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Assessment of social sustainable development in urban India by a composite index

Sudha Panda [a,*], Manjari Chakraborty [b], S.K. Misra [c]

[a] *Piloo Mody College of Architecture, Cuttack, India*
[b] *BIT, Mesra, India*
[c] *ABIT, Cuttack, India*

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Abstract

India has experienced rapid urbanisation with the rate growing from 26 percent in the 1990–2000 decade, to 30 percent in the 2000–2010 decade putting massive pressure on basic infrastructure and services. The objective of this paper is to develop a social sustainable framework and a composite index which is tailor-made to assess the Indian cities. Since social sustainability cannot be developed in isolation this paper examines urban sustainability in an integrated manner with its four dimensions of social, economic, environmental and institutional and maps the criteria at three levels i.e. policy, theoretical, and practical levels. The three tiered hierarchical model is tested in the state of Odisha where the social sustainability can be put to test in the best context as the urbanisation is growing at a stupendous speed and the infrastructure growth does not match up. Using the framework it is possible to obtain a composite index for Urban Social Sustainability whose model can be applied to all Indian cities with contextual changes. The dimensional index score and thematic index score obtained from the model helps in benchmarking the cities and identifying gaps so that it can inform national policy and planning. The social sustainability index together with the indices on the other three dimensions would help in making well informed judgement in the allocation of resources.

Keywords: Urban social sustainability; Composite index; Hierarchical model; Sustainability indicators; Integrated framework

1. Introduction

1.1. Background

India has experienced phenomenal growth of its cities. The rate of urbanisation has grown rapidly from 26 percent in the 1990–2000 decade, to 30 percent in the 2000–2010 decade. Projecting this growth rate by 2030, the urban population will be 40 percent of the total projected population of 1470 million. This scale of urbanisation will put massive pressure on city's natural resources and in the provision of basic infrastructure and services.

When we look at the background of the sustainability issues we see that a lot of study has been done since 1987 with the Brundtland commission report when a number of efforts worldwide were made to construct the Sustainability development indicators but in India not a single city has registered any initiative for indicator development till

* Corresponding author.
E-mail addresses: sudhapanda@hotmail.com (S. Panda), profmanjari@gmail.com (M. Chakraborty), santosh_ku_misra@yahoo.com (S.K. Misra).
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date (Salk et al., 2008). In 1992, governments of 178 countries met at Rio de Janeiro, for UN conference of Environment and Development (also known as the Earth Summit) which was convened to address the urgent problems of environment protection and socio-economic development.

1.2. Need for forming an urban sustainability index

Considering economic growth alone, undermines the quality of life. Indicators studied over a period of time, mark the distance and direction from the target. Urban Sustainability as given by UNCSD has four components namely Economical, Environmental, Social and Institutional. The UNCSD framework for determining the Urban Sustainability is a 3 tiered hierarchical model with several themes under each dimension and each theme has several indicators under it. Indicators help in knowing the direction and distance from the target and urban sustainability index obtained by an aggregation of all the indicators shows where the link between economy, environment and society is weak. It gives a quantitative and measurable definition to the progress in urban sustainability. The quantitative values are easy to understand and grasp by policy makers.

India has developed a series of projects and programs which can be classified as important elements of National Sustainable Strategy. It however has not yet developed or published a comprehensive and consistent sustainable strategy (Von Hauff et al., 2013) The Five Year Plans provide medium-term strategies for overall development. The Ministry of Urban Development has come up with a Report on the development of Sustainable Habitat Parameters on Urban Development (Government of India, 2011).

A lot of global initiatives have been taken by World Bank, UN Habitat, Asian Development Bank etc. which measure the urban sustainability across countries. Although globalisation – in the sense of the increasing exchange of products, services and concepts – does contribute to a convergence of solutions and problems, there is also a country specific explanation for the constraints encountered in the development of implementation of a sustainable strategy in India (Von Hauff et al., 2013). Hence it is important to develop a custom made sustainability framework for India, to address the problems which are typical to India.

1.3. Benchmarking Indian cities with global cities on sustainability

Indian cities like Mumbai and New Delhi perform averagely as seen by the City Prosperity Index, a global initiative by UN Habitat, which maps 50 cities across the world on Urban Sustainability with its 5 thematic indices of Productivity, Quality of Life, Infrastructure, Equity and Environment. An excerpt of 6 cities (State of World Cities Report, 2012) classified into 3 groups based on their ranking (Refer Table 1) shows that the Indian cities perform weakly on the Economic and Environmental dimension but are quite balanced and consistent on the Social dimension (Quality of life, Equity and Infrastructure Indices) whereas the top rung cities of Vienna and Tokyo show balanced high score on all five indices with very low income inequality.

1.4. Definition of sustainable urban development

Probably the earliest and most comprehensive definition of sustainable development is given by Brundtland Commission, as "Development which meets the needs of the present without compromising the ability of future generations to meet their own needs."

'Sustainable urban development' (SUD) has often been used interchangeably with 'urban sustainability' (Richardson, 1994; Maclaren, 1996). They may be differentiated, however, because sustainability implies a desirable state or set of conditions whereas SUD implies a process by which sustainability can be attained (Maclaren, 1996). More formally, SUD has been defined as (Wheeler, 1998): "development that improves the long-term social and ecological health of cities and towns."

Urban sustainability is defined as the challenge to "solve both the problems experienced within cities and the problems caused by cities", recognising that cities themselves provide many potential solutions. The dimensions of Urban Sustainability are established as (Drakakis-Smith, 2000) "Sustainable urbanisation refers to the well-balanced relationship between the social, economic and environmental agents in society, so as to accomplish sustainable urban development."

Table 1
Benchmarking Indian cities with Global cities on sustainability.

Groups	City prosperity index	Cities	Productivity index	Quality of life index	Infrastructure index	Environment index	Equity index
A	0.925	Vienna	0.939	0.882	0.996	0.932	0.883
	0.906	Tokyo	0.925	0.931	0.989	0.936	0.828
B	0.709	Mexico	0.743	0.764	0.900	0.866	0.405
	0.793	Moscow	0.806	0.813	0.960	0.908	0.550
C	0.694	Mumbai	0.645	0.739	0.745	0.632	0.715
	0.636	New Delhi	0.596	0.690	0.786	0.448	0.712

Data Source: State of World's Cities 2012–13, UN-Habitat

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