

## Impacts of Metro Station on Surrounding Land Value in Ahmedabad, Gujarat, India.

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### Abstract –

This research paper aims at the evaluation of various neighbourhood, spatial, and externality factors on residential, commercial, industrial, institutional land values to the East – West corridor of Metro between Thaltej and Vastrapur in Ahmedabad. The impact of the 4 Metro Station Nodes are studied in detail with respect to the residential, commercial, industrial, institutional land values and the past trends from 2012 to current 2022. This research finds out that the distance to the Central Business District (CBD), residential, commercial, industrial, institutional have a significant impact on the real estate pricing and land use. Amenities and open spaces have also changed but do not have any significant impact on prices.

### Introduction –

Ahmedabad is buzzing up with construction activities. While some big-ticket infrastructure projects have been lined up for the city, others will soon be ready to roll. The Metro Link Express for Gandhinagar and Ahmedabad (MEGA), for instance, will be operational in coming months.

The Ahmedabad – Gandhinagar metro route is currently under construction, and is being operated under the special purpose vehicle (SPV), known as the Metro Link Express for Gandhinagar and Ahmedabad (MEGA).

There are total of four phases planned under the MEGA. Of these, phase - 1, will consist of two routes. The North - South line will connect Motera stadium with Gaspar and the East - West line will connect Thaltej with Vastrapur. Other phases will connect Gandhinagar, the airport and the Gift city with the main city.

The metro route is partially funded by Japanese agency and the central government. The Ahmedabad – Gandhinagar metro will be up and running by 2022.

The 37 kilometres phase - 1 metro route would cover all the important hubs of the city along with some tourist hotspots such as Sabarmati Ashram, Motera Stadium, etc. A part of the route which will pass through old areas will be constructed underground, while the rest of the path would be elevated.

**Need of the study –**

Advantage of accessibility in public transportation is an impetus to development benefits by improvements and hence should be taken as an opportunity to develop the city.

Transport investments leads to ease in accessibility to proximate areas, which further alleviate land values. This study tries to build a relation between these benefits and proximate land value gains.

The study identifies parameters that influence the scale of increment in land values. Specifically, the study tries to analyse the impact of the Ahmedabad metro on proximate real estate values and land use.

The need of the study is to investigate the potential for financing the urban infrastructure projects through value capture.

**Objectives –**

Study the development of phase - 1 of the Ahmedabad metro with reference to the city.

Study the impact of the metro rail system on the land value use transformation taking place and price variation around the station nodes over time.

Land value increases along the metro nodes at different points of time (i.e., before announcement of the project, during construction of the project, during operation of the project).

Identifying the parameters that influence the change in land / real estate values.

**Scope –**

The study is limited to impact of mass rapid transit system and changes along the node.

The major part of the study is based on primary and secondary information from mega and related studies.

Property market effects are expected to be concentrated up to 500m radius from the stop, stations or interchange. Study the development of phase - 1 of the Ahmedabad metro with reference to the city.

Study the impact of metro rail system on the price variation around the station nodes over the time.

**Methodology –**

The methodology involves both primary and secondary data analysis to achieve all the objectives mentioned above. Firstly, the different stages of development of Ahmedabad metropolitan region have been studied to get acquainted with the Ahmedabad metro.

The Ahmedabad metro phase - 1 was chosen since it is present and working on site. To have a spatial understanding of each of the metro stations and its impact on land use and real estate secondary data is collected from respective authorities which is then influenced by various parameters.

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### **Introduction to real estate sector –**

The land advertises, which today has turned out to be obvious and prevailing in every single Indian city can be characterized as that portion of business venture which is occupied with the Activity-on generation, financing, showcasing and genuine property administration. These land designers are in this manner regularly alluded to as colonizers developers, promoters and so forth. In various part of the nation. Albeit real domain engineers frame a sizeable number and constitute a noteworthy segment has by a long shot remained a dismissed and unrecognized area of property supply, often working illicitly.

### **Key players of real estate –**

Real estate markets are portrayed by heterogeneity comprising of geological and sectorial submarkets that do not have a focal exchanging market. Likewise, the working of the market depends on the smaller scale economic situation and incorporate indistinguishable exchange forms which are the fact that contrast as indicated by different submarkets.

A typical Indian micro market includes the following players:

- Land Owners;
- Building Developers and Promoters;
- Contractors;
- Brokers;
- Financers.

The market powers and other components impact the cost of properties, which buyers are willing to pay for a property listed in the market, in advertise economy. In practice, assessing the market estimation of properties is generally in light of heuristics or is made without considering a comprehensive set of powerful factors. This in excessive costs and a lodging market hazard set apart with high points and low points. Therefore, the application has been discouraged or irregular, and a negative impact on real estate, construction industry and the national economy.

Several factors affect the market value of residential properties listed on the market. The general and specific drivers that affect residential property values are: population growth, level of development in the nodes, uses of property. Size and condition of the site improvements and supply and demand category of goods in the local market. From the study of literature, the following factors that influence the value of residential properties.

**Data collection –**

To analyse the impact of metro rail on the land use and real estate pricing following data have been surveyed, collected and computed.

Node wise data - Land use details along with ready reckoner pricing have been done with respect to land.

Local level data - land value data to understand the market trend in areas abutting to metro line, has been collected by a primary survey of the real estate developers, agents and property dealers. Further for each station within a distance of 500 m, land value estimates are also collected.

**Impact of East - West Corridor (Thaltej to Vastral) metro line –**

For looking at the effect of the metro line on the private / business costs measure the separation of 500 metres span from every one of the 11-station hub out of 18 was taken and was examined from every one of the metro hubs. Mass travel ventures, for example, the metro to has affect on private costs, require a well-working land advertise. Zones along the east-west passage are as of now created. Since the FSI long the passageway has not been reconsidered, there is a substantial extension for redevelopment and building extra zone. Therefore, data on an up-and-coming metro won't have promoted numerous exchanges, and subsequently would not influence the prepared reckoner esteems. The metro has demonstrated a positive effect of the

metro line(s). It is likewise likely that created zones would highly affect costs.

**Study area delineation –**

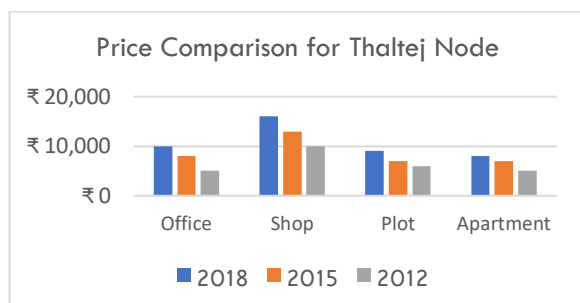
To analyse the impact of metro rail on the land / real estate following data have been surveyed and collected:

Ahmedabad Metro Corridor - 2 is divided into 18 stations from Thaltej Gam to Vastral Gam. To assess the impact of the metro corridor 2 has been selected. The phase stations include; Thaltej Gam to Vastral Gam via Thaltej, Door darshan Kendra, Gurukul Road, Commerce Six Road, Stadium, Ashram Road, Shahpur, Kankaria East, Apparel Park, Amraiwadi, Rabari colony and Nirant Cross Road. All stations located have a vital contrast in terms of land use and activities.

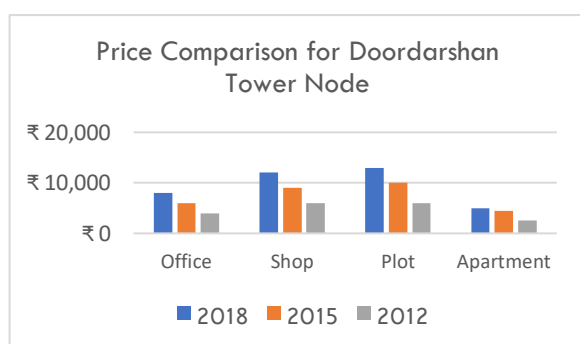
**Data Analysis****Price Comparison for different nodes –**

To identify impact of metro on real estate rates near location of proposed stations, a survey was conducted with the end - users as well as real estate agents for 10 nodes of East-West corridor. 40 samples were collected from each node such that 10 sample each from office, shop, plot and apartment were obtained within a radius of 500 m from the node. Land prices were obtained for three phases, one being before BRTS was proposed i.e., 2012, one after implementation of BRTS i.e., 2015 and

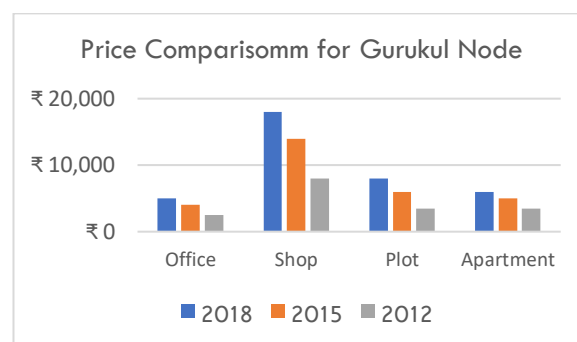
third after Metro was proposed or current rates. Comparison of obtained rates is showed graphically in below figures.



Starting from the western end, first node surveyed was near proposed Thaltej station. It was observed that drastic appreciation took place for Thaltej between year 2012 and 2015 and also between 2015 and 2018 as rapid growth along with development of public transportation was observed over here.

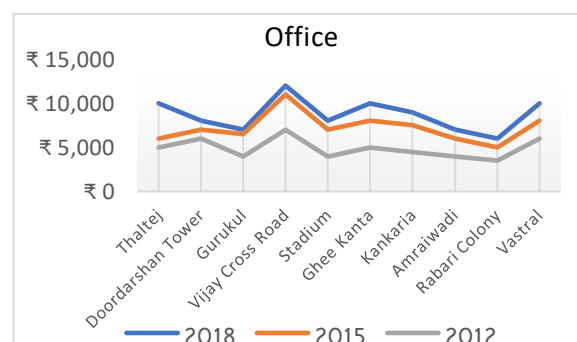


The second node surveyed was near proposed Doorarshan Tower station. It was observed the change in rates after BRTS was more as compared to growth obtained between 2015 and 2018. Here mixed usage of land usage of land was observed, hence the growth here is stagnant.

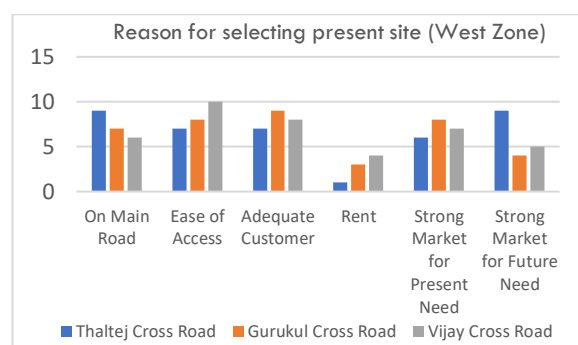
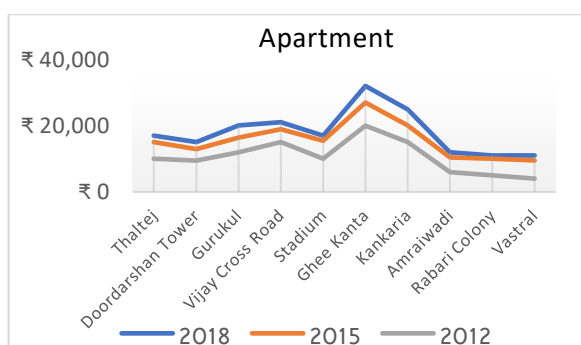
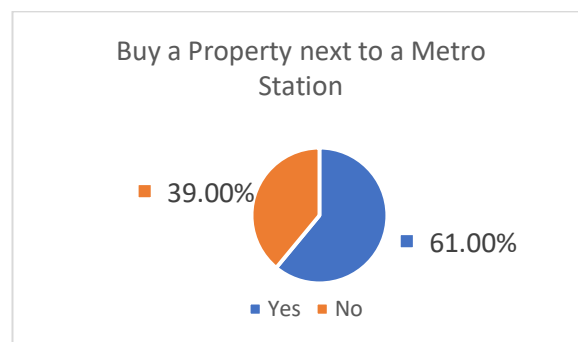
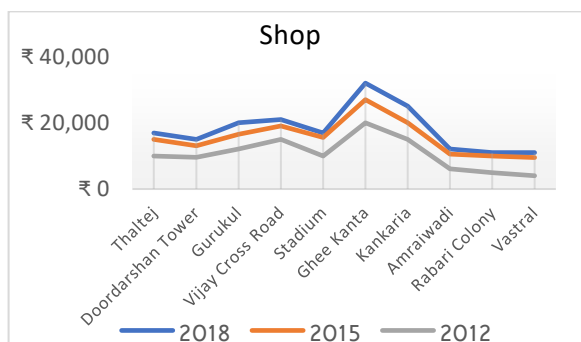


As it is known that maximum real estate development around Gurukul Nide is of commercial nature, the study also reflected the same. Maximum increase in price was found t=for shops and commercial projects while the price growth for residential and office buildings remained more or less constant.

### Price Comparison for Residential / Commercial properties across various nodes –

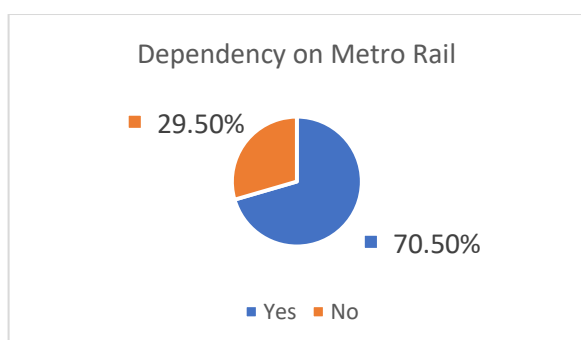


To obtain the maximum appreciation between at the nodes for offices, rates were compared at shown in above figure. Maximum change between 2012 and 2015 was near Doorarshan and Stadium while rates at Vijay Cross Road was higher among all the nodes. Similarly maximum changes between 2015 and 2018 was observed at Thaltej and Vijay Cross Road had highest per Sq. ft rates for offices.



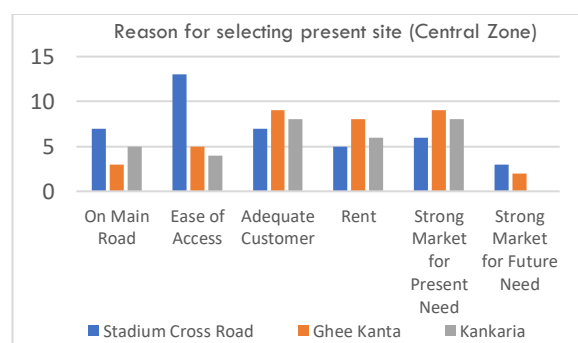
## Dependency on metro rail –

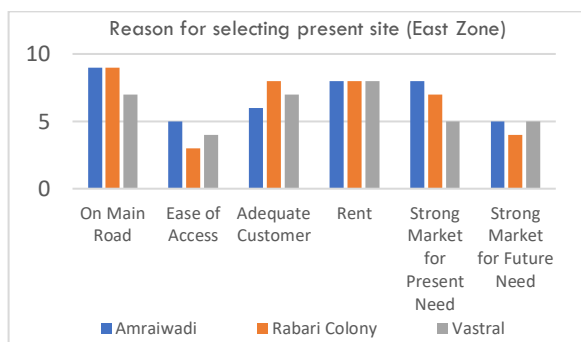
Do you think metro has affected or will affect the price rise in the property?



Would you like to buy a property next to a metro station?

When enquired about the reason for selecting the area for commercial property, maximum number of respondents were influenced by factors such as ease of access to the building, vicinity to main road and strength of available market. Surprisingly, for most respondents rent did not play a major role in this decision.





Observation from above analysis helps us too conclude that Metro construction will be beneficial for nearby commercial properties because of absolute vicinity to main road and the easy commute will bring more customers create a strong market for shop owners.

### Conclusion –

The Ahmedabad Metro link, the 2<sup>nd</sup> most costly infrastructure project is indeed boosting the city's prospects for commercial development. Easier commute, connecting prominent commercial areas with one other, greater saving of time and money for daily travellers on the otherwise congested routes of the city.

One of the major reasons that rise has been observed in commercial property rates around most if these metro nodes. This study also found that residential property rates have seen constant growth or no rise at all after metro construction was proposed. Even though old commercial areas are getting saturated in eastern areas, western zone has seen no decline in commercial property rates, the main reason that can be attributed for this fact is the presence of educational institutions like Gujarat

University, making paying guest accommodate and food joints more popular in this part of the city.

Since the infrastructure in the Eastern part of the city is still developing, there is a large scope of price appreciation as the amenities get in place.

### 1. Impact in Land Use Changes

- Land use along the metro corridor will see a lot of evident changes within a period of time.
- There would be increase in demand for commercial office, retail.
- Real estate market would get a advantage by conversion of the residential land into commercial.
- Redevelopment of old structure will benefit a lot.
- Higher impact will be realized in the immediate neighbourhood of the metro corridor.
- Amount of impact as we drift away from the station.

### 2. Impact on land use densification

- The areas near to metro will confront with vertical growth due to expansion limitation and its locational advantage.
- The development will comprise densification in terms of increased building heights.

### References –

MEGA DPR - (Metro Link Express for Gandhinagar and Ahmedabad (MEGA) Company, 2014)

(India Infra Hub, n.d.)

99 Acre, Insite Report Ahmedabad. (99 acre, 2017)



I.P. Gautam, Integrated land use and transport

Planning Ahmedabad city. (I. P. Gautam, 2014)