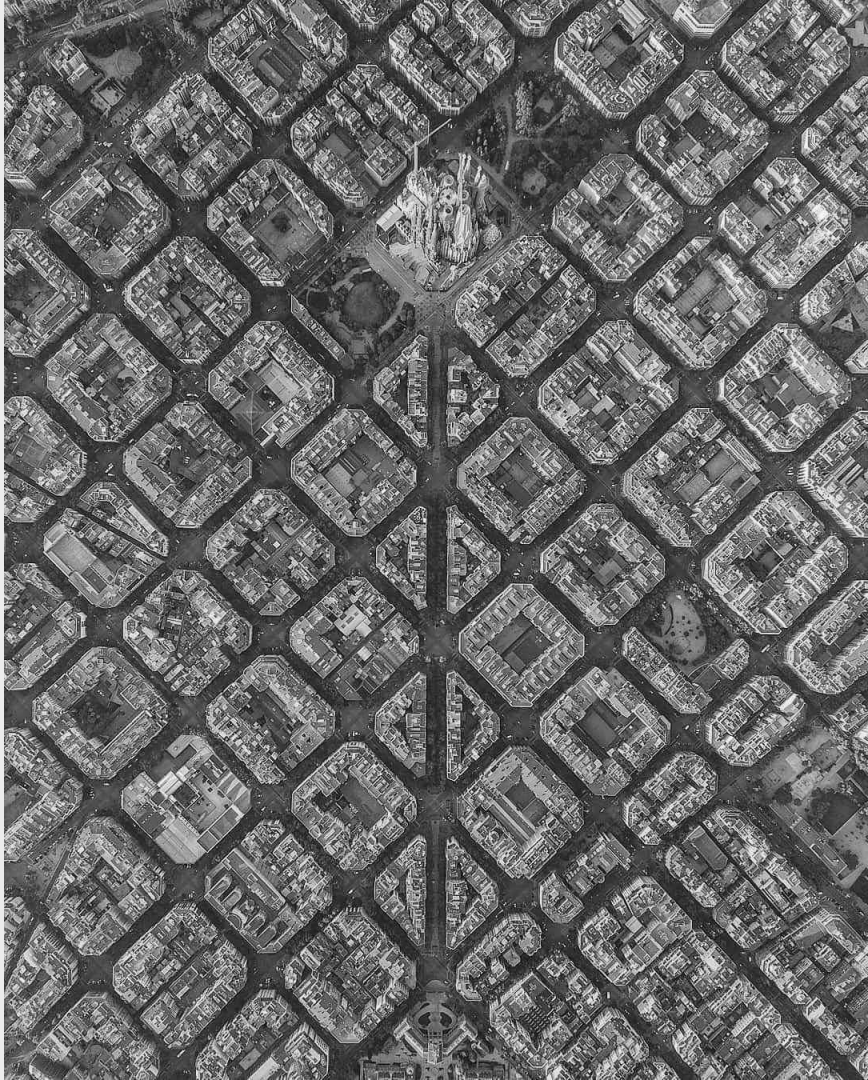
Real Estate investing. A data driven approach to buy & rent operations



27.11.21
Final Project
Ignacio Lorenzo Queralt
Data Analytics Part Time Bootcamp - Ironhack

Why are we here

Problem

Lack of structured *granular data** impedes having a data driven approach to Real Estate investing for individual investors.

Solution

Structure online available data so users can make data-driven decisions in their Real Estate investments.

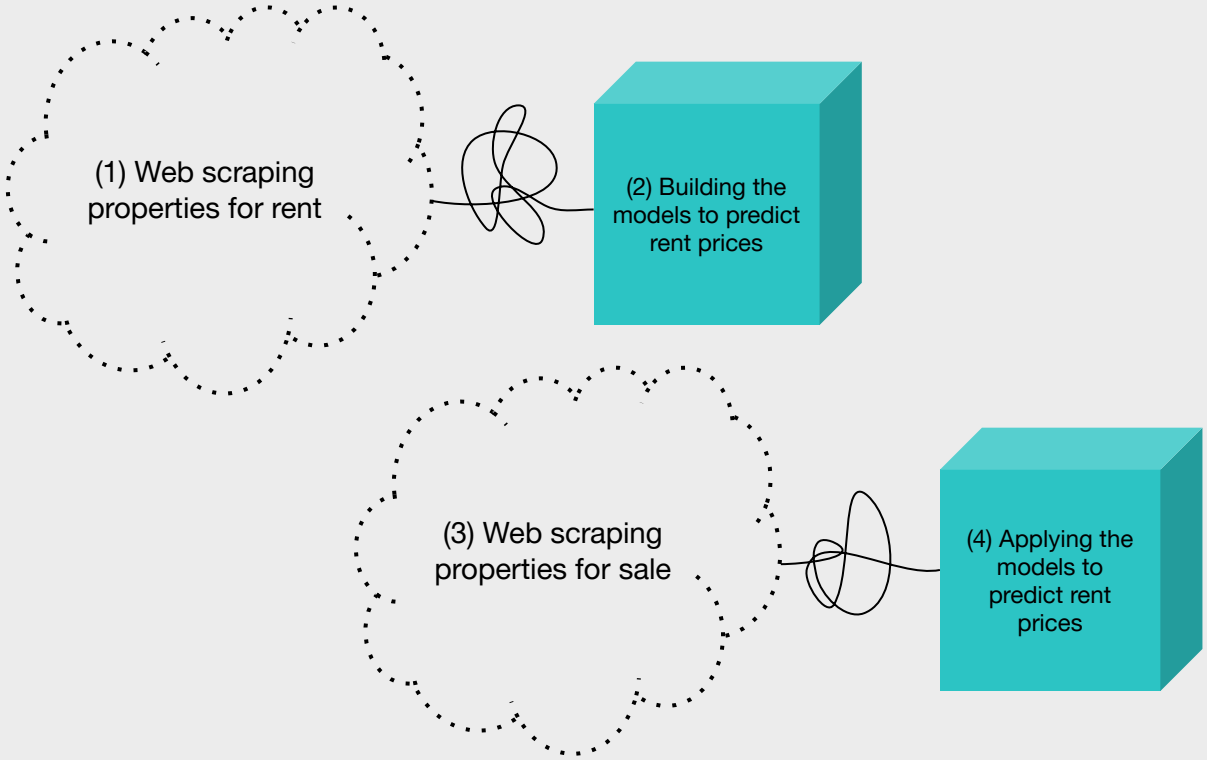
Approach

Web scraping data from RE directories to find the obtain:

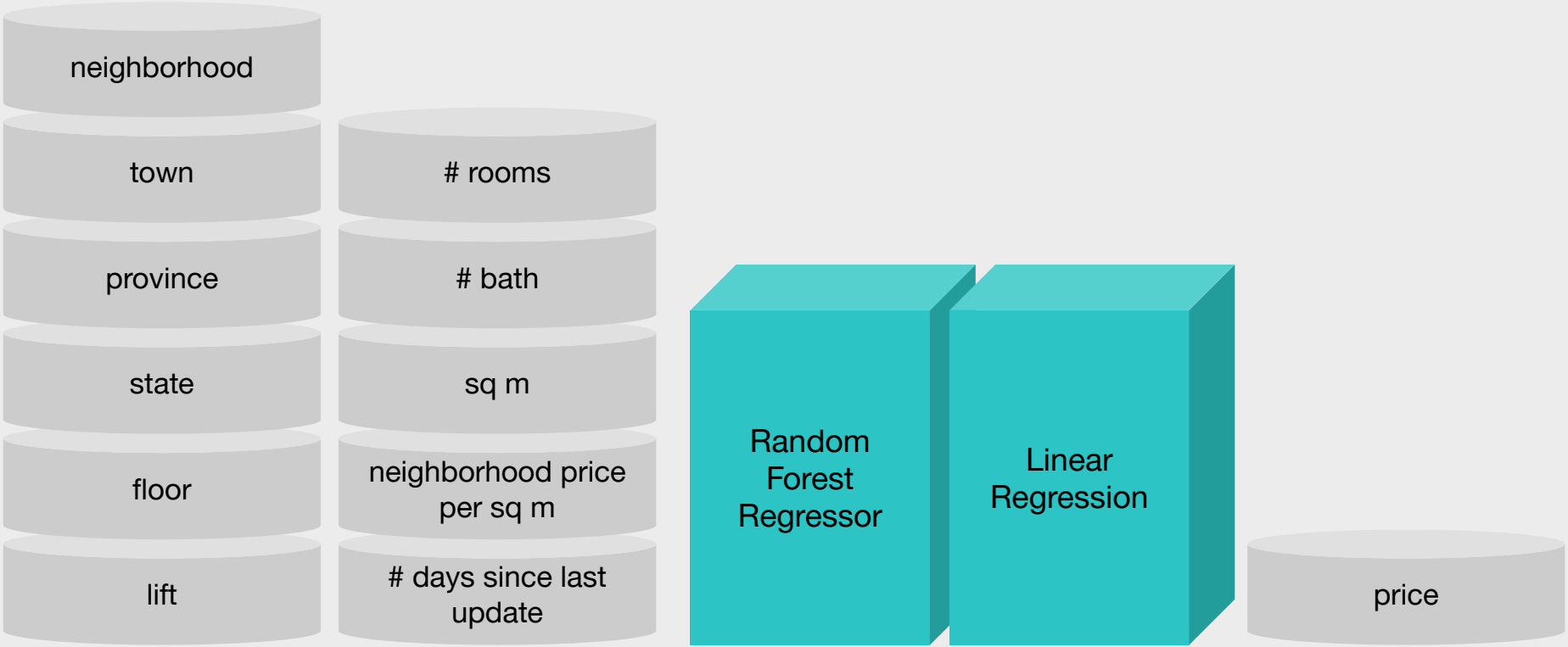
1. Predicted profitabilities for listed properties
2. Scarcity of properties for rent

So investors can decide where to invest and which kind of properties to look for.

Predicting profitabilities for properties listed for sale

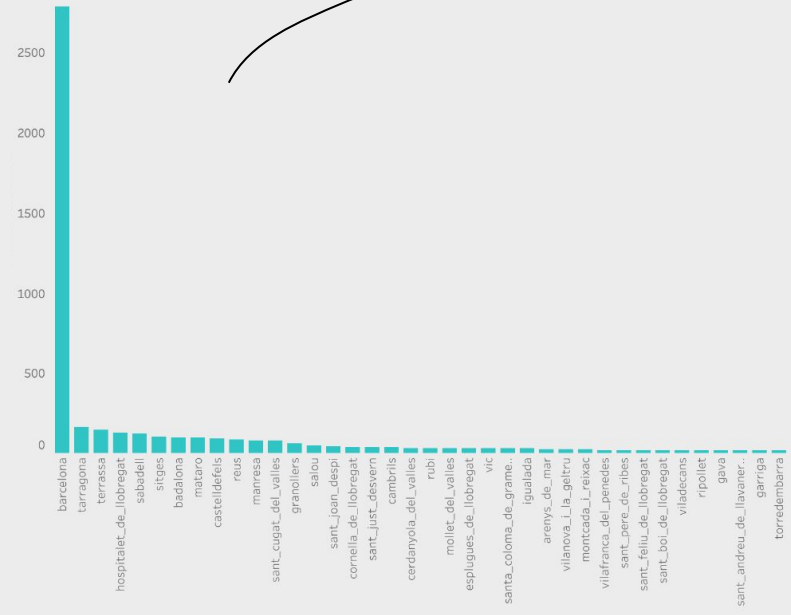


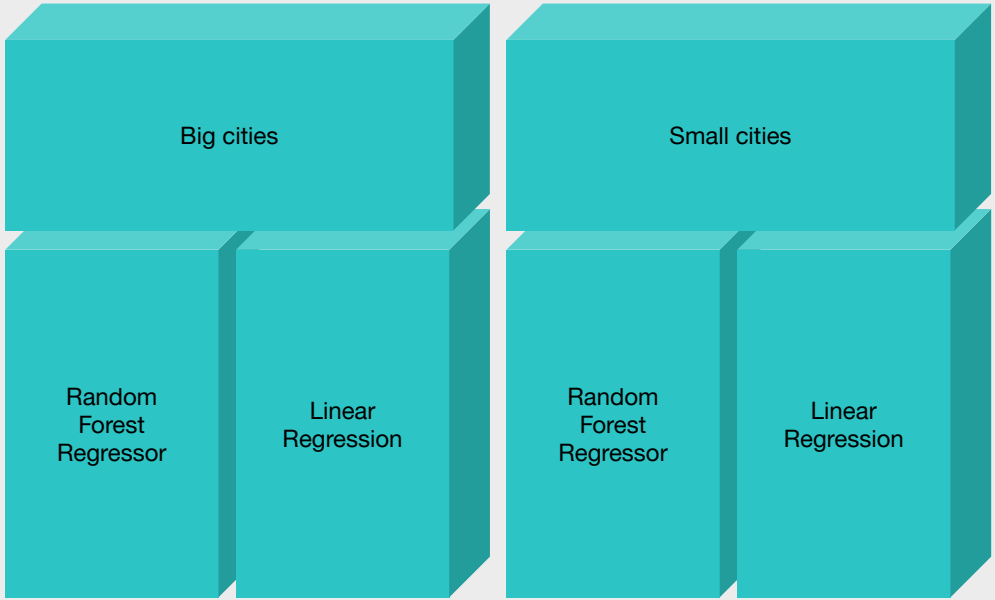
Building the model to predict rent prices



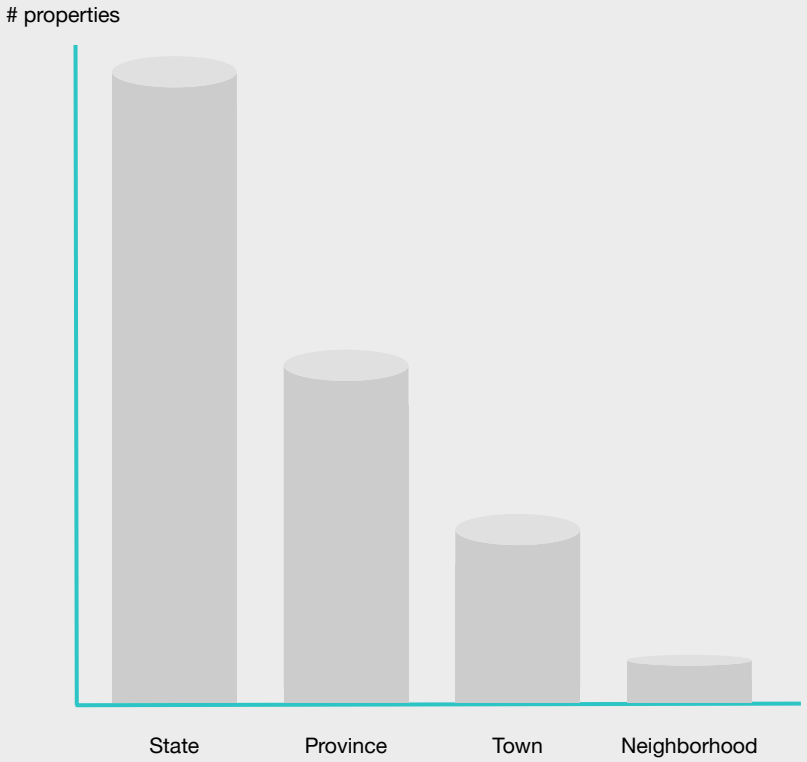
Challenges while building the model [i]

Solution offered

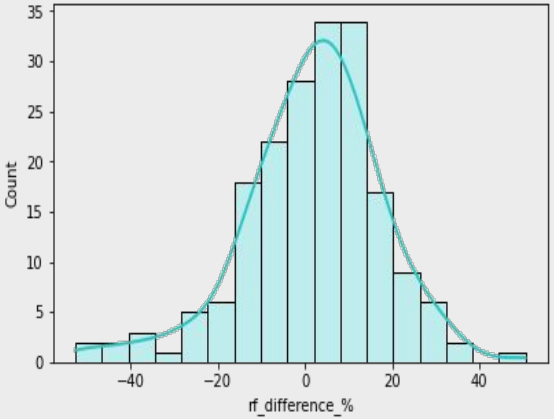




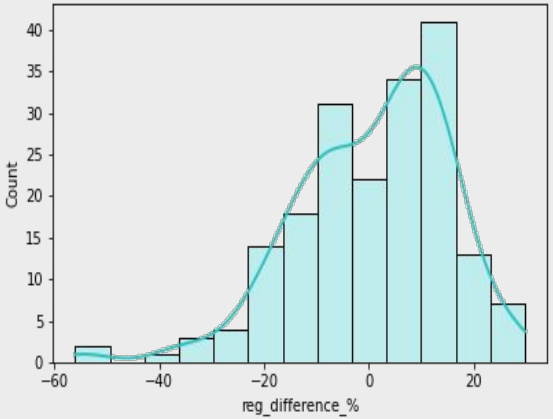
Challenges while building the model [ii]



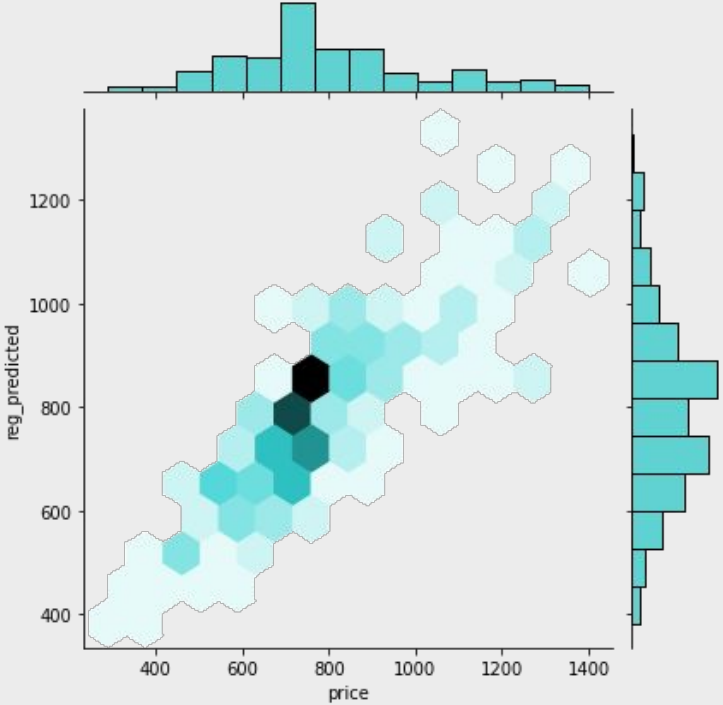
How precise are the predictions in small cities?



RandomForestRegressor()

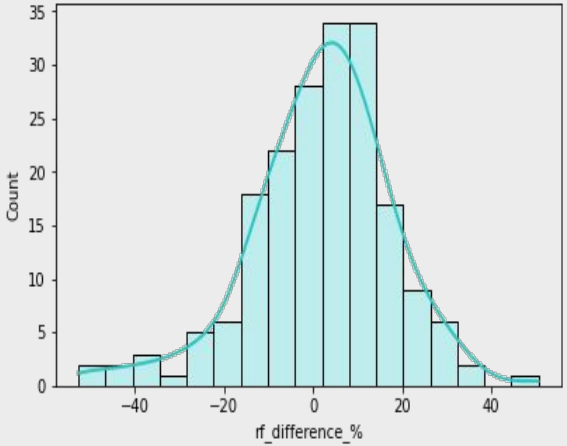


Linear Regression()

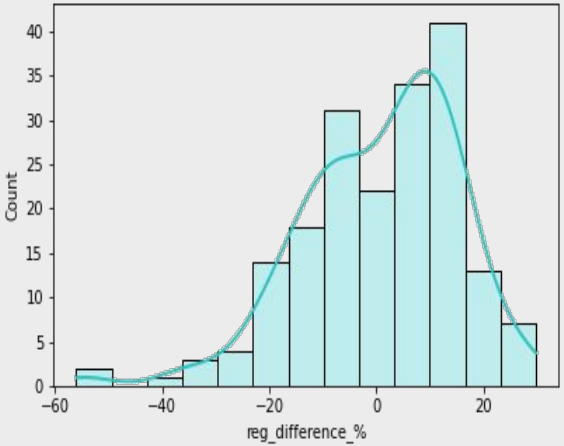


LinearRegression()

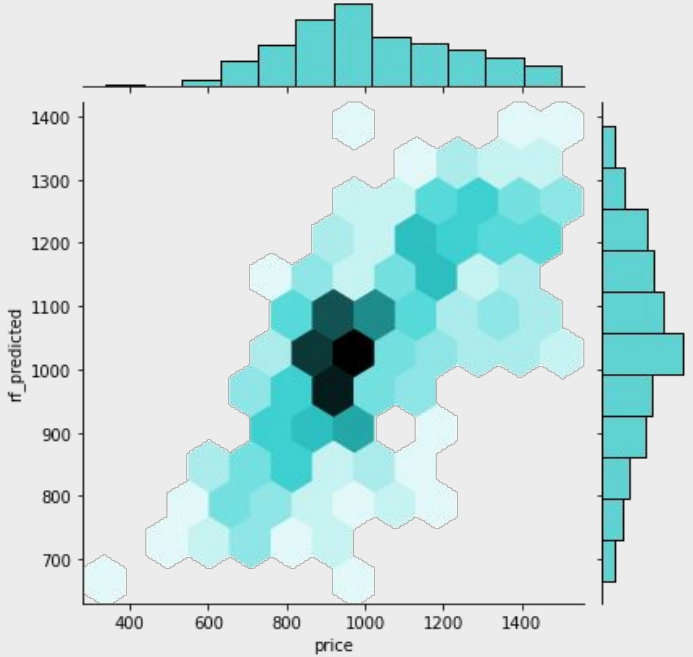
How precise are the predictions in big cities?



RandomForestRegressor()

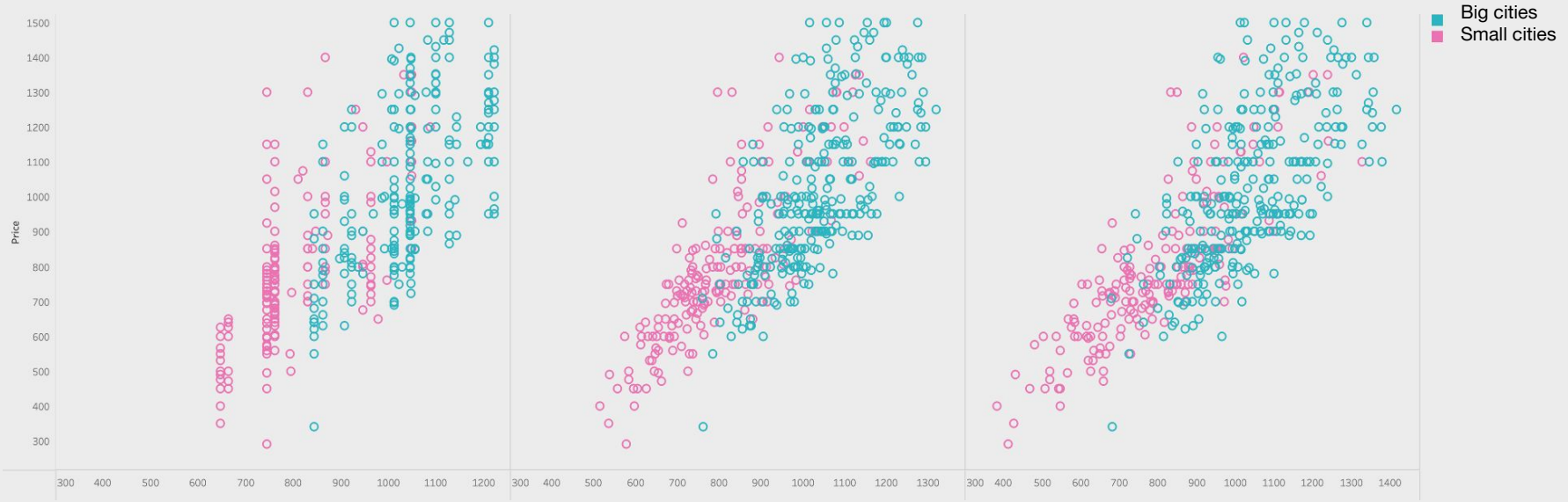


Linear Regression()



LinearRegression()

Visualizing our predictions



LinearRegression() predictions

Average of both models predictions

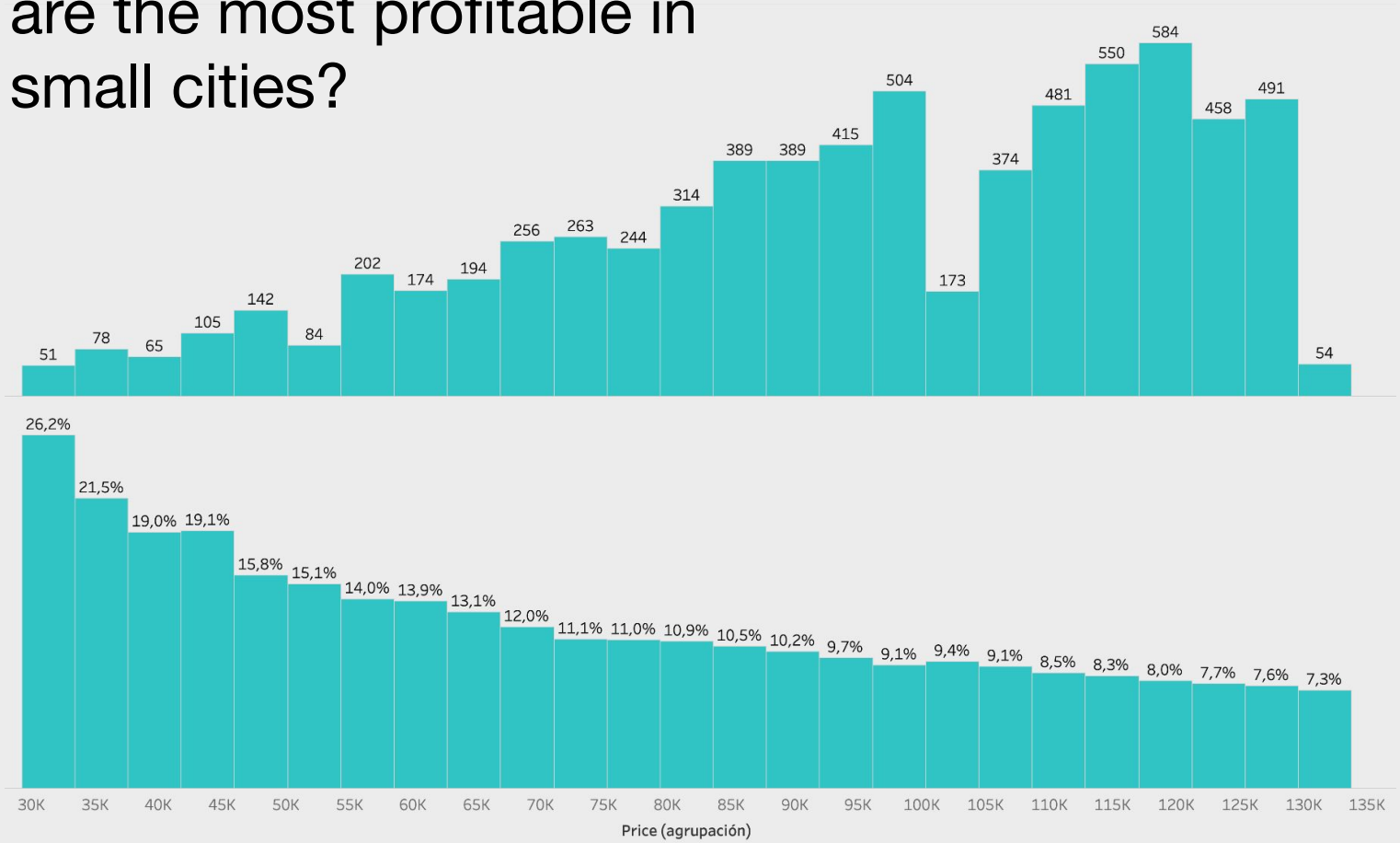
RandomForestRegressor() predictions

Best models for each city size

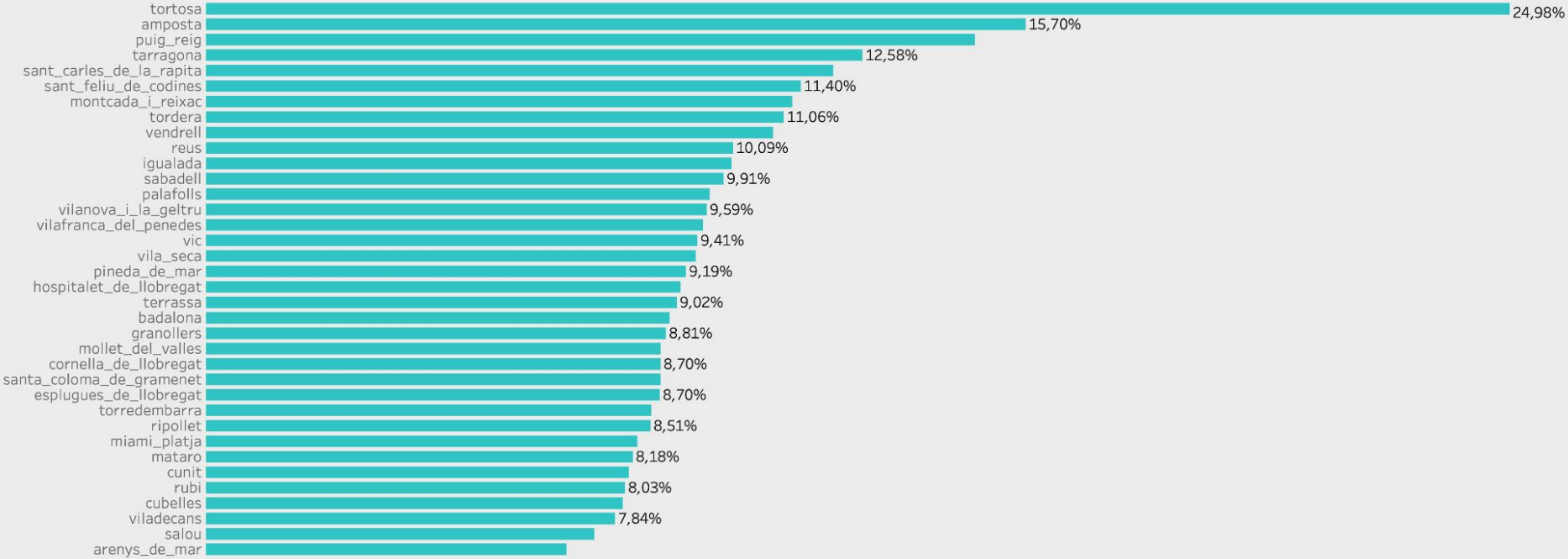
City Size	Model	r2	mean squared error	MAE / average price
Small	LinearRegression()	0.694053	119.20	13.81%
Small	RandomForestRegressor()	0.608747	134.8	12.34%
Big	LinearRegression()	0.408379	171.7	12.39%
Big	RandomForestRegressor()	0.486893	159.9	11.704%


Let’s go back to our initial goal and start analysing profitabilities

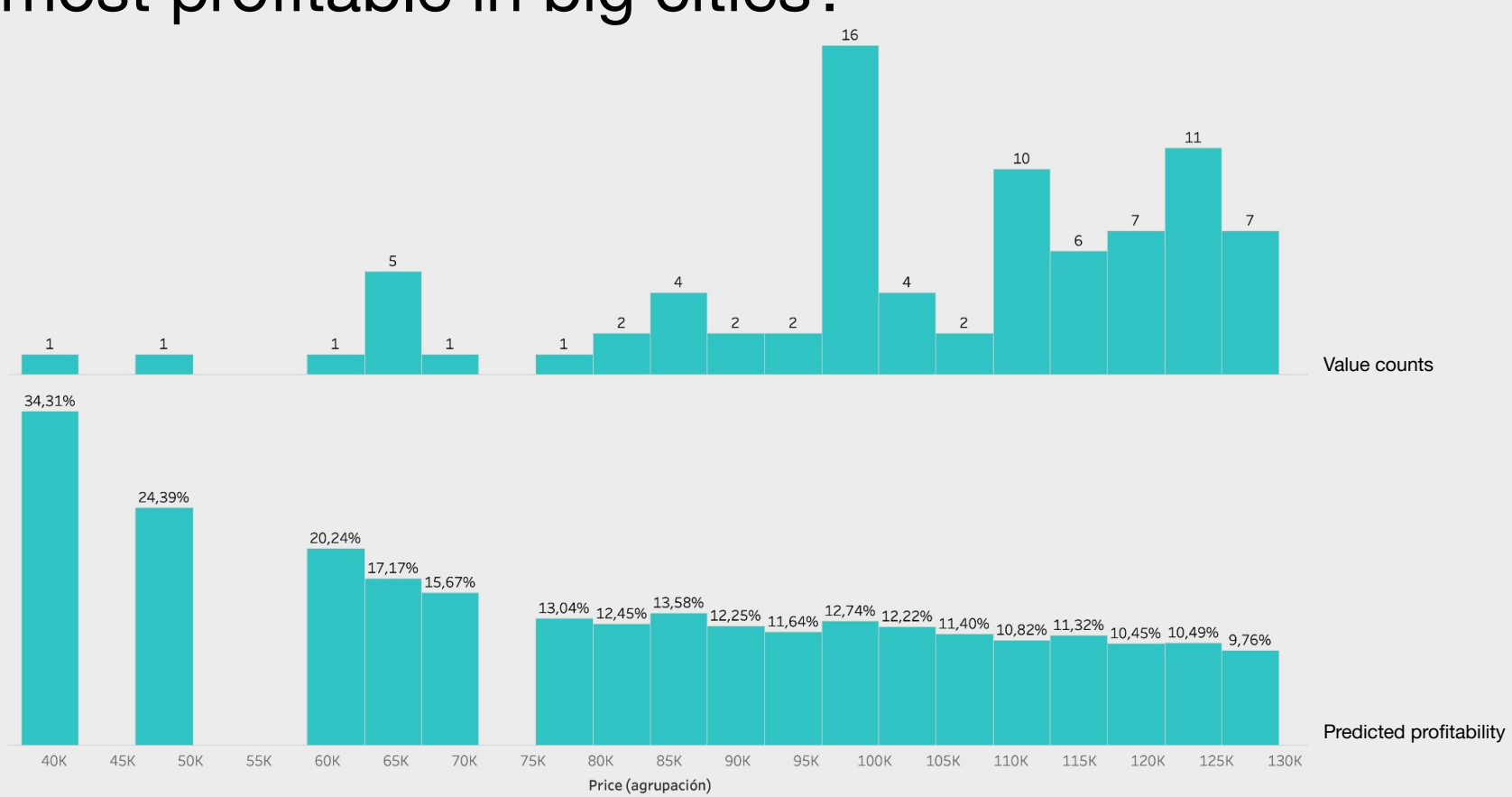
Which kind of properties are the most profitable in small cities?



What are the most profitable small cities in cataluña?

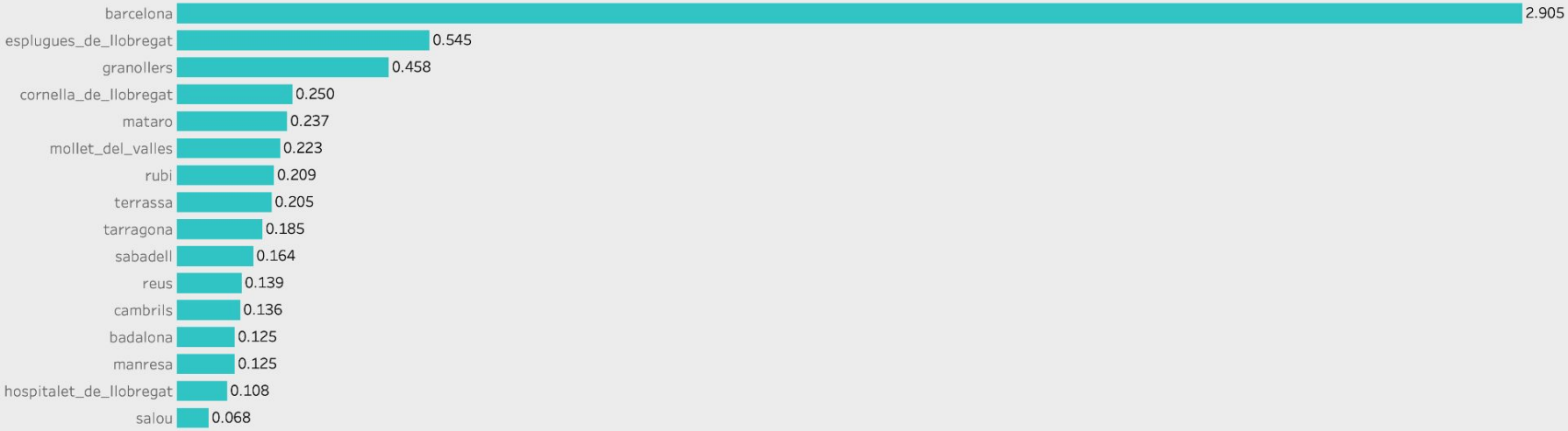


Which kind of properties are the most profitable in big cities?



Analyzing the rent density in cataluña

Rent density ratio: Properties for rent / Properties for sale x city




Investment thesis for individual investors with
a ticket under €130k

Search for **properties under 75k**

Prioritize small cities with a low rent density ratio

What happens now?

These will be my next steps:

1. Testing the model for other states
2. Make it user friendly via Streamlit
3. Gather more features for the model
4. Add Google Search trends data to detect towns with raising popularity

THE END.

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I will be forever thankful!

Reach out for any questions: i.lorenzoqueralt@gmail.com