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Impact Of Metro Rail Transit and Urban Amenities on Property Rates in Metropolitan Cities of India – A Case of Mumbai City

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Abstract

The rapid pace of urbanization since the Industrial Revolution has transformed cities globally, introducing new challenges in accommodating increasing populations and enhancing urban mobility. Urbanization in linear metropolitan areas has heightened the demand for efficient transportation, emphasizing the importance of public transit systems, particularly metro rail networks. However, the urbanization of linear cities has led to a rise in population density, increased pressure on housing markets, and challenges in sustainably expanding urban mobility infrastructure. This research primarily aims to assess how proximity to metro rail stations influences real estate values while accounting for broader spatial dependencies among properties.

The study integrates statistical modeling for spatial autocorrelation with comprehensive housing market data, encompassing locational, amenities, economic, transportation-related, and environmental variables. By leveraging advanced spatial econometric techniques, the research seeks to uncover significant spatial patterns often overlooked by traditional regression models. The linear metropolitan city of Mumbai, India, known for its substantial urban growth and unique challenges, serves as an ideal case to explore the interplay between real estate development, metro rail networks, and sustainable urban planning.

The research also examines how metro rail networks contribute to reducing the urban carbon footprint by encouraging a shift toward public transportation, alleviating road congestion, and promoting denser, transit-oriented development (TOD). These sustainability benefits complement the economic insights into property value dynamics. The dataset includes property prices from metropolitan areas with varying degrees of metro rail accessibility.

Ultimately, this study contributes to a deeper understanding of how metro rail transit systems influence property rates, urban development strategies, and environmental sustainability. The findings provide valuable insights for formulating policies related to property taxation, TOD, and the promotion of green, resilient urban growth. The outcomes highlight the importance of incorporating spatial analysis into urban planning to maximize both economic and ecological benefits derived from improved public transportation infrastructure.

Keywords: Urban footprint, Metro rail transit, Property price, Transit-Oriented Development, Urban amenities