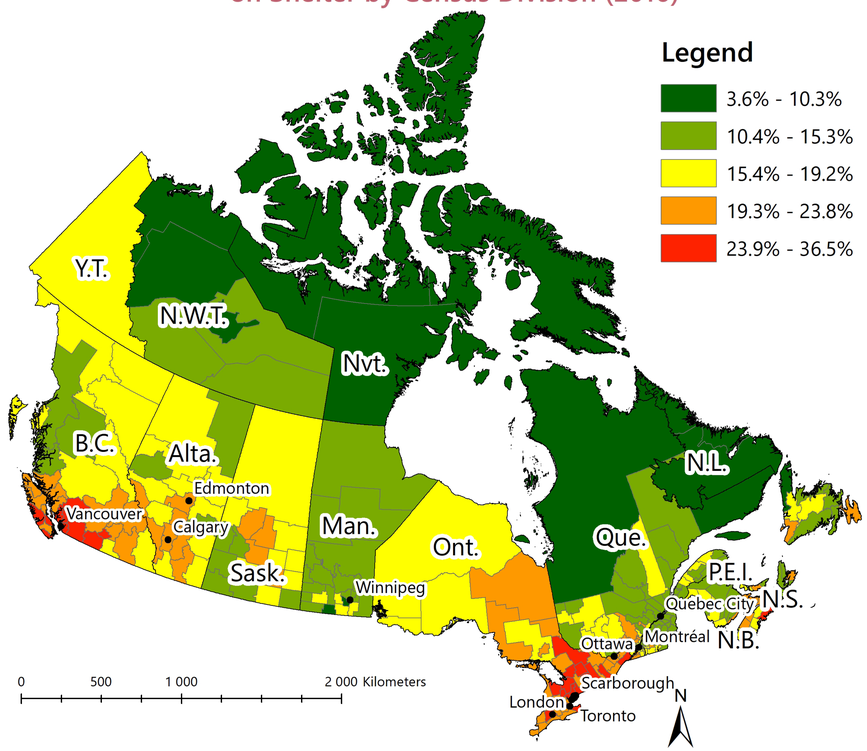
SHELTER AFFORDABILITY IN CANADA: OVERVIEW AND EFFECTS

Patrick Calderon • MGA 60710: Geographic Information Systems, taught by Professor Sisi Meng • December 2018 • University of Notre Dame

1. Percent of Households Spending 30% or More of Income on Shelter by Census Division (2016)



BACKGROUND & INTRODUCTION

The official definition of 'affordable housing' in Canada, as defined by the Canadian Housing and Mortgage Corporation (a Government of Canada-owned entity), is housing which costs less than 30% of a household's pre-tax income.[1] The question of access to affordable housing or shelter has recently become a salient issue in the country, as the cost of owning a home has reached its highest level in 28 years,[2] and as property bubbles balloon in the cities of Vancouver and Toronto.[3] The experience of the author in Vancouver suggests that, as a result of these burgeoning housing costs, Canadians are choosing to live further away from centrally located workplaces in neighbourhoods where housing costs might be cheaper, and that young people are delaying relocation out of their parents' homes.

The question under examination in this project was the following: How is shelter affordability distributed throughout Canada, and how does shelter affordability influence Canadians' behaviour? That is, in which parts of Canada do people spend the most or the least on housing, and from this geographical examination, can we infer that housing affordability influences Canadians' behaviour in some respects? In particular, this project wished to examine how shelter affordability impacts the amount of time that Canadians spend commuting to work and the percentage of young people aged 20 - 34 who continue to live with at least one parent, and then considered the policy implications that might arise from this examination.

DATA & METHODOLOGY

Data on the relevant variables were taken from the 2016 census conducted by Statistics Canada, the country's official statistics agency. Each map presented in this poster is identified by a number that precedes its title. For all maps, data were joined from the relevant tables provided by Statistics Canada to spatial layers visualizing either Canadian census divisions or census metropolitan areas/agglomerations. Choropleth maps were generated symbolizing the percentage of households in each census division or census metropolitan area/agglomeration that spend 30% or more of their income on shelter; the absolute number of such households was normalized against the total number of observations in each geographical division to produce a percentage.

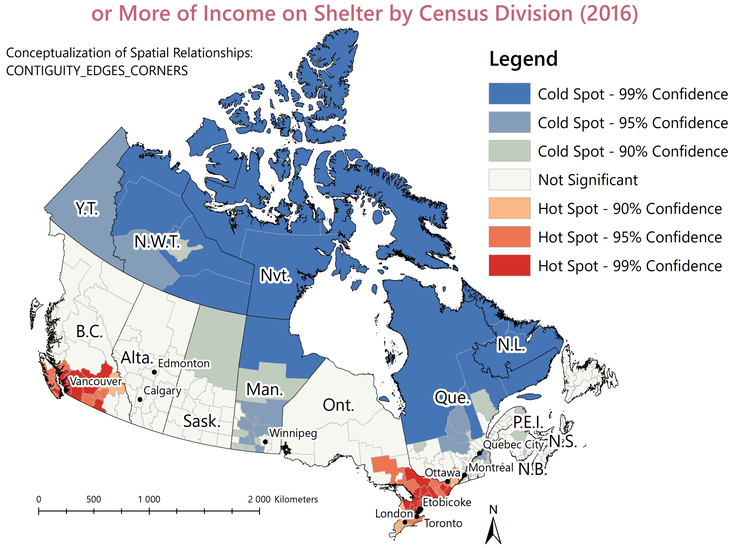
In Map 2, a Getis-Ord-G* hot spot analysis was performed using the CONTIGUITY_EDGES_CORNERS conceptualization to identify census divisions in which housing was significantly less or more affordable. In order to look more closely at the relationship between housing affordability and the dependent variables of interest, Maps 3 and 4 zoom into southern Ontario and Quebec. This area was chosen because much of the Canadian population resides there and because it features multiple hot spots. For Maps 3 and 4, the relevant dependent variables (commuting time and young adults living with a parent) were normalized against the number of observations and symbolized using point symbols which make use of a graduated colour scheme.

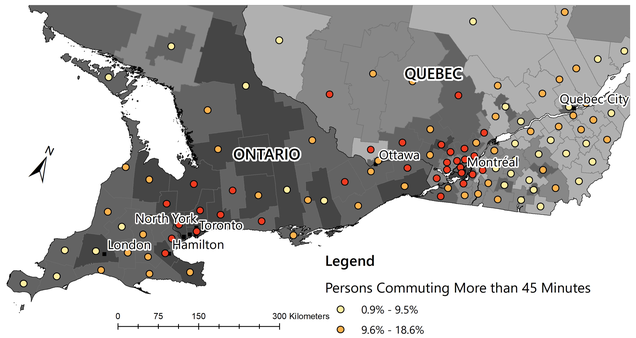
Research question: How is shelter affordability distributed throughout Canada, and how does shelter affordability influence Canadians' behaviour?

FINDINGS & RESULTS

Map 1 clearly shows that the most unaffordable areas for housing are located in southwestern British Columbia and southern Ontario, and Map 2 confirms that these areas constitute statistically significant hot spots (while showing also that cold spots exist in northern Canada and almost all of Manitoba). Maps 3 and 4 appear to indicate some measure of correlation between housing affordability and the duration of one's commute or the number of young persons aged 20 - 34 living with at least one parent, respectively, though the correlation appears to be weaker with respect to the duration of commute. All four maps reveal a modest but unmistakable disparity in housing affordability between the province of Ontario, which has less affordable housing, and the province of Quebec, where housing is more affordable. However, demonstrating a true correlation between the variables under analysis would require further statistical research.

2. Hotspot Analysis (Getis-Ord Gi*)—Percent of Households Spending 30% or More of Income on Shelter by Census Division (2016)



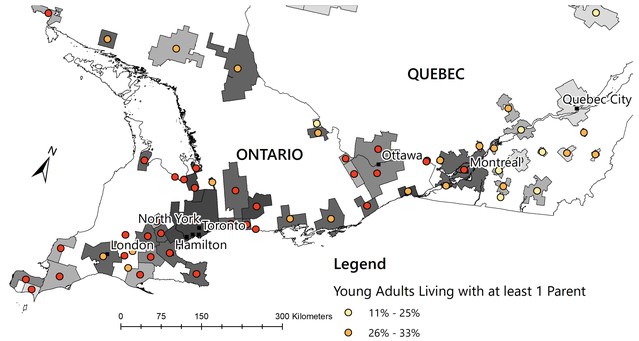


3. Southern Ontario and Quebec: Housing Affordability and Commute Time by Census Division (2016)

Legend

Persons Commuting More than 45 Minutes
- 0.9% - 9.5%
- 9.6% - 18.6%
- 18.7% - 36.2%

Households Spending >=30% of Income on Shelter
- 3.6% - 10.3%
- 10.4% - 15.3%
- 15.4% - 19.2%
- 19.3% - 23.8%
- 23.9% - 36.5%



4. Southern Ontario and Quebec: Housing Affordability & Young Adults at Home by Census Metropolitan Areas & Agglomerations (2016)

Legend

Young Adults Living with at least 1 Parent
- 11% - 25%
- 26% - 33%
- 34% - 47%

Households Spending >=30% of Income on Shelter
- 11.7% - 18.5%
- 18.6% - 21.7%
- 21.8% - 23.3%
- 23.4% - 26.6%
- 26.7% - 33.4%

CONCLUSION & POLICY IMPLICATIONS

This spatial examination has looked into *where* housing is particularly unaffordable. It has not considered the question of *why* housing is so unaffordable in certain locations, a question that would be vital for policymakers to investigate if they wish to make housing more affordable. Nevertheless, some policy implications can be derived from this examination. Firstly, targeted measures could be taken in areas of high unaffordability, like making it easier to increase the number of housing units in Vancouver and Toronto, where the elasticity of housing supply is low.[4] Secondly, even without directly targeting high housing prices, policymakers could take better steps to mitigate its effects, for instance by improving transportation infrastructures to reduce commute times or providing tax incentives for young people to live on their own. It is also perhaps the case that Canada must make better use of its expansive territory, encouraging development in and immigration to the prairie provinces and Maritimes to ease demand for housing in southern Ontario and British Columbia.

REFERENCES

Spatial data for these maps were taken from Statistics Canada, with the exception of the point layer showing cities, which was provided by Esri. Attribute data were taken from Statistics Canada tables reporting the results of the 2016 census.

[1] Canadian Housing and Mortgage Corporation, "About Affordable Housing in Canada," March 31, 2018, https://www.cmhc-schl.gc.ca/en/developing-and-renovating/develop-new-affordable-housing/programs-and-information/about-affordable-housing-in-canada.

[2] Jacqueline Thorpe and Natalie Wong, "Cost of owning a home in Toronto, Vancouver 'off the charts' — and likely to get worse, warns RBC," *National Post*, September 28, 2018, https://business.financialpost.com/real-estate/cost-of-owning-a-home-in-toronto-vancouver-off-the-charts-and-likely-to-get-worse-warns-rbc.

[3] Pete Evans, "Toronto, Vancouver among biggest property bubbles in the world, UBS says," CBC News, September 28, 2018, https://www.cbc.ca/news/business/toronto-vancouver-housing-bubble-1.4842272.

[4] Canadian Mortgage and Housing Corporation, "Examining Escalating House Prices in Large Canadian Metropolitan Centres," 2018, 7, https://www.cmhc-schl.gc.ca/en/data-and-research/publications-and-reports/examining-escalating-house-prices-in-large-canadian-metropolitan-centres.