Feasibility Study: Analysis of Commuting and Income Patterns for Cranbrook and Golden, BC

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Summary

This report presents an analytical overview of commuting behaviour, place of work, and income distribution patterns in Cranbrook and Golden, British Columbia, using Statistics Canada's 2021 Census data. The findings form part of the feasibility study for reintroducing passenger rail service between the two communities.

Through comparative data analysis and visualization in Power BI, this study identifies demographic and economic factors influencing travel demand and potential ridership. Key insights reveal significant differences in commuting distance, mode choice, and income levels, which directly inform considerations of transportation equity and regional mobility planning.

Introduction

Restoring passenger rail connectivity between Cranbrook and Golden has the potential to strengthen economic development, improve inter-community accessibility, and enhance sustainable transport options across southeastern British Columbia.

This report focuses on the socioeconomic and commuting dimensions that shape travel demand within the corridor. Specifically, it examines how patterns of income, work location, and commuting duration may influence potential rail ridership and service viability.

Objectives

- To analyse and compare commuting behaviour in Cranbrook and Golden
- To evaluate differences in income distribution and employment characteristics
- To identify key factors affecting regional connectivity and potential passenger demand
- To provide a data-driven foundation for future transportation feasibility and planning

Data and Methodology

Data Sources

All data were obtained from **Statistics Canada's 2021 Census**, including:

- Commuting mode and duration
- Place of work status
- Age structure and employment rate
- Individual and household income levels

Data were downloaded in **CSV/Excel** format for both Cranbrook and Golden.

Data Preparation

Data cleaning was conducted in Excel to ensure consistency across datasets:

- Removed summary rows and irregular headers
- Standardized column labels and value formats
- Reclassified age and income brackets for comparability
- Assigned unique city identifiers
- Merged topic-level datasets (e.g., income, commute mode, employment)

All cleaned datasets were imported into **Power BI Desktop**, where relationships were established for integrated visualization and comparative analysis.

Analysis and Findings

1. Commuting Patterns

Cranbrook shows a greater reliance on private automobiles and longer commuting durations. Nearly **70% of employed residents** commute more than 15 minutes daily, reflecting dispersed employment canters and higher car dependency.
Golden, conversely, exhibits **shorter commutes** and a higher proportion of **non-motorized travel (walking, cycling)**, aligning with its compact urban structure and localized economy.

2. Place of Work

The “place of work” analysis highlights notable contrasts in remote work prevalence:

- **Cranbrook:** Higher share of remote workers and inter-municipal commuters
- **Golden:** Predominantly local employment within the same community

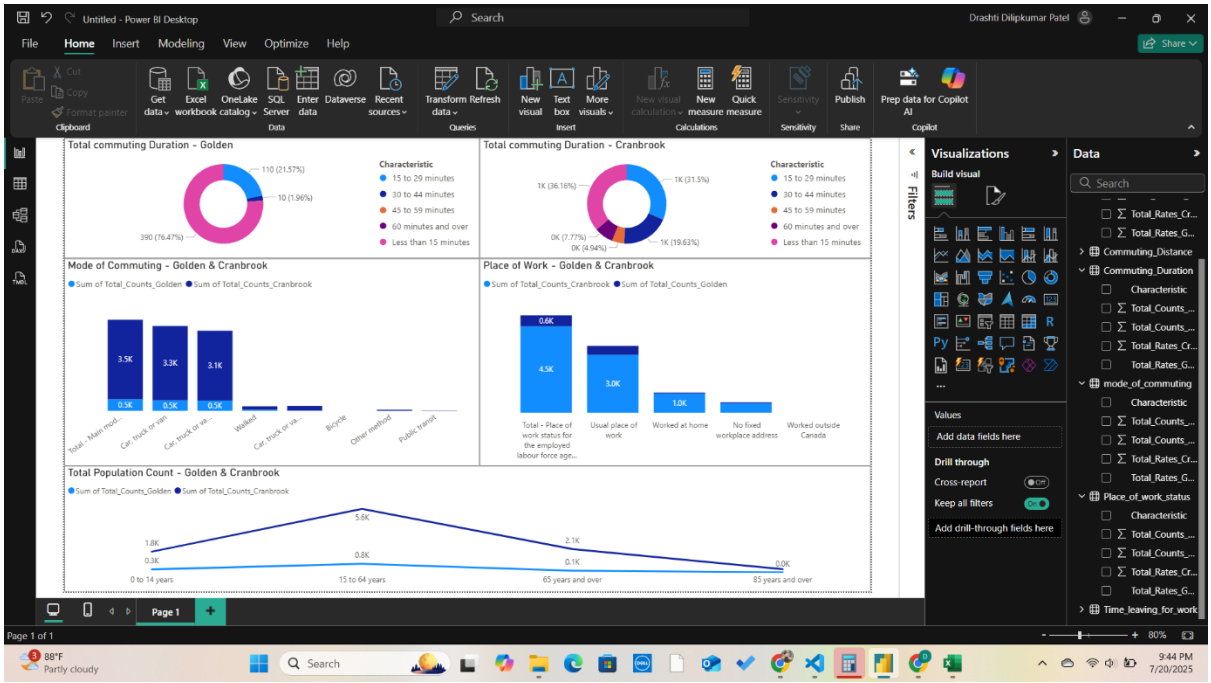
These differences imply that Cranbrook may generate higher intercity travel potential, while Golden’s compact employment geography suggests shorter, localized trips.

3. Income and Employment

Income comparisons reveal meaningful disparities:

- Cranbrook’s median income levels are higher across most age groups
- Golden’s lower median income and higher share of part-time or seasonal employment suggest more dependence on tourism and service industries

Such variations influence affordability, mode choice, and potential rail fare sensitivity. Income-based segmentation can further help forecast ticket pricing models and accessibility implications.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Total commuting Duration - Golden
Total commuting Duration - Cranbrook
Mode of Commuting - Golden & Cranbrook
Place of Work - Golden & Cranbrook
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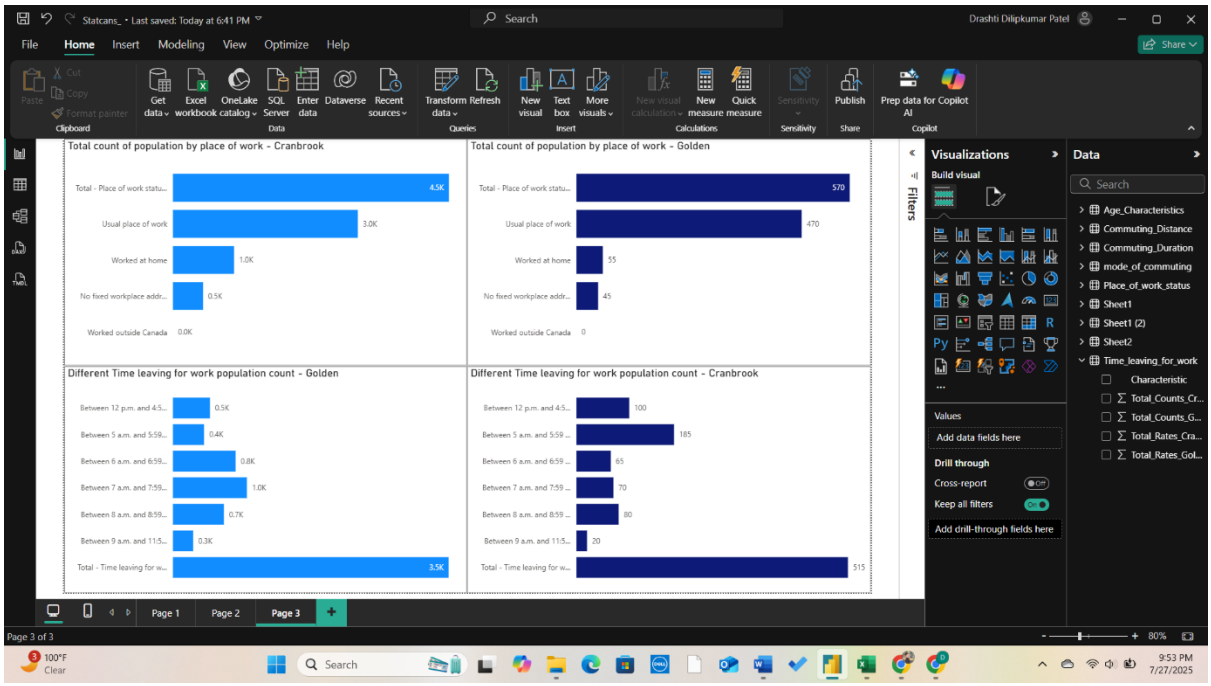
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Total count of population by place of work - Cranbrook
Total count of population by place of work - Golden
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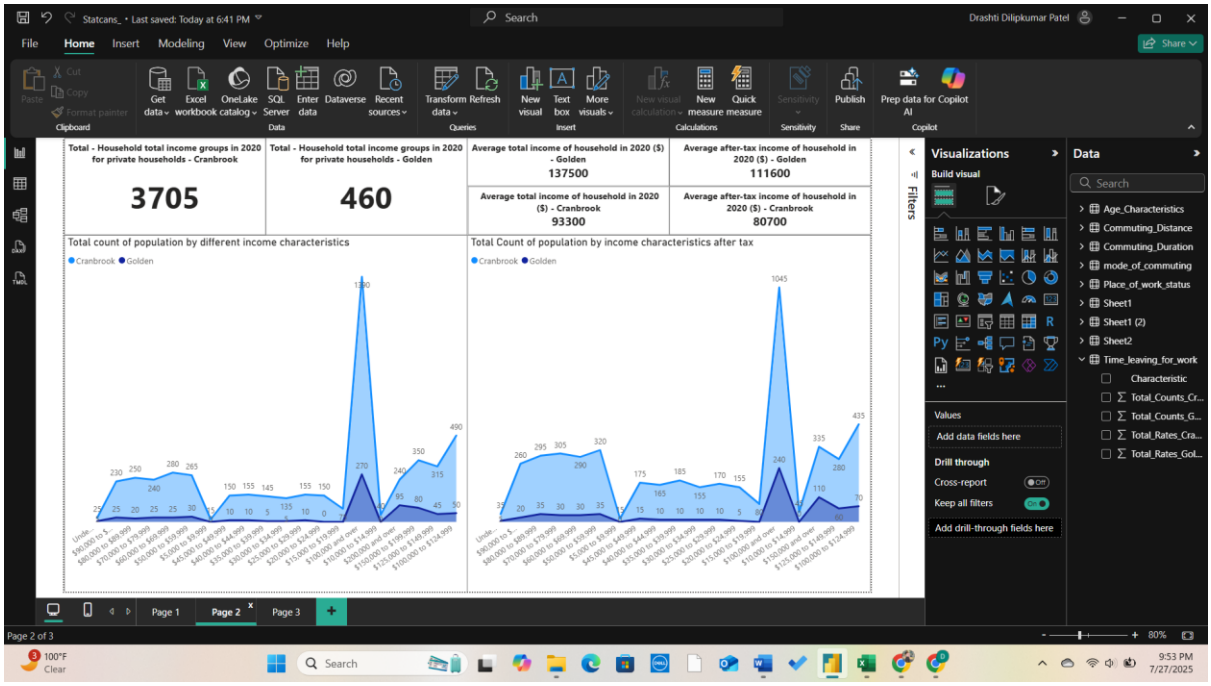

Discussion

The combined findings suggest that a **revived passenger rail service** could address both mobility and equity challenges across the region.

- **Cranbrook's higher-income, longer-commuting population** represents a potential user base for efficient intercity travel.
- **Golden's compact, lower-income profile** supports the argument for affordable, sustainable travel options connecting local workers to broader regional opportunities.

The integration of commuting and income data underscores how transportation planning intersects with regional development goals, such as workforce mobility and tourism enhancement.

Conclusion

The comparative analysis between Cranbrook and Golden demonstrates the socioeconomic and commuting contrasts that are central to evaluating the feasibility of passenger rail service. The Power BI dashboards serve as an interactive decision-support tool for stakeholders to explore travel behaviour, income dynamics, and employment geography.

Future work should incorporate:

- Population growth projections
- Environmental and cost-benefit analyses
- Ridership scenario modelling based on these socioeconomic foundations

References

- Statistics Canada (2021). *Census Profile: Golden, BC; Cranbrook, BC.* Retrieved from https://www.statcan.gc.ca/en/start