

STAT 485 Project Proposal

1.0 PROJECT IDENTIFICATION

| | |
|--------------------------------|---|
| Proposed Project Title: | Time Series Analysis of Sales to Active Listings Rate in the Greater Vancouver Area |
| Team Members: | Group 19 - June Nguyen, Mirrien Liang, Alex Li |
| Charter Prepared/Updated Date: | November 20, 2023 |

2.0 PROBLEM CONTEXT

2.1 Background:

The real estate market in the Greater Vancouver area has experienced various fluctuations over the past decade. Understanding these changes is crucial for market stakeholders, including investors, realtors, and policy makers.

2.2 Need:

There is a need for a comprehensive analysis of the Sales to Active Listings Rate (SALR) to understand its trends, seasonal patterns, and the probability and impact of extreme market events.

3.0 PROJECT SCOPE

3.1 Proposed Solution:

We propose a practical approach by conducting a time series analysis of the SALR from 2011 to 2023. This will include trend analysis, seasonality study, forecasting future values, and particularly focusing on the identification and analysis of extreme events in the market.

3.2 Assumptions and Constraints:

The analysis will be based solely on the SALR data, without consideration of external factors.

3.3 Activities Included in Project Scope:

- Trend and seasonality analysis.
- AR(1) and other model fitting and analysis.
- Model selection and evaluation.
- Forecasting future SALR values.
- Identification and analysis of extreme market events.
- Simulation of the impact of these events.

3.4 Activities Excluded from Project Scope:

Analysis of external factors affecting SALR.
Comparative analysis with other real estate markets.

3.5 Project Deliverable(s):

- A comprehensive report detailing the findings of the analysis.
- Predictive models with documentation on their development and performance.
- A document summarizing the key insights from the analysis.

4.0 PROJECT SCHEDULE

Project Schedule:

| Milestone | Target Completion Date |
|---|------------------------|
| Deliver the project charter | November 20 |
| Data preparation and preliminary analysis | Late November |
| Model development and analysis | Late November |
| Draft report preparation | Early December |
| Final report preparation | Early December |
| Deliver the project | December 9 |