



Livability Assessment through Literature Review: A Comparative Study between Dhaka and a South-East Asian City

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ABSTRACT

Livability is considered as a major concern in this age of rapid urbanization especially in the developing countries, from both urbanism and housing perspective. Housing is one of the basic needs of human for which the residents often ask the question; whether the housing they live in fulfills their requirements or not. The requirements include the quality of life, well-being, affordability, community interaction, public facilities etc. which have a great impact on resident satisfaction while assessing livability in both city and neighbourhood level. The south Asian cities are at the bottom of the livability index whereas Singapore, located in South-East Asia, is considered as the best Asian city in the Global Livability Ranking by EIU's (Economist Intelligence Unit) in 2015. In addition, Kuala Lumpur, the capital of Malaysia is a notable Asian city which is renowned for better livability. On the other hand, the majority of South Asia's cities still face high poverty, extremely poor housing conditions, and poor livability in spite of rapid urbanization. Dhaka, the capital of Bangladesh, is one of the world's most densely populated cities which is ranked as one of the least livable cities in the world (ranked 139 out of 140 cities). In this paper, before starting the livability assessment comparison between a most and least livable city, at first a literature survey will be done to understand livability, the factors, livability ranking and its impact on housing sector. After that 3 articles will be reviewed to compare the livability between Kuala Lumpur and Dhaka from both subjective and objective perspective. To understand the context of these 2 cities, some literature survey will be done prior to the article review as context highly impacts the livability condition. The aim of this paper is to find out which factor of livability is the most important for resident satisfaction and how does it vary with the context. The findings will help the architects and planners to identify the intervention areas in the least livable cities to make them more livable.

1. Introduction

The concept of livability varies according to different urban context and housing systems. The livability condition has been broadly defined as “the well-being of a community and represents the characteristics that make a place where people want to live now and in the future”.

On the other hand, urbanism can be described through two major theories such as “urban as ecological

system” and “urban as cultural form” (Mowla, 1999). Along with urbanism, urban development also takes place which results in social, behavioral and physical consequences, especially in housing sector (Rashid, 2019). Housing is closely connected with the community and it reflects how a day to day life is lived (Rashid, 2020; Rashid and Khan 2021). So, to achieve social sustainability in housing, improving livability of the community is a major concern.

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2. Aim and Objectives

The aim of this paper is to understand the livability condition of some south Asian and south-east Asian cities along with Dhaka based on the livability indicators and also to find out the most important indicator for resident satisfaction.

The objectives are:

a) To discuss the basic of livability and its relationship with sustainability and neighbourhood with through literature review

(b) To identify the livability condition in south compared to south East Asia and other developed cities

(c) To assess the livability condition of Dhaka city in both city and neighbourhood level from article review

The outcome of this paper will eventually help the designers to identify the intervention sectors for improving livability in city and neighbourhood level. It will also enlighten the planners, architects, policy makers and also the community people to understand the importance of improved livability for achieving social sustainability as well as to keep pace with the rapid urbanization.

3. Methodology

In this paper, before starting the livability assessment comparison between a most and least livable city, at first a literature survey will be done to understand livability, the factors, livability ranking and its impact on housing sector. After that 3 articles will be reviewed to compare the livability between Kuala Lumpur and Dhaka from both subjective and objective perspective. To understand the context of these 2 cities, some literature survey will be done prior to the article review as context highly impacts the livability condition.

4. Understanding Livability

4.1. What is Livability

Livability has been linked to a range of factors such as quality of life, health, sense of safety, access to services, cost of living, comfortable living standards, mobility and transport, air quality and social participation (Bishop and Syme, 1995; Howley et al, 2009). In case of urban planning and housing sector, livability is defined as an urban condition derived from interactions with the urban environment which actually expresses the level of satisfaction of the residents towards their living environment, both from objective and subjective point of view (Haarhoff et al., 2016).

4.2. What is Livability Ranking

The ranking of cities in recent times has become a regular feature to analyze why certain cities are at the top of the livability index while others struggle to achieve a respectable ranking. A ranking of livable cities is based on several indicators ranging from health infrastructure to educational facilities and environmental comfort levels.

Livability Index:

There are different livability index systems such as: the Economist, Mercer's index, GLCI Asia, EIU rating etc. In this study, the EIU livability index rating will be used (Das, 2017).

Ranking	The Economist (2016)	Mercer's Index (2016)	GLCI Asia (2012)
1.	Delhi (India)	Colombo (Sri Lanka)	Ahmedabad (India)
2.	Mumbai (India)	Hyderabad (India)	Chennai (India)
3.	Kathmandu (Nepal)	Pune (India)	Bangalore (India)

Figure 01 - Top Three livability/ QoL rankings of South Asian cities

Livability indicator:

The EIU (Economist Intelligence Unit) livability index rates each city on a scale of 0-100 based on 30 indicators and in five categories: stability (25%), healthcare (20%), culture and environment (25%), education (10%) and infrastructure (20%).

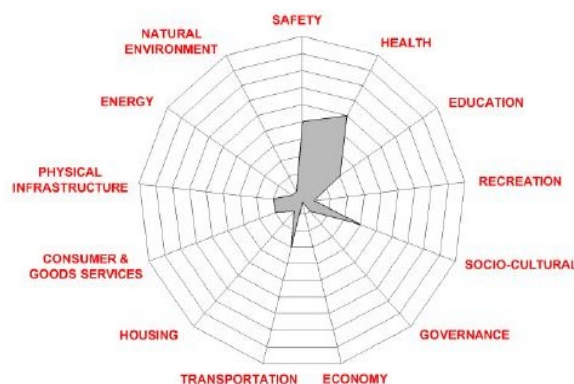


Figure 02 - EIU ranking Index- Distribution Pattern

4.3. Relationship of Livability with Sustainability

Livability is closely connected to the sustainability of a city. Cities will not be truly sustainable unless they are considered as high-quality places where people want to live (Jenks, et al, 2000).

Livability in high-density locations is related to factors other than residential density, which may not be unique to dense locations, such as environmental quality, traffic and transport, presence of air and noise pollution,

sense of community involvement, availability of services and housing options (Howley et al, 2009). Housing is a very essential component of the built environment which has a strong relationship with social sustainability and livability is one of the two Indicators for quantifiable components of the social sustainability of housing (Chiu, 1999). Improved livability does not necessarily mean larger space and more facilities. It may refer to a shelter which is healthy, safe, affordable and secure, within a neighbourhood with provision for piped water, sanitation, drainage, transport, health care, education and child development.

4.4. Relationship of Livability with Neighbourhood

A livable neighbourhood is one that provides its residents and users with essential services, well-functioning uses, and life enriching amenities within the immediate place. Great livable neighbourhoods operate holistically on social, economic and environmental dimensions to provide secure and fulfilling life experiences. While neighbourhood livability is a complex multi-layered concept of many attributes, in its most basic form livability comes down to good living.

At the neighbourhood (NGD) scale, the livability benefits are: clustered facilities with easy accessibility, open spaces for civic purposes, pedestrian friendliness through well connected sidewalks and streets, enhanced mobility and environment, stronger social interaction, improved public safety and health benefits (Jenks et al, 2000; Chiu, 2008, 2012; Jenks et al, 2000).

The Neighborhood livability dimensions include: density, Walkability and pedestrian-orientation, Transportation availability and mode choice, Land use mix and distribution, Housing choice and affordability, Leisure use spaces & opportunities, Special Amenities and place qualities etc. which helps to make a great neighbourhood.

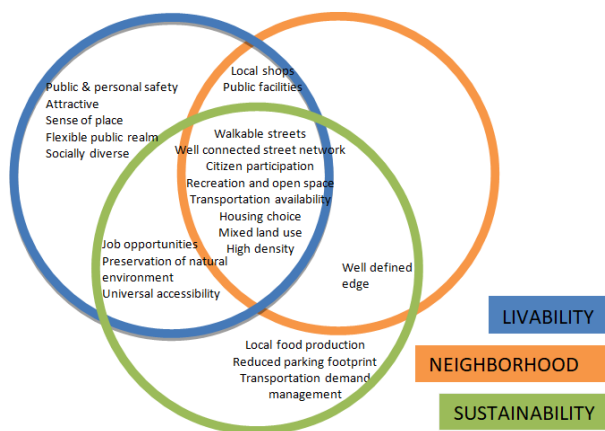


Figure 03 - Conceptual model of livability, sustainability, neighbourhood: common criteria

Concepts of livability, sustainability, and concept of neighbourhood sometimes overlap each other and there is significant similarity among them. Although each of them has its special criteria and addresses some defined issues, in a profound view their overlap could be recognized.

5. Understanding the Context

5.1. Macro Level: Livability in south and south-east Asia

In the EIU's 2015 Global Livability Ranking, the city of Melbourne in Australia provides the best living conditions, followed by Vienna in second and Vancouver in third. European and North American cities dominated the top 10 spots. Asia has a wide ranging variation in living quality. Singapore scored as the best Asian city to live with a 49 overall ranking& Kuala Lumpur was at 73. South Asian cities were largely at the bottom of the list. While Delhi (the federal capital of India) did better among its counterparts, Dhaka (the capital of Bangladesh) remained nearly at the bottom in the EIU's 2015 ranking.

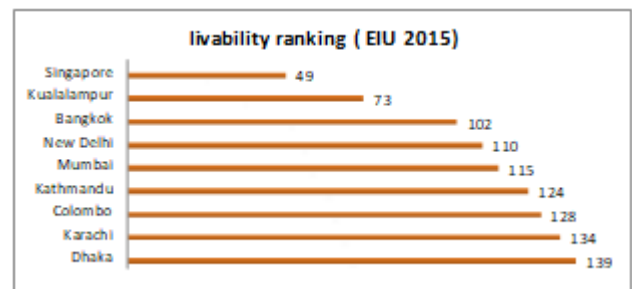


Figure 04 - Livability ranking (EIU 2015) of South Asian cities

5.2. Micro Level: Urban Condition in Dhaka and Kuala Lumpur

The Dhaka Metropolitan Area is the economic and political center of Bangladesh and has been the country's engine of economic growth and job creation. Dhaka's role as a commercial hub has led to rapid population growth, with the population increasing 10 times in 40 years to about 18 million in 2015 (Mason and Vasquez, 2018).

Today, more than one-third of Bangladesh's urban population lives in Dhaka, one of the world's most densely populated cities with 440 persons per hectare – denser than Mumbai (310), Hong Kong, and Karachi (both 270). The United Nations report (2015) projected that Dhaka would become the sixth most crowded city by 2030 with a population of over 27 million. It is found that the excessively high population and building density and the uncontrolled horizontal densification process are posing severe problems to the livability of Dhaka as pointed out

by Ahmed (2011), as well as widely reported in the mass media.

Kuala Lumpur, the capital city of Malaysia is ranked 73th in the 2015 World Livable City Ranking by the Economic Intelligence Units (EIU). The perception of the residents is the major contributing factor in creating a livable place and environment because they are the real people who live, work and play in the city itself.

To assess the sustainability of Kuala Lumpur city, a study was conducted based on the response of the community given to the three components that are used to measure urban design quality, namely the sense of place, sense of belonging and appreciation towards cultural and heritage value. Out of the three components, appreciation towards the cultural and heritage value scored the highest happiness level whilst sense of place scored the lowest.

6. Comparative Review of Livability

To know the different aspects of livability and how it varies with the context, a comparison of livability is done between a south and south-east Asian city. As Southeast Asian cities hold a higher position in livability index than the south Asian developing cities, in this paper through this comparative study we will try to find out which can be the intervention areas to improve livability in the south-Asian developing cities. We will also find out which factor of livability has greater impact on resident satisfaction and how does it varies according the context.

For the comparison, the following 2 articles are reviewed and compared:

Article 01: *Livability in dense residential neighbourhoods of Dhaka*

Article 02: *Residents' perception on livability in Affordable Housing in Malaysia*

In both these articles the livability assessment is done from neighbourhood level to know the residents satisfaction on overall livability based on some factors. The factors and indicators used are almost similar for both the articles.

6.1. Aim

The aim of these 2 articles are slightly different from each other. The 1st article is focused on the impact of planning on livability in high density neighbourhood whereas the 2nd article focuses on the impact of affordability of the residents on the overall livability. As both planning and affordability are one of the major criteria for housing design, the comparative study will be done considering both the issues.

6.2. Methodology

Both the research articles are based on questionnaire survey of the neighbourhood residents and also a five point likert scale is used to measure resident satisfaction for both the cases. Structured questionnaire format is used so that the respondents can rate the livability in Likert scale (1 for "unimportant" and 10 for "very important"). Initially there are some questions related to the demographic information such as: age, gender, income, household income, education level, employment status, tenure status and length of residency in the neighbourhood.

The 1st article purposive sampling method is used to select the respondents of the survey who are able to share their experiences in the neighbourhood from general perspective. Special need user group, young people or illiterate people are excluded in the sampling process. On the contrary, random sampling method is used for the 2nd article.

6.3. Case Study Area Selection

In the 1st article, the case study areas are selected based on the planning issues for Dhaka city as the aim of the article is to find the relationship of neighbourhood planning with resident satisfaction.

On the other hand, 2 cities are selected for the study where Kuala Lumpur is highly urbanized and Johor Bahru is still urbanizing. Some of the Neighbourhood areas are selected under these cities to find out the relation of affordability issue with livability.

Table 01- Case Study area (Neighbourhood) in Dhaka and Kuala Lumpur and Johor Bahru

<i>SOTUH ASIA_ BANGLADESH</i>		
CITY	NEIGHBOURHOOD	remarks
Dhaka	1. Agamasi Lane	Unplanned
	2. Khilgaon Taltola	
	3. Monipuripara	
	4. Dhanmondi	Planned
	5. Sector 6, Uttara	
<i>SOUTH-EAST ASIA_ MALAYSIA</i>		
CITY	NEIGHBOURHOOD	remarks
Kuala Lumpur	1. Batu Caves	Highly urbanized
	2. Selayang	
	3. Sentul	
Johor Bahru	4. Pasir Gudang	urbanizing
	5. Larkin Skudai	

6.4. Key Issues

After selecting the case study area, the key issues for livability assessment have been selected based on the previous literature review for both the articles.

The issues are similar except one addition that is workplace which is addressed in the 2nd article because the affordability issue has an impact on the location and quality of workplace.

As we will compare the articles from a general perspective, so workplace issue will be excluded from the comparative assessment.

Table 02- Key Issues for Livability Assessment

CITIES	DHAKA	KUALA LUMPUR & JOHOR BAHRU
	KEY ISSUES	Transport
Community facilities		Public Amenities
Open space and public space at the street corners		Public Amenities (public space)
Sense of community		Community
Sense of safety		safety & security
Dwelling space		Housing Issues
--		workplace

6.5. The Indicators

Under each of these issues, some indicators are selected to assess resident satisfaction through a questionnaire survey. The indicators under each of the 6 issues are mentioned in table 03 to 07.

For public transport, the indicators are quite similar for the cases. But in the 2nd article there is no mention about the waiting time for any public transport which is considered in 1st article for Dhaka city.

Table 03- Indicators for public transport

Public transport indicators	
DHAKA	KUALA LUMPUR & JOHOR BAHRU
Modes used	<ul style="list-style-type: none"> using public transport child using school buses taxi easily come to home
Duration of waiting time	--
Average distance to the public transport station	near bus station
Residents' satisfaction	transportation problem to school

Both the public amenities and open space are considered under the community facilities indicators. In the 2nd article only the existence of community facilities are mentioned in broad category whereas in the 1st article the existence, the distance of the facilities from dwelling space and transport used are also mentioned.

Table 04- Indicators for community facilities

	Community facilities indicators	
	DHAKA	KUALA LUMPUR & JOHOR BAHRU
Public amenities	Provision nearby	staying near wet market grocery, public library, shopping complex nearby
	Average distance to the nearest facilities	
	--	internet coverage
	Transport used	--
	Residents' satisfaction	--
Open space and street corners	Average distance to the nearest open space and street corners	Existence of playground and sports facilities
	Transport used	
	Residents' satisfaction	

In table 05, the sense of community indicators are mentioned where for Dhaka it is mostly from quantitative point of view and for Kuala Lumpur and Johor Bahru, it's from qualitative perspective.

On the other hand, the indicators regarding safety issue was more detailed in case of Kuala Lumpur and Johor Bahru than in Dhaka.

Table 05- Indicators for sense of community

Sense of community indicators	
DHAKA	KUALA LUMPUR & JOHOR BAHRU
Frequency of using community facilities, open spaces and public spaces per week	--

Number of social contacts on street and other public spaces in the last month	--
Number of communications (chatting), while meeting each other in last month	--
Self-reported involvement in various community activities at in last 12 months	part of any association or any community club
	<ul style="list-style-type: none"> neighbourhood friendly are they helpful do you like them face any problems

Table 06- Indicators for sense of safety

Sense of safety indicators	
DHAKA	KUALA LUMPUR & JOHOR BAHRU
Perceived safety during day-time and night-time	is safe during the night
Residents' satisfaction	trusting neighbours
--	is people in the area involved in crime/ petty etc.
--	near police station/ patrol pump
--	any case of kidnapping

Finally dwelling space size and residents satisfaction are very important factors which is mentioned in both the articles.

Table 07-Indicators for Dwelling space

Dwelling space indicators	
DHAKA	KUALA LUMPUR & JOHOR BAHRU
• Size of dwelling unit	<ul style="list-style-type: none"> house too small in size is your home crowded is enough for family members
• Residents' satisfaction with the dwelling space	<ul style="list-style-type: none"> would you like to keep living there quality of house_ acceptable or not
	living in city/town

	having enough parking space
	near open space, shops, laundry etc.

7. Findings

For both the articles the residents satisfaction are measured based on the indicators through the questionnaire survey.

The satisfaction level is measured on a Likert Scale (on a scale of 5 for article 1 and on a scale of 10 for article 02). The results are shown in table 08 and table 09.

Table 08- Residents satisfaction in Dhaka

KEY ISSUES	RESIDENTS' SATISFACTION_ average (out of 5 likert scale)	Rank
transport	2.96	low
Community facilities	3.2	medium
Open space and public space at the street corners	2.82	lowest
Sense of community	2.92	low
Sense of safety	3.28	high
Dwelling space	3.28	high

In the 2nd article there were several questions under the 6 key issues to measure the residents' satisfaction in a 10 point Likert scale. At first an average satisfaction score is measured for each issue, then the score is converted to a 5 point scale so that it can be compared with the satisfaction level of the residents of Dhaka.

Table 09-Residents satisfaction in Kuala Lumpur and Johor Bahru

KEY ISSUES	RELATED QUESTIONS	RESIDENTS' SATISFACTION (out of 10 likert scale)	RESIDENTS' SATISFACTION_ average	
			Out of 10	Out of 05
Transport	Access to public transport	8.53	8.53	
Community facilities	Access to shop	8.74	8.64	

	Access to leisure	8.16		
	Access to childcare	8.5		
	Access to health	9.01		
	Access to school	8.55		
	Availability of health fitness and others	8.86		
Open space and public space at the street corners	Access to open green public space	8.73	8.69	
	Presence of environmental problems	8.65		
Sense of community	Desirability of neighbourhood	8.95	8.7	
	Establishment of community association	8.45		
Sense of safety	safety	9.22	9.22	
Dwelling space	Quality of housing	8.87	8.64	
	Waste management	8.78		
	Energy efficiency of housing	8.26		

Finally a comparison is done between the 2 areas which can be seen in table 10 and figure 05.

Table 10-Comparison between the satisfaction level of the residents in Dhaka, Kuala Lumpur & Johor Bahru

ISSUES	transport	community facilities	open space	sense of community	sense of safety	dwelling space
DHAKA	2.96	3.2	2.82	2.92	3.28	3.28
KUALA LUMPUR & JOHOR BAHRU	4.27	4.32	4.35	4.35	4.61	4.32

From Figure 05, we can see that the overall livability in both the cities of Malaysia is greater than Dhaka city for all the 6 Factors.

For the cities of Malaysia, the safety factor can be seen as the most important issue while assessing the livability and the satisfaction level is also higher.

On the other hand, the satisfaction rate is higher for both sense of safety and dwelling space in case of Dhaka city.

But in Malaysia for dwelling space and community facilities the satisfaction level is the 2nd lowest. The reason is in a developed country like Malaysia, with the increasing affordability people like to increase their living standard, so whenever they get a chance for a better living and achieve the affordability, they like to move to that place. Whereas in Dhaka city, despite many difficulties and high density sense of belongingness is a more important factor in case of dwelling space rather than the size and other qualities of the space.

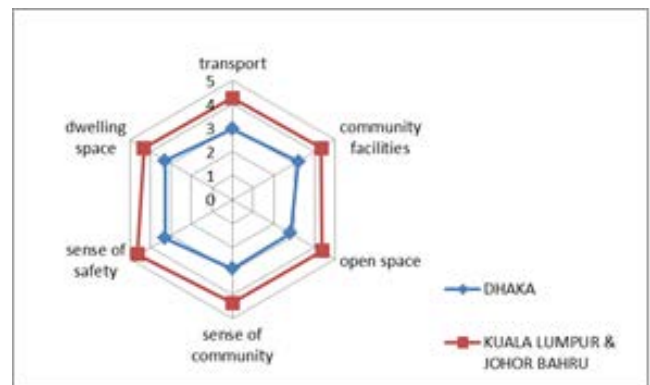


Figure 05- Comparative analysis of residents; satisfaction between Dhaka and Kuala Lumpur, Johor Bahru

8. Conclusion

From this paper, it is observed that the livability condition of south Asian cities is comparatively lower than the Southeast Asian cities in terms neighbourhood level. The goals that need to be achieved to obtain social sustainability in housing and to build a sustainable city are still on the process for south Asian cities. So this condition affects the livability of the residents of those cities as livability is closely connected with sustainability and neighbourhood. It can be noted that, the Southeast Asian countries such as Singapore and Kuala Lumpur have achieved better livability over the past few years by making their cities sustainable. Despite of being a planned city, in Kuala Lumpur, people are more content with cultural value rather than the sense of place in the city level whereas in neighbourhood level social factors are least important for them.

From the livability study of residential neighbourhoods of Dhaka it is observed that it is not only the planning but also other factors such as transportation, sense of community, open space etc. have significant effect to improve livability.

It is suggested that the government should propose

density zones, prevent the encroachment of the open spaces and provide better facilities for community interactions to improve neighbourhood livability of Dhaka as well as taking necessary steps to make the city sustainable to keep pace with the rapid urbanization.

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