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Urban Social Sustainability: The Notion and the Measurable Aspects

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ABSTRACT

Introduction: Urban social sustainability is about people's quality of life, now and in the future. It is enhanced by development, which provides the right infrastructure to support a strong social and cultural life, opportunities for people to get involved, and scope for the place and the community to evolve. The present descriptive paper, based on a theory-oriented explanatory study, tries to comprehend the notion of 'Urban Social Sustainability' and identify its quantifiable features. Methodology: With the help of the 'desk research' methodology, the present empirical theory-oriented descriptive study aims to present the perspective (abstraction and interpretation) of 'Urban Social Sustainability' and its measurable aspects. To get insight into the objectives, the 'desk research' methodology has been used in this study. The study essentially involves the collection and collation of related information from various resources. Several documents, ranging from scholarly literature to government reports and pertinent acts (state and/or central), have been reviewed. Result: There are influences from some external factors on the dynamic process of Urban Social Sustainability on regional and spatial scales, including service provision by local government and local economic, environmental, and political aspects at a broader scale. Conclusion: The present paper figures out the measurable aspects of Urban Social Sustainability and finds out the linkages between them. The "Common Accredited Indicators" are principally categorised into two groups: (a) indicators of equality in social infrastructure (basic amenities and social infrastructure) and (b) indicators of community sustainability.

***Keywords**: Sustainable Development; Urbanisation; Urban Social Sustainability; Social Infrastructure; Basic Amenities*

Introduction

In "An Essay on the Principle of Population", Malthus (1986), a renowned political economist, questioned whether there were enough natural resources to support the growing population since subsistence can only increase in an arithmetic progression, while a geometric progression of population growth is more likely. The fundamental principles of environmentalism were discussed by Malthus (1986). Until quite recently, human civilization was only interested in "efficient resource consumption" and not in "efficient resource allocation", which, in essence, disregarded the idea of resource exhaustion and instead caused resource shortages and pollution (Freeman, 1973). The limited availability of non-renewable natural resources is simply distressing for long-term economic progress.

Strong economic bases supported by infrastructural facilities, good governance, and a profound socio-cultural inheritance are essential for urban settlements to exist and to remain inhabited. Now one indispensable question arises: whether urban development is also "Socially Sustainable"? Does this urban development retain objectivity when it comes to concerns like access to jobs, housing, and fundamental requirements like health and education, as well as other social infrastructures like transportation inside the urban area? Do the features of the environment get proper consideration through this? Will the future generation get a well-brought-up, liveable society?

Methodology

The present descriptive paper, based on a theory-oriented explanatory study, tries to comprehend the notion of "Urban Social Sustainability" and identify its quantifiable features. The present paper also tries to identify the ‘Common Accredited Indicators’ for measuring urban social sustainability.

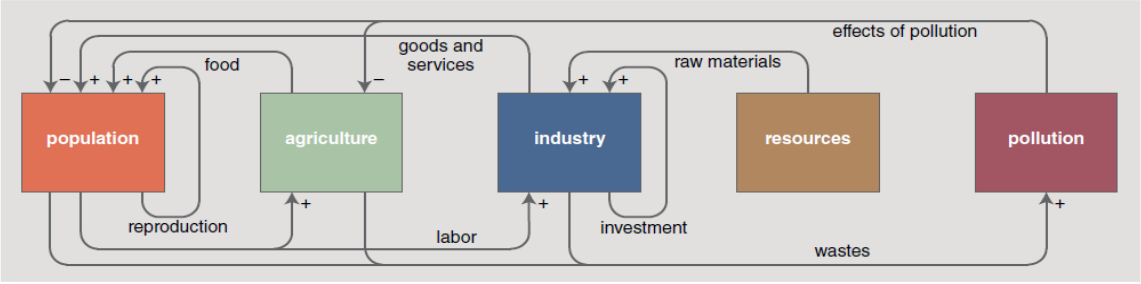
To get insight into the objectives, the ‘desk research’ methodology has been used in this study. The study is an empirical theory-oriented descriptive study with the aim of presenting the perspective (abstraction and interpretation) of ‘Urban Social Sustainability’ and its measurable aspects. This essentially involves the collection and collation of related information from various resources. Several documents, ranging from scholarly literature to government reports and pertinent acts (state and/or central) have been reviewed.

Results and Discussion

Notion of Sustainable Development

In 1972, Meadows *et al.*, with a team of researchers at the Massachusetts Institute of Technology, studied the relations among five fundamental key elements that influence the level of growth, which include: a) population; b) structural change in agricultural output; c) decrease in availability of non-renewable resources; d) industrial production; and e) pollution generation.

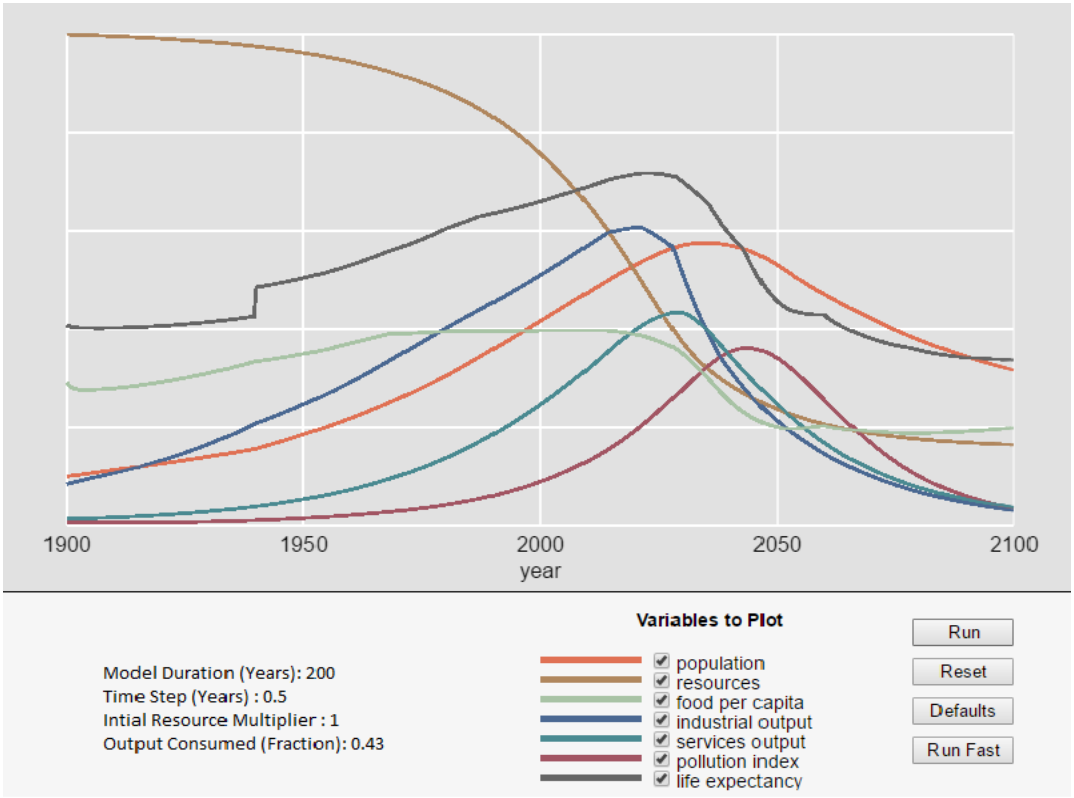
In "The Limits to Growth", the World3 model's five main parts are connected by feedback loops and other connections (Figure 1). As more people are born and more goods and services are generated by more equipment, the population and capital sectors create self-reinforcing feedback loops.



Source: Hayes (2012)

Figure 1: Five Major Aspects of the "World 3" Model's Major Trails

The World-3 Model's output aims to identify the status of important variables from 1900 to 2100. The benchmark scenario, as depicted in Figure 2, is based on the researchers' best estimate of the prime condition. Throughout the 20th century, the populace and additional economic activities (such as service output, industrial output, nutrition per capita, etc.) rose or at least stabilised; however, around the middle of the 21st century, they tended to collapse due to the rapid depletion of non-renewable resources. The situation will unquestionably get worse as pollution-related issues become more prevalent (Meadows *et al.*, 1972; Hayes, 2012). The World 3 model's underlying advice is that we ought to choose policies that will ensure population stabilisation, efficient use of limited resources, recycling, a minimal level of ecological instability, and maximum sustainability in order to prevent misfortune and provide for the highest level of its members' satisfaction (Goldsmith, 1972).



Source: Hayes (2012)

Figure 2: World 3 Model - A Probable State of Major Variables between 1900 and 2100

The report by the UN's "Global Commission on Environment and Development", led by Gro Harlem Brundtland, entitled "Our Common Future" proposed the most widely acclaimed and acknowledged definition of "sustainable development" as "*development that meets the needs of the present without compromising the ability of future generations to meet their own needs …Thus, the goals of economic and social development must be defined in terms of sustainability in all countries - developed or developing, market-oriented or centrally planned*." (WCED, 1987).

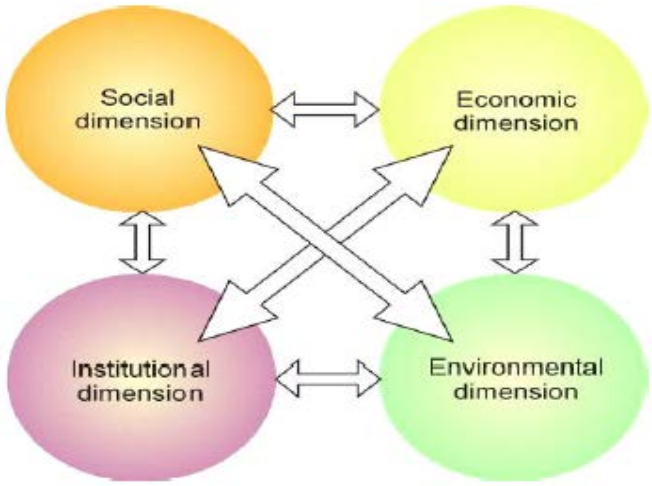
Urban Sustainability and Its Dimensions

The notion of "sustainable development" also calls for applying the idea of sustainability to the contemporary problem of revitalising, redeveloping, and reforming the accelerating process of urbanisation. According to Dempsey *et al.* (2011), the economic, social, and environmental aspects of development have become increasingly dependent on urban population growth and rapid urbanisation, making urban planning essential to achieving sustainability (Yung, Chan, & Xu, 2011).

The concept of "sustainable development," as it is described in Agenda 21, includes two main components: the environmental aspect, as well as the social and economic dimensions (i.e., resource management and conservation for development) (Hirano, 2003). As a result, the concept of "sustainable development" is founded on three main opinions: (a) economic sustainability; (b) social sustainability; and (c) environmental sustainability. Economic sustainability refers to the best case scenario wherein sustained economic progress will "trickle down" to the poor through effective resource allocation through the market, production processes, and consumption with little negative impact on the natural, social, and human resources. Social sustainability includes the ideas of equality, being empowered, mobility, involvement, collaboration, social and cultural identity, and stability in institutions. Environmental sustainability says that in order to reduce pollution, adequate waste management techniques must be utilised and that the important minimum threshold should not be surpassed when harvesting natural resources where they cannot be replenished (Basiago, 1998; Khan, 1995; Hirano, 2003).

This suggests further, at least conceptually, that the concept of "sustainable development" for a "sustainable urban society" calls for an integrative interrelationship between equality, the economy, and the environment. An improvement in local economic conditions may lead to more opportunities for capital accumulation, which might subsequently be used for additional savings and consumption geared towards eradicating poverty and achieving societal equality. This equality in society serves as inspiration for higher living standards, education, health, food access, and environmental awareness, all of which are crucial for developing the necessary level of collective intelligence for production-related inventions and innovations, among other things, to preserve productivity and safeguard the environment (Basiago, 1998). Only by effectively integrating the economic, social, and environmental aspects - also known as profit, people, and planet - can the path to sustainable development be found.

The "institutional component", whether it's a public institution, a private institution, or a joint venture between the two, can be imagined in addition to these three dimensions and is vital for urban social sustainability (Sengupta & Baranwal, 2012) (Figure 3). Other aspects of urban sustainability, including the political, legal, practical, ethical, and other elements, are also discussed by certain academics (Pawłowski, 2008).



Source: Sengupta & Baranwal (2012)

Figure 3: Urban Social Sustainability in its Different Aspects

Defining Urban Social Sustainability

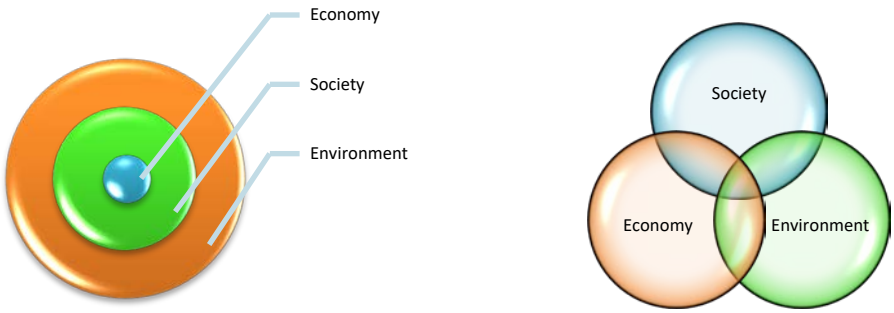
In the academic literature and among decision-makers, the environmental and economic components of the sustainability paradigm have received the most attention (Drakakis-Smith, 1995). There could be two causes for the unbalanced priority of the sustainability components. Firstly, the 1960s' burgeoning environmental movement and the international campaigns for "basic needs" of the 1970s collectively contributed to the development of the idea of sustainable development; Secondly, according to Colantonio (2008), in "Traditional and Emerging Prospects in Social Sustainability", evaluation of many social development's intangible and non-quantifiable features is fraught with measurement quandaries. Only since the 1990s have social factors in sustainability been taken into account (Colantonio, 2007).

A counterargument exists, and it is called the "Brown Agenda" trying to draw attention to the environmental and developmental issues faced by the developing nations. This is also an effort to theoretically discuss the various viewpoints on global "green" environmental problems and the problems particularly faced by urban areas. The 'Brown Agenda' makes brief note of the problems with access to clean water, proper sanitization, and drainage, due to the inappropriate management of dangerous solid waste and with air pollution, which includes unchecked emissions from companies, cars, and low-grade domestic fuels. This makes it clear why an urban focus is justified. According to the "Brown Agenda", linked economic growth and the building of "social capital" are the best ways to control the growing environmental degradation. It has been noted that the majority of severe environmental degradation typically occurs in regions with high poverty and weak social cohesion. Therefore, it is predicted that boosting social capital through development will surely produce an improved environment. (McKenzie, 2004; Agarwal & Narain, 1992; Geography, n.d).

"The Western Australian Council of Social Services" (WACOSS) proposed two social sustainability models that demonstrate the linkages between sustainability's social, economic, and environmental aspects. Three interacting spheres are present in the first

model, and according to some, the power of the environmental realm determines how well the "economic" and "social" elements function. Here, social issues are viewed as simply a mechanism for sustainability and are separated from discussions of actual issues (Ghahramanpouri, Lamit, & Sedaghatnia, 2013). According to this approach, the idea of sustainability has been de-socialized and the environmental components have been given normative weight (Maloutas, 2003; Davidson, 2009).

The second social sustainability model identifies the decisive role of social characteristics. This approach proposes three 'overlapping circles' that claim all three facets of sustainability have comparable outcomes (McKenzie, 2004; WACOSS, n.d.) (Figure 4). This concept re-socialized the idea of sustainable development by viewing sustainability in society as a goal as opposed to a tool (Maloutas, 2003).



Source: The Model of Social Sustainability, WACOSS (Western Australian Council of Social Services)

Figure 4: Two Models Illustrating How the Environmental, Social, and Economic Aspects of Sustainability Are Interconnected

Spangenberg and Omann (2006) put forward that the notion of sustainability is to be envisioned within an analytical space with four dimensions, where there are two separate axes, the economic and the environmental, whereas the ‘social dimension’ is divided into two additional axes of ‘soft infrastructures’, which are ‘the human’ (system, capital, domain) and ‘the societal’ aspects (capital stock, community capacity, community system analysis). Spangenberg and Omann (2006) also suggest that there are at least three different types of analytical methods to decide whether the axes of social sustainability are to be analysed separately or in conjunction (Spangenberg & Omann, 2006). The approaches are namely: (a) Functionality Analysis Approach: The functional analysis paradigm dominates discussions of social sustainability's definitions, dimensions, and measurement in studies of rural, urban, and community sustainability; (b) Capital Approach: This is a financial consideration based on the idea of social capital stocks. Spangenberg and Omann (2006) suggest that the notion ‘social capital stock’ is not helpful enough as a general criteria of social sustainability; the justification is that because it is grounded in economic theory, it is unable to distinguish qualitatively between the various difficulties that are used to explain the substance of social sustainability (Spangenberg & Omann, 2006); and (c) System Analysis Approach, this view suggests that if each domain is to sustain itself as a system of social sustainability, then each

domain must be able to reproduce itself (Bossel, 2000). For each of these reproductive processes, there are almost universally essential intrinsic social, economic, institutional, and environmental requirements of sustenance (Spangenberg & Omann, 2006).

This concept has received numerous definitions that have been utilised in relation to discussions on urban issues contextualised by different authors and academics, taking into account the elements and techniques of social sustainability (Ghahramanpouri, Lamit, & Sedaghatnia, 2013). According to McKenzie (2004), the combination of these diverse explanations of social sustainability collectively represents either the circumstances or the guiding principles and framework for measurement.

Ghahramanpouri, Lamit and Sedaghatnia (2013) have provided an organized array of definitions of social sustainability inside urban studies from both academic and policy perspectives, which are most cited in the literature. They group the various definitions into three major strata, (a) Definition of Conditions, (b) Definitions of Measurement Framework and (c) Attributes of Social Sustainability Definitions (Table 1).

Table 1: Definitions of Urban Social Sustainability

Definition of Conditions: these definitions focusing more on the 'conditions', typically explains the notion of "'social sustainability' either as a currently existing positive condition, or as a goal that remains to be achieved" (McKenzie, 2004).	
Author	Defining the Social Sustainability
Yuftachel and Hedgecock	"Continuing ability of a city to function as a long-term viable setting for human interaction, communication and cultural development." When defining social sustainability, they place emphasis on an urban perspective by stating that "urban social sustainability is about the long -term survival of a viable urban social unit." (Yiftachel & Hedgcock, 1993)
Polèse and Stren	Social sustainability of a city is defined as "...development (and/or growth) that is compatible with harmonious evolution of civil society, fostering an environment conducive to the compatible cohabitation of culturally and socially diverse groups... [and] encouraging social integration, with improvements in the quality of life for all segments of the population." Polèse & Stren (2020) put a focus on reducing the level of exclusion from the society by means of their definitions. They suggest that to achieve social sustainability such policy framing is required which shall reduce the level of social exclusion through employment generation, better and improved service delivery to the public, enhanced service accessibility, social cohesion and participation (Polèse & Stren, 2000).
Definition Of Measurement Framework: These definitions making use of the measurement frameworks try to suggest a number of social sustainability metrics. Dempsey *et al*. (2011) and McKenzie (2004) opine that "*though these indicators can be either positive (e.g., rate of literacy) or negative (e.g., the rate of homicide), the positive indicators are mostly used by scholars while defining social sustainability through the measurement framework*" (McKenzie, 2004; Bramley *et al*., 2009).	
Author	Social Sustainability Definition
Bramley, Dempsey, Power, Brown, Watkins	"'*Social equity' (access to services, facilities and opportunities) and 'sustainability of the community' are two recognizable, overarching concepts at the core of the notion of social sustainability within an area context… though these concepts may look upon as conceptually distinct but often strong relationships between them is observed)*" (Bramley *et al.*, 2009).

Andrea Colantonio	"*Traditional 'hard' social sustainability themes such as employment and poverty alleviation are increasingly being complemented or replaced by the emerging 'soft' and less measurable concepts such as 'happiness, social mixing and sense of place', i.e., there is a shift from almost statistics-based indicators to hybrid sets which mix qualitative and quantitative data*" (Colantonio, 2010)
Attributes of Social Sustainability Definitions: Partridge (2005) notes that "'*Future focus' and 'process' are the two most vital attributes in preciseness and usefulness of urban social sustainability discussions*" (Partridge, 2005). "*Future focus refers to the improvement of the society for current and future generations* (Castillo *et al*., 2007) *while the 'process', supported by policies and institutions ensure harmonious social relations, enhance social integration and improve living conditions for all groups within the society*'" (Holden, 2012). McKenzie (2004) considers the "'*future aspect' (time concern) in relation to considering 'equity' and 'transmitting awareness' for future generation and 'the process' through emphasizing 'a system of cultural relations, participation of citizens, a system for transmitting awareness' and 'maintaining that system of transmission'* ".	
Author	Social Sustainability Definition
Barron and Gauntlett	"Social sustainability occurs when formal and informal processes, systems, structures and relationships actively support the capacity of future generations to create healthy and liveable communities. Socially sustainable communities are equitable, diverse, connected and democratic and provide a good quality of life" (Barron & Gauntlett, 2002).
McKenzie	"Social sustainability is a life-enhancing condition within communities, and a process within communities that can achieve that condition" (McKenzie, 2004).

Source: Ghahramanpouri, Lamit & Sedaghatnia (2013)

In terms of the types of social sustainability themes, particularly in urban contexts, the definitions of social sustainability point to a "paradigm shift." The assessment process has changed as a result of this modification. (Neamţu, 2012). Colantonio (2010) asserts that indicators that are "almost statistics-based" are being replaced by hybrid sets that incorporate both qualitative and quantitative data. Also, the techniques of assessment are changing from being exclusively "quantitative procedures and metrics" to more "qualitative ones." (Neamţu, 2012). Table 2 depicts some of the important traditional and emerging themes as suggested by Colantonio (2011).

Table 2: Social Sustainability Themes

Traditional	Emerging
Basic needs – housing and environmental health	Changing demographics due to migration, ageing, and mobility
Education and skills	Social interaction and unity
Employment	Identity, sense of pride for place and culture
Equity	Access, involvement, and empowerment
Human rights and gender	Health and safety
Social justice	Social capital, health, contentment/happiness, and overall quality of life

Source: Colantonio (2011)

Moreover, as Dempsey *et al.* (2011) suggest, dimensions like (i) social interaction and social networks in the community; (ii) participation in collective groups and networks in the community; (iii) community stability; (iv) pride and sense of place; and safety and security are to be considered while measuring social sustainability within urban vicinity. And this

exemplifies again an alteration from "individual perception" towards the perception of ‘collectively / community’ (Bramley *et al.*, 2009; Neamţu, 2012).

Neamţu (2012) suggests that such paradigm shift of urban social sustainability is not being neglected by the government or the policy makers and researchers (Neamţu, 2012) as he mentions that some authors like Ormerod and Johns (2007) questions the capacity and willingness of governments to accomplish social goals (for instance, the use of the concept of ‘gross national happiness’ as the basis for policy making by the Kingdom of Bhutan which have, however, resulted in morally questionable outcomes) (Ormerod & Johns, 2007) and author like Layard (2007) who argues that many governments, without systematic explanation and/or efficient measuring methodology, are trying to achieve such objectives from a long period’ (Layard, 2007; Neamţu, 2012).

Being a ‘dynamic concept’, social sustainability adjusts "over time (from year to year or decade to decade) in a place". According to Dempsey *et al.* (2011), there are a variety of externalities that can affect the procedure on both local and spatial scales, such as improved service delivery at the local government level, which may promote social consistency (positive factors); economic, environmental, and political crises at the local level may have an impact on broader social activity (Bramley *et al.*, 2009).

Similarly, the notion of "Urban Social Sustainability" is a procedure in which a variety of issues control the quality of life and build up the community of an urban area. Taking into account all aspects of social sustainability, the concept of urban social sustainability can be defined in accordance with the definition of Woodcraft and Dixon (2013): *"Social sustainability [is] about people’s quality of life, now and in the future. Social sustainability describes the extent to which a neighborhood supports individual and collective well-being. It combines the design of the physical environment with a focus on how the people who live in and use a space relate to each other and function as a community. It is enhanced by development, which provides the right infrastructure to support a strong social and cultural life, opportunities for people to get involved, and scope for the place and the community to evolve."* (Woodcraft & Dixon, 2013; Bacon *et al.*, 2012).

Measuring Urban Social Sustainability

Measurable Dimensions and Themes

According to Dempsey *et al.* (2011), the various components that contribute to urban social sustainability and are entangled with different scales (such as Social consistency and national scale are related, activity and places on a local and spatial scale have connections with social interaction and local environmental quality), can be divided into two main categories of causal notions: Social Equity and Sustainability of Community. Table 3, on the basis of the opinion of Bramley *et al.* (2009), tries to summarize the measurable aspects / dimensions of these broad concepts and outline the suggested connections between them and the built environment in relation to urban social sustainability (Bramley *et al.*, 2009).

Table 3: Relationship between Measurable Aspects of "Urban Social Sustainability" and the Built Environment

<table>
<tr><th colspan="3">Two Broad underlying perceptions of the contributory factors of "Urban Social Sustainability"</th></tr>
<tr><td rowspan="4">Social Equity</td><td colspan="2">Social equality and social and environmental inclusion are linked in urban context. An equitable society is one in which people are not prevented from engaging economically, socially, or politically in society by "exclusionary" or discriminatory practices.</td></tr>
<tr><td>Theoretical Foundation:</td><td>This notion possesses a foundation in
justice in society,
distributive justice, often known as "fairness in the allocation of resources," and
condition for equality</td></tr>
<tr><td>Measurable Aspects / Dimensions:</td><td>"Accessibility is commonly cited as a fundamental measure of Social Equity. Aspects requires equitable access are education and training, decent housing, public services, (social) infrastructure, green space, culture and recreation."

Apart from these, 'local' services and facilities of an urban area which have impact on urban social sustainability;

Hospitals, Secondary Schools etc. are considered as more regional facilities as they generally cover larger catchment area.</td></tr>
<tr><td>Associations between built-environment attributes and dimensions:</td><td>Some of these elements have an obvious relationship with the built environment, either in relation to the supply of facilities and services or in terms of how to get to them. (as in, public transportation).

Others are connected in a more indirect way. For instance, the real structure's condition may impact one's ability to acquire quality housing, but it also depends on the level of service offered by the local authority or housing association in question.</td></tr>
<tr><td rowspan="2">Sustainability Of Community</td><td colspan="2">This is about the "ability of society itself, or its manifestation as local community, to sustain and reproduce itself at an acceptable level of functioning. Social interaction and the general stability of the society are essential for community sustainability".</td></tr>
<tr><td>Theoretical Foundation:</td><td>The terms "social capital" and "social cohesiveness" are used to describe this, which includes social networks, reciprocity standards, characteristics of social organisation, and the integration of subsequent social behaviour.</td></tr>
</table>

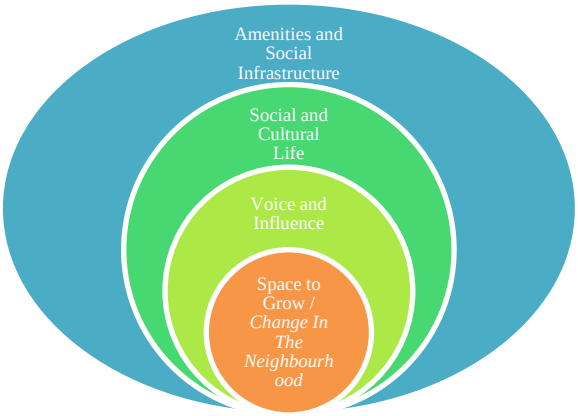
Two Broad underlying perceptions of the contributory factors of "Urban Social Sustainability"		
	Measurable Aspects / Dimensions:	At the neighbourhood five distinct, connected, and measurably important characteristics of a sustainable community can be identified ▪ *Social Networks and Interaction in the Community:* ▪ *Participation In Collective Groups And Community Networks*: ▪ *A stable community*: ▪ *Sense of pride for Place and culture*: ▪ *Security and Safety*:
	Associations between the dimensions and features of the built environment:	▪ At a neighbourhood scale, these dimensions are acceptable and meaningful notions since they relate to communal aspects of daily life. They have been linked to certain elements of the built environment, including: ▪ "*Social Interaction/Social Networks In The Community*: ▪ *Participation In Collective Groups and Networks In The Community*: ▪ *Community Stability*: ▪ *Pride/Sense of Place* ▪ *Safety and Security*"

Source: Bramley et al. (2009)

The Young Foundation has developed a framework containing four elements that are essential for urban social sustainability, i.e., to shape new urban communities that will eventually be prosperous and durable (Figure 5 & 6). The framework contains:

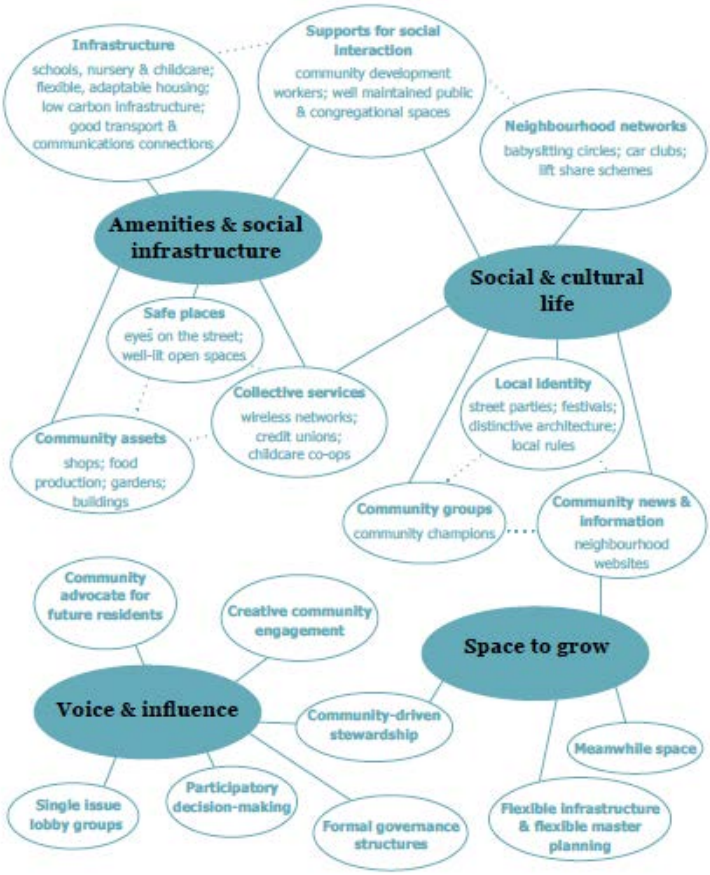
i. *"Amenities and Social Infrastructure*
ii. *Social and Cultural Life*
iii. *Voice and Influence*
iv. *Space to Grow / Change in the Neighbourhood*"

The opinions of Bramley *et al.* (2009) and the Young Foundation suggest, although independently, some common indicators of the quantifiable dimensions / aspects of the "Urban Social Sustainability". The common suggestive indicators are illustrated in Table 4. This framework, integrated with the public policy of governments, local institutions, other public agencies, and the private sector as well, shall help to understand the social needs and potential problems, which in turn shall suggest ways to improve the social supports and services to facilitate and empower society.



Source: Woodcraft, Hackett, & Caistor-Arendar (2011)

Figure 5 : Framework for Urban Socially Sustainability



Source: Woodcraft et al., (2012); Woodcraft & Dixon (2013)

Figure 6: Building Blocks for Urban Social Sustainability

Table 4: The Dimensions and Common Suggestive Indicators and Suggestive Measures of the Urban Social Sustainability (USS): Theoretical Approach

The Attributes	The Dimensions	Measurable Aspects	Common suggestive Indicators	Some Suggestive Measures
Social Equity	Amenities & social infrastructure	Availability and accessibility and of 'local' basic services	Provision of basic amenities (Health, Education), Adaptable Space, Local Integration, architecture of the Streets, Distinctive Character, Transport Link, Community Space,	Percentage households with piped water connections / electricity / sewerage network / toilet availability / sanitation / solid waste collections etc. Government expenditure per capita on core services Availability of Hospital, Schools, Transportation facilities, Firefighting service, Banks, Govt. Office etc.
Sustainability of Community	Social and Cultural life	Pride/Sense of Place; Safety and Security	Local Identity, Links with Wellbeing, neighbourhood, Local Facilities, Feeling of Safety	Availability of Cinema Theatre/ Auditorium/ Community halls / Stadium Religious tolerance / Tolerance for immigrants / Women treated with respect (1=low; 4=high) etc.
	Voice & Influence	Community Stability, Social Interaction, and Participation in Collective Groups	Willingness to act, Ability to influence	Liberty over choices in life / religions / trafficking in people and marriage to a child; demand for contraceptive met (percentage of women); Rights related to politics / Freedom to express oneself / Freedom of assembling / affiliation / Freedom of movement / Private rights to property (e.g., 0=low; 5=high)
	Space to Grow		Participation Social Enterprise Local Government	Per capita Revenue generation / capital expenditure; No. of Councillors per 1000 population; Voter participation rates by men / women; Voter turnout (%) etc.

***Source**: Bramley et al. (2009); Woodcraft, Hackett, & Caistor-Arendar (2011); Woodcraft & Dixon (2013); Miller, (2007)*

Panda, Chakraborty and Misra (2016) have also suggested the drivers or themes of 'Urban Social Sustainability' within the Indian context as well as the indicators that fall under each of these themes derived thereof by comparing and contrasting theoretical definitions, international standards, and Indian governmental/policy regulations (Panda, Chakraborty, & Misra, 2016). Table 5, in accordance with the opinion of Panda, Chakraborty and Misra (2016), depicts the common drivers or themes of 'Urban Social Sustainability' as identified by global and Indian initiatives, practices, etc.

Table 5: Common Themes of Urban Social Sustainability Framework as identified by Global and Indian initiatives: Practice

Dimensions	Themes	Themes identified by Global and Indian initiatives
Social dimension	Health	MDG, SPI, GUID, Global city indicator, CDB (ADB), IUSIL, FEEM SI, SSI Policy relevance with NSS
	Equity	MDG, SPI, CDB (ADB), SSI Policy relevance with NSS, Global city indicator, GUID, IUSIL
	Access to basic needs	SPI, GUID, Global city indicator, IUSIL, CDB (ADB), SSI Policy relevance with NSS
	Education	SPI, GUID, MDG, CDB (ADB), Global city indicator, IUSIL, SSI Policy relevance with NSS, FEEM SI
	Housing	SPI, CDB (ADB), Global city indicator, GUID, IUSIL, SSI Policy relevance with NSS
	Personal safety	SPI, CDB (ADB), GUID, IUSIL, Global city indicator, SSI Policy relevance with NSS
	Poverty	MDG, Global city indicator, CDB (ADB), IUSIL, FEEM SI, SSI Policy relevance with NSS
	Demography	CDB (ADB), IUSIL, FEEM SISSI Policy relevance with NSS
	Transport efficiency	GUID, CDB (ADB), IUSIL, Policy relevance with NSS
Institutional dimension	Local government	CDB (ADB), GUID, IUSIL, Global city indicator, SSI Policy relevance with NSS
	Governance and participation	GUID, IUSIL, CDB (ADB), Global city indicator, SSI Policy relevance with NSS

Source: Panda, Chakraborty & Misra (2016)

- SPI: Social Progress Index, The Social Progress Imperative (Stern, Wares, & Hellman, 2016);
- GUID: Global Urban Indicator Database (UN-Habitat, 2002);
- MDG: Millennium Development Goals (Millennium Project , 2006), (UN, 2006);
- CDB (ADB): Westfall & De Villa (2001)

- GCI: Global City Indicator (World Bank, 2011), (Bhada & Hoornweg, 2009));
- FEEM SI: FEEM Sustainability Index (Mattei, 2013);
- IUSIL: International Urban Sustainability Indicators List (Shen *et al*., 2011);
- Policy relevance with NSS (National Sustainable Strategy): (Town and Country Planning Organisation, 2011);
- SSI: Sustainable Society Index (Sustainable Society Foundation, 2017)

Conclusion

Consequently, by emphasising the social component of "Urban Social Sustainability", the relevant literature suggests some universal themes and indicators that are widely accredited by various global initiatives. The following Figure 7 illustrates the broad cataloguing of the attributes, dimensions, and universally accredited indicators (here termed as 'Common Accredited Indicators') in comparison with the "Common Suggestive Indicators" of "Urban Social Sustainability".

Urban Social Sustainability												
Attributes	Social Equity								Sustainability of Community			
Dimensions	Amenities & Social Infrastructure								Social & Cultural Life		Voice & Influence	Space To Grow
Common Suggestive Indicators	Provision of Basic Amenities, Modifiable space for street design and layout, transportation linkage, local integration, distinctive character, community space								Local Identity, Links With Neighbourhood, Wellbeing, Feeling Of Safety, Local Facilities		Willingness To Act, Ability to Influence	Participation, Social Enterprise, Local Government
Common Accredited Indicators	Health	Access to Basic	Housing	Education	Equity	Transport Efficiency	Demography	Poverty	Culture	Personal Safety	Governance And Participation	Local Government

Figure 7: Dimensions and Indicators of Urban Social Sustainability

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