for effective corrective action to be undertaken—to understand *who* is stressed. One of the most valuable functions of the Community GPI survey is its capacity—due to its large sample size (more than 3,600)—to provide two cross-tabulations of the data at any given time with a very high level of statistical validity.

Following are a few examples of this power, with assessments of stress levels according to different socio-demographic characteristics—by labour force activity of respondent and spouse, by age, and by income level. Other important analyses—for example, by gender, type of employment (full-time versus part-time), or educational attainment—are also possible.

Thus, it was found that the higher levels of stress among Kings County respondents were present in both employed and unemployed groups, but not among students, homemakers, or retirees (Table 20 below). While the unemployed are more likely to face the stresses of poverty and livelihood insecurity, the employed are more likely to experience the stresses of work overload, time stress, and excessive demands.

Not surprisingly, stress levels in Kings County were also substantially higher in the working-age population, particularly in the 35 to 44 age group, where career pressures and the stresses of juggling work, life, family, and child-rearing obligations are likely to be greatest (Table 20 below).

Table 19. Stress and activities (%), Glace Bay and Kings County, 2002

Activity	Percent stressed		Chi-square
	Glace Bay	Kings County	
Employed	55.9	65.5	$X^2=13.8$ p<.000
Unemployed	52.7	69.6	$X^2=5.8$ p<.016
Students	48.6	50.8	$X^2=0.11$ ns
Homemakers	48.3	49.6	$X^2=0.07$ ns
Retired	28.5	25.5	$X^2=1.0$ ns
Other	62.7	51.0	$X^2=1.6$ ns

Table 20. Stress and age (%), Glace Bay and Kings County, 2002

Age	Percent stressed		P<
	Glace Bay	Kings County	
15–24	50.1	50.7	ns
25–34	59.1	63.6	ns
35–44	59.3	69.7	ns
45–54	51.6	64.2	ns
55–64	35.8	40.2	ns
65+	26.3	21.1	ns

The results above may have been due to the substantially higher frequency of two-income families among the Kings County respondents. Within the Glace Bay group, only half of respondents reported a working spouse, while this was true of 71% of the Kings County group (Table 21 below).

Two-income families were significantly more likely to be stressed than one-income families in both groups, and this effect was particularly strong in Kings County. Thus, two-income families were

significantly more likely to be stressed in Kings County than in Glace Bay (Table 22 below). High stress levels in two-income households are certainly related to time pressures and the stress of juggling work and family obligations. For example, Statistics Canada's time use surveys have found that full-time working mothers put in an average 75-hour work week when both paid and unpaid work are considered.

Table 21. Activity of spouse among married persons aged 65 and under (%), Glace Bay and Kings County, 2002

Activity	Glace Bay	Kings County	Chi-square
Employed	50.9	71.0	$X^2 = 107.58$ $df = 5$ $p < .000$
Unemployed	9.8	3.7	
Students	1.1	0.8	
Homemakers	12.9	11.4	
Retired	22.5	10.2	
Other	2.8	3.0	

Table 22. Stress level (%), by number of income earners, Glace Bay and Kings County, 2002

Number of incomes	Stress level	Glace Bay	Kings County
Two incomes	High stress	54.8	65.1
	Low stress	45.2	34.9
	Total	100.0	100.0
One income	High stress	39.6	37.9
	Low stress	60.4	62.1
	Total	100.0	100.0

The higher average household incomes in the Kings County sample may have been due, at least in part, to the higher proportion of two-income families in the County by comparison with Glace Bay. The results reported above suggest that higher incomes may be purchased at the costs of increased stress within the two-income families. This may be one of the factors that caused roughly equivalent levels of life satisfaction in the two samples, despite the higher levels of income in Kings County, with the higher levels of stress counteracting the satisfaction-enhancing effects of the higher incomes.

The analysis thus identified a complex relationship between income and stress within both communities. In both groups, the relationship was U-shaped, with the highest levels of reported stress occurring in the lowest and highest income groups and the lowest level of stress reported in the middle-income group. The higher levels of stress in Kings County were only apparent in the middle and higher income groups. There was no significant difference between Glace Bay and Kings County

in the reported life-stress of persons with a household income of less than twenty thousand dollars (Table 23 below).

Table 23. Percent reporting that life is somewhat or very stressful, by household income, Glace Bay and Kings County, 2002

Household income	Glace Bay	Kings County	Total
<10,000	54.8	57.5	55.9
10,000–19,999	50.0	43.4	47.6
20,000–34,999	38.9	48.0	42.9
35,000–49,999	50.8	53.7	52.4
50,000+	47.4	55.7	53.2

The income-stress distribution at the upper end of the income spectrum certainly appears to be at least partially attributable to job stresses. Thus, significant differences arose between the income groups with respect to demands, hours, and interpersonal relationships, with the middle and higher income groups reporting higher levels of stress for these particular stressors. There were no significant differences in autonomy, risk, fear of lay-offs, or “other” sources of stress. In each of the significant stressors, the higher income group reported somewhat higher rates of stress than the middle-income group. But the most pronounced difference between the groups was in “working too many hours,”—with each increase in income related to a significant increase in stress due to apparent overwork (Table 24 below).

Table 24. Job stress (%), by household income, 2002

Source of work-related stress	Percent of employed respondents with household income of less than \$20,000 reporting source of stress	Percent of employed respondents with household income of \$20,000–34,999 reporting source of stress	Percent of employed respondents with household income of \$35,000+ reporting source of stress	Chi-square
Too many demands	22.7	37.3	39.7	$X^2=12.25$ $p<.002$
Too many hours	8.2	12.7	18.2	$X^2=10.8$ $p<.004$
Not enough autonomy	8.2	12.3	13.6	$X^2=2.71$ $p<.257$
Risk of accident or injury	11.8	12.7	9.0	$X^2=3.89$ $p<.143$
Interpersonal problems	8.2	13.4	16.9	$X^2=7.05$ $p<.029$
Possible layoffs	15.4	14.5	14.1	$X^2=0.1755$ $p<.916$
Other	4.6	6.9	8.7	$X^2=2.94$ $p<.230$

The results in Table 24 above might account for the upper half of the U-shaped relationship between stress and income. In other words, as income increases, the demands and pressures of work also increase. If this were the only factor at work, the relationship between stress and income would be linear in nature, with lower income persons experiencing the least stress. In reality, the reported levels of stress in low-income groups are as high as among the upper income respondents, but the sources of this stress for low-income groups do not appear to be related to work demands. Clearly, there is a variety of other poverty-related stresses operating at the lower end of the income spectrum, with economic and financial insecurity contributing more strongly to high stress levels.

In light of the serious demonstrated health consequences of stress, the results indicate a need to consider the trade-offs that occur when people work longer hours to earn more money. They also demonstrate the need to consider new policy options that have been successfully tried in Europe—like a redistribution of work hours that can reduce the hours of the overworked while making more hours available to the unemployed and underemployed. Such innovative policy options—not yet widely applied in North America—may help reduce stresses at both the higher and lower levels of the income spectrum by providing more free time and enhanced work–life balance for the overworked while providing more job openings for the unemployed.

6. Spirituality

Spirituality has been linked to life satisfaction and wellbeing in the research literature, and this relationship was also apparent in the results of the Community GPI survey. As indicated in Table 25 below, respondents who described themselves as religious or spiritual were significantly more likely to describe themselves as “happy and interested in life” and “very satisfied” with their lives. In fact, there was a clear gradient: the more spiritual or religious a person was, the happier and more satisfied they said they were.

Table 25. Wellbeing and spirituality (%), by happiness and life satisfaction, 2002

Wellbeing indicator	“How religious or spiritual do you consider yourself to be?”				Chi-square
	Very	Moderately	Not very	Not at all	
Percent happy and interested	69.4	63.8	54.9	50.3	$X^2 = 55.4$ df=6 p<.000
Percent very satisfied with life	48.5	41.3	33.6	31.8	$X^2 = 45.76$ df=6 p<.000

Spirituality played a stronger role in the lives of Glace Bay respondents than among residents of Kings County. Although a majority of both groups considered themselves to be either moderately or very religious, the proportion was significantly higher among Glace Bay respondents. Glace Bay respondents were also more likely to report that they attempted to follow religious teachings in everyday life, that they attended religious ceremonies, and that religious values and faith played an important role in their lives (Table 26 below).

Further investigation is required to assess whether the higher level of spirituality in Glace Bay also helped to play an “equalizing” role in raising the levels of self-reported health, wellbeing, and life satisfaction among Glace Bay residents to Kings County levels, despite the lower incomes, higher rates of unemployment, and poorer physical health profiles of Glace Bay residents. It would also be well worth exploring whether there is a relationship between these higher levels of spiritual faith and practice and the lower stress levels reported by Glace Bay residents.

The provocative questions raised, as much as the results provided, point once again to the extraordinary potential value of the Glace Bay and Kings County Community GPI databases. Because such a wide range of economic, social, health, and environmental variables were examined in a single survey, the new databases provide an unparalleled opportunity for in-depth research on the determinants of health and wellbeing in ways not hitherto possible using national samples and existing survey materials.

Table 26. Spirituality (%), Glace Bay and Kings County, 2002

Dimensions of spirituality		Glace Bay	Kings County	Chi-square
How religious do you consider yourself to be	Moderately or very	75.3	63.7	$X^2=62.2$ df=3 p<.001
Attempt to follow religious / spiritual teachings / practices in daily life	All or most of the time	61.5	55.3	$X^2=23.4$ df=3 p<.001
Attend religious ceremonies	At least weekly or monthly	44.8	32.6	$X^2=77.3$ df=4 p<.001
Spiritual values or faith play an important role in your life	Yes	71.9	60.2	$X^2=53.7$ df=1 p<.001

7. Social Support

Social support has been found to be an important determinant of health and wellbeing. Ground-breaking new research by John Helliwell and Robert Putnam concluded:

Social capital, as measured by the strength of family, neighbourhood, religious and community ties, is found to support both physical health and subjective well-being. Our new evidence confirms that social capital is strongly linked to subjective well-being through many independent channels and in several different forms. Marriage and family, ties to friends and neighbours, workplace ties, civic engagement (both individually and collectively), trustworthiness and trust: all appear independently and robustly related to happiness and life satisfaction, both directly and through their impact on health.⁹

Social networks and social supports have independently been found to yield substantial benefits for physical health, including strengthening immunity, increasing compliance with behaviours that promote health, and enhancing adaptation and recovery from disease. In fact, researchers have concluded that lack of adequate social supports may be as great a risk to health as poor diet, lack of physical activity, or smoking.¹⁰

According to Health Canada:

Families and friends provide needed emotional support in times of stress, and help provide the basic prerequisites of health such as food, housing and clothing. The caring and respect that occur in social networks, as well as the resulting sense of well-being, seem to act as a buffer against social problems. Indeed, some experts in the field believe that the health effect of social relationships may be as important as established risk factors such as smoking and high blood pressure.¹¹

These findings are both confirmed and amplified by results from the Community GPI Survey in Glace Bay and Kings County. Here, we examine only the relationship of social supports with life satisfaction and happiness. However, detailed additional investigation is warranted into potential correlations with a large range of health outcomes.

In Glace Bay and Kings County, respondents who reported higher levels of social support were significantly more likely to report high levels of life satisfaction and happiness (Table 27 below). This effect appeared to be particularly strong on the life satisfaction dimension.

⁹ Helliwell, John, and Robert Putnam. "The Social Context of Well-being." *Philosophical Transactions of the Royal Society B: Biological Sciences*. London. September 29, 2004. 359(1449): 1435–1446.

¹⁰ Karch, Bob. "Social Factors in Health Promotion." *American Journal of Health Promotion*. 3 (1) March/April, 2000.

¹¹ Health Canada. *Toward a Healthy Future: Second Report on the Health of Canadians*. September, 1999. Ottawa, p. 60.

Table 27. Social support and wellbeing (%), by happiness and life satisfaction, 2002

Dimensions of social support		Percent happy and interested in life	Percent very satisfied with life
Have someone to help in times of crisis	Yes	63.4	41.4
	No	26.5	9.0
	X ²	p<.000	p<.000
Have someone to give you advice about personal problems	Yes	63.8	41.8
	No	29.7	12.1
	X ²	p<.000	p<.000
Have someone to make you feel loved and cared for	Yes	63.2	41.3
	No	25.5	6.5
	X ²	p<.000	p<.000
Frequency of contacts with close relatives outside of home	At least weekly	62.0	41.3
	Weekly to monthly	57.5	35.5
	Less than monthly	50.0	30.6
	X ²	p<.000	p<.000
Frequency of contacts with neighbours	At least weekly	63.0	42.0
	Weekly to monthly	60.0	40.5
	Less than monthly	27.6	26.5
	X ²	p<.000	p<.000

There were important differences between the two samples. Glace Bay respondents were significantly more likely to report that they had someone available to provide advice on important personal decisions and someone to make them feel loved and cared for. It is noteworthy, however, that the magnitude of the differences between the two communities was not large. Larger differences were recorded with respect to the frequency of contact with close relatives and neighbours, where Glace Bay residents were substantially more likely to have frequent contact (Table 28 below).

Once again, these results may well indicate that social supports also play an equalizing role in self-rated assessments of health, happiness and life satisfaction—just as do the lower stress levels, and higher levels of spirituality in Glace Bay noted above. Together, these factors may well play a role in raising the levels of self-reported health, wellbeing, and satisfaction among Glace Bay residents to Kings County levels, despite the lower incomes, higher rates of unemployment, and poorer physical health profiles of Glace Bay residents.

Further investigation is required to assess the relative importance of each of these non-material factors (stress and mental health, spirituality, and social supports) in relation to material factors like income, employment, and physical health. In addition, it is important to examine the relative weights of material factors versus non-material factors in combination. In short, the findings presented here should be taken as a catalyst for further investigation into these vitally important determinants of health and wellbeing, which in turn can help suggest appropriate policy interventions that may not hitherto have been considered.

Table 28. Social support (%), Glace Bay and Kings County, 2002

Dimensions of social support	Glace Bay	Kings County	Chi-square
Have someone you can count on in times of crisis	95.5	94.4	ns
Have someone to give advice on important personal decisions	94.6	91.6	X ² =12.4 df=1 p<.001
Have someone who makes you feel loved and cared for	96.8	94.7	X ² =9.48 df=1 p<.001
Have contact with a close relative at least once a week	80.1	72.9	X ² =161.08 df=1 p<.001
Contact with neighbour at least once a week	77.9	63.1	X ² =196.3 df=1 p<.000

The sample results presented here are not simply matters of academic interest. Not only is such evidence of vital importance for policy planners, economic developers, and health officials, but it can also affect the deeper self-esteem and *esprit de corps* of a community, which in turn will affect its demographics and productivity.

Thus, using only conventional measures of progress, residents of Glace Bay have often heard themselves described in somewhat negative terms as a problem community—with poor employment prospects, low incomes, low GDP per capita, high risk behaviours, and dangerous drug abuse (as with the extensive publicity surrounding Oxycontin use). Such reporting, in turn, has the potential to feed a negative self-image among some residents.

By contrast, the Genuine Progress Index takes a much broader look at wellbeing and its determinants. Its findings that Glace Bay residents have very high levels of social supports, spirituality, and mental wellbeing; much lower than average stress levels; and much more frequent contact with friends, relatives, and neighbours than many other Canadians point to vitally important dimensions of quality of life that can help instil a sense of pride and enhanced self-worth among residents. Such attitudes, in turn, can help in the process of economic recovery and in fostering creative entrepreneurship.

In sum, the results presented here, and which merit considerable further investigation using the available GPI database, are not simply “soft” areas of the development equation. Rather, the GPI results show that key dimensions of social support, spirituality, and mental health are not only quantifiable, but have a measurable impact on wellbeing and on the prospects for appropriate development that meets the real needs of people.

8. Time Use

Time use data from the Community GPI survey were compiled by Dr. Andrew Harvey at St. Mary's University and were generally found to be consistent with other results from the survey. Glace Bay respondents were less likely than residents of Kings County to spend time at paid work, primarily because of the higher proportion of retired and unemployed persons in the survey sample—which again corresponds to the actual demographic profiles of the two communities.

Glace Bay respondents were more likely than those in Kings County to spend time socializing, doing housework, and watching TV.

In most other categories, the time use figures were relatively close.

Further investigation is required to correlate these time use results with other dimensions of the survey and with a range of socio-demographic characteristics.

Table 29. Average daily time use (hours per day), Glace Bay and Kings County, 2002

Activities	Glace Bay (mean hours)	Kings County (mean hours)
act1 Sleep, rest	8.6	8.2
act2 Bathing, dressing	0.8	0.7
act3 Home meals	1.3	1.2
act4 Personal services	0.2	0.2
act5 Cooking and washing up	1.1	0.9
act6 Shopping	0.4	0.4
act7 Housekeeping and laundry	0.8	0.6
act8 Maintenance and repair	0.4	0.5
act9 Other household work	0.6	0.5
act10 Paid work	1.9	3.2
act11 Education	0.1	0.3
act12 Looking for work	0.0	0.0
act13 Eating out	0.1	0.2
act14 Movies and other entertainment	0.3	0.2
act15 Watching TV/VCR	2.8	2.1
act16 Reading	0.5	0.7
act17 Non-work computer games / Internet	0.2	0.2
act18 Spiritual / religious practice	0.1	0.1
act19 Active sport or exercise	0.3	0.4
act20 Socializing	1.2	0.9
act21 Other leisure (specify)	0.4	0.4
act22 Primary child care	0.3	0.3
act23 Primary adult care	0.0	0.04
act24 Other formal volunteer work	0.0	0.13
act25 Other informal volunteer work	0.1	0.10
act26 Travel by car	0.6	0.71
act27 Travel by public transport	0.0	0.02
act28 Walking or bicycling	0.2	0.10
act29 Other travel	0.1	0.21
act30 Other	0.6	0.73
Total hours per day	24.0	24.00

9. Voluntary Activities

Community involvement and work with community organizations has been reported to be associated with wellbeing in a number of studies. As noted above, for example, Helliwell and Putnam found “civic engagement (both individually and collectively [to be] independently and robustly related to happiness and life satisfaction, both directly and through their impact on health.”¹²

Other studies have directly linked volunteerism to enhanced wellbeing. Thoits and Hewitt, for example, found that volunteer work enhanced all five aspects of wellbeing that they examined—happiness, life satisfaction, self-esteem, sense of control over life, and physical health—and that volunteers were also significantly less likely to suffer depression. Conversely, they also found that people who have greater wellbeing, according to these six dimensions, invest more hours in volunteer service.¹³

Not only is this relationship confirmed in the Community GPI survey results, but the very broad range of questions on volunteer activities and community service asked in the GPI survey (fully 20 questions) hold the potential for much more detailed and in-depth analysis in this important (but largely unexplored) field. As indicated in Table 30 below, respondents who reported voluntary involvement were significantly more likely to report that they were happy and interested in life or very satisfied with their lives. The effect appeared to be stronger with respect to involvement with formal organizations than with voluntary services offered directly to others (and not through an organization).

Table 30. Volunteer activities (%), by happiness and life satisfaction, 2002

Unpaid voluntary work in past twelve months		Percent happy and interested in life	Percent very satisfied with life
Voluntary organizations	Yes	70.6	44.4
	No	55.2	36.7
	Chi-square	X ² =86.7 p<.000	X ² =29.9 p<.000
Informal (not involving organizations)	Yes	64.8	41.7
	No	57.3	37.8
	Chi-square	X ² =20.7 p<.000	X ² =20.7 p<.04

Kings County residents were significantly more likely than Glace Bay residents to report that they had been involved in some kind of voluntary activity during the previous twelve months (Table 31 below).

¹² Helliwell, John, and Robert Putnam. “The Social Context of Well-being.” *Philosophical Transactions of the Royal Society B: Biological Sciences*. London. September 29, 2004. 359(1449): 1435–1446.

¹³ Thoits, Peggy, and Lyndi N. Hewitt. “Volunteer Work and Well-Being.” *American Sociological Association Journal of Health and Social Behavior*, vol. 42, no. 2 (June, 2001), pp. 115–131

The difference was particularly large with respect to “formal” volunteer activities through a group or organization. There was no difference between the frequency with which they provided caregiving services outside their homes.

Table 31. Volunteer activities during past twelve months (%), Glace Bay and Kings County, 2002

Type of volunteerism	Glace Bay	Kings County	Chi-square
Through a group or organization	29.0	51.6	X ² =188.9 df=1 p<.000
Not through a group or organization	52.1	59.3	X ² =18.7 df=1 p<.000
Caregiving outside home for elderly, sick, or disabled adults	6.5	6.5	ns

Among those who did volunteer, the Glace Bay respondents were more likely to report high levels of satisfaction with their voluntary activities (Table 32 below).

Table 32. Satisfaction with volunteer activities (%), Glace Bay and Kings County, 2002

Satisfaction level	Glace Bay	Kings County	Chi-square
Very satisfying	68.8	55.4	X ² =24.23 df=3 p<.000
Somewhat satisfying	28.4	38.9	
Neither / somewhat dissatisfying	2.8	5.7	

As reflected in Table 33, the lower level of volunteerism within the Glace Bay sample was significantly more likely to be attributed to health problems than in Kings County. In Glace Bay, those who did not volunteer were twice as likely to cite health problems as the reason, rather than not being willing or interested, while in Kings County, those who did not volunteer were more likely to say they were not willing or interested than to cite health issues. In both communities, however, not having enough time was the primary reason cited by those who had not volunteered in the past twelve months.

Table 33. Reasons for not volunteering during past twelve months (%), Glace Bay and Kings County, 2002

Reasons	Glace Bay	Kings County	Chi-square
Not enough time	38.9	41.3	$X^2=31.8$ $df=6$ $p<.000$
Health problems	22.4	13.5	
Not willing or interested	14.5	17.6	
Not aware of need	4.4	5.9	
Not asked	14.6	16.6	
No group in area	<1	2.1	
Other	4.5	4.6	

The lower levels of volunteerism within the Glace Bay sample suggest that this aspect of community activity was not a strong contributor to wellbeing that might have helped to compensate for the more limited employment and material circumstances in Glace Bay. In fact, it bears further investigation to find out why—despite the higher levels of social supports reported in Glace Bay—volunteerism was at a substantially lower level in Glace Bay than in Kings County.

Further analysis clearly needs to be undertaken, using more of the 20 voluntary activity questions in the survey, in order to clarify and understand the particular types and roles of social supports and voluntary activities within the two communities. Such in-depth analysis is certainly possible, since the GPI survey asked questions on informal voluntary work, types of voluntary work, motivations for volunteering, and more. Here, we simply surmise that the high levels of social support reported by Glace Bay residents may possibly act as an informal substitute for more formal volunteer engagement. However, that hypothesis requires further testing that time and resources did not permit for this report.

10. Crime and Security

Another important and very basic component of community wellbeing is the sense of safety and security that people experience in their communities. In fact, both Statistics Canada and the Canadian Institute for Health Information have recognized crime as a key “non-medical determinant of health,” and they regularly report crime rates as a health indicator. Analysts have noted that the experience of crime can have long-lasting adverse impacts on victims and those close to them, and that crime and safety “are important factors in any assessment of social well being and individual ‘quality of life.’”¹⁴

The Community GPI data pointed very clearly to the close relationship between feelings of safety and security on the one hand and feelings of happiness on the other. Thus, 67% of persons who reported that they felt very safe walking after dark in their neighbourhoods also reported that they felt happy. This was only true of 46.5% who reported that they felt very unsafe. A significant relationship was also found with respect to life satisfaction, but it was somewhat less linear (Table 34 below).

Table 34. Neighbourhood safety (%), by happiness and life satisfaction, 2002

Neighbourhood safety level	Percent happy and interested in life	Percent very satisfied with life
Very safe	66.9	45.3
Reasonably safe	61.3	37.2
Somewhat unsafe	51.0	30.4
Very unsafe	46.5	36.6
Chi-square	X ² =50.7 p<.000	X ² =50.3 p<.000

Kings County respondents were twice as likely as their Glace Bay counterparts to report that they had been victimized by crime during the previous twelve months, and they were almost twice as likely as Glace Bay respondents to report that they knew someone who had been victimized.

Like the higher rates of social support, spirituality, and lack of stress reported by Glace Bay residents and noted above, their greater safety and security may also potentially play a role in compensating for more adverse material circumstances in overall assessments of health and wellbeing. Also, as noted above, this low rate of victimization in Glace Bay is another potential source of pride and self-esteem in a community that is often negatively characterized in measures of progress based on material conditions alone. However, some of the other results below indicate that this potential is not presently being realized in Glace Bay.

¹⁴ Norris, F., K. Kaniasty, and M. Thompson. 1997. “The Psychological Consequences of Crime: Findings from a Longitudinal Population-based Study.” Cited in University of Melbourne, Melbourne Institute of Applied Economic and Social Research. “Fear of Crime and Perceptions of Safety.” Available from http://www.international-survey.org/A_Soc_M/crime.pdf. Accessed 17 May, 2008.

Despite the higher rate of victimization, however, Kings County residents were less likely than those in Glace Bay to report that their neighbourhood experienced higher levels of crime than the rest of Canada, and they were significantly more likely to report higher levels of personal safety and security (Table 35 below).

Table 35. Crime victimization and personal safety (%), Glace Bay and Kings County, 2002

Dimensions of victimization		Glace Bay	Kings County	Chi-square
Victim of crime during past five years	Yes	7.3	14.6	$X^2=40.43$ $p<.000$
Know anyone who has been a victim of crime	Yes	15.6	26.8	$X^2=65.6$ $p<.000$
Amount of crime in neighbourhood compared to other areas of Canada	Higher	3.4	1.2	$X^2=39.8$ $p<.000$
	About the same	28.7	22.6	
	Lower	67.8	76.2	
Change in amount of crime in neighbourhood—past five years	Increased	23.8	19.7	$X^2=13.7$ $p<.003$
	Decreased	6.8	5.5	
	About the same	53.1	55.9	
	Don't know	16.2	18.8	
How safe walking alone after dark in your neighbourhood	Very safe	22.9	28.0	$X^2=40.5$ $p<.000$
	Reasonably safe	40.8	45.2	
	Somewhat unsafe	13.7	10.5	
	Very unsafe	2.8	1.4	
	Don't walk alone	19.9	15.0	
Would walk more after dark if felt safer	Yes	37.9	22.3	$X^2=98.0$ $P<.000$
Feel safe from crime when home alone in evening	Very/somewhat worried	28.3	22.0	$X^2=41.08$ $p<.000$
	Not worried	60.3	69.8	
	Never alone	11.5	8.2	
Worry about being held up or mugged	Very/somewhat worried	22.5	12.3	$X^2=67.56$ $p<.000$
	Not too worried	36.1	38.4	
	Not at all worried	41.4	49.2	
Worry about being assaulted	Very/somewhat worried	25.4	13.6	$X^2=78.9$ $p<.000$
	Not too worried	35.3	39.8	
	Not at all worried	39.2	46.6	
Worry about having property broken into	Very/somewhat worried	49.8	45.4	$X^2=49.1$ $p<.000$
	Not too worried	30.2	38.6	
	Not at all worried	20.0	15.9	
Lock your doors when you go out	Yes	73.2	63.5	$X^2=37.4$ $p<.000$

Despite their lower levels of actual victimization, it is interesting and curious that Glace Bay residents were significantly more likely than those in Kings County to report that they worried about being the victims of crime and that they were more likely to lock their doors when they went out.

These findings present a number of apparent inconsistencies that warrant further research and analysis. Given the high levels of social support and interactions with neighbours, it might be expected that Glace Bay residents would report higher levels of personal safety. In fact, they were less likely to report feelings of safety despite the fact that they had substantially less personal experience with crime than those in Kings County.

Whatever the causes of this apparent anomaly, it appears that a sense of personal safety and security will not likely compensate for adverse economic circumstances in supporting the sense of wellbeing in Glace Bay until subjective feelings about safety match the relatively high actual safety from crime that most Glace Bay residents in fact experience based on their responses to the victimization questions.

It is tempting to hypothesize either that Glace Bay residents may be more influenced in their perceptions by negative media reports that may affect their responses, or that they may have set the bar higher for what they consider an acceptable level of safety and security. Further investigation is required to investigate such hypotheses and to properly understand the results in Table 35 above.

11. Environmental Values and Behaviours

The relationship between wellbeing and the environment is a relatively new area of investigation that is not well understood. The majority of the existing and conventional literature in the field addresses neighbourhood-level variables such as access to green space and air quality.

However, a changing social consciousness and awareness that larger issues like climate change and resource depletion may dramatically affect long-term wellbeing require a different and much more expansive approach. In fact, this understanding requires a shift in the very definition of wellbeing away from simply current concerns to a concern for the wellbeing of one's children. It is reasonable to assume that serious trepidations about the future that one's children will inherit create a sense of anxiety that undermines one's own current sense of wellbeing.

There may even be a growing public awareness that apparent improvements in one's own material wellbeing purchased through increased consumption at the possible expense of future generations may in fact be counter-productive to a deeper, longer-term, and more abiding sense of wellbeing. As noted, however, these are relatively new areas of investigation, and considerable further study is required to assess the degree to which long-term concerns about the state of the natural world and its impact on future generations jeopardize or detract from current wellbeing.

The Community GPI survey included a number of attitudinal questions that begin to allow for a different and broader kind of analysis than is normally contained in wellbeing indicator studies. The survey results were instructive, even though the analysis provided here is very preliminary and offered simply in the form of hypotheses that require considerable further investigation. In general, for example, it appeared that self-perceptions of over-consumption were associated with feelings of unhappiness and dissatisfaction.

Thus, among respondents who reported that they were happy and interested in life, only 31% believed that they could choose to buy and consume less. Among persons who reported that they were unhappy, this figure rose to 57%. In other words, unhappy people were apparently much more likely to feel that they were over-consuming than happy people. A similar relationship was apparent with the life satisfaction variable. Among people who reported that they were very satisfied with life, only 29.7% felt that they could consume less. Among those who reported that they were dissatisfied with life, a much larger 53% felt that they could consume less. However, there are other possible interpretations of these results, and they would have to be correlated with a wide range of socio-demographic variables before an explanation can be offered with greater certainty.

As indicated in Table 36 below, Kings County residents were significantly more likely than those in Glace Bay to believe that they consumed too many resources, and that they could choose to reduce their level of consumption. Glace Bay residents were more likely than those in Kings County to report that they spent most of their money on necessities, and that today's youth were too materialistic.

Overall, however, the results in both communities manifested a considerable degree of environmental consciousness, awareness, and concern, with more than 80% of respondents in both communities

agreeing that “we focus too much on getting what we want now and not enough on conserving resources for future generations,” that “the way we live produces too much waste,” and that “most of us buy and consume more than we need” (Table 36 below).

Table 36. Environmental values (%), Glace Bay and Kings County, 2002

Dimensions of environmental values	Percent agree and strongly agree		p<
	Glace Bay	Kings County	
The way we live produces too much waste	81.8	84.8	ns
The way we live consumes too many resources	69.7	78.5	.000
Not enough focus on conserving resources for future generations	82.2	83.1	ns
Most of us buy and consume more than we need	84.2	86.6	ns
Today's youth are too focused on buying and consuming things	83.3	78.0	.000
I spend nearly all of my money on the basic necessities of life	62.6	48.6	.001
If I wanted to, I could choose to buy and consume less than I do	61.7	66.9	.000

As reflected in Table 37 below, the environmental values of respondents were strongly related to the respondent’s income. Not surprisingly, but also rather hopefully in terms of long-term sustainability, higher income persons were significantly more likely to acknowledge that they consume more than they need and that they could choose to reduce their levels of consumption. Such self-awareness might be taken as a necessary prerequisite to shifts in personal behaviour and to creating a receptive ground for policy initiatives that encourage resource conservation and sustainability.

Table 37. Environmental values (%), by household income, Glace Bay and Kings County, 2002

Dimensions of environmental values	Household income					p<
	<20,000	20,000–34,999	35,000–49,999	50,000–69,999	70,000+	
The way we live produces too much waste	80.9	84.9	82.5	85.2	86.7	.04
The way we live consumes too many resources	68.1	73.2	75.9	77.5	80.1	.000
Not enough focus on conserving resources for future generations	81.6	82.3	83.8	84.1	84.0	ns
Most of us buy and consume more than we need	79.3	84.2	87.0	89.5	89.5	.000
I spend nearly all of my money on the basic necessities of life	75.4	65.2	54.1	48.0	23.8	.000
If I wanted to, I could choose to buy and consume less than I do	46.4	60.7	68.0	72.7	80.9	.000

Taken together, these results suggest an interesting relationship between consumption and wellbeing. Not surprisingly, as noted, higher income persons were more likely to report self-perceived “over-consumption” than lower income persons. But it is instructive that individuals who hold this belief are also more likely to be unhappy and dissatisfied in life than persons who do not perceive that they could reduce their levels of consumption if they chose. It would appear, therefore, that concerns about personal over-consumption may possibly be dampening the sense of wellbeing among higher income respondents. This is an area of inquiry that deserves considerable further analysis.

In addition to the attitudinal questions reported above, the Community GPI survey also included more than 30 detailed questions on environmental behaviours—including transportation use, water use, energy consumption, use of ecological products, food consumption, waste generation, recycling, and composting. Considerable additional work is required to analyse these behaviours carefully according to a range of socio-demographic characteristics and to correlate results with attitudinal factors and subjective feelings of wellbeing. Again, the Community GPI database provides an unparalleled resource for this investigation into a vitally important area of public concern.

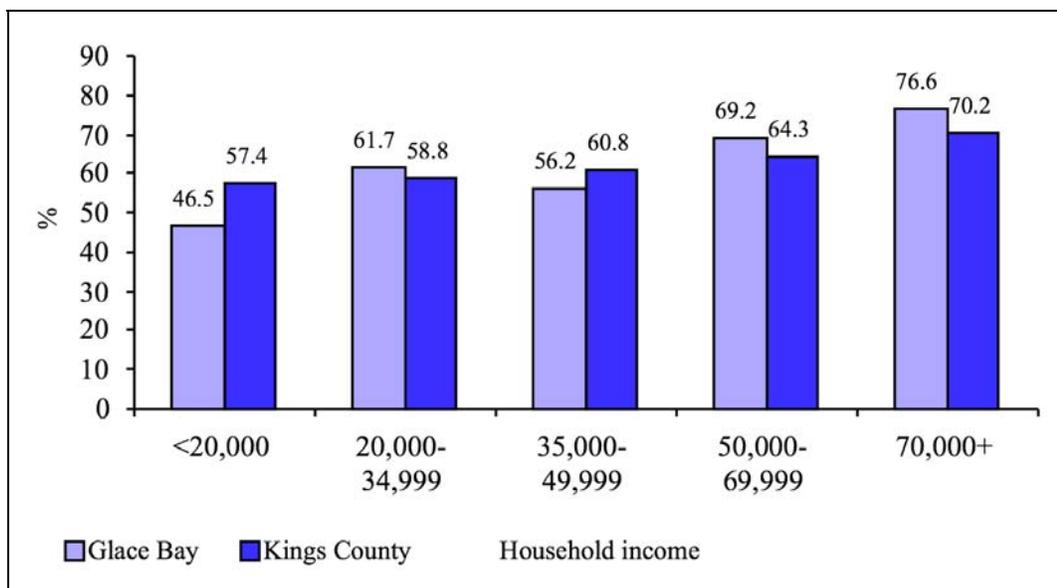
12. Income and Wellbeing

Abundant evidence, detailed in many other GPI reports, points to income as one of the most reliable predictors of health outcomes, which in turn are a key component of wellbeing.¹⁵

A positive relationship between income and self-reported happiness was also found in both Glace Bay and Kings County, though it appeared to be stronger in Glace Bay. Higher income respondents in Glace Bay were 64% more likely to report that they were happy and interested in life than the lowest income group. Among Kings County respondents, the differential was only 22%.

Low-income respondents in Glace Bay were less likely to be happy than low-income respondents in Kings County, while high-income respondents in Glace Bay were substantially more likely to be happy than their high-income counterparts in Kings County (Figure 1 below).

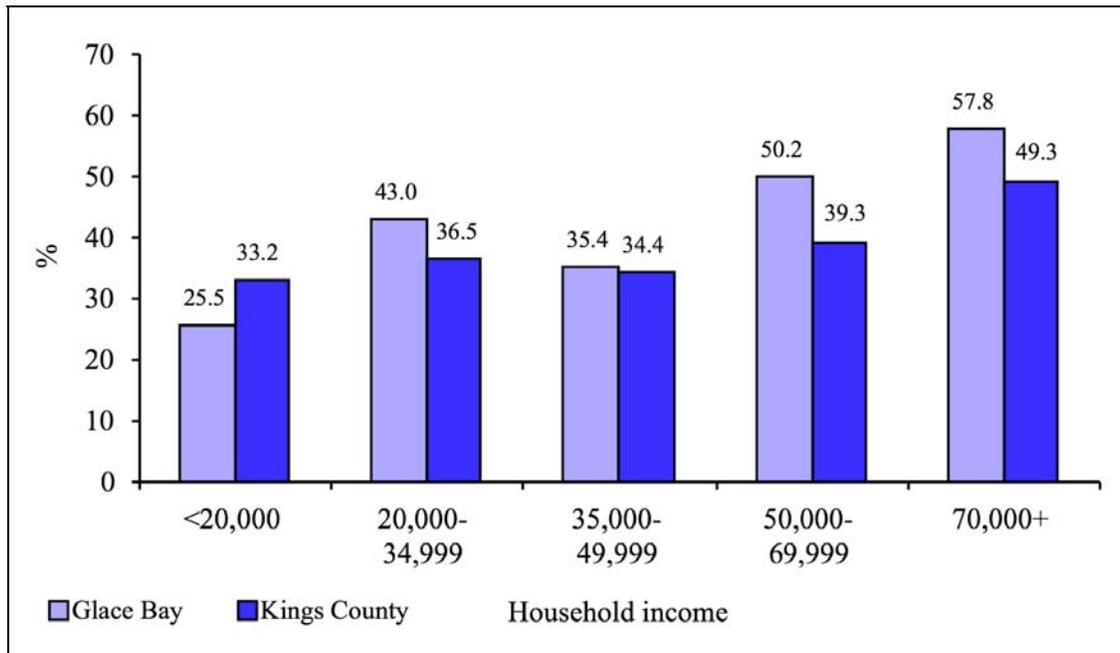
Figure 1. Percent reporting that they are happy and interested in life, by household income, Glace Bay and Kings County, 2002



¹⁵ For a review of literature in the field, please see *Income, Health, and Disease in Canada: Current State of Knowledge, Information Gaps, and Areas of Needed Inquiry* by Dennis Raphael, Ronald Labonte, Ronald Colman, Jennifer Macdonald, Renee Torgerson, and Karen Hayward (March 2003. Available on the GPIAtlantic website at <http://www.gpiatlantic.org/pdf/health/cihr.pdf>). See also GPI reports *Inequity and Disease in Atlantic Canada*, *The Socio-economic Gradient of Health in Atlantic Canada*, *Cost of Chronic Disease in Nova Scotia*, *Women's Health in Canada*, and others, for extensive sections on the income-health nexus. All these reports are available in the Population Health section of the GPIAtlantic website at: <http://www.gpiatlantic.org/publications/health.htm>.

This pattern was also present in the results pertaining to life satisfaction, but the differential was even more pronounced. Once again, lower income respondents in Glace Bay were substantially less likely to report that they were very satisfied with life than their counterparts in Kings County. At the other end of the income scale, high-income Glace Bay respondents were substantially more likely to be very satisfied with life than high-income respondents in Kings County. Among Glace Bay residents, high-income respondents were more than twice as likely to be highly satisfied with life than the lowest income group, while the differential was only 48% in Kings County (Figure 2 below).

Figure 2. Percent reporting that they are very satisfied with life, by household income, Glace Bay and Kings County, 2002



The stronger relationship between income and wellbeing in Glace Bay is consistent with the higher scores of this group on the materialist value orientation that was discussed in Chapter 3 of this report. It is possible that this, in turn, is a function of living in a lower income community that has a history of economic instability. At the same time, however, the strong income effects noted here may be ameliorated by the lower stress levels and higher levels of social support and spirituality observed in Glace Bay.

At this point, such attempted explanations are merely hypotheses rather than conclusions. Clearly, considerable additional research is warranted to better understand these differences between the two communities and their causes. Fortunately, the Community GPI databases, now freely available for public and research use at Cape Breton and Acadia Universities, provide ample material and evidence for such further explorations.

13. Discussion

These few sample results in this analysis have highlighted the complexities of understanding wellbeing within two community contexts. The analysis began with the observation that self-rated wellbeing was not significantly different in the two communities, despite their sharply differing socio-economic characteristics. Given the higher levels of unemployment and lower incomes in Glace Bay, it might have been anticipated that self-rated wellbeing would be substantially lower in that community, based on what is known about the relationship between employment, income, and wellbeing.

In subsequent chapters, however, it was seen that higher levels of non-material determinants of wellbeing, like social supports and spirituality, and lower levels of stress and victimization in Glace Bay versus Kings County might have played a significant role in ameliorating income differentials and equalizing levels of self-rated health, happiness, and life satisfaction between the two communities.

It was notable, however, that Glace Bay respondents were more likely than those in Kings County to believe that their levels of life satisfaction could be enhanced by an improvement in their economic circumstances and sense of financial security—indicating that the impact of material conditions may remain stronger in Glace Bay than in Kings County. Glace Bay residents held these beliefs in the satisfaction-enhancing potential of improved material circumstances despite the fact that their levels of life satisfaction already matched those of the Kings County respondents, who were much more likely already to experience the higher incomes and enhanced financial security that the Glace Bay respondents desired.

This result may reflect the unrealistic expectations that many hold about the actual benefits of improved economic circumstances. In fact, the results indicating the relative equality in levels of self-rated health, happiness, and life satisfaction between the two communities may even cast doubt on the messages so pervasively conveyed by advertisements in particular and our consumerist culture in general that material accumulation will make people happier, healthier, and more satisfied.

The higher incomes (and also higher levels of stress) of Kings County residents were at least partially attributable to a higher incidence of two-income households in that community. Thus, the lifestyle associated with maintaining a two-income household, including the challenges of balancing work, life, and family responsibilities, appeared to generate levels of stress that may have detracted from the experience of life satisfaction and happiness in Kings County, despite the income advantage of that community. This factor may also help account for the similarity in life satisfaction and happiness ratings between the two communities, despite the income differences.

Based on their core values, both groups of respondents viewed themselves as socially responsible (placing non-material values like family, friendship, responsibility, and generosity far above material wealth as guiding life principles), but living in a materialistic society which did not value social responsibility as highly as they did. It was also clear that socially responsible values that emphasized family, responsibility, generosity, and spirituality were much more strongly related to life satisfaction and happiness than were materialistic values.

There were, however, some interesting differences between the two communities with regard to core values and guiding life principles. Although both communities reported high levels of adherence to social values, Glace Bay residents were more likely also to report higher scores on materialistic values than were Kings County residents. The higher adherence to materialistic values in Glace Bay may, in turn, have been a reflection of the lower incomes and history of economic instability in that region and the belief that further gains in satisfaction and happiness could accrue from improved economic circumstances. That belief was particularly prevalent in the Glace Bay group.

The higher ratings for both the social and materialistic values among Glace Bay respondents suggest that they did not view the two value orientations as incompatible. Kings County respondents, on the other hand, were more likely to rate social values much more highly than materialistic values, suggesting that they were less apt to view these two value orientations as compatible. This leads to an interesting conjecture that requires further investigation: It is possible that Kings County respondents' experiences with greater affluence and the associated stresses of life in two-income families have resulted in a devaluation of material values with correspondingly greater priority given to social values.

However, although values are here grouped as "social" or "material," there are interesting distinctions within these groups. For example, it is noteworthy that respondents in both communities gave far higher priority to financial security than they did to material wealth as a core value and guiding life principle. Information like this is important to policy makers, planners, and businesses, as it indicates that programs designed to improve security, like employment, old age, and health insurance, income supports for disadvantaged groups like single mothers, and minimum wage improvements may correspond more closely to people's values and needs than those designed to stimulate consumption.

Following an exploration of some of the values results, this analysis then explored a variety of other determinants of life satisfaction and wellbeing within the two communities—health, stress, spirituality, social support, time use, participation in voluntary activities, environmental attitudes, and income. Many of these results were consistent with general expectations from the existing literature, but there were a number of key issues identified that appear to warrant further study. In particular, the survey detail, socio-demographic breakdowns, and correlations with other determinants of wellbeing enable deeper and more detailed exploration of many of these determinants than is conventionally found in the literature.

In line with other studies, spirituality and social support in Glace Bay and Kings County were both positively related to life satisfaction and happiness. Glace Bay respondents reported higher levels of both of these wellbeing determinants, and this would appear to compensate, at least in part, for the lower incomes, higher unemployment, and lower financial security in the community. The "counterbalancing" effects of spirituality and social support in raising levels of life satisfaction and happiness may provide at least a partial explanation for the similar levels of self-reported health and wellbeing in the two communities, despite the different economic circumstances.

Self-reported health status was similar in the two communities, despite the fact that Glace Bay residents were substantially more likely to report higher rates of activity-limiting health problems, smoking, and several chronic diseases. The activity limitations, in turn, appeared to be related to higher rates of arthritis, rheumatism, and back problems within the Glace Bay group. Glace Bay residents also

reported higher rates of high blood pressure, bronchitis, emphysema, cancer, ulcers, diabetes, and glaucoma. None of these differences could be attributed to differences in the age distribution of the two groups of respondents. Kings County residents were more likely to report allergies, while there were no significant differences in the prevalence of asthma, migraines, or heart disease.

There was no significant difference between the two communities in the rates of obesity, but Glace Bay residents were significantly more likely to be smokers. This difference appeared to be due primarily to a higher rate of quitting within the Kings County group rather than to major differences in the proportions who had ever smoked. Kings County residents were also significantly more likely to participate in leisure time physical activities than those in Glace Bay.

Self-reported health status was strongly associated with both happiness and life satisfaction in both communities. The fact that the two communities did not differ significantly with regard to this association suggests that health outcomes did not have particularly different impacts on overall wellbeing between the two localities. It is unlikely, therefore, that this determinant had the same kind of compensatory effect that was found with regard to spirituality, social support, and lower stress levels.

In other words, better or worse health outcomes were not found to raise or lower levels of wellbeing and life satisfaction more markedly in one community than in another. Or, stated differently, improved or diminished health outcomes appeared to have about the same degree of positive or negative effect in both communities. This is necessary to state explicitly here in light of the very different impacts of factors like income on wellbeing in the two communities.

There were some interesting apparent inconsistencies between the two groups with respect to their active involvement with their communities. The higher reported rates of social support within the Glace Bay group would suggest that these respondents would be more involved in their communities and have a stronger sense of neighbourhood security than the Kings County group. This did not turn out to be the case. The Glace Bay respondents were significantly less likely to be involved in both formal and informal volunteer activities within their community. They were also significantly less likely to report that they felt safe in their neighbourhoods. It was notable that the Glace Bay residents felt less safe and secure than the Kings County residents, despite the fact that they were only half as likely to have been victimized by crime, or to know someone who had been victimized, during the previous five years. This apparent disconnect between attitudes and actual experience supports the need for more research on this issue, and some potential explanatory hypotheses were presented for recommended investigation.

The relationship between income and wellbeing in the two communities was instructive. The fact that income appeared to be more sharply related to both happiness and life satisfaction in Glace Bay than in Kings County was consistent with the higher degree of support for materialist values in Glace Bay (though again, it must be emphasized that Glace Bay residents did not score lower than those in Kings County in their adherence to social values). It is interesting that the dissimilar effect of income on happiness and life satisfaction between the two communities appeared to act at both ends of the income spectrum. Lower income persons in Glace Bay were substantially less satisfied than their counterparts in Kings County, and higher income persons were substantially more satisfied. This may reflect the history of economic instability that the Glace Bay community has experienced.

Whatever the cause, the results suggest that there may be substantial differences between communities with respect to the interaction between income and wellbeing. This community-level information is therefore crucial in highlighting nuances and unique characteristics of particular communities that, in turn, require some modification to generalized research findings developed at national and regional levels.

In summary, the results present an interesting portrait of wellbeing in two very different Nova Scotia communities. It appears that non-economic determinants of wellbeing—such as spirituality, social support, and lower stress levels—may offset the effects of employment and income limitations in Glace Bay to buoy wellbeing to the same level reported in the more affluent environs of Kings County. Other determinants such as physical health status, community involvement, and community safety and security, did not appear to play this offsetting or compensatory role.

This was particularly true of the latter two determinants—community involvement and community safety and security. In both cases, the results were surprising. Despite the higher levels of social support in Glace Bay, respondents in that community were substantially less likely than those in Kings County to be involved in voluntary activities. Glace Bay respondents were also significantly less likely than those in Kings County to report that they felt safe in their community despite substantially lower levels of crime victimization in Glace Bay. Both of these factors—lower levels of volunteerism and of subjective feelings of safety—could be expected to have reduced the feelings of wellbeing in Glace Bay, given their overall strong connection to wellbeing in the sample as a whole. However, this did not appear to be the case.

Despite similar levels of wellbeing in the two communities, Glace Bay residents were more likely to believe that they had “room for improvement” in their wellbeing, particularly if their economic circumstances improved. This belief corresponded to higher support for materialist values than in Kings County, and a stronger relationship between income and wellbeing in Glace Bay than in Kings County. Again, the caveat must be added that higher levels of support for materialist values did not mean reduced levels of support for social values (which were as high or higher in Glace Bay than in Kings County).

In Kings County, by contrast, it is possible that the relationship between wellbeing and income was blunted by the stressful impacts of excess work demands and of juggling work, family, and life responsibilities in two-income households, which were considerably more prevalent in Kings County than in Glace Bay. Such respondents in Kings County were substantially less supportive of materialist values despite, or perhaps because of, their higher incomes.

The results also identified an interesting disconnect between the respondents’ own stated values and what they perceived to be the dominant values of other Canadians. Thus, respondents in this sample were apt to report that they themselves gave very high importance to social values like family, friendship, responsibility, generosity, and spirituality and much lower importance to materialist values like material wealth, pleasure, and career advancement. Yet, the same respondents believed that most Canadians placed much higher importance on materialist values and that they were correspondingly less supportive of social values.

In essence, respondents in both communities appeared to feel out of step with their larger society, at least as far as basic values and guiding life principles are concerned. The results may indicate that the dominant consumerist culture and its expressed values do not accurately reflect what matters to Canadians, though its very dominance convinces people that other Canadians must subscribe to those values.

The value orientations of Glace Bay and Kings County residents also appeared to be related to a strong sense of ambivalence about their own levels of consumption. Unhappy and dissatisfied respondents were substantially more likely to believe that they could reduce their levels of consumption if they chose. Thus, it appeared that self-perceptions of over-consumption may be significantly related to feelings of unhappiness and dissatisfaction—though this hypothesis requires further investigation, as other explanations are also possible.

It was noteworthy that feelings of over-consumption were highest at the higher end of the income spectrum. This suggests that there was a substantial proportion of respondents who viewed themselves as non-materialistic, but who were living a materialistic life in a materialistic society, and that these experiences and contradictions were leaving them with feelings of dissatisfaction and unhappiness. Further research is needed to test this perception and hypothesis, which has potentially very important implications both for our conventional economic paradigm and for concerns about long-term sustainability.