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REVIEW

Urban livability across disciplinary and professional boundaries

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Livable city;
Urban design;
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Abstract
This is an analytical study of the intensely debated concept of urban livability. The paper examines different literature or theoretical streams that contribute to the debate related to the notion of livable cities. It juxtaposes academic constructs from architecture and urban planning fields with the popular culture and web indices that rank cities according to their living standards, services, and international appeal. The study offers a comparative analytical assessment of these diverse approaches and lays out a nuanced understanding of urban livability that draws on the richness and diversity embedded in design, planning, and current ranking tools. The paper ultimately aims to shed light on the configurations, conditions, and processes that may enhance the livability of various urban settings. It integrates such disparate views into an interdisciplinary perspective of urban livability. While the bulk of this paper analyses relates to North American, European, and Australian cities, the concepts discussed pertain to urban livability on a global scale.
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1. Introduction and historical context

Despite its frequent appearance in the educational and professional literature, livability is an ambiguous term that is used differently by various groups in different circumstances. However, the growing attention to the subject and the increasing number of academics and professionals who are engaged in livability issues have brought to the surface a need for a clear understanding of livability, in general, and urban livability, in particular. Livability refers to various constructed views regarding the quality of life in any human living environment. This concept is concerned with optimizing the performance and the integrity of human life (Ellis and Roberts, 2016; Hagerty et al., 2001). Livable environments integrate physical and social well-being parameters to sustain a productive and meaningful human existence; productive in the sense that the social clustering of humans yields considerably more than the sum total of individual productivity, and meaningful in the sense that humans need, by their very nature, to participate in forming successful and self-sustaining social systems (Asia-Pacific Economic Cooperation, 2015).

Relevant to this study is the characterization of urban livability as a human behavioral function that denotes the interaction between individuals and the environment (Pacione, 1990). In this sense, urban livability is a unique case of livability at large and has strong ties to the notion of urbanity. Historians, urban analysts, and planners have used the terms “urbanity” and “urbanism” interchangeably to denote the culture or way of life of city dwellers. Culture is defined in the American Heritage Dictionary as “the totality of socially transmitted behavioral patterns, arts, beliefs, institutions, and all other products of human work and thought.” Culture provides individuals with a shared identity. Members of different cultural groups take pride in their institutions, behavioral patterns, and beliefs. The city is the ultimate socioeconomic and cultural product of world urbanity. The medieval sentiment, “City air makes one free” (Ellin, 1995) was manifested in creating social, political, and physical configurations that affect the urban structure of modern cities. Medieval cities adapted themselves freely to geographic, economic, and social circumstances that shaped the development of their physical forms. Weber singled out two elements that separated cities from villages, namely, oikos (house) and market (Zijderveld, 1998). He referred to the Renaissance City in Europe as the first true manifestation of urbanity. The Renaissance City, according to Weber, was characterized by a sense of community that was not based upon the solidarity of familial, clannish, and religious ties; the bonds of estate, race, or caste; or the possession of land. This solidarity was borne by the city itself as a socioeconomic and political entity. Therefore, the Renaissance City was first and foremost a rational community of interests (Henderson and Talcott, 2012; Zijderveld, 1998).

Mumford indicated that the subsequent Baroque planning shifted the emphasis from building walkable fine-grained architectural enclosures, which were characteristic of medieval cities, to creating engineered urban environments with wider avenues for wheeled traffic and power display. Baroque rulers depended on heavy military to guard their interests as well as devised city plans and elaborate financial and taxing systems that ensured their control and monopoly of urban resources (Mumford, 1961). Therefore, rational economic interests coupled with equally rational political interests in autonomy from feudal forces laid the foundation for an urban economic and civic culture. Urbanity was a creative force that promoted and helped institutionalize the sciences and the arts, which consequently created a multitude of crafts and professions that shaped the civic identity of the city. Among the most important contributions of urbanity was the creation of an urban class. Unlike the caste or status group, into which an individual was born and out of which would eventually die, such urban class was a relatively open configuration (Henderson and Talcott, 2012; Zijderveld, 1998). In principle, the individual socioeconomic position in the urban class structure was not ascribed, but achieved. A city dweller who successfully engaged in trade and craftsmanship and later in manufacturing and industry would be classified as a member of this urban class, which would then be differentiated into lower-, middle-, and upper-middle classes. The city became the social foundation of culture formation. Private and public spheres were effectively coordinated through intermediary structures, such as professional guilds, vocational associations, and schools, which constituted a concrete societal foundation for the values, norms, and meaning of urbanity (Zijderveld, 1998). The city public places had vital roles in the social dynamics of the urban community by serving as catalysts for the economic and civic culture that emanated from and contributed to urbanity (Benevolo, 1980, 308; 1993; Mumford, 1961).

European cities and their inherent urbanity are crucial to the modernization process by stimulating urban democracy, urban social life, urban economy, arts, sciences, and technology. These cities contained the seeds for the capitalist economy characteristic of modern European and North American cities. The modernization process was accompanied with, or rather caused by the Industrial Revolution and the associated innovations in agriculture, transportation, and manufacturing. The social and spatial ordering of cities has been restructured entirely by the forces of modernity. The symbiotic relationship between private and public spaces in the Renaissance City has been severed. Streets and public spaces no longer act as social organizing elements of urbanity. Zoning has fragmented the modern city

into isolated functions and socioeconomic divisions. Modernization has increased the polarity between private and public spheres, thereby leading to the emergence of metropolises without a vital urbanity. For example, the percentage of U.S. population in cities increased from 6 percent in 1800 to 56 percent in 1930. Moreover, the urban population increased from 64 percent in 1950 to 75 percent in 1990 (O'Sullivan, 1996). Over three-quarters of Europeans are currently living in urban areas (Glaeser, 2011). Such staggering increase in the percentage of urbanized population highlights the importance of addressing livability issues, particularly urban livability.

2. Urban livability and design literature

One of the prevalent views regarding urban livability is concerned with the esthetics and physical characteristics of buildings, streets, and development blocks. This approach has been widely used in architectural and urban design settings—where urban livability is perceived as a creative design process—to produce timeless physical models and themes that contain the economic and social functions of urbanity (Alexander, 1977; Bacon, 1967; Krier, 1993; Massengale and Dover, 2013). Lynch (1960) identified the elements of urban legibility (path, node, landmark, edge, and district) and building typologies that affected and potentially improved the daily lives of people. Alexander (1977) criticized how modernists separated city functions and removed the overlaps and interactions that were indispensable for creating community life (Alexander, 1979). Jacobs's "Death and Life of Great American Cities" advanced a set of urban design guidelines for maintaining the quality of life in cities. She emphasized that healthy cities required fine-grained gridiron urban blocks, high densities, and a mix of residential and commercial uses (Jacobs, 1961). Rowe and Koetter (1978) emphasized the multivalent nature of urban form and called designers to use and integrate the existing urban fabric with the new elements of a city to create a "collage city." Such normative approach, which has been recently popularized by New Urbanism (Calthorpe, 1994; Duany and Plater, 1991; Dutton, 2001; Gratz and Norman, 1998; Katz, 1994; Kelbaugh, 1997), brings together traditional and contemporary urban design concepts and draws conclusions in the form of rigorous design and planning principles. New urbanists called for a return to traditional built forms and urban space typologies to remedy the loss of human scale and sense of place characteristic of the modern city. These urbanists particularly focus on the building mass (i.e., heights, lines, and decorative details), streetscapes and plotting, mix of uses, and fine-grain urban blocks to build an image of a community and a spatially grounded civic culture (Figure 1). Creating pedestrian-friendly enclosures and neighborhoods where residents can conveniently walk from home to work, school, and parks is central to the vision of livable cities of new urbanists. Streets that were lined up with small shops, cafes, and other entertainment hubs constituted the backbone of communities and acted as generators of urban vitality. Social interaction, sense of community, and civility are perceived as by-products of such urban configurations, which also work better in terms of sustainability and socioeconomic viability. Smart growth, urban transect, and transit-oriented development, among many other design manifestos, have been proposed to enhance urban livability and create more sustainable cities (Bressi, 2002; Calthorpe and Fulton, 2001; Duany et al., 2013; Kashef, 2008; Leccese and McCormick, 2000).

The International Making Cities Livable Conference (IMCL) focuses the discussion of livability on the need for efficient mass transit, bike lanes and networks, child-friendly city spaces, and mixed-use urban fabrics. Similar to new urbanism, IMCL aims to revive the city center, create compact neighborhoods, and create human-scaled public places where people can gather to participate in farmers' markets, festivals, outdoor cafes, and community life (Figure 2). Crowhurst argued that we needed "to rediscover the principles of true urbanism, rebuild our cities so that they are ecologically sustainable, and regain communities that are healthy and socially sustainable" (IMCL; Lennard and Lennard, 1995). Current urban design analyses criticize the modernist approach of conceptualizing buildings as sculptures that are imposed on the surrounding context. They oppose the functionalism and dreariness of modern city

Figure 1 A model for urban livability as popularized in the design literature. Mixed-use pedestrian-friendly street in Bitola, Republic of Macedonia.

spaces as well as the commodification and standardization trends of modern architecture and planning (Goodchild, 1990; Ravetz, 1980). The individual building is frequently perceived as a fragment of a larger "whole," which is the urban fabric in its historical and physical dimensions. Some urban designers aim to revive vernacular and historical traditions, understand the human characteristics of space, and accentuate the controversial temper of the public realm (Barnette,1995; Gosling, 1996; Hillier, 1996; Kashef, 2011; Nassauer, 2012).

3. Urban livability and planning literature

The second approach, which has dominated the urban scene for the past several decades, is concerned with the technical and functional aspects of urbanity. This approach accompanies the development of modernity and generally emerges from comprehensive and system planning theories (Alexander, 1992, 2000). The systems approach (Figure 3a) views the city as a collection of distinct social and economic components that can be physically segregated to optimize the performance and activities within each component (Catanese and Snyder, 1988; Mcloughlin, 1969; Taylor, 1998; Wolfe, 1989). Perfecting vehicular traffic and reducing the externalities that emerge from the proximity of incompatible uses are regarded by mainstream planners as embodiments of urban livability.

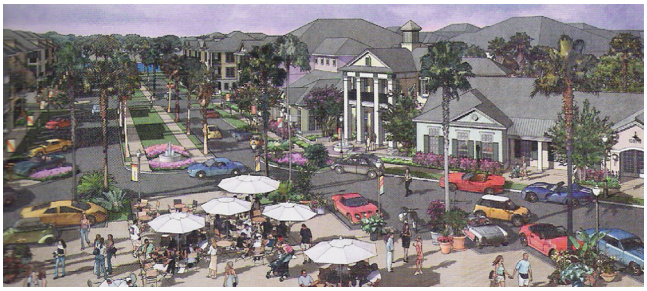

Figure 2 Design representations for improvements aimed at achieving urban livability. Main Street at Hampton Lakes, Tampa, Florida, proposed by Charlan, Brock, & Associates.

The most recent planning approaches associate urban livability with other all-encompassing terms, such as "sustainability," "biodiversity," and "ecosystem" (Ruth and Franklin, 2014; Nassauer, 2011). Each of these terms requires further study to define and understand their implications for the existence and continuity of human life on Earth. In the broadest sense, these terms relate to the concept of "balance of nature." Natural ecosystems experience fluctuations and undergo successive adaptations that have previously led to a state of homeostasis or internal stability because of the coordinated response of the parts to external stimuli or forces that tend to disturb the natural balance. Humans, animals, plants, and their surrounding physical environments interact to create a state of equilibrium that has been sustained over a long period. Environmentalists and modern-day ecologists suggest that such natural balance is currently being violated by the explosive growth of the human population. Moreover, modern advances have facilitated a massive exploitation of natural resources to satisfy benefits and demands that are perceived as essential to enhancing quality of life. In this process, humans degrade the environmental quality of their surroundings and disrupt the ecological harmony that is required to sustain their physical well-being. Despite their ideological differences, contemporary academics and professionals agree that ecosystem considerations are vital to the well-being of humanity (Beatley and Kristy, 1997; Luccarelli, 1995; McHarg, 1969; Nassauer, 2011; Walter, 1992). The city, with its industrial, commercial, and residential functions, constitutes an imposed physical presence over the natural terrain. Such presence affects natural biodiversity and ecological stability by modifying the natural landscape and emitting different kinds of wastes and pollutants to the environment. To improve the overall livability of the region, cities must minimize their influence on the environment. Many scholars have affiliated the idea of urban livability with the concepts of sustainability, biodiversity, and ecosystem given the present awareness on these issues. Some scholars conceptualize the city as a biological system with resource inputs and waste outputs (Figure 3b) (Newman, 1999). The proponents of this approach call for a general restructuring of urban areas to allow the woodlands, wetlands, and agricultural lands to

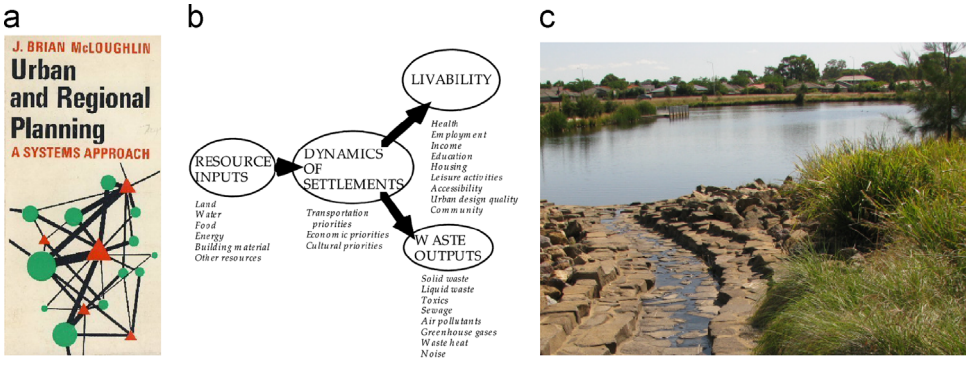

Figure 3 City as a diagram vs. city as a metabolic system or a natural reserve with constructed wetlands and green corridors.

permeate urban development (Figure 3c) (Green Cities, 1991; Hough, 1990; Kahn, 2006; Rowntree, 1994).

4. Livable cities in popular media and global ranking

The term "livable cities" appeared in the popular literature during the 1980s in connection with the growing environmental concerns and the increasing competition among world cities to attract foreign investments and boost their economies. The majority of the news sources and popular media considered such term as self-explanatory and as a reference to quality of life, standard of living, or general well-being in a specific locality. Despite the wide-ranging and relatively subjective interpretations of the latter constructs, numerous indices and measurement tools were developed over the last three decades to rank cities according to the amenities and opportunities afforded to their residents and visitors. Safety and security, crime, climate, transportation, infrastructure, healthcare, public policies and services, business environment, cost of living, recreational amenities, education, housing, gross domestic product (GDP) per capita, sanitation, culture, air quality, and natural capital have been incorporated into quantitative models to compare and rank these cities. Qualitative aspects, such as lifestyle, well-being, happiness, tolerance, and environmental esthetics, have also been compiled to benchmark urban livability on a global scale. Various rankings have been published annually, among which the most notable include the Economist Intelligence Unit's (EIU) livability ranking (EIU (Economist Intelligence Unit), 2014), the Mercer Quality of Living Survey, and the Organization for Economic Cooperation and Development (OECD) Better Life Index (BLI). Modern metropolises, such as Perth, Melbourne, and Sydney (Australia); Auckland (New Zealand); Vancouver and Toronto (Canada); as well as the mainstay European urban centers of Vienna, Zurich, Copenhagen, Helsinki, and Munich; have topped these ranking lists over the last years.

4.1. EIU livability ranking

The EIU livability ranking is probably the most comprehensive and far-reaching of all livability ranking systems. EIU uses 40 livability indicators that are grouped under five weighted categories, namely, stability (25%), healthcare (20%), culture and environment (25%), education (10%), and infrastructure (20%). As shown in Table 1, cities are rated between 0 (intolerable) and 100 (ideal) based on their performance or fulfillment of the livability measures. The stability measure includes items such as crime rates and threats of civil unrest, military conflicts, and terrorism. Cities score better in the healthcare category if they offer quality affordable private/public medical services, including the availability of over-the-counter drugs and preventive care. Culture and environment is the most controversial and encompassing category that bundles a multitude of indicators related to climate; air quality; traveler satisfaction; corruption; recreational amenities; food and drink; social/religious tolerance; freedom and level of censorship; and availability of consumer goods, sports venues, and cultural institutions. The education indicators assess the provision and quality of private/public educational institutions across various learning levels. The infrastructure category includes various indicators that evaluate the quality of local road networks; mass transit; regional and international connectivity; telecommunications; sanitation; and availability of water, energy, and quality housing. EIU uses various data collection and measurement tools that encompass raw quantitative data, public opinion surveys, and interviews with a broad spectrum of professionals, city officials, and urbanites. Surveys and interviews are conducted around the world, and the representative samples of respondents are drawn from Asia (30%), the Americas (30%), Europe (30%), and other parts of the world (10%). The EIU livability ranking compares 127 world cities and publishes annual reports that do not only list the top 10 best and worst cities in terms of livability but also cities that have achieved remarkable progress in their livability over the last 5 years (Table 2).

4.2. Mercer quality of living survey

The Mercer Quality of Living Survey predominantly assigns a premium on quality of living in over 460 cities worldwide. This survey aims to help companies and expatriate professionals assess appropriate allowances and incentives for relocation. Quality of living is measured via 39 descriptors clustered in 10 classifications, namely, sociopolitical environment (crime, safety, and stability), economics (banking regulations and services), sociocultural environment (media, censorship, and

Table 1 Top ten livable cities in 2013: 100=ideal; 0=intolerable (Economist Intelligence Unit; EIU).

Country	City	Rank	Overall rating	Stability	Healthcare	Culture & environment	Education	Infrastructure
Australia	Melbourne	1	97.5	95	100	95.1	100	100
Austria	Vienna	2	97.4	95	100	94.4	100	100
Canada	Vancouver	3	97.3	95	100	100	100	92.9
Canada	Toronto	4	97.2	100	100	97.2	100	89.3
Canada	Calgary	5	96.6	100	100	89.1	100	96.4
Australia	Adelaide	6	96.6	95	100	94.2	100	96.4
Australia	Sydney	7	96.1	90	100	94.4	100	100
Finland	Helsinki	8	96	100	100	90	91.7	96.4
Australia	Perth	9	95.9	95	100	88.7	100	100
New Zealand	Auckland	10	95.7	95	95.8	97	100	92.9

Table 2 Most improved cities over the last 5 years (livability scores over 5 years) (Economist Intelligence Unit; EIU).

City	Country	Rank (out of 140)	Overall rating (100=Ideal)	Five years improvement +%
Bogota	Colombia	111	59.6	7.9
Harare	Zimbabwe	136	40.7	3.2
Dubai	UAE	77	74.2	2.9
Algiers	Algeria	134	40.9	2.9
Kuwait City	Kuwait	81	72.1	2.5
Dhaka	Bangladesh	139	38.7	2.5
Taipei	Taiwan	61	83.9	2
Colombo	Sri Lanka	128	49.8	1.8
Bratislava	Slovakia	63	81.5	1.7
Phnom Penh	Cambodia	126	51.4	1.6

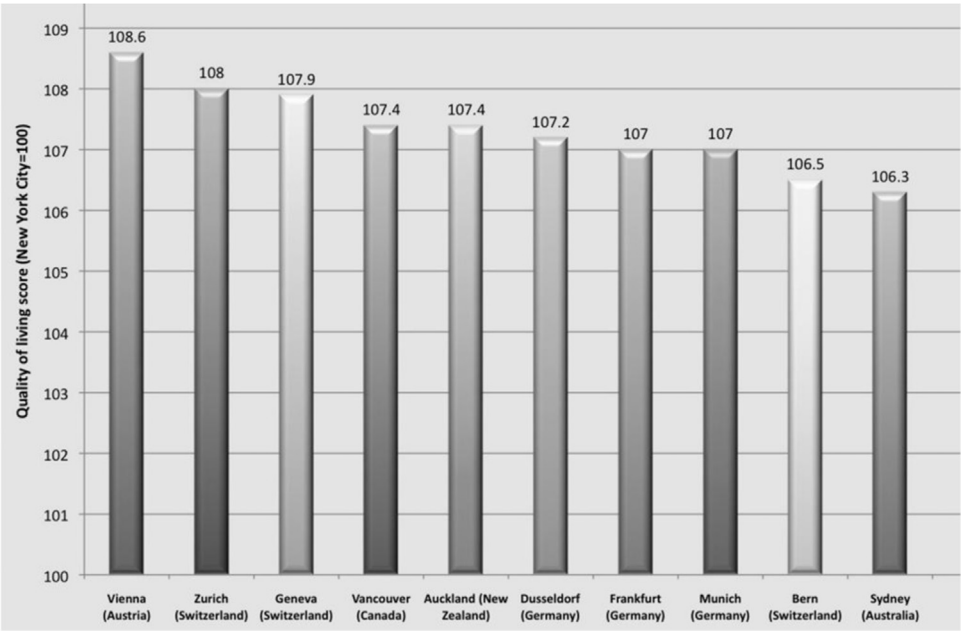

Figure 4 Top 10 livable cities according to the Mercer Livability Index (2010) (Ranking America; https://rankingamerica.wordpress.com).

personal freedom), health (private and public services, air quality, sanitation, and waste disposal), education (private and public), utilities (transportation, traffic, and services), recreational facilities (restaurants, theaters, sports, and leisure), market (availability of goods), housing, and natural environment (climate, natural calamities, and weather extremes). Mercer does not only provide a comprehensive livability score but also compares cities across all descriptors. This tool uses a grid that ranks cities according to various aspects related to the quality of living, thereby allowing users to determine which aspect carries more weight for them and then assign an exchange value to the selected variables. In addition to the international list of top 10 livable cities, Mercer also lists the top-ranking cities in North America, Central and South America, Europe, Asia, the Middle East, and Africa. The survey assigns a score of 100 to a base city (New York), and Figure 4 shows the values that are earned by the top-ranking cities vis-a-vis the base city in 2010. These cities are still leading in 2014, with Vienna and Zurich at the helm followed by Auckland, Munich, and Vancouver.

The Mercer quality of life index is used as a guide for businesses that intend to relocate or franchise in different parts of the world. This index has branded cities and mobilized government officials to examine their socioeconomic and environmental conditions to compete on a global scale. Following mutual economic and political interests, those cities with analogous environmental characteristics identify the leading urban models on the index and devise their plans accordingly. Subsequent to various corporate transactions, the City of Abu Dhabi, UAE (ranked 88 in 2010) has identified Adelaide, Australia (ranked 32 in 2010) as an urban prototype to emulate and collaborate with on issues related to climate change, urban design, education, tourism, renewable energy, and green technology (Figure 5).

The most recent Mercer survey (2014) placed Dubai, UAE at 73, making this city the highest-ranked city in the Middle East and Africa regions. Abu Dhabi jumped 11 positions to stay at 78. Middle Eastern and African cities are generally ranked very low on the Mercer index because of regional instability, looming threats of civil war in various parts of

Figure 5 Mercer Livability Survey, 2010 (http://roryhyde.com/blog).

the region, the Arab Spring with its disruptive political turn of events, lack of infrastructure, and substandard living conditions and health services. Five out of the bottom six cities worldwide are from the Middle East and Africa regions, with Damascus, Khartoum, and Baghdad scoring the lowest mainly because of internal conflicts.

The weights of the livability descriptors on the Mercer index are primarily based on evaluations by expatriates, who are already employed in the destination region. As opposed to EIU, the Mercer index does not include a provision for job prospects, which is considered highly important by many. The Mercer index is especially useful for expatriates sharing common views about urban livability and assigning similar weights to socioeconomic and environmental conditions.

4.3. OECD BLI

The OECD BLI measures and compares the quality of life among 34 OECD member countries. The organization was formed in 1961 to bring together most of the developed and emerging economies of the world in addition to Brazil and Russia. The BLI was launched in 2011 to synchronize well-being and quality of life measures with the recommendations of the Commission on the Measurement of Economic Performance and Social Progress (the Stiglitz-Sen-Fitoussi Commission). Moving beyond macroeconomic GDP statistics, the BLI examines the key ingredients for improving quality of life, such as housing, income, employment, social support systems, education, environment, health, governance, life satisfaction, safety, and work–life balance. Each of these aspects is assessed using multiple parameters that allow people to assign weights and objectively measure their life satisfaction levels. The BLI offers an interactive tool that engages individuals to assess what matters most in their lives and what needs to be done to improve their quality of life. The data mostly come from official sources, such as national records, United Nations statistics, and public opinion surveys (Gallup Poll). The BLI is regarded as an accurate measurement of quality of life and livability aspects (Marber, 2012). The interactive web application that builds the index starts with some default weights, but allows users to assign, modify, and customize their own index. Each well-being aspect is measured using one to four indicators, which are then averaged with equal weights. Gender inequalities are assessed by dividing the highest achievement by the lowest achievement between men and women. Similarly, for each indicator where the socioeconomic breakdown is available, social inequality ratios are calculated by dividing the highest achievement between high and low socioeconomic statuses by the lowest achievement between high and low socioeconomic statuses. As shown in Table 3, Canberra, Australia has been ranked as the most livable city in the world according to the BLI for the second consecutive year (OECD, 2014).

4.4. Other livability ranking tools

Other livability measures have been introduced, including Monocle, EU Urban Audit, and a host of other region-specific

Table 3 Performance of ten countries in three categories of the OECD BLI (2014).

Indicator	Housing			Income		Jobs			
	Dwellings without basic facilities (%)	Housing expenditure (%)	Rooms per person (Ratio)	Household net adjusted disposable income (US Dollar)	Household net financial wealth (US Dollar)	Employment rate (%)	Job security (%)	Long-term unemployment rate (%)	Personal earnings (US Dollar)
Australia	1.1	20	2.3	31,197	38,482	72	4.4	1.06	46,585
Austria	1	21	1.6	29,256	48,125	73	3.4	1.07	43,837
Belgium	1.9	20	2.3	27,811	78,368	62	4.5	3.37	47,276
Canada	0.2	22	2.5	30,212	63,261	72	6.6	0.9	44,017
Chile	9.4	19	1.3	13,762	18,141	62	4.7	2.01	15,438
Czech	0.9	25	1.4	17,262	17,875	67	4.2	3.03	20,645
Denmark	0.4	24	2	25,172	39,951	73	5.8	2.11	45,642
Estonia	8.6	20	1.6	14,382	7843	67	5.3	5.46	17,488
Finland	0.6	22	1.9	26,904	20,190	70	6.4	1.65	38,976
France	0.5	21	1.8	29,322	47,668	64	6.5	3.98	38,625

Table 4 Monocle's top ten cities in 2013 (monocle.com/quality of life survey).

1. Copenhagen	People of Copenhagen have embraced their city. The Danish capital has transformed on a human scale. Green and bike ridden, Copenhagen is alive and growing. The locals' enthusiasm will ensure that the city will develop as best as possible…
2. Melbourne	The city is not tired of reinventing itself, bold buildings rise, and a new generation of food trekkers tackles the suburban nights. The 3.7 billion-Euros regional railway will improve mobility and we hope to see big investment in cycling and public transport as well…
3. Helsinki	Transformed by street light and design; new generation and a surge of creativity in food and fashion; universal healthcare coverage, world's leading school system; closeness to nature…However, Finland is among other EU countries that do not allow gay marriage!
4. Tokyo	Tokyo continues to impress. The efficient public transport, the quality and variety of food, the city's all-round courtesy, make it worth living. The Tokyo vision 2020 project will further improve the capital's well-being…
5. Vienna	Don't let the small drop fool you, Vienna keeps getting better. The new Central Station opens in 2015 and the DC1 tower, Austria's highest building will be completed by autumn. Viennese still enjoys long summer lunches and elegant winter nights…
6. Zurich	Last year's winner loses its crown; Zurich has to reconsider its limits on migration from EU countries. Property prices stay too high. In terms of outdoor activities, however, Switzerland's biggest city is still an undisputed leader…
7. Stockholm	One of Europe's largest growing cities; Stockholm combines historical beauty with a thriving new generation of artists. However, this spring riots show that the capital still has some way to go when it comes to integrating all of its increasing number of citizens.
8. Munich	Drowning traditionalism is slowing Munich down. Life is good but a bit too quiet. More energy and more flavor is expected from the Bavarian city. Stuck between equilibrium and aggression, Munich drops from spot 5 to 8…
9. Sydney	The city lost one spot from last year. Fantastic weather, state of the art cuisine, and vibrant art makes it a world-class city. High living cost, horrible traffic, and worst airport in Australia hold it back…
10. Auckland	The city is not quite fulfilling its potential, it has redeveloped derelict industrial sites and improved public transport but is now facing densification issues and key infrastructure projects have yet to leave the drawing board…

livability indices. Forbes provides livability ranking for American cities and specifically focuses on economic opportunities, job growth, cost of living, and cultural activities. Pittsburgh, Pennsylvania and Ogden, Utah consistently topped the list of the most livable American cities over the last three years. As a lifestyle magazine, Monocle has created a rating system for the 25 most celebrated capitals around the world. Despite using benchmarks that are similar

to other livability scales, these tools generally focus on locales with a population that tends to have a strong sense of belonging, particularly on cities that have experienced a marked urban renaissance accompanied by supportive environmental and liberal social policies. The top 10 choices of Monocle in 2013 include some of the highest-ranking cities in the Mercer survey and EIU, such as Melbourne, Vienna, and Zurich, but in a different order and joined by several other cities for reasons highlighted in Table 4.

5. Comparative critical perspective

This study acknowledges the merits and significance of the aspects delineated within each of the aforementioned approaches to urban livability. However, each approach tends to demarcate the idea of urban livability by either disciplinary/professional concerns or specific interests that are aimed at creating a convenient cultural understanding of a complex social construct. The urban design repertoire overrepresents the designer's experience, vision, and interpretations of urban livability; is dominated by architectonic concerns and nostalgic references to traditional cities; and fails to account for the ever-changing social and economic dynamics of large metropolitan centers with a combination of urban and outlying suburban areas. The repertoire prescribes instead of allows the development of livable urban configurations that reflect the people's aspirations and visions of livable cities.

The ecological approach to urban livability has emphasized the environmental component of urban livability and has generally failed to account for the socioeconomic and civic culture characteristics of a vital urbanity. This view of urban livability tends to emphasize the importance of protecting the natural ecology in expense of critical social and cultural needs. Moreover, this approach professes another version of suburbia in which Olmsted's engineered urban parks are replaced with natural or artificially facilitated woodlands and wetlands. Such prophesized ecological city may end up defeating the purpose of its creation by dispersing urban functions within a natural setting that may be later destroyed by unpremeditated urban growth. This approach also confuses general livability issues, which may need to be addressed within a regional context with local concerns on urban livability. The ecological approach must be integrated with a comprehensive understanding of socioeconomic, cultural, and urban design considerations. Nevertheless, this approach has precipitated a wealth of information regarding the importance of protecting the natural ecology within urban regions.

The Modernist planning approach has generated an abundance of material in the form of design manuals and standards, or economic, social, and engineering models with applications in transportation, land use, city organization, waste management, and a host of other crucial urban planning functions. Road networks and metropolitan loci have been engineered for the upper social strata that enjoy a high level of mobility throughout the expansive urban and suburban regions. Zoning, modern transportation, and economic models have produced a fragmented city with adverse conditions for the lower social strata, particularly for those with limited mobility and economic resources. Social polarization, lack of vital urbanity, and loss of sense of place accompany the presumed livable modern city. The modernist planning approach must be integrated with a deeper understanding of the essence of urbanity and must be contextualized within human behavioral and social norms that have characterized the development of livable cities.

People choose to live in cities to enjoy the economic benefits of having better jobs; opportunities to build good homes with proper services and utilities; the advantages of having excellent education, accessing a variety of shops, and availing of convenient transport; and the chances for social and cultural enjoyment. These benefits of city life are being sought by most urban dwellers. In this regard, the global ranking tools have touched on critical concerns that are related to the perception of livability of people and the degree to which the city satisfies their needs and aspirations. As opposed to the inherent prescriptive nature of design and planning approaches, which are centered on the question of “how to,” the livable city global ranking tools focus on “what is” or the conditions on the ground. The latter classification is only extended as a framework that denotes areas of emphases within different livability perspectives that cross over descriptive and prescriptive divides. Global ranking tools bundle a multitude of quantitative and qualitative indicators to measure aspects of livability that are related to infrastructure, transportation, healthcare, education, employment, housing, culture, shopping, art, parks and green spaces, safety, equity, freedom, and visual esthetics. Although some of these variables can be measured objectively, the others are assessed by experts who establish normative quality of life ideals that are tilted toward elite professional living standards. Public surveys, such as the well-known Mercer Quality of Living Survey, are geared toward expatriate professionals instead of toward long-life city residents. Sanitation, mass transit, cultural homogeneity, public realm accessibility, and engineered safety are weighted heavily in quality of life surveys, which skew their results in favor of prosperous cities with a high percentage of corporate executives and accomplished professionals. Even with the presumably more accurate and citizen-driven assessments such as the OECD BLI, the aggregation and normalization of general statistical information and Gallup poll results with individual responses about present and projected future settings may create hyper livability constructions that do not reflect actual conditions.

Cities that topped the livability charts, such as Copenhagen, Helsinki, Zurich, and Vienna, have few people living under the poverty line, low birth rates, a small percentage of children, and are generally more hospitable to tourists and traveling corporate executives than to immigrants who are seeking mid- or low-paying jobs. They are not burdened with the same economic and social challenges that are being faced by other rapidly growing world metropolises in Asia, North America, and Africa. This comparison is performed not to undervalue the continuous efforts of these cities to optimize the living environment for their residents and visitors but to contextualize the results of livable city rankings within a broader understanding of urbanity.

Global ranking surveys invariably provide conflicting results. For example, cities that are ranked favorably in terms of affordable housing in one survey may perform poorly in the same category in other surveys. The reason for

such variation is that the weighting assigned to different categories, such as education, healthcare, public services, social equity, transportation, natural environment, and infrastructure, is relatively subjective and varies according to the survey. Although the EIU and Mercer rankings include some common measures, Melbourne was ranked first in the former yet regressed to 18th in the latter. Ranking surveys rarely consider migration patterns and nuclear family formation, and indirectly rank cities according to their capability to attract people, provide jobs, and create safe living environments. In this sense, these rankings do not only measure standards of living but also assess the peoples' perceptions of cities over an extended period. Social scientists have noted that the availability of shelter, food, healthcare, education, employment, and other material comforts create happiness and satisfaction only if the objective measurements of such amenities match the aspirations of the people and the sense of well-being of individuals (Victoria Government, Australia). A recent study on European cities also finds a weak correlation between the livability indicators on the Mercer ranking survey and the responses of individuals in the Urban Audit Perception Survey, 2004–2009 (Kozaryn, 2013).

Kotkin (2009) challenges the standards or criteria used by livability ranking tools to judge cities. He identifies economic growth, cultural diversity, and social dynamism as the building blocks of urban livability. Kotkin alludes to the17th century vision of Descartes of the city as "an inventory of the possible," a place that encourages people to improve their lives and achieve upward socioeconomic mobility. In this regard, excellent cities are inherently chaotic and represent considerably less groomed sidewalks and downtowns with chic shops and retro cafes. According to Kotkin, Los Angeles, Houston, and Shanghai offer significantly more advantages and socioeconomic opportunities for their residents and immigrants than Zurich, Vienna, and Copenhagen. Pittsburgh, the only American city to appear in the global ranking tools (25th on Monocle's list), has lost its steel manufacturing base to a service-based economy of hospitals, universities, and non-profit organizations. Generations of Pittsburgh residents have left the city to look for jobs elsewhere (Kotkin, 2009). This phenomenon begs the question of "livability for who?" for long-time residents and immigrants who rank Pittsburgh as a nearest-to-the-last potential destination or for transient high-paid executives who patronize conference and research centers and frequent well-appointed cafes and shops. As mentioned earlier, urban livability has strong ties to the notion of urbanity, which primarily denotes the capacity of cities to function as economic and social incubators for a diverse and dynamic population. Young and old long-time residents as well as immigrants across the entire economic spectrum vie for the ever-changing urban resources that demarcate their lives, and yet, are continuously configured and reconfigured by the actions of the people. The urban evolutionary process is inherently messy and generates cluttered spaces instead of the manicured sidewalks and public places that are seen in top-ranking cities.

Another dimension of livability that is customarily overlooked by either professional or global ranking surveys relates to the quality of life concerns of older adults. The American Association of Retired Persons (AARP) in the United States has emphasized the need to embed the concerns of the older population into policy and decision-making at all levels. Such concerns include active representation and participation in local zoning boards, metropolitan planning agencies, and other organizations that influence community design and development. AARP argues that people aged 50 years and above must be given affordable housing and healthcare, appropriate transportation services, as well as community and building designs that support their limited accessibility and mobility. Housing strategies that are proposed for older adults include co-housing, shared housing, inter-generational housing, senior communities, and assisted living. Mobility is not simply defined in terms of conventional transportation options, such as driving, public transit, and walking. The elderly may need supplementary or paratransit services, such as vans or mini-buses, on flexible routes and schedules. Walking can also be problematic if roads are not well-lit and equipped with accessibility ramps, visible signage, and safe crossings. Some of the latter concerns are shared by professional manifestos and incorporated into global ranking tools, but not as envisioned by AARP, which focuses on service delivery and advocacy for the needs of older adults at private, non-profit, and voluntary organizations, as well as at all government levels (Fidler et al., 2011).

Only few longitudinal studies have investigated urban livability; the bulk of academic, professional, and world ranking surveys focus on cross-sectional measurements and reflect a static conceptualization of livability. The underlying social, economic, and environmental parameters of livability vary across space and time and are generally conditioned by human perception, lifestyle choices, social status, gender, and stage of life. Young and old, men and women, rich and poor, and lifelong and short-term residents considerably differ from each other in terms of their social space preferences, including homes, public realm, goods and services, work, and entertainment (Champion, 2012; Florida, 2008; Ruth and Franklin, 2014). This comparison is performed not to dilute the concept of livability but to broaden its scope and conceptual limits to encompass the critical quality of life concerns that shape the perspectives on livability of people.

6. Synthesis and urban policy challenges

At the risk of sounding cliché, this study advocates an interdisciplinary approach that considers all the urban livability aspects that are delineated within the design and planning literature as well as the global ranking surveys. Each presented view offers a unique perspective on quality of life and addresses the important dimensions of urban livability. In the broadest sense, these views have all addressed livability within the triple bottom line framework that is highly affiliated with sustainability, environment, economy, and society. The tripartite construction is perceived by this study as a convenient analytical framework of highly interconnected and overlapping concepts, regardless of whether from a sustainability or livability backdrop. Despite not being specific to urban environments, Musacchio's 6Es of landscape sustainability (2009) deconstructs the society dimension into four areas, namely, esthetics, ethics, equity, and experience. The

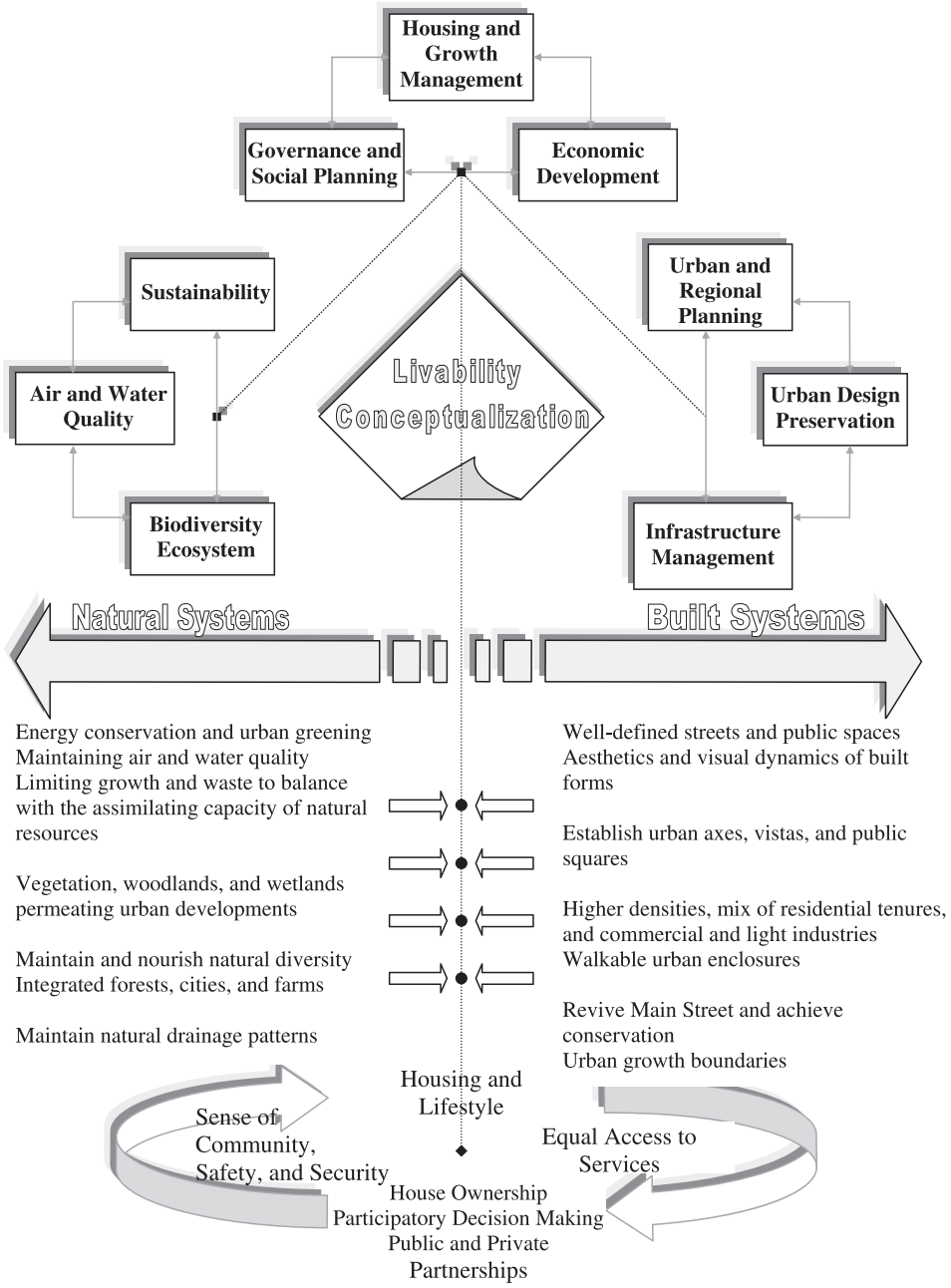

Figure 6 Urban livability conceptual diagram.

characteristics delineated under these four categories relate to various aspects that cut across design, planning, and ranking tools.

This study concurs with Van Kamp et al. (2003), who contend that the broad range of disciplines involved in environmental, behavioral, well-being, and urban studies, with each using their own vocabulary and measurement tools, hinders the formation of a consensus for developing an interdisciplinary perspective toward urban livability. Apart from disciplinary divides, measuring urban livability across cultural and societal boundaries is extremely difficult in the absence of cross-cultural comparisons of the determinants of quality of life. The questions on the basic well-being parameters of individuals and households irrespective of time, place, and culture remain unanswered. Only a few studies have examined the manner in which personal characteristics can affect the perception of environmental well-being of individuals. Longitudinal studies that examine perceptual and lifestyle choices across gender, age, and social status are extremely important in constructing a policy toolbox that helps governments assess, monitor, and plan developments that contribute to urban livability. Constructing an interdisciplinary conceptual framework is the first step in furthering the current understanding of urban livability. This step must be followed by developing multidimensional indicators for assessing and cross-referencing livability concerns in different parts of the world. The stakeholders in this process must include

citizens, scholars, professionals, as well as policy and decision makers to ensure the viability of the proposed livability tools across different cultures, places, and scales of urban development.

On the basis of the previous analytical review, this study synthesizes the dimensions of livability discussed earlier and advances an interdisciplinary perspective that presents the linkages and dialectical relationships among environmental, economic, and social domains. This paper concludes with a conceptual model that captures the intellectual building blocks of urban livability (Figure 6). The conceptualization of urban livability at the intersection of distinct environmental, economic, and social dimensions is proposed only as a graphic communication framework and is not intended as an intellectual deconstruction of these highly interlinked quality of life concerns. Therefore, the following analysis of the conceptual model provides a synthesis instead of a fragmented description of urban livability dimensions. Figure 6 depicts livability concerns along a horizontal continuum that extends from natural systems on one end to built systems on the other end. This model reflects the view of the author that livable cities require the synergy and consideration of multiple dimensions related to natural and built environments. Cities must provide economic and social benefits, but must be prevented from damaging natural systems. The preservation of natural systems must consider the economic, social, and physical imperatives of human settlements. The vertical axis in the model delineates the dialectical relations among many economic, social, and physical dimensions that should be considered in enhancing urban livability. An interdisciplinary perspective of urban livability across design, planning, landscape, and related engineering disciplines must be developed to address the complex, multifaceted issues that contribute to urban livability.

The environmental dimension in the proposed urban livability framework encompasses two distinct yet highly interrelated domains, namely, natural and man-made. Despite the fluctuations in atmospheric and ecosystem workings over the last centuries, nature has always sustained the balance required for human habitation. However, the 20th century was characterized by an explosive world population growth and the overexploitation of natural resources, which produced excessive amounts of gases and other substances that were detrimental to both nature and human life. Therefore, the influence of man-made domain or human habitat must be minimized or reduced to levels that are compatible with the assimilative capacity of natural ecosystems. The man-made domain will nearly always affect natural ecosystems, and such influence must be assessed over large regions instead of area-specific built environments. Localized measurements tend to inflate the negative influence of cities and may propel the development of excessive or misguided urban environmental policies. Air quality, watershed, green cover, and wildlife are examples of environmental issues that must be addressed on a regional scale. Concentrated built environments infringe on natural systems over small areas yet save large swaths of natural regions from destructive sprawled developments. The policy challenge is to strike a balance between creating sustainable/livable regions and healthy compact urban centers. The latter must provide its residents with a broad range of lifestyle choices, mobility options, and recreational resources.

The physical well-being in the city is tied to the overall physical and environmental stability of the surrounding region and must be used as the guiding principle for urban livability policies. The right side of the urban livability conceptual model reflects the complexity of issues on built environments, including neighborhoods, cities, and metropolitan regions; local areas should be considered beyond traditional planning mandates (zoning, transportation, and development instruments) and customary architectural interests (buildings, streetscapes, and public spaces). Therefore, the scope of urban livability must incorporate an understanding of metropolitan dynamics and how such dynamics are implicated in the demographic distribution and the allocation of uses throughout the metropolitan space. Urban livability hinges on various socioeconomic, environmental, and political concerns that involve job security; healthcare; educational standards; recreational and entertainment opportunities; clean air, soil, and water; stable biological domains; civic engagement; and equitable access to local and regional public services. However, the physical form, livability, and sustainability of urban areas are synergized to a certain extent. The urban space envelops the day-to-day life experiences of city dwellers and affects their perceptual and experiential qualities of urban living. Therefore, social and economic functions must be correlated with human-scaled physical enclosures, well-defined public spaces, as well as visually and culturally animated built forms. The urban growth process entails evolving and dialectical changes between local and regional developments. The social and economic geography of streets, squares, and parks in neighborhoods are inextricably linked with the regional geography of arterial roads and highways, commercial corridors, as well as industrial and employment nodes. Enhancing intra- and-inter-neighborhood street connectivity may reduce the influence of traffic on regional highway networks and facilitate the gradual development of new patterns of higher-intensity and mixed-use arrangements that support energy-efficient movement networks and public transit solutions.

The design and planning literature provides many tools for guiding urban governments in improving the livability of cities. Modern land use and transportation models can be integrated with recent development mechanisms that encourage mixed land use, walkable streets, and environment-friendly smart growth prototypes that can restore the balance between nature and human habitat. In this regard, the livability composite indicators of EIU, Mercer, Monocle, and others can be used to measure design and planning outcomes as well as to provide guidance for improvement. City governments must identify development objectives and desired outcomes without transforming their downtowns into shop front boutiques and retro cafes that appeal more to visitors than to lifelong residents. Urban developments that take stock of localized histories, culture, and unique contextual qualities have always fared better and attracted more visitors and external investments.

Spatial flexibility and physical form differentiation are pivotal to urban growth and vitality. Metropolitan areas must support flexible patterns of urban socioeconomic and demographic distributions to attract and sustain local, regional, and global investments. By facilitating diverse and flexible

development arrangements, cities can boast differentiated urban spaces with varying cultural dynamics. Therefore, regulatory frameworks must allow form, density, and mixed use to evolve from cultural and economic requisites. Cities must not impose a blanket approach, such as zoning, or restrictive measures, such as architectural controls, that may stifle creativity and hamper the development of innovative built forms. Planning built forms must go beyond the simple allocation of 2D land uses and circulation elements (highways and road networks), but must not go as far as setting up professionally oriented static visions or blueprints for future built forms. Urban designers must balance the current understanding of urban development processes/built form typologies with the future prospects of urban environments, which are commonly determined through the amassed ingenuity and actions of individuals and community groups.

The urban economic dimension is inextricably linked with the physical configuration of cities. Land use and transportation patterns determine development options, capital investments, and economic opportunities of different population groups. The planning literature introduced many explanatory theories for explaining urban distribution and structure, including concentric zone theories, sector and multiple nuclei theory, economic models of spatial structure, density–distance theories, wave theory of metropolitan growth, industrial location theory, central business district and commercial hierarchy theory, social area analysis, and network and urban systems theory. These theories provide the basis for building predictive models that can optimize residential distribution vis-à-vis commercial, industrial, and commercial facility citing. They can be integrated with the more inclusionary mixed-use and multimodal transportation patterns to enhance mobility and locational match among neighborhoods, employment centers, entertainment, and recreational amenities.

The built fabric serves as the physical embodiment of the social and economic institutions in a city. It is a collage of buildings, movement patterns, and spaces that support urban economies and enhance cultural experience; encouraging small business enterprises is critical for creating walkable and economically viable downtowns. Property development policies that support a broad spectrum of rental gradients provide a platform for small businesses and start-ups to thrive during their formative stages and allow them to grow locally and regionally, thereby creating a vibrant regenerative economy. Livable environments integrate physical and social well-being parameters to sustain a productive and meaningful human existence. Participation in primary and secondary social circles substantially contributes to personal well-being. The primary social circle encompasses family and immediate friends with whom an individual has the most personal and the greatest variety of social interactions, thereby providing the individual with the opportunity to experience vital social and psychological interactions over long periods. The secondary social circle includes more specialized interactions, such as at work, school, or public social events. Individuals need these two interdependent social circles to sustain their personal well-being and participate gainfully in society at large. The larger social circle, which involves civic institutions and social spaces, offers individuals with opportunities for education, employment, upward social mobility, and social networking. The city social spaces provide opportunities for social interaction beyond immediate family and friends through the participation of individuals in work, schooling, or by walking in the street.

The interface between private and public realms is the most significant theme from the design and planning literature that potentially affects sociability. Such interface essentially pertains to the articulation of the outer skin of buildings or homes and the disposition of buildings in space. Increasing the interface between private and public realms tends to heighten the level of activity around the edges of buildings. The elements that contribute to increased private/public interface include the windows of active living spaces, transitional spaces (entryways or porches), and availability and distribution of common spaces. Facilitating the closeness of people by a proper arrangement of private and shared public spaces can enhance social contact and group/place attachment. The lack of opportunities for such social contact may result in a sense of loneliness and depression. As mentioned in Section 1, urban livability has strong ties to the notion of urbanity. The city public realm has a vital role in urban social dynamics and serves as a catalyst for the economic and civic culture that emanates from and contributes to urbanity. Regardless of the physical attributes and conjoined social outcome described above, the participation of the public in directing urban growth as well as the equitable distribution of public resources, infrastructure projects, educational, and healthcare investments are essential components of urban livability. Livability indicators related to employment, education, and health services will become meaningless if they do not indicate inequalities or uneven distributions among different population groups and social strata.

7. Conclusion

This study juxtaposed different livability perspectives from the design and planning literature as well as global ranking surveys to highlight the major forces that shaped the spatial configuration of traditional and modern cities. This study also offered a comparative analytical assessment of these diverse approaches and laid out an interdisciplinary understanding of urban livability that drew on the richness and diversity embedded into design, planning, and current ranking tools. This research did not intend and could not claim to develop a new algorithm for measuring urban livability. However, this study laid the ground for further interdisciplinary research on urban livability. The synergy and dialectical interrelations between local and regional developments, natural and man-made environments, economic and social institutions, spatial and physical forms, buildings and movement patterns, public and private spaces, participatory decision making and citizen involvement, traditional and contemporary lifestyles, individuals and community, education and employment, medical care and healthy aging, equity and prosperity, and national and global interests must be considered. None of these paired phenomena may be considered in isolation. Further research must be performed to develop a complex dynamic

algorithm and the multidimensional indicators that measure, direct, and enhance urban livability.

Urban livability is presented as a unique case of livability at large with strong ties to the notion of urbanity. Developed nations have managed to retain higher levels of livability by improving economic and health conditions and by adopting a more responsive approach to environmental issues. The livability concerns in most developing nations still revolve around the reduction of poverty, hunger, and disease. The experience of well-being in urban environments cuts across the general livability issues that are engrained in the triple bottom line of environment, society, and economy. The city, with its industrial, commercial, and residential functions, constitutes an imposed physical presence over the natural environment. Such presence affects natural biodiversity and ecological stability by modifying the natural landscape and emitting different kinds of wastes and pollutants to the environment. To improve the overall livability of the region, cities must minimize their influence on the environment, which leads us to the reasonable assumption that the less cities we have, the more livability we can achieve. Such assumption may prevail if we ignore the social and psychological aspects of human life. The advent of urbanity has prompted people to abandon their rural lives with established primary and secondary social circles and head to the cities to achieve greater economic and civic independence. Urbanity has offered humanity with another kind of social and cultural affiliation that may have transcended the familial, clannish, and racial bonds. The economic and social opportunities offered by the city continue to entice people to move into urban areas and leave behind their pristine natural environments.

Urban livability focuses on the manner in which urban spaces work, the interface between public and private realms and their relationships with the natural environment, and the cultural values, including built and social heritage. Urban livability must consider urban morphology as an "incubator" of social and economic functions. Therefore, economic and physical development decisions must be coordinated to develop socially and culturally responsive environments. This process provides a healthy environment that can emancipate the abilities of people and fulfill their need to become a part of sustainable social systems (Figure 6). Therefore, cities that strive to achieve livability must create a governance model that supports the civic ecology of participatory democracy. Globalization has intensified the economic competition among world cities in terms of attracting foreign investment as well as major sports and social events. The current ranking surveys have mobilized city governments to enhance the quality and scope of their public services with an emphasis on heightening the esthetics of built environments and improving the lifestyle choices of their people. Although these measures can improve the standards of living, they do not necessarily result in long-term implications for the well-being of lifelong residents. Ranking surveys have driven cities to improve their environs and infrastructural facilities, but must develop multidimensional and highly sensitive indicators that do not only measure the objective aspects of livability but also the perceptions of and the satisfaction of people with their cities. Future research must be conducted to embed such indicators into current ranking surveys.

References

Alexander, C., 1977. A Pattern Language: Towns, Buildings, Construction. Oxford University Press, New York.

Alexander, C., 1979. The Timeless Way of Building. Oxford University Press, New York.

Alexander, E., 1992. Approaches to Planning: Introducing Current Planning Theories. Gordon and Breach, New York.

Alexander, E., 2000. Rationality Revisited: Planning Paradigms in a Post-Postmodernist Perspective. J. Plan. Educ. Res. 19, 242–256.

APEC, 2015. Building better cities: competitive, sustainable and livable metropolises. In: Eco Summit, Philippines.⟨www.pwc.com/ape⟩.

Bacon, E., 1967. Design of Cities. The Viking Press, New York.

Barnette, J., 1995. The Fractured Metropolis: Improving the New City, Restoring the Old City, Reshaping the Region. Harper Collins, New York.

Beatley, T., Kristy, M., 1997. The Ecology of Place: Planning for Environment, Economy, and Community. Island Press, Washington, DC.

Benevolo, L., 1980. The History of the City. Scolar Press, London.

Benevolo, L., 1993. The European City. Blackwell, Oxford.

Bressi, T., 2002. The Seaside Debates: A Critique of the New Urbanism. Rizzoli International.

Calthorpe, P., 1994. The Next American Metropolis: Ecology, Community and the American Dream. Princeton Architectural Press, New York.

Calthorpe, P., Fulton, W., 2001. The Regional City. Island Press, Washington.

Catanese, A., Snyder, J., 1988. Urban Planning. McGraw-Hill, New York.

Champion, A.G., 2012. Migration and population mobility. In: Susan J. Smith (Editor-in-Chief) International Encyclopedia of Housing and Home.

Duany, A., Plater, Z., 1991. Town and Town-Making Principles. Rizzoli, New York.

Duany, A., Speck, J., Lydon, M., 2013. The Smart Growth Manual. McGraw-Hill Professional.

Dutton, J.A., 2001. New American Urbanism: Re-forming the Suburban Metropolis. Skira Architecture Library.

EIU (Economist Intelligence Unit), 2014. ⟨www.economistgroup.com⟩.

Ellis, P., Roberts, Mark, 2016. Leveraging Urbanization in South Asia: Managing Spatial Transformation for Prosperity and Livability. World Bank Group, Washington, DC ⟨www.worldbank.org⟩.

Ellin, N., 1995. Postmodern Urbanism. Blackwell, Cambridge, MA.

Fidler, D., Olson, R., Bezold, C., 2011. Evaluating a long-term livable communities strategy in the U.S. Futures 43, 690–696.

Florida, R., 2008. Who's Your City?: How the Creative Economy is Making Where to Live the Most Important Decision of Your Life. Basic Books, New York.

Glaeser, E., 2011. Triumph of the City: How our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier, and Happier. Penguin Press, New York, NY.

Goodchild, B., 1990. Planning and the modern/postmodern debate. Town Plan. Rev. 61 (2).

Gosling, D., 1996. Gordon Cullen: Visions of Urban Design. Academy Editions, Britain.

Gratz, R.B., Norman, M., 1998. Cities Back From the Edge: New Life for Down Town. John Wiley & Sons, New York.

Green Cities, 1991. Visioning a More Livable Habitat. School of Planning, University of Waterloo.

Hagerty, M.R., Cummins, R.A., Ferriss, A.L., et al., 2001. Quality of life indexes for national policy: review and agenda for research. Soc. Indic. Res. 55 (1), 1–96.

Henderson, A.M., Parsons, Talcott (Eds.), 2012. MAX WEBER: The Theory of Social and Economic Organization by Max

Weber (Author). (Translated by Edited with an introduction by Talcott Parsons, 2012 Reprint of Original 1947 Edition).
Hillier, B., 1996. Space is the Machine: A Configurational Theory of Architecture. Cambridge University Press, Cambridge.
Hough, M., 1990. Out of Place: Restoring Identity to the Regional Landscape. Yale University Press, New Haven.
IMCL (International Making Cities Livable): ⟨http://www.livablecities.org/⟩.
Jacobs, J., 1961. The Death and Life of Great American Cities. Random House, Inc, New York.
Kahn, M.E., 2006. Green Cities: Urban Growth and the Environment. Brookings Institution Press.
Kashef, M., 2008. Architects and planners approaches to urban form and design in the Toronto region: a comparative analysis. Geoforum 39 (1), 414–437.
Kashef, M., 2011. Neighborhood design and walkability: a synthesis from planning, design, transportation and environmental health fields. J. Urban. 4 (1).
Katz, P., 1994. The New Urbanism: Toward an Architecture of Community. McGraw-Hill, New York.
Kelbaugh, D., 1997. Common Place: Toward Neighbourhood and Regional Design. University of Washington Press.
Kotkin, J., 2009. Why the Livable Cities Rankings are Wrong? ⟨www.frobes.com.⟩.
Kozaryn, A., 2013. City life: Rankings (Livability) Versus Perceptions (Satisfaction). Soc. Indic. Res. 110 (2), 433–451.
Krier, R., 1993. Urban Space. Rizzoli, New York.
Leccese, M., McCormick, K., 2000. Charter of the new urbanism. In: Congress for the New Urbanism. McGraw-Hill.
Lennard, C.S.H., Lennard, H., 1995. Livable Cities Observed. Gondolier Press, International Making Cites Livable Council.
Luccarelli, M., 1995. Lewis Mumford and the Ecological Region: The Politics of Planning. Guilford, London.
Lynch, K., 1960. The Image of the City. MIT Press, Cambridge, MA.
Marber, P., 2012. Brave New Math. World Policy J.
Massengale, L., Dover, V., 2013. Street Design: The Secret to Great Cities and Towns. Wiley, New York.
Mercer Quality of Living Survey. ⟨www.mercer.com.⟩.
McHarg, I., 1969. Design With Nature. Doubleday, New York.
Mcloughlin, J.B., 1969. Urban and Regional Planning: A Systems Approach. Faber & Faber, London.
Mumford, L., 1961. The City in History. Harcourt, Brace & World Inc, New York.
Musacchio, L.R., 2009. The scientific basis for the design of landscape sustainability: a conceptual framework for translational landscape research and practice of designed landscapes and the six Es of landscape sustainability. Landsc. Ecol. 24 (8), 993–1013.
Nassauer, J.I., 2011. Care and stewardship: from home to planet. Landsc. Urban Plan. 100 (321), 323.
Nassauer, J.I., 2012. Landscape as medium and method for synthesis in urban ecological design. Landsc. Urban Plan. 106, 221–229.
Newman, P.W., 1999. Sustainability and cities: extending the metabolism model. Landsc. urban Plan. 44 (4), 219–226.
O'Sullivan, A., 1996. Urban Economics. Irwin, Chicago.
OECD Better Life Index, 2014. ⟨http://www.oecdbetterlifeindex.org⟩.
Pacione, M., 1990. Urban liveability: a review. Urban Geogr. 11 (1), 1–30.
Ranking America. ⟨https://rankingamerica.wordpress.com⟩.
Rowe, C., Koetter, F., 1978. Collage City. MIT, Cambridge.
Ravetz, A., 1980. Remaking Cities. Croom Helm, London.
Rowntree, R., 1994. The Ecological City: Preserving and Restoring Urban Biodiversity. University of Massachusetts Press.
Ruth, M., Franklin, R.S., 2014. Livability for All? Conceptual Limits and Practical Implications. Appl. Geogr. 49, 18–23.
Taylor, N., 1998. Urban Planning Theory Since 1945. Sage Publications, London.
Van Kamp, I., Leidelmeijer, K., Marsman, G., De Hollander, A., 2003. Urban environmental quality and human well-being: towards a conceptual framework and demarcation of concepts; a literature study. Landsc. Urban Plan. 65 (1), 5–18.
Victoria Government-Australia. Measures of Livability and Sustainability. Staff discussion paper. ⟨http://www.vcec.vic.gov.au⟩.
Walter, B., 1992. Sustainable Cities: Concepts and Strategies for Eco-City Development. Eco-Home Media.
Wolfe, J., 1989. Theory, hypothesis, explanation and action: the example of urban planning. In: Kobayashi, A., Mackenzie, S. (Eds.), Remaking Human Geography. Unwin Hayman, Boston.
Zijderveld, A., 1998. A Theory of Urbanity. Transaction Publishers, New Jersey.

Further reading

Hough, M., 1984. City Form and Natural Process, .. Routledge, London.
Jacobs, A.B., 1993. Great Streets. MIT Press, Cambridge, MA.
Monocle's Quality of Life Survey, 2014. ⟨www.monocle.com⟩.
Wheeler, S., 2013. Planning for Sustainability: Creating Livable, Equitable and Ecological Communities. Routledge.