

House Rental Pricing across various cities in India

This project aims to conduct a comprehensive analysis of rental prices in residential properties, by employing data analytics techniques. The project seeks to generate insights that can inform landlords, property managers, and potential tenants about pricing dynamics in the rental market.

Objective

Analyze rental price trends in the housing market across various cities in India by providing insights into the dynamics of the rental market.

Dataset Overview

The dataset has 10 feature columns namely:

house_type: Title of the property.

locality: Locality of the property.

city: City to which the property belongs.

area: Property area in sq ft.

beds: Number of bedrooms in the property.

bathrooms: Number of bathrooms in the property.

balconies: Number of balconies in the property.

furnishing: Furnishing status of the property.

area_rate: Property area rate in Indian Rupees (₹)/sqft.

rent: Monthly property rent in Indian Rupees (₹).

Platforms Used

- * SQL

- * Tableau

Max Area By Each City

```
SELECT
    MAX(area) AS Area,
    city,
    RANK() OVER (ORDER BY MAX(area) DESC) AS position
FROM
    rental_prices
GROUP BY
    city
ORDER BY
    Area DESC;
```

Area	city	position	
70000	Bangalore	1	
32400	New Delhi	2	
11001	Mumbai	3	
6500	Nagpur	4	
6000	Pune	5	

Available Rentals by each city

```
SELECT house_type, count(house_type) AS Count from rental_prices
GROUP BY house_type
ORDER BY Count DESC;
```

city	count(house_type)
Mumbai	1496
Pune	1554
Nagpur	498
Bangalore	1576
New Delhi	1568

Types of houses by locality, count

```
WITH total AS (
  SELECT
    house_type,
    city,
    locality,
    COUNT(house_type) AS Count
  FROM
    rental_prices
  GROUP BY
    house_type, city, locality
)
SELECT
  house_type,
  city,
```

```

    locality,
    Count,
    RANK() OVER (PARTITION BY house_type,city,locality ORDER BY Count
DESC ) AS Position
FROM
    total

ORDER BY
    city,
    Count DESC;

```

house_type	city	locality	Count	Position
3 BHK Flat	Bangalore	Whitefield	24	1
3 BHK Flat	Bangalore	Sarjapur Road	20	1
3 BHK Flat	Bangalore	Hebbal	19	1
2 BHK Flat	Bangalore	Whitefield	15	1
2 BHK Flat	Bangalore	Marathahalli	11	1
3 BHK Flat	Bangalore	Yelahanka	11	1
1 BHK Flat	Bangalore	Whitefield	10	1
2 BHK Flat	Bangalore	Sarjapur Road	10	1
2 BHK Flat	Bangalore	Devanahalli	9	1
4 BHK Villa	Bangalore	Whitefield	9	1
4 BHK Flat	Bangalore	Whitefield	8	1
2 BHK Flat	Bangalore	Thanisandra	8	1
3 BHK Flat	Bangalore	Bannerghatt...	7	1
2 BHK Flat	Bangalore	Ramamurthy...	7	1
3 BHK Flat	Bangalore	HSR Layout	7	1
2 BHK Flat	Bangalore	Thanisandra	6	1

Available rental types by city

```

SELECT house_type,city, count(house_type) AS Count from rental_prices
GROUP BY house_type, city
ORDER BY Count DESC;

```

house_type	city	Count
2 BHK Flat	Pune	636
2 BHK Flat	Mumbai	509
2 BHK Flat	New Delhi	420
3 BHK Flat	Bangalore	413
1 BHK Flat	Mumbai	382
3 BHK Flat	Mumbai	382
2 BHK Flat	Bangalore	374
3 BHK Flat	New Delhi	372
1 BHK Flat	Pune	330
3 BHK Flat	Pune	260
1 BHK Flat	New Delhi	254

Rank by beds,baths,balconies

```

SELECT
    house_type,
    city,
    beds,

```

```

    bathrooms,
    balconies,
    AVG(rent) AS average_rent,
    RANK() OVER (ORDER BY AVG(rent) DESC) AS rent_rank
FROM
    rental_prices
GROUP BY
    city,house_type, beds, bathrooms, balconies
ORDER BY
    average_rent desc;

```

house_type	city	beds	bathrooms	balconies	average_rent	rent_rank
5 BHK Flat	Mumbai	5	6	2	1450000.0000	1
5 BHK Villa	New Delhi	5	5	5	1000000.0000	2
4 BHK Flat	Mumbai	4	3	3	1000000.0000	2
1 BHK Villa	New Delhi	1	3	0	1000000.0000	2
5 BHK Flat	Mumbai	5	5	0	927500.0000	5
5 BHK Flat	Mumbai	5	8	2	750000.0000	6
> 10 BHK Vi	New Delhi	10	6	3	750000.0000	6
5 BHK Flat	Mumbai	5	6	0	722500.0000	8
5 BHK Flat	Mumbai	5	7	0	700000.0000	9
4 BHK Flat	Mumbai	4	4	5	700000.0000	9
5 BHK Flat	Mumbai	5	5	2	675000.0000	11

Rental type with highest rent

```

SELECT
    house_type,beds,
    AVG(rent) AS average_rent
FROM
    rental_prices
GROUP BY
    house_type,beds
ORDER BY
    average_rent DESC
LIMIT 1;

```

house_type	beds	average_rent
> 10 BHK Vi	10	750000.0000

Max rent in that house type

```

WITH MaxRent AS (
    SELECT
        house_type,
        MAX(rent) AS Maximum
    FROM

```

```

        rental_prices
    GROUP BY
        city,house_type
)

SELECT
    r.house_type,
    r.rent,
    r.city
FROM
    rental_prices r
JOIN
    MaxRent m ON r.house_type = m.house_type
WHERE
    r.rent >= m.Maximum
order by rent desc;

```

house_type	rent	city
5 BHK Flat	2700000	Mumbai
5 BHK Flat	2700000	Mumbai
5 BHK Flat	2700000	Mumbai
5 BHK Flat	2700000	Mumbai
5 BHK Flat	2700000	Mumbai
4 BHK Flat	1600000	Mumbai
4 BHK Flat	1600000	Mumbai
4 BHK Flat	1600000	Mumbai
4 BHK Flat	1600000	Mumbai
2 BHK House	1500000	Mumbai
2 BHK House	1500000	Mumbai
2 BHK House	1500000	Mumbai
2 BHK House	1500000	Mumbai
5 BHK Flat	1500000	Mumbai
2 BHK House	1500000	Mumbai
5 BHK Flat	1500000	Mumbai

Furnishing vs rent

```

SELECT furnishing, MIN(rent) AS minimum_rent
FROM rental_prices
GROUP BY furnishing
HAVING MIN(rent) >= (SELECT MIN(rent) FROM rental_prices);

```

furnishing	minimum_rent
Semi-Furnished	3500
Unfurnished	2500
Furnished	2000

Beds, Bathrooms, rent

```
select house_type,beds,bathrooms,city, rent from rental_prices
where beds>3
order by beds desc,bathrooms desc,rent desc;
```

house_type	beds	bathrooms	city	rent
10 BHK Hous	10	10	New Delhi	280000
> 10 BHK Ho	10	9	New Delhi	130000
> 10 BHK Ho	10	7	Pune	40000
> 10 BHK Vi	10	6	New Delhi	750000
> 10 BHK Fl	10	2	Bangalore	18000
> 10 BHK Fl	10	0	Bangalore	180000
8 BHK Villa	8	8	Bangalore	430000
8 BHK Flat	8	8	New Delhi	350000
8 BHK Villa	8	8	Bangalore	130000
8 BHK House	8	8	Bangalore	85000
7 BHK Villa	7	8	Pune	430000
7 BHK House	7	8	New Delhi	300000
7 BHK House	7	6	Nagpur	75000
7 BHK House	7	2	New Delhi	35000
6 BHK Villa	6	6	Bangalore	70000
6 BHK House	6	5	Bangalore	150000
6 BHK House	6	5	New Delhi	35000

Which cities have the highest and lowest average rental prices?

```
select city, avg(rent) from rental_prices
group by city
having avg(rent)<= (
select avg(rent) as rent from rental_prices)
order by avg(rent) desc;
```

city	avg(rent)
New Delhi	40067.3846
Pune	31686.0032
Nagpur	18199.9116

```
select city, avg(rent) from rental_prices
group by city
```

```
having avg(rent)>= (
select avg(rent) as rent from rental_prices)
order by avg(rent) desc;
```

city	avg(rent)
Mumbai	103794.5307
Bangalore	55984.0273

How does the average rent differ by locality within each city

```
select city,locality, avg(rent) from rental_prices
group by city,locality
having avg(rent)>= (
select avg(rent) as rent from rental_prices)
order by city ,avg(rent) desc;
```

city	locality	avg(rent)
Bangalore	Yellappa Chetty Layout	850000.0000
Bangalore	Nandi Hills	465000.0000
Bangalore	Sadahalli Main Road	430000.0000
Bangalore	Lavelle Road	350000.0000
Bangalore	IVC Road	320000.0000
Bangalore	Rajanukunte	300000.0000
Bangalore	Block 3rd Koramangala	300000.0000
Bangalore	Hunasamaranahalli	293000.0000
Bangalore	Ganga Nagar Layout	260000.0000
Bangalore	Adarsh Palm Retreat	240000.0000
Bangalore	Sindhi Colony	240000.0000
Bangalore	Maruthi Nagar Yelaha...	220000.0000
Bangalore	Ashok Nagar	200000.0000
Bangalore	Rajaji Nagar Block 1	191000.0000
Bangalore	Kariyamma Aagrahara	190000.0000
Bangalore	Sir M Visvesvaraya In...	190000.0000
Bangalore	Chikkaubbi Villae	190000.0000

What is the correlation between area rate (₹/sqft) and average rent across cities?

```
SELECT city,
        AVG(rent) AS avg_rent,
        AVG(area_rate) AS avg_area_rate
FROM rental_prices
GROUP BY city
order by avg_rent desc;
```

city	avg_rent	avg_area_rate
Mumbai	103794.5307	95.3810
Bangalore	55984.0273	36.1307
New Delhi	40067.3846	40.2494
Pune	31686.0032	30.2819
Nagpur	18199.9116	17.1185

Area rent vs Rent more than Avg Rent

```
SELECT area_rate, AVG(rent) AS avg_rent, city
FROM rental_prices
GROUP BY city, area_rate
HAVING AVG(rent) >= (SELECT AVG(rent) FROM rental_prices);
```

area_rate	avg_rent	city
134	118125.0000	Mumbai
82	76875.0000	Mumbai
74	200000.0000	New Delhi
48	62999.9333	Pune
40	58238.1714	Bangalore
39	76709.6774	Bangalore
184	125000.0000	Mumbai
222	245000.0000	Mumbai
159	286666.6667	Mumbai
92	95416.6667	Mumbai
37	58216.6667	Bangalore
100	92879.9800	Mumbai
83	145000.0000	Bangalore
38	67304.3478	Bangalore
68	58235.2941	Mumbai
57	117000.0000	Bangalore
142	205000.0000	Mumbai
112	120222.2222	Mumbai
67	133333.3333	Bangalore

Average Rent by Number of Bedrooms and City

```
SELECT city, locality,
       beds,
       AVG(rent) AS avg_rent
FROM rental_prices
GROUP BY city, locality, beds
ORDER BY city, avg_rent desc, beds desc;
```


city	locality	beds	avg_rent
Bangalore	Yellappa Chetty Layout	5	850000.0000
Bangalore	Devanahalli	5	700000.0000
Bangalore	Yelahanka	5	590000.0000
Bangalore	Hunasamaranahalli	5	550000.0000
Bangalore	Sanjayanagara	5	500000.0000
Bangalore	Nandi Hills	4	465000.0000
Bangalore	Sadahalli Main Road	8	430000.0000
Bangalore	Richmond Town	4	400000.0000
Bangalore	Lavelle Road	4	350000.0000
Bangalore	Kempapura	4	350000.0000
Bangalore	Judicial Layout	3	350000.0000
Bangalore	Vasanth Nagar	3	350000.0000
Bangalore	Whitefield	5	326666.6667
Bangalore	IVC Road	4	320000.0000
Bangalore	Rajanukunte	4	300000.0000
Bangalore	Block 3rd Koramangala	4	300000.0000
Bangalore	Gunjur	5	280000.0000
Bangalore	Bileshivale	2	280000.0000
Bangalore	Ganga Nagar Layout	1	260000.0000

Average Rent by Furnishing Type

```
SELECT furnishing,
       AVG(rent) AS avg_rent
FROM rental_prices
GROUP BY furnishing
ORDER BY avg_rent DESC;
```

furnishing	avg_rent
Furnished	71740.2395
Semi-Furnished	57569.6074
Unfurnished	40255.6895

```
SELECT furnishing,
       Max(rent) AS max_rent
FROM rental_prices
GROUP BY furnishing
ORDER BY max_rent DESC;
```

furnishing	max_rent
Furnished	2700000
Semi-Furnished	1600000
Unfurnished	1450000

Average Rent by Number of Bathrooms and Balconies

```

SELECT city,
bathrooms,
      balconies,
      AVG(rent) AS avg_rent
FROM rental_prices
GROUP BY city,bathrooms, balconies
ORDER BY avg_rent DESC;

```

city	bathrooms	balconies	avg_rent
Mumbai	6	2	1450000.0000
Mumbai	8	2	750000.0000
New Delhi	6	3	750000.0000
Mumbai	7	0	700000.0000
Mumbai	5	0	586363.6364
Mumbai	5	2	538333.3333
Bangalore	7	0	530000.0000
Mumbai	6	0	505555.5556
Bangalore	8	3	430000.0000
Pune	8	5	430000.0000
Mumbai	4	5	420000.0000
Bangalore	7	5	415000.0000
Bangalore	5	10	400000.0000
Mumbai	5	3	393333.3333
Mumbai	4	4	352500.0000
New Delhi	5	5	352000.0000
New Delhi	8	7	350000.0000

Properties with Multiple Amenities and Higher Area Rates

```

SELECT COUNT(*) AS num_properties,
      AVG(area_rate) AS avg_area_rate,
      SUM(CASE WHEN bathrooms >= 2 THEN 1 ELSE 0 END) AS
properties_with_2_or_more_bathrooms,
      SUM(CASE WHEN balconies >= 1 THEN 1 ELSE 0 END) AS
properties_with_balconies
FROM rental_prices
WHERE area_rate > (SELECT AVG(area_rate) FROM rental_prices);

```

num_properties	avg_area_rate	properties_with_2_or_more_bathro...	properties_with_balconies
1953	100.7501	1565	580

Average Rent Characteristics

```

WITH Rent_Characteristics AS (
    SELECT city,
           locality,
           rent,
           area_rate,
           beds,
           bathrooms,
           balconies,
           furnishing,
           ROW_NUMBER() OVER (PARTITION BY city ORDER BY rent DESC) AS
rent_rank_high,
           ROW_NUMBER() OVER (PARTITION BY city ORDER BY rent ASC) AS
rent_rank_low
    FROM rental_prices
)

```

```

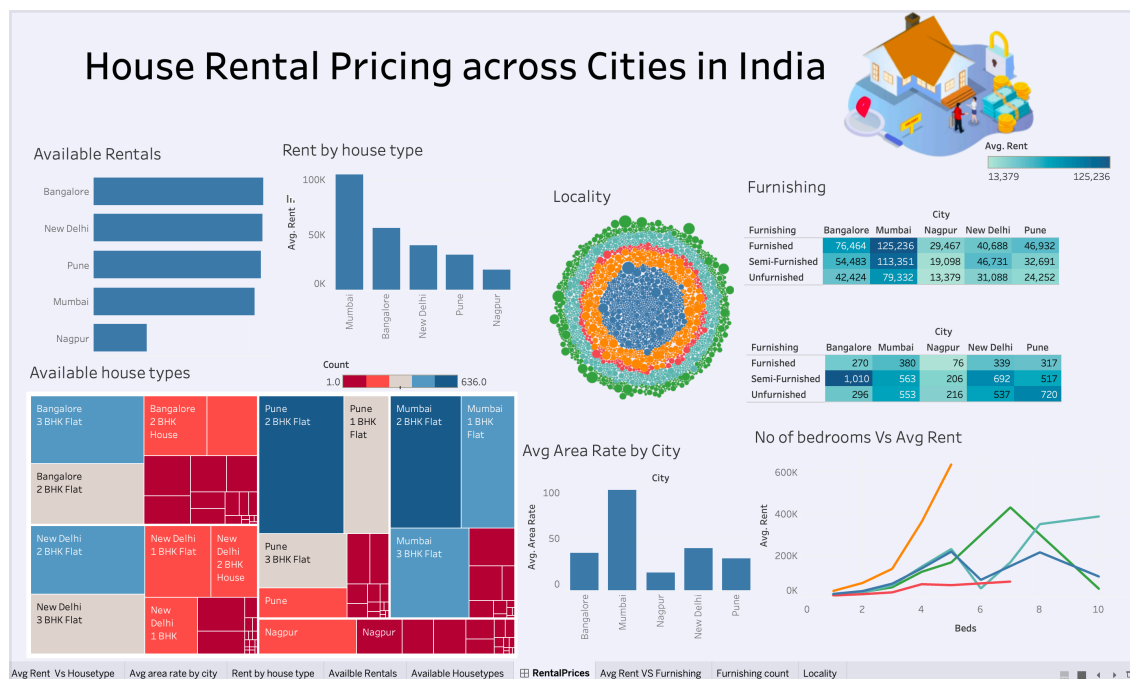
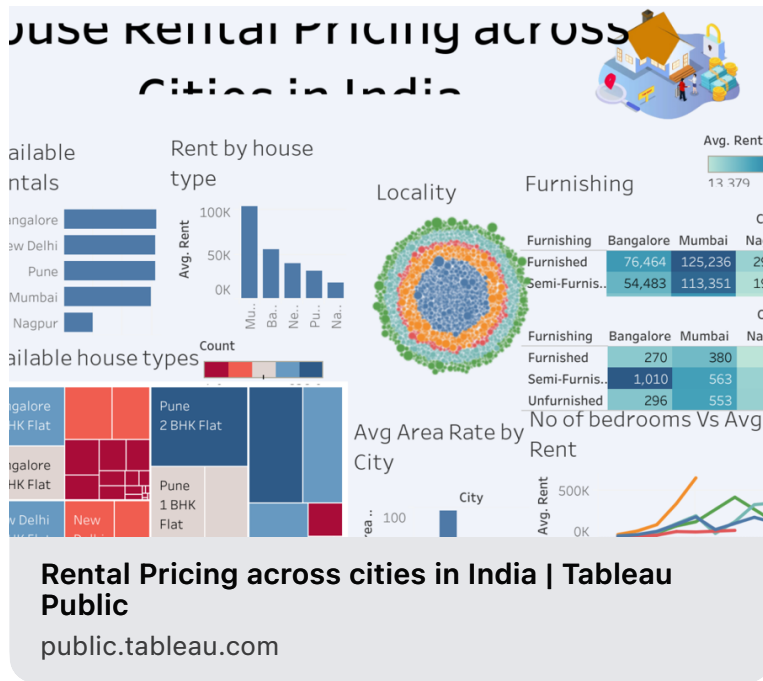
SELECT city,
       AVG(rent) AS average_rent,
       MIN(rent) AS lowest_rent,
       MAX(rent) AS highest_rent,
       COUNT(*) AS property_count
FROM Rent_Characteristics
GROUP BY city;

```

city	average_rent	lowest_rent	highest_rent	property_count
Bangalore	55984.0273	3000	850000	1576
Mumbai	103794.5307	3500	2700000	1496
Nagpur	18199.9116	2000	300000	498
New Delhi	40067.3846	2900	1000000	1568
Pune	31686.0032	2500	480000	1554

Visualisation

Tableau Link :



market for spacious accommodations, particularly catering to larger families or groups.

New Delhi follows closely, but its rental space is less than half of Bangalore's, indicating a more compact rental market.

Mumbai and **Nagpur** offer moderate rental spaces, likely due to higher population density and land costs, which limit available rental space.

Pune has the smallest rental spaces (6,000 sq. ft.), indicating a trend towards compact, affordable rentals.

Rental Variety:

Bangalore stands out for offering the highest count of rental types (1,576), indicating a diverse rental market with multiple accommodation options.

Pune and **New Delhi** also show strong rental variety (1,554 and 1,568, respectively), suggesting a competitive rental market.

Mumbai offers slightly fewer rental options (1,496), possibly due to limited space and higher rental prices.

Nagpur has the fewest rental types (498), which may reflect a smaller, more niche rental market.

Popular Rental Localities:

Whitefield in Bangalore is highly popular with a wide variety of flat types, including 3 BHK, 2 BHK, and 1 BHK, suggesting strong demand for diverse rental options in this locality.

Other prominent areas like **Sarjapur Road**, **Hebbal**, and **Yelahanka** cater to larger families or individuals seeking 3 BHK rentals.

Areas like **Marathahalli** and **Devanahalli** show a notable presence of 2 BHK flats, appealing to those seeking mid-sized accommodations.

Emerging areas like **Thanisandra**, **Bannerghatta Road**, and **Ramamurthy Nagar** could offer affordable or niche rental options in comparison to popular localities.

Most Popular Rental Types:

2 BHK flats dominate across all cities, with **Pune** showing the highest demand (636), followed by **Mumbai** (509) and **New Delhi** (420). This suggests a broad appeal for mid-sized apartments catering to families and professionals.

3 BHK flats are in higher demand in **Bangalore** and **Mumbai**, reflecting a preference for larger living spaces.

1 BHK flats are more common in **Pune** and **Mumbai**, catering to young professionals or individuals.

Luxury Rentals:

Mumbai leads in high-end rental listings, particularly for **5 BHK flats**, which have a wide rent range from ₹700,000 to ₹1,450,000, indicating a premium market catering to high-income renters.

New Delhi also offers luxury options, including **5 BHK villas** and even a

10+ BHK villa, with rents ranging between ₹750,000 and ₹927,500. The significant variation in rent prices for luxury rentals (from ₹700,000 to ₹1,450,000) highlights the varied market catering to different income brackets and property conditions.

Furnishing Types and Minimum Rent:

Semi-furnished properties tend to command the highest minimum rent (₹3,500) due to additional furniture and fixtures, which provide convenience for tenants.

Unfurnished properties have a lower minimum rent (₹2,500), as tenants are required to furnish the space themselves.

Furnished properties have the lowest minimum rent (₹2,000), offering immediate occupancy but with fewer customization options.

Conclusion:

The rental market across cities like **Bangalore**, **Pune**, and **New Delhi** shows significant diversity in terms of property sizes and types, catering to a broad spectrum of renters from singles and young professionals to families seeking larger accommodations.

Mumbai remains the leader in high-end rentals, with a strong preference for **5 BHK flats** and **luxury villas** at premium rents.

Localities like **Whitefield** and **Sarjapur Road** dominate in Bangalore for a range of flat types, especially **3 BHK** and **2 BHK** flats, while **Pune** and **New Delhi** also offer varied options for renters.

Furnishing levels play a crucial role in determining rental prices, with semi-furnished rentals commanding the highest rents, followed by unfurnished and fully furnished properties.