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The Human Development Index in Canada: Ranking the Provinces and Territories Internationally

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Abstract

This study provides internationally comparable estimates of the United Nations' Human Development Index (HDI) for Canadian provinces and territories over the 2000-2023 period. The HDI is a composite index composed of three dimensions (life expectancy, education and income) measured by four indicators (life expectancy at birth, average years of education, expected years of schooling and gross national income per capita).

We first replicate the estimates for Canada from the most recent Human Development Report (HDR, which includes data up to 2023 and was released in May 2025) using Statistics Canada data. We then apply the same methodology to generate estimates for the provinces and territories, and finally, make these estimates internationally comparable by scaling them to Canada's in the most recent HDR.

This methodology allows Canada's provinces and territories to be ranked in the HDR international tables for the overall HDI as well as its components. We find that the highest HDI score in 2023 belongs to Ontario, followed closely by Quebec and Alberta, which would rank 15th, 16th and 17th internationally, while the lowest-ranking region of Nunavut, would place 75th. Overall, our findings highlight substantial regional variation in human development across Canada, which are concealed by the national HDI, as well as a gradual decline in Canada's relative HDI ranking from 1st in 1990s to 16th in 2023.

The Human Development Index in Canada: Ranking the Provinces and Territories Internationally, 2000-2023

Executive Summary

The Human Development Index (HDI) is a globally recognized measure of socio-economic well-being, combining life expectancy, education, and income into a single composite indicator. In the latest Human Development Report (HDR) published by the United Nations Development Program, these dimensions are represented by life expectancy at birth, average years of schooling, expected years of schooling, and Gross National Income (GNI) per capita. While no single index can capture all aspects of human development, the HDI provides a richer perspective than traditional metrics that focus solely on income.

Canada ranked 16th in 2023, according to the latest HDR released in May 2025 — notably below its historically high rankings in the 1990s, when it consistently placed in the top 10 globally. However, this national rank conceals large disparities across Canada's provinces and territories. This report calculates internationally comparable HDI estimates for each province and territory from 2000 to 2023, allowing their performance to be benchmarked within Canada and against global peers. The analysis also identifies areas where each jurisdiction has seen improvement or deterioration across the HDI's components.

To produce provincial and territorial HDIs, the Centre for the Study of Living Standards (CSLS) first replicated the estimates for Canada from the most recent Human Development Report (HDR, which includes data up to 2023 and was released in May 2025) using Statistics Canada data. Next, we generate estimates for the provinces and territories following the same methodology. We make these estimates internationally comparable by calculating each province or territory estimate as the proportion of the national value in the most recent HDR and scaling them accordingly.

Critically, this report also incorporates Statistics Canada's (2025) provincial and territorial purchasing power parity estimates, along with inflation trends, to account for purchasing power disparities across Canadian jurisdictions. To our knowledge, this is the first study to capture sub-national price variation within a well-being context in Canada.

Key findings for the most recently released data for 2023 include:

• **Overall HDI:** Ontario and Quebec had the highest HDI scores and would rank 15th and 16th globally; Alberta follows at 17th. Nunavut ranked lowest, corresponding to 75th internationally.

• **Life Expectancy:** Quebec had the highest in life expectancy (12th globally), while Nunavut had the lowest (130th).

• **Average Years of Schooling:** British Columbia ranked first domestically (2nd globally), while Nunavut had the lowest educational attainment (84th globally).

• **Expected Years of Schooling:** Quebec had the highest value nationally (37th globally), with Nunavut again at the bottom (112th).

• **GNI per Capita:** The Northwest Territories had the highest income level (7th globally), and Nunavut also performed well (9th), while Nova Scotia ranked lowest (51st).

Between 2000 and 2023, all provinces and territories experienced significant improvements in their HDI values, expect the Northwest Territories. The strongest HDI growth rates were in Newfoundland and Labrador, Yukon, Quebec (all growing at 0.28 per cent per year) and Prince Edward Island (0.26 per cent).

Despite this, Nunavut remained the lowest-ranked jurisdiction among the Canadian provinces and territories in both 2000 and 2023. For largest provinces, Ontario, Alberta, Quebec and British Columbia consistently held the top positions in the national HDI ranking. In contrast, the Northwest Territories experienced a dramatic decline from 3rd in 2000 to 12th in 2023. Prince Edward Island and Yukon improved their rankings, with PEI rising from 12th to 8th and Yukon from 10th to 5th.

While Canada's national HDI rank remains high by global standards, that wide disparities between jurisdictions within Canada persist. Residents in Ontario and Quebec enjoy well-being comparable to those in the United Kingdom or Singapore, whereas those in Nunavut face challenges more akin to lower-middle-income countries in Eastern Europe. As such, our results highlight some success stories in Central Canada, but also identify persistent policy challenges among some Northern Territories.

The Human Development Index in Canada: Ranking the Provinces and Territories Internationally, 2000-2023[1]

I. Introduction

The Human Development Index (HDI) is an internationally recognized measure of socio-economic well-being. It was first published by the United Nations Development Program (UNDP) in 1990 and estimates of the HDI have been released on an annual basis ever since.[2] The HDI has become a popular tool, particularly because its simple structure facilitates international comparisons of human development and well-being. The most recent Human Development Report released in May 2025 contains HDI estimates for 193 member countries of the United Nations.

HDI is a composite index focusing on three basic dimensions of human development: the ability to lead a long and healthy life, measured by life expectancy at birth; the ability to acquire knowledge, measured by mean years of schooling and expected years of schooling; and the ability to achieve a decent standard of living, measured by gross national income per capita. To measure human development more comprehensively, the UNDP has developed five other composite indices.[3]

Canada ranked 16th in the latest international HDI rankings of the 2025 Human Development Report (HDR), which reports results up to 2023. However, this ranking ignores significant regional variations among the Canadian provinces and territories. Earlier CSLS research reports by Hazell et al. (2012) and Uguccioni (2016) calculated an internationally comparable HDI for the provinces and territories in order to compare their respective levels of human development not only with each other and the Canadian average, but also with the rest of the world. This report updates these previous reports by extending the HDI to 2023.

This report is divided into four major sections. In the first section, the Human Development Index is discussed. Next, the Centre for the Study of Living Standards (CSLS) replicates the estimates for Canada in the three dimensions of the HDI (life expectancy, education and income) published in the most recent HDR. The difficulties in precisely matching these numbers are also discussed. In section 3, the provincial and territorial HDIs are calculated based on methodology used for replicating the

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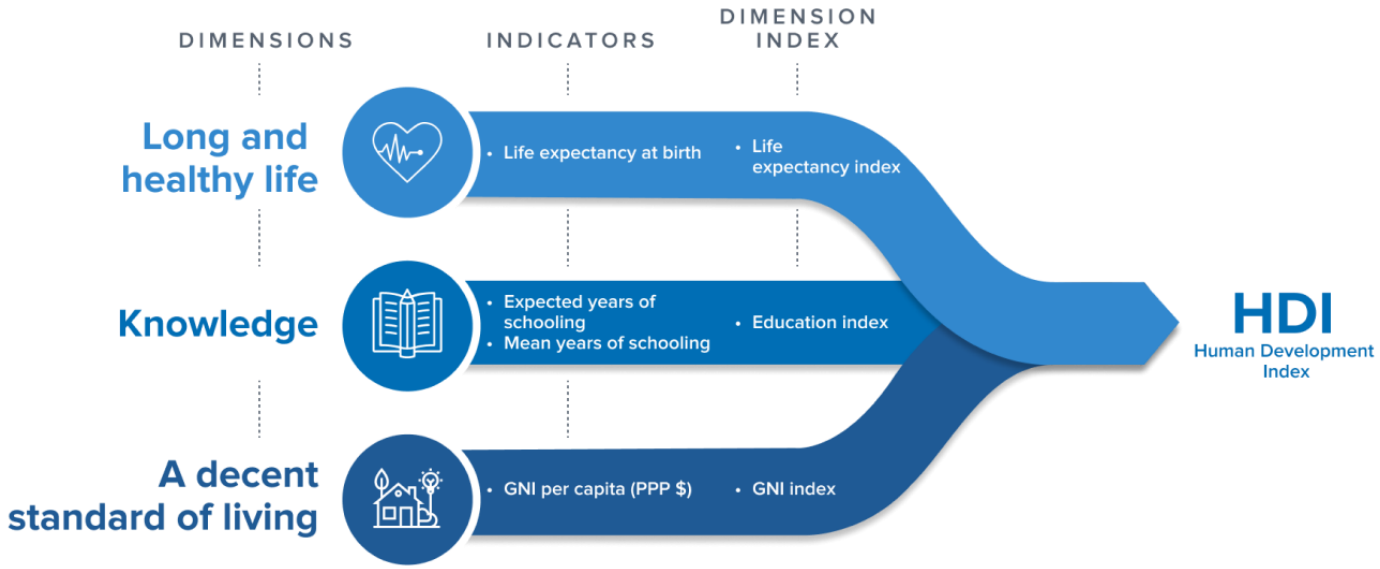
[1] This report was written by CSLS Economist Alisaleh Shariati under the supervision of CSLS Executive Director Emeritus Andrew Sharpe. We gratefully acknowledge the valuable commentary provided by UNDP Chief Statistician Yanchun Zhang and UNDP Statistics Analyst Som Kumar Shrestha, which helped improve the quality of the report. The analysis also benefited greatly from the insights of CSLS CEO and Chief Economist Stephen Tapp, as well as from comments by Finance Canada Economist Jacob Loree and other participants at the 2025 CSLS session "Trends in Well-being in Canada", held at the annual meeting of the Canadian Economics Association in Montreal, May 29–31, 2025. Email: ali.shariati@csls.ca.

[2] All annual HDR reports between 1990-2025, containing estimates for HDI in each respective year, are available on the UNDP website. The most recent report released on May 6, 2025, is available at https://hdr.undp.org/content/human-development-report-2023-24.

[3] The Inequality-adjusted HDI discounts the HDI according to the extent of inequality. The Gender Development Index compares female and male HDI values. The Gender Inequality Index highlights women's empowerment. The Multidimensional Poverty Index measures non-income dimensions of poverty. Planetary Pressures–Adjusted Human Development Index (PHDI that adjusts the traditional Human Development Index (HDI) to account for a country's environmental impact, specifically carbon dioxide (CO2) emissions and material footprint per capita. Data on all HDI indices are available at: https://hdr.undp.org/data-center/documentation-and-downloads

Exhibit 1: Structure of the Human Development Index



Source: Human Development Report 2023/2024 technical notes available at https://hdr.undp.org/sites/default/files/2023-24_HDR/hdr2023-24_technical_notes.pdf

HDI estimates for Canada for the 2000-2023 period and the rankings are discussed. These estimates as well as estimates for the pre-2000 period for all variables are provided in the online Appendix Tables.[4] Section 4 concludes.

HDI is a very useful tool, particularly because it is easily understood and widely used owing to its simple structure. Moreover, the UNDP is a high-profile organization with significant reach across the world. The HDI is based on the strong conceptual foundation of the Capabilities Approach developed by Amartya Sen and Martha Nussbaum.[5] Exhibit 1, taken from the 2025 HDR, illustrates the fundamental structure.

Before estimating the provincial and territorial HDIs, it is important to understand how the HDI is constructed. The 2010 report instituted methodological changes in response to concerns of economic development researchers. As such, it is important to be aware that more recent HDR reports (post 2010) differ in structure from earlier reports.[6]

The HDI estimates in the most recent HDR are calculated in the following manner. First, the estimates for life expectancy, average educational attainment, expected years of schooling and gross

[4] Appendix tables are available at: http://csls.ca/reports/HDI_Provinces_App.xlsx

[5] The Capability Approach is a normative framework developed by Amartya Sen (1992) and Martha Nussbaum (2011) that emphasizes the freedom and opportunity individuals have to achieve a life they value, rather than just focusing on resources or income. It is a way of understanding and assessing well-being by focusing on people's capabilities, or the substantive freedoms they have to achieve different objectives.

[6] For critiques of earlier versions of the HDI, see Srinivasan (1994), Sagar and Najam (1998) and McGillivray (1991). As a result of the changes, HDI estimates presented in HDR reports from 2010 onwards are not comparable to those published in previous HDR reports but represent an improvement in methodology in many respects. The current practice has been to generate estimates prior to 2010 to ensure comparability to the post-2010 estimates.

national income (GNI) per capita for each country are scaled into indices using the following equation:

$$Index = \frac{actual\ value - minimum\ value}{maximum\ value - minimum\ value} \quad (1)$$

The maximum and minimum values for each dimension are taken from the most recent HDR which have were last updated in 2010.[7] The minimum values are based on the concept of subsistence, that is, they are set at the lowest value needed in that indicator for a society to function, or, in the case of income, the lowest value in recorded history. The maximum values are set as "aspirational goals".[8]

The life expectancy index calculation is a straightforward application of equation (1), while the income index requires taking the natural logarithm (ln) of each country's income statistic before applying it in equation (1). The education index is slightly more complicated to calculate, as it involves creating two sub-indices and then combining them to create the dimension index. The two education sub-indices are constructed for mean years of schooling and expected years of schooling, respectively, using equation (1). The education index is then created by taking the arithmetic mean of the two sub-indices. Notably, prior to the 2015 HDR the education index was created by taking the geometric mean of the two sub-indices and rescaling the number that results by using the maximum and minimum values listed for this purpose in the technical notes of the HDR.[9]

The overall HDI is calculated as the geometric mean of the three indices:

$$HDI = I_{life}^{1/3} * I_{education}^{1/3} * I_{income}^{1/3} \quad (2)$$

This results in a number between 0 and 1, where 1 represents the highest possible human development score. A country would achieve a score of 1 only if it matches the maximum observed outcomes to date in all categories. The highest HDI score for 2023 belongs to Iceland (0.972), followed by the lowest, belonging to South Sudan (0.388).

[7] **Life Expectancy**: minimum=20 years based on long-run historical evidence from Maddison (2010) and Riley (2005), maximum=85. **Education**: minimum=0 years for both average educational attainment and expected years of schooling since survival is possible without education, maximum=15 years for average educational attainment and maximum=18.0 years for expected years of schooling. **Income** (PPP adjusted 2021 US$): maximum= $75,000 as Kahneman and Deaton (2010) showed that there is essentially no gain in human development and well-being beyond an annual income of $75,000, minimum= $100.
For more information see Technical notes in the most recent HDR at https://hdr.undp.org/sites/default/files/2023-24_HDR/hdr2023-24_technical_notes.pdf

[8] Some countries already exceed these aspirational goals. For example, San Marino had a life expectancy of 85.7 years, Greece had an expected years of schooling of 20.8 years and Norway a GNI per capita of 112,710 USD PPP in 2023.

[9] A geometric mean is calculated by multiplying n numbers and then taking the nth root of that product. The HDI used to be calculated with an arithmetic mean (or average), which is the sum of n numbers divided by n. This was changed because geometric means allow less substitutability between measures or dimension indices, so poor performances in one dimension are not linearly compensated for by better performances in other dimensions. For more information, see http://hdr.undp.org/en/statistics/hdi/.

One remaining criticism of the HDI are the arbitrary equal weights applied to each dimension.[10]

II. Replicating the most recent HDR Estimates for Canada

To develop an internationally comparable HDI for Canada and provinces and territories, the CSLS employs definitions that are as consistent as possible with those used in the most recent HDR. For instance, we use Statistics Canada data that have national, provincial, and territorial estimates for each indicator,

Table 1: Life Expectancy at Birth, Canada, 1990, 2000-2023

Year	UNDP – HDR	Statistics Canada	Proportion of HDR estimates (%)
1990	77.4	77.5	100.1
2000	79.2	79.3	100.1
2005	80.1	80.2	100.1
2006	80.5	80.7	100.2
2007	80.5	80.7	100.2
2008	80.7	80.8	100.1
2009	81.1	81.2	100.1
2010	81.3	81.4	100.1
2011	81.5	81.6	100.1
2012	81.7	81.8	100.1
2013	81.8	81.8	100.0
2014	81.8	81.9	100.1
2015	81.9	81.9	100.0
2016	82.0	82.0	100.0
2017	81.9	81.9	100.0
2018	81.9	81.9	100.0
2019	82.3	82.2	99.9
2020	81.7	81.6	99.9
2021	82.0	81.6	99.5
2022	81.2	81.3	100.1
2023	82.6	81.7	98.9

Note: The significant difference between the UNDP and Statistics Canada estimates for 2023 (82.6 vs. 81.7) is likely due to a data reporting issue. In an earlier version of this report—prior to the release of the 2023 UNDP data—a similar gap was observed

[10] Lind (2010) instead proposes a Calibrated Human Development Index (CDI) that employs revealed preferences to justify the weights applied to each dimension, and in doing so better reflects the relative roles of education and consumption in determining quality of life. However, the CDI is tailored to more accurately rank highly developed countries, and in that way is not as useful for international comparisons as the original HDI.

between the two sources (82.8 UNDP vs. 81.3 Statistics Canada). It is therefore plausible that UNDP's initial data sources overestimate life expectancy, with subsequent revisions bringing the figures closer in future updates.

Source: Canada data used in the HDR is based on the Life Expectancy at birth indicator from the World Population Prospect, UNDESA (https://population.un.org/wpp/). Statistics Canada data from https://www150.statcan.gc.ca/n1/en/catalogue/84-537-X

first to replicate the official HDI results for Canada. We then to develop estimates for the provinces and territories using the same definitions and methodology. This section outlines the process of replicating the official HDR estimates for Canada for all years. The difficulties in precisely matching the most recent HDR results are also discussed.

A. Life Expectancy

In the most recent HDR, Canada's life expectancy at birth was estimated to be 82.6 years in 2023, placing it 18th among all countries. This reflects a compound annual growth rate (CAGR) of approximately 0.2 per cent from 1990, when Canada's life expectancy was 77.4 years. Despite this increase, Canada's international ranking in life expectancy has declined from 9th in 1990 to 18th in 2023. Table 1 presents both UNDP and Statistics Canada estimates for Canadian life expectancy from 1990 through 2023. The two sources show similar and increasing trends for the 1990-2019 period. Both sources report the decline in life expectancy that occurred in 2020 because of the Covid pandemic.

However, in 2021 and especially in 2023, the divergence between the two estimates was more pronounced. In fact, the UNDP estimates showed an increase of life expectancy between 2015 and 2023 while Statistics Canada data show a decline over the same period. According to Statistics Canada, life expectancy in Canada declined from 82.2 years in 2019 to 81.7 years in 2023 (a level comparable to 2010 life expectancy in Canada), indicating a sustained impact of the Covid pandemic on national mortality trends. In contrast, the UNDP's HDR estimates suggest a recovery, culminating in a higher value of 82.6 years in 2023.[11] Despite these minor discrepancies, both series confirm that Canadian life expectancy remains high relative to global standards—the HDR reports a global average of 73.4 years in 2023. Still, Canada's relative position has weakened.

B. Education

As mentioned earlier, the HDR reports since 2010 differ from earlier reports in that the education indicators employed to generate the education index are average and expected years of schooling, instead of literacy and gross enrolment rates. These new measures of education are used because they offer a more complete picture of education. In the most recent HDR, education variables are calculations are based on data from Barro and Lee (2018), Eurostat 2024, ICF Macro Demographic and Health Surveys, UNESCO Institute for Statistics 2024 and UNICEF Multiple Indicator Cluster Surveys.

[11] These differences may reflect methodological factors. United Nations Department of Economic and Social Affairs (UNDESA), which supplies inputs for the HDR, may apply adjustments based on international models and forecasts for recent years, while Statistics Canada bases its estimates strictly on observed data. Minor revisions or rounding differences may also contribute.

Although these new measures of education may represent an improvement in theory, employing them makes the HDI's results difficult to replicate and the official estimates in the most recent HDR may not accurately reflect the situation of Canada's educational attainment in 2023.

a. Average Educational Attainment

Overall, Canada performs well in the category of average educational attainment relative to many other nations. According to the 2025 HDR, Canadians aged 25 and over have obtained, on average, 13.9 years of schooling in 2023, or fifth place in the international rankings in this domain.

Table 2: Estimated Average Educational Attainment, Canada, Persons Aged 25 and over, 1990, 2000 and 2005-2023

Year	UNDP – HDR	CSLS (Statistics Canada)	Proportion of HDR (%)
1990	10.7	11.3	105.6
2000	12.5	11.9	95.2
2005	13.2	12.2	92.4
2006	13.3	12.3	92.5
2007	13.4	12.3	91.8
2008	13.4	12.4	92.5
2009	13.5	12.4	91.9
2010	13.5	12.5	92.6
2011	13.6	12.5	91.9
2012	13.6	12.5	91.9
2013	13.6	12.6	92.6
2014	13.7	12.6	92.0
2015	13.7	12.6	92.0
2016	13.7	12.7	92.7
2017	13.8	12.7	92.0
2018	13.8	12.8	92.8
2019	13.8	12.8	92.8
2020	13.8	12.8	92.8
2021	13.9	12.9	92.8
2022	13.9	12.9	92.8
2023	13.9	12.9	92.8

Note: CSLS allocates 8 years for those with at most primary, 12 years for those with at most secondary and 14 years for those with tertiary schooling.

Source: LFS data underlying CSLS calculation from https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1410002001; HDR estimates can be found on the International Human Development Indicators website (http://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/CAN.pdf).

This estimate of average years of schooling updates the Barro and Lee (2018) estimates using UNESCO (United Nations Educational, Scientific and Cultural Organization) Institute for Statistics data on educational attainment. The HDR estimates for 1990, 2000, and 2005-2023 are presented in

Table 2.[12] Although Barro and Lee (2018) do not describe how average educational attainment is calculated for Canada specifically, their general methodology is straightforward. They first multiply the duration of each schooling level in years by the proportion of individuals in different age brackets that have achieved that level as their highest level of schooling, where "level of schooling" refers to primary, secondary and tertiary (or post-secondary) schooling levels.[13]

The age brackets used for the average education of those 25 and older are defined by 5-year intervals (i.e. 25-29, 30-34) until age 74, with the final age category being 75 and older. Summing these results across schooling levels for each age group yields the average schooling level for each age group. The average educational attainment for the entire population is then calculated by adding together these age group average educational attainments once they have been weighted by the share of that age group in the total population aged 25 and older.

To develop an estimate of average years of schooling, CSLS aggregates data on all educational attainment categories to create three broad schooling level categories and allocates individuals into these categories according to the highest level of schooling they have attained, following the methodology in Barro and Lee (2018). Individuals are considered to have attained a certain level of schooling only if they have a certificate or diploma indicating that they have completed that program. For example, an individual is placed in the secondary school category if they have a high school diploma or certificate but no certificates, diplomas or degrees from any further education, such as a university degree, regardless of whether they attended a post-secondary institution or not.[14] Individuals are placed in the primary schooling category if they do not have a high school certificate or diploma or if they have no formal education.

The estimates of mean years of schooling are presented in Table 2. In 1990, the CSLS estimate exceeded the HDR figure. By 2000, the HDR estimate became slightly higher than the CSLS figure,

[12] Barro and Lee last revised their estimates for 2010 average years of schooling in June 2018. The revised dataset estimates that average educational attainment in Canada was 12.56 years in 2010.

[13] Specifically, 8 years for those with at most a primary education, 12 years for those with at most a secondary education, and 14 years for those with at most tertiary schooling. CSLS adopt this methodology in estimating average educational attainment. The decision to allocate 8 years to those with no high school diploma is based on the fact that in Canada, the mandatory school-leaving age for high school is 16 years old in most provinces and territories (with the exception of Manitoba, New Brunswick, and Ontario which is at the age of 18). So, we would expect most individuals not finishing high school to have at least 8 years of schooling. We also note that, since we use the UIS estimate for Canada to develop the provincial and territorial estimates based on their share of the national total, the duration of primary education is assumed to be constant across all provinces and therefore does not affect the rankings.

[14] Calver (2015) discusses some of the issues with this methodology. First, there is the issue of completion of a degree – if an individual begins but does not complete some post-secondary program, none of their schooling is counted. Second, there is the issue of under-assigning tertiary schooling. For example, suppose the most common form of post-secondary school in Country A is a two-year program but in Country B it is a more rigorous four-year program. If the two countries have the same enrolment rates, then Barro and Lee would estimate the same average educational attainment in the two countries. This is likely an issue in Canada, were 2011 National Household Survey data shows that 25.9 per cent of the population aged 25 to 64 had completed a university degree of some sort (corresponding to 15 years of schooling minimum). Calver uses microdata on the number of years an individual spent in school to avoid this problem. While this is likely not possible for the UNDP to do on a global scale, a better measure could use the sort of tertiary schooling completed (e.g. certificate, Bachelor's, Masters) to avoid the latter source of mismeasurement.

Table 3: Expected Years of Schooling, Canada, 2000, 2005-2023[15]

Year	UNDP – HDR	CSLS Based on LFS data	Proportion of HDR estimates (%)
2000	15.8	15.6	101.3
2005	15.7	15.9	98.7
2006	15.6	15.8	98.7
2007	15.5	15.8	98.1
2008	15.4	15.7	98.1
2009	15.4	15.8	97.5
2010	15.3	15.9	96.2
2011	15.2	16.0	95.0
2012	15.2	16.0	95.0
2013	15.3	16.1	95.0
2014	15.2	16.0	95.0
2015	15.2	16.0	95.0
2016	15.7	16.1	97.5
2017	15.8	16.1	98.1
2018	15.9	16.1	98.8
2019	16.0	16.0	100.0
2020	15.9	16.0	99.4
2021	16.0	16.2	98.8
2022	15.9	16.2	98.2
2023	15.9	16.1	98.8

Source: LFS data calculated using Table: 14-10-0081-01, HDR data can be found on the International Human Development Indicators Website (http://hdrundp.org/en/indicators/69706

and by 2005–2010, the gap stabilized, with CSLS estimates representing roughly 92–93 per cent of HDR values. After 2010, the divergence persisted at similar levels, with the HDR estimates consistently about one year higher than those from the CSLS. By 2023, the HDR reported 13.9 years compared to 12.9 years for CSLS, maintaining a proportion of 92.8 per cent. This stable gap suggests systematic methodological differences rather than random variation.[16]

[15] Note that the CSLS's LFS-based estimates have an upward bias because of including part-time students in the student population.

[16] As average educational attainment is sensitive to the duration assumptions for each schooling level, it is worth checking the sensitivity of the results to alternate assumptions. One important test is to assign those with at most primary education 6 years of schooling, in line with UNESCO's definition, instead of the more realistic 8 years assumed by CSLS. When those with at most primary education is assigned 6 years of schooling, the data from the census gives estimates of 11.1 years in 2001 and 11.9 years in 2006 for those 25 and older. The LFS data similarly yield estimates of 11.4 years in 2000, 11.8 years in 2005, 12.2 years in 2011, and 12.3 years in 2014. These estimates are much closer to the results of Barro and Lee (2018) than are the first set of CSLS estimates: 12.2 years in 2011 from LFS exceeds Barro and Lee's estimate (12.1 years) by only 0.1 years. Since the assumption of 6 years of primary education is not realistic given the Canadian context, CSLS employs the original assumption of 8 years. The validity of CSLS's estimates is confirmed by Cohen and Soto (2007), when estimate average years of schooling is computed by employing data from surveys published by UNESCO and from an OECD database on educational attainment. Despite using the same UNESCO data source as Barro and Lee for their schooling duration assumptions, their results for Canada exceed those of both the CSLS and Barro and

More importantly, although the CSLS results in recent years are below those of Barro and Lee's results, the CSLS estimates are not unreasonable or inconsistent with the literature.

b. Expected Years of Schooling

UNESCO Institute for Statistics (UIS) (2009) defines school-life expectancy, or expected years of schooling, as the "total number of years of schooling which a child of a certain age can expect to receive in the future, assuming that the probability of his or her being enrolled in school at any particular age is equal to the current enrolment ratio for that age." Thus, school-life expectancy is simply the sum of the weighted enrolment rates of each age in a population, where the enrolment rate of a certain age is defined as the number of people of that age enrolled in formal schooling divided by the total population of that age.

As Table 3 shows, Canada's expected years of schooling for 2023 in the most recent HDR is 15.9 years, which places Canada in 49th place in the most recent HDR rankings for this indicator. The most recent HDR cites UNESCO as its data source for this measure. The HDR simply uses enrolment rates by age.

The methodology used by the UNDP for estimating school life expectancy is described in the *UIS Educational Indicators: Technical Guidelines* (UIS, 2009), and this methodology is followed here.

Unfortunately, the enrolment data for each age year are not publicly available in Canada. Thus, we employ school attendance estimates from the Labour Force Survey (LFS) for the population aged 15-29.[17]

The LFS captures data on whether an individual is attending school (either full-time or part-time) during the regular school year (September to June) and organizes these data by age instead of level of education. Since LFS data on student status are only available for those aged 15-29 and the current school-leaving age is at least 16 in all Canadian provinces and territories, the assumption is made that 100 per cent of individuals between the ages of 6 and 14 attend school and zero per cent are enrolled below the age of 6. Enrolment for persons 30 and above is also assumed to be zero due to lack of data beyond this age.

Expected years of schooling using LFS data is calculated using the data in Table 4. First, the per cent of people in school for each age group each year is multiplied by the number of years that age group represents (i.e. 15-19 is 5 years, 20-24 is 5 years and 25-29 is 5 years). These numbers are summed to obtain the expected year of schooling after age 15. Second, nine years are added to this

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Lee for all available data years (11.7 years in 1990, 12.6 years in 2000, and 13.2 years in 2010). Along with the higher estimates in the revised Barro and Lee (2018) dataset, this raises the concern that the most recent HDR may be overestimating Canada's average years of schooling relative to the rest of the world, although this issue is not directly relevant to this report as we are only using the estimates for Canada to drive the proportions for provinces and territories.

[17] We also attempted to estimate the expected years of schooling using administrative data on enrolment for 1996-2023 taken from various versions of Summary Public School Indicators for Canada, the provinces and territories, a Statistics Canada publication. The enrolment data are taken from various versions of number of students in regular college and university enrolment data are taken from Statistics Canada's database. The enrolment rate data can be seen in Appendix Tables A5a and A6a Appendix tables are available at: http://csls.ca/reports/HDI_Provinces_App.xlsx. Since these estimates were different from LFS estimates to the HDR ones we did not discuss them here.

number to approximate 100 per cent enrolment between ages 6-14 (inclusive), yielding the expected years of schooling for a child born in that year.

Table 4 gives the LFS data for those aged 15-29. In 2023, the large majority (85.7 per cent) of youth aged 15-19 were in school, while the opposite was true for individuals aged 25-29 (just 12.8 per cent are in school). Not surprisingly, the 20-24 age group lies between these two extremes, with 44.0 per cent in school in 2023. Taking a more longer-term view, since 2000, all age group have been witnessing an increase in the share of students of the population.

The estimates of expected years of schooling using LFS data are presented in Table 3. The most recent HDR relies on UNESCO data. The CSLS estimates based on LFS data is 15.6 versus UNESCO's 15.8 in 2000, and 15.9 years in 2005 compared to UNESCO's 15.8. CSLS's 2023 estimate using LFS data is also near the HDR estimate for 2023: 16.1 compared to 15.9 years, respectively.

Ideally, the number of individuals of each age (i.e. 15, 16, 17 …) attending school would be used. However, these data are not publicly available from the LFS, which instead has attendance by age

Table 4: Full-time and Part-time School Attendance by Age Group, Canada, 2000-2023

	Ages 15-19			Ages 20-24			Ages 25-29		
Year	Number of Students	Population	% in school	Number of Students	Population	% in school	Number of Students	Population	% in school
2000	1,686	2,047	82.4	757	2,021	37.5	247	2,024	12.2
2005	1,752	2,121	82.6	892	2,177	41.0	288	2,093	13.8
2006	1,776	2,152	82.5	864	2,194	39.4	296	2,126	13.9
2007	1,790	2,173	82.4	871	2,205	39.5	301	2,164	13.9
2008	1,797	2,192	82.0	857	2,211	38.8	309	2,211	14.0
2009	1,824	2,198	83.0	876	2,226	39.3	320	2,259	14.1
2010	1,829	2,191	83.5	924	2,252	41.0	332	2,293	14.5
2011	1,817	2,176	83.5	942	2,284	41.2	340	2,307	14.7
2012	1,780	2,141	83.2	996	2,324	42.8	338	2,319	14.6
2013	1,771	2,100	84.3	988	2,353	42.0	346	2,331	14.8
2014	1,742	2,066	84.3	975	2,358	41.3	333	2,347	14.2
2015	1,723	2,043	84.4	970	2,337	41.5	339	2,367	14.3
2016	1,729	2,033	85.0	982	2,324	42.3	338	2,401	14.1
2017	1,732	2,028	85.4	1,002	2,345	42.7	337	2,454	13.7
2018	1,713	2,029	84.4	1,026	2,383	43.1	346	2,520	13.7
2019	1,717	2,028	84.6	1,033	2,418	42.7	346	2,573	13.4
2020	1,680	2,029	82.8	1,059	2,426	43.7	348	2,617	13.3
2021	1,732	2,023	85.6	1,071	2,400	44.6	365	2,621	13.9
2022	1,766	2,071	85.2	1,050	2,394	43.9	362	2,655	13.6
2023	1,839	2,147	85.7	1,076	2,448	44.0	353	2,760	12.8

Note: Number of students and population are given in thousands.

Source: Statistics Canada Table: 14-10-0081-01 (LFS)

brackets. One problem with this method is that calculating expected years of schooling using a wide age bracket (i.e. 15-29) assumes that each age has a relatively similar number of individuals. Using narrower age brackets available from the LFS (15-19, 20-24 and 25-29) mitigates concerns about the age range's distributions of individuals.

When the in-school rates for these three age brackets are multiplied by the number of years they represent (5 years each) and summed together, they represent the expected years of schooling remaining for someone aged 15 years of age and over. Adding nine to this number (to represent the 100 per cent enrolment from ages 6 to 14) yields the expected years of schooling.

C. Income

In the most recent HDR, Canada's real Gross National Income (GNI) per capita for 2023 is $54,688 in purchasing power parity (PPP) adjusted 2021 US dollars, the 25th highest of all nations with an HDI ranking.

The HDR uses GNI estimates and population data from the UN Statistical Division National Accounts Main Aggregates Database. As shown in Table 5 (also in Appendix Table A16), while the GNI estimates are nearly identical to those reported by Statistics Canada, the population figures are slightly different.

For the years lacking GNI estimates when the UNDP extracted data, projections were developed using information from the IMF's World Economic Outlook publications. National accounts estimate from Statistics Canada state that in 2022 Canada's GNI per capita was $73,192 in current Canadian dollars.

This nominal GNI is then deflated by the gross final domestic expenditure implicit price index (2021=100).[18] This PPP adjustment simply translates constant 2021 Canadian dollars into a common unit used in international comparisons (2021 US dollars) so that the cost of a representative basket of goods in Canada will be the same as in the United States, given the exchange rate. Canada's GNI estimate for 2023 in 2021 US PPP adjusted dollars is $55,236. This estimate does differ from the projection used in the HDI, which is $54,688 (Table 5). As a result, directly calculating each province and territory's HDI using the raw estimates developed by the CSLS is not the most exact estimation strategy.

[18] GDP counts all production within a country's borders, while GNI counts all income earned by the country's residents, no matter where in the world it is generated. GDP measures the value of output produced, whereas GNI measures the incomes generated by that production after adjusting for cross-border income flows.
GNI and GNP are conceptually the same at current prices because both value national output using the prices of the same year. In constant (real) terms, however, they can differ if the deflators used for domestic production and for cross-border income flows differ—meaning the real growth of national income and national product can diverge. Income concepts like GNI should be deflated with the gross final domestic expenditure deflator, while output concepts like GNP should be deflated with the GDP deflator. The UNDP uses the GDP deflator (Human Development Report technical notes, 2025), in our belief, a minor accounting error.

Table 5: GNI Per Capita, PPP Adjusted 2021 US Dollars, Canada, 2000 and 2005-2023

Year	UNDP – HDR	CSLS				
	PPP Adjusted 2021 USD (1)	Current Dollars (2)	Gross final domestic expenditure, implicit price index 2021=100 (3)	2021 Constant CAD (4) = (2/3)/100	PPP Adjusted 2021 USD (5)	Proportion of HDR estimates (%) (6) = 5/1
2000	44,038	35,099	67.5	51,983	43,094	97.9
2005	49,282	43,187	74.2	58,204	49,939	101.3
2006	50,444	45,218	75.9	59,545	51,328	101.8
2007	51,514	47,263	77.7	60,846	52,328	101.6
2008	52,211	49,108	79.7	61,624	53,059	101.6
2009	48,444	45,921	80.3	57,166	48,420	100.0
2010	50,038	48,026	81.3	59,047	50,012	100.0
2011	51,659	50,687	83.2	60,947	51,622	99.9
2012	51,826	51,702	84.5	61,158	51,923	100.2
2013	52,719	53,396	85.8	62,219	52,762	100.1
2014	53,386	55,384	87.9	62,991	51,842	97.1
2015	52,139	54,896	89.3	61,477	51,641	99.0
2016	52,052	55,409	90.3	61,360	51,665	99.3
2017	53,597	57,830	91.5	63,208	52,842	98.6
2018	54,158	59,179	92.8	63,790	53,201	98.2
2019	54,499	60,438	94.5	63,948	53,205	97.6
2020	50,925	58,391	96.5	60,494	50,331	98.8
2021	55,302	65,825	100	65,825	54,766	99.0
2022	56,952	72,249	106.6	67,783	56,396	99.0
2023	54,688	73,192	110.2	66,390	55,236	101.0

Note: PPP USD per CAD for 2020-2023 is not available, so it is assumed to be same as 2019 equal to 0.832.

Source: CSLS Current dollar from Statistics Canada Table 380-0083, Implicit Price Index from Statistics Canada 380-0102, PPP from Statistics Canada. Table 36-10-0367-01 Ratios of real consumption per capita in the United States compared with Canada, by expenditure category, on an International Comparison Program Classification basis and GNI per capita in PPP terms (used in HDI calculations) from the World Bank's World Development Indicators (WDI) database.

Table 6: CSLS Replication of the Official Human Development Index Estimate for Canada, 2023

Dimension	UNDP – HDR	CSLS estimates	
		CSLS	Proportion of HDR estimates (%)
Life Expectancy at Birth (years)	82.63	81.7	98.9
Life Expectancy Index	0.964	0.949	98.5
Average Educational Attainment (years)	13.9	12.9	92.8
Average Educational Attainment Index	0.925	0.863	93.3
Expected Years of Schooling	15.9	16.1	101.3
Expected Years Schooling Index	0.883	0.896	101.5
Education Index	0.904	0.879	97.3
GNI per capita (2021 US PPP adjusted dollars)	54,688	55,236	101.0
Income Index	0.952	0.954	100.2
HDI	0.939	0.927	98.7

Note: For "UNDP - HDR", CSLS uses the data listed in the most recent HDR and calculates the indices and HDI identically to the other column. Source: CSLS estimates from Table 1, 2, 3, 5 and most recent HDR.

D. Overall Human Development Index

Table 6 presents the results from the CSLS estimate of the 2023 Human Development Index (HDI) for Canada. The CSLS continues to closely replicate both the life expectancy index and the income index components. The CSLS estimates Canada's life expectancy index for 2023 to be 0.949, compared to 0.964 in the 2023 HDR. Similarly, using the CSLS's 2023 GNI per capita estimate results in an income index of 0.954, which is nearly identical to the HDR's value of 0.952.[19]

III. HDI Estimates for the Canadian Provinces and Territories[20]

Though CSLS estimates are quite close to the official HDR estimates, especially in estimating the income and life expectancy indexes, it is clear from the previous section that it is not possible to precisely replicate the estimates of the HDI indicators for Canada using Canadian data sources.

To obtain estimates which are the most internationally comparable for the provinces and territories, we take the proportion that each province and territory's estimate represents of the corresponding

[19] The largest difference lies in the education index, largely due to a lower estimate of average years of schooling. Nevertheless, the CSLS estimate of the education index at 0.879 is relatively close to the HDR's value of 0.904. These three indices yield a CSLS estimated HDI of 0.927, which is very close to the official 2023 HDR estimate of 0.939 for Canada. Notably, incorporating the CSLS HDI estimate for 2023 would have decreased Canada's ranking globally to 22nd in 2023 instead of 16th. We note that this discrepancy does not matter in this report as we only use the CSLS estimates as denominator to obtain the proportion of each province and territory of the HDI estimates.

[20] The data for all HDI components for all provinces and territories are available in the online appendix found at: http://csls.ca/reports/HDI_Provinces_App.xlsx

Canadian estimate and applying that ratio to Canada's most recent HDR official estimates. This section will estimate the three components of the HDI (life expectancy, education and income) for each Canadian province or territory in a manner that is as consistent as possible with the most recent HDR.

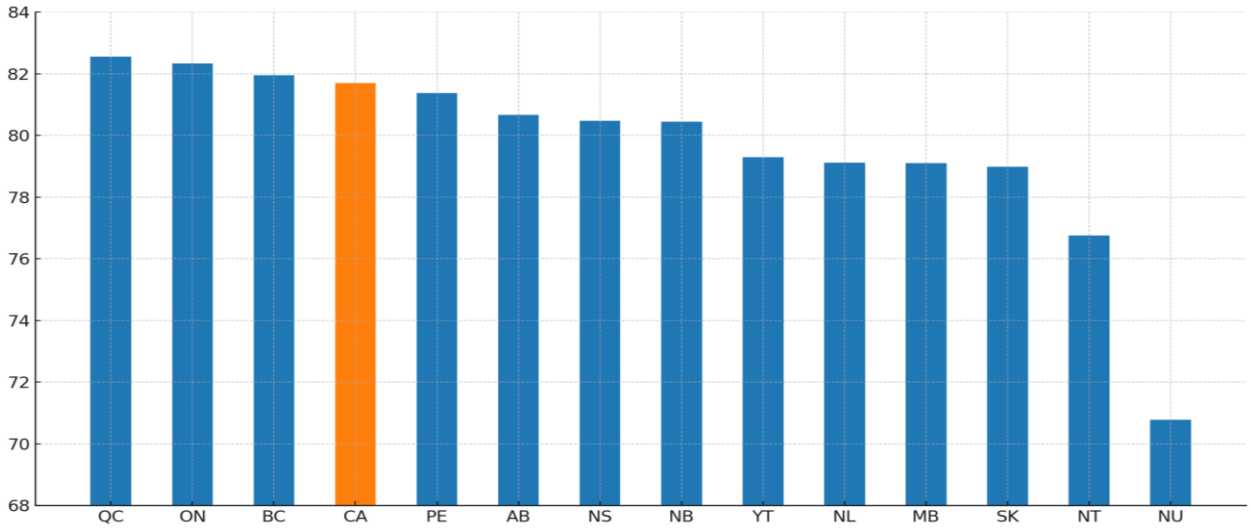
The HDI results and rankings for each province are then discussed.[21]

A. Life Expectancy

Table 7 shows life expectancy estimates of provincial and territorial Statistics Canada in addition to the HDR consistent estimates and the resulting life expectancy index for 2000, 2005, 2010, 2015, 2020 and 2023. Chart 1 illustrates that in 2023, Nunavut still had by far the lowest life expectancy of all the regions. For 2023, this territory's life expectancy was estimated to be 70.8 years, which was 6 years lower than the next lowest jurisdiction (Northwest Territories, 76.8 years).

Table 8 presents compound annual growth rates in life expectancy from 2000 to 2023, revealing significant shifts in regional trends. Over this full period, Canada's life expectancy grew by 0.13 per cent per year. Provincial and territorial growth rates ranged from a low of 0.02 per cent per year in Saskatchewan to a high of 0.19 per cent per year in Prince Edward Island, Quebec, Yukon, and Nunavut.

Chart 1: Life Expectancy, Raw Estimates, Canada and the Provinces/Territories, 2023



Note: Appendix Table A1 provides a historical times series of life expectancy in Canadian provinces and territories found at http://csls.ca/reports/HDI_Provinces_App.xlsx
Source: Statistics Canada. Life Tables, Canada, provinces and territories, catalogue no. 84-537-X. https://www150.statcan.gc.ca/n1/en/catalogue/84-537-X.

[21] Due to data limitations, this report will focus on the period 2000 to 2023 when discussing trends over time. Full time series on all of the HDI domains are available in the Appendix Tables. Caution should be taken when interpreting education data for the Territories because of the small sample size involved.

Table 7: Life Expectancy Estimates and Index, Canada and the Provinces/Territories, Selected Years

Year	CA	NL	PEI	NS	NB	QC	ON	MB	SK	AB	BC	YT	NWT	NU
Raw Estimates (years)														
2000	79.3	77.3	77.9	78.6	78.8	79.1	79.5	78.0	78.6	79.4	80.4	75.9	75.9	67.7
2005	80.2	78.1	79.4	79.3	79.9	80.1	80.6	79.1	79.2	80.0	80.9	77.5	76.9	71.0
2010	81.4	79.6	80.4	80.3	80.8	81.5	81.8	79.9	79.6	81.2	82.2	77.3	76.8	71.5
2015	81.9	79.2	81.3	80.2	80.6	82.1	82.5	80.0	80.0	81.4	82.6	78.6	77.7	71.0
2020	81.6	79.7	81.8	80.6	81.1	82.3	82.1	79.4	79.4	80.9	82.2	79.0	77.0	70.6
2023	81.7	79.1	81.4	80.5	80.4	82.6	82.3	79.1	79.0	80.7	82.0	79.3	76.8	70.8
Proportion of Canadian Estimates														
2000	1.000	0.975	0.983	0.992	0.994	0.998	1.002	0.984	0.991	1.001	1.014	0.958	0.957	0.854
2005	1.000	0.973	0.990	0.989	0.996	0.999	1.004	0.986	0.987	0.998	1.008	0.966	0.958	0.885
2010	1.000	0.977	0.988	0.986	0.992	1.001	1.004	0.981	0.978	0.997	1.010	0.949	0.943	0.878
2015	1.000	0.967	0.993	0.979	0.984	1.002	1.007	0.978	0.978	0.994	1.009	0.959	0.948	0.867
2020	1.000	0.977	1.002	0.987	0.993	1.007	1.005	0.972	0.973	0.991	1.006	0.969	0.951	0.867
2023	1.000	0.968	0.996	0.985	0.985	1.010	1.008	0.968	0.967	0.987	1.003	0.971	0.939	0.866
HDR Consistent Estimates (years)														
2000	79.1	77.1	77.8	78.5	78.7	78.9	79.3	77.8	78.4	79.2	80.2	75.7	75.7	67.6
2005	80.2	78.1	79.4	79.3	79.9	80.1	80.5	79.1	79.1	80.0	80.9	77.4	76.9	71.0
2010	81.3	79.4	80.3	80.2	80.7	81.3	81.7	79.8	79.5	81.1	82.1	77.1	76.6	71.4
2015	82.0	79.3	81.4	80.3	80.7	82.2	82.6	80.1	80.1	81.4	82.7	78.7	77.7	71.1
2020	82.0	80.0	82.1	80.9	81.4	82.6	82.4	79.6	79.7	81.2	82.5	79.3	77.3	70.9
2023	82.6	80.0	82.3	81.4	81.4	83.5	83.3	80.0	79.9	81.6	82.9	80.2	77.6	71.6
Life Expectancy Index														
2000	0.909	0.879	0.889	0.899	0.902	0.906	0.912	0.889	0.899	0.910	0.926	0.858	0.857	0.732
2005	0.926	0.893	0.913	0.912	0.922	0.925	0.932	0.909	0.910	0.923	0.936	0.884	0.875	0.784
2010	0.943	0.915	0.928	0.926	0.933	0.944	0.949	0.920	0.915	0.939	0.955	0.879	0.871	0.791
2015	0.954	0.913	0.944	0.928	0.934	0.957	0.962	0.925	0.925	0.945	0.965	0.902	0.888	0.786
2020	0.954	0.922	0.955	0.937	0.945	0.963	0.960	0.918	0.919	0.941	0.961	0.912	0.881	0.783
2023	0.964	0.923	0.959	0.945	0.944	0.977	0.973	0.923	0.921	0.947	0.967	0.926	0.887	0.794

Source: Statistics Canada. Life Tables, Canada, provinces and territories, catalogue no. 84-537-X.
https://www150.statcan.gc.ca/n1/en/catalogue/84-537-X.

Table 8: Life Expectancy Growth Rates, Canada and the Provinces/Territories, 2000-2023 (Compound annual growth rates)

Period	CA	NL	PEI	NS	NB	QC	ON	MB	SK	AB	BC	YT	NWT	NU
2000-2023	0.13	0.10	0.19	0.10	0.09	0.19	0.15	0.06	0.02	0.07	0.08	0.19	0.05	0.19
2000-2019	0.19	0.18	0.24	0.12	0.13	0.24	0.20	0.15	0.13	0.17	0.15	0.21	0.12	0.22
2019-2023	-0.16	-0.30	-0.06	0.01	-0.09	-0.09	-0.07	-0.34	-0.47	-0.40	-0.24	0.11	-0.30	0.05

Source: CSLS Calculations based on Table 7.

Table 9: Life Expectancy Rank, Canada and the Provinces/Territories, Selected Years

Year Provincial Rank (Based on Raw Estimates)	Canada	NL	PEI	NS	NB	QC	ON	MB	SK	AB	BC	YT	NWT	NU
2000	-	10	9	6	5	4	2	8	7	3	1	11	12	13
2005	-	10	6	7	5	3	2	9	8	4	1	11	12	13
2015	-	10	5	7	6	3	2	8	8	4	1	11	12	13
2020	-	8	4	7	5	1	3	10	9	6	2	11	12	13
2023		9	4	6	7	1	2	10	11	5	3	8	12	13
2023 International HDR Rank (Based on 2023 HDR Consistent Estimates)														
2023	21	49	26	38	40	12	16	50	51	37	19	47	70	130

Source: Statistics Canada. Life Tables, Canada, provinces and territories, catalogue no. 84-537-X. https://www150.statcan.gc.ca/n1/en/catalogue/84-537-X.

Note: Provincial and territorial rankings include all Canadian jurisdictions and rank them in comparison to all countries and provinces and territories (206 jurisdictions = 193 countries + 13 provinces and territories)

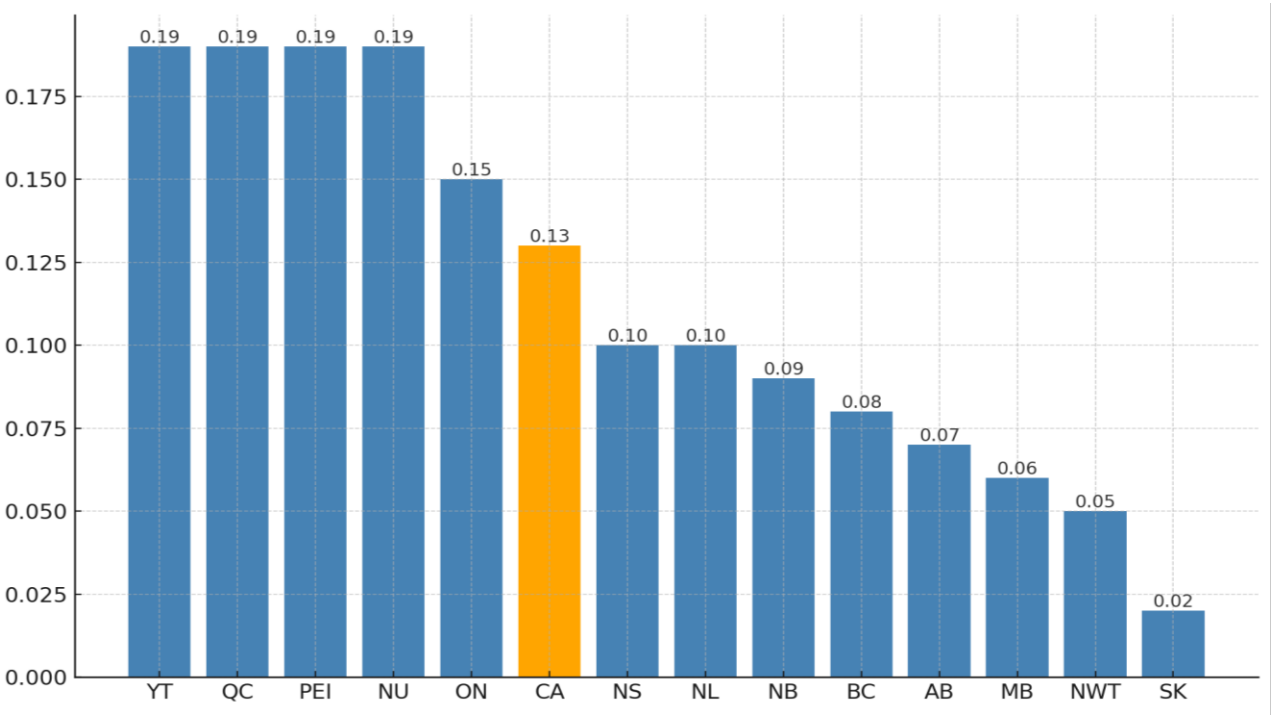
The short-term period from 2019 to 2023 paints a concerning picture. All provinces except Yukon (0.11 per cent per year), Nunavut (0.05 per cent), Nova Scotia (0.01 per cent), experienced a fall in life expectancy, with the steepest declines observed in Saskatchewan (-0.47 per cent), Alberta (-0.40 per cent), and Newfoundland and Labrador (-0.30 per cent).

This recent slowdown and reversal of gains in many regions mark a shift in the geography of life expectancy growth in Canada, with smaller or northern jurisdictions now leading the long-term improvements.

Table 9 presents the life expectancy rankings of Canada's provinces and territories from 2000 to 2023, where a rank of 1 indicates the highest-performing jurisdiction each year. While most regions maintained relatively stable positions over time, there were notable shifts in the provincial rankings. British Columbia, historically the top performer, fell from 1st in 2000 to 3rd in 2023, while Saskatchewan dropped from 7th to 11th over the same period. In contrast, Prince Edward Island and Quebec experienced the most significant improvements—Prince Edward Island moved up from 9th to 4th, and Quebec rose from 4th to 1st, overtaking British Columbia and Ontario. Despite the substantial gains in life expectancy in Nunavut since 2000, it continues to rank last among Canadian jurisdictions.

The international comparison based on 2023 HDR-consistent life expectancy estimates further underscores regional disparities. As shown in the final row of Table 9, Quebec, Ontario, and British Columbia would be ranked 12th, 16th, and 19th globally if evaluated independently, ahead of the national average for Canada (21st globally when compared with provinces and other countries).

Chart 2: Life Expectancy Growth Rates, Canada and the Provinces/Territories, 2000-2023 (Compound annual growth rates)



Source: CSLS Calculations based on Table 7.

In contrast, Nunavut would be positioned at 130th place, significantly behind all other provinces and territories. Most other regions fall outside the top 40 internationally, with only a few, British Columbia (19th) and Prince Edward Island (26th), ranking within the top global quartile. These comparisons highlight persistent health inequities within Canada despite overall national gains.

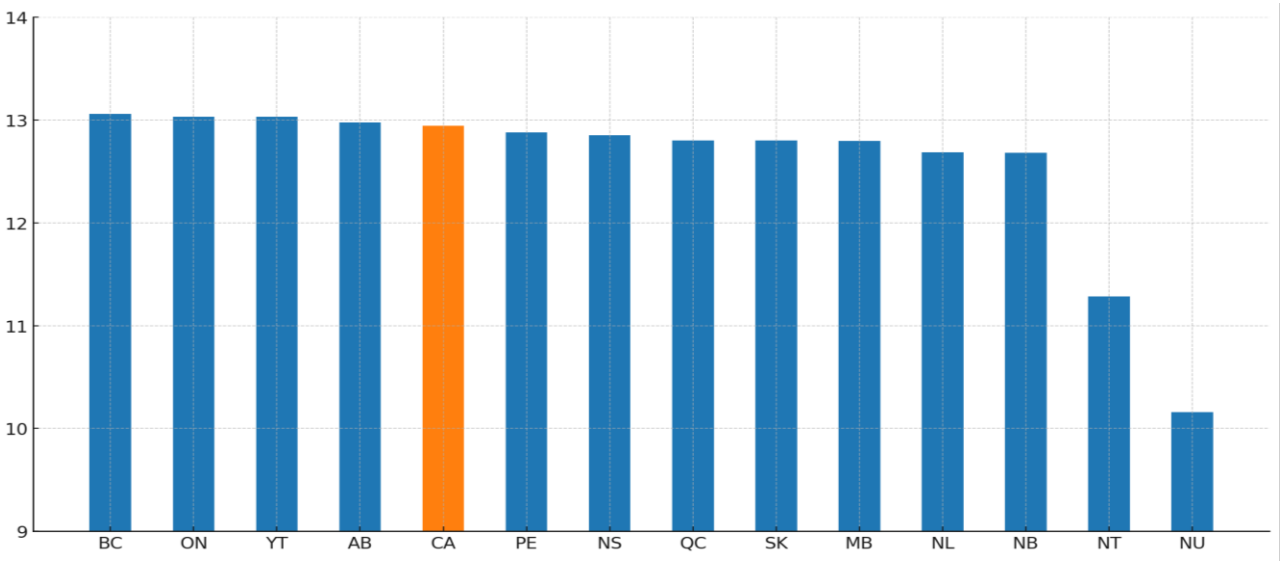
B. Education

a. Average Years of Education

Average years of education for provinces and territories is calculated in the same manner as described for Canada, allocating 8 years for those with at most primary education, 12 years for those with at most secondary and 14 for those who have a tertiary education.[22] The resulting estimate of average educational attainment is presented in Table 10 for the years 2000, 2005, 2010, 2015, 2020, and 2023. Chart 3 illustrates the 2023 values graphically. In 2000, the gap between the highest and lowest average years of schooling across Canadian jurisdictions was 1.6 years, ranging from 10.6 years in Nunavut to 12.2 years in Alberta, British Columbia, Yukon, and the Northwest Territories, based on Statistics Canada Labour Force Survey (LFS) estimates. By 2023, this gap had widened substantially to 2.9 years, with Nunavut still ranking last at 10.2 years, and British Columbia emerging as the top-ranked province with an average of 13.1 years of schooling.

[22] Appendix tables are available at: http://csls.ca/reports/HDI_Provinces_App.xlsx

Chart 3: Average Educational Attainment, Canada and the Provinces/Territories, 2023



Note: CSLS allocates 8 years for those with at most primary, 12 years for those with at most secondary and 14 years for those with tertiary schooling. Territorial values for 2016-2023 are computed using the compound annual growth rates from the census data and the corresponding growth rates between 2016 and 2021 census years.

Sources: Statistics Canada. Table 14-10-0020-01 Unemployment rate, participation rate and employment rate by educational attainment, annual (x 1,000). Data for Yukon, Northwest Territories and Nunavut are unpublished and extrapolated using the 2016-2021 growth rate of educational attainment obtained from the census data found in Statistics Canada Table 98-10-0386-01.

Canada's educational attainment grew by 0.36 per cent per year between 2000-2023. Several provinces, including PEI, Newfoundland and Labrador, and Quebec, recorded some of the most substantial improvements in this domain. PEI gained approximately 1.3 years over the period and led all regions with an annual growth rate of 0.49 per cent per year. Newfoundland and Labrador followed closely with 0.46 per cent, while Quebec grew by 0.42 per cent annually. These improvements contributed to a broader trend of convergence among most provinces, despite continued divergence in the territories. In fact, the worst performing jurisdictions from the standpoint of educational attainment growth were Northwest Territories (-0.33 per cent), Nunavut (-0.20 per cent) and Alberta (0.28 per cent).

Table 11 shows educational attainment rankings over time. From 2000 to 2023, PEI improved six positions, rising from 11th to 5th, while Ontario moved from 5th to 2nd. Yukon Territory, despite below-average growth, maintained a strong position, finishing 2nd. Newfoundland and Labrador improved modestly from 12th to 10th; Quebec went up from 9th to 7th. Saskatchewan and Manitoba stayed at 7th, In contrast, Alberta fell from 1st to 2nd, and New Brunswick slipped from 9th to 10th. The biggest drop in ranking was that of Northwest Territories which fell from 1st in 2000 to 12th in 2023. British Columbia remained the highest-ranked province throughout the period and led in absolute educational attainment in 2023. At the bottom of the rankings, Nunavut remained last, with setbacks in recent years reversing modest gains made earlier in the 2010s.

Table 10: Average Educational Attainment Estimates and Index, Canada and Provinces/Territories, Selected Years

Year	CA	NL	PEI	NS	NB	QC	ON	MB	SK	AB	BC	YT	NWT	NU
Raw Estimates (years)														
2000	11.9	11.4	11.5	11.8	11.6	11.6	12.1	11.7	11.7	12.2	12.2	12.2	12.2	10.6
2005	12.2	11.8	12.0	12.1	11.9	12.0	12.3	12.0	12.0	12.4	12.4	12.4	11.9	10.6
2010	12.5	12.1	12.2	12.4	12.1	12.3	12.6	12.2	12.3	12.6	12.6	12.4	11.9	10.6
2015	12.6	12.2	12.4	12.5	12.3	12.5	12.7	12.5	12.4	12.7	12.8	12.8	12.3	10.9
2020	12.8	12.5	12.7	12.8	12.5	12.7	12.9	12.6	12.7	12.9	13.0	13.0	12.1	10.8
2023	12.9	12.7	12.9	12.9	12.7	12.8	13.0	12.8	12.8	13.0	13.1	13.0	11.3	10.2
Proportion of Canadian Estimates														
2000	1.000	0.956	0.965	0.991	0.970	0.975	1.012	0.984	0.979	1.020	1.023	1.022	1.020	0.892
2005	1.000	0.962	0.980	0.990	0.971	0.983	1.009	0.980	0.981	1.016	1.014	1.016	0.971	0.866
2010	1.000	0.968	0.980	0.992	0.974	0.984	1.009	0.982	0.984	1.012	1.012	0.995	0.959	0.850
2015	1.000	0.967	0.983	0.993	0.973	0.988	1.007	0.987	0.985	1.008	1.012	1.016	0.977	0.860
2020	1.000	0.977	0.990	0.995	0.976	0.987	1.005	0.985	0.990	1.009	1.013	1.010	0.940	0.838
2023	1.000	0.980	0.995	0.993	0.980	0.989	1.007	0.988	0.989	1.002	1.009	1.007	0.872	0.785
HDR Consistent Estimates (years)														
2000	12.5	11.9	12.1	12.4	12.1	12.2	12.6	12.3	12.2	12.7	12.8	12.8	12.7	11.1
2005	13.2	12.7	12.9	13.1	12.8	13.0	13.3	12.9	12.9	13.4	13.4	13.4	12.8	11.4
2010	13.5	13.1	13.2	13.4	13.2	13.3	13.6	13.3	13.3	13.7	13.7	13.4	13.0	11.5
2015	13.7	13.2	13.5	13.6	13.3	13.5	13.8	13.5	13.5	13.8	13.9	13.9	13.4	11.8
2020	13.8	13.5	13.7	13.8	13.5	13.7	13.9	13.6	13.7	14.0	14.0	14.0	13.0	11.6
2023	13.9	13.6	13.8	13.8	13.6	13.7	14.0	13.7	13.7	13.9	14.0	14.0	12.1	10.9
Average Educational Attainment Index														
2000	0.832	0.796	0.804	0.825	0.808	0.811	0.842	0.819	0.815	0.849	0.851	0.851	0.849	0.743
2005	0.879	0.846	0.862	0.870	0.854	0.864	0.887	0.862	0.863	0.894	0.892	0.893	0.854	0.761
2010	0.901	0.872	0.883	0.894	0.877	0.887	0.909	0.884	0.887	0.911	0.912	0.896	0.864	0.766
2015	0.913	0.883	0.897	0.907	0.888	0.902	0.919	0.901	0.899	0.921	0.924	0.928	0.892	0.786
2020	0.923	0.901	0.914	0.918	0.901	0.911	0.928	0.909	0.913	0.931	0.935	0.932	0.867	0.774
2023	0.925	0.906	0.920	0.918	0.906	0.914	0.931	0.914	0.914	0.927	0.933	0.931	0.806	0.726

Source: Statistics Canada Table 282-0004 (LFS). Territory data from 2001 (NWT) and 2004 (NU) up to 2015 obtained by special request from Statistics Canada. Territorial values for 2016-2023 are computed using the compound annual growth rates from the census data and the corresponding growth rates between 2016 and 2021 census years. Values for NWT and NU for 2000 are assumed to be the same as 2001 and 2004 respectively.

Table 11: Average Educational Attainment Rank, Canada and the Provinces/Territories, Selected Years

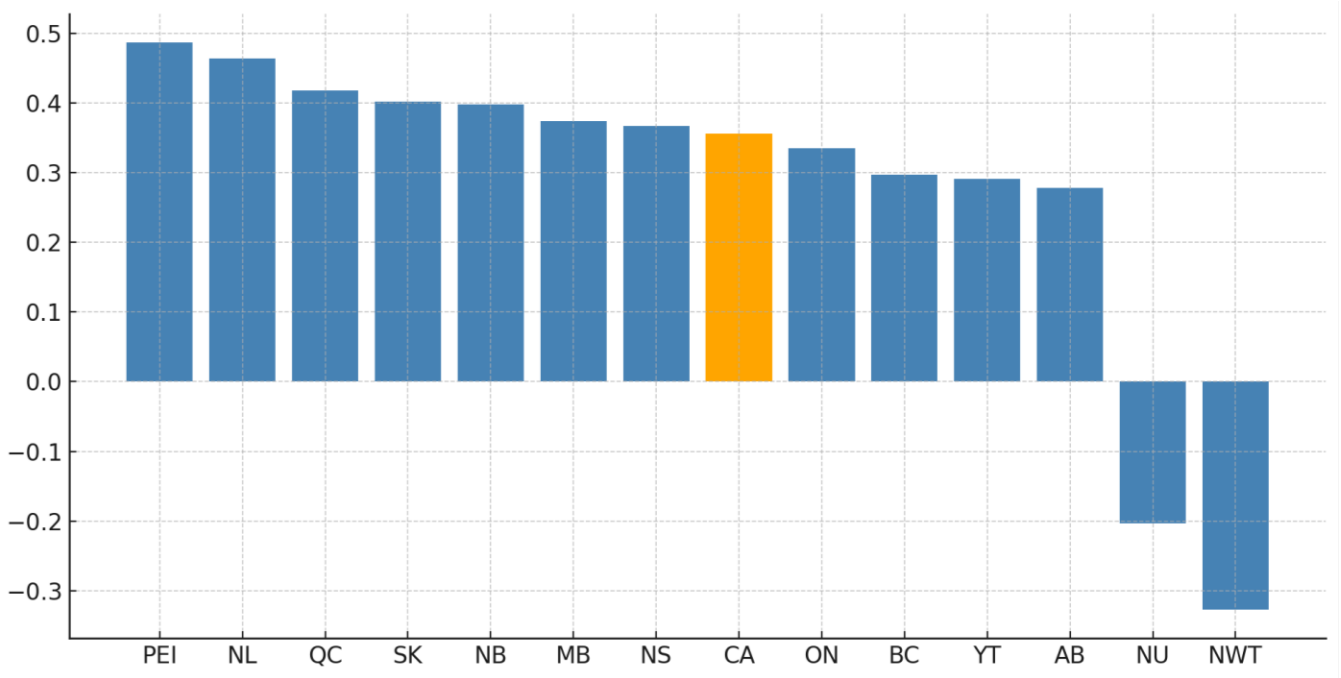
Year	Canada	NL	PEI	NS	NB	QC	ON	MB	SK	AB	BC	YT	NWT	NU
Provincial Rank (Based on Raw Estimates)														
2000	-	12	11	6	9	9	5	7	7	1	1	1	1	13
2005	-	12	6	5	10	6	4	6	6	1	1	1	10	13
2010	-	10	8	4	10	6	1	8	6	1	1	4	12	13
2015	-	12	8	5	10	5	3	5	8	3	1	1	10	13
2020	-	10	6	5	10	6	3	9	6	3	1	1	12	13
2023	-	10	5	5	10	7	2	7	7	2	1	2	12	13
2023 International HDR Rank (Based on 2023 HDR Consistent Estimates)														
2023	6	16	10	10	16	12	2	12	12	8	2	2	51	84

Note: Provincial and territorial rankings include all Canadian jurisdictions and rank them in comparison to all countries and provinces and territories (206 jurisdictions = 193 countries + 13 provinces and territories).

Source: CSLS calculations based on Table 10.

Table 12 and Chart 4 illustrate these trends, highlighting that while most provinces recorded gains, the territories—especially the Northwest Territories and Nunavut—diverged from national trends, experiencing negative growth over the full period (which were completely driven by strong declines between 2019-2023). The post-2019 fall in these territories are likely due to disruptions from the Covid pandemic, which may have disproportionately affected remote and Indigenous communities.

Chart 4: Average Educational Attainment Growth Rates, Canada and the Provinces/Territories, 2000-2023



Source: CSLS Calculations based on Table 12.

Table 12: Average Educational Attainment Growth Rate, Canada and the Provinces/Territories, 2000-2023 (Compound annual growth rates)

Period	CA	NL	PEI	NS	NB	QC	ON	MB	SK	AB	BC	YT	NWT	NU
2000-2023	0.36	0.46	0.49	0.37	0.40	0.42	0.34	0.37	0.40	0.28	0.30	0.29	-0.33	-0.20
2000-2019	0.37	0.48	0.46	0.38	0.37	0.44	0.34	0.36	0.42	0.29	0.31	0.31	0.07	0.17
2019-2023	0.31	0.40	0.61	0.30	0.54	0.30	0.32	0.43	0.33	0.20	0.25	0.19	-2.21	-1.94

Source: CSLS Calculations based on Table 10.

b. Expected Years of Schooling

Expected years of schooling are estimated for the provinces and territories using LFS data. Once again, the methodology used here is the same as the one used to replicate the Canadian estimates. In 2023, the raw estimates for Canada match closely with the official estimate from the most recent HDR, and as such there should be minimal error due to the scaling the raw provincial values in Table 13 to obtain HDR consistent estimates.

An analysis of the raw estimates for expected years of schooling based on Labour Force Survey (LFS) data (Table 14) reveals that territories except for Yukon consistently ranked below the lowest-performing province between 2000 and 2023. In 2023, the top performers in terms of expected years of schooling were Quebec (16.7 years), Ontario (16.3 years), and Newfoundland and Labrador (16.1 years). At the other end of the spectrum, Nunavut continued to lag significantly behind with just 13.5 years of expected schooling.

Unlike average educational attainment, expected years of schooling rankings have shown somewhat greater variation over the period (Table 14), though still relatively stable in comparison to other indicators. Ontario maintained a top-tier position throughout, while Northwest Territories and Nunavut consistently remained near the bottom of the rankings. However, some notable shifts in rankings did occur between 2000 and 2023:

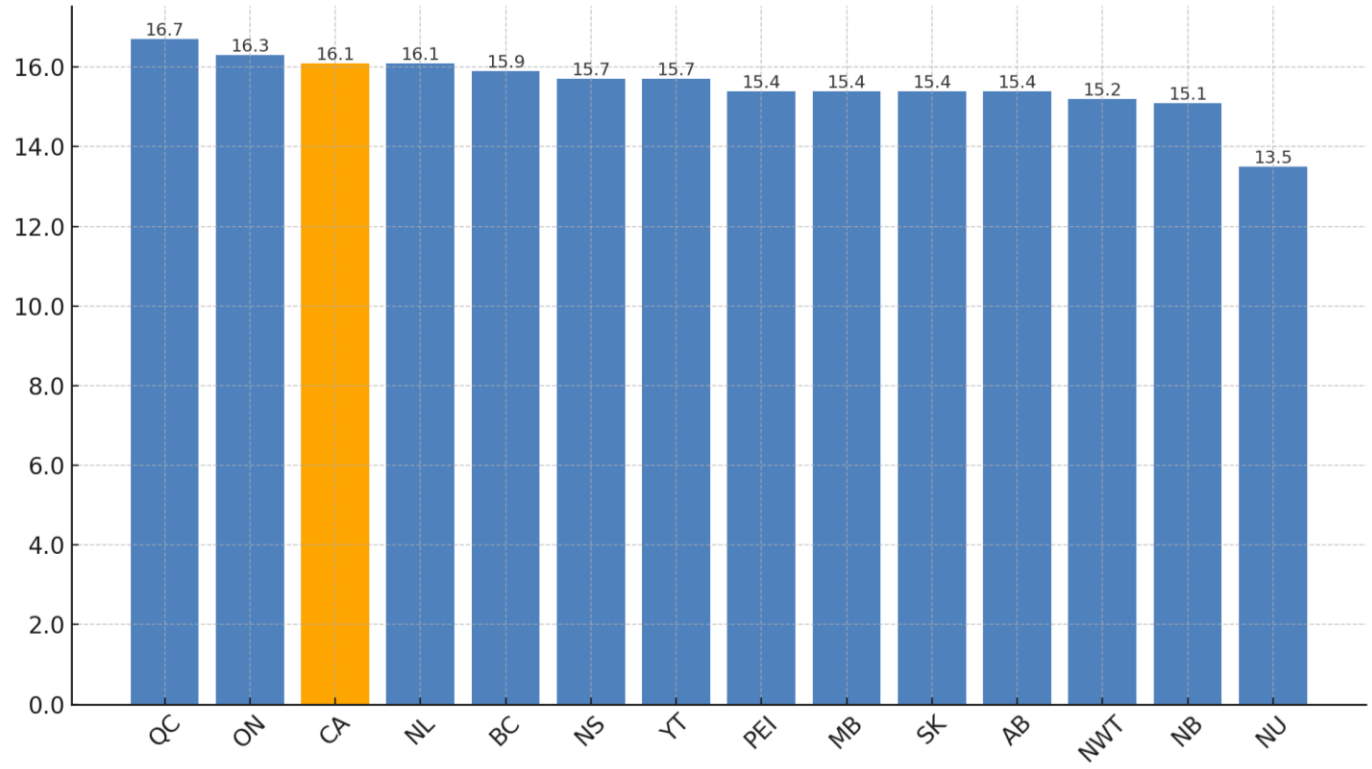
- Yukon (+6 positions), Alberta (+3), Manitoba, Quebec and Northwest Territories (+1), improved their relative standings.
- In contrast, Nova Scotia (-3), Newfoundland and Labrador as well as Prince Edward Island (−1) fell in the provincial rankings.

It is important to note that the rankings for expected years of schooling and average educational attainment do not always align. For example, Alberta was the top-ranked jurisdiction for average attainment in 2023 but ranked only 7th in expected years of schooling. Conversely, New Brunswick, which ranked 12th in expected years of schooling, placed 5th in average educational attainment.

These discrepancies can be explained by the different nature of the two measures:

- Average educational attainment reflects the current educational level of the adult population.
- Expected years of schooling represents future educational prospects for children entering the education system.

Chart 5: Expected Years of Schooling, Canada and the Provinces/Territories, 2023



Source: CSLS Calculations based on Table 13.

Table 13: Expected Years of Schooling Estimates and Index, Canada and the Provinces/Territories, Selected Years

Year	CA	NL	PEI	NS	NB	QC	ON	MB	SK	AB	BC	YT	NWT	NU
Raw Estimates (years) Based on LFS Data														
2000	15.6	15.7	15.1	15.7	14.9	15.7	15.9	15.0	15.1	14.8	15.6	14.6	14.5	13.3
2005	15.9	15.7	15.3	15.6	15.3	16.1	16.2	15.5	15.1	14.9	15.7	14.0	14.1	13.3
2010	15.9	15.5	15.7	15.6	15.3	16.3	16.3	15.4	15.0	15.0	15.8	13.2	14.1	13.2
2015	16.0	15.8	15.4	15.5	15.2	16.6	16.2	15.3	15.1	15.1	15.6	14.8	14.7	12.8
2020	15.9	15.4	15.6	15.4	14.8	16.4	16.1	15.2	14.7	15.4	15.8	15.5	15.1	13.0
2023	16.1	16.1	15.4	15.7	15.1	16.7	16.3	15.4	15.4	15.4	15.9	15.7	15.2	13.5
Proportion of Canadian Estimates														
2000	1.000	1.006	0.969	1.006	0.954	1.008	1.017	0.960	0.966	0.952	1.003	0.935	0.930	0.852
2005	1.000	0.991	0.965	0.981	0.966	1.014	1.022	0.974	0.955	0.942	0.987	0.880	0.888	0.838
2010	1.000	0.970	0.975	0.975	0.960	1.020	1.021	0.964	0.938	0.944	0.994	0.827	0.886	0.825
2015	1.000	0.985	0.960	0.967	0.947	1.041	1.017	0.955	0.945	0.942	0.976	0.926	0.917	0.801
2020	1.000	0.961	0.971	0.972	0.928	1.035	1.006	0.979	0.945	0.969	0.992	0.943	0.941	0.810
2023	1.000	0.999	0.956	0.974	0.938	1.033	1.012	0.952	0.957	0.958	0.987	0.972	0.942	0.836
HDI Consistent Estimates (years)														
2000	15.8	15.9	15.3	15.9	15.1	15.9	16.1	15.2	15.3	15.0	15.8	14.8	14.7	13.5

2005	15.8	15.7	15.2	15.5	15.3	16.0	16.2	15.4	15.1	14.9	15.6	13.5	13.6	12.9
2010	15.1	14.7	14.8	14.8	14.5	15.4	15.4	14.6	14.2	14.2	15.0	12.6	13.5	12.5
2015	15.8	15.6	15.3	15.3	15.0	16.4	16.0	15.1	14.9	14.9	15.4	14.8	14.6	12.8
2020	16.4	15.9	16.1	15.9	15.3	17.0	16.6	15.7	15.2	15.9	16.3	15.0	15.0	12.9
2023	15.9	15.9	15.2	15.5	14.9	16.4	16.1	15.1	15.2	15.2	15.7	15.4	15.0	13.3
Expected Years of Schooling Index														
2000	0.878	0.883	0.851	0.883	0.837	0.885	0.893	0.842	0.848	0.836	0.880	0.821	0.816	0.748
2005	0.878	0.870	0.847	0.861	0.848	0.891	0.897	0.855	0.838	0.826	0.867	0.751	0.758	0.715
2010	0.839	0.815	0.823	0.820	0.806	0.856	0.857	0.810	0.788	0.791	0.831	0.697	0.747	0.695
2015	0.878	0.868	0.848	0.852	0.835	0.913	0.891	0.841	0.827	0.830	0.857	0.821	0.813	0.710
2020	0.911	0.884	0.895	0.883	0.850	0.943	0.923	0.871	0.844	0.885	0.903	0.835	0.834	0.717
2023	0.883	0.881	0.844	0.860	0.828	0.912	0.894	0.841	0.844	0.846	0.871	0.858	0.831	0.738

Note: HDI consistent estimates are obtained by applying the national shares of raw estimates for provinces and territories to their corresponding raw estimates (based on LFS data). These shares are found in Appendix Table 14 at http://csls.ca/reports/HDI_Provinces_App.xlsx

Source: CSLS calculations using Statistics Canada. Table 14-10-0081-01 Unemployment rate, participation rate, and employment rate by type of student during school months, annual (x 1,000); YT, NWT and NU data by special request from LFS from Statistics Canada for 2001-2016; Estimates for 2017-2023 for territories are obtained by extrapolating using the 2011-2016 CAGR. Estimates for NWT Values for NWT and NU for 2000 are assumed to be the same as 2001 and 2004 respectively.

Table 14: Expected Years of Schooling Rank, Canada and the Provinces/Territories, Selected Years

Year	Canada	NL	PEI	NS	NB	QC	ON	MB	SK	AB	BC	YT	NWT	NU
Provincial Rank (Based on Raw Estimates)														
2000	_	2	6	2	9	2	1	8	6	10	5	11	12	13
2005	_	3	7	5	7	2	1	6	9	10	3	12	11	13
2010	_	5	5	4	8	1	1	7	10	9	3	12	11	12
2015	_	3	6	5	8	1	2	7	9	9	4	11	12	13
2020	_	8	5	5	12	1	2	4	9	5	3	9	9	13
2023	_	3	7	5	12	1	2	7	7	7	4	5	11	13
2023 International HDR Rank (Based on 2023 HDR Consistent Estimates)														
2023	49	51	71	61	79	37	45	72	70	69	53	64	75	112

Note: Provincial and territorial rankings include all Canadian jurisdictions and rank them in comparison to all countries and provinces and territories (206 jurisdictions = 193 countries + 13 provinces and territories)

Source: CSLS Calculations based on Table 13

Table 15: Expected Years of Schooling Growth Rate, Canada and the Provinces/Territories, 2000-2023 (Compound annual growth rates)

Period	CA	NL	PEI	NS	NB	QC	ON	MB	SK	AB	BC	YT	NWT	NU
2000-2023	0.14	0.11	0.09	0.00	0.07	0.25	0.12	0.11	0.10	0.17	0.07	0.31	0.20	0.06
2000-2019	0.15	0.01	0.04	0.04	0.05	0.32	0.11	0.07	0.12	0.15	0.05	0.11	0.15	-0.20
2019-2023	0.11	0.60	0.32	-0.18	0.16	-0.08	0.17	0.28	0.00	0.28	0.18	1.29	0.42	1.30

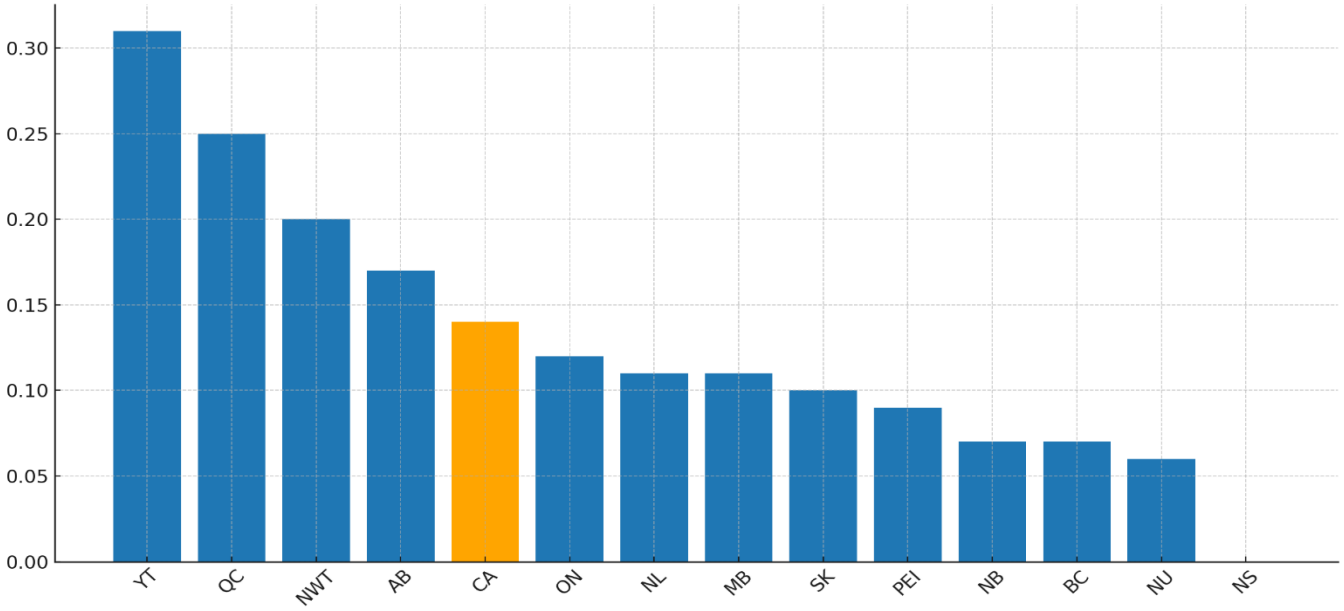
Source: Statistics Canada. Table 14-10-0081-01 Unemployment rate, participation rate, and employment rate by type of student during school months, annual (x 1,000); YT, NWT and NU data by special request from LFS from Statistics Canada up to 2016; (italicized) and extrapolated for 2017-2023 based on the 2011-2016 CAGR.

Consequently, these indicators may diverge based on demographic trends, especially immigration. Regions with higher shares of educated immigrants, such as Ontario or British Columbia, may exhibit higher attainment levels without corresponding increases in expected years of schooling.

As shown in Chart 6 and Table 15, Canada's expected years of schooling grew by 0.14 per cent per year.[23] All Canadian provinces and territories experienced a modest or stagnant growth in expected years of schooling between 2000 and 2023: Yukon (0.31 per cent), Quebec (0.25 per cent), Northwest Territories (0.20 per cent) recorded the fastest growth. Nova Scotia (0.00 per cent), Nunavut (0.6 per cent) and New Brunswick (0.07 per cent) experienced the slowest growth rates nationwide.

The post-2019 period saw some slowdowns or reversals in expected years of schooling across the country. For example, Nova Scotia (−0.18 per cent), Quebec (−0.08 per cent), Saskatchewan (0.00 per cent) experienced declines or stagnation. These declines are most likely attributable to the lingering effects of the Covid-19 pandemic, including school closures, disrupted learning, and decreased formal school attendance. Nunavut (1.30 per cent), Yukon (1.29 per cent) and Newfoundland and Labrador (0.60 per cent) saw significant improvements in their expected years of schooling in the same period.

Chart 6: Expected Years of Schooling Growth Rates, Canada and the Provinces/Territories, Selected Years, 2000-2023 (Compound annual growth rates)



Source: CSLS Calculations based on Table 15

[23] See Shariati (2025) for an in-depth discussion of anomalies in Canada's expected years of schooling data.

A comparison with other countries reveals that all Canadian provinces and territories have seen a drop in international rankings for expected years of schooling since 2000:

• In 2000, Canada was ranked 16th globally, but by 2023, it had fallen to 49th.

• Nunavut now ranks 112th, comparable to countries like Togo, Guyana, and Palestine, highlighting significant educational equity challenges.

These deteriorating international standings reflect both the slowdown in domestic improvements and the continued progress of other countries in expanding educational opportunities.

C. Income

Unfortunately, Statistics Canada does not produce a series for Gross National Income estimates at the provincial and territorial levels, and therefore we would need to approximate this income measure that is used in calculating the HDI. This can be done by following these steps:

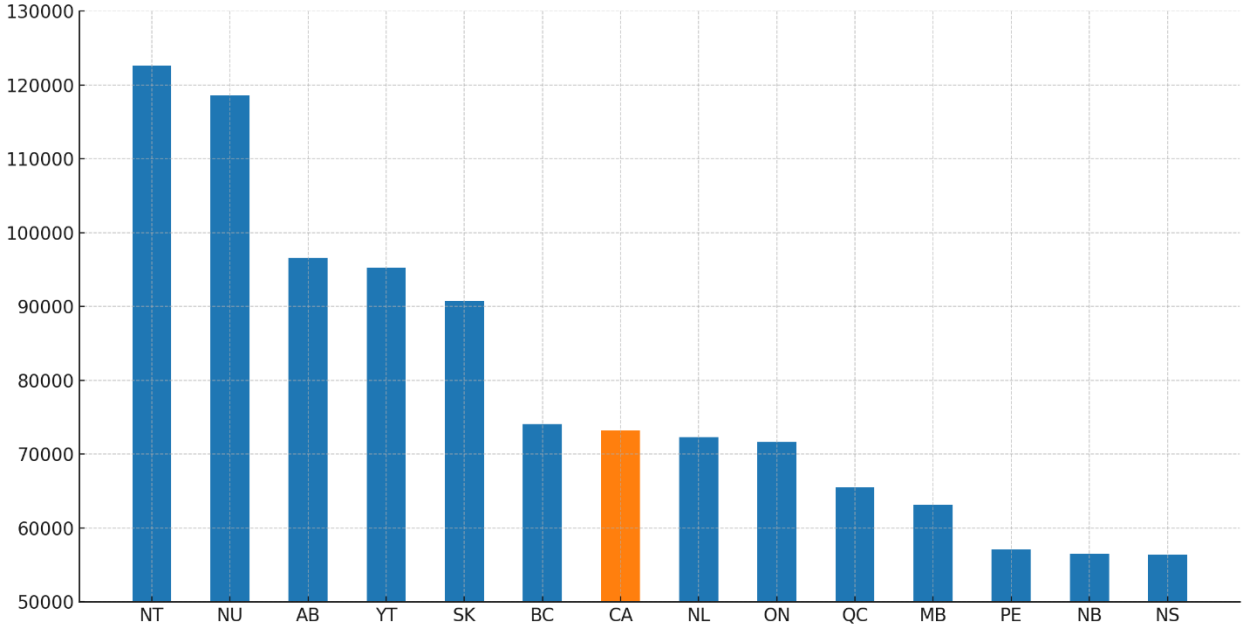
1- Adjusting provincial and territorial GDP by the national difference observed between nominal GNI and GDP each year. Once a province or territory's GDP is adjusted by the national nominal GDP to GNI ratio, population estimates are used to obtain GNI per capita.
2- Deflating each province and territory's ratio of GNI per capita by using final consumption expenditure as the deflator for that province or territory. This provides a constant price series for each jurisdiction GNI per capita.
3- We then correct for inter-provincial price differences by using Statistics Canada's 2021 "overall" relatives to produce provincially PPP-adjusted GNI per-capita series. Because only a 2021 PPP cross-section is currently available, we project PPPs backward and forward by cumulating each province's annual CPI inflation gap relative to Ontario, carrying forward (or back) the last available gap when data are missing, rather than holding the 2021 relativities fixed. Essentially, we anchor every province's / territory's price level to Statistics Canada (2025) 2021 PPP estimate and then chain the series forward and backward with the annual CPI gap versus Ontario.

$$\frac{\text{PPP}_{i,t}}{\text{PPP}_{i,\,2021}} = \prod_{k=2022}^{t} \left(1 + \Delta\pi_{i,k}\right) \quad \text{for } t > 2021$$

$$\frac{\text{PPP}_{i,t}}{\text{PPP}_{i,\,2021}} = \prod_{k=t+1}^{2021} \frac{1}{\left(1 + \Delta\pi_{i,k}\right)} \quad \text{for } t < 2021 \qquad (3)$$

Where $\Delta\pi_{i.k}$ is the percentage-point difference between inflation in province i and inflation in Ontario. Appendix Table A18 lists all provincial and territorial CPI gaps with Ontario between 2000-2023. Statistics Canada's (2025) method builds multilateral PPPs from thousands of outlet-level prices and

Chart 7: Gross National Income Per capita Estimates, Canada and the Provinces/Territories, 2023 (millions of current dollars)



Source: GNI for Canada is from Statistics Canada. Table 36-10-0122-01 Gross domestic income, gross national income and net national income, Canada, quarterly (x 1,000,000). For the provinces and territories, we impute estimates by scaling provincial/territorial GDP (from Appendix Table 2) by the national GDI-GDP ratio.

province-specific expenditure weights; it aggregates those bilateral Fisher indexes into a transitive system. [24]

4- Making GNI per capita estimates for Canadian provinces and territories consistent with UNDP's GNI per capita estimates used in HDRs by applying the provincial and territorial ratio of national GNI per capita to the GNI per capita estimate for Canada reported in the HDR.

The PPP-adjusted estimates for 2000, 2005, 2010, 2015, 2020 and 2023 are presented in Table 16.[25] We use the newly released (July 31, 2025) Statistics Canada (2025) provincial/territorial PPPs for 2021 to correct for price-level differences across Canada (Table 17).

[24] The CPI-gap method used in this report has the following caveats:

- Assumes the CPI basket is identical to the PPP basket and that only overall CPI inflation matters; Statistics Canada (2025) shows PPPs are built separately for durables, services, shelter, public consumption, etc., precisely because different items move at different speeds.
- Ignores substitution and expenditure-weight effects. Proper PPPs re-weight each commodity group by its province-specific spending share; our link leaves the 2021 weights unchanged.
- We do not factor in rent or public services that Statistics Canada (2025) addresses.

[25] This is largely a matter of accounting difficulties. The difference between GNI and GDP is income earned by residents abroad less income earned by non-residents domestically. At the provincial level it is harder to define what income is earned "abroad." Statistics Canada would have to somehow account for workers who cross a provincial border to work, as well as a company based in one province doing business across the country. For more discussion see Ross and Murray (2010).

Table 16: National Income Per capita Estimates and Income Index, Canada and the Provinces/Territories, Select Years

Year	CA	NL	PEI	NS	NB	QC	ON	MB	SK	AB	BC	YK	NWT	NU
GNI per capita in current dollars (Provincial PPP unadjusted)														
2000	35,099	26,144	24,217	26,649	27,108	30,577	37,749	29,669	33,168	47,684	32,885	40,383	64,059	31,623
2005	43,187	42,455	30,295	33,643	33,579	36,321	43,577	35,865	44,296	66,540	41,366	48,299	100,370	37,550
2010	48,026	54,658	36,198	38,415	39,402	40,688	47,135	42,845	59,108	70,969	45,437	65,564	109,086	56,283
2015	54,896	58,100	41,473	42,794	43,409	46,693	54,628	50,249	69,993	76,991	51,701	68,868	105,086	65,334
2020	58,391	61,068	46,868	46,671	47,680	52,782	59,231	52,867	66,626	68,362	59,391	77,268	94,216	102,991
2023	73,192	72,293	57,129	56,389	56,520	65,490	71,659	63,153	90,715	96,576	74,099	95,242	122,602	118,550
Final Consumption Expenditure Implicit Price Indexes, by Province (Index = 100 in 2017)														
2000	74.9	71.8	71.4	72.9	72.7	76.1	75.7	72.4	70.0	72.8	76.7	70.6	68.2	63.7
2005	82.9	79.4	80.3	82.1	81.1	83.8	83.5	81.2	78.8	81.6	84.0	78.4	76.9	73.4
2010	89.7	88.1	89.1	90.4	89.0	89.4	89.8	89.3	88.6	90.2	90.9	87.4	87.6	83.3
2015	98.0	97.0	97.5	98.0	97.4	98.1	97.9	97.8	98.3	98.8	97.6	98.4	99.1	96.7
2020	105.0	103.1	104.9	104.8	104.1	104.9	105.0	105.5	104.3	104.4	106.2	106.6	104.3	105.3
2023	117.4	114.5	120.4	119.7	118.5	118.5	117.1	117.8	115.5	114.3	118.5	120.5	117.2	113.5
GNI per capita in 2017 Constant Prices (Provincial PPP unadjusted)														
2000	46,862	36,412	33,918	36,556	37,287	40,180	49,866	40,979	47,382	65,500	42,875	57,199	93,929	49,644
2005	52,096	53,470	37,728	40,978	41,404	43,343	52,188	44,168	56,214	81,544	49,245	61,606	130,521	51,158
2010	53,541	62,040	40,626	42,495	44,271	45,512	52,489	47,979	66,714	78,680	49,985	75,016	124,528	67,567
2015	56,016	59,897	42,536	43,667	44,568	47,597	55,799	51,379	71,203	77,926	52,972	69,987	106,040	67,564
2020	55,610	59,232	44,678	44,533	45,802	50,317	56,410	50,111	63,879	65,481	55,923	72,484	90,332	97,808
2023	62,345	63,138	47,449	47,108	47,696	55,266	61,195	53,611	78,541	84,493	62,531	79,039	104,610	104,450
Provincial PPPs Using the CPI-Gap Method														
2000	-	0.895	0.867	0.900	0.879	0.975	1.000	0.916	0.886	0.952	1.139	1.101	1.106	1.272
2005	-	0.886	0.887	0.909	0.883	0.967	1.000	0.905	0.893	0.970	1.121	1.057	1.092	1.223
2010	-	0.888	0.892	0.911	0.874	0.953	1.000	0.896	0.910	1.011	1.100	1.056	1.113	1.219
2015	-	0.892	0.882	0.912	0.865	0.946	1.000	0.903	0.917	1.007	1.062	1.045	1.126	1.200
2020	-	0.888	0.866	0.895	0.867	0.927	1.000	0.902	0.908	1.003	1.077	1.042	1.104	1.205
2023	-	0.882	0.890	0.909	0.872	0.936	1.000	0.908	0.900	0.991	1.073	1.051	1.087	1.132
GNI per capita in 2017 Constant Prices (Provincial PPP adjusted)														
2000	46,862	40684	39121	40617	42420	41211	49866	44737	53479	68802	37643	51952	84927	39028
2005	52,096	60350	42534	45080	46890	44822	52188	48805	62949	84066	43930	58284	119524	41830
2010	53,541	69865	45545	46646	50654	47757	52489	53548	73312	77824	45441	71038	111885	55428
2015	56,016	67149	48227	47881	51523	50314	55799	56898	77648	77385	49879	66974	94174	56303
2020	55,610	66703	51592	49757	52828	54279	56410	55555	70351	65285	51925	69562	81822	81168
2023	62,345	71585	53314	51824	54697	59045	61195	59043	87268	85260	58276	75204	96237	92270
Proportion of Canadian Estimates														
2000	1.000	0.868	0.835	0.867	0.905	0.879	1.064	0.955	1.141	1.468	0.803	1.109	1.812	0.833
2005	1.000	1.158	0.816	0.865	0.900	0.860	1.002	0.937	1.208	1.614	0.843	1.119	2.294	0.803
2010	1.000	1.305	0.851	0.871	0.946	0.892	0.980	1.000	1.369	1.454	0.849	1.327	2.090	1.035
2015	1.000	1.199	0.861	0.855	0.920	0.898	0.996	1.016	1.386	1.381	0.890	1.196	1.681	1.005
2020	1.000	1.199	0.928	0.895	0.950	0.976	1.014	0.999	1.265	1.174	0.934	1.251	1.471	1.460
2023	1.000	1.148	0.855	0.831	0.877	0.947	0.982	0.947	1.400	1.368	0.935	1.206	1.544	1.480
UNDP Consistent Estimates (Provincial PPP adjusted, 2021 USD PPP)														
2000	44,038	38,232	36,764	38,170	39,864	38,728	46,861	42,042	50,257	64,657	35,375	48,822	79,809	36,676
2005	49,282	57,091	40,237	42,645	44,357	42,401	49,369	46,169	59,549	79,525	41,557	55,136	113,069	39,570
2010	50,038	65,295	42,566	43,595	47,340	44,633	49,055	50,045	68,515	72,732	42,468	66,391	104,565	51,802
2015	52,139	62,501	44,889	44,566	47,957	46,832	51,937	52,960	72,273	72,028	46,427	62,338	87,656	52,406

Table 16 Continued

Year	CA	NL	PEI	NS	NB	QC	ON	MB	SK	AB	BC	YK	NWT	NU
2020	50,925	61,083	47,245	45,565	48,377	49,706	51,658	50,874	64,424	59,784	47,550	63,701	74,929	74,329
2023	54,688	62,793	46,766	45,460	47,980	51,794	53,679	51,792	76,550	74,790	51,119	65,968	84,418	80,938
Income Index														
2000	0.920	0.898	0.892	0.898	0.905	0.900	0.929	0.913	0.940	0.978	0.886	0.935	1.000	0.892
2005	0.937	0.959	0.906	0.915	0.921	0.914	0.937	0.927	0.965	1.000	0.911	0.954	1.000	0.903
2010	0.939	0.979	0.914	0.918	0.930	0.922	0.936	0.939	0.986	0.995	0.914	0.982	1.000	0.944
2015	0.945	0.972	0.922	0.921	0.932	0.929	0.944	0.947	0.994	0.994	0.928	0.972	1.000	0.946
2020	0.942	0.969	0.930	0.925	0.934	0.938	0.944	0.941	0.977	0.966	0.931	0.975	1.000	0.999
2023	0.952	0.973	0.929	0.924	0.933	0.944	0.949	0.944	1.000	1.000	0.942	0.981	1.000	1.000

Source: GNI for Canada is from Statistics Canada. Table 36-10-0122-01 Gross domestic income, gross national income and net national income, Canada, quarterly (x 1,000,000). Implicit price indexes, gross domestic product, provincial and territorial are found in Statistics Canada Table 36-10-0223-01. The sources for calculating provincial PPPs are Statistics Canada Table: 18-10-0005-01 and 2021 PPPs from Statistics Canada (2025). For the provinces and territories, we impute estimates by scaling provincial/territorial GDP (from online Appendix Table A16) by the national GNI-GDP ratio for each year.[26] The source data for UNDP estimates, The World Bank, https://databank.worldbank.org/embed/ICP-Annual-PPPs/id/1da9d9a2?inf=n uses a PPP of 1.18 for Canada in 2021.

Earlier work, such as that by the Nunavut Bureau of Statistics (2015), highlighted these disparities by showing that residents of Nunavut pay roughly twice as much as Canadians for the same food basket; applying PPPs is therefore essential to reflect such differences.

However, given the available data and the likely dominant share of consumer prices in driving PPPs relative to prices of housing, energy or government services the analysis provided here can pick up some variation in PPPs across Canadian jurisdictions over time.

Table 17: Provincial and Territorial Purchasing Power Parities Based on Mean Prices, Ontario as Denominator, 2021

PPP	NB	PEI	NL	NS	MB	SK	QC	AB	ON	YT	BC	NWT	NU
Overall	0.87	0.88	0.89	0.90	0.90	0.90	0.93	1.00	1.00	1.04	1.07	1.09	1.18
Private	0.87	0.87	0.87	0.93	0.92	0.89	0.95	0.99	1.00	0.95	1.13	0.97	1.07
Goods	1.05	0.99	1.03	1.06	1.06	1.04	1.06	1.07	1.00	1.04	1.15	1.01	1.26
Durable	1.19	1.03	1.10	1.09	1.16	1.12	1.23	1.24	1.00	1.02	1.31	1.03	1.22
Semi-durable	0.98	0.91	0.88	1.18	1.04	1.06	1.07	1.03	1.00	1.03	1.16	0.91	1.10
Non-durable	1.02	0.99	1.04	1.01	1.02	1.00	1.00	1.01	1.00	1.04	1.08	1.04	1.41
Services	0.72	0.77	0.73	0.82	0.8	0.77	0.85	0.93	1.00	0.89	1.11	0.96	0.92
Shelter	0.53	0.61	0.54	0.66	0.67	0.68	0.65	0.88	1.00	0.82	1.23	0.86	0.75
Other services	0.93	0.94	0.93	0.99	0.94	0.85	1.06	0.97	1.00	0.96	1.00	1.07	1.11
Public	0.87	0.87	0.87	0.93	0.92	0.89	0.95	0.99	1.00	0.95	1.13	0.97	1.07

Notes: The breakdown for private consumption is based on Statistics Canada (2024). Shelter includes rent, dwelling values, homeowners' repairs and maintenance, other owned accommodation expenses, and water. Electricity and natural gas are not included. Fuel oil is not included in shelter but is included in non-durable goods.

Source: Statistics Canada (2025)

[26] Appendix tables are available at: http://csls.ca/reports/HDI_Provinces_App.xlsx

Unlike other components of the Human Development Index (HDI), there remains significant variation in PPP-adjusted GNI per capita across Canadian provinces and territories, as shown in Chart 7. In 2000, the range stretched from about $35,375 in British Columbia to roughly $79,809 in the Northwest Territories. By 2023 the gap was still wide, with Nova Scotia at about $45,460 and the Northwest Territories at about $84,418 (all figures in 2021-PPP US dollars).[27]

Table 18, Panel A shows the ranking of provinces and territories from 2000 to 2023 based on provincially PPP-adjusted GNI per capita (Panel B shows the provincially PPP-unadjusted rankings for comparison). Most regions maintained broadly stable rankings, with Alberta and the Northwest Territories consistently leading. Atlantic provinces (excluding Newfoundland and Labrador) remained near the bottom of the rankings throughout the entire period. However, there were a few notable shifts:

- Nunavut climbed from 12th to 2nd place nationally,
- British Columbia rose from 13th to 10th,
- Ontario dropped from 5th to 7th over the same period,
- Newfoundland and Labrador improved from 9th to 6th and Nova Scotia slipped from 10th to 13th,
- New Brunswick fell from 7th to 11th, and Manitoba from 6th to 9th.

Table 18: Gross National Income Per capita Rank, Canada and the Provinces/Territories, Provincially PPP adjusted, Selected Years

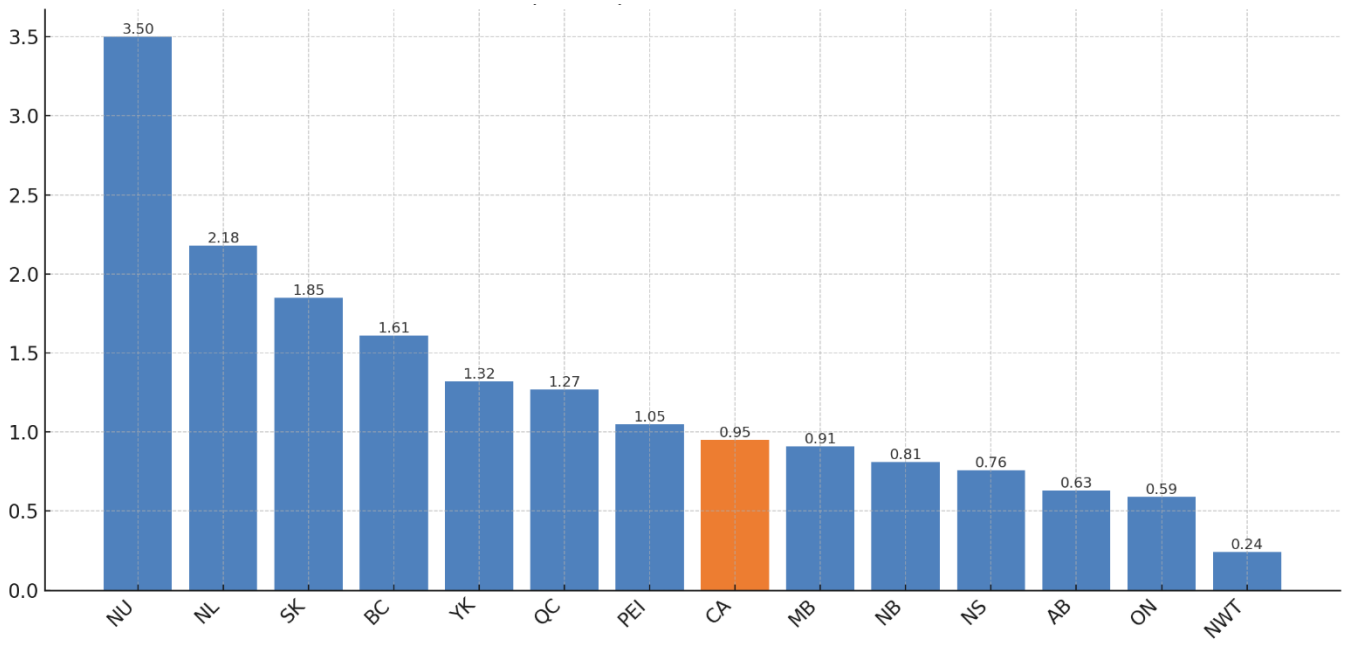
Year	CA	NL	PEI	NS	NB	QC	ON	MB	SK	AB	BC	YT	NWT	NU
Provincial Rank														
2000	-	9	11	10	7	8	5	6	3	2	13	4	1	12
2005	-	4	12	9	8	10	6	7	3	2	11	5	1	13
2010	-	5	12	11	9	10	8	7	3	2	13	4	1	6
2015	-	4	12	13	9	10	8	6	2	3	11	5	1	7
2020	-	5	12	13	10	9	7	8	3	6	11	4	1	2
2023	-	6	12	13	11	8	7	9	3	4	10	5	1	2
2023 International HDR Rank (Based on 2023 HDR Consistent Estimates)														
2023	25	26	47	51	43	37	33	38	10	13	39	20	7	9

Note: Provincial and territorial rankings include all Canadian jurisdictions and rank them in comparison to all countries and provinces and territories (206 jurisdictions = 193 countries + 13 provinces and territories).

Source: CSLS Calculations based on Table 16.

[27] We note that while everyday items especially food and fuel prices are significantly more expensive in the territories, these higher prices are somewhat offset by cheaper rent and housing prices.

Chart 8: Gross National Income Per capita Growth Rates, Canada and the Provinces/Territories, Selected Years, 2000-2023 (Compound annual growth rates)



Source: CSLS Calculations.

Table 20: Gross National Income Per capita Growth Rates, Canada and the Provinces/Territories, 2000-2023 (Compound annual growth rates)

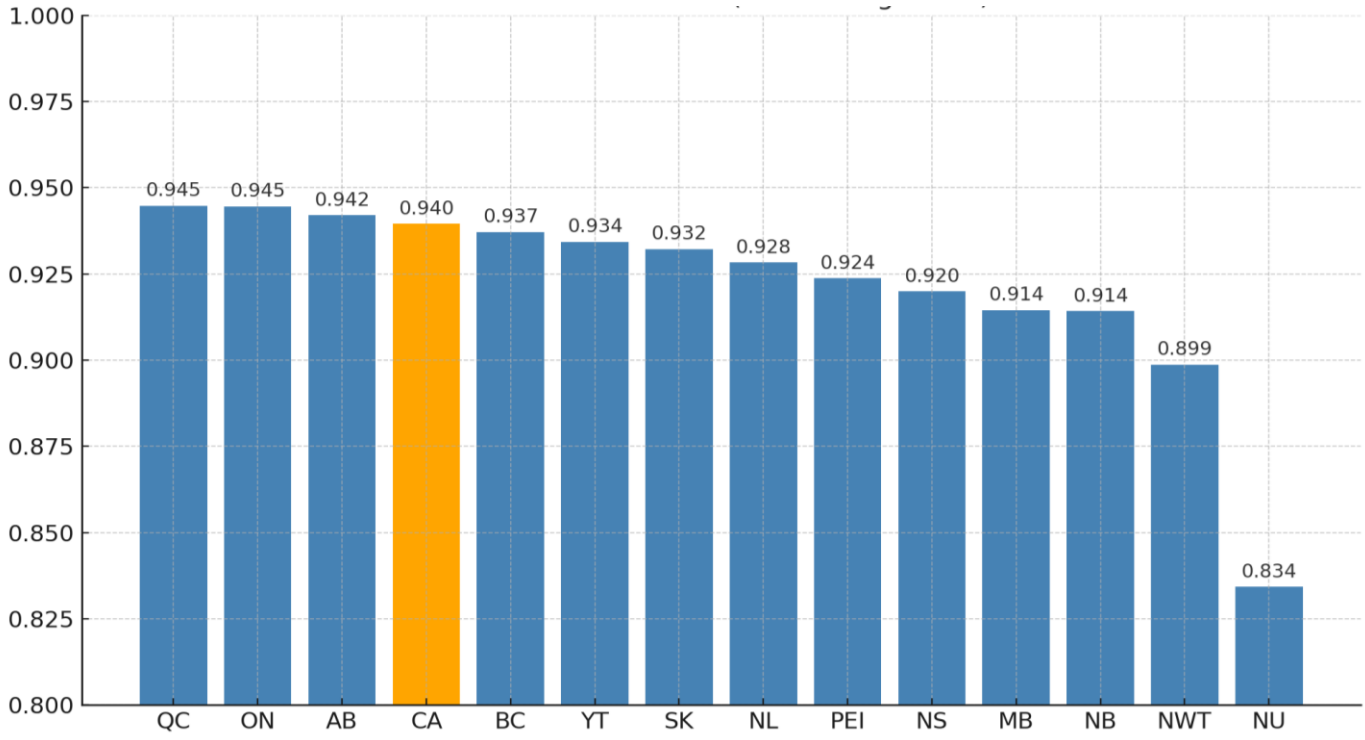
Period	CA	NL	PEI	NS	NB	QC	ON	MB	SK	AB	BC	YT	NWT	NU
2000-2023	0.95	2.18	1.05	0.76	0.81	1.27	0.59	0.91	1.85	0.63	1.61	1.32	0.24	3.50
2000-2019	1.13	3.14	1.49	1.16	1.20	1.57	0.77	1.27	1.84	0.58	1.77	1.21	0.24	3.23
2019-2023	0.09	-2.25	-1.02	-1.12	-1.05	-0.13	-0.24	-0.79	1.86	0.91	0.88	1.84	0.28	4.80

Source: CSLS Calculations.

The international comparison amplifies these disparities. Placed into the 2023 HDR-consistent global ranking (206 jurisdictions: 193 countries + 13 provinces/territories), the Northwest Territories would rank 7th worldwide, Saskatchewan 12th, Nunavut 9th, Saskatchewan 10th and Alberta 13th, while New Brunswick (43rd), Prince Edward Island (47th) and Nova Scotia (51st) align with upper-middle-income countries globally.

These variations in position are mirrored in the growth rates observed between 2000 and 2023 (see Chart 8 and Table 20). The national PPP-adjusted average annual growth over this period was 0.95 per cent, with Nunavut posting the highest growth at 3.50 per cent, followed by Newfoundland and Labrador (2.18 per cent), Saskatchewan (1.85 per cent). In contrast, Alberta (0.64 per cent), Ontario (0.59 per cent) and the Northwest Territories (0.65 per cent) grew the slowest.

Chart 9: Human Development Index, Canada and the Provinces/Territories, 2023



Source: CSLS Calculations.

The growth patterns also reveal a significant deceleration in GNI per capita post-2019 for some jurisdictions with Newfoundland and Labrador (−2.25 per cent), Nova Scotia (-1.12 per cent) and New Brunswick (-1.05 per cent) posted the largest drop among all Canadian regions.

D. Overall Human Development Index

Having obtained the index values for life expectancy, education (the arithmetic average of mean years of schooling and expected years of schooling) and income, we can now use equation (2) to calculate the HDI values for Canadian provinces and territories consistent with the HDR definitions and methodologies.

Table 21: Human Development Index, Canada and the Provinces/Territories, Selected Years

Year	CA	NL	PEI	NS	NB	QC	ON	MB	SK	AB	BC	YT	NWT	NU
HDI Estimates (Based on HDR Consistent Estimates)														
2000	0.895	0.873	0.870	0.884	0.876	0.885	0.903	0.878	0.889	0.909	0.893	0.876	0.894	0.787
2005	0.909	0.898	0.886	0.893	0.893	0.900	0.915	0.893	0.903	0.921	0.904	0.884	0.890	0.805
2010	0.918	0.911	0.898	0.900	0.901	0.913	0.923	0.902	0.912	0.928	0.914	0.883	0.889	0.817
2015	0.932	0.919	0.913	0.910	0.909	0.932	0.938	0.915	0.928	0.938	0.928	0.915	0.911	0.822
2020	0.931	0.921	0.922	0.915	0.911	0.936	0.936	0.914	0.921	0.932	0.931	0.922	0.910	0.835
2023	0.939	0.929	0.923	0.919	0.914	0.944	0.945	0.914	0.932	0.943	0.937	0.933	0.899	0.834

Source: CSLS Calculations.

Table 22: Human Development Index Rankings, Canada and the Provinces/Territories, Selected Years

Year	CA	NL	PEI	NS	NB	QC	ON	MB	SK	AB	BC	YT	NWT	NU
Provincial Rank (Based on Raw Estimates)														
2000	-	11	12	7	9	6	2	8	5	1	4	10	3	13
2005	-	6	11	8	8	5	2	7	4	1	3	12	10	13
2010	-	6	10	9	8	4	2	7	5	1	3	12	11	13
2015		6	9	11	12	3	1	7	5	2	4	7	10	13
2020	-	8	5	9	11	1	2	10	7	3	4	6	12	13
2023	-	7	8	9	11	2	1	10	6	3	4	5	12	13
2023 International HDR Rank (Based on 2023 HDR Consistent Estimates)														
2023	16	30	33	36	43	16	15	42	27	17	25	26	51	75

Note: Provincial and territorial rankings include all Canadian jurisdictions and rank them in comparison to all countries and provinces and territories (206 jurisdictions = 193 countries + 13 provinces and territories). Canada's rank is as reported in the official UNDP estimates and not ranked again.

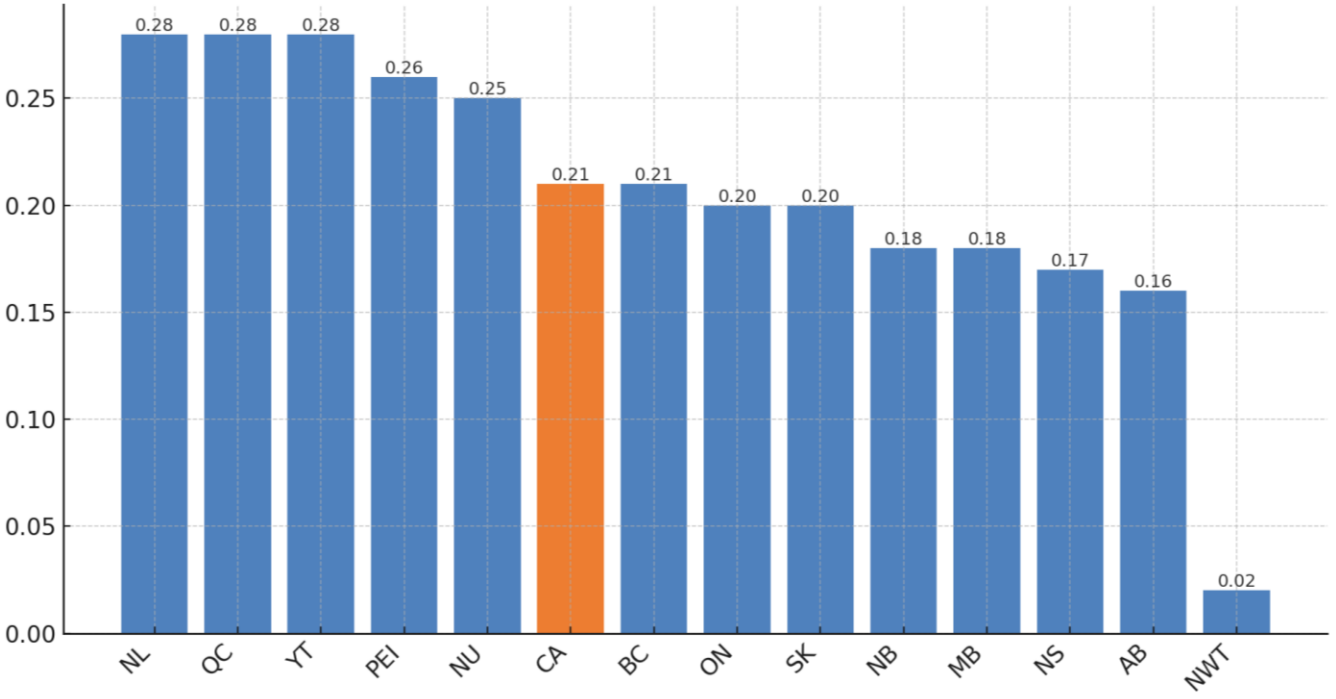
Source: CSLS calculations.

The CSLS's HDI estimates for Canada and the provinces/territories are given for 2000, 2005, 2016 and 2020 and 2023 in Table 21 and the provincial and territorial ranking for 2023 is illustrated in Chart 9.

In 2023 the highest HDI scores were in Ontario (0.945) and Quebec (0.944), followed by Alberta (0.943) and British Columbia (0.937). At the lower end were Northwest Territories (0.899) and Nunavut (0.834). The relative HDI rankings of provinces and territories have remained remarkably stable over time. As shown in Table 22, the top three have almost always been drawn from Alberta, Ontario, British Columbia and Quebec; by 2023 Ontario Quebec, and Alberta formed the top three, while Nunavut remained last throughout the period. Several provinces and territories saw changes in their standings. For instance:

- Northwest Territories fell from 3rd in 2000 to 12th in 2023,
- Prince Edward Island rose from 12th to 8th,
- Newfoundland and Labrador rose from 11th to 7th,
- Yukon moved up from 10th to 5th,
- Manitoba declined from 8th to 10th,
- Nova Scotia and New Brunswick saw small declines.

Chart 10: Human Development Index Growth Rate, Canada and the Provinces/Territories, 2000-2023 (Compound annual growth rate)



Source: CSLS Calculations

Table 23: Human Development Index Growth Rate, Canada and the Provinces/Territories, 2000-2023 (Compound annual growth rates)

Period	CA	NL	PEI	NS	NB	QC	ON	MB	SK	AB	BC	YT	NWT	NU
2000-2023	0.21	0.28	0.26	0.17	0.18	0.28	0.2	0.18	0.2	0.16	0.21	0.28	0.02	0.25
2000-2019	0.25	0.34	0.28	0.2	0.21	0.33	0.22	0.22	0.26	0.19	0.24	0.24	0.11	0.29
2019-2023	0.06	-0.03	0.13	0.02	0.07	0.04	0.09	-0.02	-0.03	0.00	0.07	0.43	-0.39	0.10

Source: CSLS Calculations.

Growth rates in HDI between 2000 and 2023 reveal further regional disparities (Chart 10 and Table 23). While Canada's HDI increased by 0.21 per cent per year, Yukon (0.28 per cent per year), Newfoundland and Labrador (0.28 per cent), Quebec (0.28 per cent), and Prince Edward Island (0.26 per cent) all provinces in long-term HDI growth. In contrast, Northwest Territories recorded the slowest HDI growth since 2000, at just 0.02 per cent per year, indicating near stagnation.

The 2019-2023 period depicts a slightly different picture. The national HDI growth rate stood at 0.06 per cent per year. Some jurisdictions such as Yukon (0.43 per cent per year), Prince Edward Island (0.13 per cent) and Nunavut (0.10 per cent) posted robust growth rates. Other provinces and territories experienced negative/weak growth, including:

• Northwest Territories (-0.39 per cent)

• Newfoundland and Labrador and Saskatchewan (-0.03 per cent)

• Alberta (0.00 per cent)

This post-2019 deceleration in HDI growth likely reflects both pandemic-induced disruptions in health and income and slower recovery in remote and northern regions, including Indigenous communities.

In the 2023 Human Development Report's international HDI rankings, the top-performing Canadian provinces compare favourably on the global stage:

- Ontario (15th) and Quebec (16th) would sit just ahead of countries such as Belgium (17th) and Finland (18th).
- Alberta (17th) follows closely, while British Columbia (25th) also remains within the world's top 25.
- At the other end, Nunavut (75th) would rank near countries like Argentina or Hungary.

These international standings emphasize that while Canadian provinces generally enjoy very high human development, not all regions benefit equally. The differences in HDI across provinces are mostly attributable to variations in life expectancy and income, as the education indicators tend to be relatively similar across jurisdictions.

IV. Future Research with the Human Development Index

The Human Development Index (HDI) is a vital tool for assessing socio-economic well-being, largely due to the global influence of the UNDP. Through its Human Development Reports (HDRs), the UNDP undertakes the complex task of compiling data from national statistical agencies to rank 193 countries based on socio-economic conditions. Given the wide variation in these agencies' capabilities, the HDI focuses on four core summary statistics, making the report's production more practical and transparent. Adding more components could reduce clarity for policymakers and invite debate over the choice of indicators. To complement the HDI, each HDR also presents alternative, specialized indices that offer a broader perspective on economic development across countries.

While the HDI is effective in measuring socio-economic well-being, it has notable limitations. It excels at distinguishing between advanced and developing economies but struggles to differentiate countries with similar levels of development. One significant issue lies in its measurement of education. Currently, the HDI evaluates educational attainment based on the highest level of education completed, assigning fixed values (e.g., 8 years for primary, 12 for secondary, and 14 for tertiary education). This method overlooks individuals who do not complete degrees. A more accurate approach, as suggested by Calver (2015), would measure the total number of years of

schooling, which, despite underestimating averages, would not distort rankings if degree completion rates are consistent among comparable countries.

A more critical measurement issue arises from assigning 14 years of education to all individuals with any tertiary education. For example, in countries where most students earn two-year certificates versus others where four-year bachelor's degrees are common, this approach undervalues the latter's educational attainment. This discrepancy is especially problematic in advanced economies with high secondary school completion rates. A more nuanced metric could differentiate types of tertiary education, categorizing them into certificates (14 years), bachelor's degrees (16 years), and postgraduate degrees (18 years). While extensive granularity may be unrealistic due to the diverse national statistical agencies involved, this three-tiered approach is feasible.

As discussed in detail by Shariati (2025), another concern with the HDI's education measurement involves its reliance on UNESCO enrollment data to estimate expected years of schooling. For instance, Canada's tertiary school enrollment data has been missing from UNESCO since 2000. Although this does not undermine the integrity of UNESCO's data for other advanced economies, it is problematic for a G7 country to rely on outdated data. Resolving this issue should be straightforward, as demonstrated by this study, which used LFS microdata to produce estimates closely matching UNESCOs.

A valuable next step would be to test how closely national and provincial HDI scores track other multidimensional measures of well-being. For example, benchmarking Canada's HDI performance with the Canadian Index of Well-being (CIW) and the OECD Better Life Index or the sub-national HDI trends with the CSLS Index of Economic Well-Being (CSLS, 2025) Statistics Canada's quality-of-life indicators. Benchmarking HDI against these alternative dashboards could reveal where the three-pillar HDI framework over- or under-states living conditions in specific provinces. In parallel, a "revealed-preference" lens that analyses interprovincial migration flows offers an indirect way to gauge well-being: if residents systematically leave one province for another, the destination's bundle of wages, public services, cost of living, amenities, and social conditions is implicitly judged superior. Combining such migration-based insights with conventional indicator comparisons would give a richer, more nuanced picture of how human development differs across Canada's regions.

Conclusion

This report updates the Human Development Index (HDI) estimates for Canadian provinces and territories from 2000 through 2023 using a methodology consistent with the United Nations Development Program's most recent Human Development Report. By scaling provincial and territorial values relative to Canada's official HDR scores, we enable meaningful international comparisons across Canada's regions.

The findings reveal important trends:

Nationally, Canada's HDI has stayed relatively high, yet its global ranking fell from 3rd in 1990s to 16th in 2023. The main factors behind this relative decline are slower growth in life expectancy and stagnation in educational attainment.

Regionally, Ontario and Quebec maintain the highest HDI values in Canada and would rank 15th and 16th globally in 2023. Nunavut remains the lowest-performing jurisdiction, ranking 75th internationally despite having one of the fastest HDI growth rates nationally.

Life Expectancy: While national life expectancy declined during 2020–2022 due to the pandemic, Quebec now leads all regions. Nunavut, despite improvements, continues to lag far behind.

Education: British Columbia, Ontario, and Yukon rank highest in average years of schooling, whereas Nunavut and the Northwest Territories have experienced declines since 2019. Notably, Prince Edward Island, Newfoundland and Labrador, and Quebec recorded the strongest gains.

Income: The Northwest Territories, Nunavut rank highest in GNI per capita, while Prince Edward Island and Nova Scotia are lowest.

The regional disparities observed in HDI components highlight the need for targeted policy efforts. Northern and Atlantic provinces, and particularly indigenous and remote communities, face systemic barriers to improving educational and health outcomes despite gains in income.

Ultimately, while Canada remains among the world's most developed nations, disaggregating the HDI by province and territory reveals stark inequalities in human development across the country. Closing these gaps is critical not only for improving well-being in underserved regions, but also for strengthening Canada's overall performance in global development metrics.

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