CAHIERS MAGELLANES-NS
Volume 06 Issue 2
2024

ISSN:1624-1940
DOI 10.6084/m9.figshare.2632574
http://magellanes.com/

A REVIEW OF LIVEABILITY ORIENTED AFFORDABLE HOUSING DIMENSIONS: AN INDIAN PERSPECTIVE

Prachi Singh[1*], Dr. Joydeep Dutta[2], Dr. Indrani Chakraborty[3], Dr. Subhrajit Banerjee[4]

[1*]Research Scholar, Faculty of Architecture & Planning, Dr. A.P.J. Abdul Kalam Technical University, Lucknow singhprachi108@gmail.com
[2]Adjunct Professor, Faculty of Architecture & Planning, Dr. A.P.J. Abdul Kalam Technical University Lucknow
[3]Professor, Faculty of Architecture & Planning, Dr. A.P.J. Abdul Kalam Technical University Lucknow
[4]Professor, Faculty of Architecture & Planning, Lucknow Dr. A.P.J. Abdul Kalam Technical University

***Corresponding Author:** Prachi Singh
[*]Research Scholar, Faculty of Architecture & Planning, Dr. A.P.J. Abdul Kalam Technical University, Lucknow singhprachi108@gmail.com

Abstract
The issue of affordable housing in India is prevalent due to the high growth of population which has led to the increased pressure on land. As per PRICE survey the Indian middle income population is going to 60 percent by 2046-2047 which will generate a huge demand for housing in this category. The middle-income population of India thrives affordable housing for better living opportunities. The National Urban Housing and Habitat Policy and Pradhan Mantiri Awas Yojana government scheme has their focus on EWS and LIG category and due to the high cost of market housing, MIG is unlikely to be impacted by the subsidies offered under this scheme. Affordability is a key component of liveability as it directly affects the ability of individuals and families to meet their housing needs without experiencing excessive financial burden. The objective of study is to identify and analyze the parameters through exploratory and thematic content analysis literature review process for the liveability oriented affordable housing dimensions including varying degrees of, policy, socioeconomic backgrounds, and geographic contexts. In this paper, we propose a five main parameters affordability, location, neighbourhood, built environment and regulatory and policy environment for affordability driven liveability comprehensive framework for the understanding of the factors guiding the process of decision- making of the policy makers.

Keywords: Affordable housing, Affordability, Liveability, Housing choice, location, built – environment

1. Introduction

According to the definition provided by the MHUPA task force on affordable housing in India in 2012- "Any housing will referred as affordable housing if meets some sort of affordability criterion, these could include the family's income level, the size of the home, affordability in terms of the size of the EMI, or the ratio of the home's price to annual income. (NIUA, 2012). Pradhan Mantri Awas Yojna (PMAY) is a flagship program of Government of India under Ministry of Housing and Urban Affair look for the housing requirement of different economic group by providing affordable housing and crafting the eligibility criteria for the beneficiaries. Beneficiaries include economically weaker section

ISSN:1624-1940
DOI 10.6084/m9.figshare.2632574
http://magellanes.com/

(EWS), low-income groups (LIGs) and Middle Income Groups I & II (MIGs). The annual income cap is up to Rs 3 lakh for EWS, Rs 3-6 lakh for LIG and Rs 6-12 lakh and 12 -18 lakhs for MIG respectively. It is unlikely that new housing policies targeting middle-class groups (like "Pradhan Mantry Awas Yojna") will have an impact on MIG housing because, notwithstanding the subsidies provided, the market price of housing stock remains outpriced for MIG members. There are two categories for the housing problem: market-driven and policy-driven. The LIG and EWS are served by policy-driven approach of housing provision. The housing pushed by the market satisfies the needs of the HIG. There is need to study the focuses on the MIG and their related housing issues in order to develop comprehensive housing strategies for all income groups. (Arnab Jana S. S., 2018). According to PRICE's survey ICE 360 carried out in 2020-21 (The Rise of India's Middle Class , 2021) the middle class in India, earning between ₹5 and ₹30 lakh annually, is expected to grow 2.5 times to 1.015 billion by 2046-2047, constituting 61% of the country's population. The middle class is expected to increase from 31% in 2020-21 to 47% in 2030-31. The survey categorizes middle-class households into "strivers" and "seekers" with incomes between Rs 15-30 lakh. (Shukla, 2022). The MIG group faces challenges in aspects of affordability and the sociological constraints of inhabiting substandard living conditions (Gupta, 2019)

Affordable Housing definition in India is not common across all policies. It changes subject to centre, state and city policies. The criteria to qualify as affordable housing also depends on the scale of city such as (metropolitan city, tier II city) subject to which carpet area is defined to qualify as affordable housing. Deepak Parekh Committee (2008), constituted by the MHUPA, Task force for affordable housing, 2008, India, defines affordable housing as the EMIs should not exceed 30%- 40% of the household gross monthly income. National Urban Housing and Habitat Policy (NUHHP), 2007 has identified 'Affordable Housing for All' as a key focus area to address concerns that could potentially impede sustainable urban development. It also emphasized on public-private partnerships for the land and service development for affordable housing to create adequate housing stock. There are disparities in affordable housing definition across scheme and funds to qualify as beneficiaries for subsidies. The parameters which can be observed from Housing policy and scheme in India are carpet area, built-up rea, housing cost, and annual income, and monthly EMI contribution, FAR and building regulations. In India the concept of affordability is the purchasing power of the individuals/household, defined through the income patterns i.e monthly emi contribution (Arnab Jana R. B., 2016). However, there are other factors involved in the designation of "affordability", like house location and quality as well as sustainability should also be explored (Emma Mulliner, 2013) . The supply side challenges and constraints for affordable housing include lack of availability of land and finance at reasonable rates, archaic zoning & building regulations. The demand drivers include the growing middle class and urbanization ((JLL, Affordable Housing in India Key Initiatives for Inclusive Housing for All, 2016).The outcome of such constraint leads to the compromised location and desired livability by the end-user.

Liveability is a multifaceted concept that may vary across different spectrums of studies and disciplines in which it is applied. It is important for policymakers to recognise these varying perspectives in order to tailor their strategies accordingly. When looking at the housing perspective, it is crucial to consider the unique socio-economic needs of residents and their trade off with factors such as affordability, quality, and access to amenities. Liveability has objectives, which can be measured with subjective measures such as resident satisfaction surveys and city rankings. In this study, liveability will see in its relationship to housing, housing affordability, built-environment and how does it affects the well- being of residents. This paper will examine the housing dimension of liveability and will establish indicators

ISSN:1624-1940
DOI 10.6084/m9.figshare.2632574
http://magellanes.com/

and variables for liveability oriented affordable housing framework. Access to opportunity is key to liveability and housing has big role to play for desired liveability. Housing is most expensive good that people desired to own which has many opportunities associated with it such as neighbourhood opportunity, accessibility to services, and freedom to choice. Urban liveability is the ability of an urban area to satisfy the requirements of its citizens in terms of their quality of life and well-being.London Commission for Architecture and the Built Environment refers liveability to "the degree to which a place, be it a neighbourhood, town or city, supports quality of life, health and wellbeing for the people who live, work or visit" (Wu, 2018). In cities and city-regions, liveability is becoming increasingly important for social well-being (Kaal, 2011). To making housing affordable often built-up area, construction cost, land prices are reduced, FAR and interest subsidies are increased which results into overlooking of accessibility and liveability aspects. The housing provided by private developers, and the choice of housing location are generally a trade-off between accessibility of the housing and affordability of the individual.
(Arnab Jana R. B., 2016)

2. Methodology

Liveability is a multifaceted, hierarchical concept with numerous criteria and sub-sub-criteria's that can be evaluated in a variety of ways. This study set out to thoroughly examine the metrics and approaches employed in the literature through the exploratory and thematic research process for liveability oriented affordable housing. The search for literature on liveability oriented affordable housing indicators & considerations began by listing the apposite keywords, namely, liveability, affordability, affordable housing, liveability indicators, liveability framework, location affordability, neighbourhood, wellbeing of habitants, resident satisfaction, affordability and liveability indexes, and built environment for the study was a desk study. Databases were searched (Google Scholar, Scopus, Science Direct, Taylor and Francis Online, Springer Link). The selection of articles for inclusion in the study involved a manual evaluation of the abstracts and titles. A matrix was conducted to conclude which keywords steered to relevant literature for the selection of study. After that thematic content analysis was used to identify emerging themes related to housing liveability indicators. The liveability indicators identified which are relevant to housing were sorted & tabulated based on their frequency of occurrence in the sampled literature and thereafter deliberated to show the relationships between the works and views of authors. The final stage of a literature review involves collating and summarizing the results to illustrate the connections between the authors' perspectives and their works.

3. Literature Analysis

Barriers to affordable housing:

Constraints in Affordable Housing: Supply side limitations for affordable housing include lack of availability of finance & land at rational rates, archaic zoning & building regulations, Regulatory Constraints: Scarcity of marketable land parcels, titling issues, rising costs (Rao, 2016) (Kalpana Gopalan, 2015) (Padmini Ram, 2016) (Arnab Jana R. B., 2016) (JLL, Affordable Housing in India Key Initiatives for Inclusive Housing for All, 2016).

In Indian cities land and real estate markets have been overly regulated for a long time. This has crowded out both the middle class & poor households from housing markets in cities of India (IDFC, 2018).

The demand drivers include migrants, the growing middle class and urbanization. Government regulation constraints including poor land records, regulations and zoning laws that discourage development, cost per built-up area, FSI (Sarkar, 2016). There are others constraints like location of housing, housing choice, accessibility to housing options and infrastructure facilities. The outcome of

ISSN:1624-1940
DOI 10.6084/m9.figshare.2632574
http://magellanes.com/

such constraint leads to the compromised location and undesired liveability by the end-user. The MIG aspires for minimum standard of living and service benchmarks, housing with such services are outpriced and their lies an affordability gap for MIG. Cost of housing unit is beyond their limit which raises the conflict between actual affordability and affordability criteria set under government policy which causes housing stress in MIG. There is low absorption and high vacancy rates in the markets due to fragmentation and lack of responsiveness. Despite this increasing shortage for affordable housing, the vacant housing inventory increased by 73% between 2001 and 2011 (Gandhi et al., 2022). If seen economically housing affordability problems are more appurtenant in lower- and middle-income groups. Apart from Megacities (Mumbai, Delhi, Kolkata, Bengaluru, Chennai, and Hyderabad), housing affordability is a rising problem in Tier II and Tier III cities of India (Prabhat Rao, 2021). Government intervention through appropriate policies can drastically reduce the cost per built-up area and enable more individuals to avail housing directly through the formal market itself (Pandey, 2009).
The determinants which can be derived from housing policy studies for regulatory and policy environment attributes are affordable housing standards, incentives, availability of subsidized housing, transparency, housing price and subsidy. Category & pattern of affordable housing program by the government, locations for the affordable housing planning, need analysis and criteria for affordable housing scheme, procedure of application for affordable houses (Rohayu Ab Majid, 2023). The term liveability has been used as a policy approach by those involved in urban governance (Li, 2013).

3.1 Housing & Liveability Related Indexes

3.1.1 Affordability

"Residex" developed by Housing Bank of India is a comprehensive tool that not only tracks the overall housing price trends in India but also provides a detailed analysis of how these prices vary across different zones or locations within a city. This allows policymakers and stakeholders to gain crucial insights into the real estate market and make au courant decisions regarding housing policies and investments.
In Indian studies of housing indexes, (JLL, Home Purchase Affordability Index , 2022) Home Purchase Affordability Index takes affordability as factor and average household income, home loan interest rates, and price of the residential apartment as variable. In (Frank, Affordability Index - Rediscovering Affordability, 2019) , parameters taken are house price to household income ratio, rent as a proportion of income, real house price growth compared to real income growth.

3.2 Liveability

Every year, the Economist Intelligence Unit (EIU) releases reports on liveability rankings called the Global Liveability Index, which is used to assess the quality of life in different places (Economist Intelligence Unit, 2012). Five weighted factors—stability, healthcare, culture and environment, education, and infrastructure—are used to determine this rating. Subsequently, the Quality of Life (QoL) assessment conducted by Mercer assesses various cities worldwide according to their quality of life (Mercer, 2018). Based on ten carefully chosen and suggested socioeconomic variables, Mercer's Quality of Life assessment provides suitable recommendations for 450 locations worldwide.
Ease of Living Index, India developed by Ministry of Housing and Urban Affairs (MOHUA, 2019) has taken housing and shelter as factor under quality of life pillar with the indicators like electrical connections in households, average duration of electrical interruptions, beneficiaries under Pradhan Mantri Awas Yojana and slum population. . Housing is measured under physical pillar as indicator Housing and inclusiveness index and sub-indicator for same is percentage of economically weaker

ISSN:1624-1940
DOI 10.6084/m9.figshare.2632574
http://magellanes.com/

section (EWS)/Slum households covered through affordable/formal housing and percentage of slum areas covered vide basic services.

American Association of Retired Person (AARP, 2015) AARP AARP public policy institute ranks US cities based on their liveability performance. The index takes liveability dimension in terms of housing, neighbourhood, transportation and health. The liveability indicator and sub indicators taken for housing are housing affordability (sub-indicators housing cost, Housing cost burden (, Availability of subsidised housing) housing option (sub-indicator Availability of multifamily housing, and housing accessibility (sub-indicator Zero step entrances). (AARP., 2018)The Center for Neighbourhood Technology (CNT, n.d.)- A neighbourhood is identified as affordable if a household spends 45% or less of its earnings/wages on housing and transportation costs. This percentage aligns with the rule of thumb that households should spend 30% or less on housing along with 15% for transportation costs. The **Location Affordability Index (LAI)** (Department of Housing and Urban Development, 2016) is a tool that estimates the percentage of a family's earnings/wages dedicated to housing and transportation costs in a specific location. It allows users to select from a range of family profiles, varying by income, size, and commuter number, to view the affordability landscape in a specific neighbourhood, city, or region.

The indexes which are developed in India are city level, the housing is seen as one of the sub indicator under quality of life with a very narrow lens of scheme beneficiaries and slum population, whereas as quality of life and social well-being is concern of every city dweller with rapid urbanization of cities. The affordability index in India focuses on emi contributions, property prices, price to income ratio, saleable area often overlook the factors of cost burden for the purchasers in terms of transport cost and neighbourhood cost. To assess the liveability of affordable housing, neighbourhood liveability for affordable housing should be developed with the wide set of indicators corresponding to the needs of affordable housing improvement. The liveability is concerned with every citizen and housing is seen as fundamental right in country, so the housing as liveability dimensions need broader set of indicators and parameters. The liveability of housing is a behaviour pattern in the relationship between people and their interaction with housing, along with the inherent quality of the housing itself, and from the perspective of the people living there, it is to achieve human quality or suitable conditions for life.

3.3 Social & Economic Factors

To determine the liveability attributes for affordability it is important to study the socio- economic profile for which variables are gender, age, marital status, indigene-ship, household size, education, monthly income, employment status, number of working class, length of stay and tenure status as it affects the housing choice (Vupru, 2020) (Paul, 2020) (Anand Patil Digambar, Residential Location Choice: A Study of Household Preferences for the City of Nagpur, 2010) (Mohammad Abdul Mohit, 2017). Social factors are family size, age group, housing ownership, employment status, working members, household income, cost-to-income ratio, education level (Olanrewaju, 2020) (Atticus Jaramillo, 2020).

Economic attributes of housing stock can be defined as Dwelling ownership, Monthly rent (RENT), Net present value of housing stock, House prices in relation to income, Rental costs in relation to income, Interest rates and mortgage availability. Land and construction cost which implies housing location choice (Pavan Namdeo, 2020), (E. Mulliner, 2012) (Nishat Afshan, 2023).

ISSN:1624-1940
DOI 10.6084/m9.figshare.2632574
http://magellanes.com/

3.4 Neighbourhood Factor

Liveability is a multifaceted concept that includes both the objective physical environment and the subjective experiences of people. In the Indian context, most studies on liveability have focused on the subjective experience of resident satisfaction, taking the parameters at premises level like park , carpet area, at neighborhood level with provision of neighbourhood facilities, security and cost incurred to purchase the house, residents' satisfaction followed by social infrastructure, residential amenities and dwelling attributes, accessibility to services, proximity to location , housing location satisfaction and happiness, accessibility, safety of public areas/streets, frequency use of public spaces, quality and maintenance of public areas, gender and age- based perception (Gupta, 2019). (Mouratidis, 2020) (Pankaj Kumar P. K., 2016) (Anwesha Mahanta, 2022) (Pankaj Kumar P. K.). This study aims to establish a comprehensive assessment framework for liveability-oriented affordable housing, considering its relationship with housing cost and affordability. The resident perception study is important to study in terms of satisfaction to understand that how affordability and liveability are interlinked and how individual perceive liveability for affordable housing. There are many studies focused on neighbourhood satistfaction but less studies that focused on spatial attributes and land use variables and how they corresponds to liveability (Nishat Afshan, 2023)

3.5 Housing Choice and Locational Attributes

Affordability is foundational to housing choice, location choice, and liveability. Affordable housing options enable residents to select housing that meets their needs without compromising their financial stability. It also emphasises the significance of physical infrastructure attributes for developing countries in residential location choice, which is hardly employed in the current practice (Pandit, 2023). The location of housing significantly influences livability as it determines the ease of access to essential services and amenities. Well-located housing contributes to higher livability by reducing commute times, fostering community engagement, and promoting healthier lifestyles. It supports location choices that align with employment opportunities and essential services, thereby enhancing livability. For assessing the liveability potential in metropolitan agglomeration the factors are neighbourhood quality, standard of civic amenities, the extent of convenience in public transportation, the extent of economic opportunities & the extent of public safety (Paul, 2020).

The factors that determine housing choice are housing price, quality and condition of location and neighbourhood Housing price is critical factors that determines location and neighbourhood choice. Neighbourhood characteristic plays a pivotal role for housing location choice. The reviewed articles emphasized the importance of accessibility and proximity to facilities in influencing consumer behaviour. Neighbourhood character attributes can be proximity and accessibility to various facilities, physical & social infrastructural coverages, and connectivity to public transport such as Aesthetic views, crime rate, and neighbourhood satisfaction (Adeyosoye Babatunde Ayoola, 2023) (Emma Mulliner, 2013) (Atticus Jaramillo, 2020).

Quality and condition of location and neighbourhood has significant impact on housing price less distance to amenities, employment opportunity, distance to CBD and neighbourhood attributes educated neighbours, worship places, convenience store can have positive impact on individual (Utpal Kumar De). The study by Gupta (2019) found that cost factors are the primary determinant of residential location choice for MIG residents. Satisfaction levels were assessed at three domains: within premises (water supply, street lighting, parking, children's park, community services, Gymnasium, swimming pool), at neighborhood (market, educational facilities, bus stand/auto stand, health facilities), and with cost (travel costs, property-related costs, initial investment, EMI payable, monthly rent).The attributes that affects location choices are location accessibility, location socio-economic, location point of

ISSN:1624-1940
DOI 10.6084/m9.figshare.2632574
http://magellanes.com/

interest education, service-retail, sport recreation transport, location- built space (Patrick M. Schirmer, 2014).
In addition to the transportation issues, a significant amount of study has been done to look at a number of factors that affect the housing and location decisions made by households. These include the nature of the neighbourhood, the density of residential units, the size and quality of the homes, the cost of the housing stock, and the houses' proximity to amenities (Chatman, 2009) (Y. Wang, 2021) (Eliasson, 2010) (Location Choice Models, 2016).
The article (Gomaa, 2023) has taken indicator namely population density, housing density, and land-use mix index, which are less studied indicator in housing choice and can be taken into variables spatial neighbourhood characteristics.
Accessibility to housing is a trade-off between housing opportunity and affordability. The policy instruments used (e.g. Housing subsidies in form of dwelling unit cost, interest subsidy etc.). Housing accessibility cannot only be defined as access to dwelling unit. Often tend to ignore to what degree different dwellings have access to quality services and opportunities nearby, or at locations within easy reach. Thus, beneficiaries are frequently priced out of areas that offer higher quality of services and opportunities, and are better connected to the rest of the city. (Acevedo-Garcia D, 2014).

3.6 Built Environment Parameters:

The Centre for Liveable Cities and the Urban Land Institute, Singapore in there study in the book 10 Principles for Liveable High-Density Cities: Lessons from Singapore has identified developing affordable housing and Mixed-use Neighbourhoods as one the crucial learning for liveability. Suburban public housing towns of Singapore provide high-quality residential environments through effective housing policies, land use planning, and financial incentives, offering a range of housing and amenities for various income groups. (Dunn, 2013).
To measure liveability of an area it is important to see percentage of mixed use development, land use and neighbourhood opportunity as more localised amenities closer to housing unit. Liveability-oriented built environments are characterized by convenience, spaciousness and diversity. The study identifies 3D Parameters i.e density- building density to assess density, building height and plot area to assess residential design and functional and land use to assess diversity. Areas with a low building density, high building heights, a large plot area, and diverse land use are highly favourable for liveability (Jinyu Huang, 2024). Built environment parameters can also be classified as urban characteristics which can be expresses as percentage of mixed use of land use (cultural, educational, commercial, public and semi-public, open spaces and networking opportunities) and city level variables such as residential population density, total built-area, and spatial variation in housing affordability (Ghumare, 2021) (Amnon Frenkel, 2013).

4. RESULTS AND DISCUSSION

Housing opportunity, neighbourhood opportunity, affordability, and liveability are interconnected concepts that collectively influence the quality of life and well-being within communities. There is need to develop a framework, policies and initiatives that promote diverse housing options, well-located housing, affordability and livable neighborhoods in India. Livability is influenced by both housing and location choices. Housing options that are affordable, well-maintained, and located in neighborhoods with adequate amenities contribute positively to livability. Similarly, well-chosen locations that offer access to jobs, transportation, schools, parks, and healthcare facilities enhance residents' quality of life and overall well-being. Location choice depending on capability, availability, requirement and neighbourhood conditions are integral parts of selection of accommodation in a city (Utpal Kumar De).

CAHIERS MAGELLANES-NS
Volume 06 Issue 2
2024

ISSN:1624-1940
DOI 10.6084/m9.figshare.2632574
http://magellanes.com/

Assessment index system for liveability oriented affordable housing parameters:

To develop a framework and assessment of parameters are done on housing affordability parameters, locational attributes, neighbourhood ,built environment parameters and regulatory and policy environment.

For housing affordability parameters we have choose, annual income, monthly emi contribution, transportation cost, which should be expressed in terms housing cost burden. Socio-economic parameters like Occupation of household head Monthly disposable income, Household size, Family type, No. of children, age of household head, education level of household head.

For neighbourhood cost- proximity to services, school, health cares, neighbourhood quality can be determined by vacancy rates, access to jobs by public resident.

For locational attributes location preference, residential characteristics and proximity to CBD and how this relation preferences affect the cost. The research has shown the housing price with these services increases and become outpriced for middle income group.

For built environment parameters 3D design parameters density, design and diversity. For density the variable taken is building density, for design the building and plot area are taken as variable, The diversity variable , functional and land use diversity is consider. The built environment relationship and its relation with housing price should be studied, for the framework of liveability oriented affordable housing.

Parameter	Variable	Meaning
Housing Affordability Factor: Socio-economic aspects	**Socio-economic characteristics of household**: Variable: Occupation of household head Monthly disposable income, Household size, Family type, No. of children, Age of household head, education level of household head **Economic attributes** Gross monthly emi contribution, transportation cost, housing price and the neighbourhood opportunity cost, availabity of subsidized housing	Percentage of monthly emi contribution for housing cost. As per H+T index if it under 45% than housing considered affordable. Perception study for housing satisfaction
Built -Environment building Parameters Factor: Planning, Land Use	**Landuse variables-** 3D Parameters Density- building density Design- Building height, plot area Diversity- Functional and land use **City level variables for affordability**- spatial variation in housing affordability	For density Proportion of building floor area per unit area For design average height of the building and average plot area Percentage of landuse mix in identified grid for functional and landuse diversity.
Parameter: Locational Factor: Housing Characteristic	Residential unit characteristic (size, cost, house type, age), landuse pattern, distance from CBD , housing option, absence of non-compatible activities	Percentage of landuses, distance from CBD, no. of subsidized housing available in area, distance from public transportation
Parameter: Neighbourhood Factor: Quality and Proximity	location accessibility, location point of interest (education, service-retail, sport recreation and transport), accessibility to public transport,	Distances from amenities, Quality of amenities Satisfaction study for the services of amenities
Regulatory and policy environment, and	National, state and local policy issues.	Affordable housing standards, Incentives, availability of subsidized housing, transparency, housing price and subsidy

By Author

ISSN:1624-1940
DOI 10.6084/m9.figshare.2632574
http://magellanes.com/

5. Conclusion

In this study multiple indicators for liveability oriented affordable housing has been identified through a relevant literature study. For the affordable housing location which impacts liveability, housing price cost, satisfaction depends on supply side factors affordability and availability of housing which gives freedom housing choice whereas as demand side factor which influences housing choice are housing accessibility, housing and transport cost.. The indicators identified for liveability oriented affordable housing are affordability with its relation to socio-economic attributes, location with attributes of choices, built environment with attributes of land use and neighbourhood with attributes of quality and proximity and governance with attributes of policy and standards can help to assess the accessibility and location potentiality for the affordable housing. The study highlights it is crucial to study the relationship between housing cost and negotiations that buyers made with neighbourhood opportunity in terms of housing location, housing accessibility, housing option and built-use factors. The study of these negotiations will lead to the determination of relationship between housing affordability relationship in terms of cost with liveability parameters and what are changes in terms of policy and framework can be made to achieve desired affordable housing. The research can help to design different policy outcomes for different set of actions for supply of affordable housing, offering good quality & affordable housing and contribute to more equitable access.

References

1. AARP, A. A. (2015). *Neighbourhoods for All Ages*. Retrieved from https://www.aarp.org/ppi/issues/livable-communities/info-2015/livability-index.html
2. AARP. (2018). *AARP Livability Index.*
3. Acevedo-Garcia D, M. N. (2014). The child opportunity index: improving collaboration between community development and public health. Health Aff (Millwood). . *https://doi.org/10.1377/hlthaff.2014.0679*.
4. Adeyosoye Babatunde Ayoola, A. K. (2023). Determining Residential Location Choice along the Coastline in Victoria Island, Nigeria Using a Factor Analytical Approach. *Buildings*.
5. Affairs, M. o. (2019). *Ease of Living Index Framework* .
6. Amnon Frenkel, E. B. (2013). Residential location choice of knowledge-workers: The role of amenities, workplace and lifestyle, . *Cities*, 33-41.
7. Anand Patil Digambar, A. D. (2010). Residential Location Choice: A Study of Household Preferences for the City of Nagpur. *Institute of Town Planners*.
8. Anand Patil Digambar, A. D. (2010). Residential Location Choice: A Study of Household Preferences for the City of Nagpur. *Institute of Town Planners, India Journal*.
9. Anwesha Mahanta, P. B. (2022). Urban livability and contextual uncertainties: An assessment of livability through the lens of urban dwellers in Guwahati, India.
10. Arnab Jana, R. B. (2016). Framework to assess and locate affordable and accessible housing for developing nations: Empirical evidences from Mumbai.
11. Arnab Jana, S. S. (2018). Disparate housing strategies and practices of public and private enterprises in India: Analysis of middle class housing and new towns.
12. Arpan Paul, J. S. (2020). A critical review of liveability approaches and their dimensions. *Geoforum*, 90-92.
13. Atticus Jaramillo, W. M. (2020). Neighborhood Opportunity and Satisfaction Among Housing Choice Voucher Recipients: A Subjective Well-Being Perspective. *Housing Policy Debate*, 703–717.

ISSN:1624-1940
DOI 10.6084/m9.figshare.2632574
http://magellanes.com/

14. Chatman, D. G. (2009). Residential choice, the built environment, and nonwork travel: evidence using new data and methods. *Environment and planning*.
15. CNT. (n.d.). *Housing + Transportation Index*. Retrieved from https://cnt.org/tools/housing-and-transportation-affordability-index
16. Department of Housing and Urban Development, 2. (2016). Retrieved from hudexchange.info: https://www.hudexchange.info/programs/location-affordability-index/about/#:~:text=The%20Location%20Affordability%20Index%20(LAI,Note%20on%20recent%20changes.
17. Dolores Acevedo-Garcia, N. M.-N. (2016). Neighborhood Opportunity and Location Affordability for Low-Income Renter Families. *Housing Policy Debate*.
18. Dunn, D. L. (2013). *10 Principles for Liveable High-Density Cities: Lessons from Singapore.* Singapore: Centre for Liveable Cities (CLC).
19. E. Mulliner, V. M. (2012). What Attributes Determine Housing Affordability? . *World Academy of Science, Engineering and Technology*, 576-581.
20. Eliasson, J. (2010). The influence of accessibility on residential location. *Advances in Spatial Science*, 137-164.
21. Emma Mulliner, K. S. (2013). An assessment of sustainable housing affordability using a multiple criteria decision making method.
22. Frank, K. (2019). *Affordability Index - Rediscovering Affordability.* Knight Frank.
23. Frank, K. (2019). *Affordability Index - Rediscovering Affordability.* Knight Frank.
24. Ghumare, P. C. (2021). Exploring preferences for affordable housing criteria importance among EWS in India. *International Journal of Housing Markets and Analysis*, 759-778.
25. Gomaa, M. M. (2023). Macro-Level Factors Shaping Residential Location Choices: Examining the Impacts of Density and Land-Use Mix. *LAND*.
26. Gupta, A. K. (2019). A need for policy revision to reach the intended benefciaries: a learning from middle-income group housing. *Journal of Housing and the Built Environment*.
27. Guturu, K. (2020). Developing Methodology to Assess Liveability of Neighborhoods in the Indian Context- .
28. IDFC. (2018). *Making Housing Affordable.*
29. Jinyu Huang, Y. W. (2024). Livability-oriented urban built environment: What kind of built environment can increase the housing prices? *Journal of Urban Management*.
30. JLL. (2016). *Affordable Housing in India Key Initiatives for Inclusive Housing for All.*
31. JLL. (2022). *Home Purchase Affordability Index* . JLL.
32. Kaal, H. (2011). A conceptual history of livability.
33. Kalpana Gopalan, M. V. (2015). Affordable housing: An academicperspective on policy and practice in India.
34. Li, W.-Y. &.-C. (2013). Trends of Livability in the Capital Region of Taiwan. *Journal of Asian Architecture and Building Engineering*, 293-300.
35. Location Choice Models, K. G. (2016). Determination of Attributes Reflecting Household Preferences in Location Choice Models . *Transportation Research Procedia*, 119 – 134.
36. Mohammad Abdul Mohit, S. A. (2017). 43 Low-Income Housing in Nigeria:A liveability investigation. *Asian Journal of Quality of Life*.
37. MoUD. (2018). *Liveability and standards in cities. Government of India.*
38. Mouratidis, K. (2020). Commute satisfaction, neighborhood satisfaction, and housing satisfaction as predictors of subjective well-being and indicators of urban livability.
39. Nishat Afshan, R. C. (2023). An Investigation of the Parameters Affecting Affordable Housing Location Choice. *https://www.mdpi.com/2673-4591/53/1.* Engineering Proceedings, MDPI.

ISSN:1624-1940
DOI 10.6084/m9.figshare.2632574
http://magellanes.com/

40. NIUA. (2012). *Task force on Promoting Affordable Housing.*
41. Olanrewaju, A. W. (2020). Evaluation of the requirements of first time buyers in the purchase of affordable housing in Malaysia. *J Hous and the Built Environ 35*, 309–333.
42. Padmini Ram, B. N. (2016). Why is Public Policy for Affordable Housing in India Changing So Slowly: Explaining Institutional Inertia. *Environment and Urbanization ASIA*, 177-195.
43. Pandey, S. M. (2009). *Land Markets in India: Distortions and Issues.* New Delhi: Oxford Univ Press, .
44. Pandit, P. S. (2023). Factors influencing residential location choice: learnings from the Indian contex.
45. Pankaj Kumar, P. K. (2016). Urban housing: a study on housing environment, residents' satisfaction and happiness.
46. Pankaj Kumar, P. K. (n.d.). Neighbourhood satisfaction, quality of life and place attachment: a study on urban locations in India.
47. Patrick M. Schirmer, M. A. (2014). The role of location in residential location choice models: a review of literature. *The Journal of Landuse and Transport*.
48. Patrick M. Schirmer, M. A. (2014). Theroleoflocationinresidentiallocationchoicemodels: areviewofliterature. *Journal of Transport and Land Use*.
49. Paul, A. (2020). Developing a methodology for assessing livability potential: An evidence from a metropolitan urban agglomeration (MUA) in Kolkata, India. *Habitat International*.
50. Pavan Namdeo, G. &. (2020). Housing attribute, affecting buyers in India. *International Journal of Housing Markets and Analysis*, 533-552.
51. Prabhat Rao, A. B. (2021). Measuring Housing Affordability Using Residual Income Method for Million-plus Cities in India. *4th International Conference of Contemporary Affairs in Architecture and Urbanism* .
52. Rao, P. T. (2016). Housing Markets and Housing Policies in India. *ADBI Working Paper Series*.
53. Rohayu Ab Majid, R. S. (2023). Modelling Housing Demand Factors for Affordable Unitsin Malaysia. *INTERNATIONAL JOURNAL OF SUSTAINABLE CONSTRUCTION ENGINEERING AND TECHNOLOGY*.
54. Sarkar, A. a. (2016). Examination of Affordable Housing Policies in India. *IIMA Working Paper Series No 2016-03-33*.
55. Sergio Altomonte, J. A. (2020). Ten questions concerning well-being in the built environment. *Building and Environment*.
56. Shukla, D. R. (2022). *The Rise of India's Middle Class.* PRICE.
57. (2021). *The Rise of India's Middle Class* . PRICE- (People Research on India's Consumer Economy).
58. Utpal Kumar De, V. V. (n.d.). Location and neighbourhood conditions for housing choice and its rental value: Empirical examination in an urban area of North-East Indi.
59. Vupru, U. K. (2020). Location and neighbourhood conditions for housing choice and its rental value: Empirical examination in an urban area of North-East India. *International Journal of Housing Markets and Analysis*, 519-538.
60. Wu, H. S. (2018). Suburban liveability in Melbourne: a narrative approach. In:Conference proceedings of the 52nd international conference of the architectural science association., (pp. 771–777).
61. Y. Wang, B. L. (2021). The Role of Smart Growth in Residential Location Choice: Heterogeneity of Location Preferences in the. *Journal of Planning Education and Research*.

CAHIERS MAGELLANES-NS
Volume 06 Issue 2
2024

ISSN:1624-1940
DOI 10.6084/m9.figshare.2632574
http://magellanes.com/