Analyzing Liveability Index Parameters for Formulating Assessment Model at the Zone Level – A case of Pune City

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Abstract: - The Liveability Index is a tool designed to help cities measure their performance in contrast to local, national, and global standards and encourage them to embrace an "outcome-based" approach to urban planning and management. It attempts to provide an organized evaluation of a city's liveability by considering many factors and measures. However, the Liveability Index does not contain explicit advice on how to improve these aspects, which is critical for increasing the liveability of communities. Develop plans and actions to address the identified parameters and help enhance them in order to move the goal of improving liveability forward. Although the Liveability Index provides a framework for assessment, it makes no recommendations for action. As a result, it is up to stakeholders, decision-makers, and urban planners to use the index's findings to develop real solutions to improve the liveability of their respective cities. The diverse methodology and criteria utilized make comparing the Liveability Index results across different locations challenging. The index's dimensions and metrics may not be universally relevant or effective in all locations and conditions, particularly in underdeveloped countries where there are considerations and obstacles. As a result, it is critical to develop context-specific liveability indices that consider each region's particular demands, conditions, and culture. To close this gap, the proposed research would identify and investigate a few key elements in determining liveability. The process entails reviewing existing data, collecting, and analyzing new data, identifying key parameters, and developing a liveability rating system. This comprehensive assessment approach will provide a framework for evaluating the liveability of various city zones. The evaluation procedure, once created, will be valuable to stakeholders, decision-makers, and urban planners. They can use this model to gain insight into the liveability strengths and weaknesses of distinct zones within a city and make decisions to improve overall liveability. The goal is to provide these stakeholders with the knowledge they need to prioritize and implement policies that will increase the standard of living for inhabitants in various zones, hence improving the city's overall livability.

Key Words: — ***Liveability Index, Urban planning, Outcome-based approach, Parameters, Context-specific, Stakeholders.***

I. INTRODUCTION

The concept of livability encompasses various factors that contribute to the overall standard of living in a city or area. It includes elements such as access to healthcare, education, employment, cultural activities, and the quality of the built and natural environments. Livability aims to ensure that all residents have access to the resources they need for a fulfilling life, regardless of their socioeconomic status. However, livability lacks a unified definition and measurement methodology due to its multifaceted nature. To address this, the Liveability Index was created by the Economist Intelligence Unit, which ranks cities based on criteria such as security, healthcare, environment and culture, education, and infrastructure. (Making Liveable Cities: Challenges and Way Forward for India, n.d.).

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The index provides a standard for comparing cities and identifying areas for improvement to enhance livability. Additionally, the Indian government introduced the "City Liveability Index" to assess and rate the quality of living in Indian cities based on various factors. While the Liveability Index provides a framework for assessment, it does not provide explicit recommendations for improving the identified parameters. This presents a gap that needs to be filled by stakeholders, decision-makers, and urban planners. They must utilize the index's findings to develop real solutions and implement policies that improve the livability of their respective cities. The diverse methodology and criteria used in the Liveability Index make it challenging to compare results across different locations. The dimensions and metrics may not be universally relevant or effective, particularly in underdeveloped countries with unique considerations and obstacles. Therefore, it is crucial to develop context-specific liveability indices that consider the specific demands, conditions, and culture of each region.

To address this need, the proposed research would identify key elements in determining liveability by reviewing existing data, collecting, and analyzing new data, and developing a comprehensive assessment approach. This approach would lead to the development of a liveability rating system that considers different city zones. The evaluation procedure would be valuable to stakeholders, decision-makers, and urban planners, providing them with insights into the strengths and weaknesses of distinct zones and enabling them to prioritize and implement policies that improve overall livability. The aim of the research is to assess and formulate urban development parameters at the zone level based on the liveability index, using Pune City as a case study. The objectives include studying the liveability parameters at the global and national levels, analyzing selected zones based on these parameters, establishing a relationship between parameters and physical planning at the local area planning level, and suggesting strategies in physical planning based on indicators. The scope of the research focuses on developing strategies for specific zones based on the current liveability parameters. The study includes different types of developments, such as private developers, integrated townships, and fringe areas like unplanned developments and slums.

By utilizing the Liveability Index and developing zone-wise standards, it becomes easier to identify and address minor issues, ultimately enhancing livability at both the zone and city levels. In conclusion, while the Liveability Index provides a valuable framework for assessing and comparing livability across cities, it lacks specific recommendations for improving identified parameters. This creates an opportunity for stakeholders and decision-makers to use the index's findings to develop tailored solutions. Furthermore, developing context-specific liveability indices and zone-level strategies can contribute to improving the overall livability of cities and enhancing the quality of life for their residents.

II. Literature Review

The concept of livability encompasses sustainability, quality of life, a place's character, and community well-being. It involves meeting current needs while ensuring the ability of future generations to meet their own needs. Sustainability acknowledges the environmental boundaries that must be respected. Livability includes various human requirements such as food availability, basic security, cultural expression opportunities, and a sense of place and community. Quality of life, which emerged in the 1960s, encompasses elements like residential areas, traffic, crime rates, and employment opportunities. Livability and sustainability help in considering a community's overall quality of life and the long-term impacts of present decisions. To evaluate livability and quality of life, indicators are utilized, going beyond conventional measures such as income and educational attainment. Environmental footprints and connectivity metrics are emerging indicators that play an increasingly prominent role. Livability indicators include measures of pedestrian-friendly streets, air pollution levels, and regional plans for land use and transportation. Enhancing livability involves initiatives like building affordable housing, promoting transit use, preserving open spaces, and creating visually appealing and functional commercial and retail spaces.

The Livability Agenda of Clinton and Gore provides specific goals for improving livability:

- Maintaining green spaces that support clean air and water, sustain wildlife, and provide recreational areas for families.
- Reducing traffic congestion by improving transportation systems, optimizing road design, and promoting alternative modes of transportation.
- Promoting citizen and private sector participation in municipal planning to foster a sense of community and ensure the inclusion of public amenities like schools.

- Encouraging cooperation between neighboring towns to develop regional growth strategies and address issues such as crime.
- Fostering a high quality of life that attracts educated workers and innovative industries, thereby enhancing economic competitiveness.

The Human Development Index (HDI) is a statistical indicator used by the United Nations Development Programme (UNDP) to rank nations based on their level of social and economic development. The HDI considers three dimensions of human development: standard of living, health (measured by life expectancy at birth), and education (measured by years of schooling). The index ranges from 0 to 1, with higher values indicating better human development. The HDI is commonly used as a tool for policy-making and international development initiatives due to its comprehensive evaluation of important aspects of human development.

The Happiness Index, on the other hand, measures the subjective well-being or happiness of a population. It is frequently employed as a tool to assess the effectiveness of public programs and guide decision-making in areas like social policy, public health, and economic growth. The World Happiness Report, published annually by the United Nations Sustainable Development Solutions Network, is the most widely recognized Happiness Index. It rates countries based on various variables that impact happiness, including social support, life expectancy, GDP per capita, generosity, and the ability to make personal decisions. The Quality-of-Life Index is a scoring system that assesses and compares the overall standards of living in different locations worldwide. It considers factors such as political and social context, economic environment, healthcare, education, public services and transportation, housing, and the natural environment. Cities receive composite scores based on these criteria, enabling comparisons across regions and countries. The index is commonly used by multinational firms and international organizations to determine compensation packages for their employees working globally. However, it does not consider aspects of total well-being such as income, social support, and personal satisfaction.(Singh Brar, 2021).

The World Liveability Index evaluates living conditions based on 30 parameters across five categories: stability, healthcare, culture and environment, education, and infrastructure. It surveys 140 locations worldwide and assesses variables such as crime rates, healthcare accessibility, air quality, and educational standards. Each characteristic is rated for each city, and these ratings are weighted and added up to generate an overall score between 1 and 100, with 100 being the most favorable. The liveability rating provides an overview of how a city performs in each category. The index combines qualitative and quantitative data, including surveys, official statistics, and other sources, to determine the scores.(The World Leader in Global Business Intelligence THE GLOBAL LIVEABILITY INDEX 2019 A FREE OVERVIEW, 2019).

The Ministry of Urban Development in India has established liveability standards and criteria for rating cities in the country. These standards consider institutional, social, economic, and physical factors. The Liveability Standards encompass elements such as governance, urban planning, fundamental services, social capital, health, education, safety, housing, land use, transportation, and the environment. The Smart City Proposals form the basis of these standards, with weights applied to different categories based on the pillars of comprehensive urban development.(Liveability Standards, n.d.) The Ministry also introduced the Ease of Living (EOL) framework, which evaluates cities based on sustainability, economic ability, and quality of life. The EOL framework includes 50 indicators and 14 categories, covering areas such as economic opportunity, mobility, sustainability, education, health, and housing. The framework aims to generate data for evidence-based policymaking, catalyze comprehensive development outcomes, assess urban policies and schemes, and gather citizen perceptions of city services. The Ease of Living Index combines indicator scores and citizen perception survey results to determine the overall ease of living score for each city. The weights assigned to each category and pillar vary, and a citizen impression survey is conducted to validate the index. (EASE OF LIVING Assessment Framework Content, 2019).

III. RESEARCH METHODOLOGY

This literature review focuses on liveability assessments in Pune, India. The study compares and analyzes data from different sources to identify relevant parameters for assessing liveability at the city level. A specific zone within Pune's PMC neighborhood is chosen for evaluation, with the administrative ward serving as the boundary reference. While Pune may have dropped in the Ease of Living Index, it presents an opportunity for improvement rather than indicating a significant decline in liveability. The city faces challenges such as congested roads, flooding, waste management issues, incomplete infrastructure, and traffic congestion. Addressing these issues requires comprehensive planning, effective implementation, and

consistent efforts from authorities. By focusing on these areas, Pune can enhance the quality of life for its residents and regain its status as one of India's most livable cities. The selected area is divided into private developer zones, integrated townships, and fringe areas based on the type of development. Unplanned areas have high population concentrations and lack efficient planning and land usage laws, often characterized by private homes and unregulated construction. Planned areas are purposefully developed according to predefined urban or land-use plans, with careful consideration and regulation of land use, infrastructure, facilities, and design concepts. Fringe areas are located on the outskirts of urban areas, adjacent to rural or agricultural terrain, and experience the impact of urbanization through infrastructure development, urban services, and transportation expansion. These fringe areas consist of newly added villages within the PMC's administrative control.

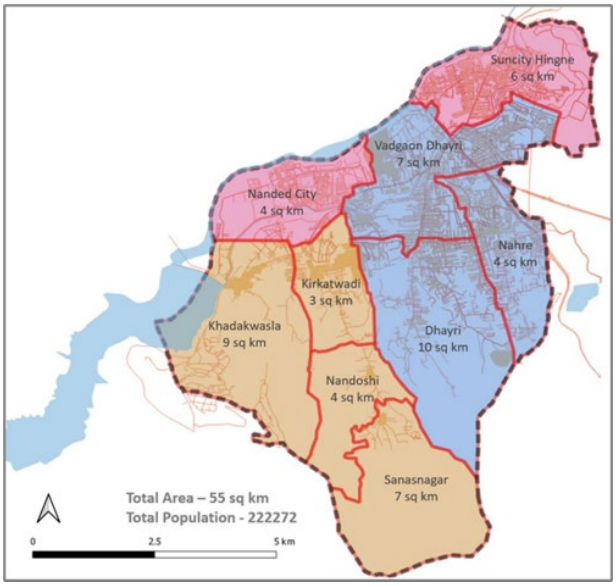

Fig.1. Map showing ward division according to the criteria

For the study in Pune, a sample size of 207 individuals was determined using the coherent sampling algorithm with a 95% confidence level. The chosen sample represents the total population of 222,272 people under consideration. The method of stratified random sampling was employed to ensure that the sample accurately reflects the population's different characteristics. The population was divided into three strata or subgroups based on the area: planned, unplanned, and fringe. By using stratified random sampling, the study aims to gain a comprehensive and precise understanding of land use patterns, features, and associated factors within each specific region type.

The 3-point Likert scale is a commonly used rating scale in surveys and research projects. It allows participants to express their level of agreement or disagreement with a statement using three response options: Agree, Neutral, and

Disagree. In this case, "good" is assigned a score of 3, "fair" a score of 2, and "poor" a score of 1. By converting responses into numerical values, quantitative analysis can be conducted. To further analyze the responses, it is important to establish the maximum possible response percentages for each indicator. These percentages represent the ideal or preferred distribution of answers among the available choices. For example, if the maximum percentage for "good" is 50%, "fair" is 30%, and "poor" is 20%, the score achieved for each indicator can be calculated based on the actual response's percentage of the maximum.

Zone-level parameters were identified based on the study region and in consideration of the examined liveability criteria. When compared to parameters at the city level, only the indications differ. The indicators were developed with the perception of the general public in mind. There are about 8 parameters derived-

1. *Safety and Security* – 4 indicators (2 citizens perception, 2 secondary data-based) The indicators included in this-area's safety standards include the number of crimes, the emergency response times of the police and fire department, and how safe residents feel overall. The amount to which major intersections and streets are monitored.
2. *Health* – 2 indicators (both area citizen perception) This comprises the availability of local healthcare services within a 5-kilometer radius, as well as its caliber in terms of treatment turnaround time, doctors' availabilities, and healthcare facility costs.
3. *Education* – 4 indicators This includes having access to the local primary and secondary schools. availability of school facilities, teachers, access to digital services, and affordability of the educational system.
4. *Socio Culture* – 4 indicators (3 citizens' perception, 1 secondary data-based) This includes the quantity of significant religious buildings or sites and their maintenance. Area for community celebration activities, and how much do the authorities contribute?
5. *Transport and Mobility*-Evaluated based on six indicators, including the accessibility and affordability of public

transport options such as buses. It emphasizes the importance of maintaining pathways, bus stations, and pedestrian-friendly walkways to ensure safe and comfortable transit infrastructure. Ensuring well-maintained roadways and accessible bus stops is crucial for improving mobility, especially for individuals with disabilities. Addressing issues related to unpermitted parking is necessary to ensure effective traffic flow and reduce congestion. Traffic flow problems and congestion hotspots are identified and traffic management measures are implemented to enhance transportation efficiency.

6. *Services* - Services in urban planning are evaluated based on six indicators. These include the management of solid waste, stormwater, and water supply. A reliable and consistent water supply facility is crucial to meet the community's daily water needs. Attention to stormwater drain coverage is important to mitigate the impact of frequent floods and prevent waterlogging. Regular maintenance of infrastructure systems is necessary to ensure their durability and effectiveness. Implementing a well-organized solid waste collection system promotes cleanliness and hygiene, while rainwater harvesting systems can increase water availability and encourage sustainable water use.
7. *Recreation* - The recreation criterion highlights the importance of accessible neighborhood parks and gardens for leisure and social interaction. It emphasizes the need for regular maintenance to ensure their usefulness and aesthetic appeal. Additionally, it addresses the accessibility of nearby marketplaces, promoting local economic activity and fostering a sense of community.
8. *Environment and city resilience* - criterion focuses on air pollution and its impact on the local environment. It assesses the level of air pollution and identifies its sources, including fossil fuel burning and industrial emissions. The criterion also addresses water pollution, highlighting the importance of proper waste management and avoiding industrial waste discharge. It emphasizes the need to transition to renewable energy sources like solar power to reduce reliance on fossil fuels. Additionally, the criterion considers the area's vulnerability to natural disasters, emphasizing the importance of disaster preparedness, early warning systems, and resilient infrastructure to mitigate their effects.

IV. RESULTS AND DISCUSSION

The citizen perception responses were scored using a Likert scale with a maximum score of 3 for each indicator. The overall scores were calculated by summing up the scores for each indicator within a parameter. In terms of safety and security, the peripheral region received the lowest score of 3, indicating a need for improvement in safety measures. Unplanned areas performed well in health and education, outperforming planned and fringe regions in these categories. Planned areas achieved satisfactory performance in the socio-cultural element, scoring a 12. They also scored slightly higher than unplanned and fringe areas in transportation and mobility. However, both unplanned and fringe areas obtained lower scores, indicating the need for interventions to improve service delivery and transit. The environment criteria revealed areas of concern for both the fringes and unplanned regions, emphasizing the need for concentrated efforts to enhance environmental quality and sustainability.

Based on the benchmarks, proposals were prioritized and a framework was prepared considering three divided areas: fringe, unplanned, and planned areas. The proposals aimed to address the specific needs and gaps in each of these areas. The priority parameters, such as health and education, were identified as key focus areas for improvement in fringe areas. This includes identifying suitable land for constructing educational facilities and establishing specialized schools to provide access to quality education. Government initiatives like the Sarva Shiksha Abhiyan (SSA) support equitable basic education, particularly in rural areas.

Table.1. Table - Liveability Framework - Benchmarks

			Fringe Area			Planned Area			Unplanned Area		
Safety and Security	Indicators	Benchmark	Khadakwasla & Kirkatwadi	Sanasnagar & Nandoshi		Suncity	Nanded City	Manikbaug	Dhayri	Nahre	Vadgaon
	Safety standards of the area	3	1	1		1	3	3	2	2	1
	Emergency response time of the fire department	3	2	3		3	3	3	3	3	3
1. Number of streets, public places, junctions covered through surveillance systems	The extent to which public areas such as streets, public places like transport interchanges, government buildings, recreational spaces etc. and major traffic junctions in the city are covered through Closed-circuit Television (CCTV) surveillance cameras										
2. Extent of crimes recorded in the area per year	Number of crimes in area										
	Total	6	3	4		4	6	6	5	5	4
Health	Indicators										
	Availability of Hospitals	3	2	2		2	2	3	3	3	3
1. Availability of Hospitals	Availability of local healthcare services	1	1	0		1	1	1	1	1	1
2. Availability of local Health care facilities	Quality of local healthcare	3	2	1		3	3	3	3	3	3
	Total	7	5	3		6	6	7	7	7	7
Education	Indicators										
1. Primary Education Facility	Availability of primary education facility in the area	1	1	1		1	1	1	1	1	1
2. Secondary Education Facility	Availability of secondary education facility in the area	1	0	0		1	1	1	1	1	1
3. Quality of education facility	Quality of Primary education facility	3	2	1		3	3	3	3	3	3
	Quality of Secondary education facility	3	1	1		2	3	3	2	3	3
	Total	8	4	3		7	8	8	7	8	8

			Fringe Area			Planned Area			Unplanned Area		
Socio- Culture	Indicators	Benchmark	Khadakwasla & Kirkatwadi	Sanasnagar & Nandoshi	Suncity	Nanded City	Manikbaug	Dhayri	Nahre	Vadgaon
	Number of historic buildings/ sites, Community halls									
1. Availability of Socio- Culture Facilities	Religious importance site/ place/ buildings	1	1	1	1	1	1	1	1	0
	Maintainance of religious/ historic places	3	3	2	3	3	1	3	3	1
2. Events hosted by authority	Authorities favour holding cultural activites	1	1	1	1	1	1	1	1	1
	Total	5	5	4	5	5	3	5	5	2
Transport and Mobility	Indicators									
	Public Transport Connectivity	3	2	2	2	3	3	3	3	3
1. Availability of Public Transport	Availability of road facilities (Nearest bus stop, footpath)	3	1	2	2	3	2	1	1	2
3. Traffic Condition	Condition of traffic in the area	3	3	3	2	3	2	1	1	2
4. Road network with dedicated bicycle tracks	Road network with dedicated bicycle tracks	1	0	0	0	1	0	0	0	0
5. Unauthorized parking spaces and Enchroachment	Unauthorized street parking	1	1	1	0	1	0	0	0	0
6. Extent to which universal accessibility is incorporated in public rights-of-way	Universal accessibility (for physically challenged people) incorporated on streets/ along footpath	1	0	0	0	1	0	0	0	0
	Total	12	7	8	6	12	7	5	5	7
Services	Indicators									
Household level coverage of direct water supply connections	Water supply on daily bases	1	1	1	1	1	1	1	1	1
Rainwater harvesting facility	Availability rainwater harvesting system facility	1	0	0	0	1	0	0	0	0
Coverage of storm water drains	The road network covered by storm water drainage network									
Efficiency of collection of municipal solid waste	Waste collection facility in the area	3	3	3	3	3	3	3	2	2
Area maintainace	Waste collection on daily bases	1	1	1	1	1	1	1	1	1
	Maintainace of area - road clean, dustbins	3	3	1	2	3	2	1	2	3
	Total	9	8	6	7	9	7	6	6	7

			Fringe Area			Planned Area			Unplanned Area	
Recreation	Indicators	Benchmark	Khadakwasla & Kirkatwadi	Sanasnagar & Nandoshi	Suncity	Nanded City	Manikbaug	Dhayri	Nahre	Vadgaon
Availability of green spaces	The amount of urban greens and open spaces that are present in the city, including parks, planned green spaces, and common areas like flood plains, natural vegetation, vacant lands, etc., contributes to a better urban environment. (Area of green space in DPR)									
Availability of public and recreational places	Availability of local area levelgardens, open spaces	1	0	0	0	1	0	0	0	0
	Local area levelgardens, open spaces accessible for all people	1	0	0	0	0	0	0	0	0
	Maintainance of gardens / open spaces	3	2	1	1	3	1	1	1	1
Market Place	Availability of market place in close proximity	1	1	0	1	1	1	1	1	1
	Total	6	3	1	2	5	2	2	2	2
Environment & City Resilience	Indicators									
Air Quality Index	Level of air pollution in the area	3	2	3	3	3	1	2	2	2
Quality of water in public surface water bodies	Condition of water bodies in the area	3	1	1	2	2	1	1	1	1
Renewable Energy	Provision of solar heating	1	0	0	1	1	1	1	1	1
Resilience to disasters	Areas resilience to disasters (Floods)	3	2	2	2	3	1	1	2	1
	Total	10	5	6	8	9	4	5	6	5

Note: Benchmarks are only considered of the indicators based on citizen perception . Remaining indicators are the supporting secondary data.

Public healthcare facilities, including 80-bed government hospitals, are planned to meet the healthcare needs of outlying settlements. Programs like the National Rural Health Mission (NRHM) and Ayushman Bharat aim to provide affordable and high-quality healthcare to rural and economically underprivileged communities.

Encouraging the development of gated communities with regulated entry, surveillance, and private security personnel promotes safety and security. Installing smart gadgets and emergency alerts enhances emergency response systems. Neighborhood involvement in regular cleanup events along rivers and Nalas promotes environmental cleanliness. Installing air quality monitoring stations and expanding public transport options improve environmental conditions and connectivity. Incorporating accessible features in footpaths promotes non-motorized transportation. Mobile toilet systems with advertising and solar panels support public sanitation and sustainability.

Encouraging rainwater harvesting and providing tax breaks for installing rainwater collection systems promote water conservation. Developing drainage systems and implementing GIS-based mapping enhance stormwater management. Introducing smart bins for effective waste separation aligns with waste management programs. These strategies are in line with initiatives like the Ti Toilet Integration project, Smart City Mission, Swachh Survekshan, Pune Solid Waste Management Rules, and waste-to-energy programs.

To address the lack of leisure amenities, converting open spaces along rivers and Nalas into public spaces with parks, gardens, and community areas is proposed. Developing green belts with native vegetation can discourage dumping and promote a cleaner environment. Increasing accessibility to public transit involves adding bus lines to neighborhoods like Dhayri and Narhe. Enforcing strict parking laws and penalties can deter unauthorized parking, reduce congestion, and improve traffic flow. Creating accessible pathways for non-motorized transportation methods will enhance mobility options, especially for people with disabilities. River rejuvenation efforts include desilting and treating drain water before releasing it into rivers, as well as regular community clean-up events. Planting native trees along streets improves aesthetics, provides shade, and mitigates heat island effects. Monitoring air pollution and establishing senior citizen homes and healthcare facilities are additional strategies to enhance environmental quality and support the well-being of older residents. These initiatives align with programs like the National Programme for Health Care of the Elderly (NPHCE) and the National Health Mission (NHM).

To enhance transportation options, e-rickshaws, and share rickshaws can be introduced, providing convenient and eco-friendly transportation for residents. Expanding rickshaw services, including along the major Suncity route, improves connectivity. Strict parking regulations can be enforced to address parking issues and promote organized parking. Increasing the number of public parking spots is necessary to meet the parking demands of both residents and visitors. The use of a sticker system can reserve specific parking spots for Suncity residents. Promoting non-motorized transportation is essential for improving mobility. Designing walkways on both sides of the road with accessible features benefits pedestrians, including those with disabilities.

V. Conclusion

Implement actions to provide a safe and secure environment for both residents and employees. Increasing police presence, installing surveillance systems, upgrading street lighting, and encouraging community participation in crime prevention efforts are all examples of such measures. People will feel more secure and confident if safety concerns are addressed, leading

to an enhanced quality of life. Develop and improve social infrastructure such as community centers, parks, recreational facilities, and cultural spaces to improve community well-being. By offering venues for social contact, community events, and recreational activities, these amenities promote communal well-being. They promote a sense of belonging and communal cohesion, ultimately boosting residents' overall quality of life. Improve transit systems by providing last-mile connectivity and enhancing overall city connectivity. This can include creating a dependable and efficient public transportation system, putting in place pedestrian and cycling infrastructure, and encouraging non-motorized transportation options. People will have easier access to key services, employment opportunities, and recreational facilities as accessibility improves, resulting in enhanced convenience and a higher standard of living.

Create long-term and effective systems for services such as stormwater control and solid waste disposal. This can involve building rainwater harvesting equipment, encouraging garbage separation, and recycling, and implementing environmentally beneficial practices. These initiatives help to safeguard the environment, improve inhabitants' quality of life, and contribute to the city's overall sustainability. Allow for plenty of opportunities for physical movement, social engagement, and mental health improvement. This can include the creation of parks, playgrounds, and sports facilities, as well as the promotion of active lifestyles. Access to recreational areas and activities can boost physical and mental health, reduce stress, and build a sense of community. Implementing techniques such as river and ecosystem restoration, afforestation, and sustainable resource management can help to restore ecological balance and safeguard natural resources. Protecting rivers, forests, and ecosystems not only protects the environment, but also helps to maintain clean air, water, and a healthy ecosystem, all of which are necessary for a high-quality living environment.

Cities can dramatically improve their livability standards by applying these techniques. These activities help to create a safe, sustainable, and vibrant living environment that promotes citizens' well-being and contentment, making the city more appealing and livable for its residents. With the use of the Liveability Index, cities can evaluate their strengths and weaknesses as well as identify areas for development to improve their livability. It is also a helpful tool for people and companies seeking to move, invest, or develop in new markets. Based on this, the structure developed for the city zones (zone-wise standards) and these benchmarks will make it simpler to identify minor issues and address them. Increasing the liveability factor at the zone level, will further address and help to improve the factor at the city level.

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