

4/6/25

Team Standard Deviants

Spatial and Structural Optimization of Commercial Real Estate in California

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1. Background & Problems

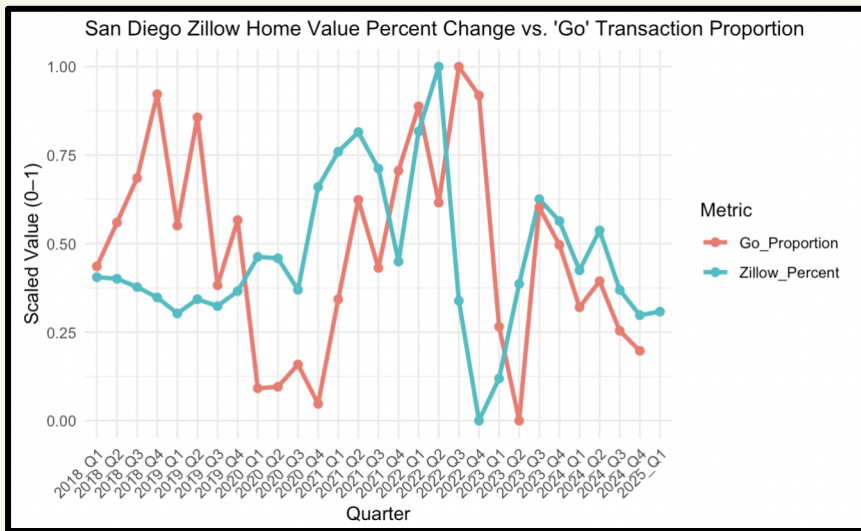
2. Methodology

3. Evaluation

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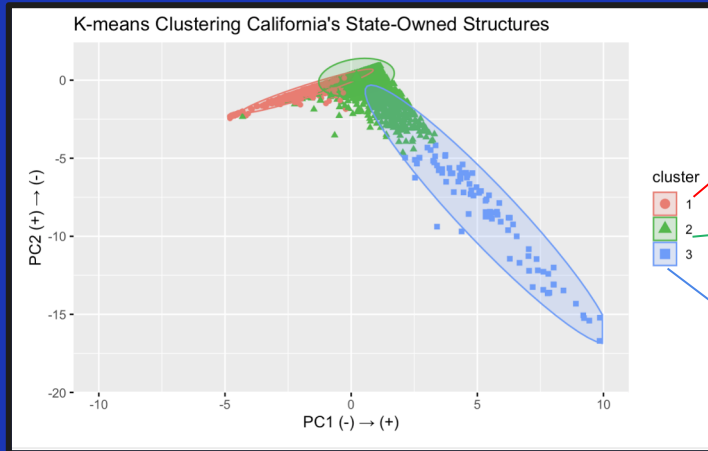
Background & Problems



Datasets

- Zillow Home Value Index (ZHVI):
measure of the typical home value
(35th to 65th percentile range) across
a given region
- California State Geoportal Statewide
Property Inventory (SPI):
 - Lease: 1,947 rows, 18 cols
 - Structure: 25,754 rows, 24 cols
 - Agencies: 276 rows, 5 cols
 - LeaseUse: 25,842 rows, 10 cols

Methodology



older, larger lower elevations

Moderately new buildings, high elevations

Newer buildings, mid-elevation

- Groups of structures differ based on three key features
- Infrastructure patterns and prioritization of upgrades by grouping properties



<https://imgflip.com/gif/9pxabb>

- Interactive Map for strategic decision-making.
- Powered by an ML classifier model (0.83 precision).
- Features fragmentation as a predictor for new leases (positive correlation).

Evaluation

Key Takeaways

1. **Fragmentation predicts relocation:** Agencies spread across many cities are more likely to move. Savills can use fragmentation to anticipate relocations.
2. **Building size and age matter:** Older, larger, low-elevation buildings may need renovation or replacement. Savills can target these for client recommendations.
3. **Smaller spaces drive moves:** Agencies in smaller spaces are more likely to relocate. Savills can focus on advising clients with growing space needs.