METRO CONNECTIVITY AND HOUSING AFFORDABILITY IN BENGALURU: AN ANALYSIS OF MARKET DYNAMICS

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Abstract*—Urban rail systems influence cities not only by improving mobility but also by changing the spatial pattern of residential demand and property values. Bengaluru provides an important case because the rapid expansion of Namma Metro has occurred alongside substantial growth in housing prices, rents and demand for residential property in metro-connected and emerging corridors. This paper examines the relationship between metro connectivity and housing affordability in Bengaluru using secondary data from Bangalore Metro Rail Corporation Limited (BMRCL), the Ministry of Housing and Urban Affairs, Government of India publications, and established real-estate market research reports. The study adopts a descriptive and analytical research design and examines changes in the operational metro network, residential prices, housing supply, sales and selected metro-influenced localities. The evidence shows that metro expansion has substantially improved accessibility across Bengaluru and has supported the growth of residential markets in corridors such as Whitefield, Electronic City, KR Puram, Yeshwanthpur, Tumkur Road and other peripheral locations. At the same time, improved connectivity has contributed to increasing land and housing values. Bengaluru's weighted average residential price increased from ₹4,977 per sq. ft. in 2019 to ₹6,620 per sq. ft. in 2024 and continued to rise in subsequent periods. The study therefore finds a dual effect of metro development: it improves the effective accessibility of peripheral housing locations, but the resulting increase in demand and land values can reduce affordability, particularly for lower- and middle-income households. The paper argues that metro-led urban development should be accompanied by affordable and rental housing policies, inclusionary housing provisions and transit-oriented development that reserve adequate housing opportunities for economically diverse households.

***Index Terms*—Metro connectivity, housing affordability, Namma Metro, residential property, urban transport, Bengaluru**

I. Introduction

Bengaluru has experienced rapid demographic, economic and spatial expansion over the last two decades. The growth of the information technology, biotechnology, start-up and service sectors has created substantial employment opportunities and has attracted a large migrant population. This economic expansion has also created significant pressure on the city's transport and housing systems. Long commuting distances, road congestion and rising residential property values have become important features of Bengaluru's urban development. The development of Namma Metro represents a major intervention in the city's transport infrastructure. The system began with the operationalisation of the Purple Line in 2011 and subsequently expanded through the Green Line and extensions under Phase II. The opening of the Yellow

Line further expanded the operational network, linking important residential and employment centres, including the Electronic City corridor. Bengaluru's metro system now extends over approximately 96 km with 83 operational stations, while additional corridors are under construction or planned. The expansion of metro connectivity has important implications for the housing market. Improved accessibility can make peripheral and previously less accessible locations more attractive for households and developers. A metro station reduces the time and uncertainty associated with commuting and can increase the attractiveness of residential locations situated near employment centres or connected to them through rapid transit. However, accessibility improvements can also be capitalised into land and property values. When demand for housing increases in metro-influenced areas, the benefits of improved connectivity may be accompanied by higher purchase prices and rents. This creates an important urban policy question. Does metro expansion improve housing affordability by making more distant residential areas practically accessible, or does it reduce affordability by increasing land values and housing prices in connected locations? The answer is likely to involve both processes. Metro connectivity may expand the geographical area within which households can search for housing, but the market response to improved accessibility may also increase the cost of living near metro corridors.

II. Review of Literature

Sharma and Newman (2018) examined the effect of Bangalore Metro on urban land values using a large dataset of apartment transactions and listings. Their analysis demonstrated a significant willingness to pay for metro accessibility. The study found that the effect extended beyond the conventional 500-metre catchment area and estimated a measurable increase in land values associated with metro accessibility. The study is particularly important because it establishes that urban rail investment can generate substantial property value effects in an emerging metropolitan economy.

Debrezion, Pels and Rietveld (2007) reviewed international evidence on the relationship between railway stations and property values. Their meta-analysis showed that accessibility improvements associated with railway stations generally have a positive effect on property values, although the magnitude differs according to location, land use and local market conditions.

Cervero and Murakami (2009) studied rail transit and land development and argued that transportation infrastructure can reshape urban development patterns when supported by complementary land-use policies. Transit systems can encourage higher-density development, but the benefits are influenced by planning regulations and the availability of developable land.

The Ministry of Housing and Urban Affairs has consistently emphasised the importance of affordable housing for economically weaker and lower-income groups. National housing policy recognises that access

to a dwelling should not be considered independently of access to employment, transport and basic urban infrastructure. This approach is particularly relevant in large metropolitan cities where households may obtain relatively cheaper housing only by accepting longer and more expensive daily commutes.

Research on Bengaluru's real-estate market has increasingly identified transport infrastructure as an important determinant of residential demand. Market reports have shown that areas such as Whitefield, Electronic City, Tumkur Road and North Bengaluru have experienced significant residential development alongside improvements in connectivity. The operational Purple Line, for example, has strengthened accessibility between eastern residential and employment centres and the wider metropolitan area.

Recent market evidence also indicates a structural shift in Bengaluru's residential market. Developers have increasingly focused on mid-premium and premium housing, while the share of new supply in lower price categories has declined. This trend raises concerns regarding affordability because rising connectivity and economic growth may increase the value of urban land faster than the ability of lower- and middle-income households to purchase housing.

III. Statement of the Problem

Bengaluru's metro network has expanded considerably and has improved connectivity between major residential, commercial and employment centres. At the same time, the city has witnessed sustained increases in residential property prices and rents. Metro connectivity may improve affordability indirectly by allowing households to live farther from the city centre while retaining access to employment opportunities. However, the increased attractiveness of metro-connected locations can also raise land prices, property values and rents. The central problem of the study is therefore to examine whether metro-led accessibility in Bengaluru is accompanied by improved housing affordability or whether the accessibility benefits are partly offset by rising housing costs in metro-connected and metro-influenced locations.

IV. Objectives of the Study

1. To examine the growth and spatial expansion of metro connectivity in Bengaluru.
2. To analyse the relationship between metro connectivity and changes in residential housing prices and affordability in Bengaluru.
3. To identify the implications of metro-led residential development for affordable and inclusive urban housing.

V. Research Methodology

The study is based on **secondary data**. Information relating to the metro network has been collected from BMRCL and Government of India sources. Data on residential prices, housing launches, sales, market composition and locality-level price movements have been compiled from established real-estate research publications. Housing policy information has been collected from the Ministry of Housing and Urban Affairs.

VI. Data Analysis and Discussion

Table 1: Growth of Bengaluru Metro Connectivity

Particulars	**Network**
Phase I total route length	42.3 km
Phase I stations	40
Phase I fully operational	June 2017
Operational metro network after Yellow Line expansion	About 96.1 km
Operational metro stations	83
Yellow Line length	Over 19 km
Yellow Line stations	16
Average daily ridership reported for the operational system	About 9.5 lakh passengers
Phase III proposed/under development route length	About 44.65 km
Phase III stations	31

Source: Compiled from BMRCL and Government of India metro project publications.

The data demonstrate the substantial growth of Bengaluru's metro system from the initial 42.3-km Phase I network to an operational network of approximately 96 km. The expansion

has increased the geographical reach of rapid transit and has connected important residential areas with employment centres. The addition of the Yellow Line is particularly significant from a housing perspective because the Electronic City corridor has developed as a major employment and residential zone. Improved rail connectivity reduces dependence on road-based commuting and makes a larger range of residential locations practically accessible to workers. The expansion of the network also changes the economics of residential location. Areas that were previously considered peripheral can become more attractive when connected to employment centres through reliable mass transit. At the same time, this increased attractiveness may create additional demand for land and housing.

Table 2:Bengaluru Residential Price Trend

Year / Period	**Weighted Average Residential Price (₹ per sq. ft.)**
2010	3,238
2019	4,977
2020	4,935
2021	5,150
2022	5,511
2023	5,900
H1 2024	6,163
2024	6,620
H1 2025 / later market evidence	Continued upward movement

Source: Compiled from residential market research datasets.

The residential price trend indicates a clear long-term increase in Bengaluru's housing costs. The weighted average price increased from ₹4,977 per sq. ft. in 2019 to ₹6,620 per sq. ft. in 2024. This represents an increase of approximately 33 per cent over the five-year period. The price increase occurred during a period in which metro connectivity expanded significantly. However, the relationship should not be interpreted as a simple one-to-one causal effect. The period also included strong growth in technology employment, post-pandemic changes in housing demand, rising construction costs and a shift toward larger and premium housing. The important observation is that improved connectivity has occurred simultaneously with increasing residential prices. Thus, while metro expansion may make more locations accessible, affordability depends on whether housing supply in these locations remains within the financial reach of ordinary households.

Table 3:Bengaluru Residential Market Performance, 2024

Particulars	**2024**
Residential sales	55,362 units
Year-on-year change in sales	2% increase
New residential launches	56,014 units
Year-on-year change in launches	10% increase
Average residential price	₹6,620 per sq. ft.
Year-on-year price increase	12%

Source: Bengaluru residential market research, 2024.

Bengaluru's residential market remained strong in 2024, with more than 55,000 housing units sold and more than 56,000 new units launched. The simultaneous increase in housing supply and prices suggests that demand remained sufficiently strong to absorb a substantial volume of new development. The 12 per cent increase in average prices is important from the perspective of affordability. An increase in supply does not automatically produce affordable housing when the composition of new supply is concentrated in higher-value market segments. Therefore, the quantity of new housing should be examined together with its price category and location.

Table 4: Shift in Bengaluru Housing Supply by Price Segment, H1 2025

Price Segment	New Launches (Units)
Below ₹50 lakh	2,005
₹50 lakh–₹1 crore	6,749
₹1 crore–₹2 crore	16,255
₹2 crore–₹5 crore	8,019

Source: Compiled from Bengaluru residential market research for H1 2025.

The distribution of new housing supply shows an important structural change in Bengaluru's residential market. The largest volume of new launches was concentrated in the ₹1 crore–₹2 crore segment, while the supply of housing below ₹50 lakh was relatively limited. This pattern has direct implications for affordability. Metro expansion can increase the attractiveness of locations and encourage new residential development, but if most new projects target upper-middle-income and high-income households, improved connectivity may not translate into affordable ownership opportunities. The shrinking presence of low-ticket housing may also push lower-income households toward more distant locations, informal housing or rental accommodation. Thus, transport connectivity and housing affordability must be planned jointly.

Table 5: Residential Price Movement in Selected Bengaluru Locations, H1 2026

Location	Approximate Price Range (₹ per sq. ft.)	12-Month Change
KR Puram	6,400–13,400	20%
Whitefield	7,100–15,200	14%
Marathahalli	7,310–15,500	15%
Hebbal	7,800–15,000	11%
Yelahanka	6,300–12,700	18%
Electronic City	5,700–8,600	10%
Tumkur Road	5,300–10,200	16%
Yeshwanthpur	7,700–14,500	9%
Sarjapur Road	5,700–11,300	3%

Source: Bengaluru residential market research, H1 2026.

The selected locality-level data show that housing prices have continued to increase across several major growth corridors. KR Puram, Whitefield, Marathahalli, Electronic City and Yeshwanthpur are especially relevant because of their relationship with existing or expanding mass-transit and employment infrastructure. The data also demonstrate that metro connectivity does not produce a uniform price effect. Localities differ in employment concentration, existing infrastructure, land availability and stage of urban development. KR Puram, for example, has experienced substantial appreciation because of its importance as a transport and development node. Whitefield combines metro accessibility with a strong concentration of information technology and commercial activity. Electronic City remains relatively lower priced than many established central and eastern locations, but price growth indicates that improved connectivity and employment demand are strengthening the residential market. This suggests that metro expansion can initially improve the relative attractiveness of lower-cost peripheral locations, although continued demand may gradually reduce the affordability advantage.

Table 6: Rental Levels in Selected High-Demand Bengaluru Localities, 2024

Locality	Average Monthly Rent for 2 BHK (₹)	Average Monthly Rent for 3 BHK (₹)
Whitefield	39,000	62,500
Hebbal	32,500	76,700
Kaggadasapura	27,200	37,100
HSR Layout	34,700	60,800
Marathahalli	37,900	61,800
Sarjapur Road	39,100	60,800
Koramangala	45,200	86,500
Electronic City	26,300	37,800

Source: Bengaluru Rental Index, 2024.

Housing affordability in Bengaluru cannot be examined only through property purchase prices. A large section of the urban population lives in rental housing, including migrants, young professionals and households unable or unwilling to purchase a house. The rental data show considerable variation across locations. Electronic City and Kaggadasapura had relatively lower rents among the selected high-demand locations, while Whitefield, Sarjapur Road and Koramangala recorded substantially higher levels. Metro connectivity can

influence the rental market in two opposite ways. First, it can increase the supply of accessible residential options by making peripheral locations more attractive. Second, improved accessibility can increase rental demand and allow landlords to charge higher rents. The net effect depends on the availability of housing supply and the characteristics of the local labour market.

VII. Conclusion

Bengaluru's metro expansion has transformed the spatial structure of urban accessibility. The growth of the operational network to approximately 96 km has connected major residential, commercial and employment corridors and has increased the attractiveness of locations that were previously constrained by poor accessibility. The evidence reviewed in this study indicates that metro connectivity is associated with increased residential demand and property value appreciation. Bengaluru's housing market has experienced sustained price growth, and several metro-connected or metro-influenced corridors have recorded significant increases in residential values. At the same time, the composition of new housing supply has shifted increasingly toward mid-premium and premium segments. The study therefore concludes that metro connectivity can improve accessibility**,** but accessibility does not automatically translate into housing affordability. The affordability benefit of living in a well-connected location may be reduced when landowners and developers capitalise transport improvements into higher property prices and rents. The future challenge for Bengaluru is to ensure that metro-led urban development remains socially inclusive. Transit-oriented development should not only produce high-value real estate but should also create accessible housing opportunities for lower-income, middle-income and migrant households. Integrating affordable ownership housing, rental housing and public transport planning is therefore essential for achieving a more balanced and inclusive pattern of metropolitan development.

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