

# Spatial Variations in Residential Rental Values: Case Study of Vijay Nagar, Hyderabad

Narendar Kumar<sup>1</sup>, Santhanam Kumar<sup>2</sup> and Nand Kumar<sup>3</sup>

<sup>1</sup>Urban Planner, <sup>3</sup>Associate Professor,

<sup>1&3</sup>Department of Architecture and Planning, Malaviya National Institute of Technology (MNIT), Jaipur, Rajasthan, India

<sup>2</sup>Professor, Department of Architecture,

Jawaharlal Nehru Architecture and Fine Arts University, Hyderabad, Telangana, India

Email: narendar.gncc@gmail.com, skumarjnfau@gmail.com

**Abstract** - Migration from rural to urban leads to intense urbanization; as a result, the demand for houses increases. Migrants prefer to have rental housing instead of having their own houses. Residential rental values differ from place to place on a city horizon. Variations in residential rental values are a result of preferences of tenants i.e. locational and neighborhood attributes. In Hyderabad Metropolitan Area, the impact of location and neighborhood attributes on rental housing shows the spatial variations in residential rental values. These preferable attributes further can be defined in form of Physical, Social, and Economic importance. Rents are fixed depending upon the availability of the aforementioned attributes. This paper aims to explore the impact of these attributes of preferences, made by tenants on residential rental values. To achieve the results, demand, and supply have also been analyzed by taking the mean values of identified parameters. The study is vital for investors, real estate developers, and housing policymakers to relieve capital investment decisions in the housing sector.

**Keywords:** Spatial Variations, Rental Housing, Rental Variation, Locational Attributes, Locational Preferences

## I. INTRODUCTION

The right to housing and adequate shelter is guaranteed in the directive principles of state policy, enshrined in the constitution of India. India is passing through a stage of acute urbanization; which symbolizes the worldwide explosion in urban population. High urbanization needs a large number of dwelling units to give shelter to immigrated people. The population of India has increased by 3.4 times from 1951 to 2011, while the urban population has increased by 6 times during the aforementioned period from 62.4 million to 377.1 million (National Urban Rental Housing Policy Draft, 2015). As the study conducted and estimations made by the Asian Development Bank (ADB) in 2013, the urban population in India is expected to touch 590 million by the year 2030 (McKinsey Global Institute, 2010). The rate of increase in urban population from 2001 to 2011 is 31.8 percent while the overall population of the country has grown by 17.64 percent (Sudhira and Gururaja, 2012). On the flip side, over 27 percent of townsmen in India are abiding in rental housing (National Urban Rental Housing Policy Draft, 2015).

Deficiency in urban housing is an evident affair of policymakers in India. With increasing urbanization, the urban housing shortage is an accentuated reality that is expected to touch 38 million by 2030, and access to housing for all seems more critical in urban areas when it seems to touch 590 million by the year 2030 estimated to ADB. This increasing trend of urbanization exerts a lot of pressure on change in urban land use, infrastructure, amenities as well as the demand for housing. Moreover, migration is a prominent characteristic of Indian urbanization; which usually relies on rental housing to have a foothold to approach the urban economy and its facility.

The importance of rental housing can be seen worldwide with the share of tenants, such as 90 percent of the residents in Berlin are tenants, 85 percent in Geneva, three-quarters of the population are tenants in Vienna, Amsterdam as well as in Paris, and more than half of the residents do not pertain their own house (Benjamin and Sirmans 2007). In Saudi Arabia, about 67 percent of low-income households living in apartments prefer rental housing (Opoku and Abdul-Muhmin, 2010). The events of tenancy in umpteenth parts of West Africa were exalted where it was 79percent in Abidjan, Côte d'Ivoire, in 1988 (Appessika, 2013), 88 percent in Port Harcourt of Nigeria in 1984. In South Africa, almost 90percent of immigrants to Johannesburg either have rented or shared accommodation upon arrival in the city (Miller & Isaac, 2014). Therefore, rental housing is a more affordable way of accommodation for the people ubiquitously in the world.

Rental housing plays a vital role for the housing market and real estate developers (Hurtubia 2010). Ergo, there is a relationship between residential rental prices, location, availability of amenities, and the existence of facilities within a particular piece of accommodation (Amenyah and Fletcher, 2013). Additionally, elements such as physical attributes i.e., space, age of the house, vicinity to parks, landscapes and distance from the workplace, and condition of apartments influence rental values (Adama, 2015). Moreover, accessibility of transport referential facility and linkages alsoimpacts rental values in residential properties (Asikhia, 2013).

Urban housing scarcity and homelessness have been magnified in India. Keeping a close watch on the aforementioned concern, India has traveled a long journey to resolve the concerns of housing shortages after independence through various five-year plans; establishing legal provisions in “Urban Land (Ceiling & Regulation) Act-1976”, the establishment of Housing and Urban Development Corporation (HUDCO), 1970, financial provisions through “The National Housing Bank (NHB) and NHB Act” - 1988, (National Urban Rental Housing Policy Draft, 2015), National Housing Policy (NHP), 1988; it was resurfaced in 1994, National Urban Housing and Habitat Policy (NUHHP), 2007, etc. with the pursuit of affordable housing for all were enunciated. Besides the above gestures, the first policy level effort was made in 2015, when National Urban Rental Housing Policy (NURHP) was framed. All these gestures are appreciable but lacking in addressing the key issues and challenges affined to rental housing, rental values, and rent determinant factors. Ergo, this paper will discuss the components of residential rental values which will further lead and assist in policy-making for rental housing for Indian cities.

This paper aims to provide a focus on the rental determinants responsible for variations in residential rental values. The objectives of this paper are to identify the preferences of tenants and their impact on the residential rental values which they often make in process of pre-occupying a habitat, basically called ‘demand of preferences’ in an urban area. This study will assist to understand the rental price gradient for Hyderabad city based on these identified parameters of rental variations in residential areas. This study will also be helpful for the underlay changes in Rent Control Act for the flourishing of tenants to fix the standard rents and regulate the spontaneous rent behavior of the landlords due to the hike in rental prices in Hyderabad city. This study will try to answer the following questions.

1. What are the differences in rental values from one location to the next on a city horizon?
2. Which factors are responsible for the variations in residential rental prices?
3. What is the basis or parameters for determining rents?
4. What are the locational preferences made by tenants?

The present study gives preponderance to these aforementioned issues and will be an integral document for

the policymakers and practitioners to unify the key features to include in the rental housing programs and policies to boost the rental housing sector. The paper will also be an epochal part for the builders, investors, landholders, and various housing stakeholders in the housing market to focus on the tenant’s choices and preferences.

## II. MATERIALS AND METHODS

To examine the spatial variations in rental values, three multifarious factors i.e., physical, social, and economic are chosen and these are further sub-classified to assess the rental variation in the study area. These chosen parameters; are called rental determinants. The aforementioned key parameters are not equally dispersed in the study area; as a result, rents are also transmogrified in proportionately to the supply (availability) of these attributes. Primary data have been collected from the field by conducting a structured questionnaire, based upon a systematic random sampling technique which was based on economic classes distinctions such as HIG (High Income Group), MIG (Middle Income Group), LIG (Low Income Group), and EWS (Economical Weaker Section).

## III. STUDY AREA (VIJAY NAGAR COLONY, HYDERABAD)

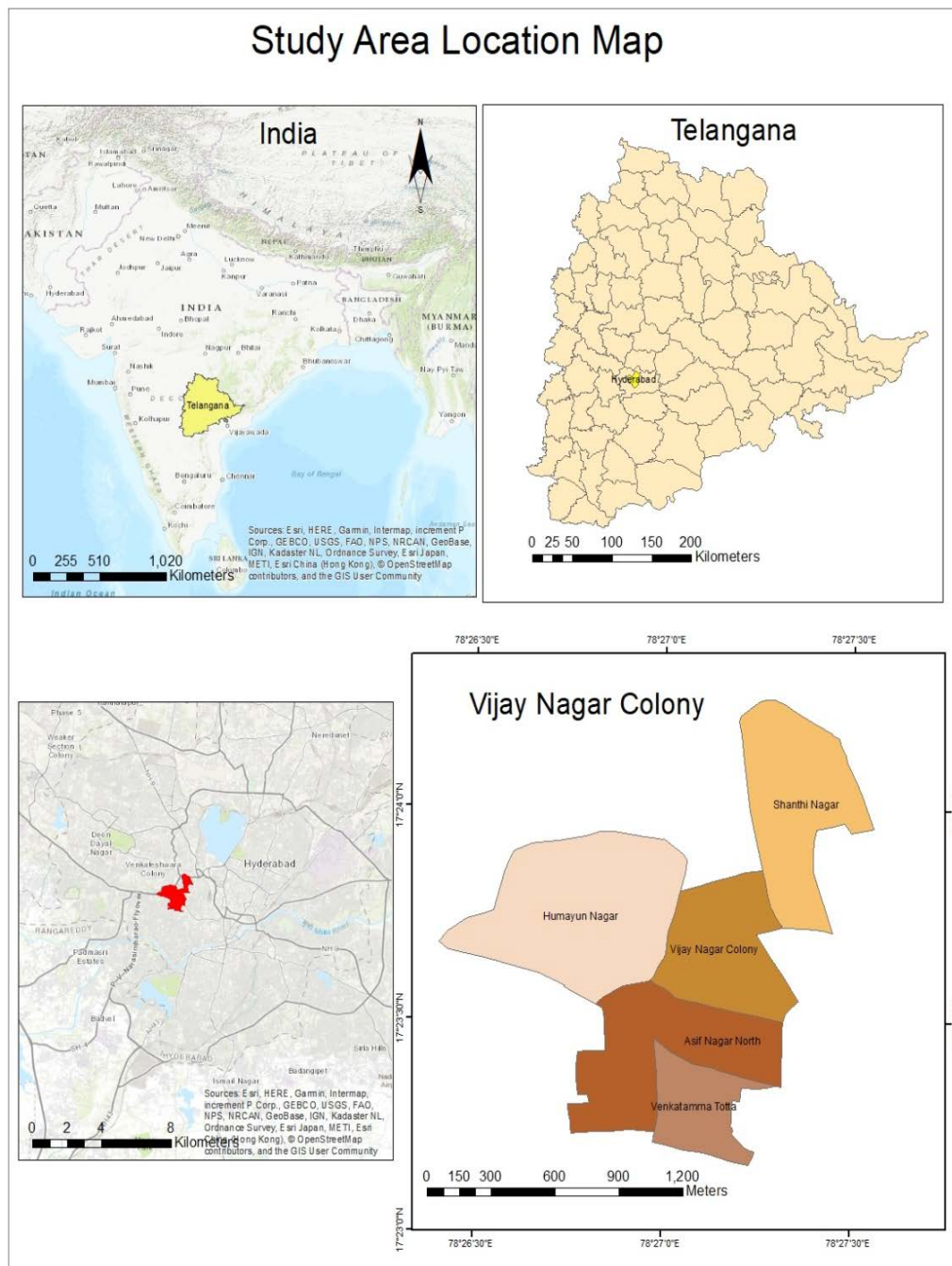
Municipal ward 73, known as Vijay Nagar Colony, comes under the central zone and circle VII of Greater Hyderabad Municipal Corporation (GHMC, Hyderabad. Study area selection is made based on multiple factors such as residential land uses, data availability, location attractiveness index, time and economic viability, and consonance paradigm among tenants from HIG, MIG, LIG, and EWS emboldened. The nomenclature of the five localities is done based on economic classes (Table I).

Its geographical extent is between 17°40’43.17” north latitudes to 17°38’59.51” and from 78°43’98” east longitudes to 78°45’92.17” east longitudes. It has a population of 31,635 people and 7,067 households (HHS) as per the census 2011. It has been witnessing a preferred liveable residential area in the past few years due to its proximity to Hi-tech City which is known as the software hub of Hyderabad city, there has been a heavy influx of IT professionals. Being located at the center of Hyderabad, it has better spatial linkages with every part of Hyderabad city.

TABLE I LOCALITIES WITHIN VIJAY NAGAR COLONY, HYDERABAD

S. No.	Locality	Area in Sq. km	Income Class
1	Vijay Nagar	0.28	HIG
2	Shanti Nagar	0.36	HIG
3	Asif Nagar (North)	0.36	LIG
4	Humayun Nagar	0.54	MIG
5	Venkatamma Thota Nagar	0.16	EWS
Total		1.7	

Source: Nomenclature based upon Primary Survey (2018)



Source: GHMC (2019)

Fig. 1 Location Map of Vijay Nagar Colony, Hyderabad

#### IV. RESULTS AND DISCUSSION

The degree of analysis is based on the identified parameters for each locality. The analysis of data has been done by taking each parameter independently from five localities and their mean value is considered and compared with all five localities. Eventually, a matrix table is prepared to superimpose to identify the rental characters of each locality to assess the variations in rental values in terms of supply and demand existed. These preferred values are the determinants of residential rents and are answerable for the variations in residential rental values.

##### A. Housing Conditions and Tenants' Characteristics

The study area is conversant as a better residential dwelling purlieu after Banjara Hills and Jubilee Hills areas of Hyderabad city; there remains an inherent demand for independent houses in these areas of Hyderabad city (Services I.P, 2016).

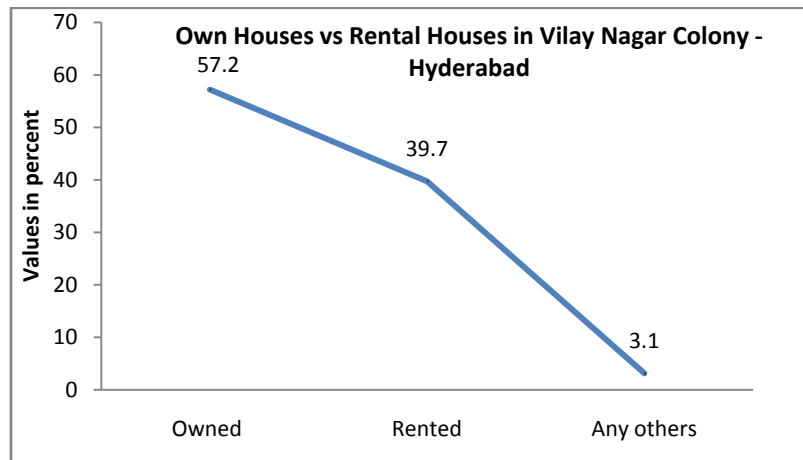
The share of the total built-up housing properties under residential uses enshrined 98.5 percent while mixed-use of residential with other uses enshrine only 1.5 percent (Table II).

TABLE II QUALITY OF HOUSING UNITS IN VIJAY NAGAR COLONY, HYDERABAD

Household Size							
Person	1	2	3	4	5	6 - 8	9+
Share (in percent)	2.8	12.7	16.5	24.8	18.3	20.2	4.7
Residential Uses							
Total	Good	Liveable		Dilapidated			
98.5	88.2	8.7		1.6			
Residence-Cum-Other Uses							
Total	Good	Liveable		Dilapidated			
1.5	1.3	0.2		0			

Source: Calculated from House listing & Housing Census, 2011

Most of the housing properties are good in quality of living indicating good demand for the residential uses for tenants (Census of India, 2011) in the present and future. The share of rented houses is 39.7 percent while owned houses are 57.2 percent (Fig. 2). Most of the houses are in good condition to use and qualitative measures to live whether these are under the intention of residential or mixed uses category as depicted (Table II). This indicates that the rental houses are highly in demand and are a preferable location to reside by tenants. It alludes to a large share of income as a prominent source of capital backflow in terms of the due to return of rental values to the owners, land developers, and investors of housing property development and allied sectors.

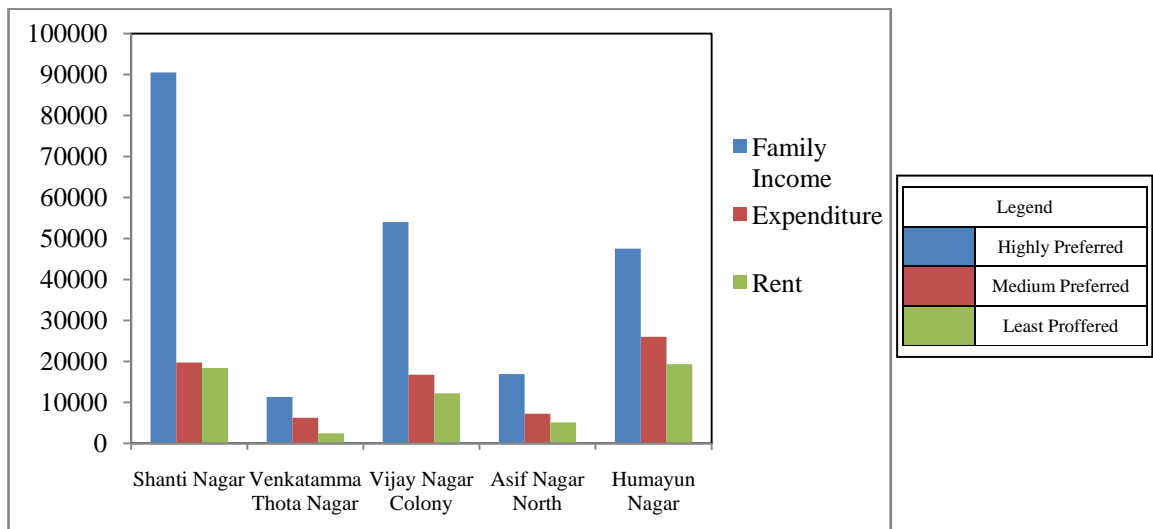


Source: Calculated from House listing & Housing Census, Table 14, 2011  
Fig. 2 Occupancy Status of Rental and Owned Houses

**B. Mean Monthly Income vs Expenditure vs Rent**

Mean values of monthly income, expenditure, and rent of individual HHs have been enshrined based on a primary survey conducted in 2018. Tenants of Shanti Nagar have the

highest monthly income followed by Vijay Nagar, Humayun Nagar, Asif Nagar, and Venkatamma Thota Nagar. The monthly expenditure is the highest in Humayun Nagar followed by Shanti Nagar, Vijay Nagar, Asif Nagar North, and Venkatamma Thota Nagar (Fig. 3).



Source: Primary Survey, 2018  
Fig. 3 Price Index Model: Mean Monthly Income vs Expenditure vs Rent

Fig. 3 elucidates that there is a direct relationship between income and locational preference of an individual HH. If the income is high, tenants will move to a preferable locality to reside. Ergo, the high rent is paid by tenants of Humayun Nagar purlieu followed by Shanti Nagar, Vijay Nagar, Asif Nagar North, and Venkatamma Thota Nagar. Towering rental values alludes to the location preferences of tenants where the more facilities are available and who are more preferred to live by them, an increase in demand for attributes of a particular locality that leads to the rising trend in rents.

*C. Analysis of Identified Parameters*

Appraisal of spatial variations in residential rental values of the Vijay Nagar Colony has been done based on identified parameters (Table III) that are answerable for spatial variations in the rents. A housing occupant makes a preference based on these factors. In this regard, the analysis of these attributes results in a lower mean value preferred first and vice versa. Social parameters are more preferred, followed by physical, economic, and others are least preferred in all the five localities of the study purlieu.

TABLE III ANALYSIS OF IDENTIFIED PARAMETERS OF RENTAL VALUES

Locality name	Physical	Social	Economical	Others
Shanti Nagar	0.77	0.77	0.77	7.75
Venkatamma Thota Nagar	0.7	0.7	0.8	7
Vijay Nagar Colony	0.75	0.75	1.02	2.81
Asif Nagar North	0.92	0.77	0.77	3.08
Humayun Nagar	0.75	0.75	0.8	11.25
Total	3.89	3.74	4.16	31.89

Source: Primary Survey (2018)

*D. Comparative Analysis of Identified Preferences*

Tenants make their preferences to reside in the particular residential areas where the supply of certain parameters of rental housing from the demand side has the potential to full fill their needs. The value of preferences is subject from

place to place and proportionally, rents also vary based on preferences made by tenants in this regard. In Shanti Nagar, the sub-factors of physical parameters are highly preferred followed by affordability, the income of tenants, spatial linkages, and environmental/neighborhood concerns from social parameters (Table IV).

TABLE IV COMPARATIVE ANALYSIS OF TENANTS PREFERENCES

Factors/Attributes	Sub-Factors	Shanti Nagar	Venkatamma Thota Nagar	Vijay Nagar Colony	Asif Nagar North	Humayun Nagar	Total
Physical	1. No. of Rooms	2	1	1.03	0.6	1.37	6
	2. Infrastructure	2	1.33	1.32	1.87	1.47	7.99
	3. Services	2	0.33	1.22	1.45	1.37	6.37
	4. Visual factors	2	0	0.94	0.20	0.09	3.23
	5. Materials Used	2	2.33	0.47	0.41	0.68	5.89
Social	1. Workplace	1.07	1.84	1.15	1.21	1.17	6.44
	2. Spatial Linkages	1.19	1.31	1.15	1.81	1.59	7.05
	3. Race & Ethnic Groups	0.59	1.84	0.38	0.90	1.27	4.98
	4. Security	0.95	0	1.15	0.90	0.85	3.85
	5. Environment/ Neighborhood	1.19	0	1.15	0.15	0.1	2.59
Economic	1. Affordable	1.78	2.72	1.8	4	1.85	12.15
	2. Income of Consumer	1.60	0.90	1.2	0.66	1.57	5.93
	3. Pattern of Savings	1.60	0	1.5	0.33	1.42	4.85
	4. Price Expectation	0	1.36	0	0	0	1.36
	5. Public Transport Subscription	0	0	0.34	0	0.14	0.48

High Preferred	Medium Preferred	Least Preferred
----------------	------------------	-----------------

Source: Calculated based on Primary Survey (2018)

In Venkatamma Thota Nagar, factors of affordability followed by the material used in housing construction, rent expectation, race, and ethnic groups are vice-versa preferred whereas security, neighborhood, and public transport are undershot preferred. In Vijay Nagar Colony, affordability, infrastructure, services, spatial linkages workplace, and visual factors are highly preferred while rent expectation and public transport are minimum preferred by the tenants.

In Asif Nagar, North, affordability, infrastructure, spatial linkages, and services are highly preferred while price expectation and public transport are least preferred. In Humayun Nagar, affordability, spatial linkage, income, infrastructure, and services are highly preferred while rent expectation, visual factors, and public transport are least preferred.

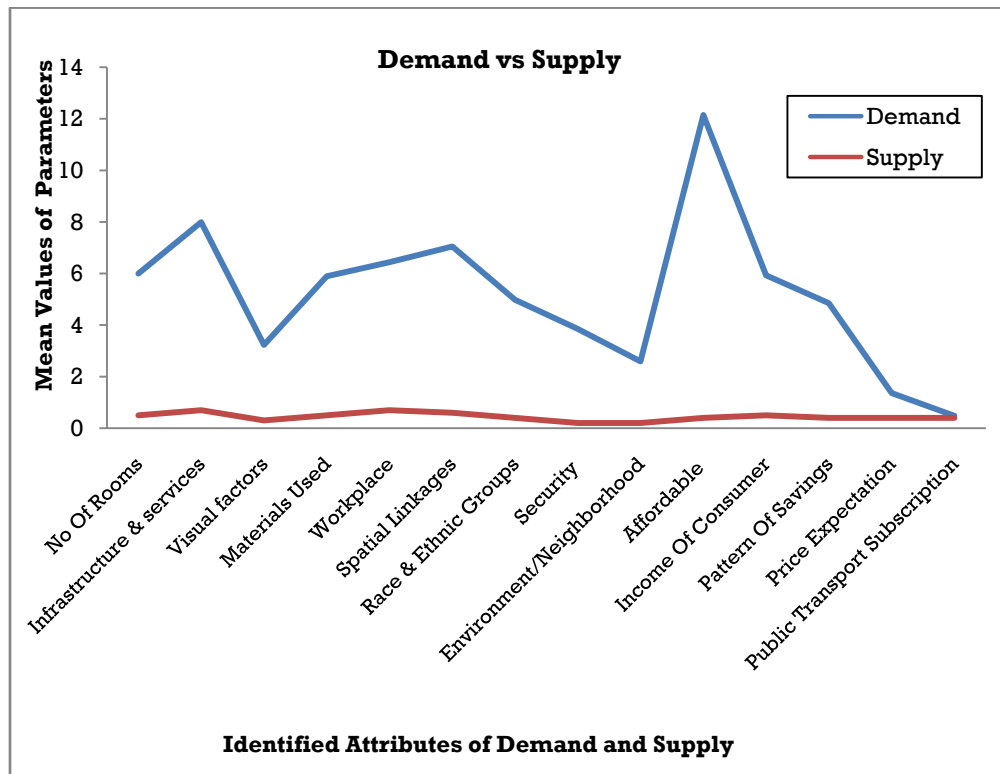
*E. Comparative Analysis of Demand and Supply of Preferences*

Analysis of demand and supply elucidates the gap of identified attributes; when the gap is higher it leads to the result that the tenant is not fascinated to hire a residential dwelling unit in that locality. Despite it, when suppliers ensure the supply of these housing indicators, as a result, the tenant is attracted to reside in that locality.

When the mean values of supply are elevated that promulgates high demand for residential units; it is a benignant emblem for the owner and tenants that alludes to

higher demand for rental housing and reverse capital flow in housing market returns in form of rental values. On the flip side, when mean values from the supply end are lesser than the demand ell, this marks that demand for rental housing is declining due to the lack of access to preference parameters expected by the tenants. The gap between demand and supply of respective parameters emblem the recession in demand for rental housing that further leads to a decrease in income from rental housing. This interlude is not benignant to the economy of the rental housing market of Hyderabad city. The interlude between parameters of demand and supply should be impregnated by housing suppliers i.e., investors, builders, housing policymakers, property developers, etc. to that will boost the demand for vacant houses by the occupants who are immigrants in Hyderabad city.

In context to rental variations in Vijay Nagar Colony, tenants consider such aforementioned parameters given in Table IV in the selection of their livable purlieu when they hire a dwelling rental property unit which determines the variations in residential rents in Vijay Nagar Colony. These parameters are not equally supplied in every locality; hence the rents are also not equally exercisable in each locality. It has been identified and analyzed that the demand is higher whereas the supply of certain parameters is lesser (Fig. 4) in the study area. Spatial variations in residential rental values are existed due to uneven distribution of social, economic, physical, and other sub-factors as discussed earlier (Table IV).



Source: Primary Survey, 2018

Fig. 4 Comparison between Demand and Supply of Preferences



## V. CONCLUSION

The determination of rental values in a non-controlled housing market is a complex process, encompassing several variables. The study unravels the driveways of development for Indian cities to endow a sustaining and dedicated vision to boost the rental housing sector keeping the vision of capital expenditure by the investors, which are key entrepreneurs in housing and real estate developing markets. The variations in residential rents are observed due to an interlude between demand and supply of preferences i.e., physical, social, and economic flair. The state government should redefine the rent control act 'Telangana Buildings (Lease, Rent, and Eviction) Control Act, 1960 (Act XV of 1960)' keeping the present vision and challenges of housing sectors for the mutual welfare of landlords as well as tenants. The key determinants of rents in form of preferences made by tenants are the major concerns to be incorporated into the present and future housing policy framework that will further lead to the sustainable development of better residential units, neighborhoods, attractive locations, and needs of housing entities for rapidly spreading migrated population to Hyderabad metropolitan city.

## REFERENCES

- [1] C. O. Aina and A. Somefun, "The Effects of Facilities Provision on Rental Values of Residential Properties in Ikeja, Lagos State," *Journal of Land use and Development Studies*, Vol. 3, No. 1, pp. 60-67, 2007.
- [2] O. Aluko, "The Effects of Location and Neighbourhood Attributes on Housing Values in Metropolitan Lagos," *Journal of Geography and Regional Planning*, 1767-1775, November 2011. [Online] Available: <http://www.academicjournals.org/JGRP>
- [3] I. D. Amenyah and E. A. Fletcher, "Factors Determining Residential Rental Prices," *Asian Economic and Financial Review*, Vol. 3, No. 1, pp. 39-50, 2013.
- [4] R. Appelbaum and J. Gilderbloom, "The Redistribution Impact of Modern Rent Control," *Environment and Planning A: Economy and Space*, Vol. 22, No. 5, pp. 601-6014, 1 May 1990.
- [5] K. Appessika, *The case of Abidjan, Ivory Coast*, Abidjan: Bureau National d'Etudes Techniques et de Development (BNETD), 2013. [Online] Available: <https://www.humanitarianlibrary.org/sites/default/files/2013/07/Abidjan.pdf>.
- [6] E. W. Asikhia O. Monday, *Accessibility as a Factor Affecting Rental Values of Residential Property In Benin City*, 2013. Retrieved 2017, from file:///D:/pretheses%20data/Journal/The Effect of Accessibility on Rental Values of Residential Properties.htm.
- [7] J. D. Benjamin and G. S. Sirmans, "Apartment Rent: Rent Control and Other Determinants," *Journal of Property Research*, Vol. 11, pp. 27-50, 2007. DOI: 10.1080/09599919408724100.
- [8] E. F. Brigham, "The Determinants of Residential Land Values," *Land Economics*, Vol. 41, No. 4, pp. 325-334, 1965. DOI: 10.2307/3144665.
- [9] Census of India. *Percentage of Households to Total Households by Amenities and Assets, Houselisting & Housing Census: Table 14*, 2011. New Delhi: Registrar General & Census Commissioner. [Online] Available: <https://censusindia.gov.in>.
- [10] Census of India. *Primary Census Abstract Total Table for Hyderabad District Andhra Pradesh*. New Delhi: Registrar General & Census Commissioner, 2011. [Online] Available: <https://censusindia.gov.in>.
- [11] Cushman & Wakefield, "Hyderabad Housing Market to Witness Shortfall in Supply by 2018," *Times of India*, 22 October 2014. [Online] Available: <https://timesofindia.indiatimes.com/business/india-business/Hyderabad-housing-market-to-witness-shortfall-in-supply-by-2018/articleshow/44909334.cms>.
- [12] Government of India, *National Urban Rental Housing Policy (Draft)*. New Delhi: Ministry of Housing and Poverty Alleviation, 2015. [Online] Available: [https://indiahousingreport.in/wp-content/uploads/sites/10/2020/04/National\\_Urban\\_Rental\\_Housing\\_Policy\\_Draft-1.pdf](https://indiahousingreport.in/wp-content/uploads/sites/10/2020/04/National_Urban_Rental_Housing_Policy_Draft-1.pdf).
- [13] Government of India, *National Urban Housing and Habitat Policy*. New Delhi: Ministry of Housing & Urban Poverty Alleviation, 2007. [Online] Available: [https://www.nhb.org.in/Urban\\_Housing/HousingPolicy2007.pdf](https://www.nhb.org.in/Urban_Housing/HousingPolicy2007.pdf).
- [14] R. Hurtubia, "Attributes of Households, Locations and Real-Estate Markets for Land Use Modeling," *Sustaining*, pp. 1-30, April 2010.
- [15] K. S. Kim and W. A. Nelson, "Assessing the Rental Value of Residential Properties: An Abductive Learning Networks Approach," Vol. 12, No. 1, pp. 63-78, 1996.
- [16] Knight Frank India, *11.09 Million Homes are Lying Vacant in India: Report*, October 2019. [Online] Available: <https://www.livemint.com/news/india/11-09-million-vacant-houses-in-india-says-report-11571053150289.html>.
- [17] S. Malpezzi, "Private Rental Housing Markets in the United States," *Netherlands Journal of Housing and the Built Environment*, Vol. 13, No. 3, pp. 353-386, 1998. [Online] Available: [https://www.jstor.org/stable/41107757?seq=1#metadata\\_info\\_tab\\_contents](https://www.jstor.org/stable/41107757?seq=1#metadata_info_tab_contents).
- [18] D. J. McKenzie and R. M. Betts, *Essentials of Real Estate Economics* (5th ed.). Thomson/South-Western, 2006.
- [19] McKinsey Global Institute, *India's Urban Awakening: Building Inclusive Cities, Sustaining Economic Growth*, 2010. [Online] Available: [https://www.mckinsey.com/~media/McKinsey/Featured%20Insights/Urbanization/Urban%20awakening%20in%20India/MG1\\_Indias\\_urban\\_awakening\\_executive\\_summary.pdf](https://www.mckinsey.com/~media/McKinsey/Featured%20Insights/Urbanization/Urban%20awakening%20in%20India/MG1_Indias_urban_awakening_executive_summary.pdf).
- [20] A. S. Mehmet Topcu, "The Analysis of Urban Features that Affect Land Values in Residential Areas," In L. M. Daniel Koch (Ed.), *7th International Space Syntax Symposium*, pp. 1-9, 2009. Turkey.
- [21] A. W. Miller and N. Isaac, *Assessing the Factors That Influence the Rental Values in Wa Municipality*, Department of Real Estate and Land Management. Tamale: University of Development Studies, 2014. [Online] Available: <https://philpapers.org/archive/MILATF-2.pdf>.
- [22] L. Olayiwola, O. Adeleye, and A. Oduwaye, "Correlates of Land Value Determinants in Lagos Metropolis, Nigeria," *Journal of Human Ecology*, Vol.17, No. 3, 2005.
- [23] R. A. Opoku and A. G. Abdul-Muhmin, "Housing Preferences and Attribute Importance among Low-Income Consumers in Saudi Arabia," *Habitat International*, Vol. 34, No. 2, pp. 219-227, 1 April 2010. DOI: 10.1016/j.habitatint.2009.09.006.
- [24] P. C. R. Cruz, "Transaction Costs and Housing Affordability in Asia," *International Real Estate Review*, Vol. 11, No. 1, pp. 128-150, 2008.
- [25] R. G. Ridker and J. A. Henning, "The Determinants of Residential Property Values with Special Reference to Air Pollution," *The Review of Economics and Statistics*, Vol. 49, No. 2, pp. 246-257, May 1967. DOI: 10.2307/1928231.
- [26] I. P. Services, *Hyderabad Real Estate Overview-216*, Hyderabad, Telangana, India, 2016.
- [27] H. Sudhira and K. Gururaja, "Population Crunch in India: is It Urban or Still Rural?," *Current Science*, Vol. 103, No. 1, pp. 37-40, July 2012. [Online] Available: [https://www.researchgate.net/publication/295634745\\_Population\\_crunch\\_in\\_India\\_is\\_it\\_urban\\_or\\_still\\_rural](https://www.researchgate.net/publication/295634745_Population_crunch_in_India_is_it_urban_or_still_rural)
- [28] M. Topcu, "Accessibility Effect on Urban Land Values," *Scientific Research and Essay*, Vol. 4, No. 11, pp. 1286-1291, 2009. [Online] Available: <http://www.academicjournals.org/SRE>.
- [29] A. J. U. J. Adama, "An evaluation of the relationship between neighborhood quality and property value in Minna, Niger State, Nigeria," *International Journal of Development and Sustainability*, Vol. 4, pp. 81-91, 2015. [Online] Available: [www.isdsnet.com/ijds](http://www.isdsnet.com/ijds).