**Housing Crisis in Canada:**

**Fact or Fiction?**

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# **PROJECT SUMMARY**

The "Housing Crisis in Canada: Fact or Fiction?" project stands as a robust and comprehensive investigation into the pressing issues surrounding the Canadian housing market. With a clear mission to bridge the gap between perception and reality, our initiative delves deep into the historical development of the housing sector. By meticulously identifying and analysing critical elements that have contributed to the crisis, our goal is to provide an insightful and accurate portrayal of the challenges faced by individuals and communities across the country.

One key aspect of our project involves translating complex data into easily digestible visual representations. Through compelling illustrations, we aim to vividly depict the disparities between the most and least expensive cities, offering a nuanced understanding of the diverse housing landscape. These visual aids not only enhance accessibility to our findings but also cater to a broad audience, ensuring that the complexities of the housing crisis are communicated effectively to people from all walks of life.

Looking towards the future, our project transcends the immediacy of the current situation. We strive to contribute enduring value by projecting the trajectory of the housing market for the years 2023–2024. This forward-looking approach enables us to provide insightful forecasts that can inform and guide stakeholders, policymakers, and the public in navigating the evolving dynamics of the housing sector. Rooted in a human-centerer perspective, our project views the comprehension of the housing problem as a shared responsibility, emphasizing the need for a resilient and well-informed society.

# **MOTIVATION/ OBJECTIVE**

Our motivation originates from the vital necessity to distinguish perception from reality in the "Housing Crisis" in a Canada where information is abundant. Social media narratives and news channels (Cairns, 2023) frequently impact our culture, making it difficult to distinguish between what we believe to be true and what is reality. The urgent need to determine if the housing crisis is a real concern or the result of sensationalised media coverage is what motivated this effort.

Our goals are providing detailed and clear answers for as many questions as possible from below:

1. Differentiate Perception from Reality

* Identify key-factors affecting Housing Market
* Research and analysis of historical data about housing market
* Public awareness by identifying actual visualizations based on real figures.
* Most affordable cities vs most expensive cities
* Prediction of housing market for year 2023-2024

Our goal as knowledge stewards is to shed light on the major variables affecting the housing market. We seek to identify the crisis's origins and offer a comprehensive picture of its development through an examination of historical data. Our main goal is to separate perception from truth and provide the public with accurate information. By creating captivating visualisations that make difficult data understandable to anyone, we also hope to raise awareness.

# **METHODOLOGY**

Research to date has been done to determine the conclusion and gathering requirements that are essential to this project. To that end, we have first identified the key factors that can be used to characterise the housing crisis. These factors include population from each province, immigrants, mortgages, interest rates set by the Bank of Canada, sales of houses, social media influences [TBD], shortages of housing in Canada, and rates of inflammation. These factors all help us determine whether there is a housing crisis. Furthermore, the data sets are collected from reliable sources. The data in this case came from the Statistics Canada website. (Canada, 2023)

## Dataset Discovery

### Data Collection Method:

**Quantitative:** Collected housing data from government sources, real estate databases, and surveys already done by the Canadian Statistic Specialists.

Our project adheres to ethical standards by relying solely on government-collected data, assuring the public of the unbiased nature of our findings. This commitment ensures transparency and integrity in our analysis of the housing crisis in Canada. Our data discovery was based on the major key factors affecting housing market which are,

|  |  |  |
| --- | --- | --- |
| **Data Sources** | **Data Collection** | **Carried out by,** |
| **House & Land-selling dataset** | [**https://www.statcan.gc.ca/**](https://www.statcan.gc.ca/) | Deep Sheta on 6th Oct 2023 |
| **Population Dataset** | [**https://www.statcan.gc.ca/**](https://www.statcan.gc.ca/) | Kaveri Patel on 4th Oct 2023 |
| **Migrants Dataset** | [**https://www.statcan.gc.ca/**](https://www.statcan.gc.ca/) | Kaveri Patel on 7th Oct 2023 |
| **Mortgage Dataset** | [**https://www.statcan.gc.ca/**](https://www.statcan.gc.ca/) | Deep Sheta on 8th Oct 2023 |
| **Interest Rate Dataset** | [**https://www.statcan.gc.ca/**](https://www.statcan.gc.ca/) | Jatin Kansra on 6th Oct 2023 |
| **Constructions Dataset** | [**https://www.statcan.gc.ca/**](https://www.statcan.gc.ca/) | Tirthak on 7th Oct 2023 |

Data Manipulations:The datasets underwent several refinements to enhance their usability and analytical capabilities. These modifications were meticulously implemented to streamline the data and facilitate a more comprehensive analysis. Here are the key changes made:

1. **REF\_DATE Filtering:** The datasets were filtered to include data specifically from the years 2020 to 2023, ensuring that the analysis is focused on the most recent and relevant time frame.
2. **Date\_in\_Quarter Transformation:** A new column, "Date\_in\_Quarter," was introduced, capturing each date in a quarter-year format (e.g., "Q1\_2020"). This transformation aids in organizing temporal patterns for more granular insights.
3. **GEO Column Transformation:** The "GEO" column, originally containing city and province information, underwent a transformation. The dataset was refined by splitting the GEO column into separate city and province components.
4. **Column Removal during EDA:** As part of the Exploratory Data Analysis (EDA) process, unnecessary columns were identified and subsequently removed. The specifics of this data refinement can be found in the provided Appendix at the end of the file.

# **DATA ANALYSIS**

## Key Insight 1: Population

A graph and diagram of a graph

Description automatically generated with medium confidence

**Findings:**

The data unequivocally illustrates a consistent and unambiguous upward trajectory in Canada's population. The undeniable trend points to a sustained increase, emphasizing the need for proactive planning and resource allocation to effectively accommodate and support the growing populace.

## Key Insight 2: Housing Index

A chart of different colored squares

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**Findings:**

Analysing crucial data on housing prices from 2020 to 2023 reveals a clear and consistent upward trend in the housing index, particularly since 2022. The costs associated with land, houses, and combinations thereof have surged significantly in comparison to 2020, indicating a notable increase in property values. Notably, a limited number of units are now classified as the "costliest houses," deviating from the typical distribution. These key facts strongly suggest a trajectory towards doubling in price, signalling potential challenges in affordability and emphasizing the urgency for comprehensive housing market assessments and interventions.

## Key Insight 3: Housing Mortgage

A graph of different colored bars

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**Key Findings:**

The mortgage data for 2023 presents a stark picture, revealing a significant and abrupt decline in the number of individuals taking out mortgages for residential units. This noteworthy decrease suggests a shift in the dynamics of homeownership or may indicate economic factors influencing mortgage uptake. Understanding the underlying reasons for this decline becomes paramount for stakeholders, as it can have far-reaching implications for the real estate and financial sectors.

## Key Insight 4: Interest Rate on Home Loan

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**Key Findings:**

Interest rates fluctuate within the range of 0.5% to 5.3%, representing a spectrum from historically low to moderately high rates. This range underscores the impact of economic conditions and central bank policies on borrowing costs and financial decisions.

## Key Insight 5: Housing Constructions

A graph of different colored bars

Description automatically generated

**Key Findings:**

The red color highlighting 2023 with a saddened emoji suggests a concerning trend in the construction sector, indicating that, perhaps, construction activity is at its lowest point. This downturn could have significant implications for the economy, employment, and the real estate industry. Understanding the reasons behind this decline is crucial for policymakers, stakeholders, and industry experts to formulate targeted interventions and strategies for revitalizing the construction sector.

## Key Insight 6: Investments In Residentials

A graph of different colored bars

Description automatically generated

**Key Findings:**

Amid the challenges in the construction sector, there's a positive note in the form of increasing investments in housing. This optimistic trend signifies a potential resilience in the real estate market, showcasing sustained interest and confidence from investors. Understanding the factors driving this positive shift can offer valuable insights for fostering continued growth in the housing sector, contributing positively to economic development.

# **INTERPRETATION**

The housing crisis in Canada appears to be a tangible reality rather than a mere fiction. The available data points towards a substantial and persistent surge in housing-related challenges. Factors such as escalating property prices, a notable increase in demand, and limited affordability underscore the severity of the situation. The prevalence of issues like homelessness, bidding wars, and an insufficient housing supply further solidifies the interpretation that Canada is indeed grappling with a genuine housing crisis.

By acknowledging these multifaceted dimensions, our project seeks to contribute to a holistic understanding of the housing crisis in Canada and advocate for comprehensive solutions that address the real and pressing needs of the population.

# **LIMITATIONS**

However, it is crucial to acknowledge certain limitations in the interpretation. The data may not capture the entire spectrum of the crisis, and regional variations could exist. Additionally, qualitative aspects such as the emotional and social impact on affected individuals may not be fully represented in quantitative data. Furthermore, the data might be subject to lag, potentially underestimating the current magnitude of the crisis. Taking these limitations into account ensures a nuanced understanding and encourages ongoing research and analysis to comprehensively address the complex nature of the housing crisis in Canada.

# **RECOMMENDATIONS**

In light of the housing crisis in Canada, our comprehensive analysis suggests several key recommendations to address the multifaceted challenges faced by individuals, communities, and the broader housing market:

**Affordable Housing Initiatives:** Implement targeted programs to increase the availability of affordable housing units. This includes collaboration between government entities, private developers, and non-profit organizations to create housing solutions that cater to diverse income levels.

**Homeownership Assistance Programs:** Expand and enhance programs that assist first-time homebuyers, especially those from marginalized communities. This could include down payment assistance, low-interest loans, or government-backed mortgage programs.

**Legislation for Inclusive Zoning:** Enact legislation that promotes inclusive zoning practices, ensuring that new developments incorporate a mix of housing types, including affordable options. This can contribute to more balanced and resilient communities.

**Sustainable Urban Planning:** Prioritize sustainable urban planning that considers long-term environmental, social, and economic impacts. This includes creating walkable communities, promoting public transportation, and integrating green spaces into urban developments.

By implementing these recommendations collaboratively and strategically, Canada can work towards alleviating the housing crisis, fostering inclusive and sustainable communities for its residents.

# **FUTURE WORK**

Future work involves advancing various aspects for a more comprehensive understanding and effective response to the housing challenges. Here are suggested areas for further development:

1. **Advanced Exploratory Data Analysis (EDA):** Conduct an in-depth advanced EDA to uncover deeper insights into the patterns, correlations, and outliers within the data. This may involve employing advanced statistical techniques, machine learning models, and data visualization tools to identify nuanced trends and potential causal relationships.
2. **Predictive Modelling:** Implement predictive modelling to forecast future trends in the housing market. Utilize machine learning algorithms to develop models that can predict housing demand, price movements, and potential areas susceptible to housing crises. This proactive approach can aid policymakers, investors, and communities in preparing for future challenges.
3. **Integration of Additional Factors:** Expand the scope of analysis by incorporating more diverse factors that contribute to the housing crisis. This may include socio-economic indicators, employment rates, demographic shifts, and environmental considerations. Integrating a broader set of variables can provide a more holistic understanding of the complexities influencing housing dynamics.
4. **Detailed Reports and Policy Recommendations:** Develop detailed reports that synthesize findings, insights, and recommendations from the analysis. These reports should be tailored for various stakeholders, including policymakers, non-profit organizations, developers, and the general public. Provide actionable policy recommendations based on the research to guide interventions and strategic planning.
5. **Geospatial Analysis:** Explore geospatial analysis to understand spatial variations in the housing crisis. Mapping trends in different regions can reveal localized challenges, enabling targeted interventions and policies that address specific needs unique to each area.
6. **Collaboration with Experts:** Foster collaboration with experts in urban planning, economics, sociology, and environmental science. Interdisciplinary collaboration can enrich the analysis by incorporating a wide range of perspectives and expertise.
7. **Public Awareness Campaigns:** Develop public awareness campaigns to disseminate research findings, raise awareness about housing issues, and promote community engagement. An informed public can play a pivotal role in advocating for policy changes and fostering a collective understanding of the housing crisis.

By advancing these aspects, the project can evolve into a dynamic and responsive initiative that not only diagnoses the housing crisis but also contributes substantively to its resolution.

# **APPENDIX**

**EDA** for the House selling Data set is as below. We did the EDA for each and every key factors.



# **REFERENCES**

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