

Comparing Indicators of “Livability” of Oregon, Melbourne, Beijing and Bhopal

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Abstract

The term ‘Livability’ is used worldwide to describe the sum of the factors that add up to a community’s quality of life—including the built and natural environments, economic prosperity, social stability and equity, educational opportunity, and cultural, entertainment and recreation possibilities. Livability encompasses broad human needs ranging from food and basic security to beauty, cultural expression, and a sense of belonging to a community or a place. Taking a holistic approach to assessing community livability is important, because every place has unique strengths. Central neighborhoods in major cities have the advantage of being close to job opportunities, shops, and entertainment options, while rural towns often have more affordable homes, safer streets, and less pollution. The Livability Index measures housing, neighborhood, transportation, environment, health, engagement, and opportunity characteristics. For each category, the Index evaluates current conditions using a diverse set of metric indicators, and considers policies and programs that can enhance community livability over time. In Indian urban scenario, it is highly neglected term as awareness about livability is lacking. This paper compares the various indicators of livability in Oregon, Melbourne, Beijing and Bhopal and it tries to interpret the term “Livability” in the Indian Urban scenario.

Keywords: Livability, Indicators, Subjective aspects, Objective aspects, Indian urban areas.

Introduction

“Livability” is a broad term with no precise or universally agreed-upon definition. The concept embraces cognate notions such as sustainability, quality of life, the “character” of place, and the health of communities. Livability encompasses broad human needs ranging from food and basic security to beauty, cultural expression, and a sense of belonging to a community or a place. Livability being a subjective notion, its gamut differs with different economic,

social, cultural and local influences. In Indian context the livability differs slightly from concept of developed countries though the essence remains the same. Developed countries take certain facilities for granted while having the same facilities becomes an attractive proposition for Indian people. For example a grocery store with home delivery services within walking distance in a residential area, easy accessibility to a weekly vegetable market for fresh vegetables and fruits; are some of the important criteria for livability in India whereas these issues are not important in developed countries as the nearby departmental stores thereat serves the purpose of one stop shop. The fundamental goal of this paper is to identify the indicators of livability performance parameters for evaluating livability of urban areas in the city of Bhopal as compares to Oregon, Melbourne and Beijing.

Methods

The methodology used here is comparison of established indicators of Livability in urban areas of cities of different countries. The different countries include United States of America, China, Australia and India. India and China are climatically on the same region whereas the climate and expanse of United States and Australia are similar. This climatic difference is considered while studying established indicators of Livability in urban areas.

Livability Principles in Oregon, U.S.A.

Livability has emerged at the forefront of the recent Partnership for Sustainable Communities formed by the U.S. Department of Housing and Urban Development (HUD), the U. S. Department of Transportation (DOT), and the Environmental Protection Agency (EPA) in June of 2009^[4]. The partnership identifies six livability principles to help the three agencies collaborate to improve access to affordable housing, increase transportation options, lower transportation costs, protect the environment, promote equitable development, and address the challenges of climate change in communities nationwide (USEnvironmental Protection

Agency, 2011).^[4]The following six livability principles serve as the foundation of the Partnership.^[4]

1. **Provide more transportation choices** to decrease household transportation costs, reduce our nation’s dependence on foreign 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 people of all ages, incomes, races, and ethnicities to lower the combined cost of housing and transportation.
3. **Enhance economic competitiveness.** Improve economic competitiveness through reliable and timely access to jobs, education, and services, as well as expanded business access to markets.^[4]
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 federal policies and funding to remove barriers to collaboration, leverage funding, plan for future growth, and make smart energy choices such as locally generated renewable energy.
6. **Value communities and neighborhoods.** Invest in healthy, safe, and walkable neighborhoods.

Proposed Working Definition: For the purposes of this paper, the researcher proposes defining livability as “the attributes of a community that affect its suitability for human living.”^[4] The team proposes defining quality of life as “the effects of a community’s livability on its residents.” The following table provides an example of the types of factors that affect community livability under the above definition.

Livability Factors	
Economic Development	availability of jobs, services and retail
Housing	affordability, location, diversity of housing types
Environmental Quality	air quality, aesthetics, noise, water quality, greenhouse gases (ghgs), parks and open space
Community Development	community cohesion, historic and cultural resources, educational opportunities
Transportation	availability of multimodal connected networks, mobility
Equity	safety, accessibility of jobs, housing and services, streetscape attractiveness equitable distribution of amenities

Table 1: The Livability Factors^[4]

Livability Principles in Melbourne, Australia

To date, a number of major international livability studies have been conducted. These include:^[5]

- Mercer Quality of Living Survey
- Economist Intelligence Unit (EIU) Quality of Life Index
- Demographia International Housing Affordability Survey
- Jones Lang LaSalle City Governance Index
- Anholt City Brands Index
- GaWC World Cities Index
- Monocle Global Quality of Life Survey

Broadly, these benchmarking studies can be categorized as ‘quality of life surveys’, ‘cost of living surveys’, and ‘other specific surveys’. Each of these surveys varies in scope, methodology and comprehensiveness.^[5] Focusing on those (Mercer and EIU) that purport to measure quality of life in major cities and are the most commonly cited in Australia, the following summarizes their main characteristics.^[5]

The EIU ranks cities on their livability as part of the Worldwide Cost of Living Survey. Living conditions are assessed using around 40 indicators, with each city being given a value between one and five for each indicator. These scores are then grouped into five weighted categories to allow rating of between 0 per cent and 100 per cent to be determined for each city — the lower the score the more ‘livable’ the city. The five weighted categories of the EIU Quality of Life rating are:^[5]

- Stability (25 per cent)** — prevalence of petty crime, prevalence of violent crime, threat of military conflict, threat of civil unrest/conflict, threat of terrorism
- Healthcare (20 per cent)** — availability of public and private healthcare, quality of public and private healthcare provision, availability of over-the-counter drugs, general healthcare indicators
- Culture and Environment (25 per cent)** — climate (humidity/temperature rating, discomfort to travelers, cultural hardship), corruption, social/religious restrictions, level of censorship, recreation (sports, culture, food and drink), availability of consumer goods and services
- Education (10 per cent)** — availability of private education, quality of private education provision, general public education indicators
- Infrastructure (20 per cent)** — transport (quality of road network, quality of public transport, quality of regional or international links), housing (availability of good quality housing), utilities (quality of energy provision, quality of water provision, quality of telecommunications infrastructure).^[5]

Mercer Human Resource Consulting’s annual worldwide quality of living survey is designed to assist people moving internationally and companies who relocate employees to decide on appropriate remuneration. It is a measurement based on 39 factors that are grouped into 10 key categories. These are:^[5]

- Political and social environment - eg, political stability, crime and law

- Enforcement
- Economic environment - e.g., banking services
- Socio-cultural environment - e.g., civil liberties
- Health and sanitation
- Schools and education
- Public services and transportation
- Recreation
- Consumer goods
- Housing
- Natural environment - e.g. climate.^[5]

Cities are then weighted and ranked against the base city, New York, which has a score of 100. In 2008, Zurich was ranked the world's top city with a score of 108.1. Sydney was ranked tenth behind other Asia-Pacific cities such as Vancouver (fourth) and Auckland (fifth), Other Australian cities –were ranked: Melbourne 17, Perth 21, Adelaide 29, and Brisbane 34 (Mercer 2008).^[5]

Methodological Limitations^[5]

While each of these annual surveys generates significant media attention, particularly in Sydney and Melbourne, there are more fundamental limitations of these studies that must be emphasized. Using indicators to benchmark cities according to its livability is a useful tool for both communicating how well a city is performing against its competitors and for helping to establish targeted policy directions? However city benchmarking also has a number of limitations that undermine their validity for measuring and monitoring performance and for informing urban policy.^[5] These limitations include the integrity and compatibility of data among cities, the overstatement of the cause and effect relationship between indicators and city outcomes, and the subjectivity of the analysis and conclusions.^[5]

Livability Principles in Beijing and Wuhan, China

In 2007, a report named the Scientific Assessment Standards of Livable Cities (Table 1) was published by the then Ministry of Construction, aimed to serve as a quantitative index system to guide and assess the development of livable cities in China.^[6]

The system comprises six major index including social civilization, economic prosperity, environmental soundness, resource sustainability, living convenience and public security; 23 sub-categories and 74 specific scores based on different weight. Among which ecological environment weighs the heaviest followed by housing, municipal facility and urban traffic.^[7]

Environmental soundness	a. ecological environment, b. climate, c. cultural environment, d. urban landscape
Resource sustainability	a. per capita fresh water resource, b. recycling rate of industrial water, c. per capita urban land use, d. food security
Living convenience	a. urban traffic, b. commercial service, c. municipal facility, d. educational, cultural and sports facilities, e. green open spaces, f. urban housing, g. public health
Public security	a. completeness of life-line projects, b. facility, mechanism, precaution against natural disasters by the municipal government, c. facility, mechanism, precaution against human-inflicted disasters by the municipal government, d. rate of successful handling of public security issues in past years by the municipal government
Negating condition	a. high crime rate, b. serious social polarization, c. serious pollution d. serious fresh water deficiency or ecological deterioration

Table 2 : Scientific Assessment Standards of Livable Cities (Source : Research projected by the Ministry of Construction 2007)

The index system is nearly all-inclusive and accords well with the generally accepted sustainability framework which comprises the environment, economy and equity.^[6]

Construction of indicator system

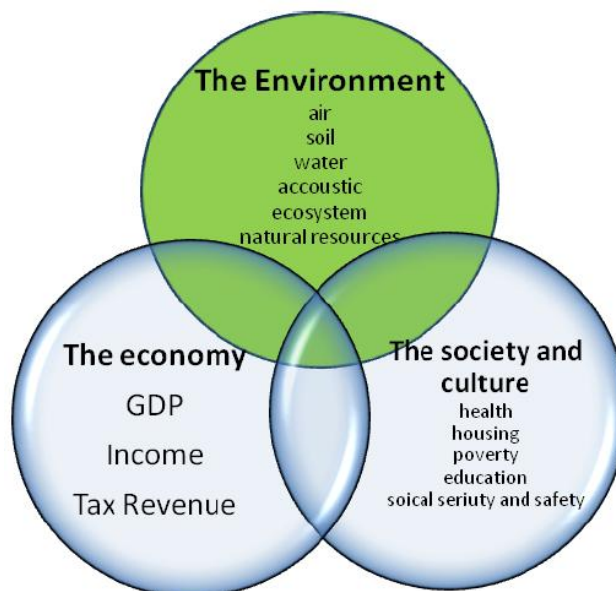


Figure 1: Scope of Indicators^[6]

It seeks to develop the Environmental Livability Index (ELI), an index for tracking, evaluating and reporting on a city's environmental livability (EL) and its improvement. The index will also provide a support tool for policy analysis and decision making of pollution control investment. The Environmental Livability Index System (ELIS) will be a system consisting of ELI as well as all the indicators and sub-

Scientific Assessment Standards of Livable Cities	
Major index system	contents
Social civilization	a. political civilization, b. social harmony, c. community civilization, d. public participation
Economic prosperity	a. per capita GDP, b. disposable income of urban residents, c. per capita fiscal revenue, d. employment rate, e. percentage of tertiary industry employment in total employment

indices for deriving ELI. The ELIS will also integrate impacts of social and economic activities on the environment, as shown in Figure 1.

The ELI system consists of three levels, an aggregated ELI, a sub-index and indicators. Sub-indices are proposed based on the analysis of China's urban environmental issues above. Seven indices for addressing the above major urban issues are included in the urban livability index as water environment, water resource, air environment, solid waste, acoustic environment, ecological environment, domestic livability and environmental management.^[6]

Under each sub-index, indicators are selected according to the PSR model and various criteria for section. The four key criteria – representative, measurability, analytical soundness and data availability- are suggested based on these previous works. Following the above criteria, 8 indicators are selected for water environment, 3 indicators for water resource, 11 indicators for air environment, 6 indicators for solid waste, 1 indicator for acoustic environment, 4 indicators for 2 ecological environment, 4 indicators for domestic livability, and 4 indicators for environmental management. This makes a total of 41 indicators, among which 13 indicators reflecting the environmental state and pollution control efficiency are selected to calculate the Environmental State Index (ESI), and 13 pressure indicators to calculate the Environmental Pressure Index (EPI) and 15 indicators to calculate the Environmental Response Index (ERI).^[6]

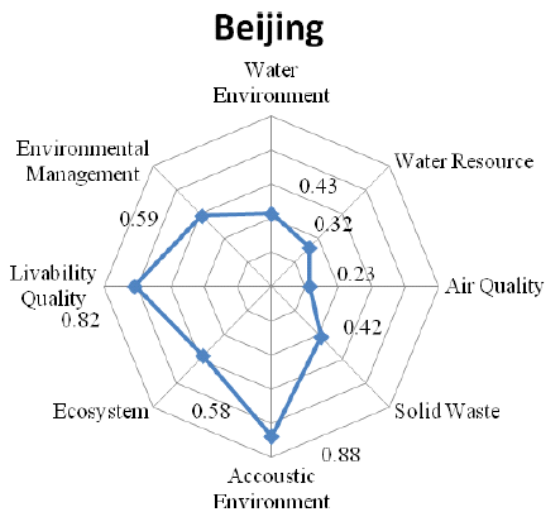


Figure 2: Trend Analysis for Beijing^[6]

Understanding Livability in Bhopal, India

India is a vast country showcasing social and economic diversity among its states and cities. Therefore, a city representing various facets relating to culture, religion, caste, creed etc. of Indian society was selected to carry out the research work. Based on above considerations Bhopal, the capital city of Madhya Pradesh was selected for the study. Bhopal being centrally located in India is well connected to other major cities through rail, road and air and has been attracting peoples from all parts of India, thereby giving rise to a very cosmopolitan culture. Historically, it has been ruled by both Hindu as well as Muslim rulers, which has only added to its evolution into a very pluralistic society. In recent times,

Bhopal has emerged as one of the major cities of India and was a part of Confederation of Indian Industry study, "Livability index 2010: The best cities in India". The CII livability index 2010 was based on objective analysis of data collected for top 37 cities of India. The study was carried out in the city of Bhopal to understand how people perceive livability of residential areas.^[10]

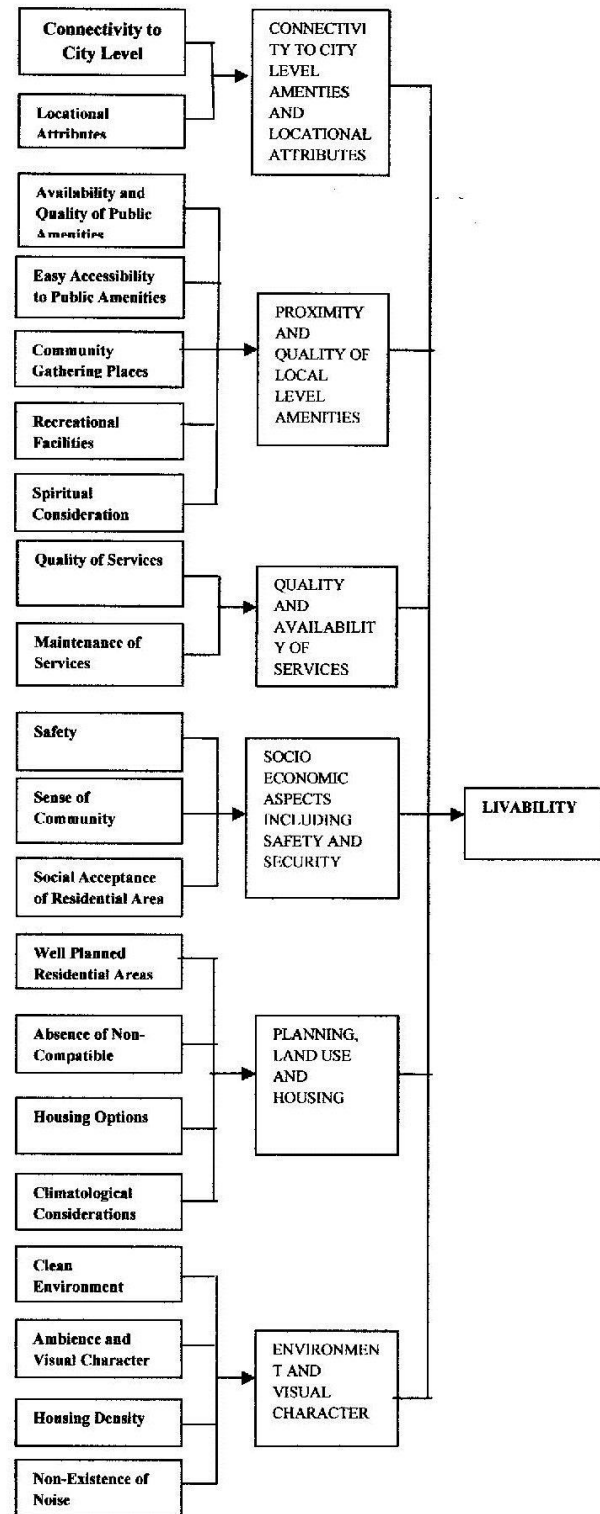
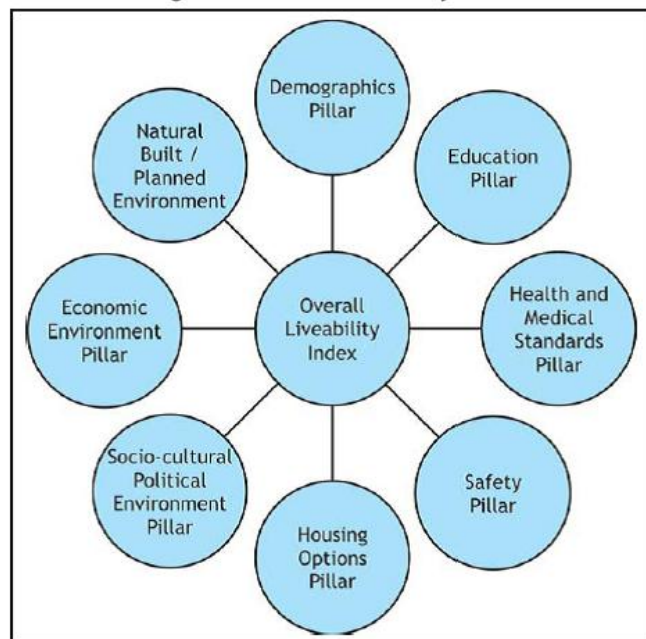


Figure 3: Categorization of Identified Livability Attributes^[10]

Parameters of Built Environment	Indicators of Built Environment
Green Space	1. Total green space to site ratio
	2. Green space per capita
	3. Hard surface to site ratio
	4. Green surface to built surface area density
	5. Open space to building volume ration
Density	1. Population density
	2. Total builtup area to site area
	3. Built form (height to perimeter of building ratio)
	4. Outdoor thermal control
Road	1. Road area to total site area
	2. Road width and building height
	3. Road width (area of particular width) to total road area
Convenience	1. Distance to bus stop/taxi stand
	2. Distance to provision store and day to day items shop
	3. Distance to play school
	4. Distance to internet café
Clean Environment	1. General sanitation condition
	2. Number of skips (for collection of garbage) to number of households.
	3. Average distance to skip from households
	4. Municipality garbage collection vehicle trips per week
	5. Proximity to nallah or any other obnoxious factory
	6. Housing quality
Noise and Safety	1. Average distance of households from highway and main road
	2. Proximity to noise generating activities in the vicinity
	3. Feeling of walking safety at night
Visual Character	1. Building materials used in façade
	2. Glass façade to solid building surface ratio
	3. Colour and texture

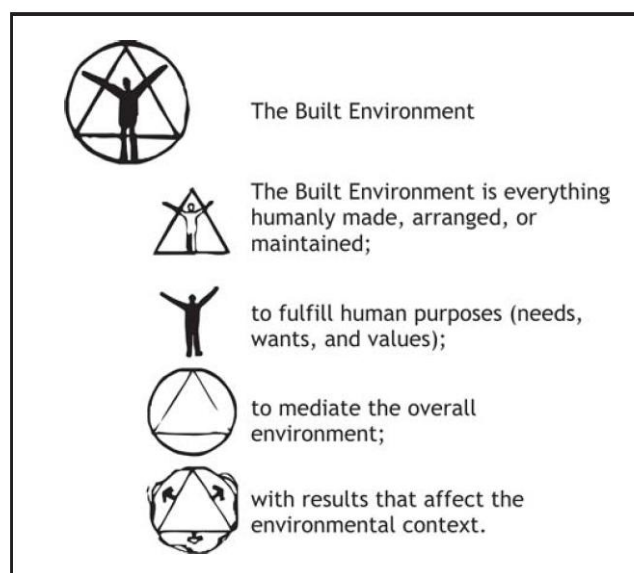
Table 3: Parameters and indicators of Built Environment for a Residential Area [8]

The Confederation of Indian Industry or CII has recently prepared a livability index 2010 for Indian cities after studying 37 cities. The mission of the index is to measure significant drivers of the overall health and welfare of the residents. The parameters making an impact on livability are shown in Fig. 2 with a component of built environment. The importance of built environment in effecting the livability is established by the study.



Source: Confederation of Indian Industry (2010), Livability Index 2010: The Best Cities in India

Figure 4: CII model of Livability Index^[8]



Source: The Built Environment, a collaboration inquiry into Design and Planning, second edition, 2007, edited by Wendy R. McClure and Tom J. Bartuska

Figure 5: Definition of Built Environment and its Four related Characteristics^[8]

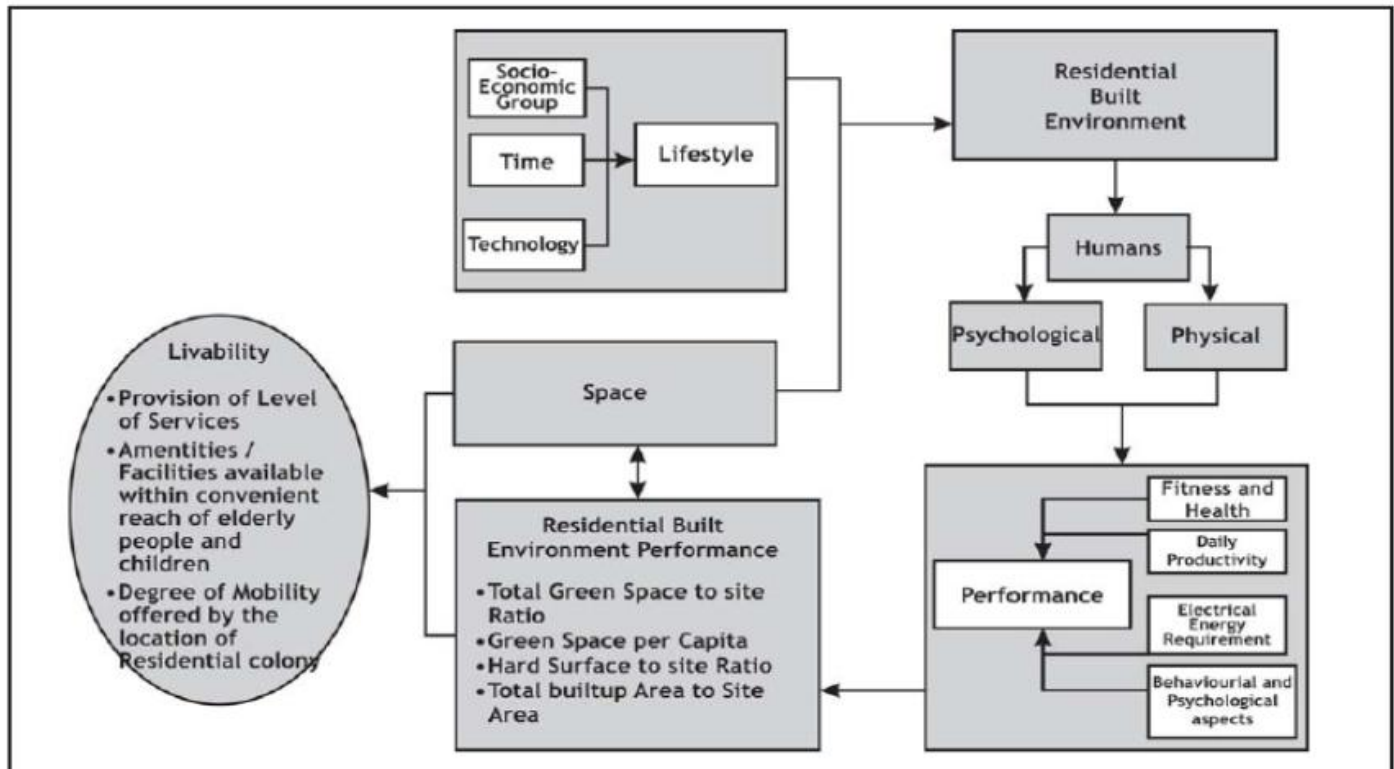


Figure 6: Conceptual Framework to Evaluate Residential Built Environment Performance for Livability^[8]

Conclusion:

After comparing indicators of “livability” from each two cities from developed country and developing country, it is found that the stress on various indicators was different in different countries. In developed world the stressors are environment, culture and the economy; whereas in developing countries like India and China, the indicators stressed upon city level amenities, housing and other services. It can be concluded that this difference of priorities is because of different social and cultural conditions, different economic conditions and climate. It is also found that, in developing countries, the quality of built environment plays an important role in overall quality of life or parameters of “Livability” in these countries.

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