What determines HOAS rents?

February 19, 2025

1 Introduction

Inspired by the discussion in the telegram group "Kannelmäki Hoas". The goal of this paper is to quantify the rent difference between locations in apartments provided by HOAS. Another goal is to make an educated guess on the rent of the new HOAS apartments being built in Pasila. I'm mostly focusing on unfurnished studios, since I can't be bothered to write this up for every apartment type.

2 Data acquisition

The data was acquired on the 16th of february 2025 directly from the HOAS Website. The domain was scraped to provide URLs (e.g. https://hoas.fi/alueet/kannelmaki/) for all areas. Then the area URLs were scraped to obtain links for all possible properties. Finally a search across all property URLs for apartment characteristics yielded the raw dataset.

2.1 Preprocessing & Feature creation

The raw results from Hoas yielded 2476 lines of apartment types. The data had some obvious errors, like Siltakuja 2 having apartments with no rent. These were removed by clearing all types with rent = 0 or Null. After removing these entries, the final data had 2464 rows. No more manual checking was done apart from these obvious discrepancies. The second step was duplicating the lines by the count of the apartment types. The raw data contained info on all different apartment *types*, but the goal is to have one rentable *apartment* per line. This process created a data frame with 14326 rows. Three additional columns were created: The age of the building, years since last renovation and rent / m^2. The data processing is done in a notebook in this github repo, which also includes the scraped raw data.

2.2 Validation and assumptions

The latest HOAS financial statement for year 2023 gives a count for apartments at 10788, occupants at 19065 and a utilization rate of 97,4 %. With this utilization rate a plausible total occupant count would be about 19573. Table 1 shows the values for the scraped data. The apartment count differs by quite a bit, but I am willing to assume that this is a result of different categorization; HOAS might classify an apartment with multiple shared rooms as one apartment, whereas my data classifies each room as an apartment. Assuming a shared apartment has an average of three shared rooms, the total apartment count in my data would drop to around 11000. The total occupant count also seems reasonable to me considering the financial statement is a couple of years old. To me, these numbers seem reasonable but feel free to disagree with these assumptions and debug the data scraper.

	apt count	Assumed occupants per apartment	Occupant count
Studios	3776	1	3776
shared apt	4887	1	4887
2-bdrm	3976	2	7952
3-brdm	1687	2	3374
sums	14326		19989

Table 1: Occupants by apartment type at 100 % utilization in the scraped data

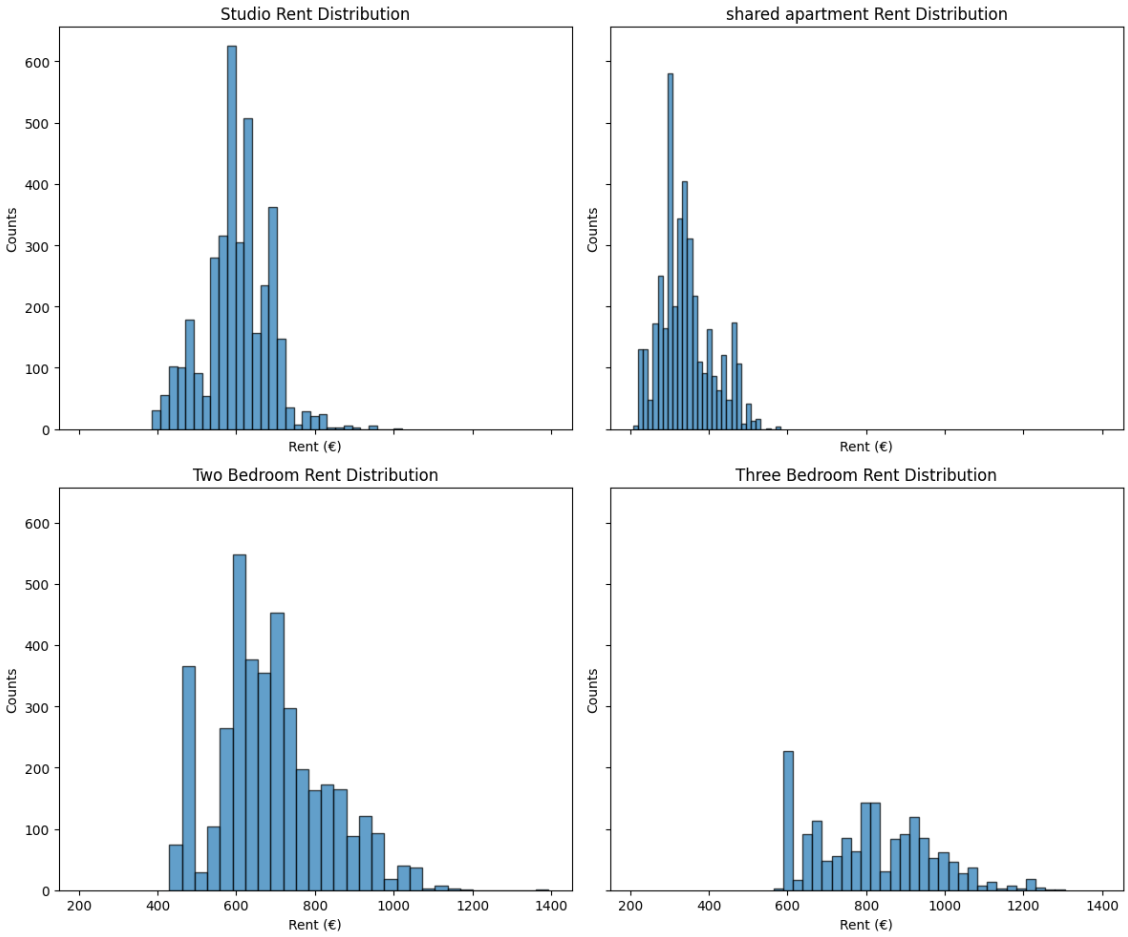

Figure 1: Rent distribution for apartment types

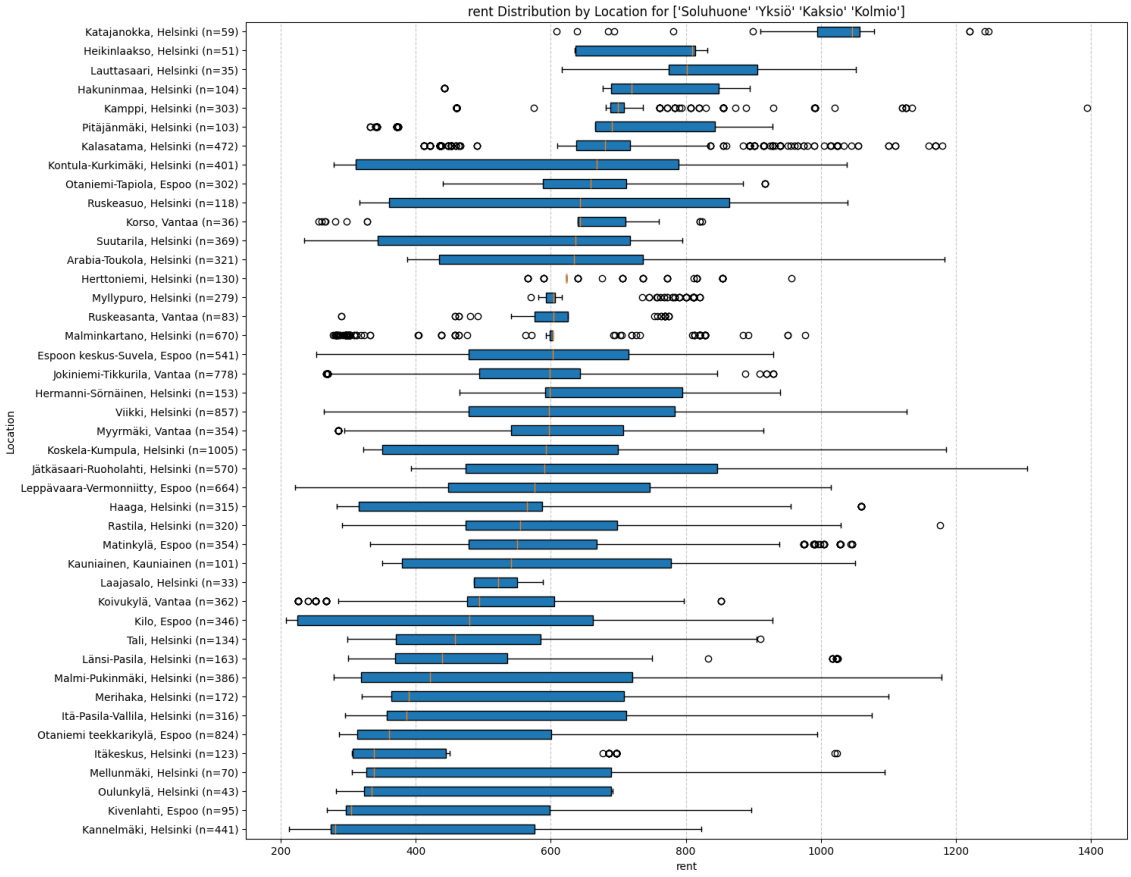

Figure 2: Box plot for rents by area for all types of unfurnished apartments

3 Rents by area for studios

Figure 4 shows the rents for studios by area as defined by HOAS. Figure 5 shows the same but in rent / square meter. Keep in mind that the prices are not necessarily the appreciation of the area, but instead could reflect the age and condition of the housing stock as well. By the median rent, Kannelmäki places roughly in the middle of all areas. The apartments in Kannelmäki are quite recently renovated (5 or 6 years ago), which probably skews the rents higher. Some other considerations include:

- Apartments may include (for instance in Rastila) a loft which increases the usable space but not necessarily the listed size
- Apartments may have personal Saunas or balconies, which is data that wasn't easy to parse from the listings
- Some apartments include water/electricity in the bill, cutting the true monthly costs by **quite** a bit

I also fitted a linear regression model with the features of location, years since renovation and construction year. Other features like sauna, elevator and rating were also tested but showed such a large correlation with other variables that the results would have been worthless. Figure 3 shows the coefficients and their relative importance in predicting rents with this fit. This plot should still be taken with a large grain of salt since years_since_reno and building_age still have VIF above 5 (6.3, 6.6).

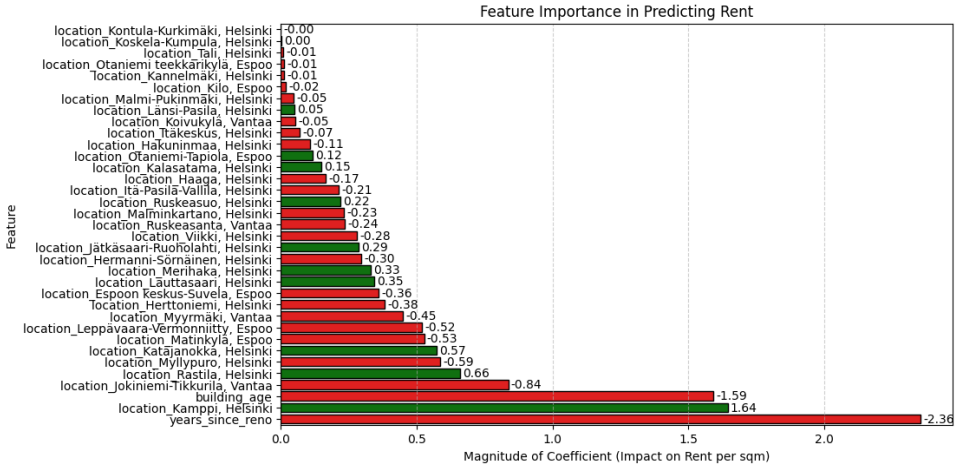

Figure 3: Most imporant features in predicting rent, red bars indicate a decrease and green bars an increase

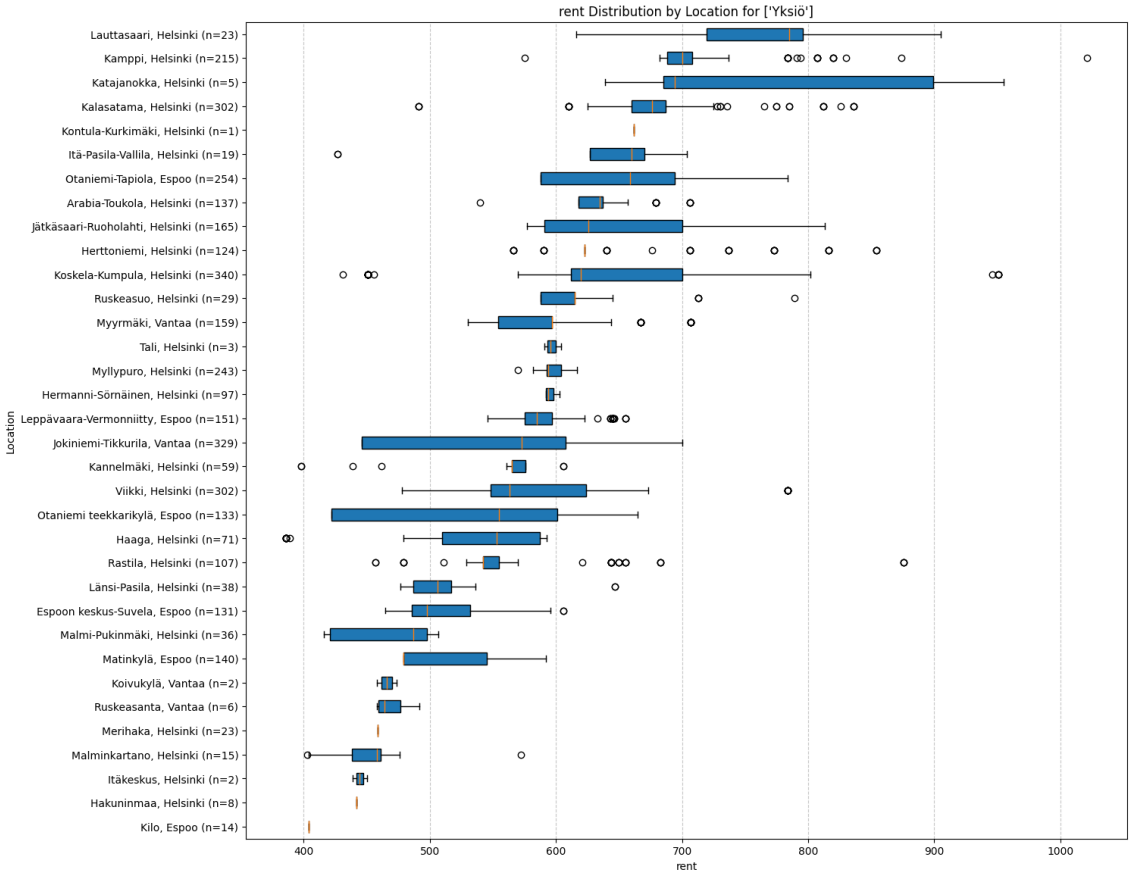

Figure 4: Box plot for rents of all studios by areas

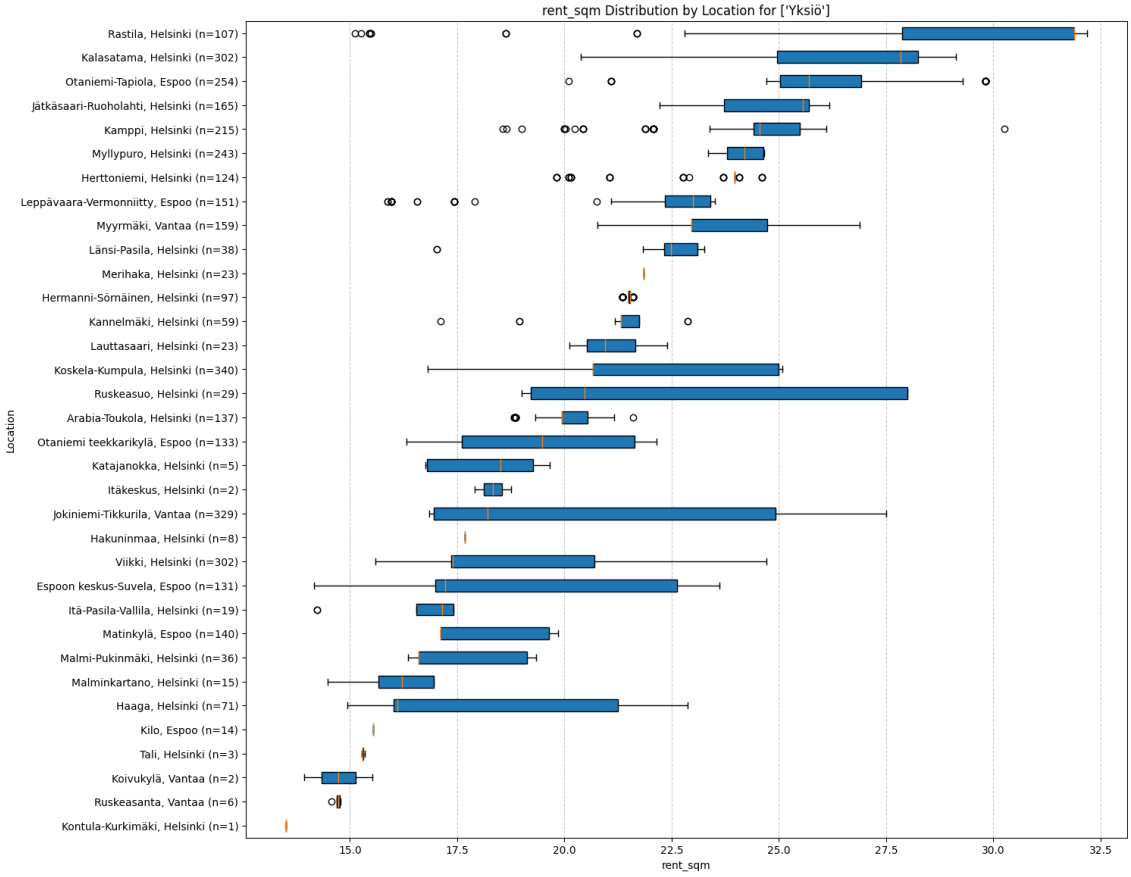

Figure 5: Box plot for rents/sqm of all studios by areas

4 How much cheaper is HOAS than the private market?

Data obtained from Vuokraovi.com lists the prices per square meter for studios in Helsinki in different postal codes. I'll assume that the rents have not risen since 2023 (unlikely) to give the private market a bit of an edge in the comparison. This comparison is concentrated on the areas with the largest number of HOAS studios in Helsinki (Koskela-Kumpula, Viikki, Kalasatama, Myllypuro, Kamppi) as well as Länsi-Pasila and Kannelmäki. I selected the lower average on the private market when the corresponding HOAS area spans multiple postal codes.

Area	Hoas Average (€/sqm)	private average (€/sqm)	Hoas Cheaper by (%)
Koskela-Kumpula	22.0	27.1	19
Viikki	19.0	24.4	21
Kalasatama	26.4	30.3	13
Myllypuro	24.1	24.2	0
Kamppi	24.5	26.6	6
Länsi-Pasila	22.3	28.4	21
Kannelmäki	21.4	23.3	8

Table 2: rent/sqm comparison HOAS and private market

You shouldn't draw sweeping conclusions from this since there are a LOT of factors to the price of an apartment. The data from the private market is also out of date, but HOAS is still noticeably cheaper. The outlier of Myllypuro could be explained by the newer HOAS Buildings there when compared to the older private market housing stock. A quick google shows that quite a bit of the private market in Myllypuro are apartments built in the 60s.

5 An educated guess on the prices in Pasila

I fitted a linear regression model (MSE: 2.62, $R^2 = 0.82$.) to predict the rent for new HOAS apartments in Pasila. (see github). The predicted rent per square meter for a brand new studio in Länsi-Pasila came out to 27.64 € / m^2 which would come out to 636 €/month for a standard studio. I personally think this guess is too optimistic, because this is the largest HOAS project yet with large communal areas. Both of these might drag the price a bit higher. Furthermore, the current HOAS stock in Länsi-Helsinki is located further from the train station so might be a bit cheaper, leading to a bad estimation of the true value of the area.