LANGUAGE AS A DETERMINANT OF HEALTH STATUS AND SERVICE QUALITY

The Socioeconomic Status of Anglophones in Québec

INSTITUT NATIONAL
DE SANTÉ PUBLIQUE
DU QUÉBEC

Québec

Report

The Socioeconomic Status of Anglophones in Québec

Vice-présidence aux affaires scientifiques

May 2012

Institut national de santé publique Québec

AUTHOR

Marie-Hélène Lussier, Demographer
Vice-présidence aux affaires scientifiques

COORDINATOR

Normand Trempe, Project Manager
Vice-présidence aux affaires scientifiques

LAYOUT

Hélène Fillion, Administrative Assistant
Vice-présidence aux affaires scientifiques

ACKNOWLEDGMENTS

We would like to thank Danièle Dorval for her invaluable initial contribution that allowed this project to get off the ground. We also thank Sylvie Martel, André Simpson, Jérôme Martinez, Ernest Lo, and Amadou Diogo Barry for their comments, suggestions, and technical support.

This analysis was produce as part of the "Official Language Minority Community Health Projects", an initiative funded through Institut national de santé publique du Québec by Réseau communautaire en santé et services sociaux (RCSSS) under Health Canada's Official Languages Health Contribution Program.

LEGAL DEPOSIT – 3rd QUARTER 2012
BIBLIOTHÈQUE ET ARCHIVES NATIONALES DU QUÉBEC
LIBRARY AND ARCHIVES CANADA
ISBN: 978-2-550-62941-2 (FRENCH PRINTED VERSION [SET])
ISBN: 978-2-550-62942-9 (FRENCH PDF [SET])
ISBN: 978-2-550-65414-8 (FRENCH PRINTED VERSION)
ISBN: 978-2-550-65415-5 (FRENCH PDF)
ISBN: 978-2-550-62943-6 (PRINTED VERSION [SET])
ISBN: 978-2-550-62944-3 (PDF [SET])
ISBN: 978-2-550-65416-2 (PRINTED VERSION)
ISBN: 978-2-550-65417-9 (PDF)

ABSTRACT

As part of a wide-ranging project to study the health status of Québec's Anglophones, the present analysis examines the Anglophone population's socioeconomic situation over time, by geographic area, and in comparison with Francophones. The variable used to establish membership in the Anglophone population is the mother tongue. The study analyzes standard socioeconomic indicators, as well as income disparity.

The analysis of census socioeconomic indicators shows that despite a generally positive progression over the period 1991-2006, the relatively favourable picture of the socioeconomic situation of Anglophones for Québec as a whole is tempered when the available data are examined by geographic area and in comparison with Francophones. For example, despite high levels of university education, Anglophones register higher unemployment rates than Francophones. And despite higher average incomes overall, they are proportionally more likely to live below the low income cut-off. Geographical analysis also brings out regional disparities and reveals greater income gaps among anglophones in the Montréal census metropolitan area (CMA). The following table summarizes the main findings by area.

Income disparities were analyzed using the Gini coefficient, which confirmed that income inequality is more pronounced among anglophones than among francophones, and more so within the Montréal CMA. In particular, Anglophone men in the Montréal CMA stood out with an especially high indicator of income disparity throughout the period under study.

Main findings on anglophone socioeconomic status by region

Region	Compared to francophones	Compared to other regions
Montréal CMA	Greater disparity: both richer and poorer	Where there is the greatest level of socioeconomic inequality
Other CMAs	Comparable or slightly advantaged	Fewest disparities and generally a favourable socioeconomic status
Non-CMA	Largely comparable	All socioeconomic indicators are less favourable except for low income cut-offs levels

The analysis brings to light not only that Anglophones have lost a relative socioeconomic advantage in comparison with Francophones, but also the widening gaps within the anglophone population. Socioeconomic status being a determinant of health status, it remains to be seen what effect the current situation may have on Québec anglophones' future health status.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

The health status of a population is influenced by a number of determinants, some of which cannot be altered, such as age and sex, and others which can be modified through changes to lifestyle habits, implementation of health-friendly public policy, or better access to healthcare services. Socioeconomic status is a big part of the analysis of health determinants and the relationships among them. The relationship between socioeconomic and health status is well documented (Braveman et al., 2010; Orpana et al., 2009; Pampalon et al., 2008; Feinstein 1993; Winkleby et al., 1992). Rates of hospitalization (ICIS 2010), premature death (Pampalon et al., 2008; Dupont et al., 2004), death from injury (Pampalon and Hamel 2002), stroke (Martinez et al., 2003), and suicide (Burrows et al., 2010) are systematically lower and life expectancy higher (Auger et al., 2010) among the most privileged populations. The trend also applies to geographical regions: people are healthier in more privileged areas (ICIS 2008).

The two dimensions most often used in health studies to estimate socioeconomic status are education level and income. But beyond wealth as measured with indicators such as average income, it is increasingly acknowledged that inequality of income, regardless of actual level, can exacerbate health disparities. The more unequal the income distribution in a society, the less healthy its population will be (Auger et al., 2011; De Vogli et al., 2011; Wilkinson and Pickett 2006; Lynch et al., 1998). In fact, individuals with a low socioeconomic status are more privileged when living in an equalitarian society (Rowlingston, 2011).

This analysis reviews a series of key socioeconomic indicators used to analyze the socioeconomic status of populations. It then looks at income disparities among Québec anglophones. Comparisons are then made between time periods, areas of residence, and with findings for the francophone population.

1 METHODOLOGY

1.1 DATA SOURCE AND TIME PERIODS

Data was taken from the long-form census of 1991, 1996, 2001, and 2006[1]. Data in the text is for 1991 and 2006, while data from 1996 and 2001 is given in Appendix 1. All income indicators are for the fiscal year preceding the census, i.e., 1990 and 2005. However, in order to maintain consistency throughout the text, we will always refer to the census year, even when discussing income data.

1.2 LANGUAGE

We use *mother tongue* as the variable identifying membership in the anglophone or francophone community. This is defined as the first language learned at home in childhood and still understood by the person in question. The mother tongue is more closely bound to the cultural and ethnic identity of individuals and their ancestors than is the language spoken at home or work or the first official language spoken. It is considered here as a determinant of health status or as a factor acting on other determinants. In the text, use of the terms francophone or anglophone will refer to the mother tongue of the persons so designated.

Multiple responses to the mother tongue variable were processed as followed: Francophones include those who responded only French as their mother tongue as well as those who answered French and one or more languages other than English. Similarly, English speakers include those who answered English only as well as those who responded English and one or more languages other than French.

1.3 AREAS STUDIED

For purposes of analysis, Québec was divided into three general geographical areas: the Montréal Census Metropolitan Area (CMA), the five other metropolitan areas combined (Québec, Trois-Rivières, Sherbrooke, Saguenay, and Gatineau), which are designated as “other CMAs,” and the rest of the province. This third group comprises all villages, towns, cities, and rural areas not part of a metropolitan area, and is designated “Non-CMAs” or “non-metropolitan regions.” These geographical groupings were necessary because the anglophone population would otherwise be too small to provide for statistically reliable analysis by topic. Figure 1 maps out the areas of residence examined. Census metropolitan areas (CMAs) are the geographical units used by Statistics Canada. A census metropolitan area is the area consisting of one or more neighbouring municipalities situated around a major urban core. A CMA must have a population of at least 100,000, of whom 50,000 must live in the urban core (Statistics Canada, 2008).

[1] The long-form questionnaire was sent to one fifth of Canadian households in these four censuses.

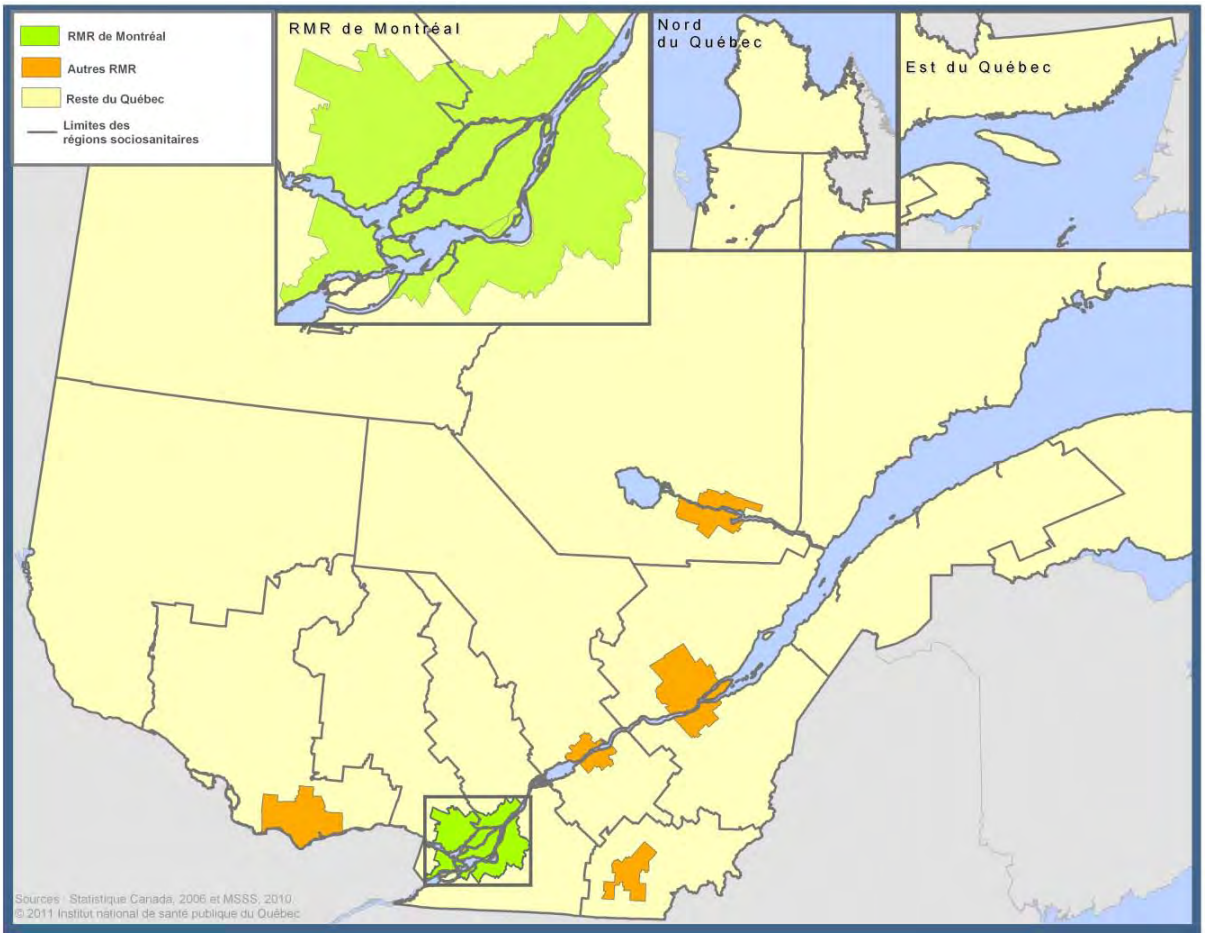

Figure 1 **Map of areas studied: Montréal CMA, other CMAs (Québec, Sherbrooke, Trois-Rivières, Saguenay, Gatineau) and the rest of Québec (non-CMA)**

Table 1 shows the population of each area of residence for the last four censuses.

Table 1 **Population by mother tongue and area of residence: 1991, 1996, 2001, and 2006**[2,3]

	Montréal CMA		Other CMAs		Non-CMA		Québec total	
	Anglophones	Francophones	Anglophones	Francophones	Anglophones	Francophones	Anglophones	Francophones
1991	452,105	2,095,830	53,740	1,210,705	105,525	2,266,770	**611,370**	**5,573,305**
1996	441,865	2,228,490	56,715	1,257,215	104,275	2,242,560	**602,855**	**5,728,265**
2001	422,255	2,298,430	53,745	1,272,395	96,120	2,217,815	**572,110**	**5,788,645**
2006	440,875	2,355,410	57,450	1,340,485	93,445	2,213,135	**591,770**	**5,909,030**

[2] Population living in private households only.

[3] The total population includes allophones and individuals who declare both French and English as mother tongues (bilingual) but they are not analyzed in this document.

2 SELECTED SOCIOECONOMIC INDICATORS

Anglophone socioeconomic status was analyzed in four categories (education, unemployment and employment, poverty, and income), using twelve socioeconomic indicators.

- Proportion of the population without a high school diploma
- Proportion of the population with a bachelor's degree
- Unemployment rate (age 15 to 24 and 25 and over)
- Employment rate for those age 25 and over
- Proportion of the total population age 6 and under and 65 and over living below low income cut-offs (LICOs) before taxes[4] (see Appendix 2 for LICOs)
- Mean and median income[5] by sex

The results were analyzed according to three dimensions: temporal (1991, 2006), geographical (province-wide, Montréal CMA, other CMAs, non-CMA), and linguistic (anglophones, francophone). Given the volume of information collected, only the main findings will be given in the body of the text. The detailed data is available in Appendix 1 and definitions of the indicators are given in Appendix 3.

Appendix 1 groups together all the indicators presented in the text, to which we added data for 1996 and 2001. We have also added the employment rate for 15- to 24-year-olds and data, available for 2006 only, on the proportion of the total population, the proportion of those 6 and under, and that of those 65 and over who fall below the LICOs **after** taxes[6].

2.1 RESULTS

Initial results reflect general trends in the socioeconomic situation of anglophones for Québec as a whole as compared with that of francophones. We then present the differences observed by area of residence. Table 2 compares anglophones and francophones in 1991 and 2006 according to each of the selected indicators. The red boxes mark a difference that is unfavourable relative to francophones, while the green boxes indicate a favourable difference. Yellow boxes indicate that differences between francophones and anglophones were minor or nonexistent[7].

[4] Low income cut-offs (LICOs) are recommended by Centre d'étude sur la pauvreté et l'exclusion (CEPE) for measuring poverty in Québec.

[5] Median income is not available for the other CMAs.

[6] The proportion of the population living below the low income cut-off after taxes, as opposed to before taxes, is not available for censuses before 2006.

[7] The statistical measure used to compare proportions of anglophones and francophones with respect to indicators of education levels, unemployment, employment, and poverty was the odds ratio. Since the populations used to calculate the proportions are quite large, any differences found will in theory be statistically significant. We selected 0.833 and 1.2 (inverse) to identify differences between the two linguistic groups that were the most noteworthy. For mean and median income gaps, a difference of 5% was considered significant.

Table 2 Anglophone and francophone socioeconomic indicators by area of residence, 1991 and 2006

			Québec total		Montréal CMA		Other CMAs		Non-CMA	
			1991	2006	1991	2006	1991	2006	1991	2006
Education	Population age 15 and over without a high school diploma	A	31.7	19.7	28.0	16.9	30.6	20.2	48.1	31.8
		F	39.6	25.3	35.0	21.6	33.0	20.4	47.5	31.9
	Population age 15 and over with at least a bachelor's degree	A	16.4	22.5	18.8	25.3	15.4	21.5	6.9	10.5
		F	9.2	14.8	11.9	19.0	11.9	17.7	5.2	8.5
Unemployment	Unemployment rate among 15- to 24-year-olds	A	18.7	15.0	18.2	14.0	15.0	17.0	24.0	19.9
		F	18.3	11.3	16.6	10.8	17.0	10.9	21.0	12.2
	Unemployment rate age 25 and over	A	10.6	6.8	10.2	6.5	7.5	5.0	14.6	10.0
		F	10.2	5.3	9.3	4.6	8.5	4.4	12.2	6.7
	Employment rate age 25 and over	A	57.1	60.9	58.9	62.8	61.3	62.7	47.8	51.7
		F	59.2	62.1	61.9	65.4	61.3	63.2	55.5	58.0
Poverty	Total population living below the LICOs (before taxes)	A	19.9	18.8	20.5	20.3	16.1	14.3	19.2	14.0
		F	18.0	14.7	20.1	17.2	18.0	15.2	16.1	11.8
	Population age 6 and under living below the LICOs (before taxes)	A	23.5	21.5	23.7	23.0	16.8	14.0	26.0	15.1
		F	19.6	15.3	22.4	18.6	18.6	14.4	17.5	11.9
	Population age 65 and over living below the LICOs (before taxes)	A	23.8	17.9	26.7	20.1	19.9	16.5	15.7	11.2
		F	28.7	19.9	36.1	25.5	31.1	22.4	21.3	13.1
Annual income ($)	Mean income - men	A	32,611	45,652	34,945	49,652	26,603	41,020	24,192	33,616
		F	27,904	38,987	30,289	43,130	26,380	40,040	25,131	34,219
	Median income - men	A	24,689	29,045	25,719	29,700			19,192	24,893
		F	24,398	31,412	26,364	33,754			21,891	28,898
	Mean income - women	A	18,834	29,081	19,710	30,311	16,370	30,735	14,671	22,585
		F	16,368	26,085	18,158	28,879	15,312	27,061	14,096	22,369
	Median income - women	A	14,054	20,982	15,028	21,786			10,720	17,327
		F	12,503	20,351	14,524	22,940			10,730	17,616

Legend:

Unfavourable for anglophones compared with francophones.

Little or no difference between anglophone and francophone results.

Favourable for anglophones compared with francophones.

Data not available.

A Anglophones.

F Francophones.

2.1.1 Anglophone socioeconomic status for Québec as a whole

At first glance, anglophone socioeconomic indicators for Québec as a whole progressed well over the period.

Among the most favourable indicators for anglophones is education. The proportion of the anglophone population with low education levels dropped and that of individuals with a university degree increased. Consequently, Anglophones holding a Bachelor's degree today outnumber those without a high school diploma (Figure 2).

Francophones also made major gains in education levels between 1991 and 2006. However, Anglophones remain more likely to have completed university studies, with 22.5% holding a bachelor's degree as opposed to 15% of francophones in 2006. The university education gap between the two linguistic groups was so large that in 2006, francophones still had not caught up to the level recorded for anglophones in 1991.

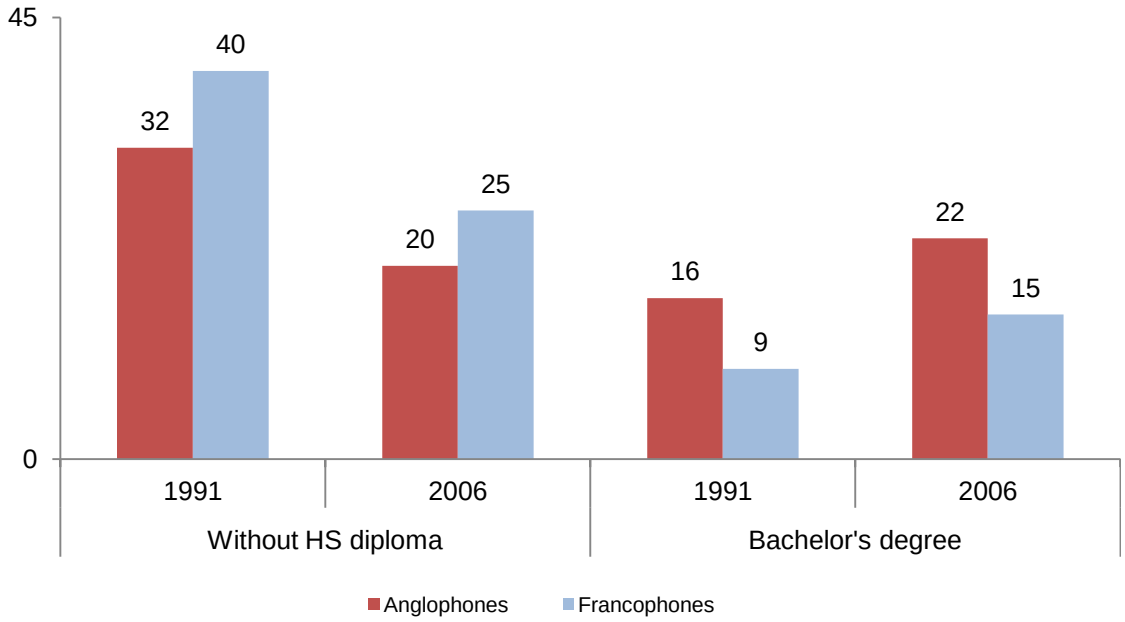

Figure 2 Proportion of the population by education level and mother tongue, Québec, 1991 and 2006

Mean income generally correlates to education levels, and anglophones and francophones in Québec are no exception. Figure 3 shows that ***mean income for anglophones remained higher than that of francophones*** regardless of sex. Mean income for anglophone men was over $45,000 in 2006, compared with $39,000 for francophone men, while the difference in mean income between anglophone and francophone women was $3,000. The relative gap separating anglophones and francophones held steady between 1991 and 2006 for both sexes.

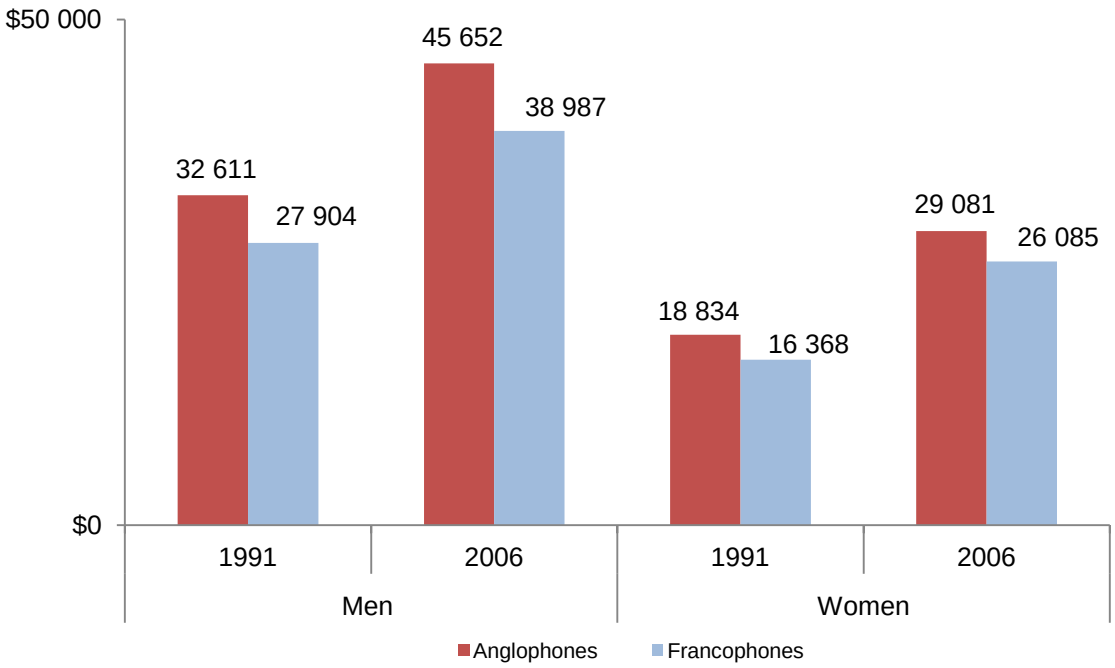

Figure 3 Mean income by mother tongue and sex, Québec, 1991 and 2006

Mean income quantifies a population's total income, but one its weaknesses is that it is influenced by exceptionally high or low values. For this reason, many researchers prefer to use ***median income*** because it reflects more accurately the situation of the majority of the population. Median income divides the population into two groups: half of whom have higher incomes than the median and half of whom have lower incomes.

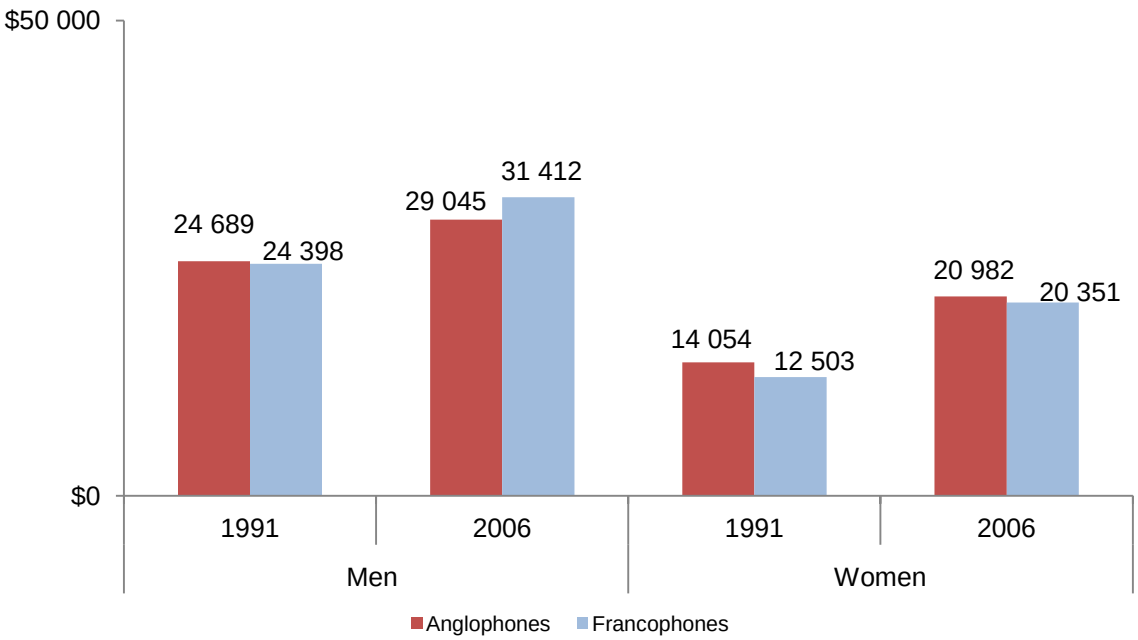

Figure 4 Median income by mother tongue and sex, Québec, 1991 and 2006

The differences observed in mean income among men disappear or are even reversed when median income is considered (Figure 4). In 2006, the median income of anglophone men was lower than that of francophones, while it was equivalent in 1991. Anglophone women continued to show slightly higher median incomes than their francophone counterparts, but the difference was no longer significant (Table 2).

To sum up, anglophone men had higher mean incomes and lower median incomes in 2006 than francophone men. Among anglophone women, mean incomes were higher, but median income was similar to that of francophone women. In addition, the differences between mean and median incomes were greater among anglophones than among francophones (Figure 5). A larger gap between mean and median incomes generally indicates that wealth is not uniformly distributed and is held more exclusively by the most advantaged segment of the population.

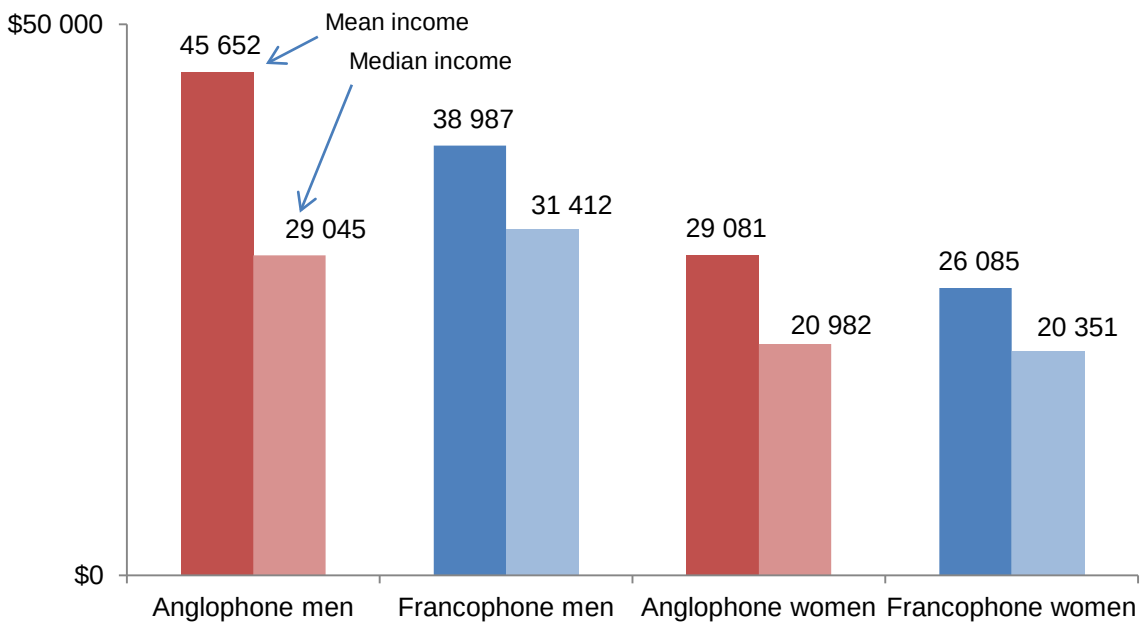

Figure 5 Mean and median income by mother tongue and sex, Québec, 2006

Despite higher levels of university education and higher mean incomes, ***anglophones had higher unemployment levels than francophones in 2006*** (Figure 6). This is observed for the population as a whole. In 1991, the two linguistic groups had roughly identical unemployment levels, but subsequently diverged. By 2006, the gap between them was significant. Younger anglophones age 15 to 24 were the most affected — the difference compared to francophones was 4% in 2006. ***Employment*** rates for those over 25 (Figure 7) reflected the findings for unemployment, with francophones showing slightly higher employment rates than anglophones.

The unemployment rate declined and the employment rate rose between 1991 and 2006 for all groups. This is coherent with the economic conditions prevailing during this time period.

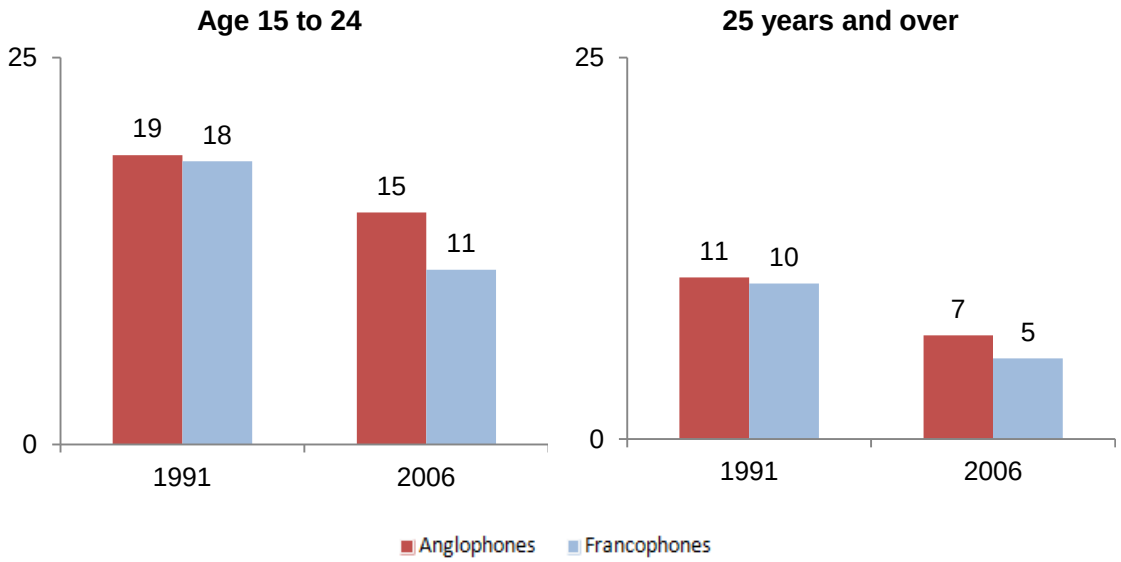

Figure 6 **Unemployment rate for anglophones and francophones by age, Québec, 1991 and 2006**

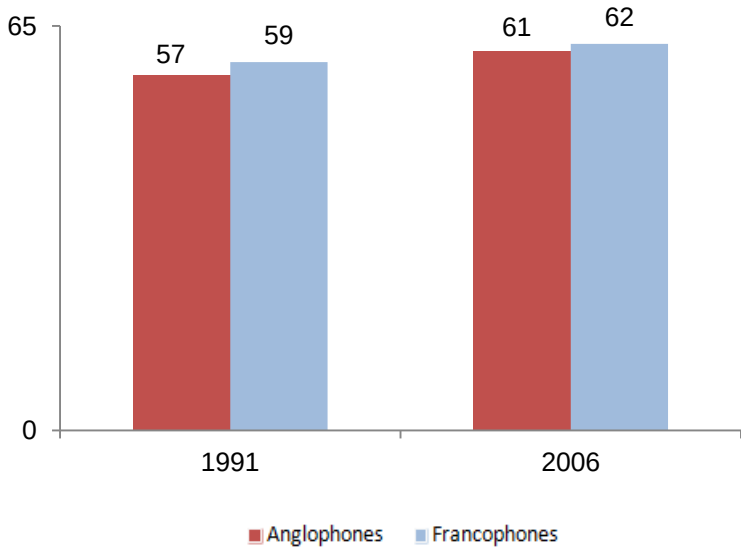

Figure 7 **Employment rate for anglophones and francophones age 25 and over, Québec, 1991 and 2006**

The proportion of the population living ***below the low income cut-offs*** (LICOs) is a classic indicator used to assess the socioeconomic health of a population. LICOs are defined as the income below which a family is likely to spend 20 percentage points more of its income on food, shelter and clothing than the average family. They are adjusted according to family size and area of residence (Statistics Canada 2009).

Anglophones are proportionally more likely to live below the LICOs than francophones (Figure 8). This was observed both in 1991 and 2006, with the gap between the two linguistic groups increasing over time. The gap was most pronounced for those age 6 and under. The tendency reversed however for those 65 and over: francophones here showed a higher proportion of individuals living below the LICOs. These results indicate that Québec anglophones' higher mean incomes do not necessarily translate into equal distribution of wealth.

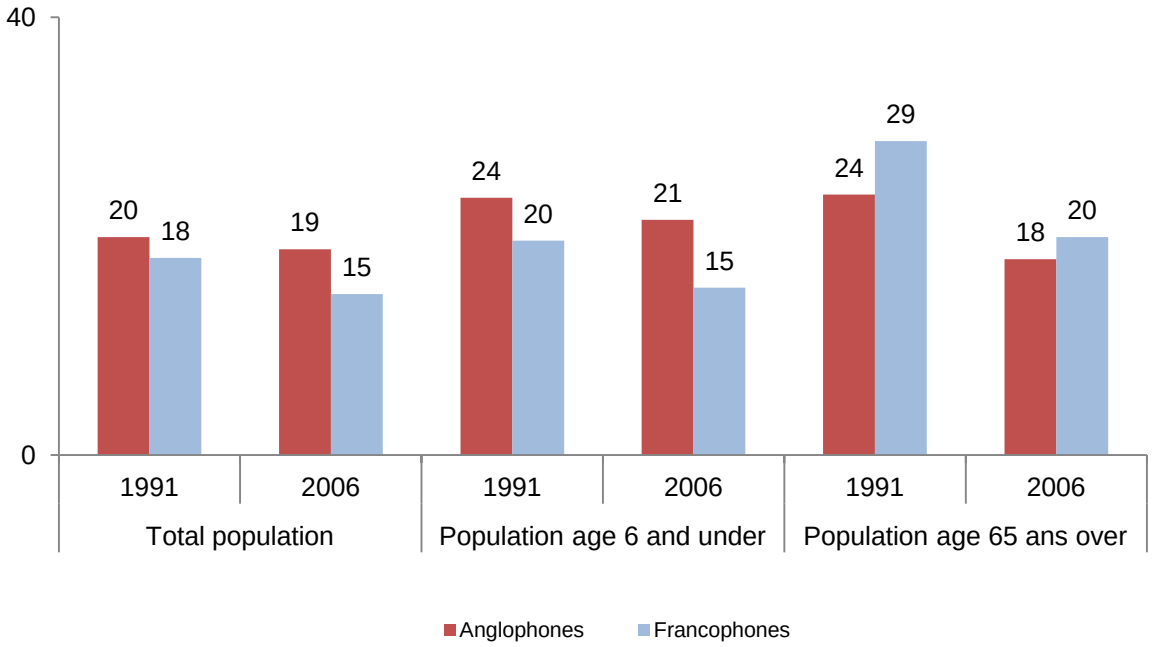

Figure 8 **Proportion of the total population, the population age 6 and under and the population age 65 and over living below the low income cut-off before taxes among francophones and anglophones Québec, 1991 and 2006**

The Overall Picture for Québec

The otherwise positive socioeconomic picture of anglophones clouds up somewhat when compared with that of francophones. The analysis reveals the scale of socioeconomic contradictions found among Québec anglophones.

Province-wide gains between 1991 and 2006 were smaller for anglophones than for francophones, so that many of the gaps that favoured anglophones in 1991 closed up and certain gaps favouring francophones increased.

Ultimately, anglophones were proportionally more likely to live below the LICOs and to experience unemployment, even though their mean incomes were higher and they were more likely to have a university degree.

2.1.2 Anglophone socioeconomic status by region

The analysis grows more complex when the geographical dimension is added to those of gender, language, and census year. Many of the results for Québec as a whole are also reflected at the regional level. We chose to comment on the main findings and most revealing indicators. See Appendix 1 for complete results.

Montréal CMA

We have seen that the analysis of anglophone socioeconomic indicators at the provincial level reveals disparities. The province-wide socioeconomic picture for anglophones is strongly influenced by the trends observed in the Montréal CMA because three out of four Québec anglophones live in this area, and it is in that are indeed that disparities are the most pronounced.

The socioeconomic status of Montréal CMA anglophones is marked by contradictions and the trend lines are less positive than in the past. The income study was the first indicator of these contradictions in the Montréal CMA. Figures 9 and 10 show the mean income of men and women by area of residence and mother tongue. We found that, in 2006, anglophones in the Montréal CMA continued to have higher mean incomes than those residing in other CMAs or outside CMAs.

Anglophone mean income in the Montréal CMA was also higher than that of francophones, but the situation was reversed in 2006 for ***median income***, which was lower than that of francophones for both sexes (Table 2).

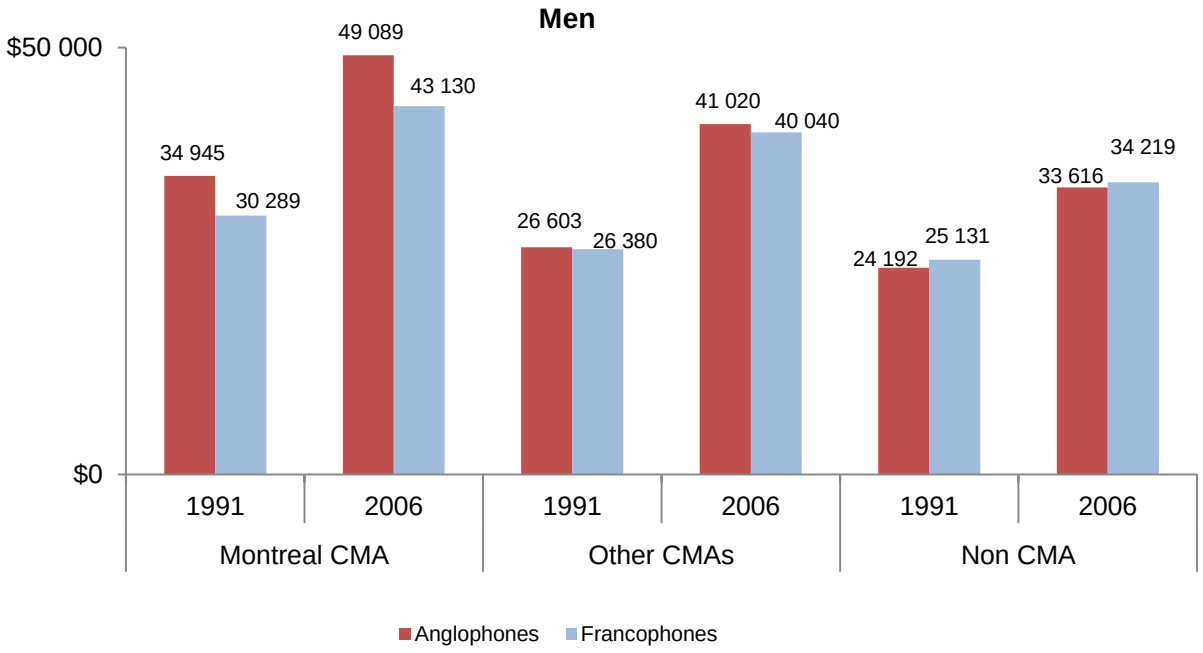

Figure 9 Mean income for anglophone and francophone men by area of residence, 1991 and 2006

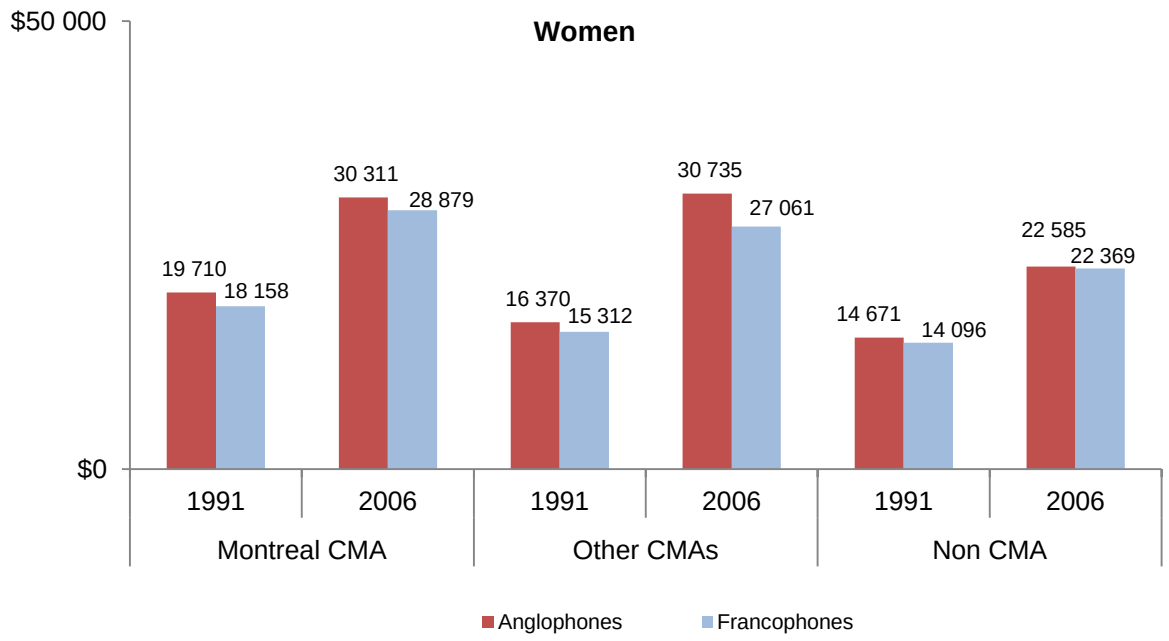

Figure 10 Mean income for anglophone and francophone women by area of residence, 1991 and 2006

Among the other indicators favourable to anglophones in the Montréal CMA were those relating to ***education level*** (Figures 11 and 12). The proportion of Montréal CMA anglophones with a university degree was much higher than that of other regions while the proportion without a high school diploma was lower.

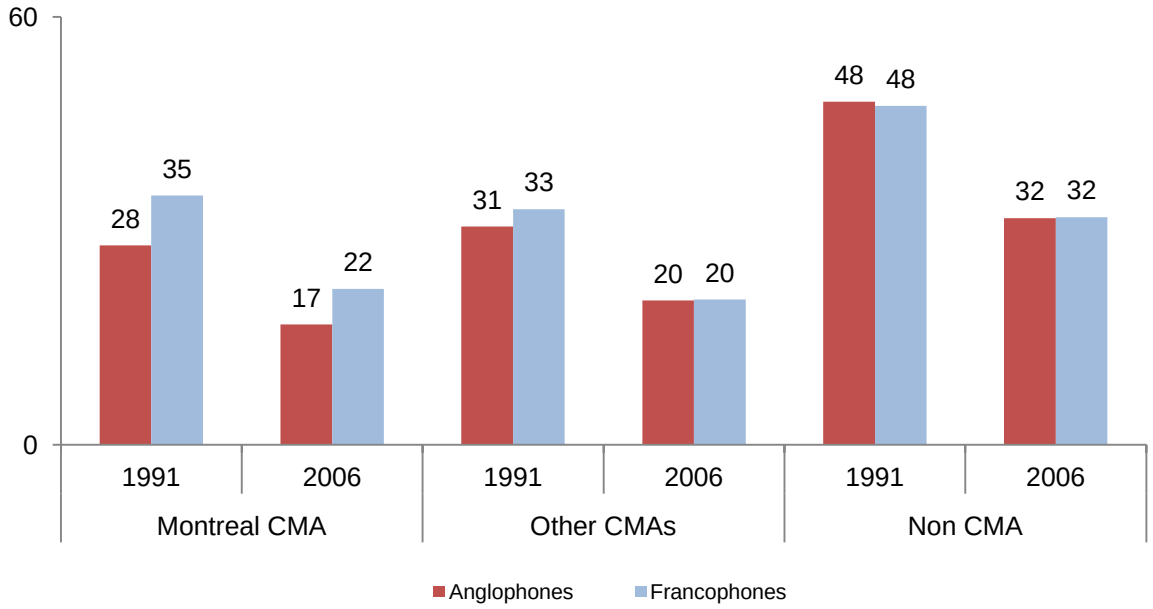

Figure 11 Proportion of the population without a high school diploma by mother tongue and area of residence, 1991 and 2006

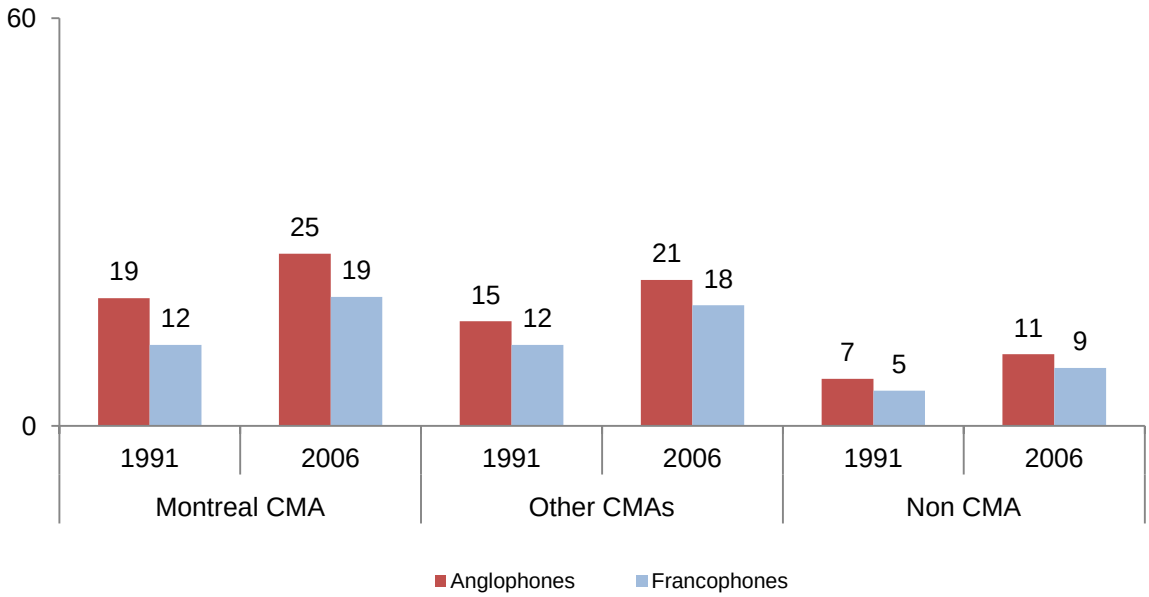

Figure 12 Proportion of the population with a bachelor's degree by mother tongue and area of residence, 1991 and 2006

Montréal CMA anglophones were more likely to have university degrees than were Montréal francophones, but despite these higher education levels and a higher mean income, Figure 13 shows that, with the exception of seniors, anglophones in the Montréal CMA were more likely than francophones to be living in a household falling ***below the LICOs***.

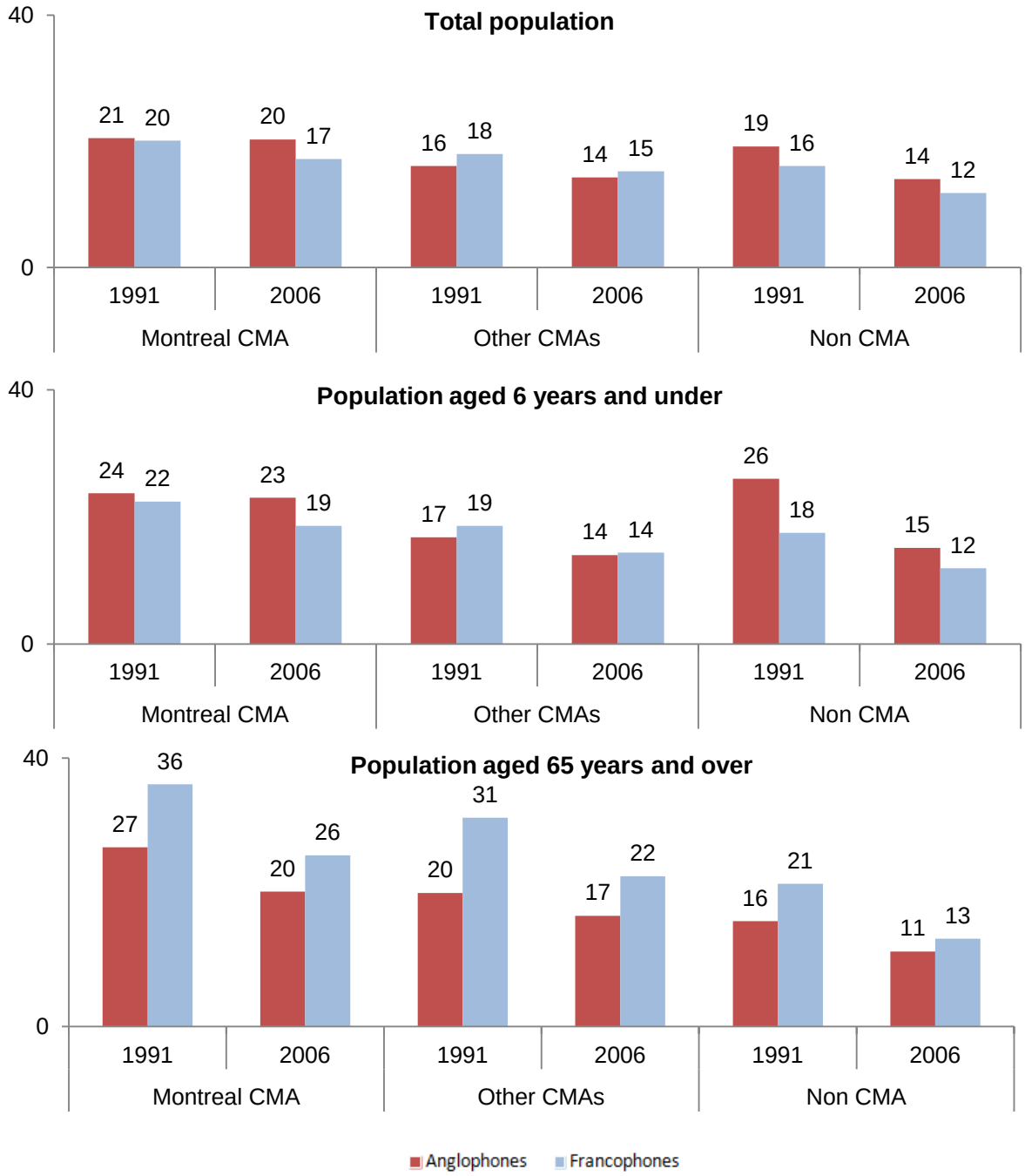

Figure 13 **Proportion of the total population age 6 and under or age 65 and over living below the LICOs, anglophones and francophones, 1991 and 2006**

A general look at Table 2 at the beginning of the text shows that anglophones in the Montréal CMA have lost some of the lead they held in 1991 over anglophones elsewhere in Québec. But most of all, they have lost ground compared to francophones: in 1991 no indicator was unfavourable to anglophones in the Montréal CMA, whereas in 2006, only four of twelve indicators were favourable to anglophones.

The economic polarization that seems to characterize the English-mother-tongue population in the Montréal CMA will be examined in greater depth in section 3, which analyzes income distribution inequalities using the Gini coefficient.

Other CMAs

Other CMAs are the areas with the fewest anglophones, according to Table 1, but trends seem encouraging for anglophones living in metropolitan areas outside of Montréal.

In many aspects, the situation of anglophones in other census metropolitan areas is positive when compared with the Montréal CMA and non-metropolitan regions.

For example, mean income for anglophone women in other CMAs saw the greatest gains after 1991, and by 2006 was higher than that of women in the Montréal CMA (Figure 10). Education indicators were mid-way between those of the Montréal CMA and those of non-CMA regions, while poverty, as measured by the proportion of the population living below the LICOs, was the lowest of all areas (Figure 13). Compared to francophones, indicators for other-CMA anglophones were either neutral or better. The only exception was the unemployment rate among 15- to 24-year-olds, which outpaced that of francophones.

Outside Metropolitan Areas (Non-CMA)

Although the overall socioeconomic picture of Québec anglophones is strongly marked by the trends observed in the Montréal CMA, since three quarters of Québec anglophones live there, realities in other Québec regions should not be overlooked. In all, there were close to 100,000 English-mother-tongue individuals living outside metropolitan areas in 2006 (Table 1).

Results for anglophones outside metropolitan areas lagged on most socioeconomic indicators with one significant exception: the proportion of anglophones living below the LICOs.

Despite unfavourable employment rates, unemployment rates, and education levels (Table 2), the proportion of the anglophone population living below the LICOs was lower in than in metropolitan areas, particularly among the elderly (Figure 13), even though the cut-offs are adjusted downward for those regions. The low level of poverty as measured by the LICOs may seem contradictory, given the lower mean incomes recorded in non-metropolitan areas.[8] The reality however is that wealth disparities are less pronounced among anglophones outside metropolitan areas; there are fewer very rich and fewer very poor individuals. It should be noted, however, that anglophones under age 65 were proportionally more likely to live below the LICOs than francophones in these areas.

Another finding that emerged from the analysis of socioeconomic indicators for non-metropolitan regions was a similarity between francophone and anglophone education levels as well as mean and median incomes. This differs from what was found in metropolitan regions, where the two linguistic groups generally showed marked differences.

[8] One hypothesis that might explain this apparent contradiction is that LICOs are adjusted downward because the cost of living is lower in these regions (see Appendix 2). Thus, individuals who live outside metropolitan areas may have lower incomes without being considered to live below the LICOs.

Regional Overview

In addition to declines noted for the Montréal CMA, the generally favourable situation in other CMAs, and the somewhat unfavourable situation outside metropolitan areas, figures 9 to 13 show that ***regional disparities are more pronounced*** among anglophones than among francophones, and among men than they are among women. In other words, place of residence has a greater determining effect on socioeconomic status for anglophones than for francophones. For example, anglophones showed more pronounced regional disparities in education levels, with a difference in university completion rates between the Montréal CMA and non-metropolitan regions in 2006 of 15 percentage points compared to only 10 percentage points for francophones. Most other economic indicators showed a similar tendency.

2.1.3 Summary of socioeconomic indicators from the census

Overshadowed by progress in education and mean incomes is a socioeconomic gulf among anglophones, who experience higher poverty levels than do francophones. How can they be richer overall while at the same time experiencing greater poverty? Based on these initial findings, we decided to test the hypothesis of economic polarization by applying a measure of statistical dispersion to income.

3 INCOME INEQUALITY

Income inequality within a given population is often attributed to neoliberal economic policies, which may aggravate inequality. Economic and social policies promoting more equitable distribution of income are generally acknowledged to be more conducive to improvements in population health, e.g., lower infant mortality (De Vogli et al., 2011; Coburn 2000).

Economic inequality as a health determinant is still a subject of debate within the scientific community, but it is generally conceded that reducing the income gap by increasing incomes at the bottom of the scale improves the health of the poor, reduces social inequality, and improves the health of the population in general (De Vogli et al., 2011; Lynch et al., 2004). Since disparities were observed within the anglophone population when certain economic indicators were examined, we decided to look more closely at income inequality.

3.1 DISPARITY MEASURES

There are various measures for assessing income disparities in a given population, notably the Gini coefficient, the Atkinson index, decile ratios, generalized entropy indices, the Robin Hood index, and the proportion of total earned income (De Maio, 2007). In a study on the links between various inequality measures and mortality, the choice of measure did not seem to affect the conclusion that income inequality is linked to higher mortality (Kawachi, I. and Kennedy, B.P. 1997).

We settled on the Gini coefficient, the most commonly used measure and the easiest to interpret (De Maio, 2007).

3.2 METHODOLOGICAL DETAILS RELATING TO CALCULATION OF THE GINI COEFFICIENT

Data for the Gini coefficient, as for the indicators presented above, was taken from 1991 and 2006 census results. We used individual income before taxes reported for persons 15 years of age and over by sex, in increments of $2,500 with a top category of $100,000 and over (42 increments in all). The mean income of each increment was used in the calculation of Gini coefficients.

We could also have calculated the index by household rather than by individual, but decided that such an approach might lead to confusion, since household mother tongue is necessarily less specific than that of an individual. Also, the data used did not indicate the size of the household.

Certain methodological choices were made regarding incomplete or atypical data. For the 2006 data, mean income was not available for income groups of fewer than 250 people. In such cases, we therefore assumed a mean income in the middle of the range for the group in question.

In a few cases, negative mean incomes were found in the bottom income group, i.e., $2,500 and under. This is because some individuals declare financial losses, which can yield negative mean income for the group as a whole if the group is small enough. It may be that

some individuals — most likely self-employed workers — actually had positive incomes, but claimed assets (such as a car or house) as a work-related expense, thus ending up with negative income. This bias can occur in all income groups, but is only detectable in the first group ($2,500 and under). We therefore decided not to adjust the small number of cases showing negative income, as we lacked the information needed to make corrections to other income groups. The decision to include the negative incomes as is rather than exclude them may have slightly increased the Gini coefficient. However, we calculated these impacts, and found that they did not affect our overall findings.

The last dilemma we faced was whether to retain or exclude individuals with no income from our Gini coefficient calculations. There seems to be no clear consensus in the literature on this subject. It is generally assumed that the financial needs of individuals without income are covered by another member of their household, notably for students and homemakers. We calculated data with and without these individuals and, after comparing the results, decided to exclude individuals claiming zero earnings. One reason is that when the Gini coefficient for women incorporates zero income individuals, changes in the coefficient largely become a function of the falling number of women without income. In other words, women's increasing labour force participation between 1991 and 2006 generates a steep decline in the Gini coefficient over this period. It therefore seemed more useful to estimate income inequality only for labour market participants. The methods used by the Luxembourg Income Study (LIS), an internationally known centre for the study of inequality measurement, corroborated our decision, as its program recodes zero earnings into missing values.

3.3 INTERPRETING THE GINI COEFFICIENT

The Gini coefficient is based on the Lorenz curve. Its calculation and interpretation are explained in more detail in Appendix 4.

The Gini coefficient ranges from 0, where every individual would have the same income, to 100, where all income for the population would be captured by a single individual. The higher the Gini coefficient, the greater the level of inequality. The Gini coefficient does not measure wealth or poverty; it indicates the statistical disparity in income within a population. If for example the Gini coefficient increases over a certain period, there is no way to know whether the population in question has become poorer: all we know is that the gap between its most and least affluent members has increased.

We first examined the evolution of income disparities for Québec as a whole before breaking them down on a regional basis. Results are presented by sex.

3.4 RESULTS

3.4.1 The Evolution of Income Inequality for Québec as a Whole

Examination of income inequality reveals greater disparity among anglophones than francophones regardless of sex.

Figure 14 illustrates that, for the two periods, income distribution was consistently less equitable among English-mother-tongue men and women than among their French-mother-tongue counterparts. Inequality in income distribution increased markedly among anglophones between 1991 and 2006, particularly among men. The picture is quite different for francophones, for whom income inequality increased to a lesser degree among men and did not change for women.

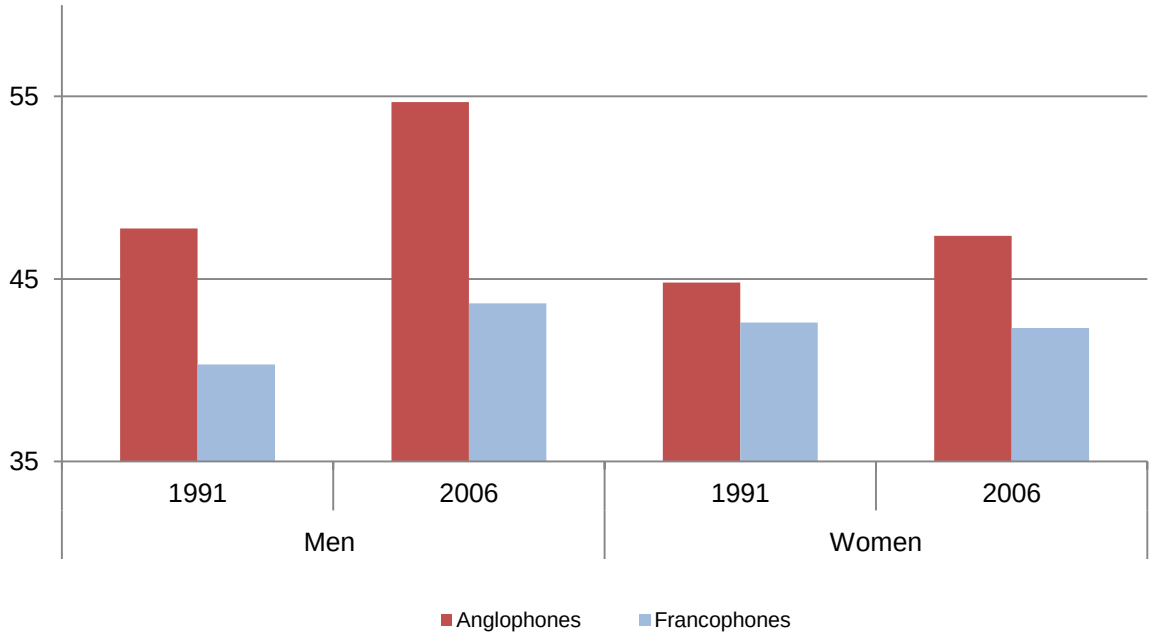

Figure 14 Gini coefficient for anglophones and francophones by sex, Québec, 1991 and 2006

3.4.2 Income Inequality by Area of Residence

Once again, the analysis becomes somewhat more complex when the geographical dimension is added.

Figure 15 shows that with the possible exception of women in other CMAs, income distribution by area of residence mirrored that of Québec as a whole in 1991 and 2006, i.e., it was more unequal for English–mother-tongue than for French–mother-tongue populations.

In particular, anglophone men in the **Montréal CMA** stand out markedly, with much higher income disparity indexes than those in other geographical areas in 1991 and 2006. The gap between rich and poor also increased more over time in Montréal. Francophone men in the Montréal CMA show a similar trend to their anglophone counterparts, but their Gini coefficient is much lower and the increase in inequality less pronounced.

The Montréal CMA emerges as the income inequality champion; distribution appears most unequal there, with the exception of francophone women. They show relatively little variation in income distribution over the years and between geographical areas. Anglophone women followed a different path: increases occurred in the Montréal CMA between 1991 and 2006, while little change was seen in other CMAs and inequality dropped in non-CMA areas.

We note also that the Gini coefficient for francophones and anglophones is most similar in **other CMAs**, and that the lowest coefficient for anglophones is also found there. Polarization between the wealthiest and poorest anglophones is thus lower in other CMAs than in the Montréal CMA.

Non-metropolitan areas generally landed in the middle in cross-regional comparisons of anglophones and when compared to francophones. Anglophone Gini coefficients and differences between anglophones and francophones are lower in non-metropolitan areas than in the Montréal CMA, but higher than in other CMAs (Figure 15).

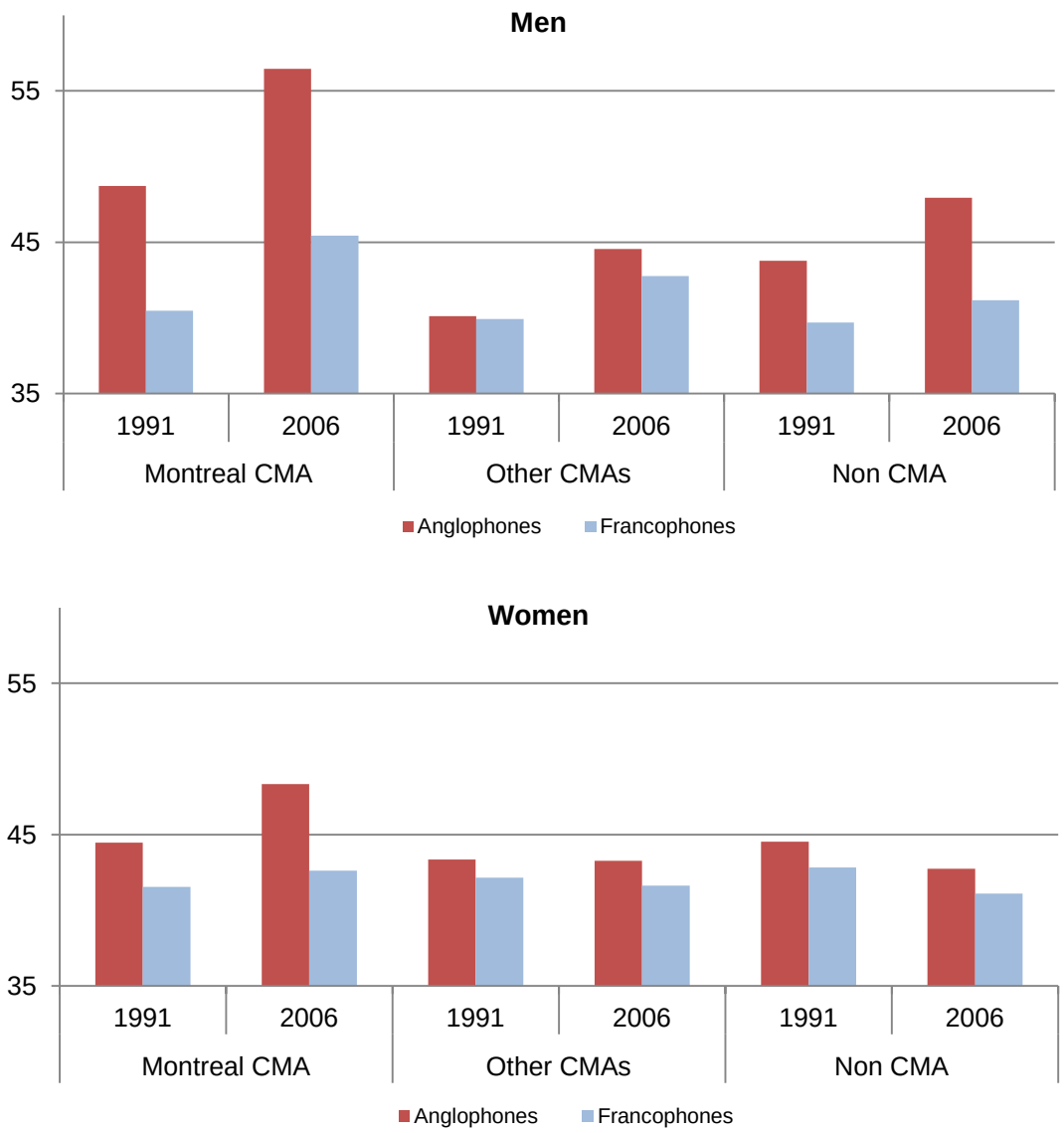

Figure 15 Gini coefficient for anglophones and francophones by area of residence and sex, Québec, 1991 and 2006

Aside from the fact that the Gini coefficient is consistently higher among anglophones than francophones regardless of sex, income inequality levels did not evolve uniformly by area for either linguistic group (except francophone women). Regional disparities in income distribution thus became more and more pronounced, particularly among anglophone men.

3.4.3 Summary of Gini Coefficient Results

Gini coefficient results confirm the hypothesis put forward during our analysis of census indicators. This suggests that income inequalities are greater in the anglophone population at every level. Income inequality was particularly high in the Montréal CMA. Income distribution was also found to be less equal among men than women, particularly among anglophones. This finding is consistent with a number of health studies in Canada and elsewhere, which also found greater disparity among men (ICIS 2010; Dupont et al. 2004; Mackenbach et al. 1999). Regional and gender disparities were also greater among anglophones than among francophones.

Table 3 Summary of changes in the Gini coefficient between 1991 and 2006 for anglophones and francophones by area of residence and sex

Have income inequalities increased or decreased over time?		
Increasing economic inequality	**Decreasing economic inequality**	**Stable economic inequality**
All of Québec		
Anglophone men Francophone men Anglophone women	Francophone women	
Montréal CMA		
Anglophone men Francophone men Anglophone women Francophone women		
Other CMAs		
Anglophone men Francophone men	Francophone women	Anglophone women
Non-CMA		
Anglophone men Francophone men	Francophone women Anglophone women	

4 LIMITATIONS

One limitation of our indicators concerns the age structure of the populations studied. Because indicators could not be standardized, population age structure may have influenced the results. As a hypothetical example, if young people were more educated than the elderly and the age structure of the anglophone population was younger than the age structure of francophones, anglophones would come out as more educated.

Furthermore, indicators are not always independent of each other. For example, a falling employment rate among young people may be the consequence of staying in school longer.

The inclusion of members of First Nations and the Inuit in the data often raises questions. First Nations and Inuit results were not excluded from our calculations. We therefore had to estimate their impact on our statistical analysis by mother tongue in light of the fact that their socioeconomic status is generally lower than that of the rest of the population. Table 4 shows that in 2006, 108,000 individuals in Québec reported an aboriginal or Inuit identity. Twelve thousand of these individuals described their mother tongue as English, which means they comprise 2.0% of Québec's total anglophone population. Aboriginal individuals identifying their mother tongue as French likewise made up 0.9% of the total francophone population. Similar mother tongue proportions have been found for registered Indians, who are less numerous than those identifying as aboriginal and Inuit.[9] Because they make up a relatively small proportion of the anglophone and francophone population, we considered aboriginal individuals to have had a minimal impact on data for the two linguistic groups.

Table 4 Population by aboriginal identity or Indian status by mother tongue, Québec, 2006*

Mother tongue	Total population	Aboriginal identity			
		Population reporting an aboriginal identity		Registered Indian	
	N	N	%	N	%
English	591,760	12,000	2.0	6,845	1.2
French	5,909,010	55,980	0.9	19,190	0.3
Other (non-official language)	886,280	39,460	4.5	29,625	3.3
French and English	48,855	990	2.0	300	0.6
Total	**7,435,905**	**108,430**	**1.5**	**55,955**	**0.8**

* Aboriginal identity includes members of First Nations and Inuit, whereas registered Indian includes only members of First Nations. Data based on self-reporting in the census.

[9] Note that Mohawk and Wendat communities did not participate in the 2006 census. Their mother tongue is English in the former case and French in the latter. Because the Mohawk communities (around 10,000 members) are located in the Montréal CMA and the Wendat community (around 3,500 members) in the Québec City CMA (other CMAs), their weighting within the geographic units was negligible.

The Gini coefficient also has certain limitations. It is particularly sensitive to inequality in the middle of the income distribution scale. Variations within income groups close to the middle of the distribution spectrum change the Gini coefficient more than variations within the lowest or highest income groups. Some however see this limitation as an advantage, since the index is less influenced by variations occurring at the extremes.

In addition, the Gini coefficient does not indicate where inequalities are coming from along the income spectrum. We discuss this issue in more depth in Appendix 4. Although increasing income inequality as measured by the Gini coefficient could come from either or both ends of the distribution spectrum, such increases in Canada are most often caused by income growth at the top of the scale (Morissette et al., 2002).

The index is also sensitive to the number of income categories. The more categories there are, the lower the aggregation level for income groups and the higher the Gini coefficient. The number of categories chosen has an impact on the comparability of this report's Gini coefficients with those from other studies. Our 41 income groups yield what is considered a low aggregation level, so we caution readers about comparing our Gini data with data from other sources, which is likely to have lower Gini values than ours.

CONCLUSION

At first glance, the socioeconomic status of Québec's English-mother-tongue population seems to have improved between 1991 and 2006. Anglophones' already high education levels rose impressively as did their incomes. However, a closer look at the variables shows an increase in the gap between rich and poor anglophones that already existed in 1991— as if the middle class were shrinking. Unequal income distribution among anglophones is confirmed by our analysis using the Gini coefficient. One possible explanation might be that anglophone youth have had more difficulty breaking into the labour market than did their parents and grandparents. This appears to be borne out by the high unemployment rate among 15- to 24-year-olds. Recent studies also point to diverging cohorts: anglophones under 45 have significantly lower socioeconomic status than the cohort preceding them (Floch and Pocock, 2008). The trend is exacerbated by the departure of the most educated anglophones from the province at the peak of their working lives (Floch and Pocock, 2008).

The socioeconomic status of anglophones for the province is further tempered when data is examined by area of residence and when compared with that of francophones. Francophone gains, particularly in employment, unemployment, median income, and poverty have been greater than those of anglophones, despite the traditional image of anglophones as socioeconomically advantaged. This shrinking of the socioeconomic gap between the two linguistic groups, mainly a result of francophones moving up from the bottom of the socioeconomic ladder, has been observed for some decades (Floch and Pocock 2008; Shapiro and Stelcner 1987).

The Montréal CMA, popularly seen as a bastion of wealthy anglophones, is characterized by deep disparities; the proportion of poor anglophones has significantly increased, while the traditionally wealthy upper crust remains firmly in place. Income distribution analysis confirms this polarization and also brings out the even starker inequality faced by men. On the other hand, anglophones in other CMAs often come out ahead of francophones and appear to suffer less from income polarization. Non-metropolitan areas are characterized by lower education and income levels and higher unemployment as well as by lower poverty levels, mirroring the situation of francophones in this respect. Last of all, one of the most striking findings arising from geographical analysis is that regional disparities are more pronounced among anglophones than among francophones.

Earlier in this report, we noted the links between socioeconomic status and health and income inequality and health. Obviously, there is a time lag before changes in a population's socioeconomic status start impacting its health. Our studies of anglophone health status are both a reflection and a record of the consequences of past trends. Having shown here that anglophones are losing steam socioeconomically compared to francophones and having uncovered growing divisions within the anglophone population, we can only speculate at this point on the future effects of this deterioration on the health status of Québec anglophones.

REFERENCES

Auger, N., Hamel, D., Martinez, J., and Ross, N.A. (2011). "Mitigating effect of immigration on the relation between income inequality and mortality: a prospective study of 2 million Canadians". *Journal of Epidemiology and Community Health*, pending.

Auger, N., Alix, C., Zang, G., and Daniel, M. (2010). "Sex, age, deprivation and patterns in life expectancy in Quebec, Canada: a population based study." *BMC Central Public Health*, 2010, 10:161, 9 pages.

Braveman, P.A., Cubbin, C., Egerter, S., Williams, D.R., and Pamuk, E. (2010). "Socioeconomic disparities in health in the United States: what the patterns tell us." *American Journal of Public Health*, vol. 100, Sup. 1:S186–96. Epub 2010: Feb 10.

Burrows, S., Auger, N., Roy, M., and Alix, C. (2010). "Socio-economic inequalities in suicide attempts and suicide mortality in Québec, Canada, 1990–2005." *Journal of Public Health*, vol. 124, no. 2, pp. 78–85.

Coburn, D. (2000). "Income inequality, social cohesion and the health status of populations: the role of neo-liberalism." *Social Science Medicine*, vol. 51, no. 1, pp. 135–146.

De Maio, F.G. (2007). "Income inequality measures." *Journal of Epidemiology and Community Health*, 61, 849–852.

De Vogli, R., Gimeno, D. and Mistry, R. (2011). "Economic Inequality and Health in the Age of Globalization," in Nriagu, J, (ed.) *Encyclopedia of Environmental Health*. pp. 207–214. Elsevier: Oxford.

Dupont, M., Pampalon, R., and Hamel, D. (2004). *Inégalités sociales et mortalité des femmes et des hommes atteints de cancer au Québec, 1994–1998*. Institut national de santé publique du Québec, 12 pp.

Feinstein, J.S. (1993). "The relationship between socioeconomic status and health: a review of the literature." *Milbank Q*. vol. 71, no. 2, pp. 279–322.

Floch, W and Pocock, J. (2008). "Emerging Trends in the Socio-Economic Status of English Speaking Quebec: Those Who Stayed and Those Who Left." In R.Y. Bourhis (Ed.). *The Vitality of the English-Speaking Communities of Quebec: From Community Decline to Revival*. Montréal, Québec: CEETUM, Université de Montréal.

Institut canadien d'information sur la santé (ICIS). (2010). Disparités en matière d'hospitalisation selon le statut socioéconomique chez les hommes et les femmes, (Online) http://secure.cihi.ca/cihiweb/products/disparities_in_hospitalization_by_sex_2010_f.pdf Ottawa (Ontario).

Institut canadien d'information sur la santé (ICIS). (2008). *Réduction des écarts en matière de santé : un regard sur le statut socioéconomique en milieu urbain au Canada*, Ottawa, Ontario.

Kawachi, I. and Kennedy, B.P., (1997). "The relationship of income inequality to mortality: does the choice of indicator matter?" *Social Science Medicine*, vol. 45, no. 7, pp. 1121–7.

Lynch, J.W., Kaplan, G.A., Pamuk, E.R., Cohen, R.D., Heck, K.E., Balfour, J.L. and Yen, I.H. (1998). "Income inequality and mortality in metropolitan areas of the United States." *American Journal of Public Health*, vol. 88, pp. 1074–1080.

Lynch J., Smith G.D., Harper S., Hillemeier M., Ross N., Kaplan G.A. and Wolfson, M. (2004). "Is income inequality a determinant of population health? Part 1. A systematic review." *Milbank Q*.; vol. 82, no. 1, pp. 5–99.

Mackenbach, J.P. et al. (1999). "Socioeconomic Inequalities in Mortality among Women and among Men: An International Study," *American Journal of Public Health*, vol. 89, no. 12, pp. 1800–1806.

Martinez, J., Pampalon, R., and Hamel, D. (2003). "Deprivation and stroke mortality in Quebec." *Chronic Diseases Canada*, vol. 24, nos. 2–3, pp. 57–64.

Morrissette, R., Zhung, X. and Drolet, M. (2002). "The Evolution of Wealth Inequality in Canada, 1984-1999." Working Document #187, Analytical Studies Branch Research Paper Series, Statistics Canada.

Orpana, H., Lemyre, L. and Gravel, R. (2009). "Income and psychological distress: The role of the social environment". Statistics Canada, *Health Reports*, vol. 20, no. 1, March 2009.

Pampalon, R., Hamel, D., and Gamache, P. (2008). *Les inégalités sociales de santé augmentent-elles au Québec?* Institut national de santé publique du Québec, 20 pages.

Pampalon, R. and Hamel, D. (2002). *Traumatismes et défavorisation au Québec*. Institut national de santé publique du Québec, 8 pp.

Rowlingson, K. (2011). *Does income inequality cause health and social problems?* (Online) http://www.jrf.org.uk/sites/files/jrf/inequality-income-social-problems-full.pdf. Joseph Rowntree Foundation, 50 pp.

Shapiro, D.M., Stelcner, M. (1987). "Earnings Disparities among Linguistic Groups in Quebec, 1970–1980." Canadian Public Policy / Analyse de Politiques, Vol. 13, No. 1: 97–104., Mar., 1987.

Statistics Canada (2009) "Low income after-tax cut-offs." (Online) http://www12.statcan.ca/census-recensement/2006/ref/dict/fam019-eng.cfm.

Statistics Canada (2008) "Glossary." (Online) http://www.statcan.gc.ca/pub/91-003-x/2007001/4129905-eng.htm#a6.

Statistics Canada (2006) "Low Income Cut-offs for 2005 and Low Income Measures for 2004," Income Research Paper Series, Income Statistics Division. Catalogue no. 75F0002MIF, No. 004, 37 pp.

Wilkinson, R. G. and Pickett, K.E. (2006). “Income inequality and population health: A review and explanation of the evidence.” *Social Science and Medicine*, vol. 62, pp. 1768–1784.

Winkleby, M.A., Jatulis D.E., Frank E. and Fortmann, S.P. (1992). “Socioeconomic status and health: how education, income, and occupation contribute to risk factors for cardiovascular disease.” *American Journal of Public Health*. June; vol. 82, no. 6, pp. 816–820.

APPENDIX 1

SOCIOECONOMIC INDICATORS FOR ANGLOPHONES AND FRANCOPHONES BY AREA OF RESIDENCE: 1991, 1996, 2001, AND 2006

Appendix 1 lists all the indicators presented in the text with the addition of equivalent indicators for 1996 and 2001. We also include employment rates for 15- to 24-year-olds along with certain data that is only available for 2006, i.e., the proportion of the total population, the population under age 6, and the population age 65 and over living below the low income cut-off **after** taxes.[10]

[10] The proportion of the population living below the low income cut-offs after taxes, as opposed to before taxes, is not available for censuses before 2006.

Table 5 Census socioeconomic indicators for anglophones and francophones by area of residence, 1991, 1996, 2001, and 2006

	1991	1996	2001	2006
Proportion of the population age 15 and over without a high school diploma				
Québec overall				
Anglophones	31.7	28.8	25.9	19.7
Francophones	39.6	35.8	31.9	25.3
Montréal CMA				
Anglophones	28.0	24.9	22.5	16.9
Francophones	35.0	31.6	27.6	21.9
Other CMAs				
Anglophones	30.6	27.7	24.4	20.2
Francophones	33.0	29.6	26.2	20.4
Outside CMAs				
Anglophones	48.1	45.0	40.9	31.8
Francophones	47.5	43.6	39.5	31.9
Proportion of the population age 15 and over with a bachelor's degree				
Québec overall				
Anglophones	16.4	18.6	20.5	22.5
Francophones	9.2	11.1	12.7	14.8
Montréal CMA				
Anglophones	18.8	21.1	23.2	25.3
Francophones	11.9	14.0	16.2	19.0
Other CMAs				
Anglophones	15.4	19.2	20.8	21.5
Francophones	11.9	14.0	15.4	17.7
Outside CMAs				
Anglophones	6.9	7.9	8.9	10.5
Francophones	5.2	6.4	7.4	8.5
Unemployment rate among 15- to 24-year-olds				
Québec overall				
Anglophones	18.7	20.5	15.1	15.0
Francophones	18.3	18.5	12.7	11.3
Montréal CMA				
Anglophones	18.2	19.4	14.6	14.0
Francophones	16.6	16.8	10.8	10.8
Other CMAs				
Anglophones	15.0	23.6	14.8	17.0
Francophones	17.0	19.8	13.3	10.9
Outside CMAs				
Anglophones	24.0	24.7	18.3	19.9
Francophones	21.0	19.6	14.7	12.2

Table 5 Census socioeconomic indicators for anglophones and francophones by area of residence, 1991, 1996, 2001, and 2006 (cont'd)

	1991	1996	2001	2006
Unemployment rate age 25 and over				
Québec overall				
Anglophones	10.6	10.7	7.5	6.8
Francophones	10.2	9.8	6.8	5.3
Montréal CMA				
Anglophones	10.2	9.9	7.0	6.5
Francophones	9.3	8.5	5.3	4.6
Other CMAs				
Anglophones	7.5	8.5	5.5	5.0
Francophones	8.5	8.9	6.0	4.4
Outside CMAs				
Anglophones	14.6	15.6	11.0	10.0
Francophones	12.2	11.9	8.8	6.7
Employment rate among 15- to 24-year-olds				
Québec overall				
Anglophones	51.8	43.4	49.0	50.5
Francophones	52.2	44.9	55.2	58.0
Montréal CMA				
Anglophones	52.4	44.3	49.3	51.1
Francophones	56.3	48.9	59.6	59.2
Other CMAs				
Anglophones	58.8	44.4	54.0	51.9
Francophones	53.7	44.6	55.3	60.5
Outside CMAs				
Anglophones	45.3	38.8	44.2	46.0
Francophones	47.5	41.2	50.5	55.2
Employment rate age 25 and over				
Québec overall				
Anglophones	57.1	56.1	59.4	60.9
Francophones	59.2	58.3	60.8	62.1
Montréal CMA				
Anglophones	58.9	57.9	60.9	62.8
Francophones	61.9	61.2	64.3	65.4
Other CMAs				
Anglophones	61.3	59.7	63.9	62.7
Francophones	61.3	59.9	61.6	63.2
Outside CMAs				
Anglophones	47.8	46.9	51.1	51.7
Francophones	55.5	54.6	56.8	58.0

Table 5 Census socioeconomic indicators for anglophones and francophones by area of residence, 1991, 1996, 2001, and 2006 (cont'd)

	1991	1996	2001	2006
Mean income for men (before taxes) ($)				
Québec overall				
Anglophones	32,611	33,291	39,645	45,652
Francophones	27,904	28,590	33,146	38,987
Montréal CMA				
Anglophones	34,945	35,536	42,372	49,089
Francophones	30,289	30,919	36,699	43,130
Other CMAs				
Anglophones	26,603	27,850	32,517	41,020
Francophones	26,380	26,767	30,448	40,040
Outside CMAs				
Anglophones	24,192	25,219	29,827	33,616
Francophones	25,131	25,805	29,322	34,219
Median income* for men (before taxes) ($)				
Québec overall				
Anglophones	24,689	23,410	27,299	29,045
Francophones	24,398	24,339	27,858	31,412
Montréal CMA				
Anglophones	25,719	24,353	28,339	29,700
Francophones	26,364	26,084	30,153	33,754
Other CMAs				
Anglophones	n/a	n/a	n/a	n/a
Francophones	n/a	n/a	n/a	n/a
Outside CMAs				
Anglophones	19,192	19,638	22,946	24,893
Francophones	21,891	21,995	25,231	28,898
Mean income for women (before taxes) ($)				
Québec overall				
Anglophones	18,834	20,285	24,058	29,081
Francophones	16,368	17,859	21,331	26,085
Montréal CMA				
Anglophones	19,710	21,387	25,116	30,311
Francophones	18,158	19,868	23,836	28,879
Other CMAs				
Anglophones	16,370	17,619	22,253	30,735
Francophones	15,312	16,707	19,753	27,061
Outside CMAs				
Anglophones	14,671	15,234	18,662	22,585
Francophones	14,096	15,235	18,162	22,369

* n/a: not available. The median income for other CMAs could not be calculated because the five CMAs are not aggregated.

Table 5 Census socioeconomic indicators for anglophones and francophones by area of residence, 1991, 1996, 2001, and 2006 (cont'd)

	1991	1996	2001	2006
Median income* for women (before taxes) ($)				
Québec overall				
Anglophones	14,054	14,829	17,403	20,982
Francophones	12,503	13,476	16,396	20,351
Montréal CMA				
Anglophones	15,028	15,573	18,339	21,786
Francophones	14,524	15,258	18,828	22,940
Other CMAs				
Anglophones	n/a	n/a	n/a	n/a
Francophones	n/a	n/a	n/a	n/a
Outside CMAs				
Anglophones	10,720	11,622	14,024	17,327
Francophones	10,730	11,818	14,118	17,616
Total population living below the Low income cut-offs after taxes**				
Québec overall				
Anglophones	n/a	n/a	n/a	14.2
Francophones	n/a	n/a	n/a	10.5
Montréal CMA				
Anglophones	n/a	n/a	n/a	15.7
Francophones	n/a	n/a	n/a	13.0
Other CMAs				
Anglophones	n/a	n/a	n/a	10.7
Francophones	**n/a**	**n/a**	**n/a**	**11.1**
Outside CMAs				
Anglophones	n/a	n/a	n/a	8.9
Francophones	n/a	n/a	n/a	7.5
Population age 6 and under living below the Low income cut-offs after taxes				
Québec overall				
Anglophones	n/a	n/a	n/a	15.7
Francophones	n/a	n/a	n/a	10.6
Montréal CMA				
Anglophones	n/a	n/a	n/a	17.2
Francophones	n/a	n/a	n/a	13.8
Other CMAs				
Anglophones	n/a	n/a	n/a	10.1
Francophones	n/a	n/a	n/a	9.7
Outside CMAs				
Anglophones	n/a	n/a	n/a	7.7
Francophones	n/a	n/a	n/a	7.5

* n/a: not available. The median income for other CMAs could not be calculated because the five CMAs are not aggregated.

** n/a: not available. Indicator available for 2006 only.

Table 5 Census socioeconomic indicators for anglophones and francophones by area of residence, 1991, 1996, 2001, and 2006 (cont'd)

	1991	1996	2001	2006
Population age 65 and over living below the Low income cut-offs after taxes				
Québec overall				
Anglophones	n/a	n/a	n/a	9.6
Francophones	n/a	n/a	n/a	9.5
Montréal CMA				
Anglophones	n/a	n/a	n/a	11.9
Francophones	n/a	n/a	n/a	15.1
Other CMAs				
Anglophones	n/a	n/a	n/a	7.7
Francophones	n/a	n/a	n/a	11.7
Outside CMAs				
Anglophones	n/a	n/a	n/a	2.8
Francophones	n/a	n/a	n/a	3.0
Total population living below the Low income cut-offs before taxes***				
Québec overall				
Anglophones	19.9	n/a	n/a	18.8
Francophones	18.0	n/a	n/a	14.7
Montréal CMA				
Anglophones	20.5	n/a	n/a	20.3
Francophones	20.1	n/a	n/a	17.2
Other CMAs				
Anglophones	16.1	n/a	n/a	14.3
Francophones	18.0	n/a	n/a	15.2
Outside CMAs				
Anglophones	19.2	n/a	n/a	14.0
Francophones	16.1	n/a	n/a	11.8
Population age 6 and under living below the Low income cut-offs before taxes				
Québec overall				
Anglophones	23.5	n/a	n/a	21.5
Francophones	19.6	n/a	n/a	15.3
Montréal CMA				
Anglophones	23.7	n/a	n/a	23.0
Francophones	22.4	n/a	n/a	18.6
Other CMAs				
Anglophones	16.8	n/a	n/a	14.0
Francophones	18.6	n/a	n/a	14.4
Outside CMAs				
Anglophones	26.0	n/a	n/a	15.1
Francophones	17.5	n/a	n/a	11.9

*** n/a: not available. Indicator available for 1991 and 2006 only.

Table 5 Census socioeconomic indicators for anglophones and francophones by area of residence, 1991, 1996, 2001, and 2006 (cont'd)

	1991	1996	2001	2006
Population age 65 and over living below the Low income cut-offs before taxes				
Québec overall				
Anglophones	23.8	n/a	n/a	17.9
Francophones	28.7	n/a	n/a	19.9
Montréal CMA				
Anglophones	26.7	n/a	n/a	20.1
Francophones	36.1	n/a	n/a	25.5
Other CMAs				
Anglophones	19.9	n/a	n/a	16.5
Francophones	31.1	n/a	n/a	22.4
Outside CMAs				
Anglophones	15.7	n/a	n/a	11.2
Francophones	21.3	n/a	n/a	13.1
Gini coefficient: men				
Québec overall				
Anglophones	47.8	51.6	51.5	54.7
Francophones	40.3	43.5	43.0	43.7
Montréal CMA				
Anglophones	48.7	53.0	52.9	56.5
Francophones	40.5	44.1	44.0	45.4
Other CMAs				
Anglophones	40.1	44.4	44.5	44.5
Francophones	39.9	43.3	42.3	42.8
Outside CMAs				
Anglophones	43.8	46.2	46.0	47.9
Francophones	39.7	42.4	41.4	41.2
Gini coefficient: women				
Québec overall				
Anglophones	44.8	47.3	47.4	47.4
Francophones	42.6	44.7	44.0	42.3
Montréal CMA				
Anglophones	44.5	47.2	47.6	48.3
Francophones	41.5	43.8	43.3	42.6
Other CMAs				
Anglophones	43.4	44.5	45.3	43.3
Francophones	42.2	44.2	43.5	41.6
Outside CMAs				
Anglophones	44.5	45.7	45.5	42.7
Francophones	42.8	44.7	43.8	41.1

APPENDIX 2

LOW INCOME CUT-OFFS FOR ECONOMIC FAMILIES AND UNATTACHED INDIVIDUALS, 2005

Table 6 Low income cuts-off for economic families and unattached individuals, 2005

Size of area of residence					
Family size	**Rural areas (agricultural and non-agricultural)**	**Small urban areas**	**30,000 to 99,999**	**100,000 to 499,999**	**500,000 and over**
1	14,303	16,273	17,784	17,895	20,778
2	17,807	20,257	22,139	22,276	25,867
3	21,891	24,904	27,217	27,386	31,801
4	26,579	30,238	33,046	33,251	38,610
5	30,145	34,295	37,480	37,711	43,791
6	33,999	38,679	42,271	42,533	49,389
7+	37,853	43,063	47,063	47,354	54,987

Source: Statistics Canada. Income Research Paper Series, Low income cut-offs for 2006 and low income measures for 2005," catalogue no.75F0002MIE, Statistics Canada, no. 004.

Note: The Montréal and Québec City CMAs are in the 500,000 and over category, other CMAs in the 100,000 to 499,999 category, while non-metropolitan areas are in the 30,000 to 99,999, small urban areas, and rural area categories.

APPENDIX 3

INDICATOR DEFINITIONS

INDICATORS DEFINITIONS

Employment rate:

Number of persons employed in the week (Sunday to Saturday) prior to Census Day as a percentage of the total population age 15 and over.

Employed persons are persons who, during the week (Sunday to Saturday) prior to Census Day (a) did any work at all for pay or in self-employment or without pay in a family farm or business or professional practice; or (b) were absent from their job or business with or without pay for the entire week because of vacation, illness, labour dispute, or for any other reason.

Unemployment rate:

Number of persons unemployed in the week (Sunday to Saturday) prior to Census Day as a percentage of the labour force.

Labour force = employed persons + unemployed persons

Proportion of the population living below the low income cut-offs (LICOs) before taxes:

Low income cut-offs before taxes vary according to family size and area of residence and designate the level at which a family devotes 20% more of its income to food, housing, and clothing than does the average family. Economic families and persons not in economic families on Indian reserves are not included in low-income statistics (before or after taxes) (Statistics Canada, 2009). The most recent base year was 1992, although LICOs are updated regularly according to the Consumer Price Index (Statistics Canada 2009).

APPENDIX 4

THE LORENZ CURVE

THE LORENZ CURVE

Figure 16 shows Lorenz curves. The Gini coefficient is derived from the Lorenz curve. The Gini coefficient takes the area between the line of perfect equality and the Lorenz curve, which represents the actual ranking and frequency of income levels, and divides it by the total area below the line of perfect equality. The farther the Lorenz curve is from the line of perfect equality, the higher the Gini coefficient, meaning that inequality is higher.

The figure below shows income inequality for groups A and B. Because group B's Lorenz curve is further from the line of perfect equality than group A's, group B's Gini coefficient is higher. Group B therefore experiences greater internal income inequality than does group A.

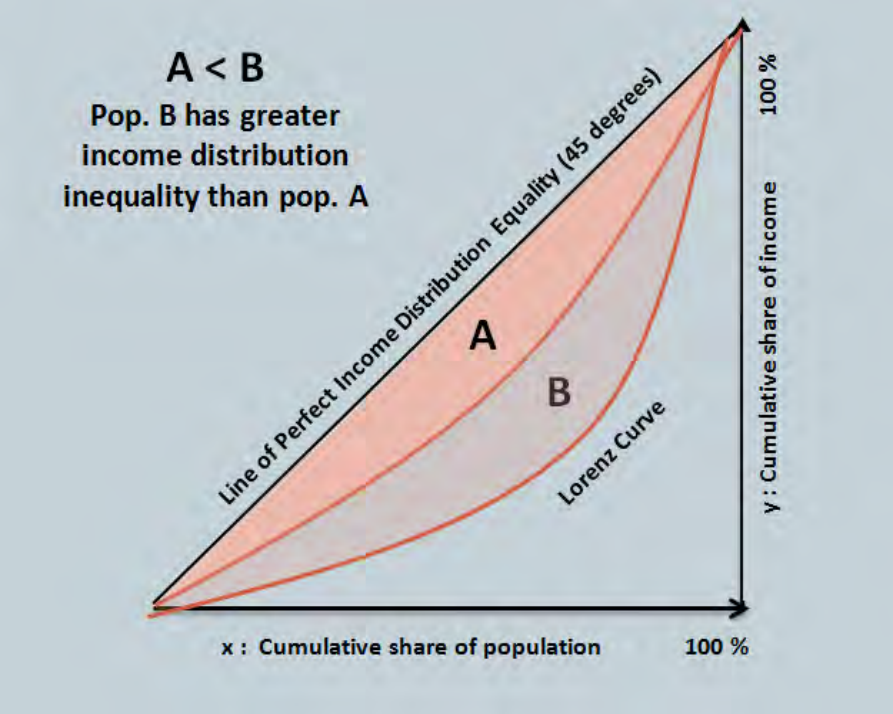

Figure 16 Sample Lorenz curves and income distribution

These sample Lorenz curves have a classic arch, but the Lorenz curve can take a variety of shapes depending on where inequality is concentrated: at the bottom, in the middle, or at the top of the income spectrum. However, such variations do not necessarily alter the total area between the curve and the line of equality and may therefore yield identical Gini coefficients. One of the Gini coefficient's limitations is that it tells us nothing about where along the income spectrum inequality occurs.

Publication N^{o}: 1494

EXPERTISE
CONSEIL

INFORMATION

FORMATION

www.**inspq**.qc.ca

RECHERCHE
ÉVALUATION
ET INNOVATION

COLLABORATION
INTERNATIONALE

LABORATOIRES
ET DÉPISTAGE

Institut national de santé publique Québec