

2. Social and economic inequalities in the circumpolar Arctic

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Translated from French (Canada) by Elliott Macklovitch

I remember the bright silks and sparkling faces I had seen that day, in gala trim, swanlike sailing down the Mississippi of Broadway; and I contrasted them with the pallid copyist, and thought to myself, Ah, happiness courts the light, so we deem the world is gay, but misery hides aloof, so we deem that misery there is none.

Herman Melville, *Bartleby the Scrivener*, 1853

Introduction

Although social and economic inequalities appear in social science studies of the Arctic, they are rarely the focus of systematic attention at the level of the entire circumpolar region. Recent large-scale international research programs provide numerous indications of the presence of such inequalities. In the update of the Arctic Human Development Report (AHDR), dimensions like demography, health, education and the economy are examined in an effort to identify the principal trends that have marked the last decade. The report highlights significant disparities between rich and poor regions, or between regions with high or low levels of education¹. In the wake of the AHDR, the Arctic Social Indicators (ASI) program proposes a human development monitoring system with a series of indicators that characterize the situation in each region. The ASI program's latest publication offers regional case studies with rich data sets, and reveals several types of inequalities, such as in urban or rural areas or in the indigenous or total population². Finally, the Megatrends program, run by the Nordic Council of Ministers, identifies numerous contrasts between Arctic regions, as regards, for example, the level of economic development or industrial structure³.

Several studies agree that growth in inequalities and their increasing complexity are central characteristics of globalization⁴. Since 1980, on a world-wide level, the following appears to be dominant trends in these inequalities: they have declined between nations, but have increased within nations, especially within rich nations⁵. The reasons for the relative increase in inequalities within rich countries (partial deindustrialization, job insecurity, rise in poverty) are different from those in poor countries (export-driven development). Moreover, in most countries, the gap between the richest and poorest segments of society has widened under the influence of similar forces.

Many recent studies suggest that the circumpolar Arctic is involved in the process of globalization, with considerable impact on economic structure, socio-economic conditions and social inequalities. Some support this assumption with a few relevant indicators; others illustrate the basic mechanisms with empirical arguments that are more or less detailed, borrowed mainly from international law, geopolitics or economics⁶.

In our previous comparative study for 2006, in *The Economy of the North 2008*, we showed that there are important differences in social and economic conditions across the circumpolar Arctic⁷. We collected widely used indicators of demography, health, education and economic situation. The results suggested the existence of distinct patterns that characterized the socio-economic differences between the main geopolitical groups of Arctic regions, in North America, the Nordic countries, and the Russian Federation. In North America, the indicators generally showed the most favourable economic and social conditions for human development; in Arctic Russia, they generally showed less favourable economic and social conditions, while the Arctic regions of the Nordic countries were somewhere in the middle. In short, the indicators pointed to social situations that were quite specific, corresponding to different political and economic systems of the Arctic regions. However, none of these general patterns reflected the situation in all sub-regions. The situation in the most prosperous sub-regions - Alaska, Troms



Greenland/Colorbox

Table 2.1. **Selected social and economic indicators¹ and composite index². Arctic regions. 2012³**

Regions	Population	Population growth 2000-2012	Female rate	Youth rate	Demo-graphic dependency	Life expectancy	Infant mortality	Tertiary education	Economic dependency	Dis-posable income ⁴	GDP	Com-posite index
	N	Per cent			Ratio	Years	Per 1000 live births	Per cent	Ratio	USD-PPP per cap		n
Alaska	731 449	1.3	47.9	14.5	0.43	78.0	5.2	36.2	0.6	43 394	78 515	7.13
Northwest Territories	41 460	0.7	49.2	21.7	0.38	78.1	7.2	20.1	0.6	30 993	88 936	6.00
Nunavut	31 905	2.1	48.6	32.7	0.56	73.8	26.3	10.5	2.1	24 735	52 742	3.97
Yukon	33 900	1.5	49.7	17.3	0.36	77.4	0.0	25.4	0.7	33 219	59 823	6.13
Faroe Islands	48 211	0.4	48.1	21.5	0.58	82.0	6.3	41.5	0.7	16 713	35 056	5.37
Lapland	182 844	-0.5	49.8	20.5	0.56	80.0	..	23.7	1.4	17 430	33 269	3.98
Oulu	400 670	0.8	49.6	20.5	0.57	80.8	..	27.1	1.4	16 756	32 760	4.60
Kainuu	80 685	-1.0	49.9	14.6	0.59	79.0	.	22.0	1.3	17 090	28 282	3.57
Greenland	56 749	0.0	47.1	22.0	0.41	70.9	8.9	16.0	1.2	12 258	30 085	3.72
Iceland	319 575	1.1	49.8	18.4	0.50	82.3	1.1	27.3	0.9	17 152	39 866	5.36
Finnmark	73 787	0.1	48.7	17.7	0.50	78.9	2.3	23.3	0.9	22 062	41 479	4.75
Nordland	238 320	0.1	49.7	18.1	0.55	80.5	1.6	22.3	1.0	21 560	40 493	4.62
Troms	158 650	0.5	49.5	14.8	0.51	80.3	6.0	26.6	0.9	22 265	42 403	5.09
Norrbotten	248 591	-0.3	49.2	15.7	0.59	80.8	..	15.9	1.1	18 832	47 336	3.91
Vasterbotten	259 942	0.2	49.7	17.1	0.55	81.2	..	20.7	1.1	17 615	34 992	4.22
Arkhangelsk	1 213 533	-1.2	53.3	17.1	0.66	70.1	7.1	17.5	1.0	14 689	22 985	3.41
Chukchi	50 988	-1.3	49.3	22.2	0.49	60.7	21.2	21.2	0.5	27 212	53 396	4.04
Karelia	639 681	-1.2	54.4	16.3	0.66	68.6	7.6	19.1	1.1	12 545	14 291	3.46
Khanty-Mansii	1 561 238	0.7	51.1	20.9	0.47	71.9	4.5	24.0	0.7	22 774	91 425	5.47
Komi	889 837	-1.5	52.8	18.1	0.57	68.7	5.9	17.8	0.9	16 404	31 292	3.65
Magadan	154 485	-2.2	51.5	17.1	0.53	66.5	8.4	23.7	0.7	22 544	29 940	3.59
Murmansk	787 948	-1.5	52.2	16.6	0.55	69.9	6.6	21.0	0.9	17 449	21 730	3.91
Sakha	955 859	0.0	51.4	23.5	0.58	68.3	9.6	21.6	1.0	17 630	32 710	4.14
Yamal-Nenets	536 558	1.2	49.7	21.8	0.43	70.7	10.5	26.6	0.4	31 511	111 899	7.25

¹ Population growth: average annual per cent; female rate: per cent women in total population (relative to global average at 49.59 in 2012, from World Bank); youth rate: per cent of 0-14 years in the total population; demographic dependency: (0-14) + (65 +) / (15-64); infant mortality: per 1000 live births; tertiary education: per cent of tertiary level graduates in total population; economic dependency: (non-employed/employed person in total population); disposable income: personal disposable income in 2010 USD-PPP; GDP: gross domestic product in 2010 USD-PPP.

² The composite index calculation does not take into account total population and infant mortality.

³ Alaska: life expectancy 2010; Canada: 2011, except economic data 2012; Norway: life expectancy 2010, infant mortality 2011; Russia: educational attainment 2010. For infant mortality data were not available by the time of collecting data. For Candada the 2011 census data were used. Regarding the Yukon infant mortality rate, it was 0.0 for 2011, but for 2012 it was 2.2.

⁴ The discrepancy between the household disposable income data presented in this chapter and Chapter 3 can be explained by the different conversion procedures used: in this chapter, the household disposable income has been converted in PPP to ensure comparability across the regions, and based on constant 2010 prices to ensure comparability between 2006 and 2012. In Chapter 3, the household disposable income was not compared across time and was based on constant 2010 USD-PPP.

and Yamal-Nenets – was very different from that of the poorest sub-regions – Nunavik, Greenland and Arkhangelsk. We found that the key to a proper explanation lay both in the local characteristics and in the structure of society, such as population size, proportion of indigenous peoples, industrial structure, infrastructure development, natural resources extraction regimes, political conditions, as well as globalization as a factor that generates social inequalities.

The study reported in this chapter updates and extends the comparative study and explores some aspects of inequality in economic and social conditions across the circumpolar Arctic. We extended the methodology we developed for *The Economy of the North* 2008, in order to compare the situations in 2012 and 2006. Comparing the indicators allowed us to verify whether the models we previously identified for 2006 are still relevant in 2012. The results also allowed us to see if the relative ranking of regions and sub-regions is still valid.

Methodology

Our study focuses on demography, health and education, and the economic situation. We gathered additional indicators and revised and harmonized the set of indicators for 2006 and 2012, the most recent year for which data were available. We collected data for 2006 and 2012 on the following ten indicators: (1) proportion of women in the total population, (2) life expectancy at birth, (3) infant mortality rate, (4) graduation rate at the tertiary education level, (5) disposable income per capita, (6) economic dependency ratio (proportion of non-employed persons to employed persons in total population), (7) population growth, (8) demographic replacement rate (proportion of women in reproductive age to children from 0 to 14 years), (9) demographic dependency ratio (proportion of children and elders to adults), and (10) gross regional product (GRP) per capita. GRP is gross domestic product (GDP) at regional level (Table 2.1). The indicators were transformed to a common format, presented as an index on a scale from 1 to 10, where 1



Arctic Canada, Igloolik. Photos: Mary Stapleton

represents the least favourable condition, and 10 the most favourable condition for human development⁸ (see Box 2.1). The results were displayed in nine-point radar-shaped diagrams (Figures 2.1 to 2.8), and the more of the total area that is covered, the more favourable are the indicators in terms of human development. A composite index for each region was calculated as average of the scaled indicators (Table 2.1, last column). The composite index and the radar-shaped diagrams do not include infant mortality. Data on infant mortality are no longer recorded for the Arctic regions in Finland and Sweden. Available data on infant mortality are given in Table 2.1 and Annex 2.1. In the previous study for 2006, the proportion of indigenous peoples in the total population was recorded, but in the present study

we did not retain this indicator, as a lack of systematic data on indigenous peoples prevails, and the efforts required to overcome this obstacle were beyond the reach of this study.

Our study covers the following regions of the circumpolar Arctic: Alaska (USA); Yukon, the Northwest Territories and Nunavut (Canada); Greenland and the Faroe Islands (Denmark); Iceland; Finnmark, Troms and Nordland (Norway); Norrbotten and Vasterbotten (Sweden); Lapland, Kainuu and Oulu (Finland); and Arkhangelsk, Chukotka, Karelia, Khanty-Mansii, Komi, Magadan, Murmansk, Sakha, Yamal-Nenets (Russian Federation). We were not able to include the regions of Nunatsiavut (or Inuit Labrador) and Nunavik covered in the previous study (see Box 2.2) because of changes to practices at Statistics Canada. The Norwegian island of Svalbard is also excluded, as in the previous study. Following changes in the Russian Federation's constitutional law, Rosstat adjusted its statistical coverage, as described in the Chapter 1, in particular the regions of Evenk and Taimyr (Dolgan-Nenets) are now included in the territory of Krasnoyarsk. Apart from the economic data, most of the other data were taken from the socioeconomic database ArcticStat, www.ArcticStat.org, (Annex 2.2) based on data from the national statistical agencies of the Arctic countries. The economic data are the same as those in Chapter 3 of this report. Where data were not available, data from the most recent available year were used.

Box 2.1. Converting social and economic indicators to a common scale

Since the indicators are of different units, they have been converted into indices on a scale of 1 to 10. For each indicator, the lowest observation was subtracted from the set of regional observations. The differences were expressed as shares of the gap between the highest and lowest observation. The resulting ratios were multiplied by 10, to obtain indices expressed on a scale from 1 to 10. For the following indicators, the first step was calculated differently, to express that low values are beneficial: for infant mortality, economic dependency and demographic dependency, the observation for each region was subtracted from the highest observation. In the case of the female proportion, the observation for each region was subtracted from the global average (and converted to an absolute value by adding 10).

The share of women in the population and the youth rate are presented differently in the radar diagrams and the bar diagrams (Figures 2.11 to 2.18). The bar diagrams depict the actual share of women in the population and the actual proportion of children aged under 15 years. In the radar diagrams, the youth rate is replaced by a demographic replacement rate based on the ratio between children (aged 15 years and younger) and women (aged 15-54 years) as a proxy measure for the total fertility rate (which is not available for all Arctic regions), and we calculated the distance of this fertility rate proxy to the minimal replacement rate used in developed countries (defined as 2.1 children per woman). We then calculated the distance between the fertility rate proxy and the replacement rate of 2.1.

The composite index was calculated as the average of these indices (except infant mortality), allowing us to produce a comparative ranking of the regions.



Leftovers, Nuvahut/Photo: Mary Stapleton

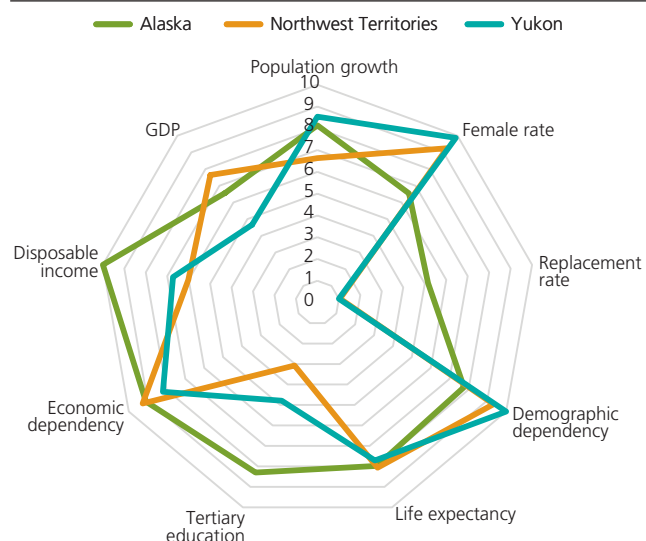
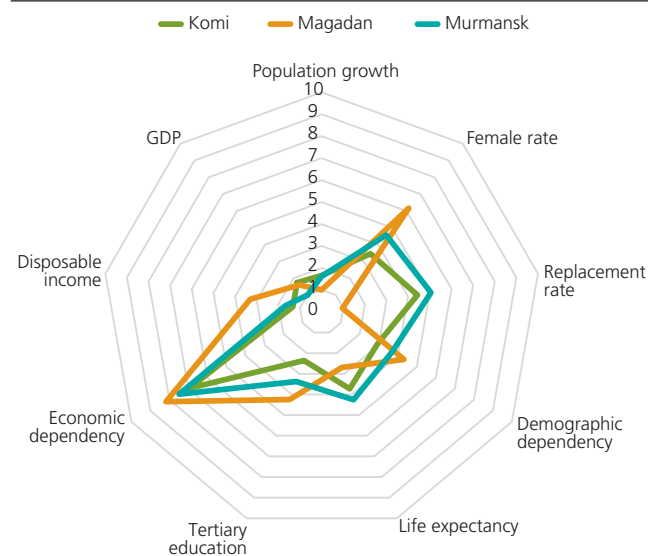
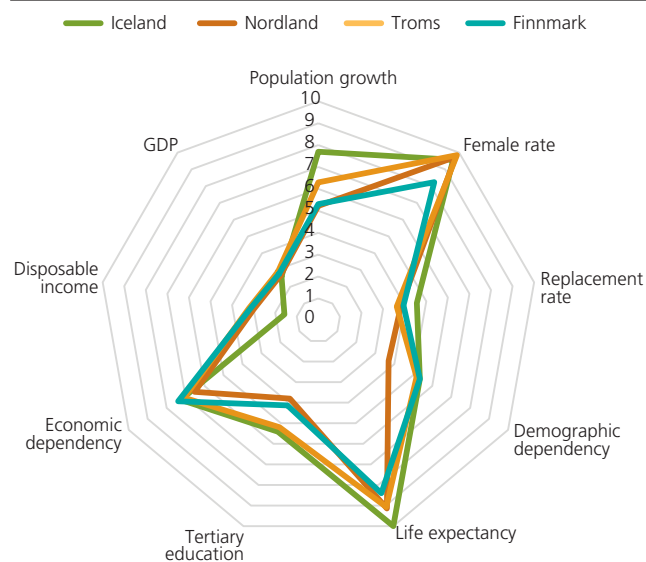
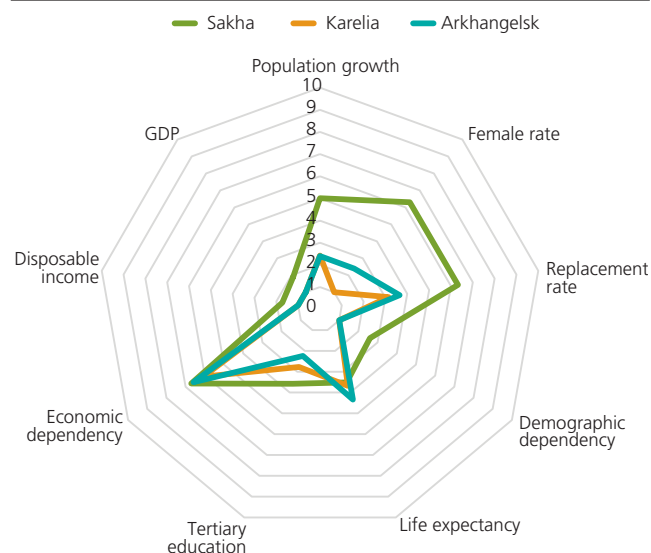
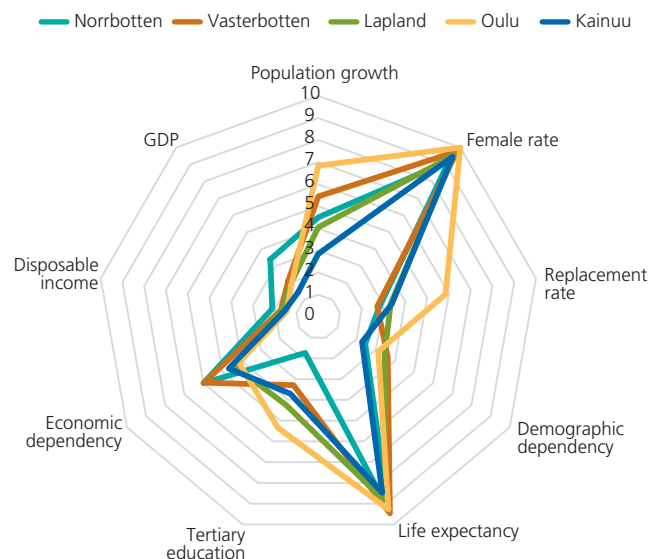
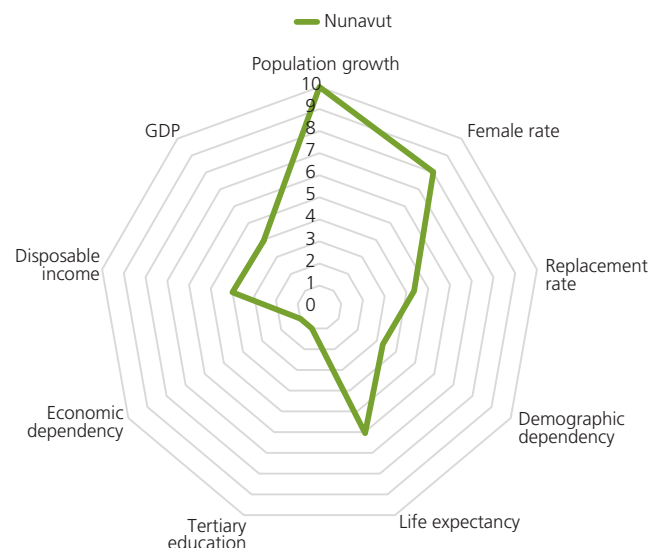
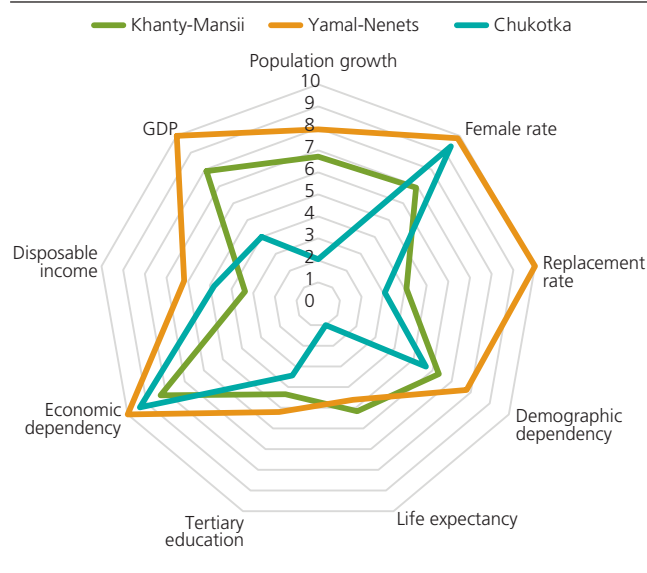
Figure 2.1. **North America model, main pattern, 2012**Figure 2.4. **Russian Federation model, main pattern, 2012**Figure 2.2. **Nordic Countries model, main pattern, 2012**Figure 2.5. **Russian Federation model, main pattern, 2012 (cont.)**Figure 2.3. **Nordic Countries model, main pattern, 2012 (cont.)**Figure 2.6. **North America model, variation, 2012**

Figure 2.7. **Nordic Countries model, variation, 2012**Figure 2.8. **Russian Federation model, variation, 2012**Table 2.2. **Arctic regions distribution by socio-economic model, 2012**

Model	Main pattern	Variation
North America Model Figure 2.1 and 2.6	Alaska Northwest Territories Yukon	Nunavut
Nordic Countries Model Figure 2.2, 2.3 and 2.7	Iceland Nordland Troms Finnmark Norrbotten Vasterbotten Lapland Oulu Kainuu	Faroe Islands Greenland
Russian Federation Model Figure 2.4, 2.5 and 2.8	Arkhangelsk Karelia Komi Magadan Murmansk Sakha	Chukotka Khanty-Mansii Yamal-Nenets

The Three Worlds

The results confirm structural differences in inequalities between the Arctic regions of North America, the Nordic countries and the Russian Federation, (Figures 2.1 to 2.8). The pattern is similar to what was observed in the study for 2006 as reported in *The Economy of the North 2008*. The results also confirm that, beyond certain similarities between the regions within a given model, there also exist variations within the typical pattern (Table 2.2).

The majority of Arctic regions in North America appear to be rather favourable to human development, with the highest disposable income per capita, longest life expectancy, and lower rates of demographic and economic dependencies, together with a rather high population growth rate and female rate. The indicators GRP per capita and education display average values, whereas the replacement rate is below average (Figure 2.1).

Throughout the Nordic Arctic regions, life expectancy is the highest in the most egalitarian regions (Figure 2.9). The situation in the Arctic regions of the Nordic countries shows a different pattern. First of all, most Nordic Arctic regions enjoy the longest life expectancy and has female rate close to the global average. The other indicators are all at average or below. Both gross regional product (GRP) per capita and disposable income per capita are relatively low compared to the North American regions (Figures 2.2 and 2.3).

Most of the Arctic regions in the Russian Federation show a very different situation. The female rate (share of women in the population) is far from the global average, and the rates of economic dependency are low. All the other indicators are generally below average (Figures 2.4 and 2.5). Table 2.1 illustrates the considerable differences in population size within the Arctic regions. The Russian Federation represents about 70 per cent of the entire population of the circumpolar Arctic, with the largest populations found within Khanty-Mansii and Arkhangelsk.

Despite significant Russian progress achieved in 2012 compared to 2006, life expectancy and education were still at lower levels in the Arctic Russian regions compared to the Nordic regions. The Arctic Russian regions Khanty-Mansii, Yamal-Nenets and Chukotka diverge in several ways from the main pattern of the Russian model. These resource-rich regions have the highest GRP per capita of the Arctic Russian regions (Figure 2.8), due to the exploitation of natural resources.

There are notable variations from the three typical patterns (Table 2.2). In North American Arctic and the Nordic Arctic regions, the variations are found in isolated regions with small populations. In Nunavut, the picture is practically the opposite of the typical North American model. The population has an average life expectancy, but a significant proportion of depen-

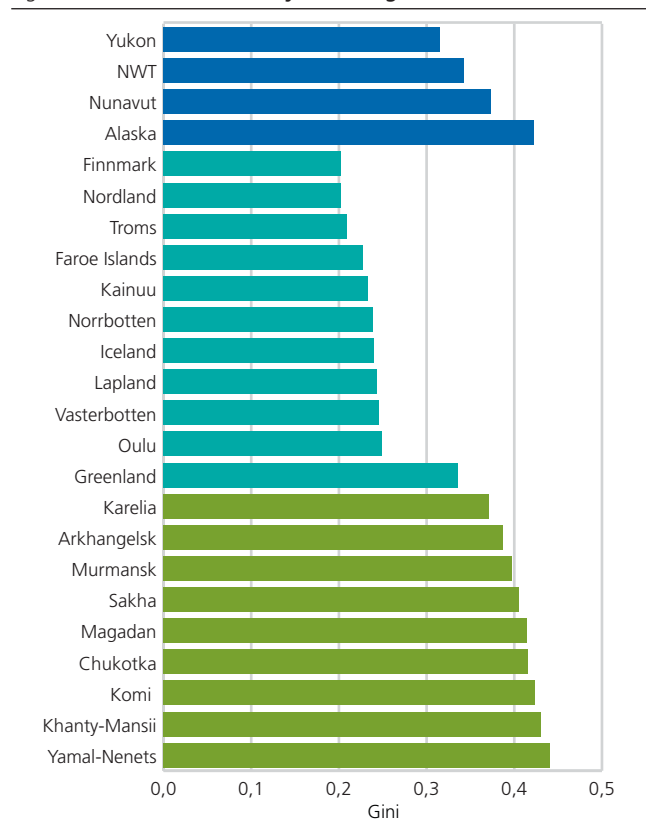


Longyearbyen, Svalbard, the world's northernmost city. Photo: Crestock

dents, and the level of education is among the lowest in the entire circumpolar region (Figure 2.6). The situation of Greenland and the Faroe Islands is generally similar to the main Nordic model. However, Greenland and the Faroe Islands clearly differ from the other regions, and in particular life expectancy, education and economic dependency ratio are more favourable in the Faroe Islands than in Greenland (Figure 2.7).

In Arctic Russia, the sub-regions that differ from the general model, are Yamal-Nenets, Khanty-Mansii and Chukotka (Figure 2.8). The GDP per capita in Yamal-Nenets is the highest within the circumpolar Arctic and several indicators are also very favourable in the other two regions. Altogether they show variations that recall the main pattern of the North American model (Figure 2.1).

Figure 2.9. **Gini coefficient by Arctic regions 2012**

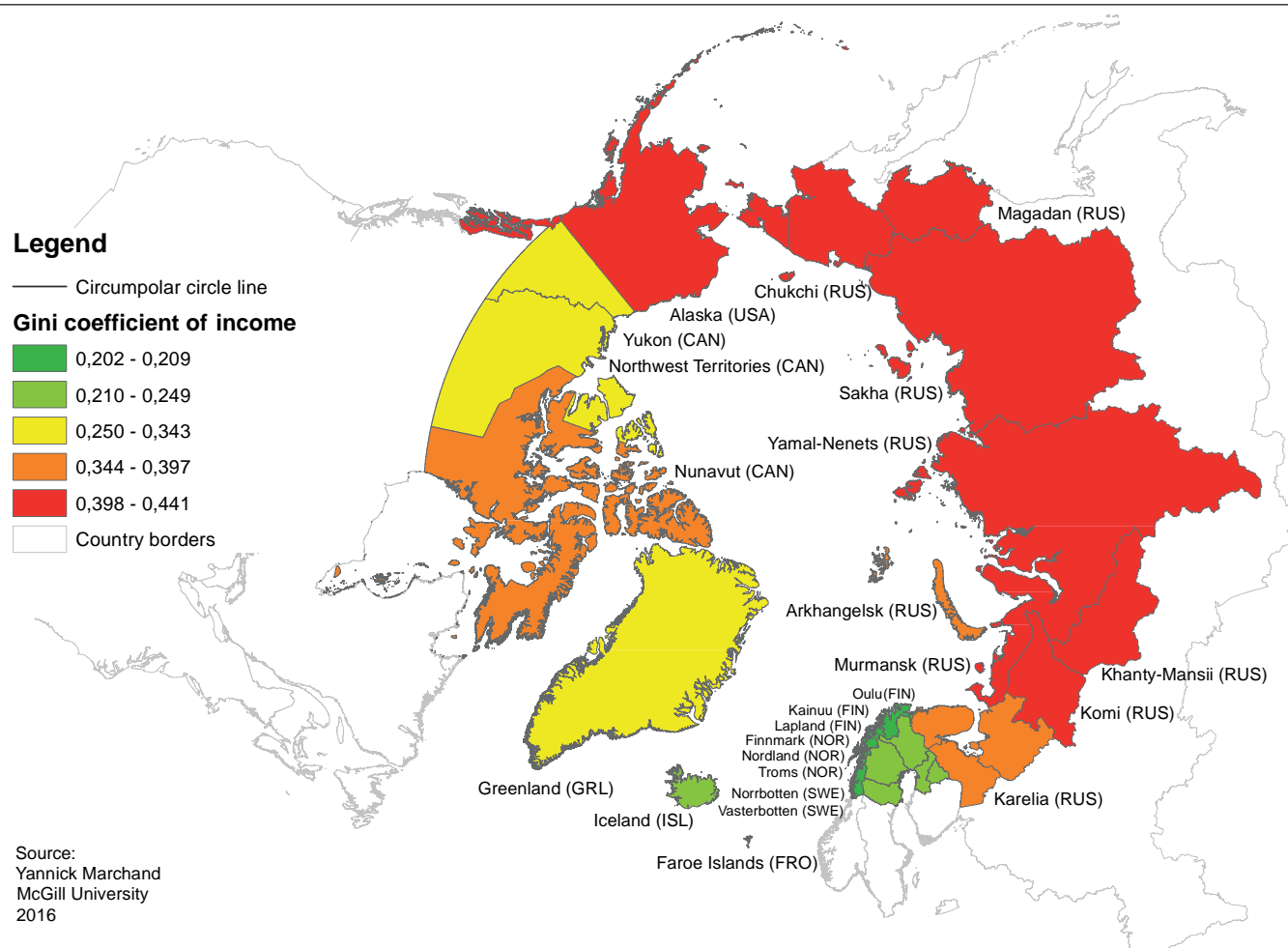


In summary, this circumpolar comparative analysis for 2012 shows that the socio-economic indicators for the Arctic regions reproduce the models that were initially identified in 2006, with regard to the three main models for the Arctic regions in North America, Nordic countries and Russian Federation, and the variations that occur within those models.

Income distribution and inequalities

The Gini coefficient is a measure of income inequality within a given population. The coefficient varies between 0 and 1, where 0 signifies perfect equality, and 1 corresponds to complete inequality, i.e. where a single person has the entire income of the economy.

Gini coefficients by Arctic sub-regions are displayed in Figure 2.9. The Gini coefficients range between 0.2 and 0.43. The lowest inequality is found in Finnmark, followed by the other Nordic regions of the Arctic. In the Nordic regions the level of disposable income per capita is low, but supplemented by comprehensive public services as a consequence of redistribution of tax revenue, in accordance with national social policies. The more egalitarian distribution of income reflects that these sparsely populated regions belong to the Nordic countries. Supported by a diversified economy that contributes to their funding, these policy orientations do bear fruit in terms of improved welfare⁹.

Figure 2.10. Map of circumpolar Arctic income inequality measured by the Gini coefficient. 2012¹

¹ When available, the Gini coefficients for disposable income of households were selected, however, for some regions the Gini coefficients are based on different income concepts, income equivalence scales or statistical units.

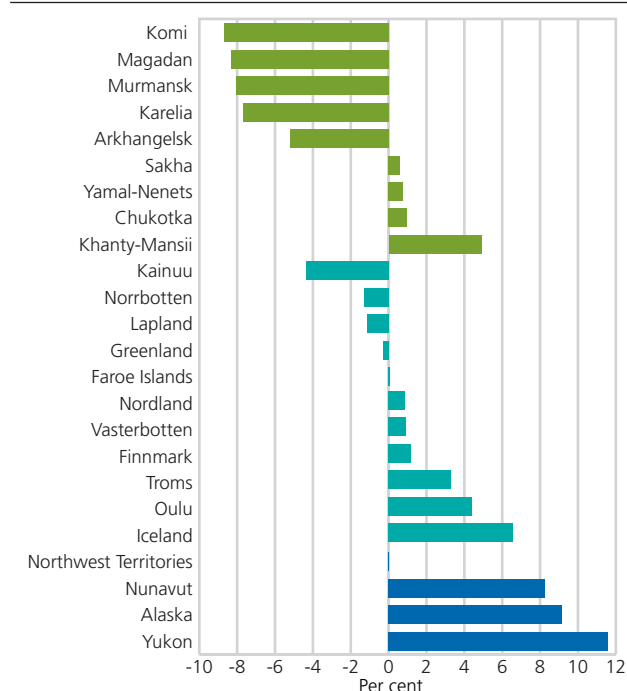
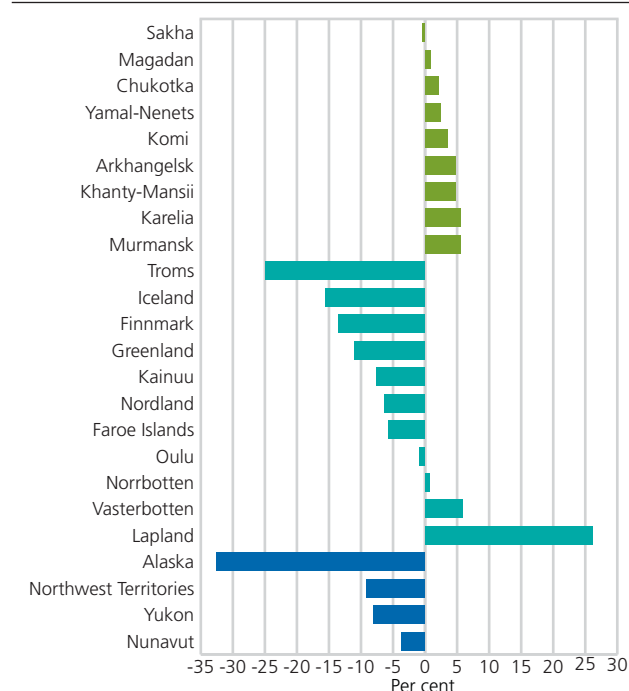
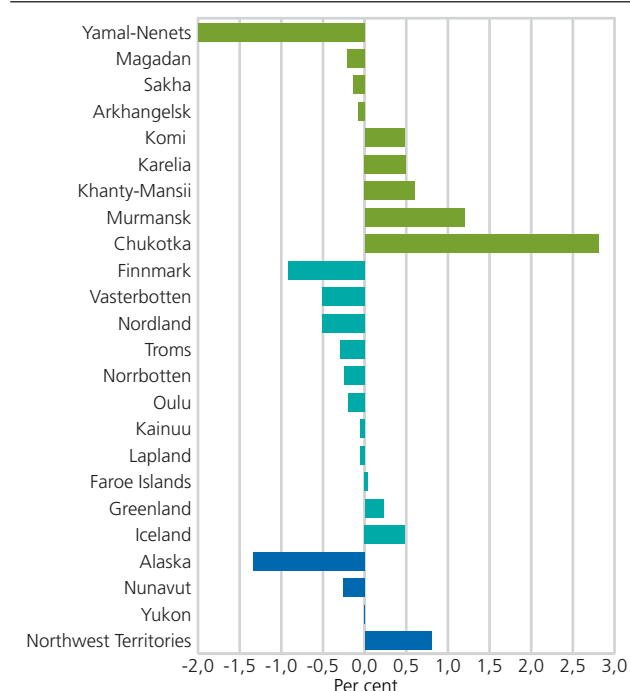
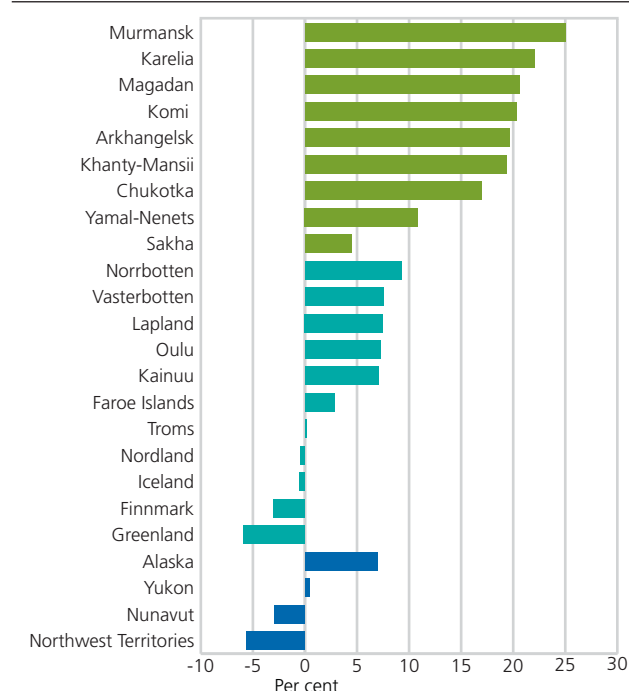
The American and Russian regions of the Arctic have Gini coefficients above the median with Yamal-Nenets on top. The resource-rich regions of Khanty-Mansii, Yamal-Nenets and Chukotka, with the highest level of disposable income per capita and GRP per capita, also have the highest inequality measured by the Gini coefficient. Within the regions inequalities can be observed as a result of e.g. highly paid employees in the mining sector¹⁰ and other activities related to extractive industries.

The economic inequalities may be exacerbated by inequalities in access to other social resources, e.g. health services and housing¹¹. The dismantling of the USSR and the deep crisis that marked the ensuing decade and the following years, led to economic liberalization and the erosion of the social safety net¹². For example, in-kind benefits such as free housing, which previously were the norm, were replaced by cash payments. This “monetization of assistance” contributed to an increase in inequalities, since the amounts granted did not take into account the high cost of living in the North¹³.

Alaska is the North American region where the income inequalities are the highest, with a Gini coefficient of about 0.42. The Gini coefficients for the Canadian

Arctic regions are situated in the middle, between high inequality in Alaska and resource-rich Arctic Russian regions, and low inequality in the Nordic regions. A study of inequality in the region inhabited by Canada’s Inuit (which covers part of the Northwest territories, Nunavut, Nunavik in Quebec and Nunatsiavut in Labrador) for 2010 showed that inequalities in this region remained very strong, and indigenous people were five times more prevalent in the lowest two deciles of the income distribution, and four times less numerous in the upper two deciles¹⁴. In 2006, the indigenous poverty rate was 44 per cent, more than three times the Canadian rate¹⁵. While these studies certainly suggest major inequality gaps, it is essential to achieve better statistical coverage, both geographic and temporal, before we can reach firm conclusions consistent with the approach and methodology adopted here.

Figure 2.10 displays the Gini coefficients on a map where green color indicates low inequality and red indicates high inequality. The Gini coefficients were calculated by the national statistical agencies in the Arctic countries¹⁶. When available, the Gini coefficients for household disposable income were selected. The Gini coefficients for some regions were calculated with different income concepts, with income

Figure 2.11. **Population by Arctic regions, changes between 2006-2012**Figure 2.13. **Youth rate by Arctic regions, changes between 2006-2012**Figure 2.12. **Female rate by Arctic regions, changes between 2006-2012**Figure 2.14. **Demographic dependency ratio by Arctic regions, changes between 2006-2012**

equivalence scales or different statistical units. Moreover, the lack of underlying data on source of income and its distribution across regions and social groups limits the depth at which we can understand the distribution of income.

For some regions the Gini coefficients were not available for the appropriate geographical level; in these cases, an estimate was calculated based on Gini coefficients of each sub-regions, from which the average value was calculated.

Circumpolar changes

Figures 2.11 to 2.18 give a circumpolar overview of the direction and magnitude of the percentage change from 2006 to 2012 in the indicators. Note that the share of women in the population as presented in Figures 2.11 to 2.18 is the actual proportion of women in the regions, not the difference between the regional share of women and the global rate.

In the North American Arctic the population has increased whereas the demographic dependency ratio

Figure 2.15. Life expectancy by Arctic regions, changes between 2006-2012

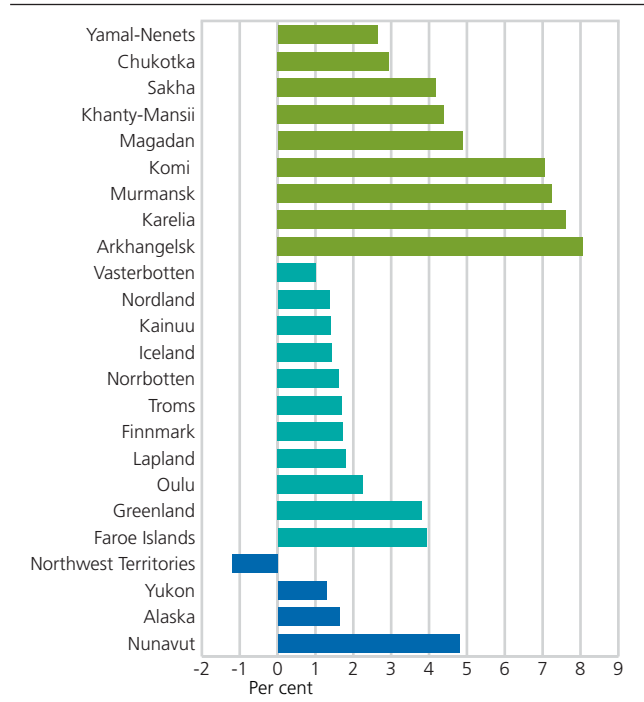
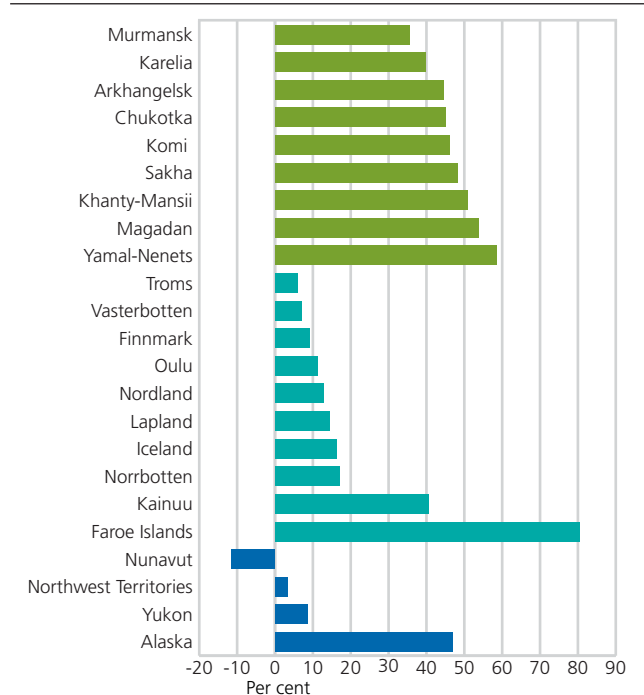


Figure 2.16. Tertiary education by Arctic regions, changes between 2006-2012



has declined, except in Alaska. The youth rate has declined. The proportion of women has declined, except in the Northwest Territories. Social and health indicators show a relative improvement, with an increase in life expectancy, except in Northwest Territories. The largest increase in life expectancy was found in Nunavut. There has been an increase in education except in Nunavut. The value of economic indicators also increased, in terms of disposable income per capita and in terms of gross regional product (GRP) per capita, although not in the Northwest Territories.

Figure 2.17. Disposable income per capita by Arctic regions, changes between 2006-2012

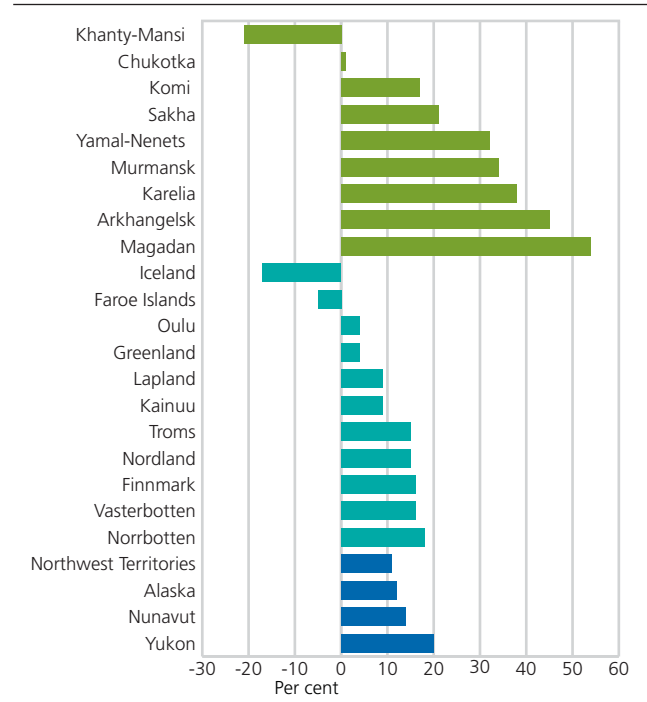
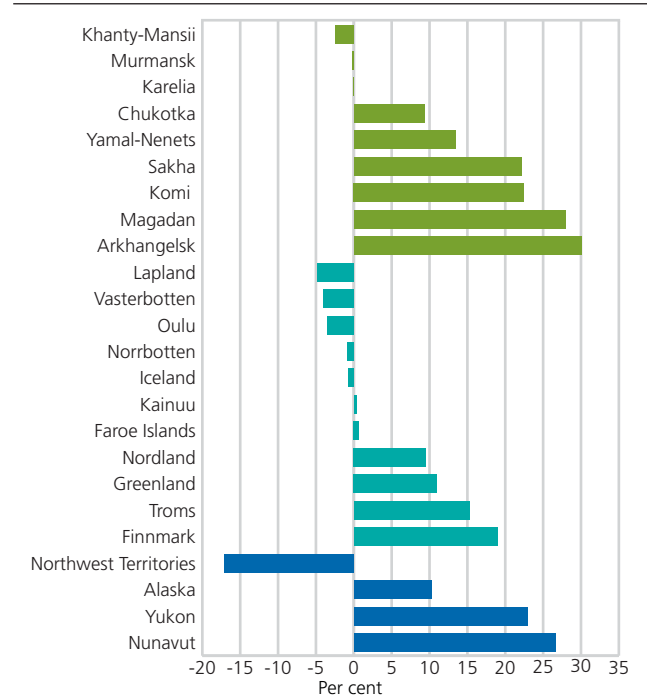


Figure 2.18. Gross domestic product per capita by Arctic regions, changes between 2006-2012



Except for the changes in the proportion of women and replacement rate, the changes observed might suggest that the North American Arctic regions, which already displayed a favourable situation in 2006, have further improved their situation in 2012. However, we also observe that regions belonging to the other two main models to a large extent have caught up with the North American levels.

Arctic Russia had the highest GRP per capita in 2012, and the GRP per capita of both Yamal-Nenets and



Tyonek Fish Camp – A fish camp in Tyonek on the shore of West Cook Inlet, Southcentral Alaska in June 2004. Photo: Davin Holen

Khanty-Mansii were higher in 2012 than those of Alaska and the Northwest Territories. The economic indicators do indeed show significant improvements: disposable income per capita has increased everywhere, except in Khanty-Mansii, and the same is true for the GRP per capita, except in Khanty-Mansii, whereas in Murmansk and Karelia there was no change. Advances are seen in the demographic and social spheres, although with two opposing trends.

On the one hand, the population of Arctic Russia has decreased by about 3 per cent. This decrease is unevenly distributed, as most sub-regions experienced a significant decline in their population, in line with the Russian model, whereas some sub-regions had a relatively modest population growth. The proportion of women in the population also underwent changes, and overall it increased slightly. The replacement rate increased everywhere, contributing to an increase in the demographic dependency ratio. The indicators show significant improvements in life expectancy and educational levels, as well as a decline in infant mortality.

In several of the Arctic Russian regions the depopulation that began during the economic crisis on the 1990s is still continuing. Factors suggested to explain these changes include rising mortality rate among adult males and a higher out-migration of men than women, with the latter remaining “locked in poverty traps”. These factors, and even more the high mineral prices, contribute to increasing inequality.

Between 2006 and 2012 many indicators showed significant differences between the two types of

regions, the main model and the variations. These differences appear in the size and direction of the observed changes, where the resource-rich regions have positive population growth, smaller increase in demographic dependency (Figure 2.14), and lower increase in life expectancy. The female proportion of population had its largest increase in Chukotka and declined in Yamal-Nenets (Figure 2.12). For the economic indicators, Khanty-Mansii is the only region to have decline in disposable income per capita. Considerable differences continue to exist in the demographic structure of these regions relative to the main model.

The situation of the Nordic Arctic regions lies somewhere between that of North America and Russia, and is more nuanced. The demographic indicators of the Nordic Arctic regions show both increase and decline. Overall, the population increased slightly, while the proportion of women in the total population decreased slightly. The replacement rate also declined, and the demographic dependency ratio increased. However, these changes were generally quite moderate, as for other indicators. Overall, the economic indicators show a slight increase. While almost all the social and health indicators show improvements, here too the changes are moderate.

The infant mortality rate has decreased in four of the six Nordic regions for which we have data, and is still among the lowest in the circumpolar Arctic.

There are a few exceptions to the Nordic model, above all in the Faroe Islands and in Greenland. The increase in life expectancy is stronger in these two regions. The situation in Greenland tends to be closer to other

Box 2.2. Nunavik

Nunavik, the northernmost region of Quebec (Canada), is inhabited by some 12,000 people, over 90 per cent of whom are Inuit (Table 1). Social conditions more closely resemble those of the adjoining territory of Nunavut than they do those of the main pattern of the North American model, as represented by Alaska. When the data from 2011 are compared to those of 2001 (Figure 1), certain indicators suggest that the gap is narrowing ever so slightly between the two models, e.g. life expectancy or the replacement rate. But overall, the differences remain considerable, and several have actually increased, such as the level of education.

The central industry for Nunavik residents is public administration. Public spending accounts for 30 per cent of the region's economic activity, and it has doubled in ten years. This is about 4 times higher, per capita, than it is in Quebec as a whole. Yet this public spending amounts to only a fraction of the profits that are derived from the exploitation of the region's resources. Large scale resources extraction, mainly mining, now represents over 40 per cent of the territory's entire economic activity. Between 2003 and 2012, this industry has seen its value increase eight-fold. However, its impact on residents' income is curtailed by the organization of these operations. As opposed to public administration, which is closely linked with the daily life of the residents, mining operation is largely disconnected from the region itself¹.

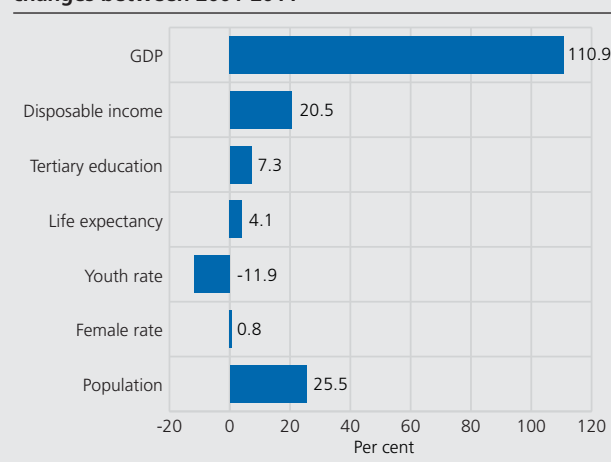
Economic inequalities remain significant. In 2012, GRP per capita was 111 per cent higher than in 2003, but the disposable income per capita increased by only 21 per cent. More than 60 per cent of all personal income generated by economic activity within the region was directly transferred outside of Nunavik, having been paid to transient workers in resource extraction and the construction industries. Among indigenous peoples, disposable income stood at about 13 656 USD PPP per capita (2010), while that of non-native residents was three times higher, at 46 393 USD PPP per capita (2010). And despite their lower incomes, the Nunavimut are confronted with much higher consumer prices than people in southern Quebec on the order of 60 to 80 per cent higher, just for food². Nunavik is not connected by road to the south, and shipping is practicable only for a short navigation season³.

¹ Duhaime, G., N. Bernard, and A. Caron, Mining on Aboriginal Land. Hidden in Plain Sight, V. II. Contributions of Aboriginal Peoples to Canadian Identity and Culture, ed. C. Voyageur, D.R. Newhouse, and D. Beavon. 2011, Toronto: University of Toronto Press. Robichaud, V. and G. Duhaime, Nunavik Eco-

Table 1. **Selected social and economic indicators. Nunavik, changes between 2001-2011**

Indicators	2001	2011	Variation (n)
Population (N)	9 632	12 090	2 458
Female rate (%)	48.9	49.3	0.4
Youth rate (%)	38.9	34.3	-4.6
Life expectancy (years)	63.3	65.9	2.6
Tertiary education (%)	9.6	10.3	0.7
Infant mortality (/000)	21.3	19.4	-1.9
Disposable income per capita (USD-PPP 2010)	13 954	16 821	2 867
GDP per capita (USD-PPP 2010)	27 171	57 299	30 128

Figure 1. **Selected social and economic indicators, Nunavik, changes between 2001-2011**



conomic Portrait 2012. Final Report on the Construction of a Social Accounting Matrix for Nunavik. Research Report, 2015. p. 1-18 <http://www.nunivaat.org/documents/Publication/Rapport-final-MCS2012-v3-eng.pdf>.

² Duhaime, G. and A. Caron, Consumer prices Monitoring in Nunavik 2011-2013, 2013, Canada Research Chair on Comparative Aboriginal Condition: Québec. p. 1-88 <http://www.nunivaat.org/documents/Publication/Suivi-des-prix-2011-2013-eng.pdf>.

³ Rodon, T., F. Lévesque, and J. Blais, De Rankin Inlet à Raglan, le développement minier et les communautés inuit. Études/Inuit Studies, 2013. 37(2): p. 103-122. Duhaime, G., A. Caron, and S. Lévesque, Nunavik in Figures 2015, Full Version, 2015, Canada Research Chair on Comparative Aboriginal Condition: Québec. p. 1-133 <http://www.nunivaat.org/documents/Publication/Suivi-des-prix-2011-2013-eng.pdf>

regional models than the Nordic, e.g. with regard to the increase in the proportion of women in the population.

Thus far, our comparative analysis has shown that the three main models, along with their respective variations, remain relevant. The changes within each model differ both in direction and in magnitude. The greatest improvements have taken place in Arctic Russia, mainly in the economic, social and health spheres. But beyond the general models, there are many variables that differ between the regions. This is the case of the female proportion, for example, which increases in roughly half of the regions, but decreases in the other half.

Our approach has several limitations. We compared two years, 2006 and 2012, rather than analysing the time series, which could have indicated trends. However, our selected indicators are rarely available in complete and consistent time series, making the goal of systematically monitoring trends over time illusory.

Summary

The recent changes reveal a phenomenon that is visible in the indicators for 2012 and the change over the period from 2006 to 2012: The different models appear to be converging. The most striking evidence of this is the rise in the economic indicators in the regions that make up the Russian Arctic model, which now attain

levels comparable to those in the Nordic Arctic regions. Additional evidence comes from the improvements in the indicators that relate to living conditions: the greatest improvements were in Arctic Russia, whereas the more modest improvements in the Nordic countries are attributable to the fact that these regions already had high living conditions.

However, while the levels of disposable income per capita and GRP per capita are becoming similar in resource-rich Russian Arctic regions and the Nordic Arctic regions, the socio-economic situation still cannot be considered equivalent. Indeed, given the same income, the Scandinavians' standard of living is higher, since it is supported by generous social benefits.

In the North American Arctic, the results for change between 2006 and 2012 show characteristic differences between the main model and Nunavut: Life expectancy in Nunavut has increased more, education level has declined in Nunavut and increased in the other regions, GRP per capita has increased more and youth rate declined less than in the other regions. The Russian model displays high inequality, reflecting the investment boom in the petroleum and mining sectors attracting workers with high qualifications and high wages¹⁷.

Major internal inequalities also exist in the area of health. The situation is particularly unfavourable in the Arctic regions of the Russian Far East¹⁸. The model of



the Nordic countries show a more nuanced situation. The Arctic regions that conform to the main Nordic model have undergone modest improvements or declines; but differences are diminishing between those regions and those that show variations, i.e., Greenland and the Faroe Islands, particularly to the advantage of the Faroe Islands.

In summary, the dominant features of the socioeconomic portrait of the circumpolar Arctic are the following: a major gap that continues to exist between the three large geopolitical groups; a modest convergence in some aspects; and inequalities that are highest in Russia, high in America, and lower in the Nordic countries¹⁹.

Notes

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- ² Larsen, J.N., P. Schweitzer, and A. Petrov, Arctic Social Indicators. ASI II: Implementation, 2014, Nordic Council of Ministers: Copenhagen. p. 328.
- ³ Rasmussen, R.O. e.a., Megatrends, 2011, Nordic Council of Ministers: Copenhagen. p. 205.
- ⁴ Walby, S., Globalization and Inequalities. Complexity and Contested Modernities. 2009, Thousand Oaks: Sage. 508. Dufy, C. and F. Weber, L'ethnographie économique. Repères, ed. P. Combemale. 2007, Paris: La Découverte. 122. Edelman, M. and A. Haugerud, eds. The anthropology of development and globalization: from classical political economy to contemporary neoliberalism. 2005, Wiley-Blackwell: Malden. 416.
- ⁵ Manzagol, C., La mondialisation. Données, mécanismes et enjeux. Campus. 2011, Paris: Armand Colin. Cohen, D., Richesse du monde, pauvreté des nations. Essais. 1997, Paris: Flammarion.
- ⁶ Foucher, M.d., L'Arctique. La nouvelle frontière. 2014, Paris: CNRS Éditions. Lasserre and Frédéric, eds. Passages et mers arctiques. Géopolitique d'une région en mutation. 2010, Presses de l'Université du Québec: Québec. 516
- ⁷ Duhaime, G. and A. Caron, Economic and Social Conditions of Arctic Regions, in The Economy of the North 2008, S. Glomsrod and I. Aslaksen, Editors. 2009, Statistics Norway: Oslo. p. 11-23.
- ⁸ Sen and A. K., Development as Freedom. 1999, Oxford: Oxford University Press. United Nations Development Programme, Human development report. , 1990. p. 189. Wilkinson, R. and K. Pickett, L'égalité c'est mieux. Pourquoi les écarts de richesses ruinent nos sociétés. 2013, Montréal: Écosociété. 379.
- ⁹ Huskey, L., I. Maenpaa, and A. Pelyasov, Economic systems, in Arctic human development report II. Regional processes and global linkages, J.N. Larsen and G. Fondahl, Editors. 2014, Nordic Council of Ministers: Copenhagen. p. 151-182.
- ¹⁰ Fondahl, G., S. Crate, and V.V. Filippova, Sakha Republic (Yakutia), Russian Federation, in Arctic Social Indicators. ASI II: Implementation, J.N. Larsen, P. Schweitzer, and A. Petrov, Editors. 2014, Nordic Council of Ministers: Copenhagen. p. 55-92. Rasell, M., Neoliberalism in the North: the transformation of social policy in Russia's northern periphery. Polar Geography, 2009. 32(3): p. 91-109.
- ¹¹ Walby, S., Globalization and Inequalities. Complexity and Contested Modernities. 2009, Thousand Oaks: Sage. 508.
- ¹² Åslund, A., How capitalism was built: the transformation of Central and Eastern Europe, Russia, the Caucasus and Central Asia. 2nd ed ed. 2013, Cambridge: Cambridge University Press. xv, 423 p.
- ¹³ Rasell, M., Neoliberalism in the North: the transformation of social policy in Russia's northern periphery. Polar Geography, 2009. 32(3): p. 91-109.
- ¹⁴ Lévesque, S. and G. Duhaime, Inequality and Social Processes in Inuit Nunangat. The Polar Journal, In print.
- ¹⁵ Duhaime, G. and R. Édouard, Monetary Poverty in Inuit Nunangat. Arctic, 2015. 68(2): p. 223-232.
- ¹⁶ Due to methodological differences, there are some limits to the comparison of the Gini coefficients. Canada is the only country where the statistical agency does not calculate Gini coefficients for its northern territories. The only available income dispersion measures for Northwest Territories, Nunavut, and Yukon can be found in Marchand, Y. (2016). Analyse spatiale de l'inégalité des revenus: perspectives de la ruralité canadienne (Mémoire de maîtrise). Université McGill. We get access to these results before their publication, and the authorization to use them here, thanks to the exceptional collaboration of Yannick Marchand and Sébastien Breau.
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- ¹⁸ Rautio, A., B. Poppel, and K. Young, Human health and well-being, in Arctic human development report II. Regional processes and global linkages, J.N. Larsen and G. Fondahl, Editors. 2014, Nordic Council of Ministers: Copenhagen. p. 297346.
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Annex 2.1. Changes in selected social and economic indicators¹ and composite index². Arctic regions, changes between 2006 and 2012³

Regions	Population	Female rate	Youth rate	Demographic dependency	Life expectancy	Infant mortality	Tertiary education	Economic dependency	Disposable income	GDP	Composite index
	n	Per cent		Ratio	Years	Per 1000 live births	Per cent	Ratio	USD-PPP per cap		n
Alaska	61 396	-0.65	-7.00	0.03	1.26	-1.52	11.55	-0.01	4 667	7 292	-0.13
Northwest Territories	-5	0.39	-2.18	-0.02	-0.96	3.00	0.66	-0.14	3 193	-18 367	-0.96
Nunavut	2 430	-0.12	-1.26	-0.02	3.38	16.30	-1.36	0.48	3 042	11 097	0.11
Yukon	3 525	0.00	-1.51	0.00	0.99	-11.00	1.99	-0.26	5 496	11 148	-0.01
Faroe Islands	28	0.02	-1.31	0.02	3.10	1.91	18.51	0.03	-950	233	0.20
Lapland	-2 091	-0.03	4.25	0.04	1.42	..	3.01	-0.14	1 404	-1 708	0.10
Oulu	16 962	-0.10	-0.17	0.04	1.78	..	2.75	0.00	693	-1 167	-0.26
Kainuu	-3 665	-0.03	-1.20	0.04	1.10	..	6.36	-0.19	1 419	108	0.51
Greenland	-152	0.11	-2.74	-0.03	2.60	-6.50	n.a.	0.32	525	2 976	-0.73
Iceland	19 684	0.24	-3.39	0.00	1.16	-0.30	3.80	0.09	-3 529	-265	-0.44
Finnmark	850	-0.45	-2.75	-0.02	1.33	-2.00	1.93	-0.23	2 967	6 608	0.16
Nordland	2 063	-0.26	-1.22	0.00	1.09	-1.70	2.53	-0.19	2 890	3 532	0.21
Troms	5 065	-0.15	-4.91	0.00	1.35	2.30	1.52	-0.08	2 970	5 615	-0.21
Norrbotten	-3 295	-0.12	0.11	0.05	1.29	..	2.31	-0.21	2 854	-420	0.36
Vasterbotten	2 361	-0.26	0.95	0.04	0.82	..	1.34	-0.10	2 405	-1 470	-0.12
Arkhangelsk	-66 667	-0.04	0.77	0.11	5.23	-3.10	5.39	-0.10	4 572	5 312	1.05
Chukchi	488	1.35	0.46	0.07	1.74	-2.00	6.59	0.25	193	4 564	0.32
Karelia	-53 419	0.27	0.85	0.12	4.86	0.00	5.43	0.08	3 470	-14	0.81
Khanty-Mansii	72 938	0.31	0.96	0.08	3.03	-3.00	8.10	0.02	-5 984	-2 278	-0.57
Komi	-84 763	0.25	0.62	0.10	4.53	-1.10	5.63	-0.16	2 421	5 743	0.79
Magadan	-14 015	-0.11	0.13	0.09	3.10	-5.80	8.28	-0.06	7 882	6 537	0.61
Murmansk	-69 052	0.62	0.86	0.11	4.72	-3.70	5.49	-0.05	4 439	-29	0.72
Sakha	5 859	-0.07	-0.11	0.02	2.74	-1.00	7.03	-0.02	3 026	5 922	0.89
Yamal-Ne nets	3 958	-1.01	0.51	0.04	1.82	-2.50	9.85	-0.06	7 573	13 269	1.01

¹ Population growth: average annual per cent; female rate: per cent women in total population (relative to global average at 49.59 in 2012, from World Bank); youth rate: per cent of 0-14 years in the total population; demographic dependency: $(0-14) + (65 \text{ and } +) / (15-64)$; infant mortality: per 1000 live births; tertiary education: per cent of tertiary level graduates in total population; economic dependency: (non-employed/employed person in total population); disposable income: personal disposable income in 2010 USD-PPP; GDP: gross domestic product in 2010 USD-PPP.

² The composite index calculation does not take into account total population and infant mortality.

³ Alaska: life expectancy 2010; Canada: 2011, except economic data 2012; Norway: life expectancy 2010, infant mortality 2011; Russia: educational attainment 2010.

Annex 2.2: ArcticStat**Circumpolar Database**

As a result of multiple sources, finding the relevant socio-economic data for the Arctic regions has long been a highly time-consuming procedure.

ArcticStat was created in order to overcome this difficulty and to increase the research capacity by taking advantage of already existing data. This unique databank aims to facilitate research by importing, stocking and organizing in a friendly-user way socioeconomic data covering 30 Arctic regions belonging to 8 countries: Alaska, Northern Canada, Greenland and Faroe Islands, Iceland, Northern Norway, Northern Sweden, Northern Finland and the Northern Russian Federation.

The data that can be found in ArcticStat cover dwellings, population, language, health, education, migration, economy, employment and other social issues. It is a free-access web-based databank which links users directly with the relevant tables on web sites where they originate and, in case of such procedure is not possible, offers a PDF and an EXCEL copy of these tables.

ArcticStat was launched on October 1st 2007. It gives access to more than 10 200 tables through 8 indicators and some 75 sub-indicators. ArcticStat was created by the Canada Research Chair on Comparative Aboriginal Condition of Université Laval, Canada, as a major Canadian contribution to the International Polar Year. It can be found at www.arcticstat.org