

Capstone 1 Proposal.

Introduction

Real estate remains the largest investment for most people in the United States. It's no surprise that many discussions focus on buying, selling, or renting properties. I aim to investigate the real estate inventory and analyze the price differences between one-bedroom and two-bedroom units across various states.

Dataset

My analysis will utilize data from the USA Real Estate Dataset (<https://www.kaggle.com/datasets/ahmedshahriarsakib/usa-real-estate-dataset>) available on Kaggle.com. This dataset includes 2,226,382 records and 12 variables: brokered by, status, price, beds (number of bedrooms), baths (number of bathrooms), property/land size in acres, street, city, state, zip code, house size (area/size/living space in square feet), and previously sold date. This dataset covers 50 states plus United States territories. The number of one and two-bedroom units ranges from 200 in Alaska to over 60,000 in Florida. The number of records makes the state-based analysis possible.

Research Design

I will test the following hypotheses in each state:

H_0 : There is no significant difference in the sale prices of one-bedroom and two-bedroom units.

H_a : There is a significant difference in the sale prices of one-bedroom and two-bedroom units.

Independent T-test will be used on two samples (one-bedroom and two-bedroom units) in each state. Then we will compare mean differences and % differences for states where that difference is significant. Two levels of significance will be looked into ($p\text{-value} < 0.05$ (significant) and $p\text{-value} < 0.01$ (very significant))

Audience

This research could interest individuals looking to buy, sell, or relocate, as well as real estate investors seeking the best return on their capital. They may also wish to compare sales prices with rental prices and demographic trends in specific states.