# CONCEPTUALIZING THE LIVEABLE AFRICAN CITY

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**Abstract**

This paper attempts to conceptualize the liveable African City using indices of liveability as advanced by Africans. The concepts of City Liveability and the City as a living system are used as the theoretical underpinnings to the study. A purposive online questionnaire survey of 453 Africans, living both in Africa and the Diaspora was conducted to elicit their perspectives on what they consider the most important indices for a Liveable African City. The data was disaggregated on locational basis. This was done to determine whether ones location i.e. living at home or in the Diaspora contributes significantly to one's opinion on the identified issues. Issues investigated include governance, safety and security, culture and global identity, environmental indices and infrastructure. Furthermore, the inherent contradictions between western and African concepts of liveability were examined. The study revealed that 67% of all respondents consider governance to be the most important determinant of city liveability. Cultural heritage and city image were considered the least important indices of urban liveability. In determining the choice of where to live, 82.2% of respondents consider quality of life, while few differentials existed based on location, safety and security, particularly violent crime and the threat of terror were considered extremely important by respondents living in the Diaspora. The study concludes by recommending the application of broad based urban management strategies combined with good urban governance mechanisms to improve city liveability across the continent.

**Keywords:** Liveability, Liveable city, Africa, Governance, Poverty, Quality of life

## INTRODUCTION

Partners for Liveable Communities (2002) define liveability as the sum of the factors that add up to a community's quality of life including the built and natural environments, economic prosperity, social stability and equity, educational opportunity, and cultural, entertainment and recreation possibilities.

According to the City of Vancouver (2003), Liveability refers to an urban system that contributes to the physical, social and mental well being and personal development of all its inhabitants. It is about delightful and desirable urban spaces that offer and reflect cultural and sacred enrichment.

The Economist Intelligence Unit (2012) defines the concept of liveability as an assessment of which locations around the world provide the best or the worst living conditions. However, assessment rankings are largely subjective. Quality of life might refer to a citizen's satisfaction with residential environments, traffic, crime rate, employment opportunities, or the amount of open space (Myers, 1988). Alternatively, the phrase might refer to less tangible qualities such as freedom of expression and social justice (Land, 1996). According to Ling, Hamilton and Thomas (2007), liveability for some people is intrinsically tied to physical amenities such as parks and green space, while for others to cultural offerings, career opportunities, economic dynamism, or some degree of reasonable safety within which to raise a family. This paper therefore considers the perceptions of Africans with regards to urban liveability in Africa.

Various liveability rankings exist and the most popular are the Mercer Quality of Living Survey and the Economist Intelligence Unit (EIU) Global Liveability Report. The Economists Ranking is based on a survey of 140 cities in which every city is assigned a rating of relative comfort for over 30 qualitative and quantitative factors across five broad categories: stability; healthcare; culture and environment; education; and infrastructure. Mercer 2011 survey evaluates local living conditions in 220 cities according to 39 factors, grouped into 10 categories namely Political and social environment, Economic environment, Socio-cultural environment, Health, Schools and education (standard and availability of international schools, Public services and Recreation, Consumer , Housing and Natural environment. Some rankings include humidity and comfort level of international travellers and expatriate workers as well as availability of international schools and night life (EIU, 2012).

Mercer conducts the surveys to help governments and multi-national companies compensate employees fairly when placing them on international assignments and uses New York City as a benchmark while the Economists surveys have been criticised as being anglocentric (New York Times, 2010).

In the 2011 Mercer Quality of Living Survey, only three African cities namely; Port Louis in Mauritius, Cape Town and Johannesburg in South Africa fall into the top 100 liveable cities, while there are 18 African cities in the bottom 25. The Economists 2012 Liveability Report ranks  Lagos 138th of the 140 cities ahead from the rear to other African Countries like Nairobi, (124), Lusaka, (126), Dakar,(129), Abidjan, (131) Douala,(133) and Harare (137). African cities score poorly on these rankings that are obviously skewed towards western concepts of what is pleasant and acceptable urban living. They do not take into consideration the differences in culture and environment of the various cities considered and also the concept of the City as a Living System which responds to both internal and external change as are synonymous to that of living organisms.

According to Ling, Hamilton and Thomas (2007), crucial to the well-being of communities is their resilience, their stability and their future. These need to be defined and continually refined by each community embedded in a dynamic planning process. Castellati (1997) opines that 'Liveability means we experience ourselves as real persons in the city'. Southworth(2007) also considers liveability as a concept to be a determinant of how well the city works for her inhabitants. Hence the raison d'être of this study is to answer the following questions - What issues are at the core of the African concept of liveability?  What are the most important indices necessary for achieving urban liveability from an African perspective? Does being resident in Africa or abroad present any significant difference of opinion?

## THE CITY AS A LIVING ORGANISM

The Twenty First Century city is made up of complex systems that are analogous to living organisms.

Literature reveals that the evolution of city structure has undergone various transitions to a situation where cities have all the sub-systems that are needed by living organisms (Mitchelle, 2007; Hanczyc, 2011; Lakhina, 2011; Gershenson, 2011 and Weinstock, 2011).

The concept of the City as a Living Organism serves as a powerful conceptual framework for the Liveability debate. It enables the examination of different critical components from the liveable city standpoint and at the same time focuses attention on the interdependence of these components in the quest to achieve holistic development of the urban system. According to Cools (1997), the city must be seen as a living organism in which balance must be maintained in order to function properly. Timmer and Seymoar (2006), in designing a Liveable Vancouver, compare the city to the living organism and according to them, the brain and nervous system refer to the governance structures, the heart refers to the city spirit and place identifiers, the different organs are the residential, industrial, open spaces and other hubs while the circulatory systems refer to the transportation routes and nodes and infrastructure networks as shown in Table 1.

Table 1: The Liveable City as a Living Organism

| Liveable City Metaphor | Components | Description |
|---|---|---|
| The brain and nervous system | Governance and Participation Monitoring, Measuring, Learning | A liveable city engages the active involvement of a diversity of citizens in visioning, planning, implementing and monitoring regional plans and place-based solutions to challenges. The monitoring capability of a liveable city is equivalent to the nervous system in a living organism. A liveable city develops the capability to measure progress towards its goals, to encourage experimentation and test new ideas, to learn from experience, to adapt strategies in order to take into account dynamic circumstances and shifting priorities, and to quickly respond to opportunities and challenges. |
| The heart | Common Values, a Sense of Identity and Place | A liveable city contains an active public realm for reflecting the essence of itself, for creating and reinforcing a common identity, for dialogue about common values, for remembering history, for celebration and festivals, and for socialization of children and young people. |
| The organs | Complete Communities, Vital Downtown Core, Industrial Clusters, Green Space | A liveable city contains complete communities with mixed-use and affordable housing close to shopping, employment, cultural centres and pedestrian-friendly transportation networks; a vital downtown core with public spaces and economic activity; industrial clusters with shared infrastructure; and green space including agricultural lands and parks. |
| The circulatory | Natural Resource | A liveable city is connected through the flow of resources that |

| system | Flows, Green Corridors, Energy Grids, Communication, Transportation | sustain its activities including water, materials, sewage, and waste; through access to energy resources; through green corridors for biodiversity habitat and recreation; through access to the communication systems including information and communication technologies; through a transportation network that prioritizes walking, public transportation and efficient movement of goods. |
|---|---|---|

Similar to the concept of Liveability is that of Sustainability, though according to Evans (2002)0 and Girardet (2004) liveability and sustainability are intimately connected, but are not the same. According to Idrus et al, (2008), the liveable city as a healthy, safe, economically growing, and socially, culturally and politically vibrant entity within its green ambience captures the essence of a sustainable city. A Sustainable city enables all its citizens to meet their own needs and to enhance their well being without degrading the natural world or the lives of other people, now or in the future (Habitat Agenda, 1996).

In comparing the liveable and sustainable city concepts, Douglass et al. (2004) maintain that a liveable city concept is more human centred as against the sustainable city which seeks to protect the environment. This can be interpreted to mean that the liveable city focuses on quality of life while the sustainable city focuses on quality of environment. Other studies on city liveability include those of McGee 1971; Salzano, 1997; Casellati 1997; Girardet, 1999; Leung 2004; Eastaway & Stoa, 2004; Abdul Aziz and Hadi (2007), Idrus, Shah and Mohamed, (2007) and Oktay (2012).

This study disaggregates issues of liveability on the basis of the conceptual framework discussed and sees the city as a living organism which is dynamic and continually recreates itself for the benefit of her citizens.

## METHODS

This study adopted a survey design. A purposive online questionnaire survey of 453 Africans, living both in Africa and the Diaspora was done to elicit their perspectives on what they consider the most important indices for a Liveable African City.

UN Habitat (2010) states that a healthy, well-educated population is a major asset for any city, and knowledge is a prerequisite for enhanced civic participation in the social, political and cultural spheres. As such the target population for the study were people with at least a university degree. This was done to narrow down the respondents' pool to only those with an understanding of issues of sustainability and liveability. Majority of the respondents are professionals working in built environment disciplines, financial and professional services, education and information technology.

Data was disaggregated on locational basis. This was done to determine whether one's location i.e. living on the African continent or in the Diaspora contributes significantly to one's opinion on the identified issues. Five point Likert scale was designed to enable respondents choose in order of importance those issues that are germane to their perceptions of city liveability. The variables were developed from the Conceptual Framework and delineated based on the metaphors for the liveable city. Issues investigated include governance representing the brain and nervous system of the city , safety and security as well as cultural identity  and global relevance representing the heart of the city , environmental indices and infrastructure representing the organs and circulatory system of the city. Furthermore, qualitative analyses of the perceived contradictions between Western and African concepts of liveability were carried out.

Data was analysed with simple descriptive statistics and presented with tables and graphs. Chi square tests were also done to determine if significant differences exist between the opinion of respondents living on the continent and those in the diaspora.

## FINDINGS AND DISCUSSION

### *Profile of Respondents*

Four hundred and fifty three (453) respondents from 15 African countries were sampled. Countries of origin for the respondents include Burkina Faso, Cameroon, Egypt, Ethiopia, the Gambia, Ghana, Kenya, Mali, Namibia, Nigeria, Sierra Leone, South Africa, Tanzania, Uganda and Zambia. 71.6% are resident on the African continent while 28.4% are resident

abroad. Those living abroad are resident in Australia, Canada, England, France, Italy, Jordan, Malaysia, the Netherlands, Spain and United States of America.

Sixty four (64%) of respondents were male, while 36% were female. Age distribution of the respondents was between 16 and 34 (41.8%), 35 and 44 (30.7%), 45 and 54 (20.9%). About 6.7% of the respondents were older than 54years old. 32.4% of the respondents have a first degree, while 67.6% have higher degrees. Majority of the respondents are professionals working in built environment disciplines, financial and professional services, education and information technology.

### *Perceptions of City Liveability*

When asked what they perceived as the most important indices of city liveability, 67% of respondents chose governace, while 18.7%, 8% and 5% considered infrastructure, safety and environmental sustainability respectively as being important. It was interesting to note that among those residing in Africa 65% consided governance while 71% of those resident broad considered this to be important.

To 82% of respondents, the quality of life is the most important issue when selecting where to live, followed by safety (8%) and cost of living (7.8%). Nearness to kin and environmental friendliness were negligible considerations. Quality of life in this context refers to the state of social wellbeing of an individual or group, either perceived or as identified by observable indicators (Pacione, 2005). Indicators include security, health, education, work and social ties as highlighted by Marans and Stimson, 2011. Among those resident in Africa, quality of life was the most important determinant of choice of where to live for 80%, while 10% considered safety to be most important compared to only 3% of those resident abroad. However, cost of living is a stronger determinant of choice of residence for those living abroad (9.3%) than for those on the continent (6.1%). This may be because of the stronger kin networks which offer support structures that are prevalent in the African cultural context.

For the respondent's resident in Africa, the issues that have the most impact on Africa's liveability ranking are poverty (73.2%), economy (8%), governance (6%), and corruption (5%). Other issues include migration, regional conflicts and population dynamics which have negligible impact. Infrastructure, which most African governments consider as essential indices of development, was considered important by less than 1% of all respondents. For those residing abroad, 76% of respondents consider poverty to be the single most important issue impacting on Africa's liveability rankings. The economy, governance and corruption only have negligible impact, with 7% each of the respondents considering them as having some impact on the liveability rankings of African cities.

### *Governance as a Determinant of Urban Liveability*

The variables considered in this section were Democratic Governance structure, political stability, citizen participation and government accountability as well as pro-poor governance policies. Respondents were required to choose which they considered to be essential to African liveability in order of importance.

For both groups of respondents, the most important governance variables for achieving urban liveability in Africa are government accountability, political stability and citizen participation. The respondents living abroad had stronger opinions concerning these issues as more of them considered the variables to be extremely important. 29.8% of those living in Africa consider democratic governance to be extremely important, compared to 39.1% of those abroad. This disparity was also reflected in the opinions concerning Political stability (44.1% Africa - 59% Diaspora) and citizen participation (32.3% Africa - 48.4% Diaspora).

Government accountability was considered extremely important by 48% of both groups, while 27% of respondents in Africa and 29.8% of those abroad consider pro-poor governance policies to be extremely important for the achievement of urban liveability in Africa

The relationship between location of the respondents (whether within the African continent and in Diaspora) and their perceptions of governance variables is further corroborated by chi-square tests as shown in Table 2 below.

The table shows that there are significant differences in the perceptions of citizen participation, pro-poor governance and government accountability. Conversely, insignificant differences exist in democratic governance structures and political stability perceptions with significance level of 0.05. It can therefore be concluded that opinions concerning the importance of democratic governance structure and political stability are a function of location.

Table 2: Chi Square Test for Location and Governance Perceptions of Respondents

| Variable | Chi Square Value | Degree of Freedom | Level of Significance | Comment |
|---|---|---|---|---|
| Democratic Governance Structure | 10.021 | 4 | .040 | Not Significant |
| Political Stability | 12.369 | 4 | .015 | Not Significant |
| Citizen Participation | 5.864 | 4 | .210 | Significant |
| Pro Poor Governance Policies | 3.214 | 4 | .523 | Significant |
| Government Accountability | 6.049 | 4 | .196 | Significant |

### *Safety and Security as Determinants of Urban Liveability*

The issues discussed with regards to urban safety and security is the prevalence of petty and violent crime, terrorism threats, and the importance of an effective policing system. The issues considered most important in order of intensity for both groups are threat of violent crime, terror and presence of an effective policing system. While 59.6% of those in Africa considered the threat of violent crime to be extremely important, 79.7% of those in the Diaspora held the same opinion. The higher value reported for those in the Diaspora may be because of the growing incidents of xenophobia around the world (DisGiusto and Jolly, 2009; Crush and Ramachandran, 2009; . 42.2% of respondents in the diaspora consider tolerance of foreigners as being extremely important, compared to 26.1% of those living in Africa. The threat of terror being an index of urban liveability was considered extremely important by 53% of all respondents. 8% of those living in Africa do not see this as important while less than 1% of those living abroad share a similar sentiment. Among those living abroad, the threat of terror is considered a higher threat (56.2%) than petty crime (39.1%). An effective policing system is considered extremely important by 44.7% of respondents in Africa and 53.7% of respondents abroad.

The results of the Chi Square test are presented in Table 3 below. Significant differences exist with regards to location and perception of threat of terror, tolerance of foreigners and effective policing system at a significance level of 0.05. This shows that respondents' opinions concerning these issues are a function of location. The data confirms these as those living abroad tend to exhibit stronger opinions concerning the importance of the issue of security.

Table 3: Chi Square Test for Location and safety and Security Perceptions of Respondents

| Variable | Chi Square Value | Degree of Freedom | Level of Significance | Comment |
|---|---|---|---|---|
| Threat of Petty Crime | 11.298 | 4 | .023 | Not Significant |
| Threat of violent crime | 10.467 | 4 | .033 | Not Significant |
| Threat of Terrorism | 2.753 | 4 | .600 | Significant |
| Tolerance of Foreigners | 7.601 | 4 | .107 | Significant |
| Effective Policing System | 8.055 | 4 | .858 | Significant |

Threat of petty crime and violent crime had insignificant values and this can be directly related to that of effective policing system which recorded a highly significant value of .858. the importance of an effective policing system makes the threat of crime negligible as these would be minimized significantly if the policing system is effective.

### *Environment and Infrastructure as Determinants of Urban Liveability*

Respondents' opinions on how important the following variables are to urban liveability were examined. These include quality of housing, education, health care and public infrastructure, and quality of transport and telecommunication services. Environmental variables include susceptibility of the city to natural disasters and environmental hazards as well as the clemency of weather and respondents access to nature.

When asked what they considered the most important infrastructure in determining urban liveability, 67% of that resident in Africa considered quality of water and sanitation services, while75% of those living in the Diaspora considered same as shown in Figure 1 below. This was closely followed by quality of health (65.6%) and education facilities (60.93%) for those in the diaspora, while those on the African continent considered quality of health services (56.5%) and telecommunication facilities (50.1%) to be next in importance.

From the survey findings, 48.5% of respondents in Africa consider quality of educational facilities to be extremely important, while 54.68% of respondents in the diaspora consider the quality of telecommunication services to be a very important determinant of urban liveability.
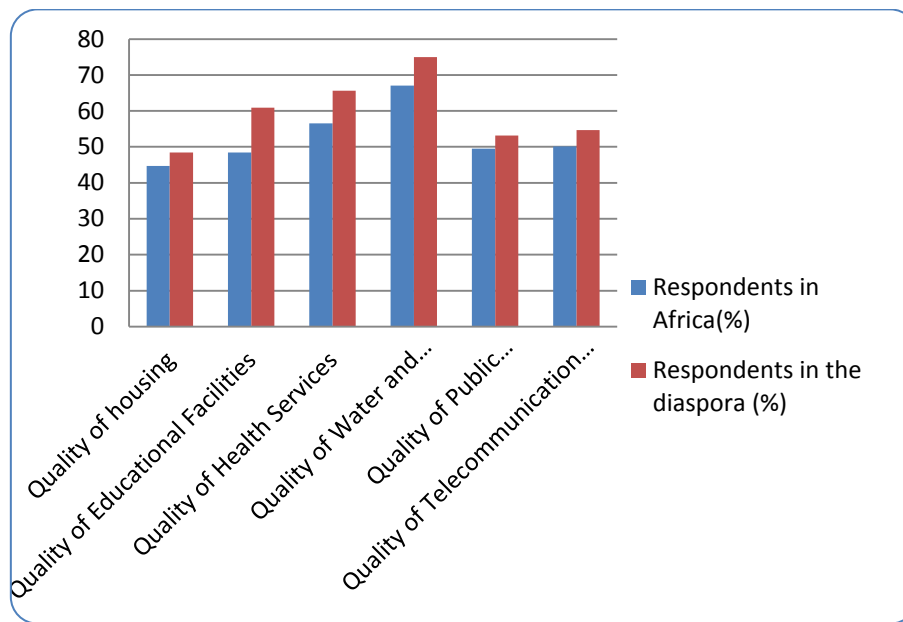


Figure 1: Respondents Perception of Quality of Infrastructure as Determinant of Urban Liveability

While 48.4% of respondents abroad and 44.72% of those in Africa consider quality of housing to be extremely important, 6.2% of respondents in Africa do not consider housing to be an important determinant of urban liveability. The quality of public transportation was also considered by 49% and 53% of Africans at home and abroad to be important in determining urban liveability.

Environmental variables also play an important part in the respondents' consideration of urban liveability. While 3% of respondents in Africa do not consider access to outdoor open spaces to be an important determinant of liveability, 29.8% do. 34.3% of those living in the Diaspora also share this opinion. Access to outdoor sports and recreation facilities is also considered important to 21% and 17% of respondents in Africa and abroad respectively. Significant chi square values were recorded for these variables as shown in Table 4 below.

Susceptibility of an area to natural disasters and extreme weather events were considered extremely important by 49% of all respondents. While susceptibility to natural disasters had an insignificant chi square value, threat of extreme weather event recorded a chi square value of 0.868. This may be because of the increasing frequency of storms, floods and other extreme weather events due to growing awareness of global warming and climate change.

Table 4: Chi Square Test for Location and Environmental Determinants of Liveability

| Variable | Chi Square Value | Degree of Freedom | Level of Significance | Comment |
|---|---|---|---|---|
| Susceptibility to natural disasters | 8.861 | 4 | .065 | Not Significant |
| Threat of extreme weather events | 1.258 | 4 | .868 | Significant |
| Access to green spaces | 1.629 | 4 | .804 | significant |
| Access to sports/ recreational facilities | 1.730 | 4 | .785 | Significant |
| Family friendly urban facilities/ management | 1.319 | 4 | .858 | Significant |
| Quality of housing facilities | 6.344 | 4 | .175 | Significant |
| Quality of Educational Facilities | 5.543 | 4 | .236 | Significant |
| Quality of Health Care Services | 5.616 | 4 | .230 | Significant |
| Quality of Public Water and Sanitation Services | 5.052 | 4 | .282 | Significant |
| Quality of Public transportation systems | 3.653 | 4 | .455 | Significant |
| Quality of Telecommunication Services | 7.444 | 4 | .114 | Significant |

### *City Identity and Global Recognition and Determinants of Urban Liveability*

The variables considered under this section are city identity and cultural heritage preservation, tolerance of foreigners and international travel linkages. Respondents held similar views on the average except for tolerance of foreigners which 42.2% of those living abroad considered extremely important compared to only 26% of respondents based in Africa. The importance of international financial linkage channels such as ease of money transfer were also highlighted by those in the diaspora (26.56%) compared to those in Africa (17.2%). Those living abroad prefer cities with international airports (29.6%), compared to those in Africa (26.7), albeit negligibly. For both groups of respondents, 25% considered religious freedoms to be important in their choice of preferred city.

*African Perceptions of City Liveability*

Though Africans' experience of poverty, lack of technological advancement, poor governance, corruption, poor service delivery, are common factors raised as the determining factors of city liveability in African city perception. Analysis of the responses shows that there exist some basic contradictions in the western and African perception of liveability of cities. Respondents cited cultural differences, differing spatial requirements, unequal household sizes, etc. Western concept of liveability appears more to be premised more on cities global relevance, the strength of institutional and democratic structures and freedom of choice. Africans view liveability however from the perspective of access to basic necessities of life and affordability, a perception formed from a long exposure to ineffective urban policies resulting in exclusion and slum development. African concept of liveability delves more on sustainability of life vis-a-vis access to basic necessities of life. Also while individuality and anonymity are preferred western city characteristics, Africans put greater value on good neighbourliness. Africans are communal, open and accommodating at the individual levels, western cities operate closed systems.

Some respondent's opinions of these contradictions are cited below:

- Western concepts of good urban form (urban modernism) do not fit well in Africa - in Africa I don't want to feel as if I am in any American city.
- The African concept of liveability is centred around community and interpersonal relationships while western concept is more geared towards individualism
- Africans are geared towards having a life that upholds culture and tradition whilst western country citizens regard technology and modernity
- I guess the current ideas in the West seem to conceive liveability more in global economic terms whereas in Africa (and perhaps Asia) the viewpoints lean more towards sociocultural wellbeing.

This survey has further revealed that concept of liveability in African perspective cannot be divorced from the realities of urban life in Africa as experienced by Africans both at home or the Diaspora.

Beyond the provision of social infrastructures, the African concept of liveability encourages the preservation of kinship and informal networks s opposed to the nucleated social structure of most western cultures.

The definition of a Liveable City from the standpoint of the respondents could be crystallized as follows:

- A liveable city is one that allows a citizen to thrive in all incomes, has equitable access to education, healthcare and housing as well as understand and utilize cultural differences to  improve the quality of life for all citizens

- A liveable city is one that combines good infrastructures, good governance system, and feelings of oneness, standard security, job opportunities and a sense of belonging to an individual.

- A liveable city is one where you can have a reasonably easy access to all your daily requirements without having to forfeit your freedom or security.

- A liveable city is a place devoid of fear, and is secure, run by a relatively fair and just government with primary aim of people's welfare in mind.

- The city should have good governance through participatory processes, economic vibrancy, cultural and social diversity and equality.

## CONCLUSION

This paper is a perception analysis on urban liveability .  the study considered the opinions of people of African descent resiident in 13 african countreis and 10countries in the Diaspora. The study discovered that the most important indicex of urban liveability to those resident in Africa is governance, while for those resident abroad, the threat of violent attacks from terror. While both groups consider infrastructure to be an important index of urban liveability, religious freedoms, tolerance of foreigners and the preservation of cultural heritage were considered  important. These  issues  are  remarkably  different  from  established  Urban liveability rankings which are essentially an index of the most preferred  locations for expatriates from developed countries, based on their cultural peculiarities. This research is an ongoing one. The next stage is to attempt a ranking schedule for African cities based on the major determinants highlighted.

## REFERENCES

Abdul Aziz, N and Hadi, A (2007), 'Linking Urban Form to a Liveable City', Malaysian Journal of Environmental Management, Vol 8 (1) pp 101-122

Casselati, A. (1997). 'The Nature of Livability' in Lennard, SH et.al (eds). Making Cities Livable. International Making Cities Livable Conferences, California, USA: Godolier Press.

CitiesPLUS, (2003) A Sustainable Urban System: The Long-term Plan for Greater Vancouver. Vancouver, Canada

Cools, B. (1997) "The Future of the City" In Lennard, S. H., S von Ungern-Sternberg, H.L. Lennard, eds. Making Cities Livable. International Making Cities Livable Conferences. California, USA: Gondolier Press

Crush, J. and S. Ramachandran. (2009). "Xenophobia, International Migration, and Human Development." Human. Development Research Paper No. 47.

Douglass, M., Trung Q. L, Cameron K. L, Hao.T N, Pham. A. N, Thai N.D, & Yulinawati. H. (2004). The livability of mega-urban regions in Southeast Asia - Bangkok, Ho Chi Minh City, Jakarta and Manila compared. International Conference on The Growth Dynamics of Mega-Urban Regions in East and Southeast Asia, 24 - 25 June 2004, Singapore.

Eastaway, M.P. & Stoa, E. (2004). Dimensions of housing and urban sustainability, Journal of Housing and the Built Environment, Vol 19, pp1-5.

Economist Intelligence unit (2012) 'A Summary of the Liveability Ranking and Overview' www.eiu.com

Evans, P, ed. (2002). Livable Cities? Urban Struggles for Livelihood and Sustainability, California: University of California Press Ltd.

Gershenson, C. (2011).' Living in Living Cities', C3 Report 2011.09. http://arxiv.org/abs/1111.3659

Girardet, H. (1999). 'Creating Sustainable Cities', Devon, UK: Green Books for The Schumacher Society

Girardet, H. (2004). 'Cities people planet', liveable cities for a sustainable world. West Sussex, UK: John Wiley & Sons Ltd.

Hadi, A.S., S. Idrus, A.H.H. Shah and A.F. Mohamed, (2007). 'Shaping Livable Cities for Malaysia', In Modelling Local Sustainability: Developing a Conceptual Framework for Sustainable Development, Hadi, A.S., S. Idrus, A.H.H. Shah, A.F. Mohamed and N.M. Hamim (Eds.). LESTARI, Universiti Kebangsaan Malaysia, Bangi, pp: 11-18.

Hanczyc,M. (2011) 'The line between life and non-life', TED Videos, www.ted.com/talks/martin_hanczyc_the_line_between_life_a.

Hadi .I.S, Shah.A, Mohamed.A, (2008), 'Spatial Urban Metabolism For Livable City', In Proceedings Of Blueprints For Sustainable Infrastructure Conference. December 9-12, 2008. Auckland, New Zealand

Lakhina, (2011), 'Cities as living systems', The disaster library, http://www.disasterdiary.org/17/post/2011/11/cities-as-living-systems-by-shefali-j-lakhina.html

Land, K. (1996). 'Social indicators and the quality of life: Where do we stand in the mid-1990s?' SINET: Social Indicators Network News 45:5-8.

Leung, M.(2004), 'KCRC Linear City Research Project. Module 4.1: Precedents/International Examples', Final Report April 13, 2004

Ling,C, Hamiliton, J. and Thomas,K. (2007) What makes a city liveable? In http://crcresearch.org/case-studies/case-studies-sustainable-infrastructure/land-use-planning/what-makes-a-city-liveable

Marans.R. W and Stimson. R. J (Eds.) (2011), 'Investigating Quality of Urban Life: Theory, Methods and Empirical Research', Social Indicators Research Series, Volume 45, Springer, Dordrecht, pp. 453.

McGee, T. (1971) 'The Urbanization Process in The Third World' – Explorations in search of a Theory. 3rd edition. London: Bell & Hyman Limited

Mercer Human Resource Consulting (2011) 'Quality-of-Living Reports 2011' Information available: http://www.mercerhr.com

Mitchelle, (2007) 'Intelligent cities', Inaugural lecture of the UOC 2007-2008 Academic Year, uocpapers, e-journal of knowledge, iss. 5 (2007) | ISSN 1885-1541 http://uocpapers.uoc.edu

Myers, D. (1988). 'Building knowledge about quality of life for urban planning' Journal of the American Planning Association Vol 54, pp 347-358

New York Times (2010) 'The Best Place to Live?' New York Times May 27th 2010

Oktay, D. (2012)'Editorial: Quality of Life in Cities', Urban Design and Planning. Vol 165 (Issue DP 3)

Pacione M (2005) 'Urban Geography: a Global Perspective' Routledge Publishing and Co, New York, USA.

Partners for Livable Communities (2000) 'The Livable City: Revitalizing Urban Communities' New York: McGraw-Hill, Inc.

Salzano, E. (1997) 'Seven Aims for the Livable City' in Lennard, S. et.al (eds). Making Cities Livable. International Making Cities Livable Conferences, California: Godolier Press.

Southworth,M. (2007) 'Morphology of the Liveable City' , In: Urban Forms and Metropolitan Spaces April 2-3 2007, Roma, Università degli Studi di Roma Sapienza, Facoltà di Ingegneria, BERKELY .IT

Timmer, V. and Seymour, N. (2006), 'The Livable City'. The World Urban Forum 2006 – Vancouver Working Group Discussion Paper. International Centre for Sustainable Cities

United Nations Centre for Human Settlements (1996) 'Habitat Agenda- The Global Plan of Action' Adopted by the International Community at the Habitat II Conference in Istanbul, Turkey.

UN Habitat (2010) 'State of the World's Cities Report' 2010/2011', London: UNHABITAT

Weinstock, M. (2011), 'The Metabolism of the City: The Mathematics of Networks and Urban Surfaces' . Archit Design, Volume 81, Issue 4, pages 102–107 doi: 10.1002/ad.1275