# **ANALYSING HOUSING PRICES IN METROPOLITAN AREAS OF INDIA**

## **INTRODUCTION**

### **OVERVIEW**

* + - * The Housing Price Index is a quarterly report by the Reserve Bank of India (RBI) based on the all-India price movement from data collected from a few cities. The indices are based on official data of property price transactions obtained from the respective state governments' registration authorities.
      * House price prediction in a metropolitan city in India is a valuable solution for potential home buyers, real estate agents, and investors. By leveraging historical sales data, property details, and location-specific information, a predictive model can accurately estimate house prices.
      * The model's scalability, real-time updates, user-friendly interface, and transparency ensure it meets the needs of stakeholders. Integration capability, data privacy, and cost-effectiveness are also important considerations. By addressing these requirements, the prediction model provides reliable insights, empowering stakeholders to make informed decisions in the fast-paced real estate market.

### **PURPOSE**

* + - Property prices in India are expected to increase 7.5% on a pan-India basis this year, the fastest growth in five years, according to a Reuters poll of property analysts. Average house prices were forecast to rise 6% next year and in 2024. The poll of 13 property analysts were held during May11-27. As a result, many of them can no longer afford to purchase homes due to increased EMIs. Meanwhile, real estate consultant Ana rock said in a report last month that rising land prices and input costs have also contributed to the decline in demand for affordable housing in India.
    - As a result, many of them can no longer afford to purchase homes due to increased EMIs. Meanwhile, real estate consultant Ana rock said in a report last month that rising land prices and input costs have also contributed to the decline in demand for affordable housing in India.
    - This paper aims to examine the dynamics of house prices in metropolitan cities in an emerging economy. The purpose of this study is to characterise the house price dynamics and the spatial heterogeneity in the dynamics.
    - The main purpose of this paper is to examine the convergence hypothesis of House Price Index (HPI) in the case of 18 major Indian cities for the period 2023–2024.

## **2.PROBLEM DEFINITION & DESIGN THINKING**

### **EMPATHY MAP**

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### **IDEATION & BRAINSTORMMING MAP**

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### **RESULT**

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## **ADVANTAGES & DISADVANTAGES**

### **ADVANTAGES**

* + - House price prediction can help the developer determine the selling price of a house and can help the customer to arrange the right time to purchase a house. There are three factors that influence the price of a house which include physical conditions, concept, and location.
    - Property prices in India are expected to increase 7.5% on a pan-India basis this year, the fastest growth in five years, according to a Reuters poll of property analysts. Average house prices were forecast to rise 6% next year and in 2024. The poll of 13 property analysts were held during May11-27.
    - The year 2022 saw the demand for houses in India increase by 34 per cent to reach a nine-year-high in a trend driven primarily by a post-pandemic need for security, increased savings, and relatively little income disruption for middle- and higher-income groups.
    - Demand for homes soars, prices follow suit Remarkably, even with the influx of new properties, prices in primary economic hotspots are skyrocketing.
    - The HPI is one of many economic indicators that investors use to keep a pulse on broader economic trends and potential shifts in the stock market. The rise and fall of house prices can have big implications for the economy.

### **DISADVANTAGES**

* + - A lot of fundamental factors like geographics, demographics, and the growing culture of nuclear families too come into the picture. Housing demand is also supported by favourable tax regimes and the government's thrust on the real estate sector.
    - The biggest disadvantage with real estate investment is the high capital requirement. To get started, you need to provide for down payments, EMIs, insurance, property taxes, stamp duty and so on. Given the high transaction costs, finding buyers and sellers readily is an uphill task.
    - Escalating construction costs, land prices, and property taxes pose significant challenges to real estate developers and potential homebuyers. Affordability concerns can limit access to housing and impact the overall real estate market.
  + There is no shortage of land in India; there is a shortage of zoned land.” Zoned land is what the politicians ration to builders thus creating artificial shortages. So, the shortage of zoned land – on which real estate is constructed – is a man-made shortage in India…a shortage created by policy.
  + As Mumbai remains the most unaffordable housing market in the country with an EMI to income ratio of a whopping 55 per cent, though it is a significant improvement from the 93 per cent ratio noted in 2010.

## **APPLICATIONS**

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* + - Bengaluru too witnessed a 10 per cent increase in prices to ₹8,688 per square feet. The prices of residential properties in Chennai went up 6 per cent to ₹7,653 per square feet. In Delhi-NCR, rates shot up 14 per cent to ₹8,652 per square feet. Housing prices in Hyderabad rose 13 per cent to ₹10,530 per square feet.
    - The business requirements for house price prediction in a metropolitan city in India include developing an accurate prediction model that can estimate property prices.
    - The model should identify the key features impacting house prices and provide insights to aid decision-making. It should be scalable to handle a large volume of data and incorporate real-time updates to reflect the latest market conditions.
    - The solution should have a user-friendly interface, ensure transparency, and explain ability of predictions, prioritize data privacy and security, and define performance metrics for evaluation. Integration capability and cost-effectiveness are also important considerations to deliver a valuable and efficient solution.
* The data provides a reliable and accurate prediction tool that assists users in navigating the competitive real estate market and maximizing their returns.

## **CONCLUSION**

* + - This paper analyses whether the Law of One Price (LOOP) holds in the housing market of fifteen metropolitan areas in India, namely Delhi, Mumbai, Bengaluru, Kolkata, Chennai, Jaipur, Lucknow, Hyderabad, Pune, Surat, Ahmedabad, Patna, Faridabad, Kochi, and Bhopal.
    - We test the existence of LOOP using the I’m, Psarian, and Shin (2003) panel unit root test based on quarterly data on residential property prices covering the period of 2007Q1 to 2011Q4 of the Indian housing market.
    - Based on the criterion of price convergence, house prices in the 15 metropolitan cities do not converge to the LOOP. This implies that the housing markets in the different areas operate as segmented independent local markets.
    - Therefore, house prices in one location in India cannot impose a competitive constraint on house prices in other location, and as such a homeowner can freely set the price of his house.

## **FUTURE SCOPE**

* + - By analysing the housing prices of metropolitan areas, it is the second-highest employment generating sector in India. And by 2025, it is believed that it will contribute 13% of the country's GDP. Real estate careers encompass a wide range of possibilities and are always highly in demand.
    - The scope of analysing the housing prices helps in the management and marketing encompasses various aspects of the real estate industry, including property management, marketing and sales of residential and commercial properties, real estate investment, and development.
    - By analysing the housing prices, it is expected to grow steadily in the coming years, making it an attractive investment destination. Real estate is expected to act as an investment vehicle, and assets will thus be created for investment and money-making.

## **APPENDIX**

### **SOURCE CODE**

* <https://github.com/Divyamarudhappan/analysing-housing-prices-in-metropolitan-areas-of-india-SACIIIMATHSTEAM3?search=1>

## [**https://public.tableau.com/app/profile/divya.devi.m/vizzes**](https://public.tableau.com/app/profile/divya.devi.m/vizzes%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20)