

We examine natural disasters in Canada since the 1900s and the socioeconomic demographics. A province-based distribution of these disasters suggests that Ontario is ranked first with 158 major events, followed by Quebec, Alberta, and British Columbia, with over 100 events each. In terms of population changes, between 1901 and 2019, Ontario has grown over 560%, Quebec 50%, Alberta 325%, and BC a whopping 2,700%.

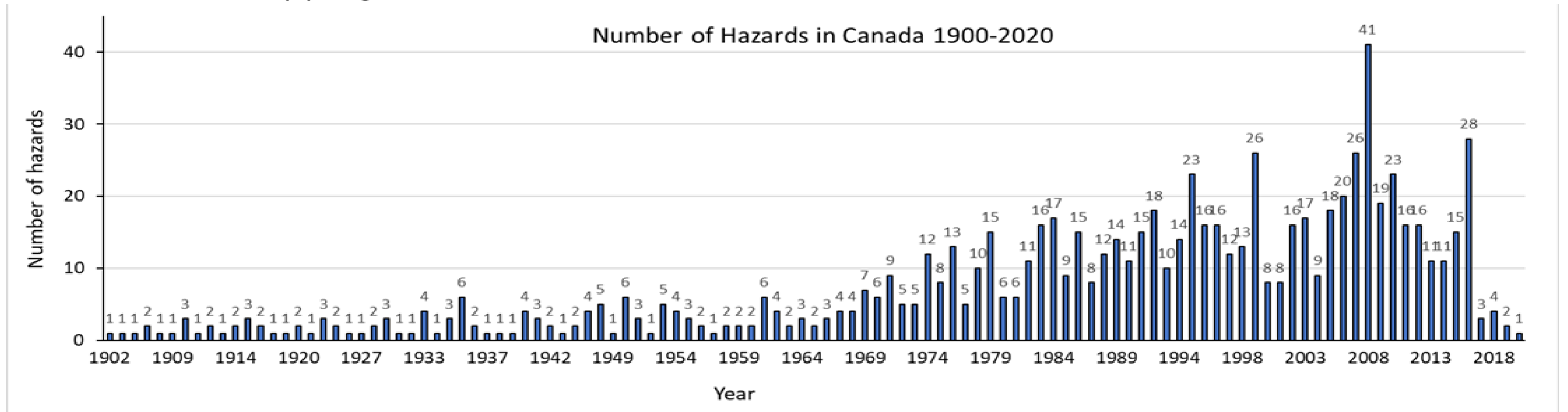


Figure 1: Number of natural hazards in Canada between 1900 and 2020. Data compiled from the Canadian Disaster Database (Public Safety Canada, 2020) and International Disaster Database [EM-DAT] (CRED, 2020).

RESEARCH TEAM

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Demographic and socioeconomic scene

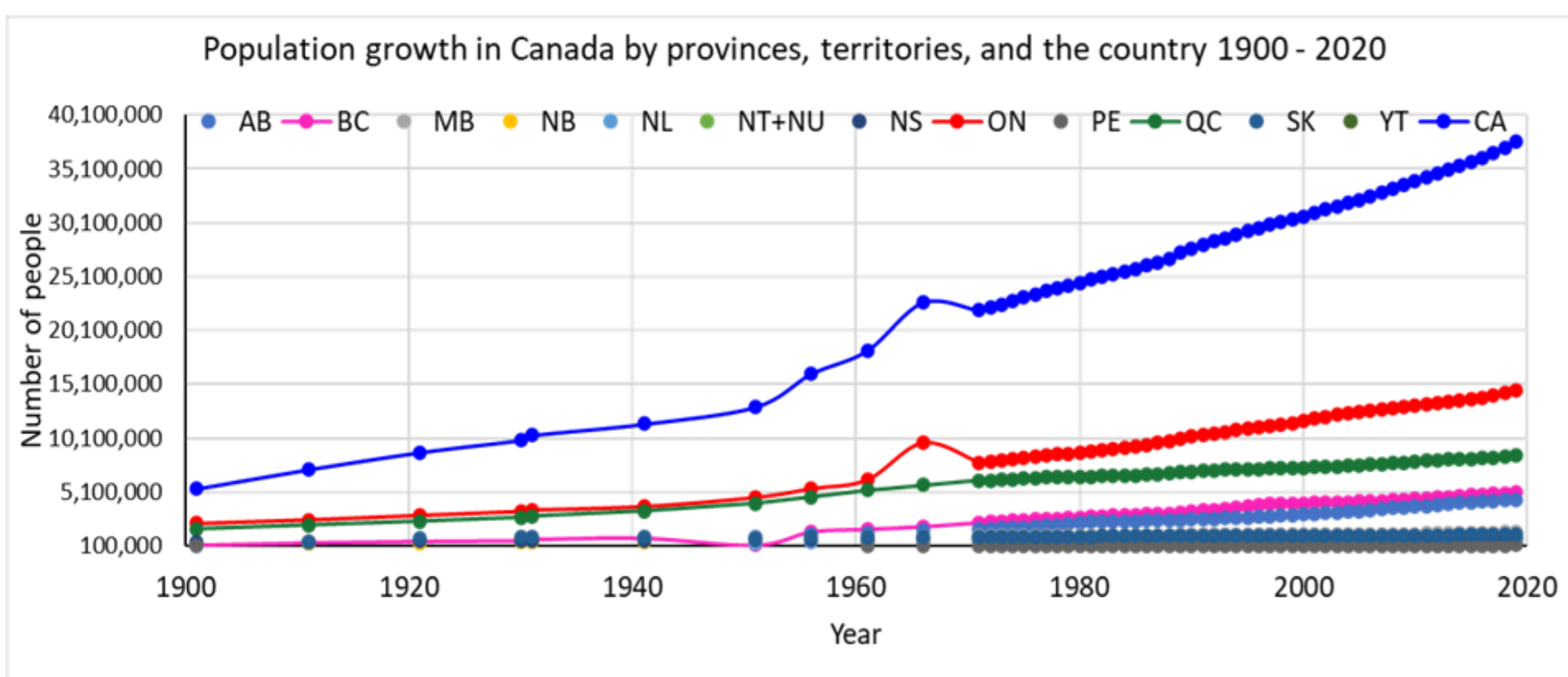


Figure 3: Population growth in Canada (CA - blue) and provinces. Ontario (ON - red), Quebec (QC - green), and British Columbia (BC - pink) stand out with high population growth (Data source: Statistics Canada, 2016).

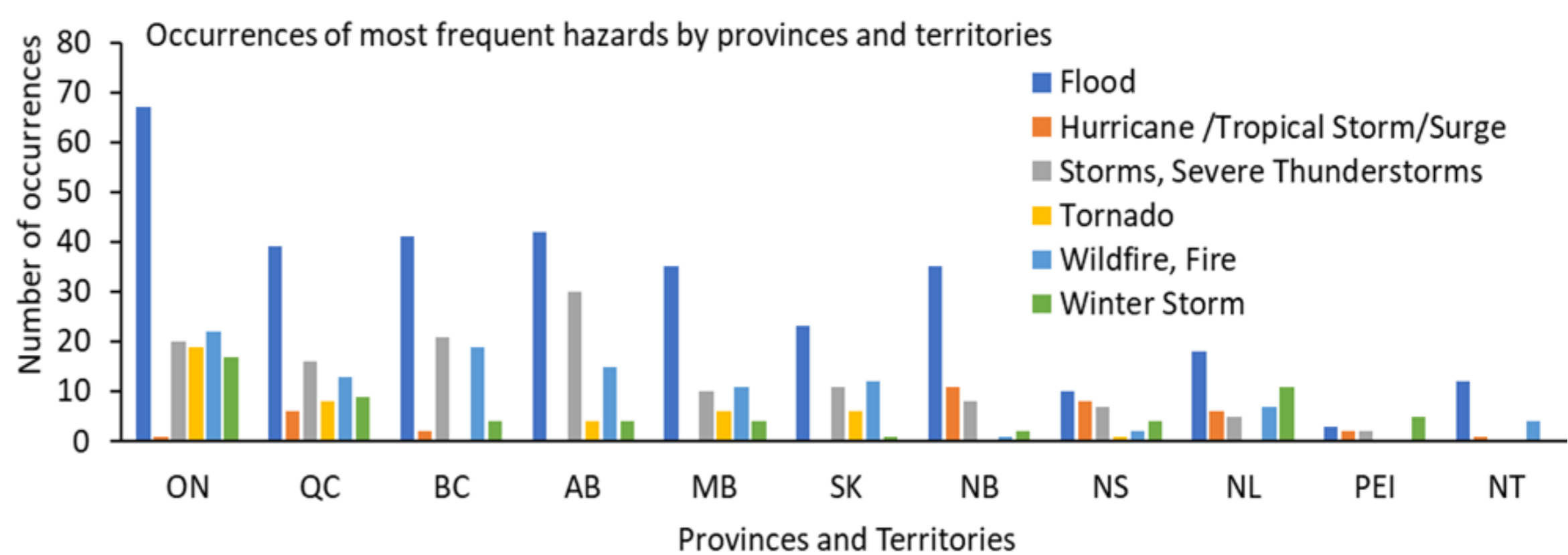


Figure 2: The top six most frequent hazards by province and territory between 1900 and 2020 (Statistics Canada, 2016). Nunavut and Yukon Territories did not make the top six list, hence excluded from this graph.

FINDINGS A perspective is presented here on historical disaster data, population growth, and the socioeconomic status of demographics in various provinces and territories in Canada. The analysis provides a birds-eye view of natural hazards and population susceptibility, conducive to creating disasters. We identified the top six most frequently occurring natural hazards - floods, severe storms, wildfires, winter storms, and tornadoes—floods are the most frequent in all ten provinces and the Northwest Territories. The population data clearly indicates, Ontario, Quebec, and British Columbia are the fastest-growing provinces in Canada that also experience the most significant proportion of the total disasters in the country caused by natural phenomena. It is noteworthy that understanding the socioeconomic status of the demographics is a critical factor in developing long-term strategies to build adaptive capacities on a systemic level to alleviate the impacts of disasters effectively. We used a limited number of vulnerability indicators for demonstrating the thought process that the most populous provinces also house the most vulnerable population, in addition to encountering the most natural hazards. For example, Ontario’s major challenges include a high percentage of people lacking education (15%) and low-income families (about 11%), indicating a lack of coping capacity.

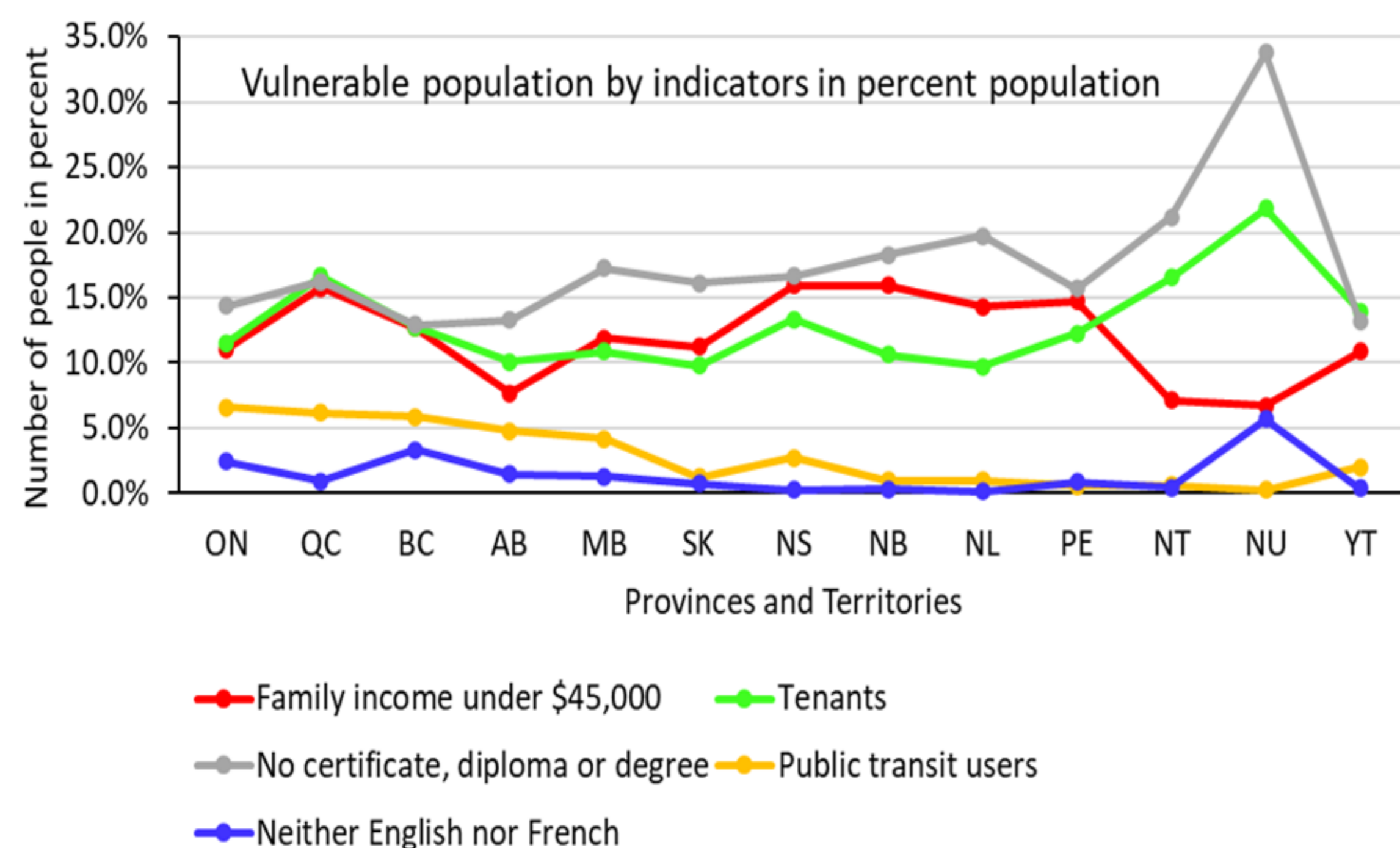


Figure 4: Socioeconomic overview of Canadian Provinces drawn from the 2016 Census of Canada (Statistics Canada, 2016).