

SDA 490 - Final Report
Capstone Project Term Paper

*Impacts of Housing Crisis on Quality of Life
A Comparative Analysis: Calgary vs Vancouver*

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Impact of Rising Rental Costs on Vancouver's Population Sentiments and Migration Patterns

The affordability of housing in Vancouver has been an issue of escalating concern, particularly following a dramatic spike in rental costs in 2021. This report provides an in-depth analysis of the public sentiment on housing affordability in Vancouver and the migration patterns that have emerged as a consequence, with an emphasis on the migration to Calgary, Alberta.

Rising Rental Costs in Vancouver

To contextualize the shift in rental prices, we examined the year-over-year change by calculating the percentage increase in rent from the previous year. The analysis revealed a significant 20% increase in 2021, in rental costs, with the average two-bedroom apartment in Vancouver increasing to over \$2,500, signifying a financial strain for many residents. The abrupt increase in rent is attributed to various factors, including market trends post-COVID-19 and policy changes. As international borders reopened, the ensuing demand from returning emigrants and new immigrants exacerbated the housing supply shortage.

The steep rise in rental costs raised concerns about the overall quality of life for Vancouverites, with many experiencing financial precarity and considering relocation as a viable option. Looking ahead to 2024, the rent trends suggest a potential stabilization post-2021. However, the long-term impact on affordability and resident retention remains uncertain.

Sentiment Analysis Of Vancouver Residents

An analysis of sentiments expressed by Vancouver residents reveals a complex emotional landscape marked by a struggle with housing affordability. The following subsections detail the multifaceted nature of public opinion drawn from social media discussions, particularly focusing on Reddit threads where individuals openly share their experiences and concerns.

The data indicates an overwhelming prevalence of negative sentiments. Key themes identified include, the high cost of housing looms large, pushing residents to the brink of financial despair and amplifying the fear of homelessness or displacement. This crisis is not merely economic but deeply emotional, as the community grapples with stress and hopelessness about what the future holds. Families find their stability and

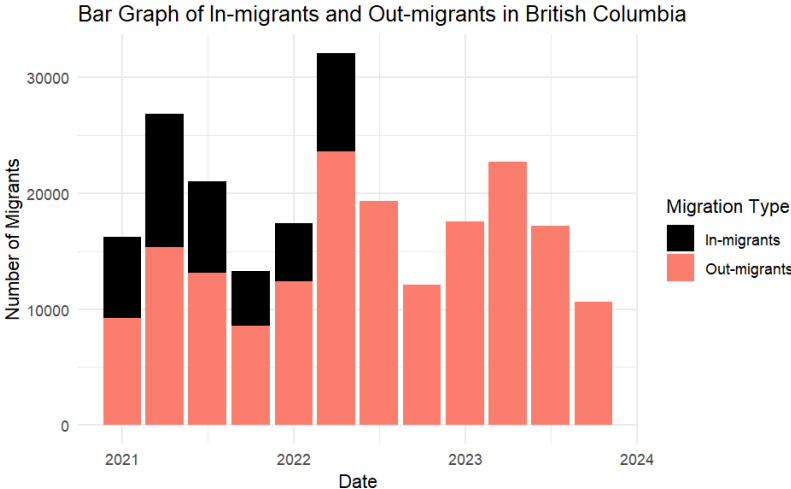
community bonds tested as they contend with the prospect of forced relocation. The once vibrant quality of life offered by the city is now marred by housing affordability issues that curtail lifestyle choices and enjoyment of local amenities. Amidst this turmoil, frustration mounts against what is seen as government inertia, sparking fervent calls for policy interventions to tackle the growing crisis and restore a sense of security and well-being among the populace.

While positive sentiments are less common, they do provide insight into the resilience and adaptability of Vancouverites. These include strategic relocation and community support. The sentiment analysis of online comments regarding Vancouver housing yields an average sentiment score slightly positive at 0.042. However, this figure is skewed by the presence of neutral and a few mildly positive comments, overshadowed by a significant number of negative expressions of distress and frustration.

Migration Trends: The Shift to Calgary

Migration from British Columbia

Data showcases a net outflow of individuals from British Columbia.



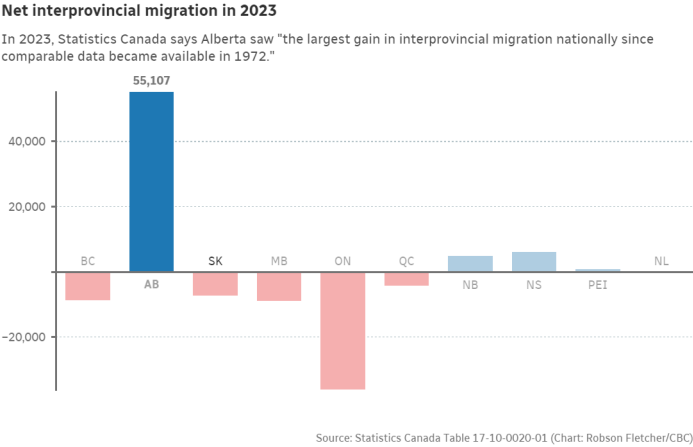
This graph illustrates a pressing issue: people are leaving British Columbia more than they are coming in. When more people move out than move in, it can lead to several problems.

First, it might mean we're losing workers, which can hurt our businesses and economy. Without enough people to work in shops, hospitals, or tech companies, services can get worse and businesses might struggle or close. Second, if lots of people are leaving, it could be because things like housing are too expensive, or they can't find good jobs. This can be a sign that we need to make life more affordable and create more

opportunities in our province. Finally, fewer people could mean less money for things like schools and roads, because there are fewer taxpayers. This might make it harder for the government to support everyone who stays.

In short, when more people leave than come, it can be a warning that we need to look at what's happening and find ways to make our province a better place to live, work, and raise a family.

Alberta's Appeal

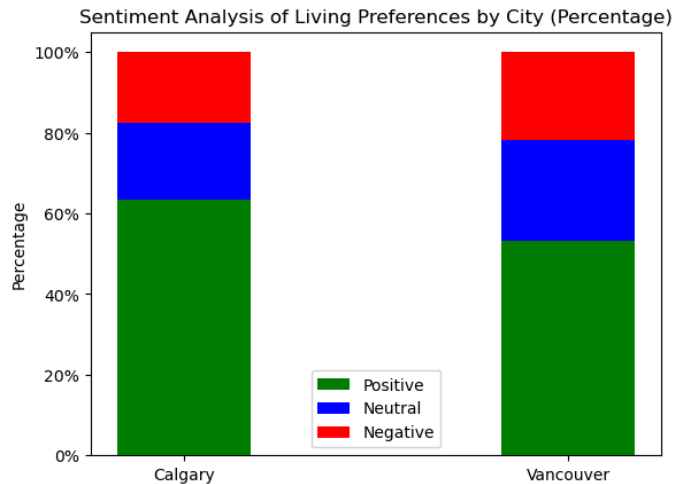


In stark contrast to the outmigration from British Columbia, Alberta has experienced a notable increase in population, with residents praising its lower housing prices, no provincial sales tax, and the evolving perceptions of Calgary as a modernized city.

Sentiment in Calgary

Migrants to Calgary report a mostly positive sentiment, appreciating the economic stability and quality of life improvements over other provinces like Toronto. Positive personal experiences highlight satisfaction with living in Calgary, friendly community interactions, and urban amenities.

Comparative Sentiment Analysis: Calgary versus Vancouver



The sentiment analysis regarding housing and affordability in Vancouver and Calgary reveals contrasting public perceptions. In Vancouver, despite the challenges posed by high living costs and the housing crisis, there remains a certain level of appreciation for the city's milder climate and scenic beauty. The distribution of sentiments from the analysis reflects this duality, with positive sentiments (17) slightly outweighing neutral ones (14), and negative sentiments (5) being the least expressed. This indicates that while the cost of living is a significant concern, many still find value in the unique attributes of the city.

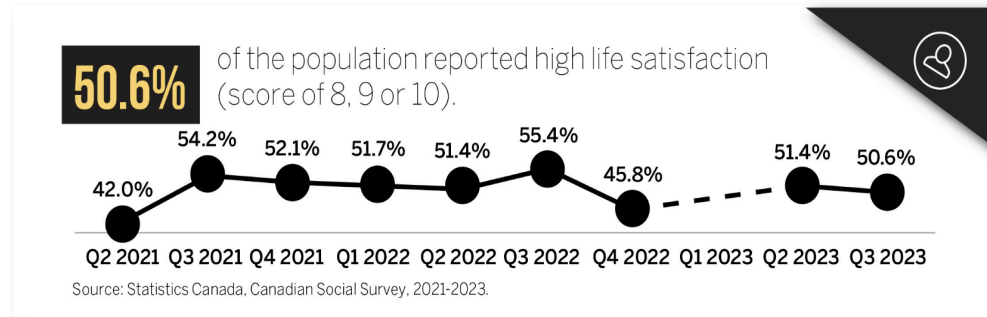
In Calgary, the sentiment leans more positively, with 21 positive sentiments being recorded, alongside 15 neutral and 9 negative sentiments. The higher incidence of positive sentiments suggests that Calgary's residents may be experiencing a more favorable view of their housing situation, perhaps influenced by the city's economic opportunities, lower cost of living, and burgeoning cultural scene. Nonetheless, the presence of negative sentiments, although fewer, signifies that not all experiences are positive and that challenges do exist.

For those weighing the decision between Vancouver and Calgary, these sentiments paint a picture of two cities, each with its appeal and drawbacks. Vancouver, despite its higher living costs and housing pressures, offers a climate and beauty that some find irreplaceable. Calgary is perceived as a city on the rise, where economic pragmatism and a dynamic urban environment are drawing new residents despite its own set of challenges. Personal preferences, such as job opportunities, weather, and cultural offerings, continue to play pivotal roles in influencing individuals' choices on where to settle.

Class Analysis

Utilizing data from Statistics Canada, we analyze factors such as life satisfaction rates, sense of meaning and purpose, and demographic variables including age, immigrant status, ethnicity, disabilities, education level, employment status, and geographic location. Our findings reveal disparities in life satisfaction rates among different demographic groups, highlighting the importance of targeted interventions to support marginalized communities. We further explore the role of commute times and housing income as predictors of quality of life.

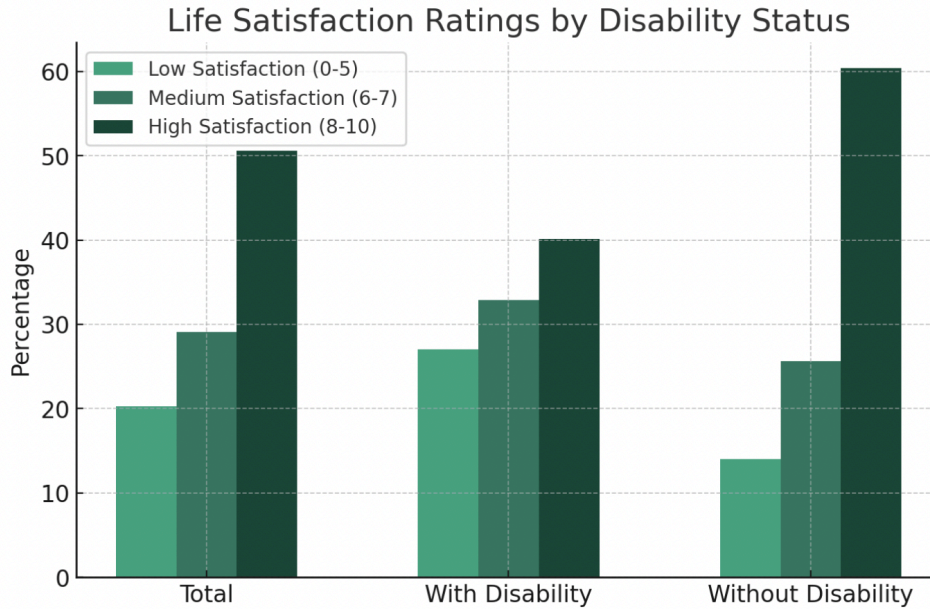
We were eager to explore the impact of housing prices in Canada on different social demographics. To begin, we sought to understand the concept of quality of life as defined by Statistics Canada. According to their definition, quality of life is influenced by various factors including health, education, prosperity, governance, and more. Analyzing Statistics Canada data, we identified life satisfaction rates and a sense of meaning and purpose as significant indicators of quality of life experienced by Canadians. Thus, we focused our attention on examining life satisfaction rates in Canada. Initially, we examined regional data; however, findings were inconclusive. Nonetheless, our exploration on the Statistics Canada website revealed that over 50% of Canadians reported high satisfaction rates, often scoring it at 8, 9, or 10 out of 10. Delving deeper, we discovered variations in these findings across different social demographics.



Source: Quality of Life, Statistics Canada, April 2024

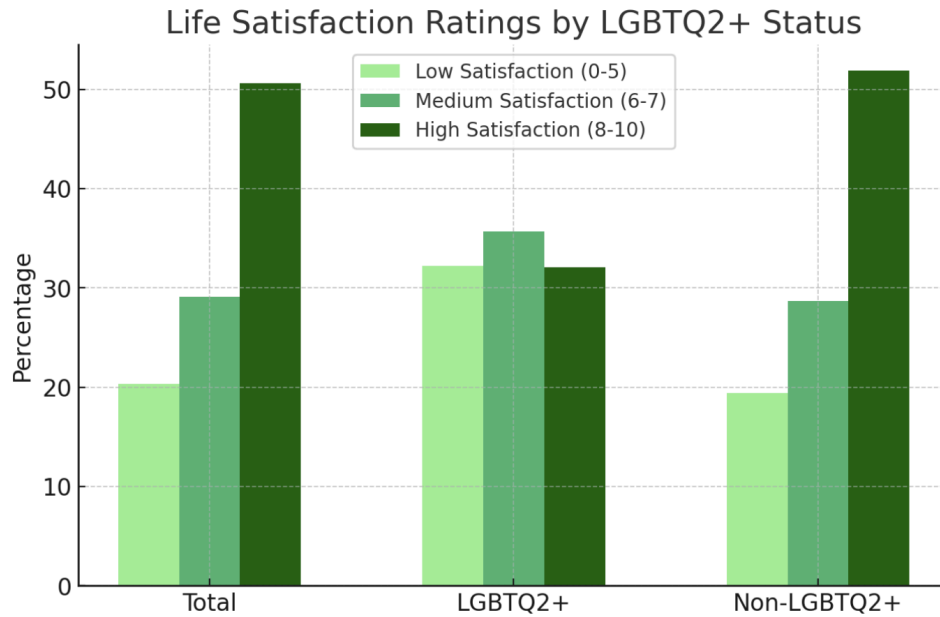
Life Satisfaction Rates by Disabilities:

Individuals with disabilities consistently report lower life satisfaction rates compared to those without disabilities. This finding underscores the importance of accessibility, inclusion, and support services for individuals with disabilities to enhance their quality of life. Removing physical and social barriers and promoting equal opportunities for participation are essential steps towards fostering greater well-being among disabled individuals.



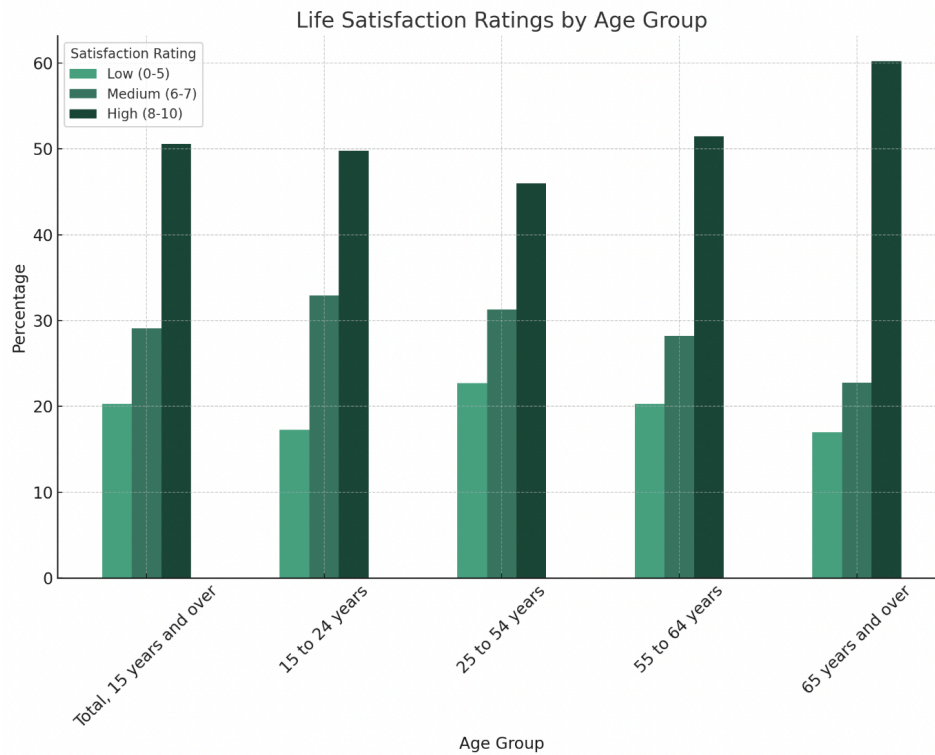
Life Satisfaction Rates by LGBTQ2IA+ Status:

LGBTQ2IA+ individuals consistently report lower life satisfaction rates compared to those who identify as cisgender heterosexual. This finding underscores the importance of creating safe and inclusive spaces, as well as providing support services tailored to the needs of LGBTQ2IA+ individuals, to enhance their quality of life. Removing systemic discrimination, both physical and social, and promoting equal opportunities for participation in all aspects of life are essential steps towards fostering greater well-being among LGBTQ2IA+ individuals.



Life Satisfaction Rates by Age:

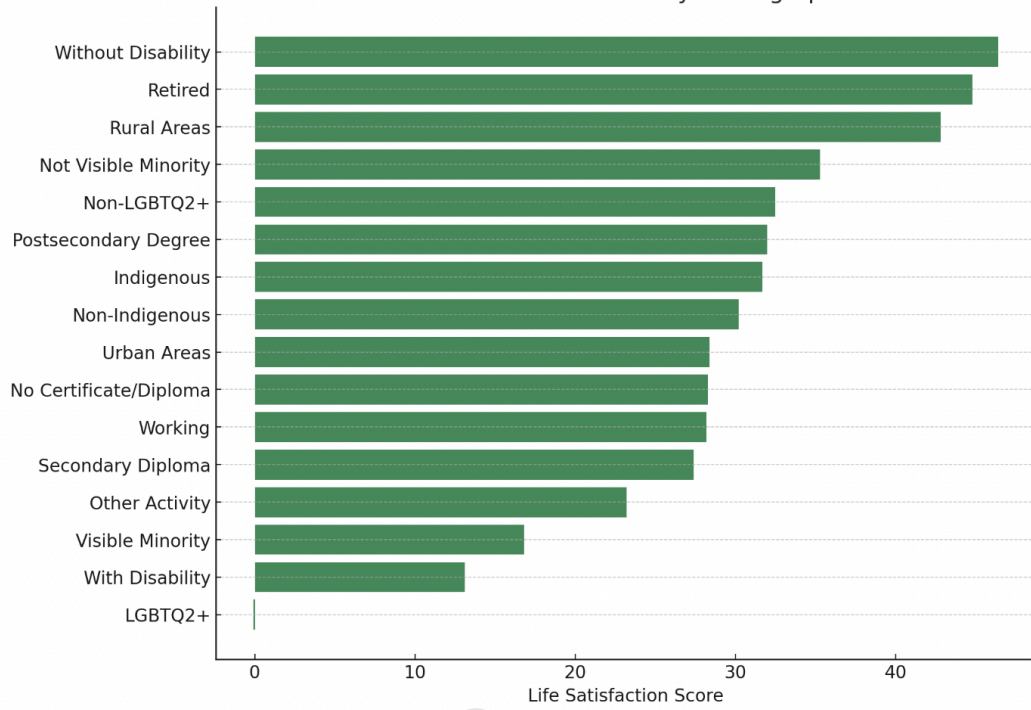
Our analysis reveals a notable difference in life satisfaction rates among different age groups. Elderly individuals aged 65 and above consistently reported higher life satisfaction rates compared to younger cohorts. This trend suggests that older adults tend to have a greater sense of contentment and fulfillment, possibly due to factors such as financial stability, social support networks, and a sense of accomplishment in life.



Results:

Our analysis reveals significant disparities in life satisfaction rates across different social demographics. Elderly individuals, non-immigrants, non-indigenous populations, individuals without disabilities, and those with higher education levels consistently reported higher life satisfaction rates. Conversely, marginalized groups such as visible minorities, indigenous populations, individuals with disabilities, LGBTQ individuals, and unemployed individuals tended to experience lower life satisfaction rates. Geographic location also played a role, with individuals in rural areas reporting higher life satisfaction rates compared to urban counterparts.

Life Satisfaction Score by Demographic

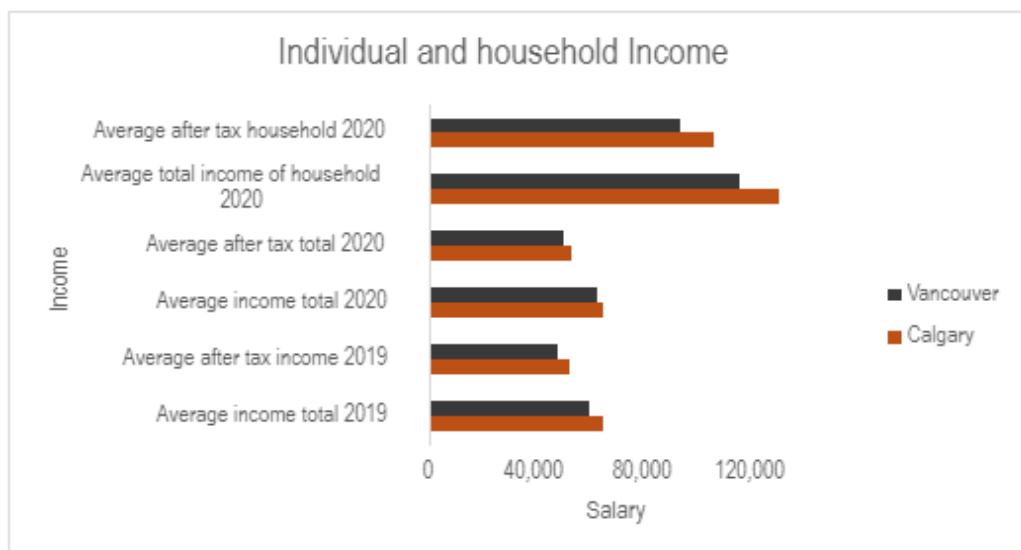


Quality of life

We identified two major aspects that impact an individual's quality of life which are income and Commute duration.

Income

Income levels often dictate the type of housing individuals can afford. Higher income earners have more options in choosing housing that meets their needs. While, lower income individuals may face limited options and may be forced to settle for low-quality or less desirable housing options. What does income tell us about both cities?

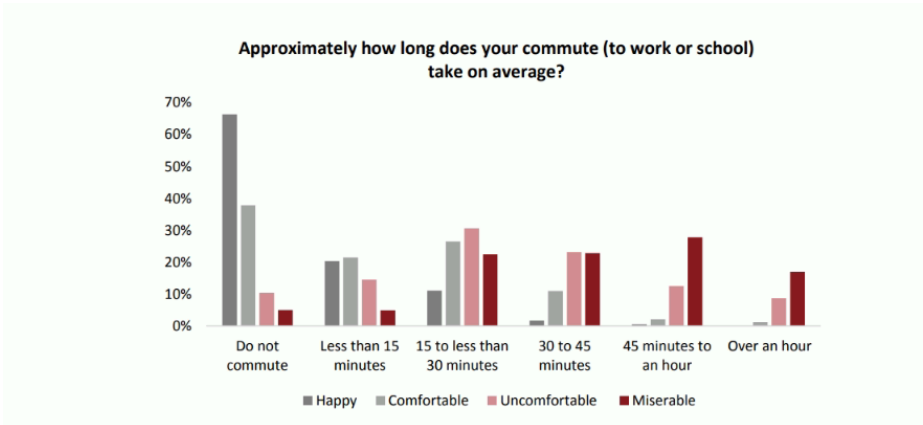


As we can see from the graph collected from the 2021 census, Calgary has a slightly higher individual and household average income before and after taxes compared to Vancouver. The subtle contrast in income salary can be a notable difference for many individuals looking to improve their disposable income. We know that Calgary has lower housing costs and Vancouver has higher housing costs. This means that Calgary residents will have more disposable income after covering their expenses. While in Vancouver, we are dealing with a relatively lower income, where a large portion of people's income goes towards housing costs, leaving less disposable income.

When it comes to commute duration

We know from research studies that longer commute times are associated with increased levels of fatigue and stress due to the extended time spent traveling each day which impacts the overall quality of life. So to learn more about the effects of housing and commute duration. We look into a public opinion poll conducted by the Angus Reid

Institute that surveyed 821 Metro Vancouver residents on their experiences with housing and transportation. The poll divided its respondents into four major groups: happy (21 per cent), comfortable (34 per cent), uncomfortable (27 per cent) and miserable (18 per cent).



Based on these findings we see that spending more commuting time is linked to being less happy and less satisfied with their quality of life because It's really important for people to have easy mobility to go around the city and minimize their commuting time to get to school ,work , or other amenities.

Quality Of Life:

Commute Time + Type & Family Amenities Score's Impact on Shelter Cost

Aim of this Section:

Our aim in comparing Family Amenity Scores and Commute Times and Types between Vancouver and Calgary is to make an informed recommendation about whether it is best to move from the former to the latter when presented with a job offer.

Data Notes

The data was collected at the census tract level. When there are more data points in a given census tract, an average value is generated for the whole census tract.

Commute Type and Time

We use commute time and type as proximate measures of quality of life. Research indicates that there is an increase in all-cause mortality when commute times increase, let alone life satisfaction. Commute times and types of commute also reveal interesting differences between the two cities.

This data was collected from the Statistics Canada Census.

Family Amenity Score

We sought to create an amenity score that would enable us to compare access to amenities between Vancouver and Calgary. The aim was to focus specifically on the amenities that would be most relevant to young families, particularly daycare, parks, schools, and grocery stores. Research conducted by partners pointed to demonstrable health benefits of proximity to parks and grocery stores.

This data was collected from the Statistics Canada Census.

Shelter Cost

We chose the median monthly shelter cost as our dependent variable for the analysis. The aim was to examine not only the impact on shelter costs but also the

comparative impact on shelter costs for renters compared to owners. This effort was partly driven by anecdotal and sentiment analysis work that showed a lack of belief in home ownership in Vancouver compared to a higher belief in personal home ownership.

This data was collected from the Statistics Canada Census.

Commute Time and Type Observations

Vancouver sees a far more significant use of public and active transit (Walking and Biking) than Calgary.

Vancouver sees significant car use, with car commute times similar to those in Calgary. The Calgary use of cars, however, is significantly higher. This indicates less access to transit and or less use of transit.

Family Amenity Scores

Family Amenity Scores Between Vancouver and Calgary are significantly different. Unsurprisingly, Vancouver’s highest amenity score is 26, whereas Calgary’s is 15 (of 100). Moreover, as seen below, Vancouver has a distribution of amenities that is not as centralized as Calgary.

Shelter Cost - Renters

As one can see below, there is a trend towards urban areas having on average, lower rents and suburban areas having higher rents. This is likely due to the volume and scale of rental units available in suburban areas, typically full houses and not apartment units.

Shelter Cost - Owners

As one can see in the Shiny App, there is a trend toward higher shelter costs for owners in suburban areas than in urban areas.

Comparing Model Results

	<u>Median Shelter Costs: Renter</u>		<u>Median Shelter Costs: Owner</u>	
	<u>Vancouver</u>	<u>Calgary</u>	<u>Vancouver</u>	<u>Calgary</u>
<u>Car Commute</u>	Negative Relationship (Car Count)	Negative Relationship (Car Average Commute Time)	Positive Relationship (Car Average Commute Time)	Significant Positive Relationship
<u>Public Transit</u>	Positive Relationship	No Observed Relationship	Negative Relationship	No Observed Relationship
<u>Active Transit</u>	Positive Relationship	No Observed Relationship	No Observed Relationship	No Observed Relationship
<u>Family Amenity Score</u>	Negative Relationship	Negative Relationship	No Observed Relationship	Significant Positive Relationship

Conclusions

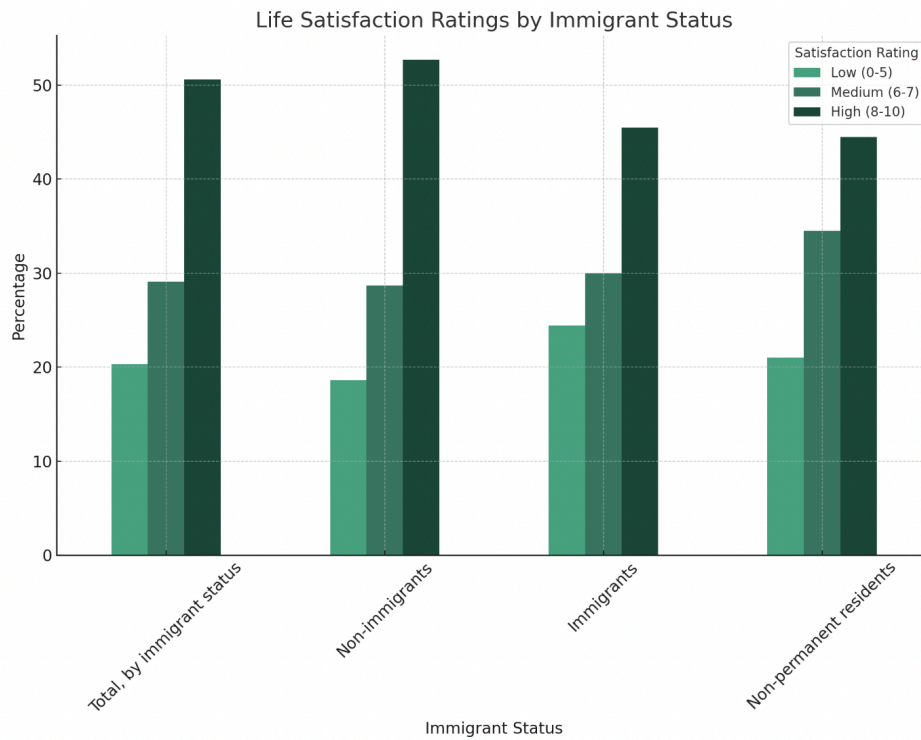
- Calgary: Higher Incomes, Lower Shelter Costs, and Higher Car Commute Use and Times
- Vancouver: Higher Average Amenity Scores and Higher Public + Active Transit Use and Times

Should the Carters Move?

- Staying in Vancouver would enable the Carters still to have walking access to school and parks, but may continue to strain their ability to purchase a single family home.
- Moving to Calgary enables the Carters the opportunity to purchase a single family home with an equivalent shelter cost to their Vancouver rent, but comes at a cost of increased car use.

Appendix:

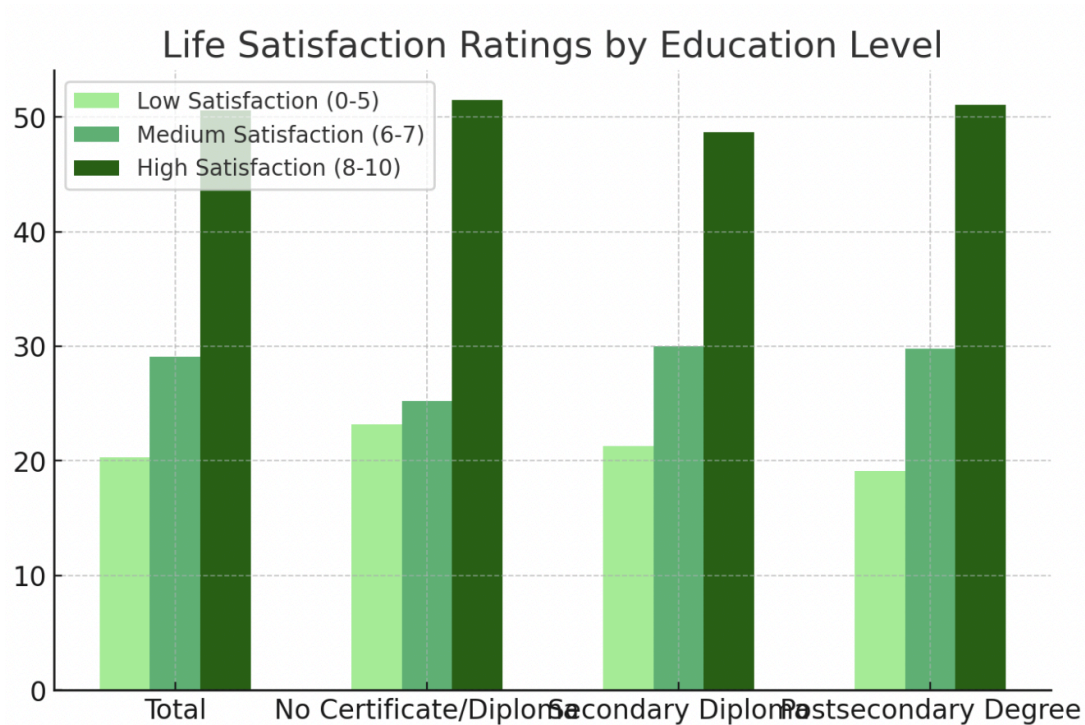
Life Satisfaction Rates by Immigrant Status:



Life Satisfaction Rates by Ethnicity:

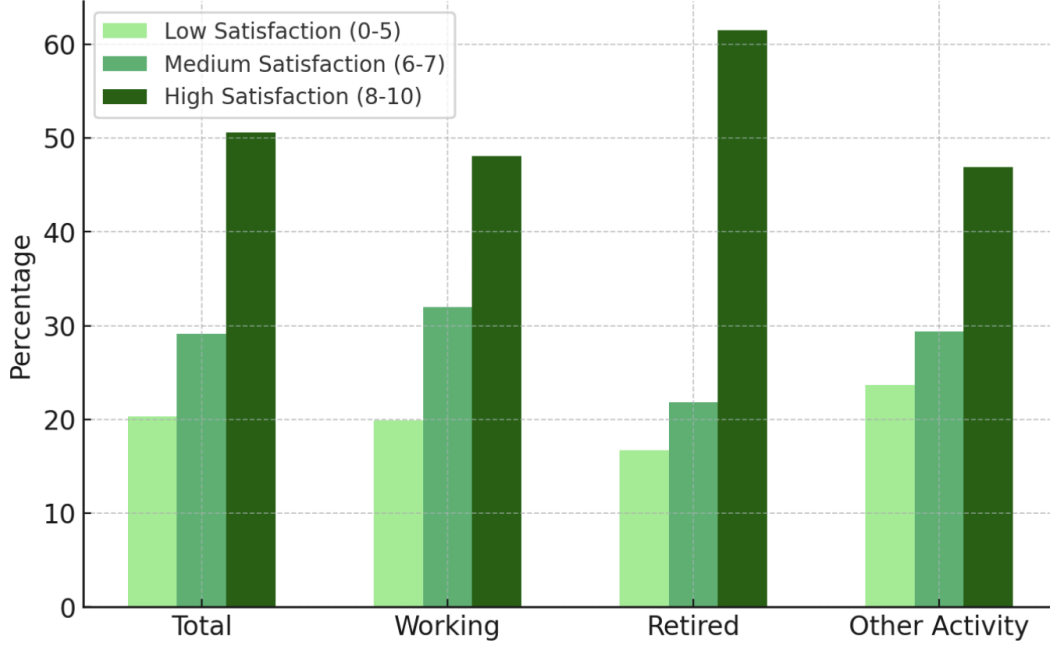


Life Satisfaction Rate by Education Level:



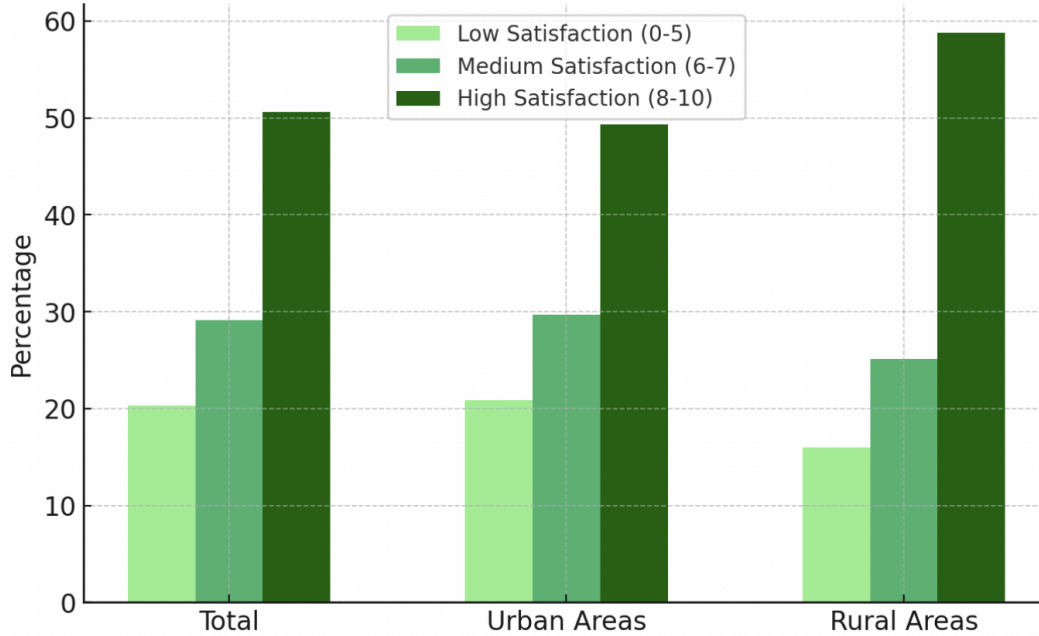
Life Satisfaction Rate by Main Activity:

Life Satisfaction Ratings by Main Activity

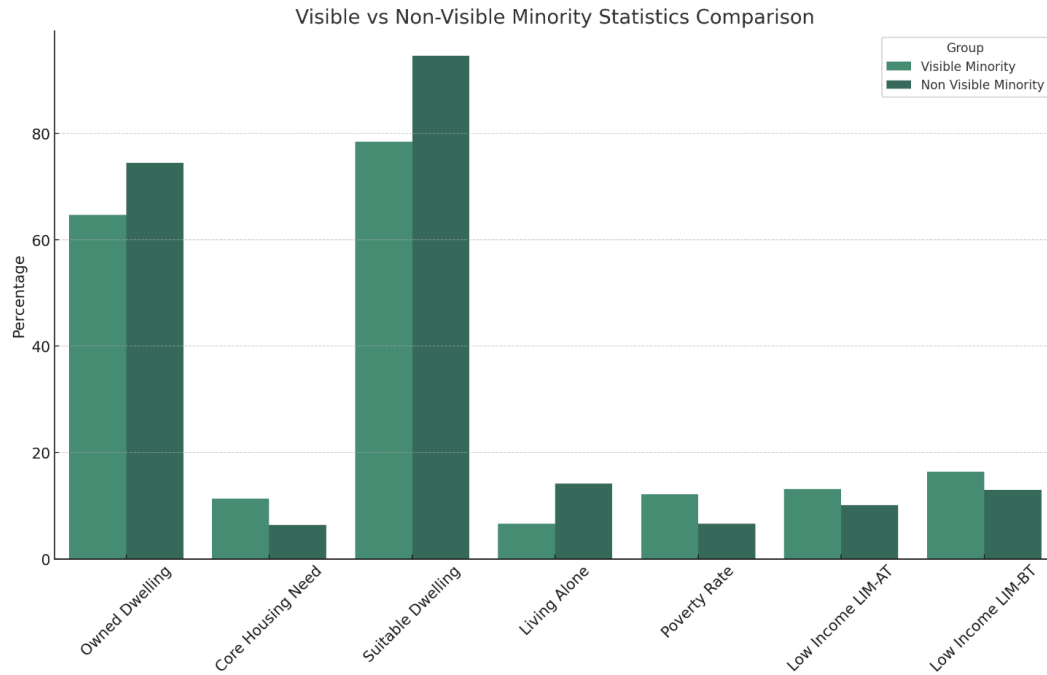


Life Satisfaction Rate by Location:

Life Satisfaction Ratings by Location

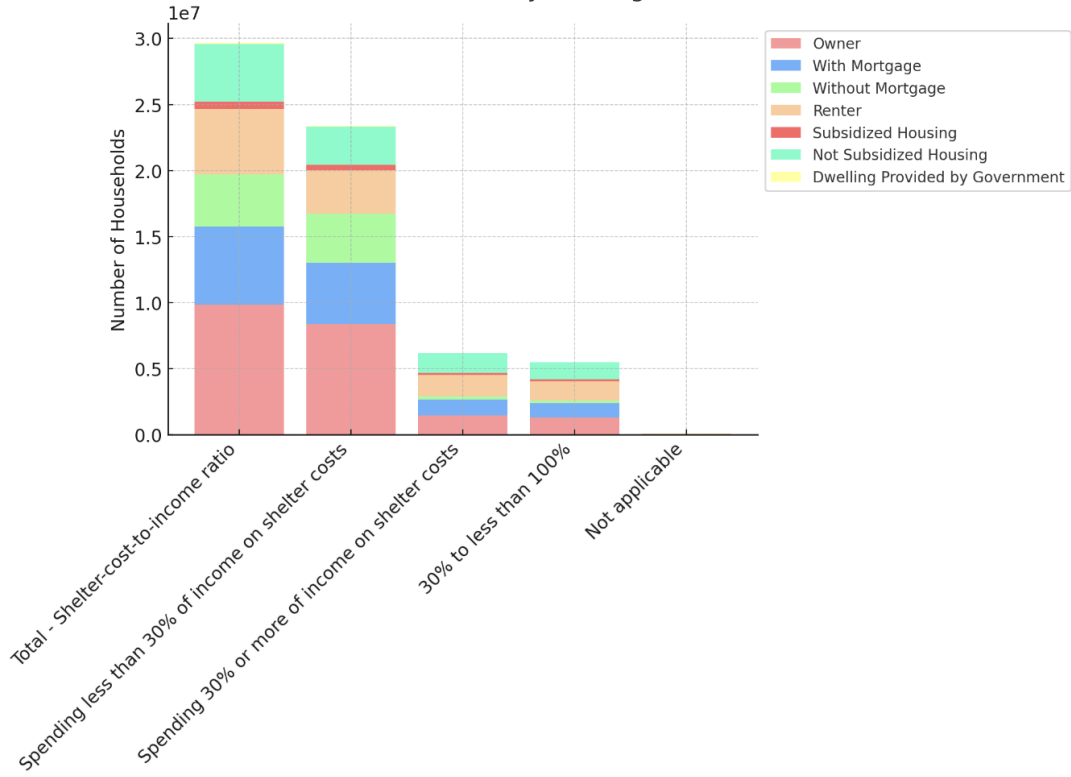


Visible vs Non-Visible Minority Housing Statistics



Distribution of Shelter Costs as Percentage of Income Ratio

Distribution of Shelter Costs to Income Ratio by Housing Tenure and Subsidization



Shelter Cost to Income Categories

Total Income of Seniors by Family Characteristics

