

Exploring Livability as a dimension of Smart City Mission (India)

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Abstract - Urbanization has been simultaneously appreciated and criticized, as it has accelerated the economic development on one hand and on the other has adversely affected the urban environment. The issues associated with urban regions like environmental degradation, traffic congestions, inadequate infrastructure services, unhygienic streetscapes etc., are making them unpleasant to live in. Indian cities have witnessed similar impacts due to this phenomenon and the most affected aspect is the quality of life. Indian cities rank almost at the bottom of livability ranking (EIU¹-2015) as Delhi is on 110th and Mumbai on 115th at world level. Therefore, it is evident that there is a need to build Indian cities more livable in nature. Recently, Smart City Mission has been adopted as an approach by the Government of India to tackle urban development issues caused by rapid urbanization. The aim of the mission is to drive economic growth and improve the quality of life of urban cities. Hence, it is important to understand by what degree the mission aims at improving the quality of life of Indian cities. The paper intends to interpret the concept of livability in urban context and analyze whether the Smart City Mission adopted is adequately equipped to promote livability in India urban cities. The approach adopted is; firstly, to explore the evolution of the livability concept from its initialization, and secondly, undergoing a comparative analysis of the indicators of the respective concepts at both local and international tiers.

Key Words: Urbanization, Livability, Quality of Life, Smart City Mission, Comparative Analysis

1. INTRODUCTION

Urbanization in India has resulted in increase of urban population from 26% in 1990 to 32% in 2014 and is expected to reach about 50% by 2050. As major share of population in India resides in urban cities, yet the urbanization ratio is low compared to countries like China, Mexico, Russia, Brazil etc [1]. India's urbanization is full of contradictions; having such percentage of country's population living and working in urban areas, these cities witness issues like informal settlements, insecurity, high levels of pollution etc. The urbanization characteristic of

1. EIU - Economist Intelligence Unit: Created in 1946, it is a research and analysis division of the Economist Group, providing forecasting and advisory services. It also produces regular reports on livability and cost of living of the world's major cities. It has also a well noted report that is Quality of Life Index.

India can be defined as heavy top and light bottom; cities of Class-I tier have seen higher rate of urbanization as compared to the smaller cities and towns [2]. The above phenomena of one-sided distribution of population has resulted to urban development issues like gap in demand and supply of infrastructure services, lack of open green spaces, unhygienic streetscapes etc, hence contributing to the degrading living quality of urban cities.

As urban cities aim to provide healthy environment to its population, Livability has been considered as an important dimension for any urban city to thrive in its endeavors. It is also considered as a guiding principle that shapes the social, economic, physical and biological urban environment [3]. Livability is concerned with urban development issues like inadequate infrastructure services, declining economic prosperity and rising social discontent among the urban population, ultimately, making the population suffer [4]. It has been associated with dimensions like safety, climate, infrastructure, public policies, business environment and many more [5], making the concept multi-dimensional in nature. This characteristic has made the concept difficult to define and measure, though, in general terms, it is the ability of the city to maintain and improve its viability (to attract investments) and vitality (to remain alive) [6].

Recently, Indian government introduced the Smart City Mission in the 12th Five Year Plan, to tackle issues related to rapid urbanization. The mission aims to achieve sustainable environment for its urban cities. It agrees to the fact that there is no universal accepted definition for concept Smart City and it varies region to region. The purpose of the mission is to drive economic growth and improve the quality of life, thus aims at providing a framework for the development of smart cities in India [7].

As per Livable city rankings released yearly by various international organizations, it is evident that Indian cities rank very poorly in the world wide scenario. This instigated a debate whether India as a nation needs more livable cities or smart cities. As discussed by various practitioners, approach towards urban development, firstly, needs to be towards providing a livable and safe environment to the users and secondly, develop strategies promoting socio-economic development. But, as an aid, various other tools can be integrated in the development approach, to make it an efficient and effective one like the use of ICT (Information and Communication Technology) in the physical and social infrastructure planning.

The study aims at understanding the livability concept; its integration with the smart city mission and by what extend it promotes the urban cities to be livable. To lead the study further, following objectives have been identified:

1. Exploring the evolution of livability concept with understanding of its principles in the urban context.
2. Analyzing the indicators of livability as per various world-wide organizations.
3. Comparative analysis of the world based indicators with smart city mission indicators.
4. Conclude, whether the Smart City Mission promotes livability in its approach.

2. DEFINING LIVABILITY

Over the years, livability as a concept has been defined in a variety of dimensions, making it an ambiguous concept. The concept came up with the concern towards the conservation of natural and built environment, and lately evolved into improving the quality of life in the urban cities. The following section aims at understanding the evolution of the concept and how its principles are related to the field of urban planning.

2.1 Evolution of the Concept

Post World War-II, the negative impact of modernization led to deterioration of quality of life. The urbanization of few centers led to increase in concentration of population, this rapid relocation of population led to disparities among the housing and employment sector.

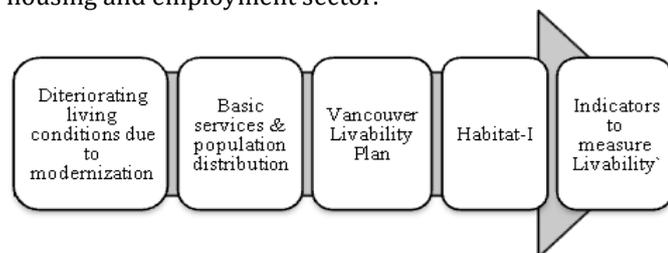


Fig 1: Evolution of Livability as a concept over the years. [8]

The natural growth and migrating population to the new urban centers accelerated the above disparities due to lack of provision of basic services to the residing population. Initiatives were taken up in order to improve the quality of life like Vancouver Livability Plan² and Habitat-I³; which

2. Vancouver Livability Plan: The livability plan formed for GVRD (Greater Vancouver Regional District) to make the city more livable for the population engaged in management and service activities, producer services, finance, tourism and the information industries. Also, to initiate less dependency on traditional port related and primary industries with more focus upon higher education and, research and development.

3. Habitat-I: The first United Nations Conference on Human Settlements, Vancouver, Canada, 1976, convened by the United

were globally accepted. Later on, in order to measure the scale and impact of urban development on the urban cities, PMF's (Performance Measurement Framework) were introduced as measuring tools, and were broadly based on six pillars or dimensions i.e. Environment, Economy, Governance, Infrastructure, Living and Society [8].

2.2 Definitions

Apparently the concept has a defined purpose of making cities livable but still it lacks a unified definition [9]. It has been advocated that there has been no agreement among researchers towards the variety of defining dimensions. It can be inferred from various studies that the concept ranges at different scales (individual, neighborhood, city and country) in multiple disciplines such as ecology, geography, sociology and urban planning [10]. Following are some of the definitions that have quoted over the years defining livability/livable city.

1. A livable city is a city where I can have a healthy life and where I have the chance for easy mobility – by foot, by bicycle, by public transportation, and even by car where there is no other choice. The livable city should be attractive, worthwhile, safe for our children, for our older people, not only for the people who earn money there and then go and live outside in the suburbs and in the surrounding communities. For the children and elderly people it is especially important to have easy access to areas with green, where they have a place to play and meet each other. The livable city is a city for all. (D. Hahlweg, 1997) [11]
2. The coin of livability has two faces. Livelihood is one of them. Ecological sustainability is the other. Livelihood means jobs close enough to decent housing with wages commensurate with rents and access to the services that make for a healthful habitat. Livelihoods must also be sustainable. If the quest for jobs and housing is solved in ways that progressively and irreparably degrade the environment of the city, then the livelihood problem is not really being solved. Ecological degradation buys livelihood at the expense of quality of life, with citizens forced to trade green space and breathable air for wages. To be livable, a city must put both sides of the coin together, providing livelihoods for its citizens, ordinary as well as affluent, in ways that preserve the quality of the environment. (P. Evans, 2002) [12]
3. Livability refers to an urban system that contributes to the physical, social and mental well being and personal development of all its inhabitants. It is about delightful and desirable urban spaces that offer and reflect

Nations as governments began to recognize the magnitude and consequences of rapid urbanization.

cultural and sacred enrichment. Key principles that give substance to this theme are equity, dignity, accessibility, conviviality (joviality), participation and empowerment. (Cities PLUS, 2003) [13]

4. Livable communities are where transportation, housing and commercial development investments have been coordinated such that people have access to adequate, affordable & environmentally sustainable travel. The specific attributes that define livability in any individual community are shaped by the values of its citizens and unique local conditions. (Partnership for Sustainable Communities⁴, 2009) [14]

2.3 Principles

To implement the above discussed goals, principles and strategies have been developed by various authors. These are mostly reflected in the urban context and represent a guiding tool towards urban planning. In 1997, H. L Lennard [15] laid the principles for a livable city, stating that these nine principles are the basis of the concept:

1. In the livable city, all can see and hear each other. It is the opposite of the dead city, where people are segregated and isolate.
2. Dialogue is important.
3. The public realm offers activities, celebrations, festivals that bring all of its inhabitants together, events that bring opportunities for its citizens to be together, not in the specialized roles and functions that they usually occupy, but as full human beings.
4. A good city is not dominated by fear, not by a conception of fellow human beings as evil and subhuman.
5. A good city offers the public realm as a place of social learning and socialization that is indispensable for children and young people. All of the inhabitants of the community serve as models and teachers.
6. Cities must meet many functions – economic, social and cultural. In so doing, however, there has been a trend for the modern city to over-specialize in one or two functions; other functions are being sacrificed.
7. All inhabitants confirm and value each other.
8. Aesthetic considerations, beauty, and meaning of the physical environment must have high priority. The physical and social environments are two aspects of the same reality. Just as it was a mistake to think that city inhabitants can have a good civic and social life in an ugly, brutal and physically inhospitable city.

4. Partnership for Sustainable Communities: Organization formed in 2009, with collaboration of the U.S. Department of Housing and Urban Development (HUD), U.S. Department of Transportation (DOT), and the U.S. Environmental Protection Agency (EPA), to help communities nationwide improve access to affordable housing, increase transportation options, and lower transportation costs while protecting the environment.

9. The wisdom and knowledge of all inhabitants are appreciated and used. People are not intimidated by experts, whether architects or planners, but show a sense of caution and distrust of those who make decisions about their lives.

Recently, more developed principles have been adopted to promote livability, like by the Partnership for Sustainable Communities (2009) [14]. They have identified six dimensions to promote the same at the global level. They mainly include dimensions like transportation, housing, equity, policy making etc, where each dimension cultivates together to achieve holistic development. Following are the principles:

1. Provide more transportation choice

To decrease household transportation costs, reduce dependence on oil, improve air quality, reduce greenhouse gas emissions and promote public health.

2. Promote equitable, affordable housing

Expand location and energy efficient housing choices for all ages, incomes, races to lower the combined cost of housing and transportation.

3. Enhance economic competitiveness

Improve economic competitiveness through access to jobs, education and services as well as expand business access to markets.

4. Support existing communities

Increase community revitalization through transit oriented development, mixed-use development and land-recycling.

5. Coordinate and leverage federal policies and investment

Align policies and funding to remove barriers to collaboration, leverage funding and plan for future growth.

6. Value communities and neighborhoods

Making investments towards providing healthy, safe and walkable neighborhoods to everyone.

2.4 Quality of Life

There has been a major debate over the years about defining the two terms Livability and Quality of life, since both are very general terms that can mean different things to

different people in various different urban contexts [16]. Broadly defining the term; quality of life, is mainly a measure of satisfaction or dissatisfaction with the living environment of a person, where socio-economic and environment wellbeing of a person are not taken into account. It widely focuses on measuring the happiness and desires of people such as quality of education, quality of healthcare etc. [17]

In the urban context, quality of life focuses on community quality of life and social well being, rather than towards emotional and psychological indicators. They intend to focus upon the external conditions (level of income, access to resources and services etc) and not the internal conditions (based on subjective judgment of population) that contribute to quality of life [18].

As both the terms; livability and quality of life, are often used interchangeably, the difference is the presence and quality of the amenities of the built and natural environment (livability) and the user experience of those amenities and their benefits (quality of life). For example, livability is concerned with the transportation choices that exist in a community whereas quality of life refers to the associated health benefits gained from the selected choice of travel modes. Hence, livability is existence of community's services and amenities whereas quality of life refers to how these services and amenities shape and benefit the human experience [19].

	Livability Factors	Quality of Life Benefits
Economic Development	availability of jobs, services and retail	disposable income, recreation and leisure time
Housing	affordability, location, diversity of housing types	shelter, safety, and security
Environmental Quality	air quality, aesthetics, noise, water quality, greenhouse gases, parks and open space	physical and mental health, protection from some natural hazards
Community Development	community cohesion, historic and cultural resources, educational opportunities	sense of belonging, sense of place, community resiliency, social capital
Transportation	availability of multi-modal connected networks; mobility; safety; accessibility of jobs, housing, and services	independence of movement, reasonable and reliable travel times, physical and mental health
Equity	equitable distribution of amenities	sense of social justice, exposure to diverse ideas

Table 1: Livability Factors & Quality of Life Benefits [19]

2.5 Discussion

Urbanization as a phenomenon has negatively impacted the urban environment and in order to provide a livable environment, a major intervention had to be brought upon in

the paradigm of urban development. Livability in the urban context aims at improving the living quality of its inhabitants, by adopting appropriate development strategies. The concept began with the aim of conservation and preservation of the natural environment, further, adding quality of life as an important expression to the urban environment. Over the years, various dimensions that have been associated with the concept to fulfill the ultimate goal; they are policies towards transportation options, affordable housing, economic development and strengthening the existing communities, in order to make urban cities more livable and sustainable.

Ambiguity among the terms; Livability and Quality of Life, has been discussed, coming to the conclusion that livability as a concept aims to provide a livable, healthy and safe environment while adopting suitable strategies, whereas, quality of life is the experience bared by the residents due to the above development in terms of satisfaction. Hence, it can be concluded that livable environment is the simplest and most significant form possible for any urban city development. The city should structure itself in an order that promotes the well being of the people in all the dimensions of life.

3. Measuring Livability

Despite various subjective interpretations of the concept, numerous measurement tools have been developed to rank cities according to the amenities and opportunities offered to their residents; in the livability context. The most notable include the Economist Intelligence Unit's (EIU⁵) livability index, the Mercer Quality of Living Index and OECD⁶ Better Life Index (BLI). Each with their indices has been described below.

3.1 EIU Index (Economist Intelligence Unit)

EIU has 30 livability indicators that are grouped under five categories; Stability (5 indices), Healthcare (6 indices), Culture and Environment (9 indices), Education (3 indices), and Infrastructure (7 indices).

5. EIU – Economist Intelligence Unit: Created in 1946, it is a research and analysis division of the Economist Group, providing forecasting and advisory services. It also produces regular reports on livability and cost of living of the world's major cities. It has also a well noted report that is Quality of Life Index.

6. OECD – Organization of Economic Corporation and Development: The Organization for European Economic Cooperation (OEEC) was established in 1948 to run the US-financed Marshall Plan for reconstruction of a continent ravaged by war. Encouraged by its success and the prospect, Canada and the US joined in signing the new OECD Convention. OECD was officially born on 30 September 1961, when the Convention entered into force. The mission OECD is to promote policies that will improve the economic and social well-being of people around the world.

EIU Index	
CATEGORIES	INDICES
Stability	Prevalence of petty crime Prevalence of violent crime Threat of terror Threat of military conflict Threat of civil unrest/conflict
Healthcare	Availability of private healthcare Quality of private healthcare Availability of public healthcare Quality of public healthcare Availability of over-the-counter drugs General healthcare indicators
Culture and Environment	Humidity/temperature rating Discomfort of climate to travelers Level of corruption Social or religious restrictions Level of censorship Sporting availability Cultural availability Food and drink Consumer goods and services
Education	Availability of private education Quality of private education Public education indicators Adapted from World Bank
Infrastructure	Quality of road network Quality of public transport Quality of international links Availability of good quality housing Quality of energy provision Quality of water provision Quality of telecommunications

Table 2: EIU- Categories and Indices [20]

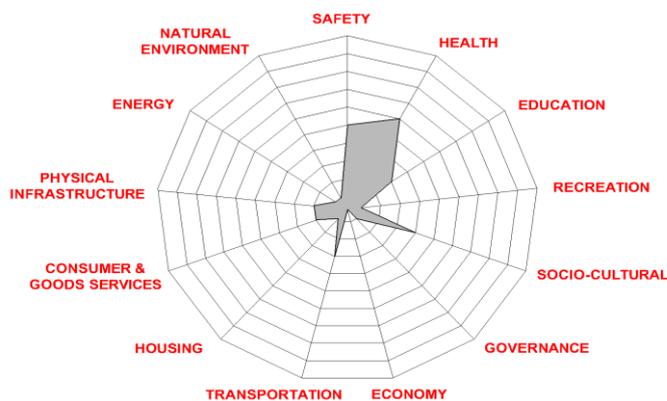


Fig 2: EIU Ranking Index- Distribution Pattern

3.2 Mercer Quality of Living Index

Mercer Quality of Living Index has 39 livability indicators that are grouped under ten categories; Political and Social Environment (5 indices), Medical and Health (8 indices), Public Services and Transport (7 indices), Consumer Goods (5 indices), Economic Environment (2 indices), Socio-Cultural Environment (2 indices), School and Education (1 index), Recreation (4 indices), Housing (3 indices) and Natural Environment (2 indices).

Mercer Quality of Living Index	
CATEGORIES	INDICES
Political & Social Environment	Relationship with other Countries Internal Stability Crime Law Enforcement Ease of Entry and Exit
Medical and Health	Hospital Services Medical Supplies Infectious Diseases Water Potability Sewage Waste removal Air Pollution Troublesome and Destructive Animals and Insects
Public Services and Transport	Electricity Water Availability Telephone Mail Public Transport Traffic Congestion Airport
Consumer Goods	Meat and Fish Fruits and Vegetables Daily Consumption Items Alcoholic Beverages Automobiles
Economic Environment	Currency Exchange Regulations Banking Services
Socio-Cultural Environment	Limitation on Personal Freedom Media and Censorship
School & Education	Schools
Recreation	Variety of Restaurants Theatrical and Musical Performances Cinemas Sport and Leisure Activities
Housing	Housing Household Appliances and Furniture Household Maintenance and Repair
Natural Environment	Climate Record of Natural Disasters

Table 3: Mercer Quality of Living- Categories and Indices [21]

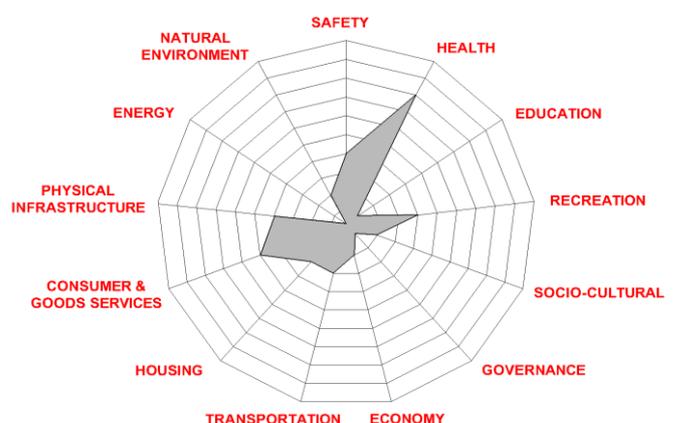


Fig 3: Mercer Quality of Life Ranking Index- Distribution Pattern

3.3 OECD Better Life Index (BLI)

OECD BLI Index has 24 livability indicators that are grouped under eleven categories; *Housing* (3 indices), *Income* (2 indices), *Jobs* (4 indices), *Community* (1 index), *Education* (3 indices), *Environment* (2 indices), *Civil Engagement* (2 index), *Health* (2 indices), *Life* (1 index), *Safety* (2 indices) and *Work-Life Balance* (2 indices).

OECD BLI	
CATEGORIES	INDICES
Housing	Dwellings without basic facilities Housing expenditure Rooms per person
Income	Household net adjusted disposable income Household net financial wealth
Jobs	Labor market insecurity Employment rate Long-term unemployment rate Personal earnings
Community	Quality of support network
Education	Educational attainment Student skills Years in education
Environment	Air pollution Water quality
Civil Engagement	Stakeholder Engagement for developing regulations Voter Turnout
Health	Life Expectancy Self Reported Health
Life	Life Satisfaction
Safety	Walking during Night Homicide Rate
Work-Life Balance	Employees working very long hours Time devoted to leisure and personal care

Table 4: OCED BLI- Categories and Indices [22]

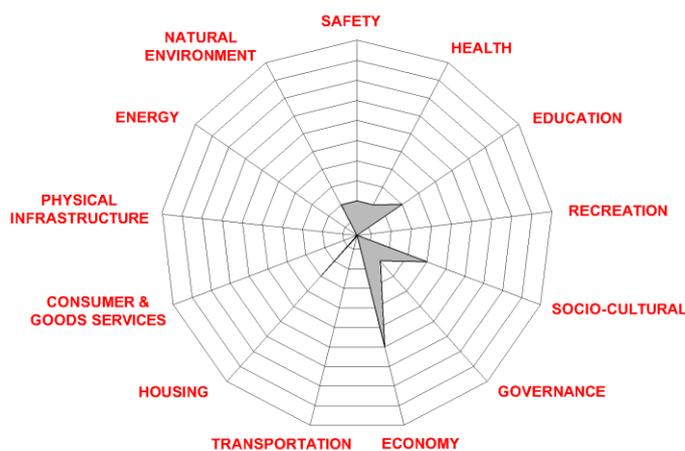


Fig 4: OECD Better Life Index- Distribution Pattern

From the above section, it is evident that each of the international organizations have focused upon their respective prime dimensions of livability, as per their understanding; EIU on Safety and Health, Mercer on Health and Consumer & Good Services, and, OECD BLI on Economy and Socio-Cultural; hence, it is essential to co-relate these indices with the smart city mission, to be able to understand whether the mission has adopted a holistic approach towards achieving livability.

4. Smart City Mission (India) & its Indices

In order to fulfill the study’s objective of understanding the livability quotient of the Smart City Mission, a basic understanding of the concept and its indices had to be carried out. The concept is considered as an initiative towards smart development in the urban context with the integration of the latest modern technology.

4.1 Background

Indian government launched the Smart City Mission in 2015 with the objective to attain sustainable environment for its urban cities. The development of Smart Cities involves following 3 strategies [23]:

1. Provision of core urban infrastructure

This component involves providing physical and social infrastructure service and utilities like water supply, transport, housing etc to every section of population equally.

2. ICT enabled smart solutions to core infrastructure

This component involves use of modern technology (ICT) to adopt smart solutions to improve the efficiency of the core infrastructures with relatively small investments.

3. Area Based Development

The strategic components adopted for area based development are improvement (retrofitting), city renewal (redevelopment), city extension (green field development) and pan city concept (using modern technology solutions to the existing city infrastructure); which will transform existing deteriorating areas into better planned ones and develop new areas to accommodate the expanding populations in urban areas.

It is conceived that the cities will achieve the goal of comprehensive development by adding on the layers of smartness. The strategic areas of the mission are derived from the four pillars of comprehensive development – *physical, social, economical and institutional* [24].

4.2 Indices

To scale the degree of smartness of Indian urban cities, two organizations have articulated indicators; BIS⁷ and MoUD⁸. BIS has provided 92, where as MoUD has 67 Indies towards achieving the goal of making urban cities smart. Broadly, the indices have been sub-divided into various themes that are essential for a holistic urban development.

INDICATORS	
BIS (96 Indices)	MoUD (67 indices)
Energy (5)	Energy (5)
Atmosphere (8)	Atmosphere (2)
Water (1)	Water (1)
Local Economy (6)	Local Economy (3)
Finance (4)	Housing/Inclusiveness (2)
Housing/Shelter (3)	Governance (4)
Governance (6)	Health (4)
Health (7)	Education (4)
Education (5)	Safety (4)
Safety (5)	Recreation (3)
Recreation (2)	Transportation (12)
Demographics (5)	Water Supply (7)
Transportation (7)	Solid Waste (2)
Water Supply (6)	Sewerage & Sanitation (5)
Solid Waste (7)	Identity & Culture (3)
Sewerage & Sanitation (6)	Compactness (2)
Urban Planning -Implementation (4)	Power Supply (4)
Fire & Emergency Response (6)	
Tele-Comm. & Innovations (5)	

Table 5: Smart City Mission: Indices by BIS [25] & MoUD [23]

It is evident from the above table that Smart City Mission can be regarded as an initiative that aims at promoting the quality of living of urban cities with focus on economic, physical and social development, with integration of modern technology (ICT) as an important asset. This integration basically makes the whole approach more efficient and cost

7. BIS - Bureau of Indian Standards: National Standard Body of India established under the BIS Act 1986, for the harmonious development of the activities of standardization, marking and quality certification of goods and for matters connected therewith or incidental thereto.

8. MoUD - Ministry of Urban Development, India: Apex authority of Government of India at the national level to formulate policies, sponsor and support programme, coordinate the activities of various Central Ministries, State Governments and other nodal authorities and monitor the programs concerning all the issues of urban development in the country.

effective, and intends to tackle urban development issues caused by the phenomenon of rapid urbanization.

5. Comparative Analysis of Indicators

5.1 Approach Adopted

Approach adopted to evaluate, whether Smart City Mission (India) has an integrated approach towards attaining Livability; indices of various discussed organizations have been compared to that of Smart City Mission. The analysis includes comparison of various themes (shown in Table VI) and their associated indices, in order to delineate those dimensions that are essential for the development of urban environment.

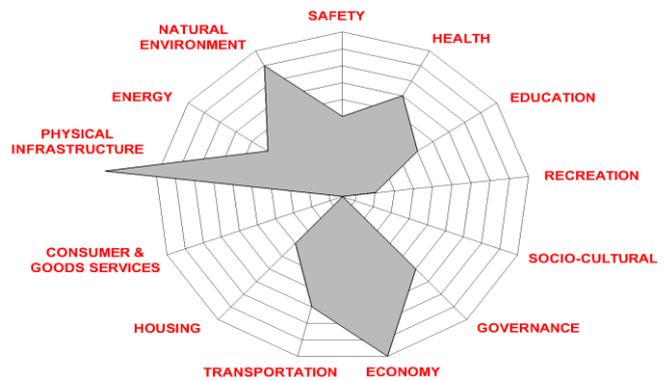


Fig 5: Bureau of Indian Standards Index- Distribution Pattern

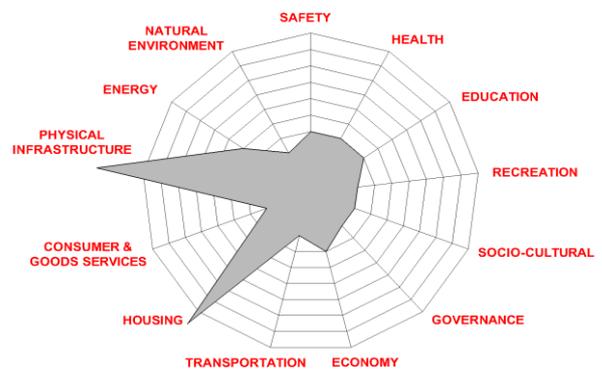


Fig 6: Ministry of Urban Development (India) Index- Distribution Pattern

THEMES			
Safety	Health	Education	Governance
Recreation	Socio-Culture	Economy	Transportation
Housing	Consumer & Good Services		Energy
Natural Environment (Air, Water and Noise)			

Physical Infrastructure (Water Supply, Waste Management, Sewerage and Drainage, Electricity and Tele-Communications)

Table 6: Adopted themes for the comparative analysis⁹.

Economy	-	2	6	10	3
Transportation	3	3	-	7	12
Housing	1	3	3	3	2
Consumer & Good Services	2	5	-	-	-
Physical Infrastructure	2	4	-	29	18
Energy	1	-	-	5	5
Natural Environment	1	2	2	9	3

5.2 Results and Discussion

As discussed, International ranking organizations, have focused upon individual themes like health, safety etc, as their prime concerns for achieving livability, even the Indian standards have similar scenario, having higher indices towards Physical Infrastructure theme. Therefore, livability in Indian urban context can be interpreted as provision of basic amenities to the residing population in the form of water supply, sewerage and drainage, solid waste management and other amenities. A detailed analysis of the Indian standards in the context of livability has been discussed below.

BIS Index: On comparison, clearly the number of indices is much more than the livability organizations, as the focus is upon providing basic infrastructure facilities and promotes economic development with concerns towards the impact of the above on the natural environment. Health, governance and transportation are also considered as an important integration to the whole mission, whereas, recreation and housing have been neglected as dimensions towards livability. Also, the index lacks indices in the dimensions of Socio-Cultural, and Consumer and Service Goods.

MoUD Index: Compared to BIS, the index has less number of indices but has covered more themes. The prime focus is towards providing physical infrastructure and transportation facilities. Rest, almost each dimension like governance, safety, health, education, recreation, socio-cultural, economy and natural environment has been given same weightage. Also, the only dimension in which the index lacks behind is of Consumer and Service goods; same as BIS.

COMPARATIVE ANALYSIS					
Themes	EIU	Mercer	OECD	BIS	MoUD
Safety	5	4	2	5	4
Health	6	8	2	7	4
Education	3	1	3	5	4
Recreation	1	4	-	2	3
Socio-Cultural	4	2	4	-	3
Governance	1	1	2	6	4

⁹ The themes selected are on the basis of the study of indices and their common livability characteristics, as provided by various organizations. These are terminologies generally associated with the field of urban planning.

Table 7: Comparative Analysis of Livability & Smart City Mission Indices provided by various organizations

Note: Only EIU in the international organizations, after BIS and MoUD have indices in the energy dimension of livability.

Comparing upon the Indian smart city indicators to the three international livability rankings, it is evident that the Indian measuring tools are more sophisticated in their manner, almost covering all the themes. The inadequacy that has been observed is in the Consumer and Good Services theme, where none of the Indian organizations have focused. The only conflict that has been identified among all the organizations is that International livability tools have focused more upon creating safe, healthy, socio-cultural and economic rich environment for their cities, where as Indian organizations, though have laid concerns towards these themes, but their prime focus is upon providing the basic essential infrastructure services, to promote a livable urban environment.

6. Conclusion

Rapid urbanization has negatively impacted the livability dimension of the urban cities. In order to transform urban context into more safe, healthier and livable environment, the concept of livable city came up as a solution. Livability as a concept has been in ambiguity as it has been defined in many dimensions. Broadly, it has been associated with three dimensions i.e. Economy, Environment and Quality of Life; creating path towards holistic development making urban cities more livable. The economy dimension aims at making cities more economically viable, with concerns towards the impact on the natural environment and Quality of Life dimension; reflects the satisfaction of population towards the on-going development.

In the Indian urban context, the recent launched Smart City Mission aims at integrating smart development principles and strategies in urban paradigm. The analysis conducted in this research paper was to answer the question, whether the mission is capable enough to provide a livable environment to the urban cities, has been concluded. It is evident from the analysis that the mission focuses on the holistic development of Indian urban cities; though the mission lacks in some of the dimensions which are essential for developing a livable urban environment i.e.

Consumer & Good Services and Socio-Culture. Apparently, as compared to the international ranking organizations, the mission indices are much more elaborately distributed and it can be concluded that the mission has an adequate integration of livability dimensions, in order to improve the quality of life in the Indian cities.

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