Social Determinants of Health

Introduction

- What Are Social Determinants of Health?
- Why Are Social Determinants Important?
- Key Determinants of Health
- The Canadian Context.
- Who are the policy makers

Objectives

01

How do socio economic characteristics and health related characteristics differ across Canadian provinces and and what implications do these differences have for targeted policy-making?

02

How does the expenditure on education correlate with other features among the provinces?

03

What provinces should be taken into consideration to create a more equitable, healthy, and prosperous society?

04

What are the possible actions that can be taken by the policy makers to improve the conditions?

Data analysis and sources

- Statistics Canada
- Statscan
- Canadian Public Health association
- The Canadian facts
- Canadian best Practices portal
- Other literary resources.

STRENGTHS
- High GDP
- Economic prosperity
- Educational access

WEAKNESSES
- Geographical disparity
- Income inequality
- Drug abuse

OPPORTUNITIES
- Targeted policy interventions
- Health education
- Collaborative initiatives

THREATS
- Economic instability
- Aging population
- Social inequalities

S W O T

ANALYSIS

CORRELATION

Health Outcomes

- Life expectancy at birth and at 65 are strongly correlated.
- Economic prosperity (GDP) significantly contributes to better health outcomes.
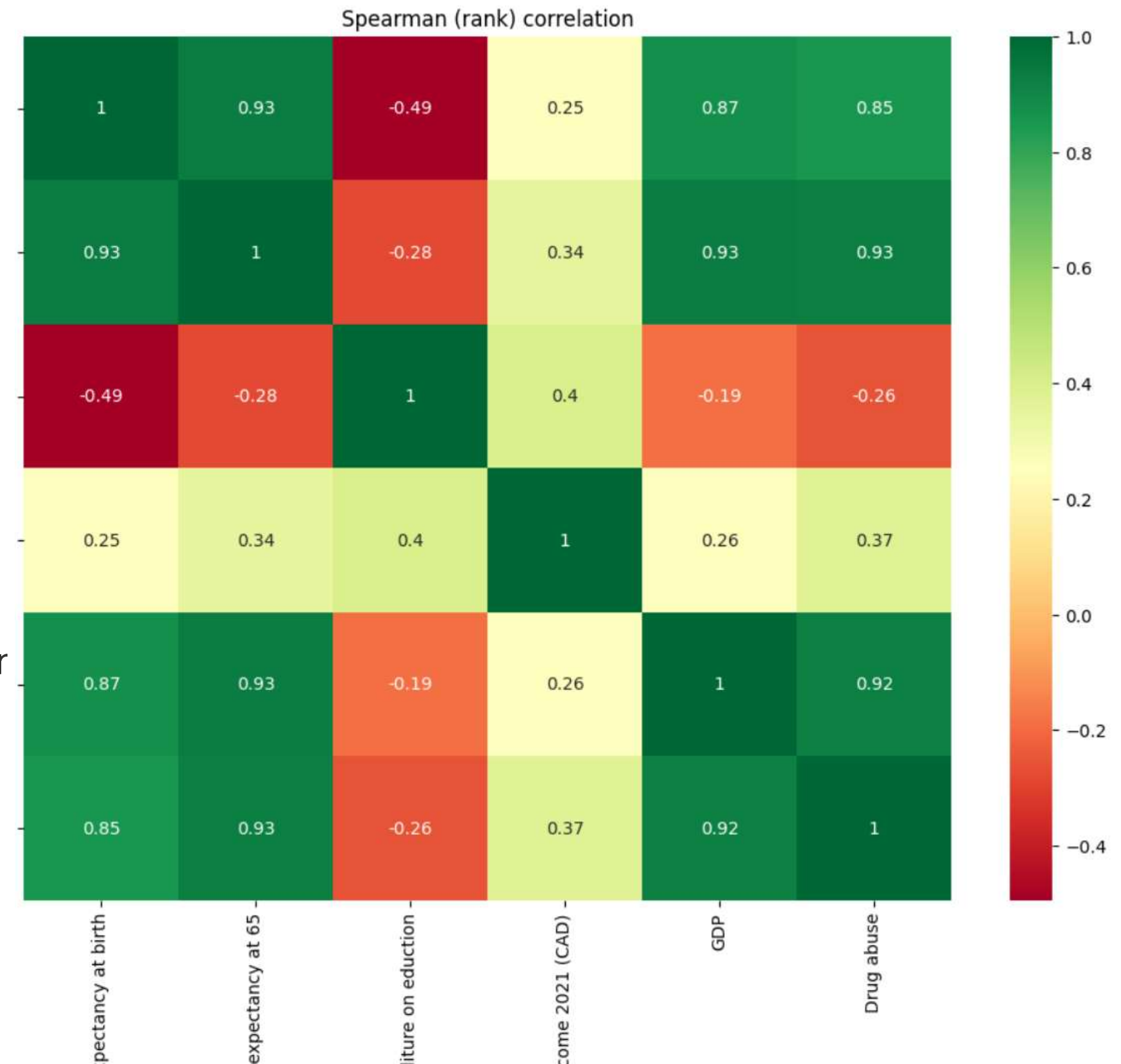
Education

- Expenditure on education shows weaker or negative correlations with life expectancy and GDP.
- Factors beyond financial investment influence educational and health outcomes.

Income and Drug Abuse

- Median family income and GDP strongly correlate with higher drug abuse.
- Wealthier regions may experience more social stress, contributing to drug abuse.
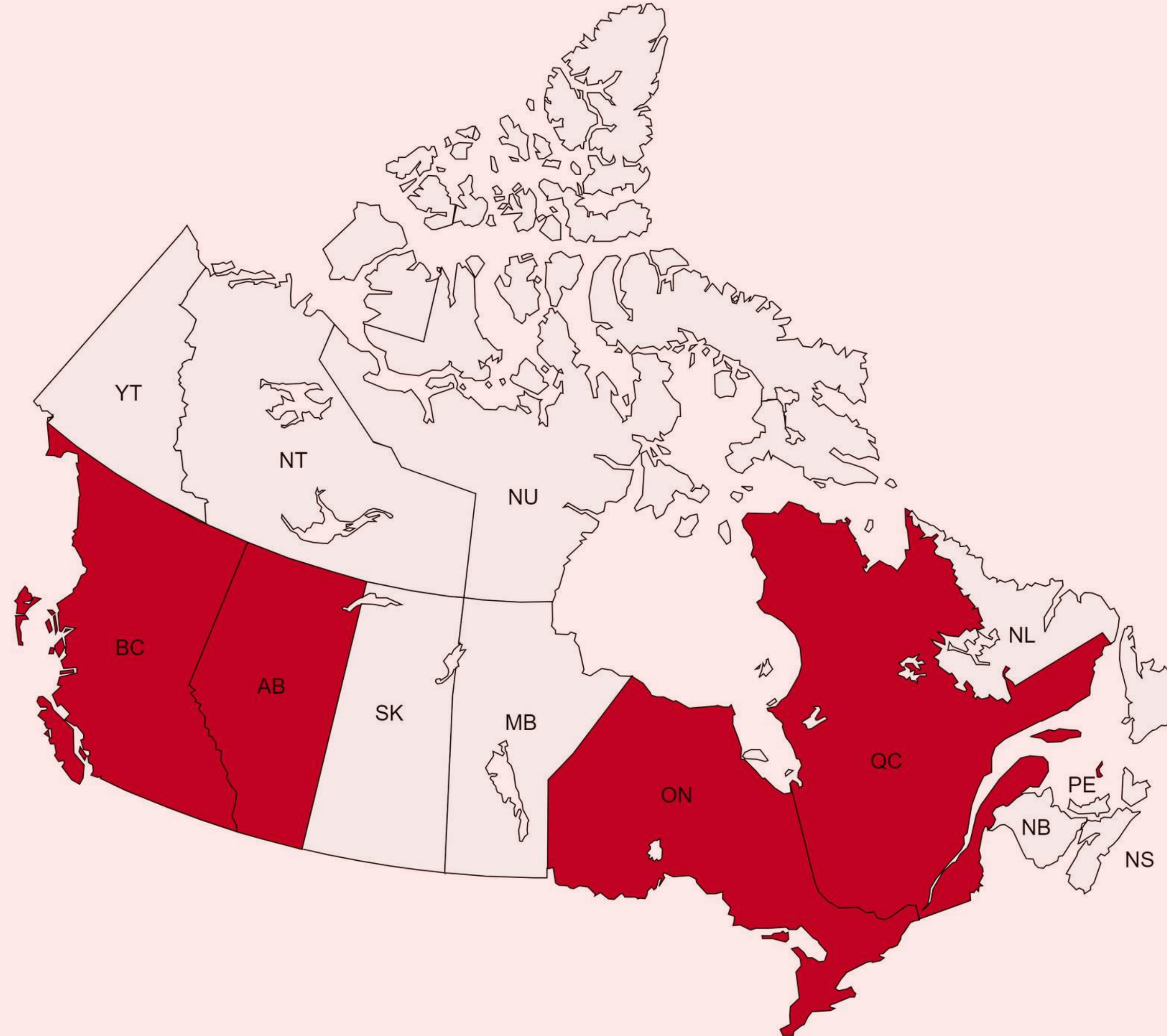
Economic Factors

- GDP strongly affects life expectancy and drug abuse.
- Weak link with education spending shows need for targeted investments.

Spearman (rank) correlation

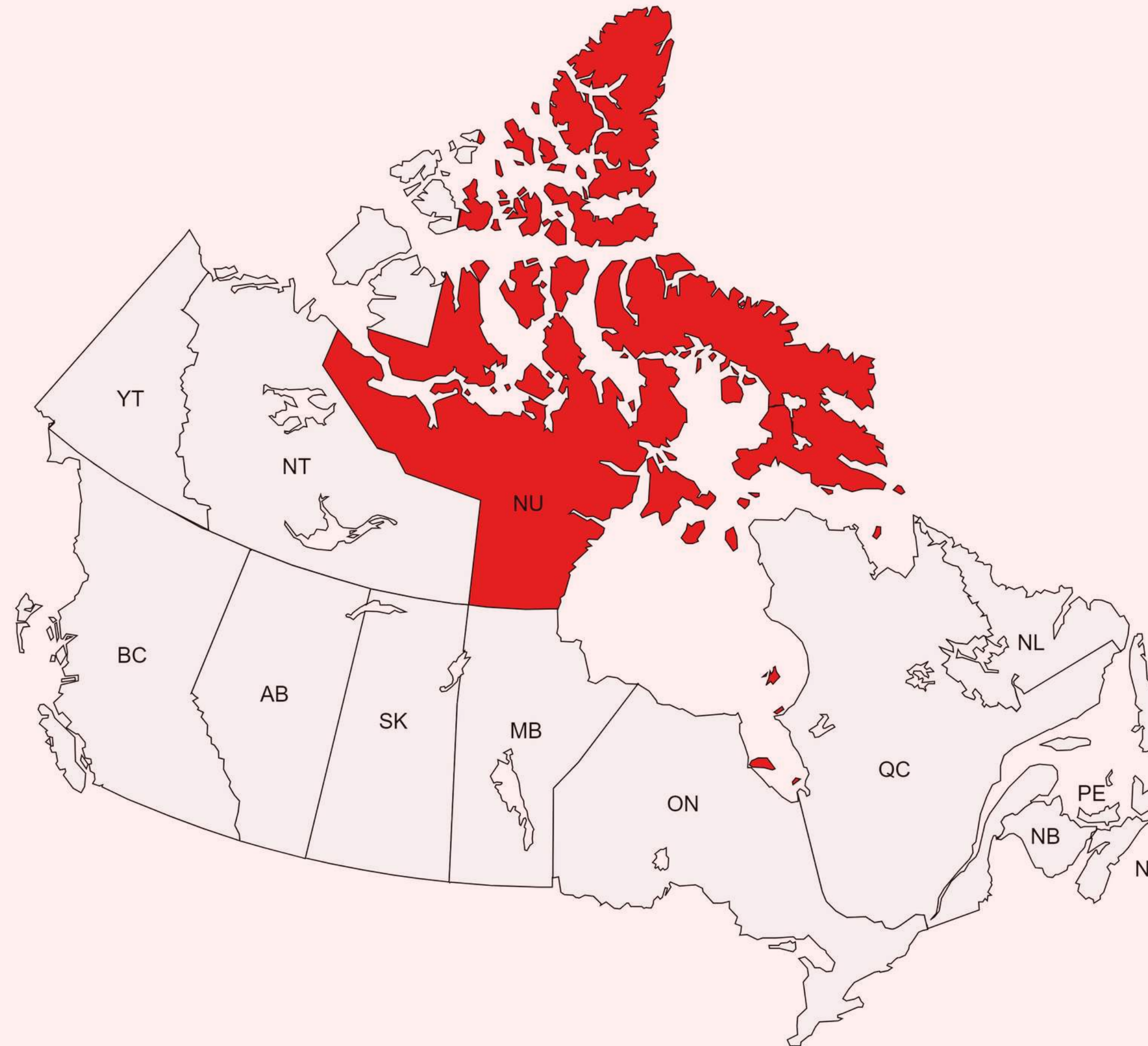|	pectancy at birth	expectancy at 65	liture on eduction	come 2021 (CAD)	GDP	Drug abuse
	1	0.93	-0.49	0.25	0.87	0.85
	0.93	1	-0.28	0.34	0.93	0.93
	-0.49	-0.28	1	0.4	-0.19	-0.26
	0.25	0.34	0.4	1	0.26	0.37
	0.87	0.93	-0.19	0.26	1	0.92
	0.85	0.93	-0.26	0.37	0.92	1

This analysis combines K-Means Clustering and Principal Component Analysis (PCA) to understand the socio-economic and health-related characteristics of Canadian provinces. The PCA reduces dimensionality and helps visualize provincial differences, while K-Means Clustering groups provinces with similar profiles.

- ***Cluster 0:***
- **Provinces: Quebec, Ontario, Alberta, British Columbia**
- **Characteristics:**
- **High GDP and median family income.**
- **Higher life expectancy and education expenditure.**
- **Well-developed healthcare and economic infrastructure.**

- **Cluster 1:**

- **Province: Nunavut**
- **Characteristics:**
- **Lowest life expectancy and highest drug abuse rates.**
- **Distinct socio-economic challenges due to geographical isolation.**
- **Lower education expenditure and GDP.**

- **Cluster 2:**

- **Provinces: Yukon, Northwest Territories**
- **Characteristics:**
- **Similar to Nunavut but with slightly better socio-economic outcomes.**
- **Geographical challenges impact healthcare and education.**
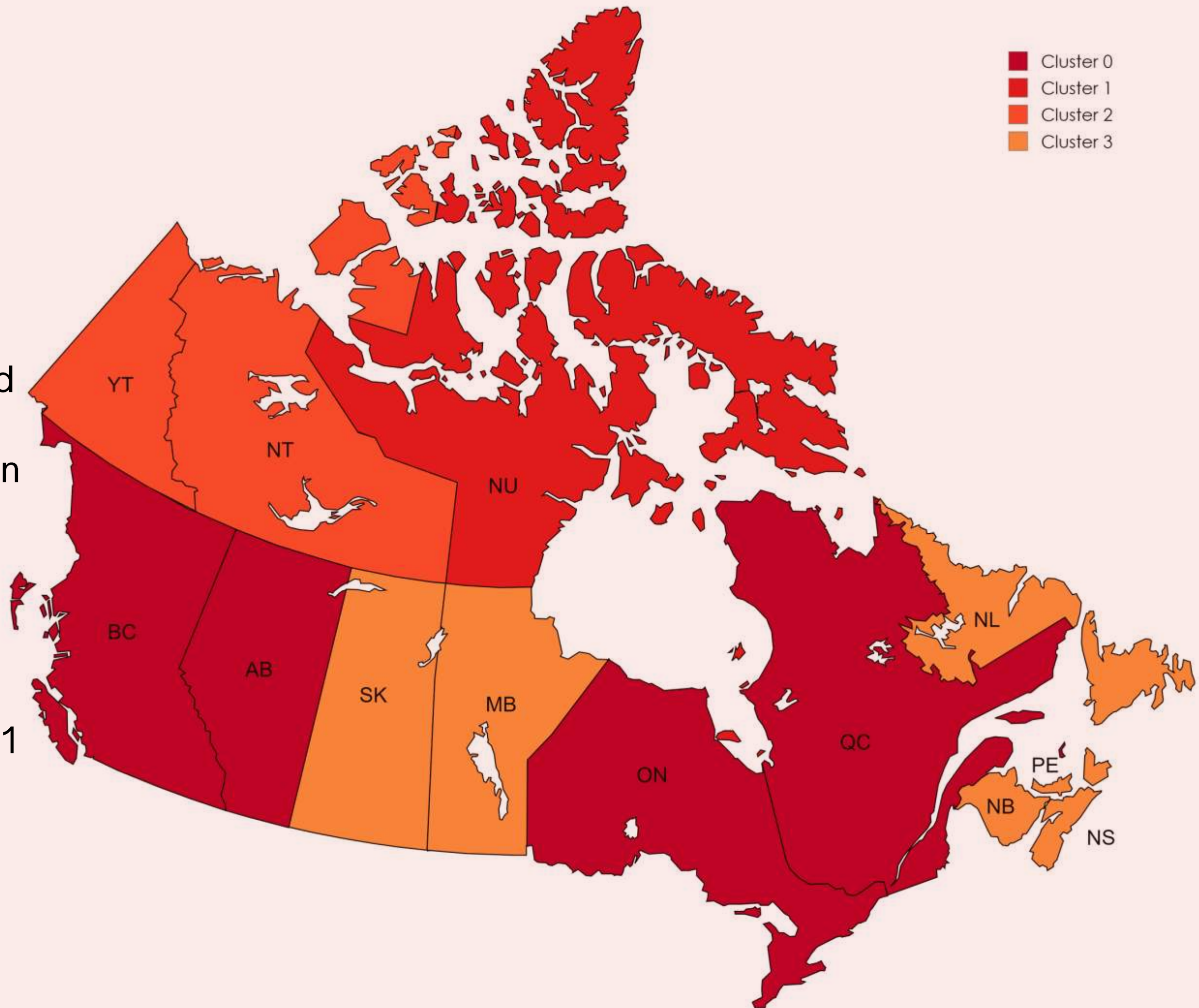- **Lower GDP and median income compared to Cluster 0.**

- **Cluster 3:**

- **Provinces: Canada, Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick, Manitoba, Saskatchewan**
- **Characteristics:**
- **Moderate life expectancy, family income, and GDP.**
- **Varied healthcare and education systems.**
- **Less extreme outcomes compared to Clusters 0 and 1.**

Findings

- Life Expectancy: Highest in Cluster 0, lowest in Cluster 1 (Nunavut).
- Education Expenditure: High in Cluster 0; lower in Clusters 1 and 2.
- Median Family Income: Highest in Cluster 0, with Clusters 1 and 2 trailing.
- GDP: Follows the same trend as family income, reflecting economic disparities.
- Drug Abuse: Elevated in Cluster 1 due to socio-economic challenges.

Recommendations

01 Targeted Health Interventions for Remote and Northern Regions

02 Balanced Investment in Education

03 Economic Development in Disadvantaged Areas

04 Comprehensive Drug Abuse Prevention and Rehabilitation Programs