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Real Estate Research Company



Ranking housing affordability of major Indian cities

moneycontrol


Liases Foras
Real Estate Rating & Research Pvt. Ltd.



Synopsis

All the top eight cities in India are not necessarily the most affordable. Bengaluru stands out as the most affordable city in India, followed by Indore, Rajkot, Vadodara and Kolkata, according to a report by Moneycontrol and Liases Foras titled “Ranking housing affordability of major Indian cities”.

Of the 32 cities analysed, NCR is ranked 22, MMR 24 and Hyderabad 25. Vizag is the most unaffordable city. Other least affordable cities are Bhubaneswar, Patna, Tiruchirappalli and Ranchi.

The report concludes that the affordability of housing cannot be understood by a mere comparison of the average price between the cities. Liases Foras devised an approach to discover the most affordable and costliest cities in India.

The approach focuses on an individual's capacity to rent a home against the option of purchasing it. With how many months of rent will an individual be able to purchase the same home that he is renting is how the most affordable cities ranking was achieved.

A total of 32 cities with 41,482 projects have been considered for the study. To correlate the sizes and ease of access in cities, different distance band ranges have been considered based on the city size. The model measures the rental yield in distance bands. Distance is the travel time from a project in the city to the city center or the Central Business District.

Basis these parameters, Bengaluru is the most affordable city. The city scores highest rental yields in four out of five distance band in which each city has been divided.

Key words: 10 most cities affordable and costliest to live and work in India. *Housing affordability, ideal investment, rental yield*

Methodology: Concept and achieving parity in comparing cities

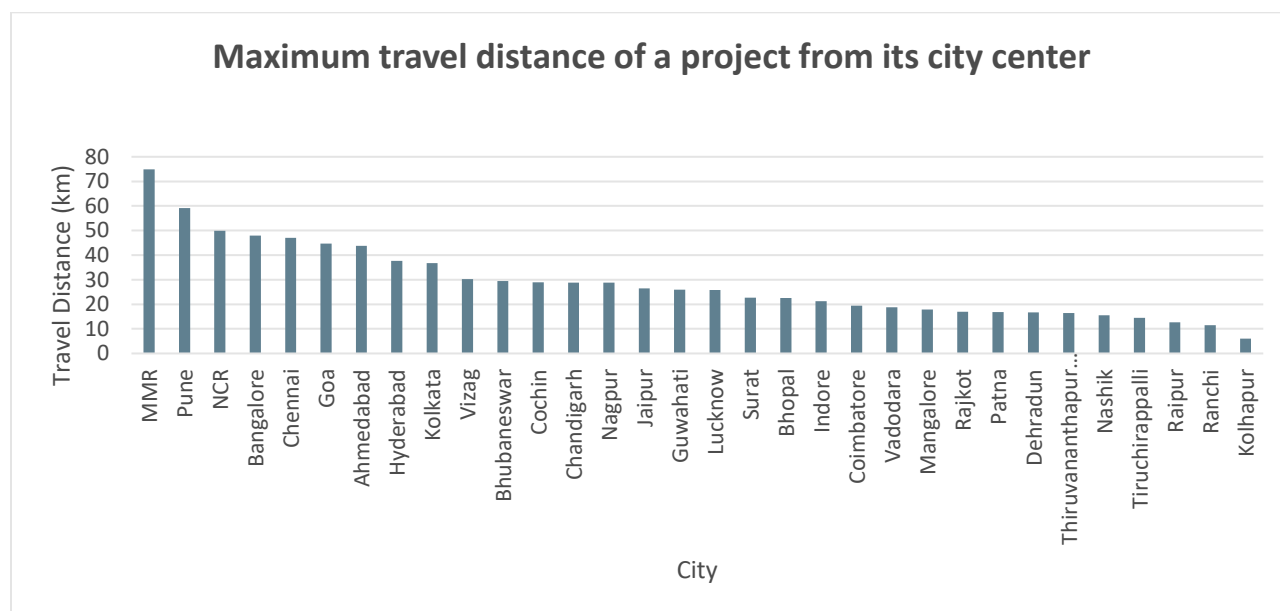
The approach equates capital value and monthly rentals to measure affordability.

Capital value is the value of the asset or cost incurred by the buyer. The monthly rental is the rent per month of a direct comparison to the asset whose capital value has been considered. The rental represents an individual's capacity to occupy housing. The estimated housing affordability of a city is measured by the count of months, the sum of whose rental or rental yield is required to own the property.

Liases Foras database has primary data on capital values of all marketable projects in the city. The relevant comparable for the rental yield calculation is selected by the property science algorithm developed by Liases Foras.

Because cities have different profiles and urban spreads, the direct calculation of the average rental yield of all projects in the city would be biased.

The model, therefore, measures the rental yield in distance bands. Distance is the travel distance of a project in the city to its city center. Each city has a designated city center or the Central Business District. Based on its location coordinates, the travel distance of each project is measured and then placed into a distance band.



Source: Liases Foras

The figure shows the farthest travel distance among all the projects in the city from the designated city center. It can be observed that the maximum span of housing spread in Raipur is around 14 km, whereas, in larger cities like MMR and NCR, it is more than 75 Km.

Therefore, to equate the values across cities, the rental yield and “months of rent required to own the property” are measured at

- An actual distance and

- A normalized distance.

The normalized distance has been derived by dividing the maximum distance by five and creating five bands. Each city has five bands. This helps in weighing the small and large cities on the same scale. While the first band of MMR is 0 - 15 Km, the first band of Raipur is 0 – 3 Km. It means that a 15 Km travel distance in MMR is equivalent to a 3 Km travel distance in Raipur. The bands bring parity to the analysis.

How did Lias Foras estimate a city's average affordability?

The rental yield of all projects in each band is divided into bands. The Euclidean distance of the vectors has been used to measure the rental yield in each band for every city.

The ranking on affordability is proportional to the normalized rental yield. A city is ranked higher in affordability if all or the maximum number of bands maintain relative affordability. The cities with the maximum number of bands with high rental yields are the best. The average rental yield is calculated as a mean of all projects in a specific city. You may find, as in the case of Vadodara, that despite having a better average rental yield, it has been ranked 4th, behind Indore and Rajkot; this is because Indore and Rajkot have better rental yields in more number of distance bands.

Outcomes

Bengaluru stands as the most affordable city in India, followed by Indore, Rajkot, Vadodara and, Kolkata. Out of 32 cities compared, NCR is ranked 22, MMR is ranked 24 and Hyderabad is ranked 25 in affordability. Vizag is the most unaffordable city. Other least affordable cities are Bhubaneswar, Patna, Tiruchirappalli and Ranchi.

Bengaluru is the most affordable city

Bengaluru is the most affordable city because it has the highest rental yields in four out of five distance bands in which each city has been divided. The projects in Bengaluru are spread to a distance of 48 Km from the city center. Thus, each distance band consists of 9.6 Km. Only the first distance band (0Km - 9.6Km) has lower rental yield of 3.0%. The other 4 distance bands "9.6Km - 19.2Km", "19.2Km - 28.8Km", "28.8Km - 38.4Km" and "38.4Km - 48.0Km" have rental yields of 3.8%, 4.4%, 4.8% and 5.0% respectively. There are 3 distance bands where rental yield is more than 4%.

The table shows the Rental yield and overall affordability rank of the 32 cities analyzed

Category	Urban Agglomeration	Normalized Distance Range					Avg Rental Yield	Months of rent to own	Afford ability Rank
		0	1	2	3	4			
Tier I	Bangalore	3.00%	3.80%	4.40%	4.80%	5.00%	3.64%	330	1
Tier I	Kolkata	3.00%	3.10%	3.70%	3.90%	4.90%	3.35%	358	5
Tier I	Pune	3.10%	3.30%	2.70%	2.60%	4.40%	3.12%	385	9
Tier I	Ahmedabad	2.80%	3.10%	3.30%	3.40%	3.40%	3.10%	387	12
Tier I	Chennai	1.90%	2.40%	2.70%	3.10%	3.70%	2.35%	511	19



Tier I	NCR	2.40%	2.70%	2.80%	2.60%	2.90%	2.67%	449	22
Tier I	MMR	2.50%	2.60%	2.50%	2.40%	2.60%	2.51%	478	24
Tier I	Hyderabad	1.90%	2.60%	2.60%	2.50%	2.60%	2.54%	472	25
Tier II	Indore	3.30%	3.20%	3.60%	4.50%	4.50%	3.63%	331	2
Tier II	Rajkot	4.00%	3.80%	3.90%	3.70%	4.00%	3.82%	314	3
Tier II	Vadodara	3.30%	3.90%	4.10%	4.10%	3.60%	4.03%	298	4
Tier II	Mangalore	3.20%	3.10%	3.80%	4.00%	3.80%	3.25%	369	6
Tier II	Raipur	3.40%	3.30%	3.20%	3.50%	3.70%	3.30%	364	7
Tier II	Guwahati	2.60%	2.60%	4.10%	3.90%	2.90%	2.85%	421	8
Tier II	Nagpur	2.80%	3.00%	3.30%	2.70%	4.30%	3.01%	399	10
Tier II	Chandigarh	3.20%	2.70%	3.00%	3.40%	3.70%	3.13%	383	11
Tier II	Goa	3.40%	3.80%	2.40%	3.90%	2.00%	3.34%	359	13
Tier II	Kolhapur	4.00%	2.80%	2.60%	2.90%	3.30%	2.78%	432	14
Tier II	Cochin	3.40%	2.80%	3.00%	2.70%	2.70%	2.99%	401	15
Tier II	Jaipur	1.90%	2.40%	3.40%	3.10%	3.50%	2.95%	407	16
Tier II	Dehradun	2.20%	3.00%	2.90%	2.80%	3.50%	2.89%	415	17
Tier II	Nashik	2.90%	3.00%	2.30%	2.90%	3.30%	2.95%	407	18
Tier II	Lucknow	2.30%	2.40%	2.90%	3.10%	3.00%	2.93%	410	20
Tier II	Bhopal	1.40%	2.40%	2.90%	2.90%	3.50%	2.91%	412	21
Tier II	Thiruvananthapuram	2.30%	2.30%	2.40%	2.80%	3.00%	2.43%	494	23
Tier II	Coimbatore	1.70%	2.40%	2.60%	2.60%	2.50%	2.41%	498	26
Tier II	Surat	1.80%	2.30%	2.70%	2.60%	2.00%	2.62%	458	27
Tier II	Ranchi	2.30%	2.20%	2.10%	2.50%	2.20%	2.30%	522	28
Tier II	Tiruchirappalli	2.30%	2.20%	2.00%	2.20%	2.40%	2.30%	522	29
Tier II	Patna	2.20%	2.10%	2.20%	2.30%	1.90%	2.17%	553	30
Tier II	Bhubaneswar	2.40%	2.00%	2.10%	2.00%	1.70%	2.11%	569	31
Tier II	Vizag	2.40%	1.50%	2.10%	1.50%	2.40%	1.98%	606	32

Source: Lias Foras

Indore is the second most affordable city

Indore is the second most affordable city as per the analysis because there are 2 distance bands “12.8Km - 17.0Km” and “17.0Km - 21.3Km”, where rental yield is more than 4%. In Indore, Rental per sqft changes from Rs 13 / sqft to Rs 17 / Sqft and the sale price changes from Rs 3700 / sqft to Rs 7000 / sqft. The maximum travel distance in Indore is 21.3Km. Each distance band is of 4.3Km.

Rajkot is the third most affordable city

Two distance bands in Rajkot have a rental yield of 4%. All 5 distance bands have rental yield more than 3.5% and the minimum rental yield in Rajkot is 3.7%. Owing to this, Rajkot ranks third in terms of affordability.

A Tier II city, the maximum travel distance in Rajkot is 16.9Km. Thus, each distance band has an interval of 3.4km. The rental and sale prices in Rajkot are mostly homogeneous. Rental per sqft changes from Rs 15 / sqft to Rs 16 / Sqft and sale price changes from Rs 4600/ sqft to Rs 5000 / sqft.

Vadodara is the fourth most affordable city

The minimum rental yield in Vadodara is 3.3% and 4 out of the 5 distance bands have rental yield more than 3.5%, making it the fourth most affordable city. The rental per sqft in Vadodara changes from Rs 10 / sqft to Rs 17 / Sqft and sale price changes from Rs 3300 / sqft to Rs 6000 / sqft. Maximum travel distance in Vadodara is 18.8Km. Each distance band is of 3.8Km.

Kolkata is the fifth most affordable city

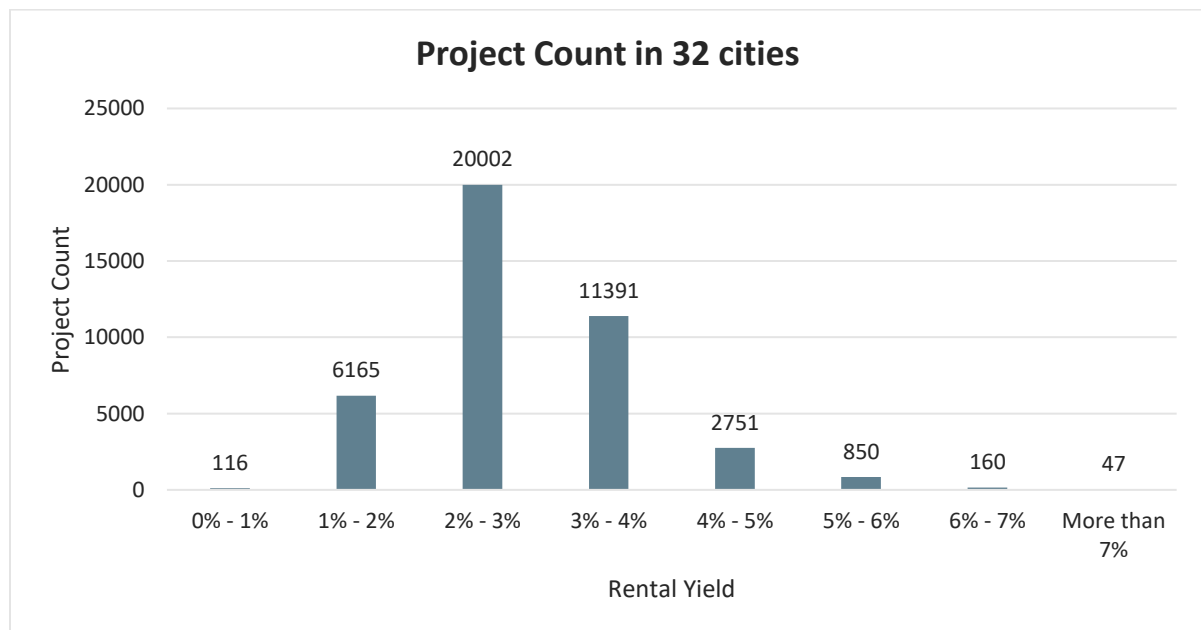
The rental per sqft in Kolkata changes from Rs 16 / sqft to Rs 29 / Sqft and sale price changes from Rs 5000 / sqft to Rs 12500 / sqft. Capital cost is almost 2.5 times in the city center than outer most parts, whereas rental cost hardly doubles in the same range. Maximum travel distance in Kolkata is 36.7Km. Each distance band is of 7.3Km. 3 out of 5 distance bands have rental yield more than 3.5%. Minimum rental yield in Kolkata is 3.0%. The farthest distance bands from the city center have the highest yield and are the contributors to Kolkata's overall affordability.

Vizag is the most expensive city

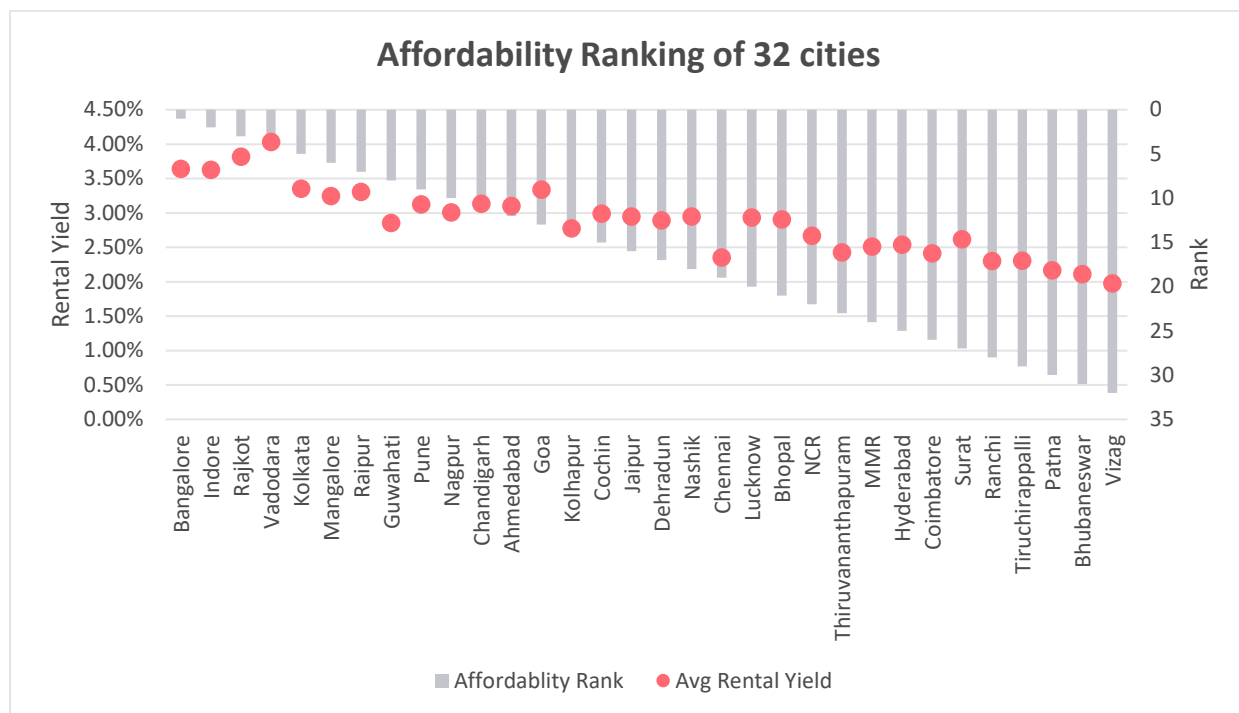
As for the most expensive cities in the country Vizag is ranked first because the rental yield is relatively the lowest among the 32 cities considered.

Rental per sqft in Vizag changes from Rs 8 / sqft to Rs 14 / Sqft and sale price changes from Rs 5000 / sqft to Rs 7000 / sqft. Because the maximum travel distance in Vizag is 30.3Km, each distance band is of 6.1Km. All 5 distance bands have rental yield is less than 2.5%. Minimum rental yield being 1.5%.

If we compare Vizag with Indore, Rs 7000 /sqft apartment in Vizag fetched Rs 14 / sqft rental, whereas Rs 7000 / sqft apartment in Indore fetches Rs 17 / sqft rental.



Source: Liases Foras



Source: Lias Foras

Bhubaneswar is the second most expensive city

All 5 distance bands in Bhubaneswar have rental yield is less than 2.5% and the lowest rental yield is 1.7%. This makes Bhubaneswar the second most expensive Indian city. Similar to Vizag, the maximum travel distance of the city is higher in comparison with other Tier II cities at 29.5Km. Each distance band is of 5.9Km.

Patna is the third most expensive city

The lowest rental yield in Patna is 1.9% and no distance band exceeds a yield of 2.5%. 4 out of the 5 distance bands have rental yield more than 2.0%. These factors make it the third most expensive city. The maximum travel distance in Patna is 16.8Km. Each distance band is of 3.4Km.

Tiruchirappalli is the fourth most expensive city

No distance band in Tiruchirappalli has a rental yield more than 2.4%. The minimum rental yield of the city is 2.0%, conferring it as the fourth most expensive city in the list. The maximum travel distance in Tiruchirappalli is 14.5Km. Each distance band is at an interval of 2.9Km.

Ranchi is the fifth most expensive city

The minimum rental yield of Ranchi is 2.1% and reflects in the ranking of the city at fifth from the bottom of the affordability list. The maximum travel distance in Ranchi is 11.5Km. Each distance band is of 2.3Km.

It should also be noted that NCR is ranked 22, MMR 24 and Hyderabad 25. The maximum travel distance in NCR is 49.9Km and each distance band is of 10.0Km. The maximum travel distance in MMR is 74.9Km and each distance band is of 15.0Km. The maximum travel distance in Hyderabad is 37.6Km and each



distance band is of 7.5Km. All 3 cities have 4 distance bands with rental yields more than 2.5%. However, while we compare rental yields in each distance band, amongst NCR and MMR, there are 4 distance bands in which MMR has lower yields than NCR. Hence, MMR is ranked lower than NCR.

The first distance band in Hyderabad has a rental yield of 1.9%. In the same distance band, NCR and MMR has rental yield of 2.4% and 2.5% respectively. Due to which, Hyderabad is ranked below NCR and MMR.

Study Sample

The study was carried out over 54 urban agglomerations and cities and 41,846 projects. The data in all bands of 22 cities was not enough. Hence, we have excluded these cities from the analysis.

Therefore, 32 cities with 41,482 projects have been considered in the study. These 32 cities constitute an estimation of over 24% of the urban population in India, over 55% contribution to GDP, and over 80% of the housing mortgage industry.

Approach

This analysis is based on 41,482 projects.

Using the unit cost and monthly rental in the same project, the rental yield for each project is calculated. The travel distance of each project from its city center was computed using Google API. All distances were then normalized on a scale of 0 to 1 and divided into 5 bands equally.

On assigning a distance band to each project, the average rental yield for each band in each city was determined. If, for a city, there are no projects in 1 or more distance bands, that city was removed from the analysis, owing to its thin data size.

Therefore, the cities have been ranked for affordability using Euclidean distance on rental yields in each distance band.

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About Liases Foras

Founded in 1998, Liases Foras provides data-driven business intelligence, research, risk advisory, and valuation services to banks, HFCs, developers, corporates, and funds, mainly B2B segments. LF serves the mortgage industry leaders, such as HFDC, SBI, Axis Bank, LIC, and NHB, to name a few.

Our products and advisory services predominantly focus on providing scientific solutions on real estate price, valuation, and risk associated with builders, projects, and locations, helping the stakeholders invest, lend, and mortgage real estate and properties.

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