

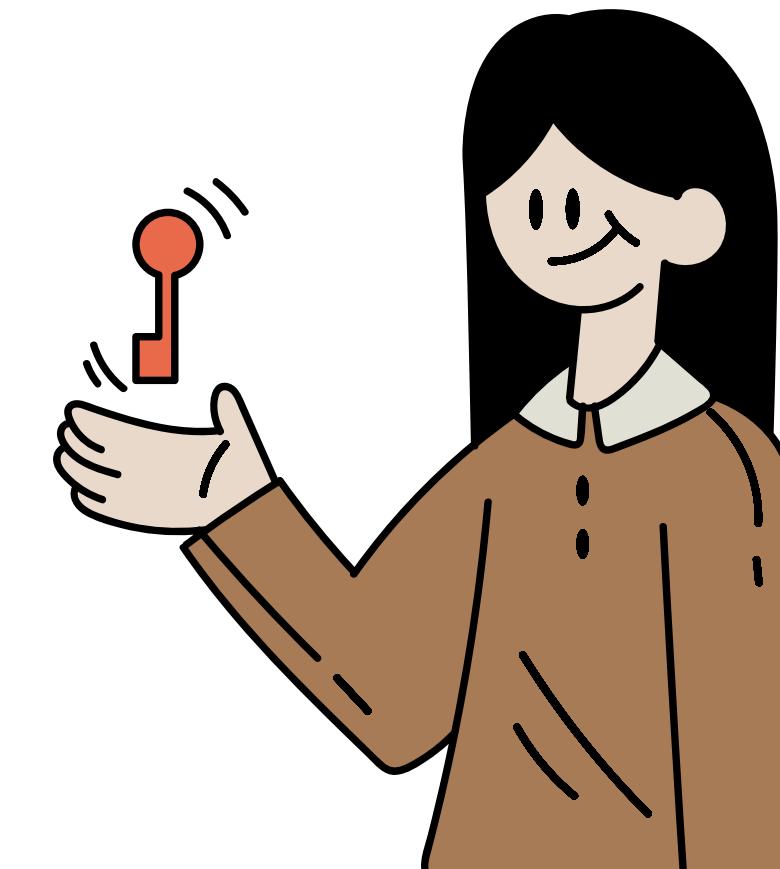


The Future of Home Sharing in Los Angeles: A Data- Driven Post-COVID Analysis of Airbnb Prices and Listing Success



Team 6

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Methodology

Data Cleaning & Visualization Strategy:

- Examined data for bad values
- Converted relevant strings to usable data types
- Mapped listing IDs between listing/calendar datasets
- Computed performance estimate based on adjusted price and occupancy
- Plotted available geographic data
- Incorporate LA's geojson file for mapping

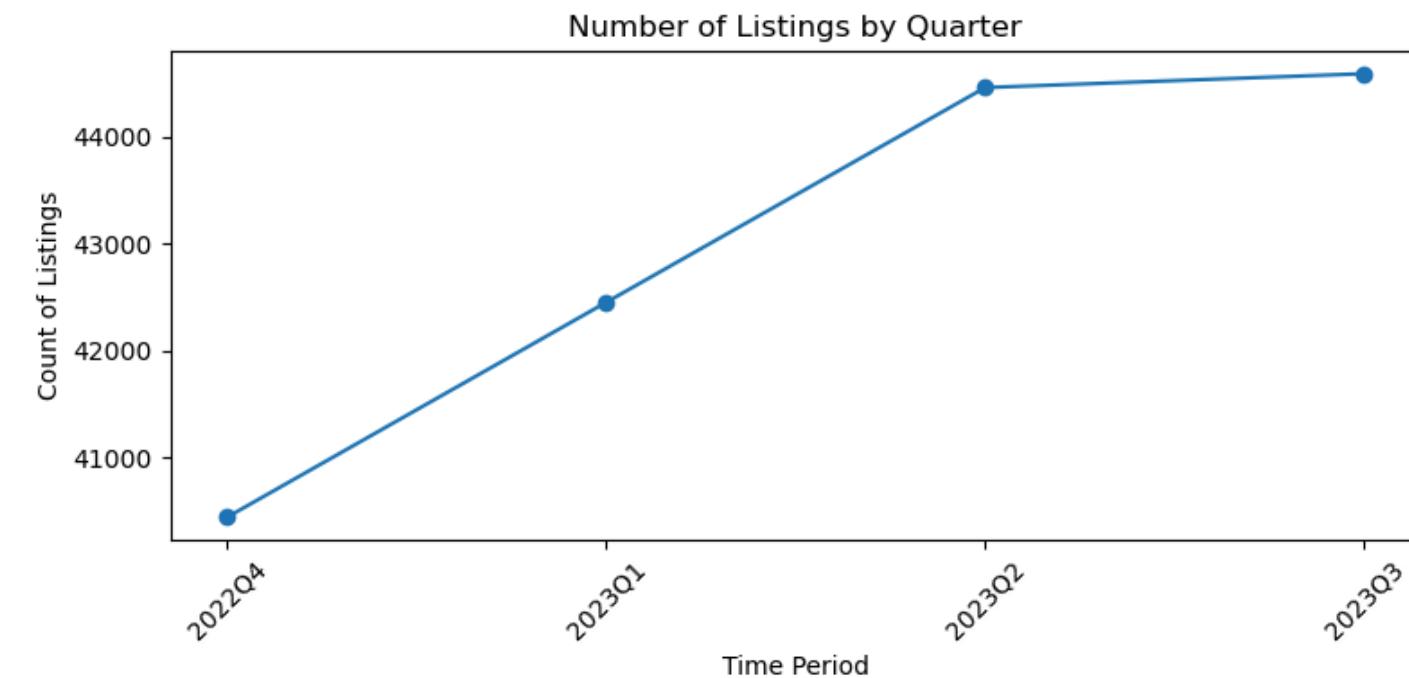
Forecasting :

- Conducted EDA to assess data quality, clean prices, remove outliers, and analyze trends by quarter, room type, and neighborhood.
- Calculated quarterly average prices using combined 2022Q4–2023Q3 datasets.
- Fit a linear trend model on quarterly averages
- Forecasted next four quarters using the estimated linear slope.
- Validated trend using ARIMA/SARIMA models, which showed a similar upward direction despite limited time-series length.

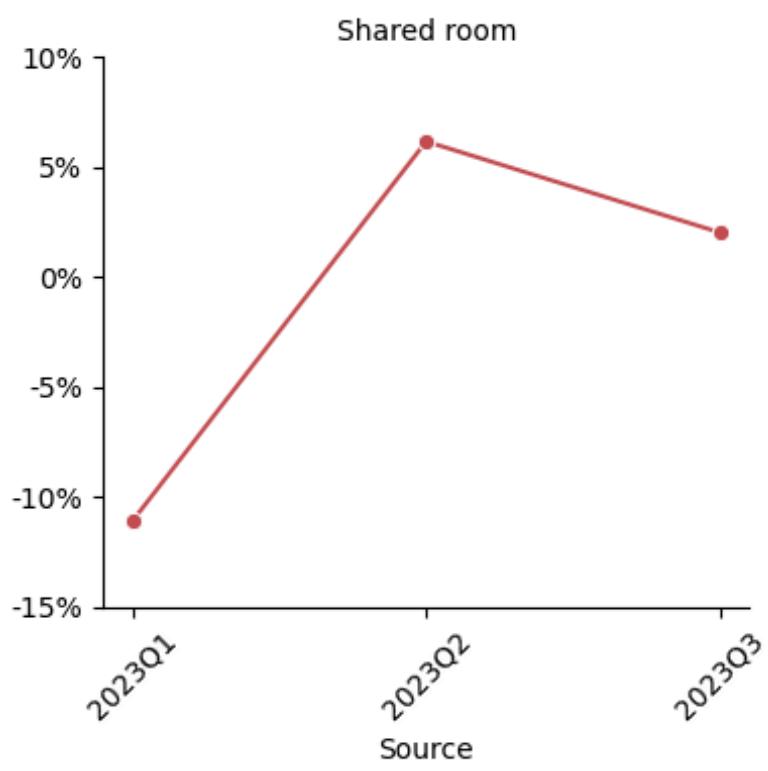
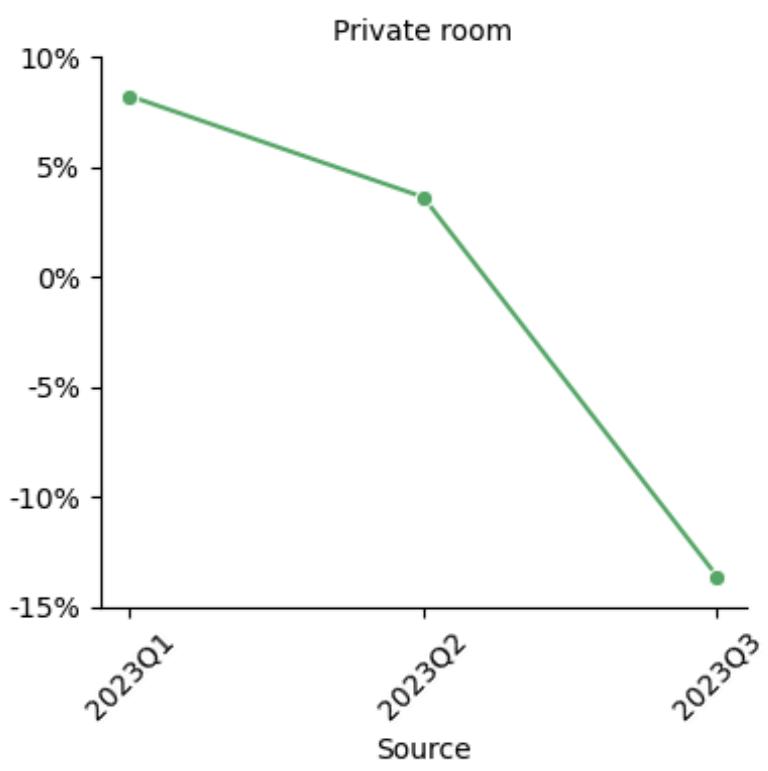
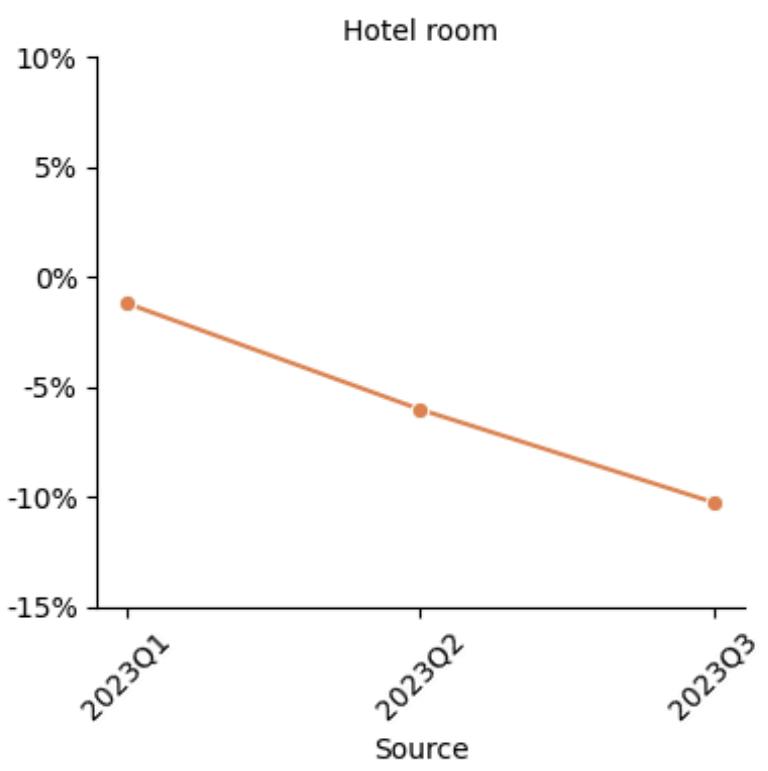
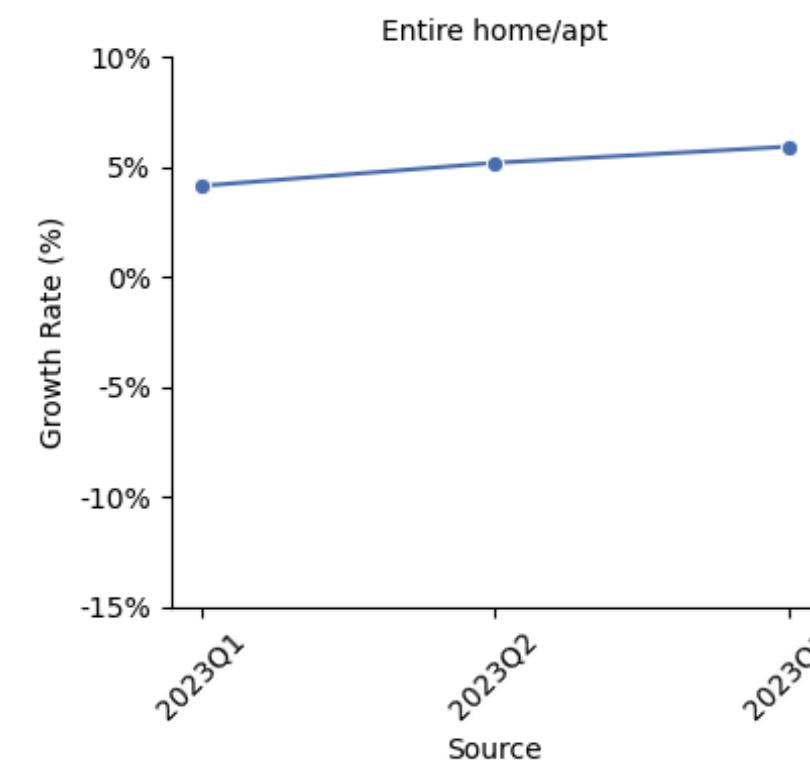




LA Airbnb Supply Rises, but Not All Room Types Keep Pace



Listings increase each quarter from Q4 2022 to Q3 2023 (+10.28%), yet room types evolve unevenly. Entire homes show steady gains, while **hotel rooms and private rooms decline** toward Q3. Shared rooms spike briefly before leveling off. The findings show that the market is expanding overall, but two room types may continue to decline due to intensified competition and shifting guest preferences.



Guests occupy the entire property
with no shared spaces

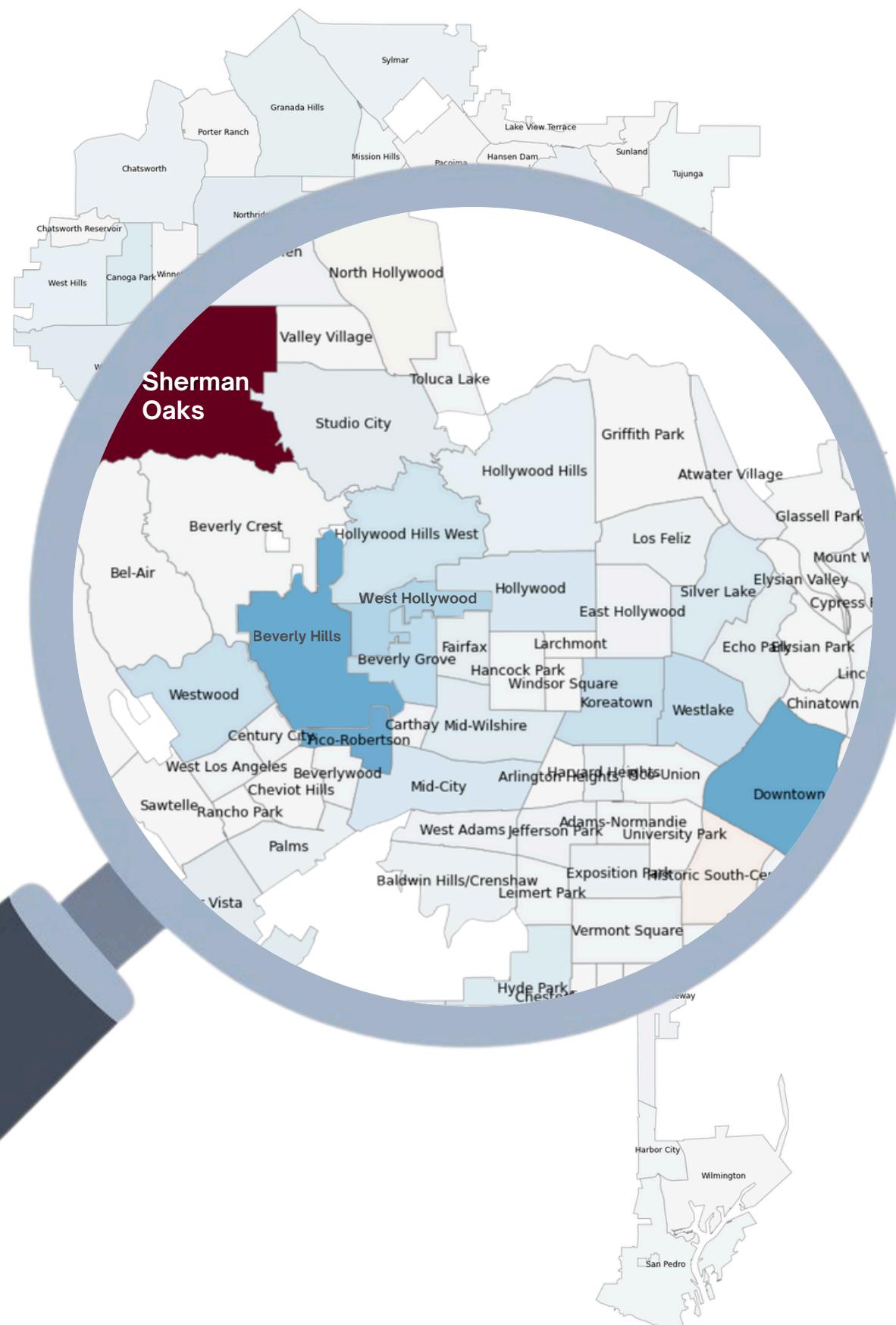
A professionally managed hotel unit
offered through Airbnb

Guests have a private bedroom
while sharing common areas

Guests share both the bedroom and
common spaces together

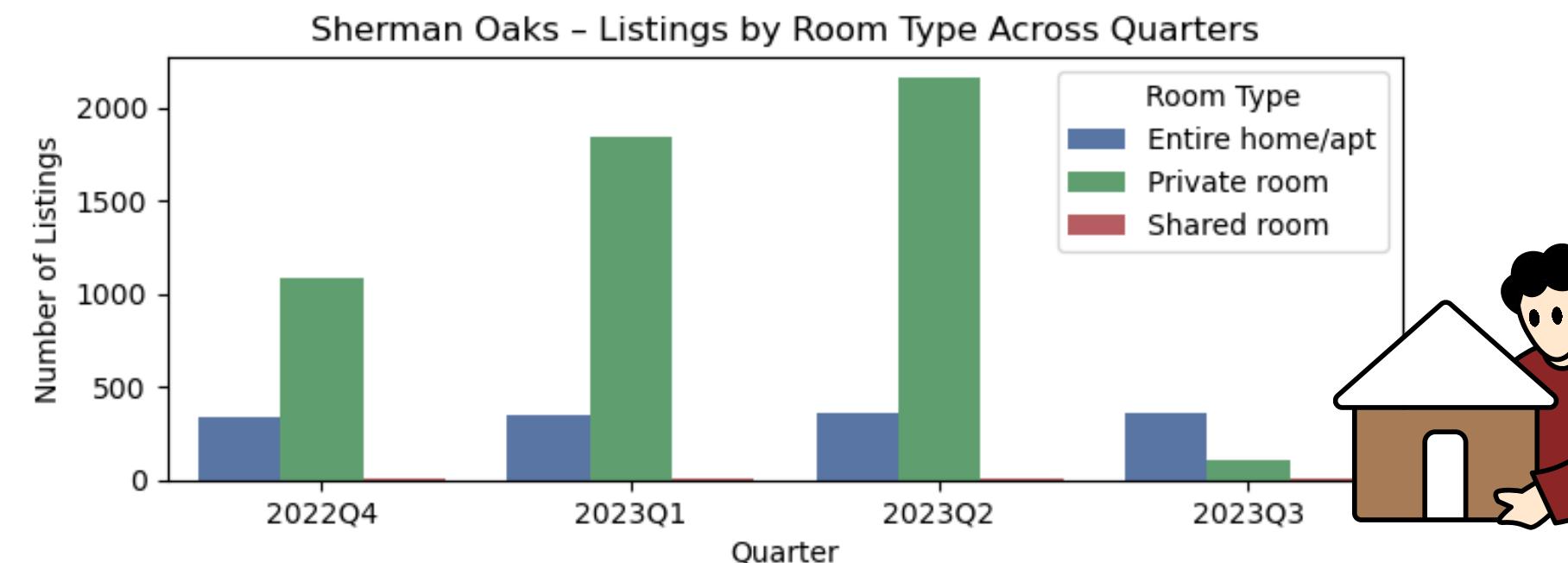


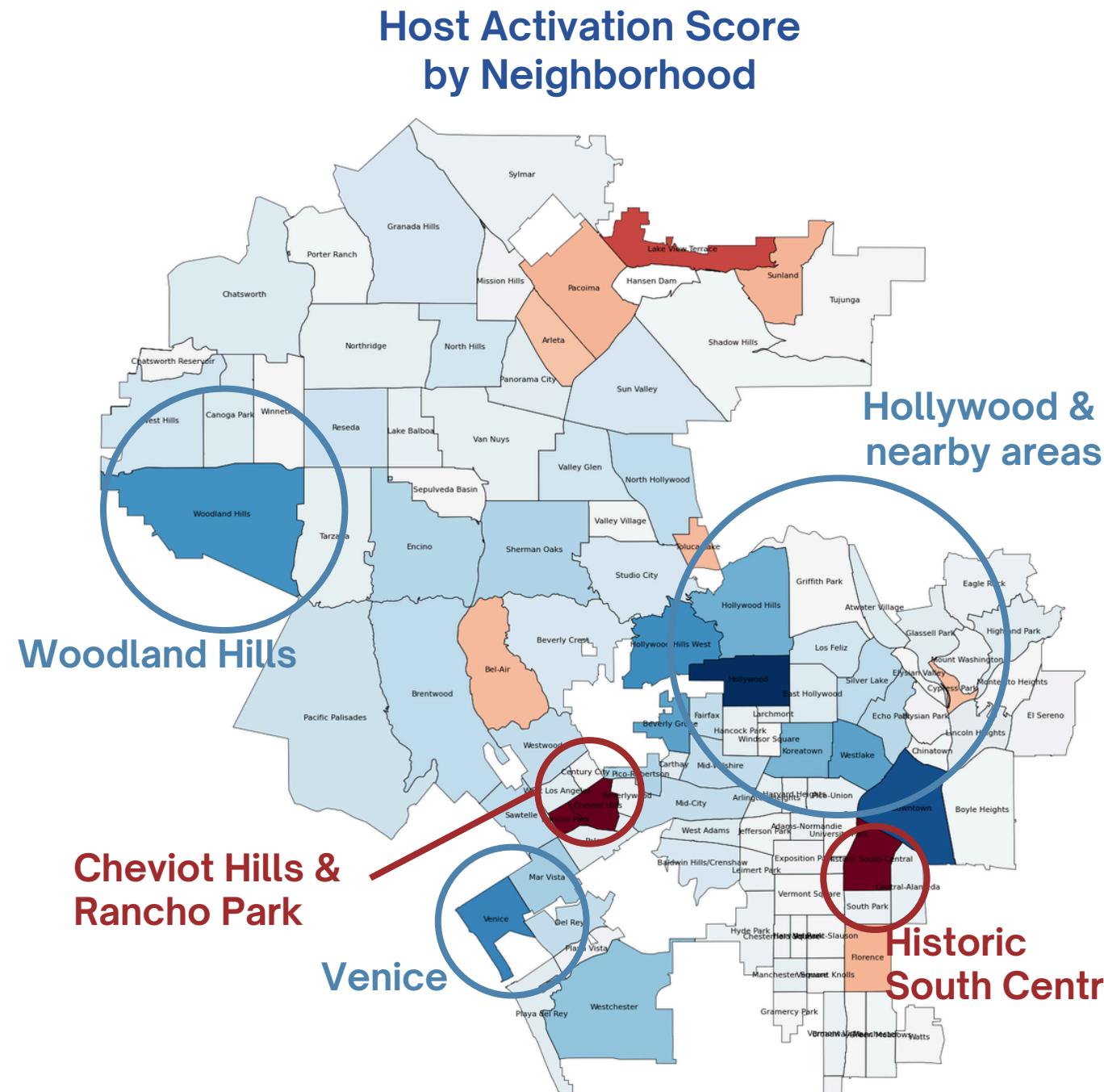
Number of Listings Change by Neighborhood (2023Q3 vs. 2022Q4)



Private Room Decline: Impact of Stricter Regulations

- LA's Airbnb listings **cluster in major tourism (central LA) areas** as well as nearby residential neighborhoods
 - **Downtown and Pico-Robertson show notable growth**, supported by strong commercial activity and accessibility.
 - 2023 Q3 reveals a **sharp decline in Sherman Oaks**, driven by reduced **private room** supply. This shift may reflect the effects of LA's Home-Sharing Ordinance. Future trends may further diverge as regulatory enforcement tightens across residential areas.





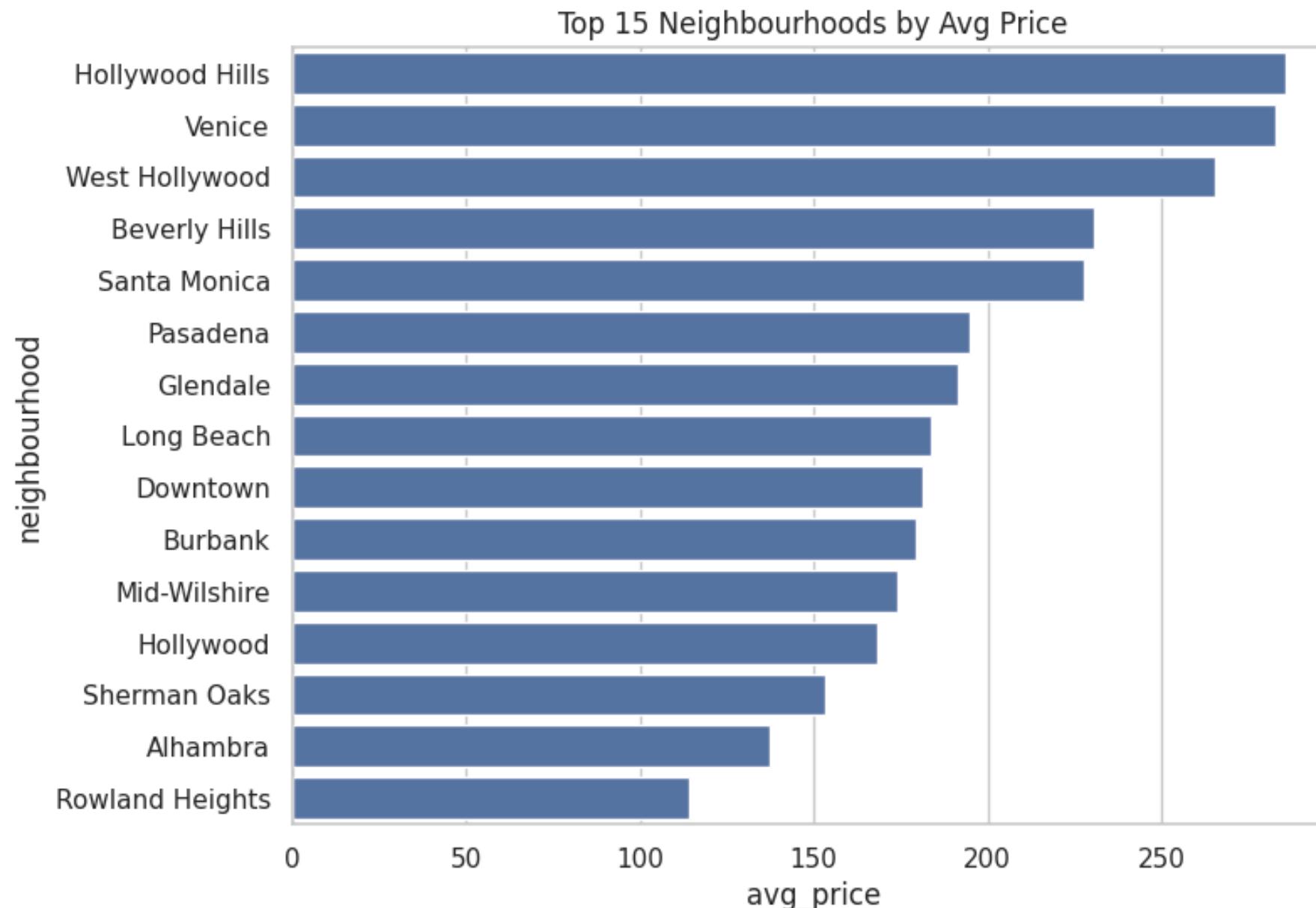
Future Growth Signals: Where Hosts Are Entering

We introduced the **Host Activation Score** to assess **which areas are likely to expand or contract** in LA's future home-sharing market.

- This metric combines the net change in hosts, the number of new hosts, and their share relative to the previous quarter's host base in 2023 Q3.
Higher value reflects greater supply momentum
- Neighborhoods with historically strong Airbnb activity continue to show high Host Activation Scores, suggesting strong potential for sustained growth**
- Historic South Central, Cheviot Hills, and Rancho Park** show notable host outflow and low activation scores, indicating potential decline as host participation weakens.



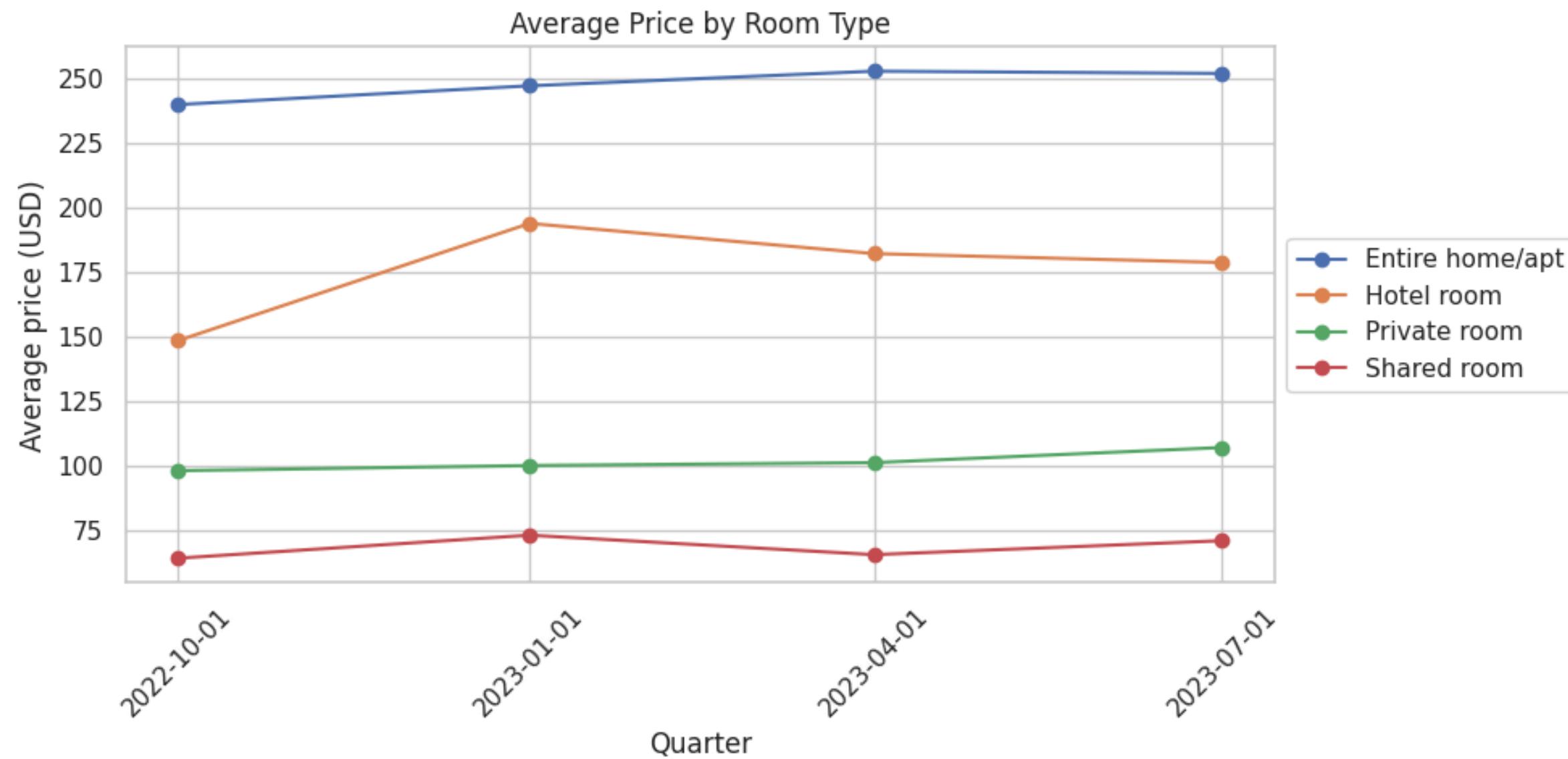
Mapping LA's Airbnb Premiums: Who Pays More, and Where?



- **Venice, Hollywood Hills, and West Hollywood** are LA's highest-priced Airbnb neighborhoods, with average nightly rates well above \$250.
 - These premium markets attract tourists seeking luxury, beach proximity, and nightlife access.
 - **Sherman Oaks, Rowland Heights, and Alhambra** sit at the lower end of the price spectrum, indicating budget-friendly, residential-focused markets.
- Prices cluster into three tiers:**
- **Luxury (>\$250)** → Venice, Hollywood Hills, West Hollywood
 - **Mid-tier (\$180–\$230)** → Santa Monica, Beverly Hills, Pasadena
 - **Budget (<\$160)** → Sherman Oaks, Alhambra, Rowland Heights
- The strong variation by neighborhood reflects tourism intensity, local regulations, and supply mix (entire homes vs private rooms).



From Luxury to Shoestring: How Room Types Divide the Market



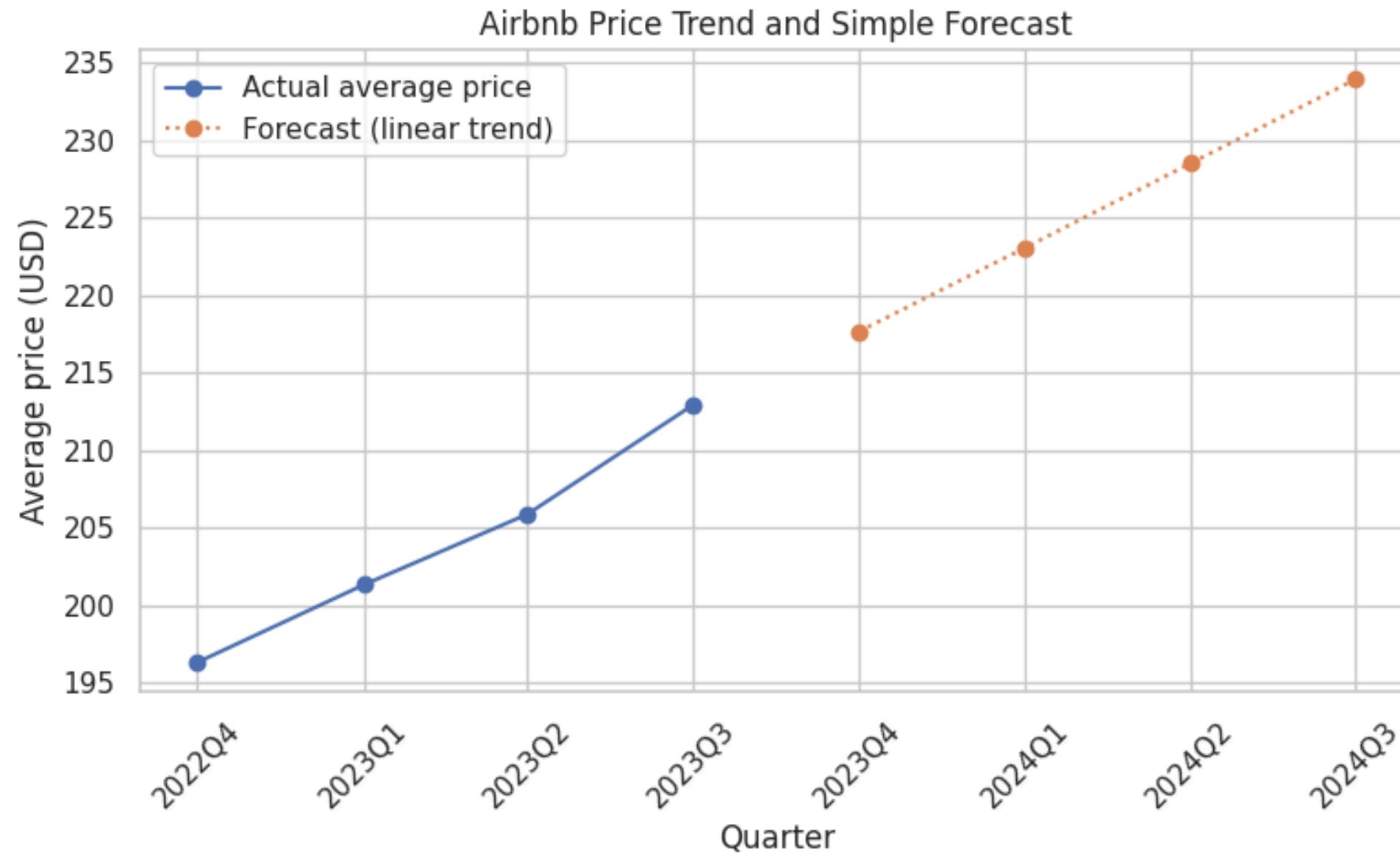
- **Entire homes:** highest-priced, rising from \$240 → \$253 across quarters.
- **Hotel rooms:** seasonal spike to \$194 in 2023Q1, then cooling to \$179.
- **Private rooms:** steady growth from \$98 → \$107, showing stable budget demand.
- **Shared rooms:** lowest tier, fluctuating between \$63–\$72.

Market forms clear price tiers:

- Premium: \$250+ (Entire home)
- Mid-tier: \$170–\$190 (Hotel room)
- Budget: \$60–\$110 (Private & shared rooms)



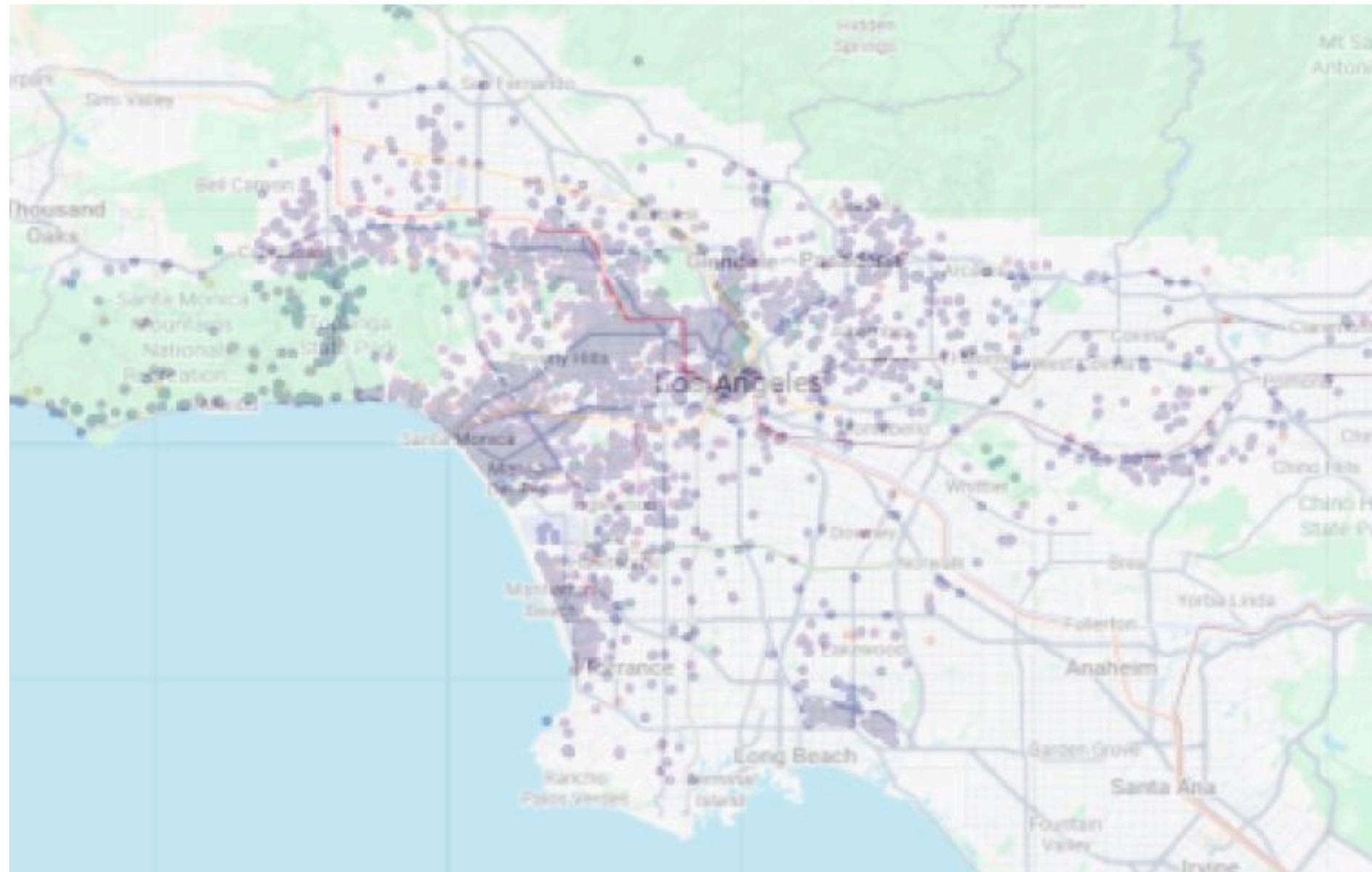
Where LA Airbnb Prices Are Headed Next?



- Average Airbnb price in LA increased from \$196 (2022Q4) to \$213 (2023Q3), an +8.7% rise in less than a year.
- Linear trend model predicts prices will continue climbing to \$234 by 2024Q3.
- Prices are projected to grow at ~\$5.4 per quarter (\approx \$22 per year).
- Forecast suggests steady, moderate price inflation, not volatility or decline.
- Trend aligns with rising tourism recovery and strong demand for entire-home listings.



Trends and Tracks



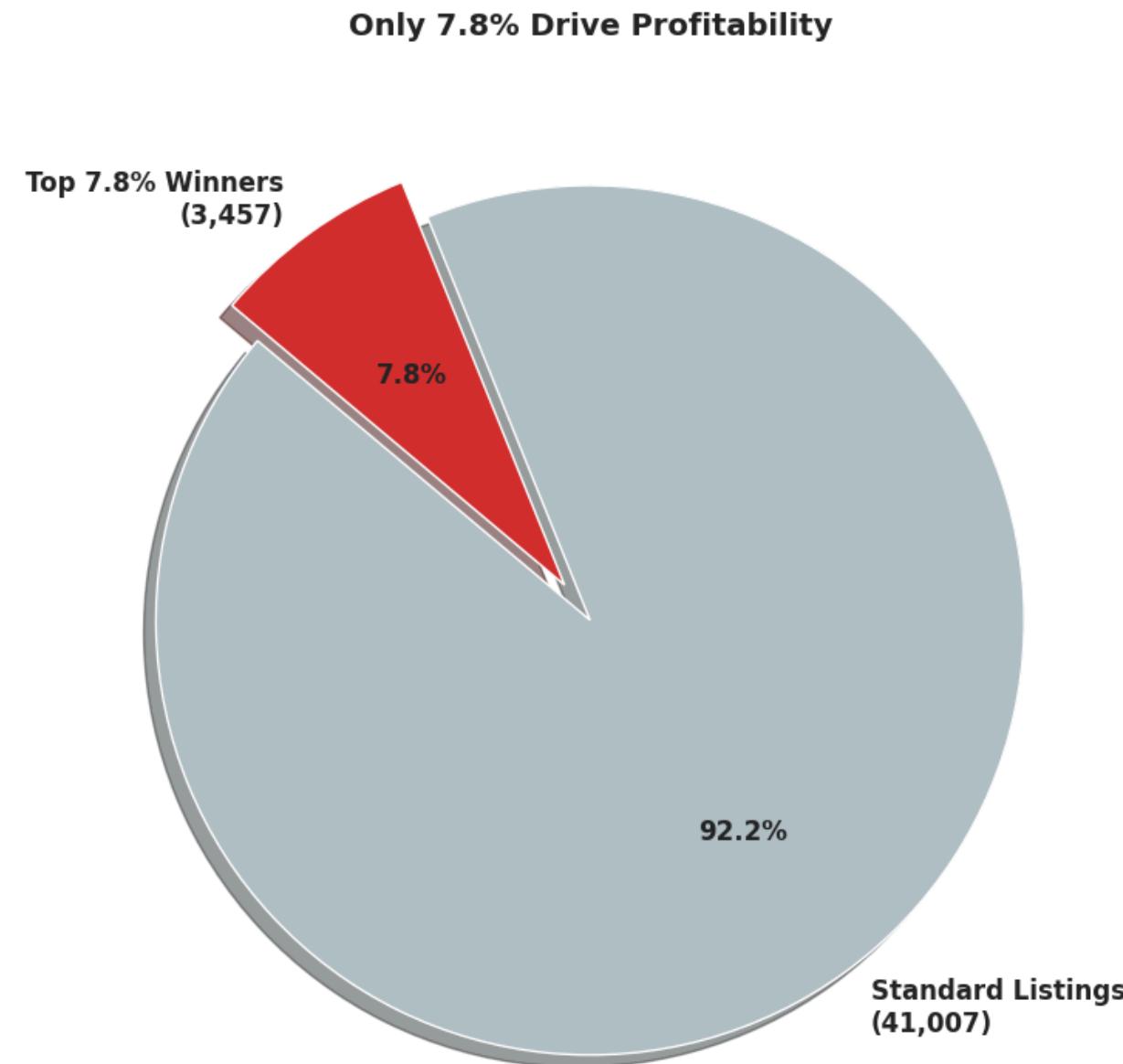
There is a correlation between high performing properties and proximity to public transportation. This is especially true when that provides easy access to local points of interest.

Key Data:

- Top 20% of performers when controlled for adjusted pricing.
- Geo spatial data.



What Makes A Listing Successful: The Market Reality

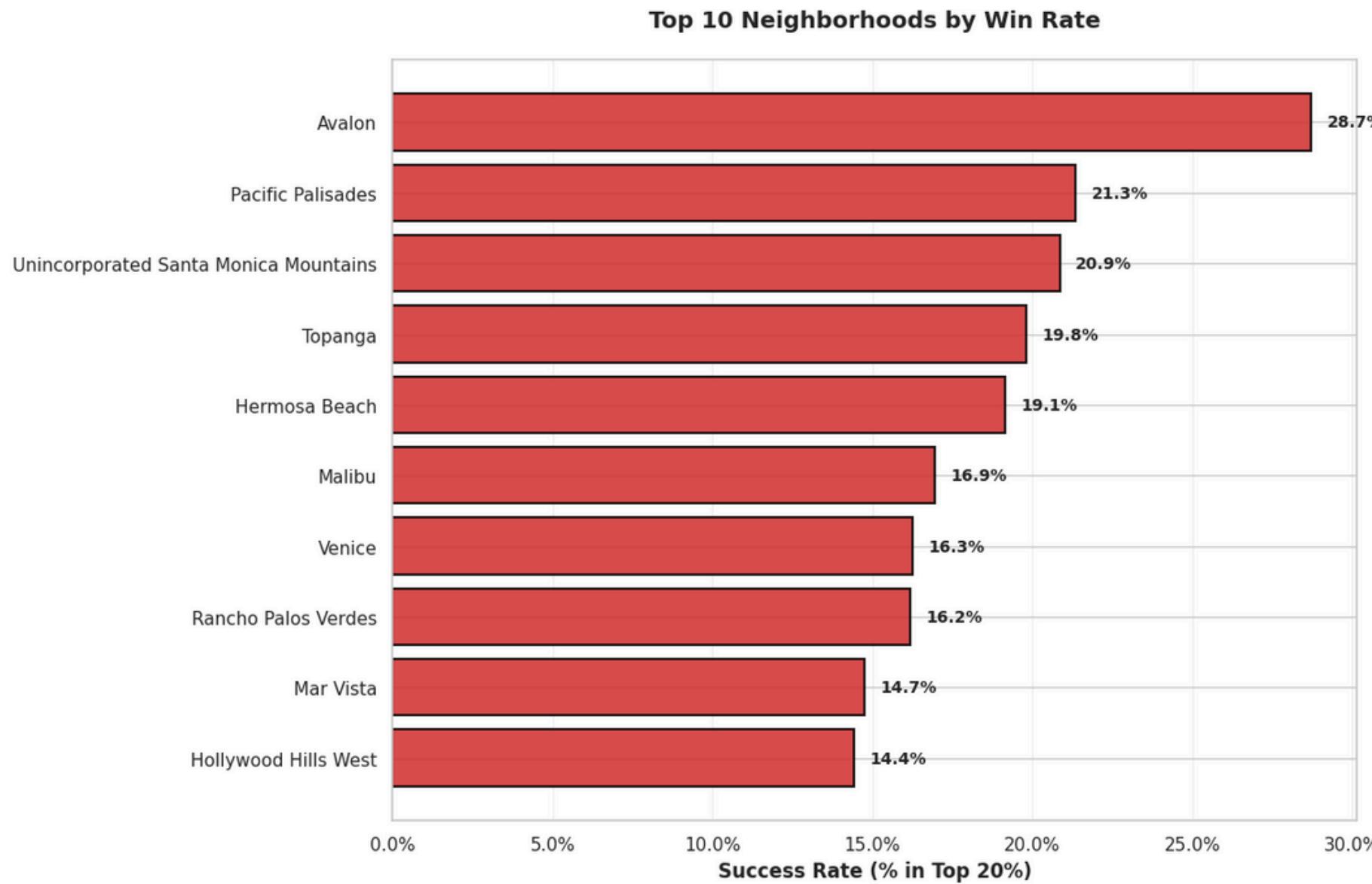


The market is heavily oversaturated. 92% of listings are fighting for scraps, while the top 7.8% dominate revenue. We analyzed this top tier to find the 'Success DNA'

- **Total Listings:** 44,464
- **Top Performers:** 3,457 (7.8%)
- **Revenue Gap:** Winners generate \$110k more annually than standard listings (+442% premium).



Location Strategy – Coastal Dominance



Geography is the primary filter. Listings in affluent coastal zones are 300% more likely to be profitable than the market average

Key Data:

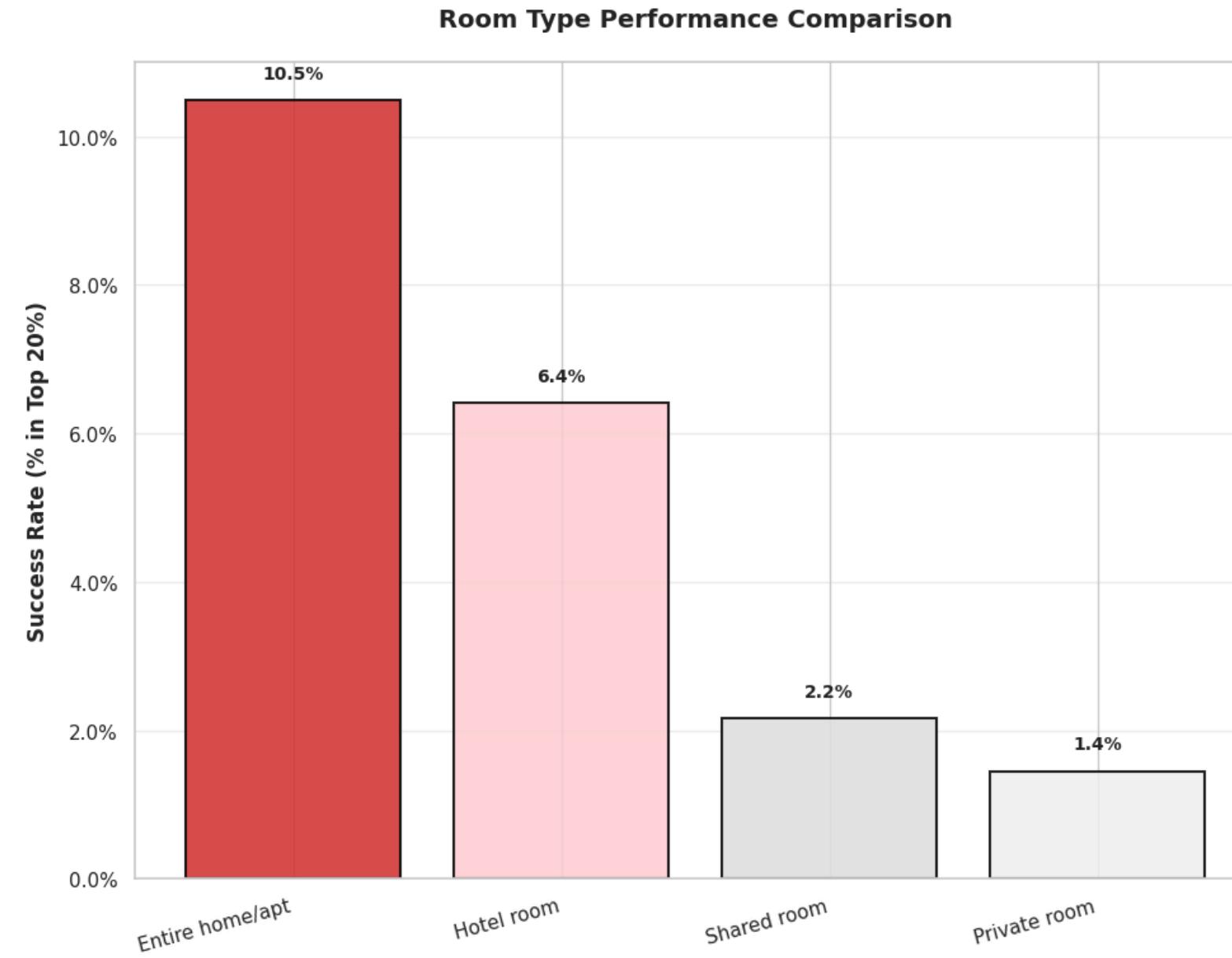
- Avalon: 28.7% Win Rate
- Pacific Palisades: 21.3% Win Rate
- Santa Monica Mtns: 20.9% Win Rate

Contrast:

- City Average: 7.8%
- Coastal Average: ~20% (Nearly 3x higher probability of success)



Product Fit - Privacy is King



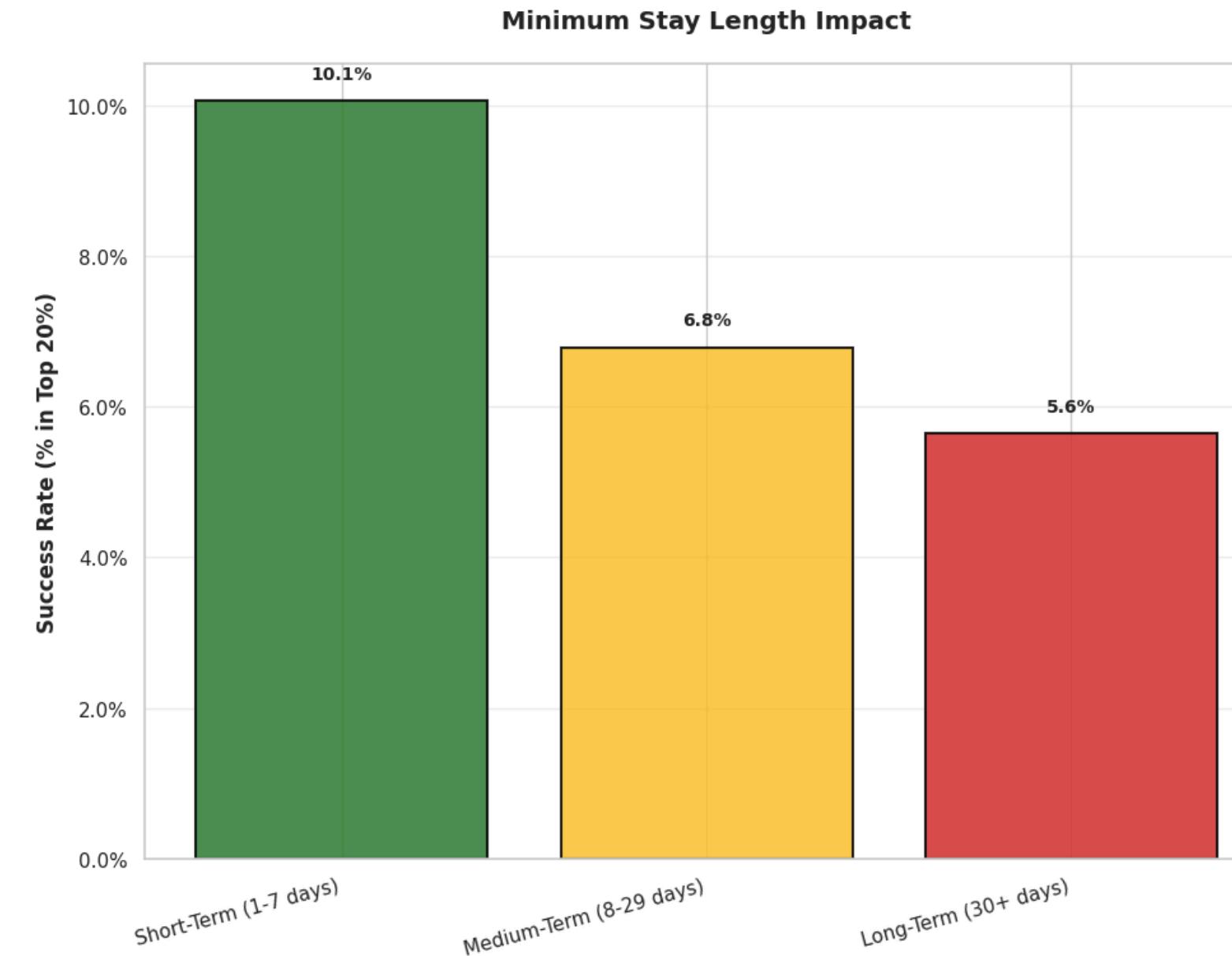
Post-COVID guests demand privacy. Entire Homes are 7x more likely to succeed than Private Rooms. Shared spaces are economically irrelevant

Key Data:

- Entire Home: 10.5% Win Rate (3,253 winners)
- Private Room: 1.4% Win Rate (183 winners)
- Dominance: 94% of all winners are Entire Homes (3,253 out of 3,457).



The Flexibility & Pricing Strategy



Short-term flexibility doubles your chance of success. Winners command a 68% price premium while maintaining 87% occupancy

Flexibility Data:

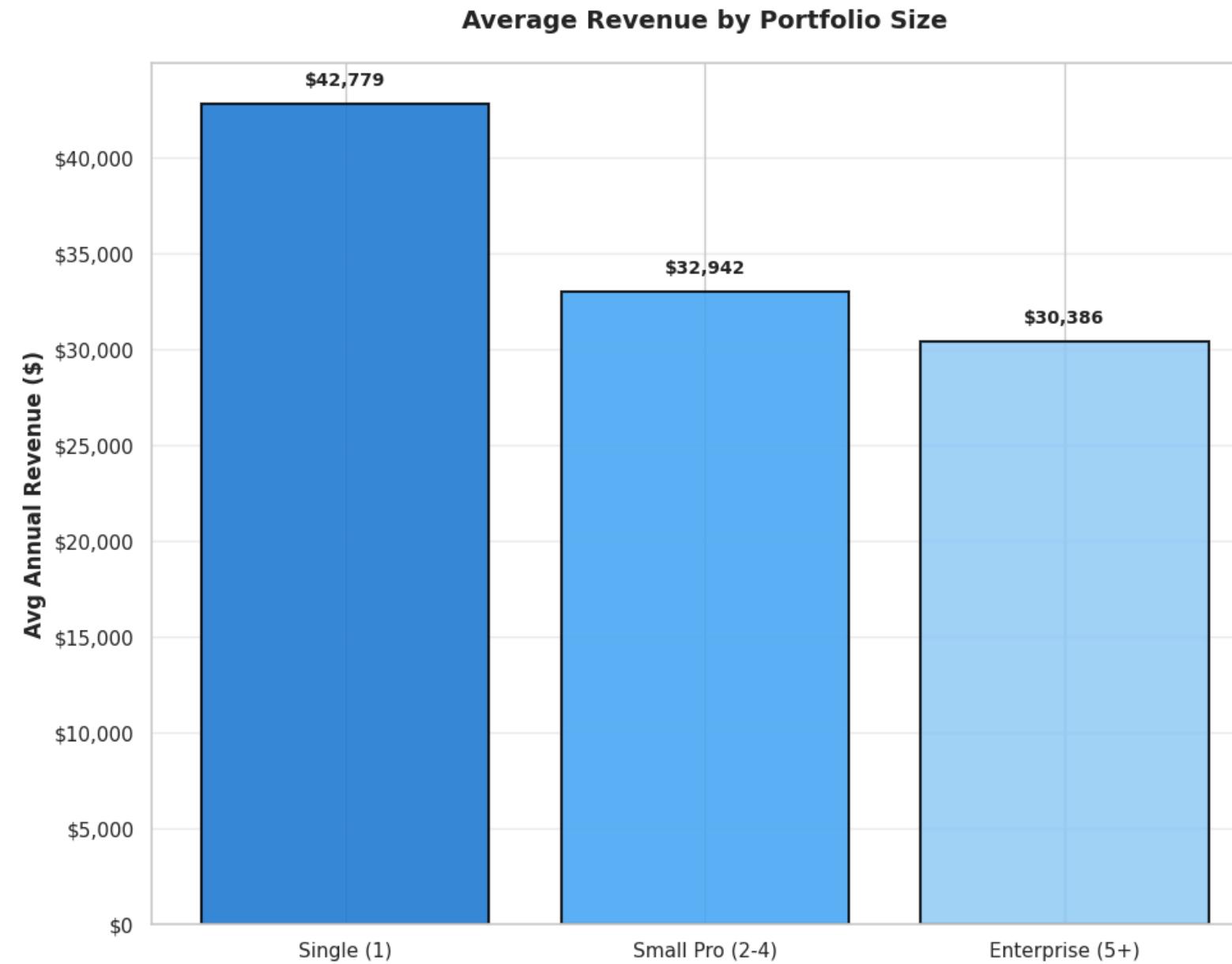
- Short-Term (1-7 days): 10.1% Win Rate
- Long-Term (30+ days): 5.6% Win Rate

Pricing Data:

- Winners charge \$445/night
- Standard \$265/night (+68% premium).



Revenue by Host Size - Small beats Big



- Single Host (1 listing): \$42,779 avg revenue

- Enterprise (5+ listings): \$30,386 avg revenue

The most profitable model is the 'Focused Owner':

- One high-quality coastal asset
- Entire Home privacy
- Short-term flexibility
- Premium positioning (\$445/night)

This beats the 'Empire Builder' strategy of mass-managing mediocre units.

PLATFORM LIVE DEMO

