

Residents' Perception of Green Spaces for Urban Sustainability: A Case Study in Dhaka City

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Abstract

There has been growing recognition among both the academia and practicing quarters regarding the significance and implications of urban green space for wider sustainability of city environments. Among other benefits, for example, green spaces in the urban areas can reduce noise pollution and improve air quality; and thus, contribute to overall urban sustainability. Notwithstanding this recognition and importance, however, academic research on the subject has been strikingly limited especially in the context of Bangladesh. In this backdrop, this study aims to examine city dwellers' perception about green spaces, and explore the relationship between green space and urban sustainability in selected areas of the Dhaka city. Based on such tools as official documents review, consultation of relevant secondary literature, and a social survey - targeting some 100 residents from Dhaka North and South City Corporations for in-depth interviews - the research attempts to capture the existing status and utilization condition of urban spaces in the study areas. The findings suggest that current state of green space is not in 'at all satisfactory condition' as perceived and experienced by the respondents. The study further alludes to city dwellers' low level of satisfaction with the existing modalities of utilization of green spaces in Dhaka. City dwellers' perception of inadequate green spaces has serious negative social implications too (e.g. detrimental effect on creating strong family bondage, inadequate social interactions). Insights from this study may assist city authorities and national government to create more green spaces and formulate policies for better utilization of these green spaces with a view to enhancing urban livability in Dhaka city.

Keywords: Green space, City, Urban, Social implications, Sustainability

Prologue

The significance and implications of urban green space for wider sustainability of city environments are now unequivocally established among both the academic and practicing quarters. Green spaces are known as 'green lungs' of the city which help to provide mental and physical health among the people (Khan 2014). Among other benefits, for example, green spaces in the urban areas can reduce noise pollution and improve air quality; and thus, contribute to overall urban sustainability.

Most cities in the developing countries typically face many challenges; for

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instance, air, water and noise pollution; lack of green field and space for physical exercise and relaxation; inefficient household waste management; unexpected onslaught of urban calamities - which forces city dwellers to undergo additional mental stress along with city life pressure. In this context, urban development and sustainability have become critical issues of concern for the city stakeholders – from regulators to city inhabitants. City authorities have prime responsibility to keep balance between urban development and sustainability for the present and future generation. The provision of adequate green spaces is considered as key element for ensuring urban sustainability. More specifically, green spaces provide walking, cycling, socializing opportunities that help to mitigate daily stress. According to Chowdhury & Faruqui (1989), residents get the social benefits of urban green space in terms of recreational opportunity, mental well-being, aesthetic enjoyment, and social bonding. Thus, urban green space is playing a vital role on social issues in the mega cities. According to Wheeler & Beatley (2014), urban green space provide residents economical, ecological and social equity benefits that turn the city into sustainable.

Generally, green spaces are not only used for ecological and environmental balance but also social facts like balanced mental growth of city dwellers. Green space is a combination of garden, parks, green grounds, natural vegetation, roof top gardening, playing field, green corridors (Verdú-Vázquez et al., 2017). Sustainability focuses on meeting the needs of present without compromising the ability of future generations to meet their needs (Santillo 2007). According to Alberti (1996), urban sustainability is essential where a city uses natural resources and release emissions and wastes.

Dhaka is one of the fastest expanding cities where more than 17 million people are living. The city has grown with wanton destruction of green cover, unexpected flooding, prolonged water logging, and air pollution owing to imbalanced urbanization (Islam et al. 2015). The State of Global Air Report (2017) ranked Dhaka city the second most air polluted city in the world. Pollution and mismanagement have decayed the city's fabric of sustainability. The provision of green spaces can prevent this decay and improve the quality of urban dwelling.

Notwithstanding this recognition and importance, however, academic research on the subject has been strikingly limited especially in the context

of Bangladesh. In this backdrop, this study aims to examine city dwellers' perception about green spaces, and explore the relationship between green space and urban sustainability in selected areas of the Dhaka city.

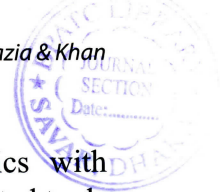
This study is significant for several reasons. First, although there have been some studies on economic and environmental aspects of green spaces, investigation into residents' perceptions with regards to social implications of green spaces for urban sustainability has been clearly limited. Secondly, the study may shed light on some ecological and social facts that city dwellers need to consider for improving urban green space - resulting in improved living atmosphere for them. Third, it may also provide valuable evidence and clues to the policy quarters (e.g. city authorities and the national and local government agencies) towards formulating effective policies and management strategies with a view to widen the green space in Dhaka city.

The Objectives and Methodology of the Study

The prime objective of this study is to examine the residents' perception of the study area about green space for urban sustainability with specific focus on social implications of green space. More specifically, it attempts to: (i) review the conceptual linkage between green space and urban sustainability; (ii) examine the respondents' perceptions about current status of the green space and level of utilization of the green space in urban areas; and (iii) explore social implications of green space for urban sustainability based on respondents' perception.

A total of 100 respondents were selected from the Dhaka City Corporation (both North and South) area by deploying a purposive snowball sampling technique. In selecting the respondents, the following criteria were considered: those who had been living in Dhaka for at least a decade; were capable of reflecting on changes over the years were given priority; and had demonstrated knowledge on the subject (i.e. the social implications of green space on urban sustainability). The structured survey questionnaire was sent to 100 respondents; of them, 78 respondents duly completed the exercise (response rate was 78%).

The data collected from the survey were analyzed using the Statistical Package for Social Science (SPSS version 20) to enhance the accuracy of the result. A 5.00 point scale was used to capture the respondents'



(citizens') perception regarding issues, and descriptive statistics with weighted average score was used to find out rank of the most expected tools for enhancing green space. Additionally, a cross checking mechanism was deployed to ensure the quality of data.

The respondents' (78 in total) were aged between 20 and 43 years. Out of the 78 respondents, 69.2% were male and the remaining (30.8%) were female. 57.7% respondents were drawn from the Dhaka North and 42.3% Dhaka South city corporations. The (respondents') duration of living in Dhaka spanned between 10 and 39 years.

Besides the above survey, other methods included secondary literature review (mainly peer reviewed journal articles, book chapters, selected web-based public domain information), and official document survey (relevant policy documents, working papers of the studied City Corporations).

Green Space and Urban Sustainability

Urban centers in developing countries are increasingly facing varied tangible and intangible effects of (often unplanned) urbanization process such as lack of balancing atmospheric oxygen, emission of carbon dioxide, lack of flood control, and lack of cleansing of return water flow, and physical and mental stress (Jim & Chen 2006). As argued by (Khan 2014), urban sustainability is useful for urban inhabitants for two simple yet vital reasons: first, it provides quality of air, water and waste management; second, it creates environmental and ecological balance in the cities. Green space constitutes the key component for any urban sustainability.

There is no universally accepted definition of 'green space'; however, one popular view defines green space as those lands which include both cultivate land such as agricultural areas, crop fields, fallow lands and vegetation cover like deciduous forest, mixed forest lands, palms, conifers, shrubs, and others in the context of Bangladesh (Byomkesh et al. 2012).

In one sense, the provision of green space is a human desire for getting the better urban ecosystems, sustainable development, environment quality and healthy life as well (Jim & Chen, 2006). The multifarious (including health, environmental, social and economic) benefits of urban greening are now proven, and extensively cited in the literature (see, for example, Qureshi et al. 2013; Shuvo & Hakim 2013).

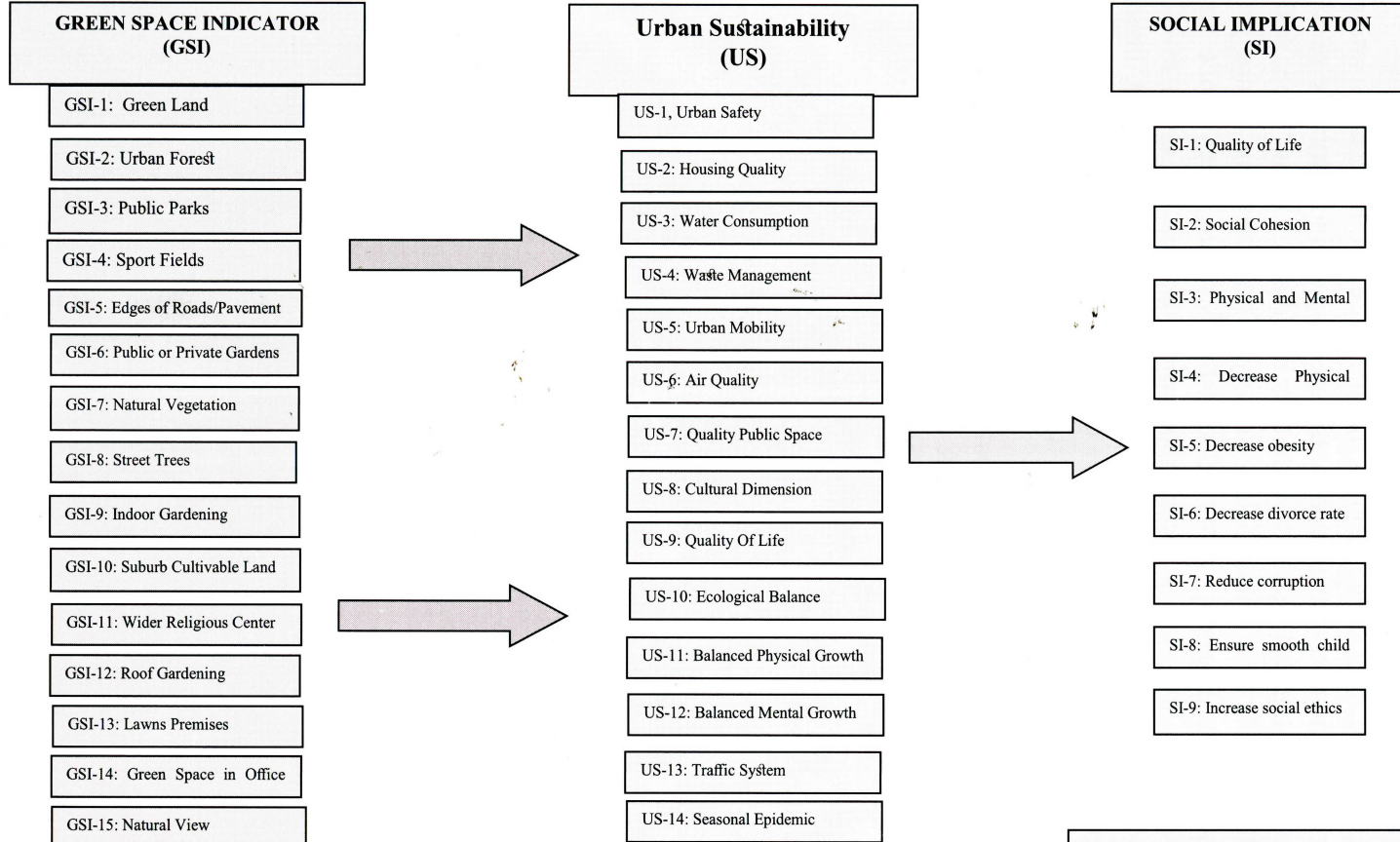
(Ehnert et al. 2018; Fastenrath & Braun 2018; McDonald et al. 2009; Zhang & Li 2018 and long term investment especially by the local government (Infobase 2007).

Based on the above review of literature, authros have attempted to conceptualize and explain how the green space indicators are related to the urban sustainability, and how do they implicate on social issues in the urban family life and wider urban society. The following figure presents a schematic diagram on the relationship between green space and urban sustainability and its social implications among the urban dwellers. For example, some green space indicators - such as green land, urban forest, public parks, sport fields, edges of roads, public or private gardens, natural vegetation, street trees - lead to the achievement of unban sustainability like quality of life, quality of air, water and waste management, environmental and ecological balance(Gren & Andersson 2018; Khan 2014; Qureshi et al. 2013; Wheeler & Beatley 2014; Zhang & Li 2018; Zhou & Parves Rana 2012) which further produce social benefits.

Fig 1: A conceptualization of the relationship between urban sustainability and green space.

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Source: Based on the literature review

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Green Space for Urban Sustainability in Dhaka City: An Overview

As the preceding literature on urban sustainability suggests that green space is essential element for the urban environment and has greater impact on life of city dwellers. Once upon a time, Dhaka city was famously dubbed as the 'Venice of the Orient' for its wide open spaces; but the scenario has changed over time (Khan, 2014). Situated on the bank of the Buriganga, Dhaka (formerly known as 'Dacca') cherishes a long history since its establishment in 1772. The city has experienced booming population over the years (see Table 1).

Table 1: The population growth trend in the Dhaka city.

Year	Population *	Growth Rate (% per year)
1941	2,39,728	4.14
1951	4,11,279	1.28
1961	7,18,766	5.18
1974	20,68,353	9.32
1981	34,40,147	9.94
1991	71,24,730	7.55
2001	1,02,53,992	3.7
2011	1,51,23,293	3.96

Source: RAJUK(2016a)

In the recent decades, Dhaka has been one of the fastest growing cities in the world (Islam et al. 2015). Approximately 17 million people live in the area of 350 square kilometers. The rapid urbanization coupled with the population boom have led to the gradual demolition of open space like parks, vacant lands and green areas (Bymokesh et al., 2012; Chowdhury & Faruqui 1989; Infobase 2007) which created such undesired environmental reactions as noticeable rise in the surface temperature, excessive rains, acid rains, and extreme dust in the air. Urban green areas in Dhaka have rapidly shrunk in the recent decades and resultantly, residents have been experiencing a stressful and unhealthy life; put differently, as (Khan, 2014) has rightly argued, the scarcity of open or green space has made the city unsustainable to a great extent. Table 2 shows the gradual reduction of green space over the years between 1975 and 2017. The highest rate (i.e. 20.8%) of loss of green space in Dhaka occurred during the period 2000-2005. Modern Dhaka consists of two City Corporations (North & South) with 130 Wards. Currently, the Dhaka city has 54 registered parks and 11 playgrounds under the two City Corporations as opposed to the Dhaka City Structure Plan's suggested target of at least 20% green space of the total city area.

Table 2: Lss of green ares in Dhaka.

Year	Population	Growth Rate (% per year)
1975	18,626	
1988	14,818	20.4%
1999	12,966	12.5%
2005	10,009	22.8%
2012	8805	12.03%
2017	7768	11.78%
Sources: Byomkesh et al.(2012: 53) and Mundi		

The following table outlines the six major urban green spaces in Dhaka.

Table 3: The majur urban green spaces in Dhaka

	Name of the Open Space	Area (acre)
1	Sohrawardy Udyan	55
2	Ramna Park	58
3	North and South Plaz of National Assemby Buiding	95
4	Chandrima Udyan	77
5	Sohrawardy Udyan	120
6	Sohrawardy Udyan	
Sources: Khan (2014)		

Although somewhat limited, there have been some policy and operational efforts by the government towards widening the green spaces in Dhaka. The RAJUK, for example, has initiated such pilot programmes as 'Compensative Greening' and 'Long-Term Greening' (RAJUK 2016b); the effectiveness of these initiatives have been limited mainly owing to insufficient monitoring (Shuvo & Hakim 2013). Besides, many illegal and unplanned structures posed a challenge while implementing the urban greening programmes. With the stated aims of reversing the trend and serving the purpose of visual relief and buffering from building, the Dhaka Metropolitan Development Plan (DMDP) has been developed which proposes creation of urban forestry, parks, playgrounds, domestic gardens, roadside open spaces and other forms of urban vegetation (Islam et al. 2015).

Empirical Findings and Observations
Respondents' Perceptions about Current Status and Level of Utilization of the Green Space in Urban Areas:

This section, based on the survey data, presents the citizens' perceptions about current status and level of green space in Dhaka.

Adequacy of Green Space in Dhaka City:

All the respondents have generally stressed the crucial significance of green space for the sustainability of urban Dhaka, and considered green space as an ingredient to boost up the mental and physical health of city dwellers. Notwithstanding this recognition of the primal importance, however, most respondents reported inadequate provision of green space for meeting the standard living atmosphere in Dhaka (Fig 2).

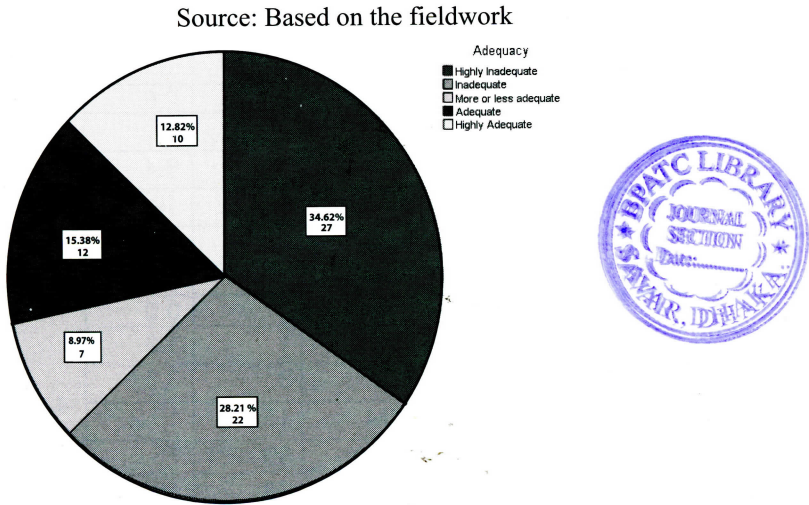


Fig 2: Adequacy of green space in Dhaka city

Necessities of basic elements of green space to maintaining sustainability in Dhaka city

The respondents were asked to find out the basic elements and necessities of green space to maintain sustainability in Dhaka city. The following table portrays the respondents' relevant perception with Weighted Average Score (WAS) and rank (R_k). According to the opinion of city dwellers, 'required number of trees' is highly necessary to maintain urban sustainability with weighted average score 4.85 out of 5.00 point scale. This is followed by

‘structured parks’ with 4.69 weighted averages. Then, ‘educational institutions with wider open space’ and ‘open space for social interaction’ are placed 3.5th with 4.58 weighted average score. ‘Natural views’ and ‘lawns attached with household premises’ stood 5th and 6th with weighted average score 4.49 and 4.24 respectively. ‘Flower garden’ has been the last position among the nine basic elements placed before the respondents in the structured questionnaire. All the nine basic elements of green space in questionnaire are rated as ‘significant’ since all the elements scored more than 4.00 in 5.00 point scale where 5.00 denotes ‘Most Important’.

Table 4 : Necessities of basic elements of green space to maintaining sustainability in Dhaka city

SL	Elements of green space	Scale	F _r	%	WAS	R _K
1	Educational institutions with wider open space	NAI	2	2.6	4.58	3.5
		UI	0	0		
		LI	5	6.4		
		IM	15	19.2		
		MI	56	71.8		
		Total	78	100.0		
2	Structured	NAI	0	0.0	4.69	2
		UI	1	1.3		
		LI	3	3.8		
		IM	15	19.2		
		MI	59	75.6		
		Total	78	100.0		
3	Required number of trees	NAI	1	1.3	4.85	1
		UI	0	0		
		LI	3	3.8		
		IM	2	2.6		
		MI	72	92.3		
		Total	78	100.0		
4	Lawns attached with household premises	NAI	0	0	4.24	6
		UI	2	2.6		
		LI	15	19.2		
		IM	23	29.5		
		MI	38	48.7		
		Total	78	100.0		

5	Religious concentration center with secured walk path (Pavement)	NAI	0	0	4.22	7
		UI	1	1.3		
		LI	17	21.8		
		IM	24	30.8		
		MI	36	46.2		
		Total	78	100.0		
6	Offic premises with green areas	NAI	1	1.3	4.18	8
		UI	4	5.1		
		LI	12	15.4		
		IM	24	30.8		
		MI	37	47.4		
		Total	78	100.0		
7	Open space for social interaction	NAI	0	0.0	4.58	3.5
		UI	2	2.6		
		LI	4	5.1		
		IM	18	23.1		
		MI	53	67.9		
		Total	78	100.0		
8	Natural views	NAI	0	0	4.49	5
		UI	4	5.1		
		LI	5	6.4		
		IM	18	23.1		
		MI	51	65.4		
		Total	78	100.0		
9	Flower garden	NAI	0	0.0	4.14	9
		UI	4	5.1		
		LI	5	17.9		
		IM	18	34.6		
		MI	51	42.3		
		Total	78	100.0		
Note:5= Most Important (M), 4=Important(IM),3= Less Important, 2=Unimportant(UI, 1=Not at All Important (NAI), Fr=Frequency, Weighted Average Score (WAS), R _k =Rank						

Source: Based on the fieldwork

Level of satisfaction regarding the current status of green space in Dhaka city

This study tried to understand residents'. Table 5 presents the respondents' views on the level of satisfaction about current status of green space in

Dhaka city. Among the nine elements of green space, the respondents have shown their highest level of satisfaction on 'educational institutions with wider open space' where weighted average score 2.44 out of 5.00 point scales with rank one. In contrast, 'flower garden' ranked last on the satisfaction scale. The 2nd and 3rd were 'structured parks' and 'natural views' with weighted average 2.32 and 2.31 out of 5.00 point scale respectively. In general, all the green space elements are scored below 3.00 of 5.00 point weighted average score where 5.00 denotes 'highly satisfactory' and 1 'unsatisfactory'. This makes it clear that the current status of green space is not satisfactory to the City's residents.

Table 5: Respondents' level of satisfaction regarding the current status of green space

SL	Current status of green space	Scale	F _r	%	WAS	R _K
1	Educational institutions with wider open space	UNS	22	28.2	2.44	1
		MAS	27	34.6		
		SAT	12	15.4		
		MOS	7	9.0		
		HST	10	12.8		
		Total	78	100.0		
2	Structured	UNS	25	28.2	2.32	2
		MAS	27	34.6		
		SAT	12	15.4		
		MOS	4	9.0		
		HST	10	12.8		
		Total	78	100.0		
3	Required number of trees	UNS	33	28.2	2.14	6.5
		MAS	25	34.6		
		SAT	7	15.4		
		MOS	2	9.0		
		HST	11	12.8		
		Total	78	100.0		
4	Lawns attached with household premises	UNS	34	43.6	2.09	8
		MAS	24	30.8		
		SAT	7	9.0		
		MOS	5	6.4		
		HST	8	10.3		
		Total	78	100.0		

5	Religious concentration center with secured walk path (Pavement)	UNS	26	33.3	2.19	5
		MAS	28	35.9		
		SAT	14	17.9		
		MOS	3	3.8		
		HST	7	9.0		
		Total	78	100.0		
6	Offic premises with green areas	UNS	33	42.3	2.14	6.5
		MAS	23	29.5		
		SAT	9	11.5		
		MOS	4	5.1		
		HST	9	11.5		
		Total	78	100.0		
7	Open space for social interaction	UNS	30	38.5	2.27	4
		MAS	23	29.5		
		SAT	11	14.1		
		MOS	2	2.6		
		HST	12	15.4		
		Total	78	100.0		
8	Natural views	UNS	29	37.2	2.31	3
		MAS	22	28.2		
		SAT	13	16.7		
		MOS	2	2.6		
		HST	12	15.4		
		Total	78	100.0		
9	Flower garden	UNS	34	43.6	2.08	9
		MAS	23	29.5		
		SAT	10	12.8		
		MOS	3	3.8		
		HST	8	10.3		
		Total	78	100.0		
Note:5= High Satisfactory (HST), 4= Moderately (MOS), 3= Satisfactory (SAT), 2=Marginally Satisfactory (MAS), 1=Unsatisfactory (UNS), F =Frequency, a=Weighted Average Score (WAS), o =SD, R=Rank						

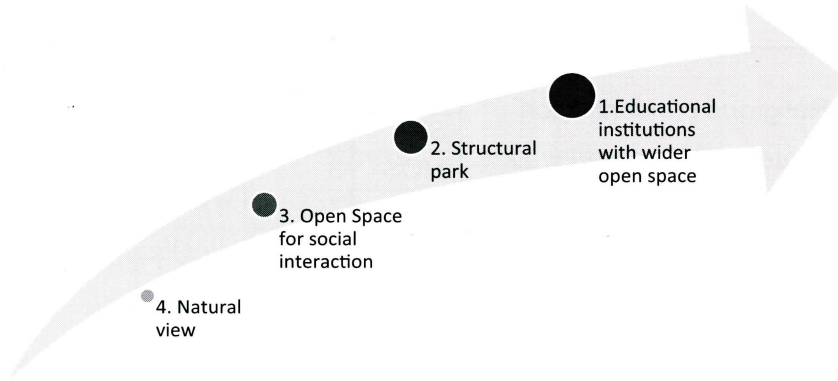


Fig 3: Respondents' preference of green spaces in their respective locality.

Source: Based on the fieldwork

To sum up the respondents' preferences and satisfaction about the elements of green space, it can be said that the city dwellers are expecting educational institutions with wider open space for better growing up of their children. One of the most expected elements structured parks where they can do physical exercise, enjoy green space, and take deep breath. However, many people cannot use structured parks because of long distance from home/office and lack security in the early morning and evening hours. Some of the respondents preferred open space for social interaction, where they could spend quality time with friends and family. Natural views also contribute to refreshing mind among the people.

Level of utilization of the stated green spaces in Dhaka city

The respondents were asked about the expected level of utilization of green space in Dhaka city and their preferences were in wide variance (Table 6). Among 11 levels of utilization condition of green space elements, according to the respondents, 'place for prayer' is highly usable with the weighted average score 3.51 out of 5.00 and it ranked the first. Lighting in the park and road also preferred where weighted average is 3.21 with the 2nd. Moreover, the residents of Dhaka city think that they can use rides/utilities for sports/playing for their refreshment and which is ranked 3rd with weighted average score 2.62. Moreover, path for exercise and clean areas are also preferred; however they cannot use it. Similarly, lay-by and seating places, which are most needed for spending quality time, are missing in this city. The city dwellers are facing serious problem with separate toilets for disabled people. Fountains with leisure bench are not in usable condition at all and this received weighted average score of 2.10 out of 5.00 scales.

level of green space because each element got below 3.00 point weighted on average, which is very low on 5.00 point scale. However, only prayer place/religious Centre received highest level of satisfaction among all elements with weighted average score of 3. Respondents' feedback highlights the importance to improve the current status of green space in Dhaka city to make their life less stressful.

Table 7: Respondents opinion about the level of utilization of the stated green spaces

SL	Elements of green space	Scale	F _r	%	WAS	R _K
1	Paths for exercise	NAU	22	28.2	2.59	4
		UNU	22	28.2		
		SIU	12	15.4		
		USA	10	12.8		
		HIU	12	15.4		
		Total	78	100.0		
2	Rides/utilies for sports/ playing	NAU	21	26.9	2.62	3
		UNU	22	28.2		
		SIU	14	17.9		
		USA	8	10.3		
		HIU	13	16.7		
		Total	78	100.0		
3	Foot message pavement	NAU	25	32.1	2.29	8
		UNU	25	32.1		
		SIU	12	15.4		
		USA	12	15.4		
		HIU	4	5.1		
		Total	78	100.0		
4	Path and road free areas	NAU	25	32.1	2.45	7
		UNU	22	28.2		
		SIU	11	14.1		
		USA	11	14.1		
		HIU	9	11.5		
		Total	78	100.0		
5	Lighting in the park and roar	NAU	4	5.1	3.21	2
		UNU	17	21.8		
		SIU	29	37.2		
		USA	15	19.2		
		HIU	13	16.7		
		Total	78	100.0		

6	Lots of lay- by and seating places	NAU	16	20.5	2.50	6
		UNU	33	42.3		
		SIU	10	12.8		
		USA	12	15.4		
		HIU	7	9.0		
		Total	78	100.0		
7	Barbecue and fire places	NAU	26	33.3	2.26	9
		UNU	19	24.4		
		SIU	21	26.9		
		USA	8	10.3		
		HIU	3	3.8		
		Total	78	100.0		
8	Clean areas	NAU	24	30.8	2.56	5
		UNU	24	30.8		
		SIU	9	11.5		
		USA	4	5.1		
		HIU	17	21.8		
		Total	78	100.0		
9	Separate toiles for disabled dwellers	NAU	39	50.0	2.18	10
		UNU	16	20.5		
		SIU	3	3.8		
		USA	7	9.0		
		HIU	12	15.4		
		Total	78	100.0		
10	Fountains with leisure bench	NAU	39	50.0	2.10	11
		UNU	16	20.5		
		SIU	3	3.8		
		USA	7	9.0		
		HIU	12	15.4		
		Total	78	100.0		
11	Place for prayer	NAU	39	50.0	3.51	1
		UNU	16	20.5		
		SIU	3	3.8		
		USA	7	9.0		
		HIU	12	15.4		
		Total	78	100.0		
Note:5= Most Important (M), 4=Important(IM),3= Less Important, 2=Unimportant(UI, 1=Not at All Important (NAI), F =Frequency, Weighted Average Score (WAS), R_k =Rank						

Obstacles to use green space by city dwellers

Distance between houses and green space is the common barrier to use green space, as reported by the residents surveyed. Most of the green spaces are far away from their office/houses with average distance of around 2.66 kilometer and with the highest distance of 12 kilometers. Some other important obstacles include use of green space by local political people, lack of security and social awareness, traffic congestion and unclean condition of space (Fig 4).

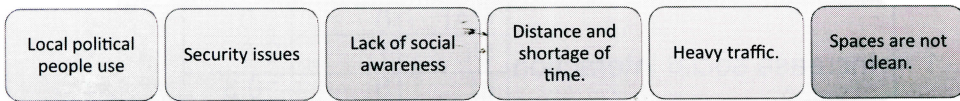


Fig 4: Obstacles for use green space

Source: Developed by the authors

Wider social implications of green space for urban sustainability based on respondents' perception in Dhaka city

Table 7, proffers a summary of the respondents view on social implications on human life owing to green spaces. In order to measure the 'social implications', this study developed and posed nine constituent elements of social implications to the respondents, and asked them to rate on a 4-point scale. The elements are:

- i) Increase social interaction within the society
- ii) Create strong family bondage
- iii) Increase awareness to make the city clean
- iv) Ensure smooth child growth
- v) Improve mental health condition
- vi) Decrease divorce rate
- vii) Decrease obesity (reduce weight)
- viii) Reduce corruption
- ix) Increase social ethics.

Among these implications, ‘increase awareness to make the city clean’ is ranked 1st with 4.69 weighted mean, followed by ‘ensure smooth child growth’ with 4.64 weighted mean. ‘Improve mental health condition’ and ‘increase social ethics’ have been ranked 3rd and 4th. On contrary, ‘divorce rate decrease’ and ‘corruption reduction’ received the lowest ranks with WAS of 3.78 and 3.71 respectively which were lower than other elements.

SL	Social implication of green space	Scale	F _r	%	WAS	R _k
1	Increase social interaction within the society	NAI	0	0.0	4.27	5
		UI	7	9.0		
		LI	8	10.3		
		IM	20	25.6		
		MI	43	55.1		
		Total	78	100.0		
2	Create strong family bondage	NAI	2	2.6	4.22	6
		UI	4	5.1		
		LI	10	12.8		
		IM	21	26.9		
		MI	41	52.6		
		Total	78	100.0		
3	Increase awareness for make city clean	NAI	0	0.0	4.69	1
		UI	1	1.3		
		LI	3	3.8		
		IM	15	19.2		
		MI	59	75.6		
		Total	78	100.0		
4	Ensure smooth child growth	NAI	0	0.0	4.64	2
		UI	3	3.8		
		LI	3	3.8		
		IM	13	16.7		
		MI	59	75.6		
		Total	78	100.0		
5	Improve mental health condition	NAI	0	0.0	4.60	3
		UI	2	2.6		
		LI	6	7.7		
		IM	13	16.7		
		MI	57	73.1		
		Total	78	100.0		

6	Decrease divorce rate	NAI	3	3.8	3.71	9
		UI	10	12.8		
		LI	20	25.6		
		IM	17	21.8		
		MI	27	34.6		
		Total	78	100.0		
7	Decrease obesity (Reduce Weight)	NAI	1	1.3	4.17	7
		UI	6	7.7		
		LI	10	12.8		
		IM	26	33.3		
		MI	35	44.9		
		Total	78	100.0		
8	Reduce corruption	NAI	9	11.5	3.78	8
		UI	9	11.5		
		LI	11	14.1		
		IM	9	11.5		
		MI	39	50.0		
		Total	78	100.0		
9	Increase social ethies	NAI	2	2.6	4.29	4
		UI	4	5.1		
		LI	10	12.8		
		IM	19	24.4		
		MI	43	55.1		
		Total	78	100.0		
Note:5= Most Important (MI), 4=Important(IM),3= Less Important (LI), 2=Unimportant(UI), 1=Not at All Important (NAI), Fr=Frequency, Weighted Average Score (WAS), R _k =Rank						

Source: Based on the fieldwork

Citizens' Recommendations

In this context, the following are the key recommendations on the part of the respondents towards making the city greener (Fig 5).

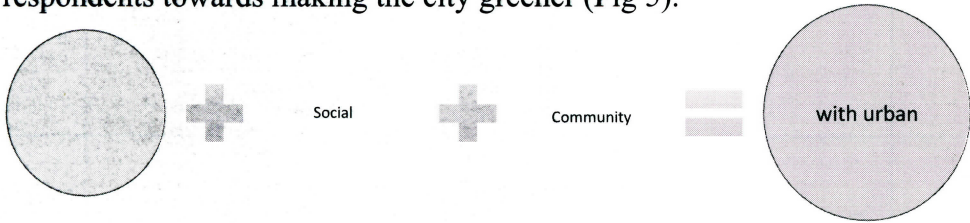


Fig 5: Respondents' recommendations to improve green space

Source: Based on the fieldwork

Besides the above broader recommendations and avenues of interventions, the respondent city dwellers also emphasized the improvement of the green space conditions by introducing more leisure bench, clean areas, and separate toilet for disable persons.

Conclusion

Ensuring sustainability of urban areas has been a burning issue in the recent times. This study has attempted to examine the citizens' perception on different aspects of urban sustainability – such as green space, utilization condition, and social implications. Although the core concept of sustainability and urban sustainability have been adequately addressed in the in the literature, the social implications of green space for urban sustainability – especially in the context of Bangladesh have remained poorly researched. This research has attempted to contribute to this relative cavity by examining the relationship between green space and social implications in the context of the Dhaka City's sustainability. It has corroborated the relevant observations of, and contributed to the previous research by summarizing the conceptual linkages between green space and urban sustainability. The current status and level of utilization of the green space and wider social implications of green space for urban sustainability (based on respondents' perception in Dhaka city) have been explored. All the surveyed respondents recognized that green space was important for urban sustainability. They however noted dissatisfaction about the current status of green space – especially the level of its utilization. The results reveal that most of the green space and utilization conditions have strong influence on social issues. It is evident that all the current social implications

mentioned in questionnaire are highly influenced through green space with the exception of divorce rate decrease and corruption rate reduction. As noted above, there has been strikingly limited research on the subject, and this interesting area of study deserves immediate academic attention – as at present our knowledge on the subject is at best marginal.

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