

ORIGINAL RESEARCH PAPER

An assessment of redeveloped public spaces in a city: Critical evaluation of parks and playgrounds

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ABSTRACT

BACKGROUND AND OBJECTIVES: Though Public Spaces are the images of the social status of the community, but in case of Dhaka City (Bangladesh), there are intensely shortages of public open spaces. Recently a number of parks and playgrounds in Dhaka South City Corporation area have been redeveloped under a government project. So, this research has highlighted on the state of usefulness of these redeveloped public spaces of Dhaka South City Corporation.

METHODS: Amongst many types of public spaces, only parks and playgrounds had been counted for this research purpose. A mixed method approach had been opted as it includes both qualitative and quantitative data for the assessments. Qualitative assessment with pictures of structures in public spaces had been conducted and maps of the area had been produced using ArcGIS 10.5 software. Also, statistical analysis like descriptive analysis, chi-square test, multiple regression model etc. had been conducted using Statistical Package for Social Sciences and Microsoft Excel software which covered quantitative assessment.

FINDINGS: This study found that though the visitors had been increased after redevelopment, but the quality of infrastructures and accessibility were not up to the mark even after redevelopment. These public spaces were abandoned or vacant land formerly. But these places were refurbished with new structures. But there was cave-looked boundary in every public space and the area had been restricted and locked up by the authorities. Elderly people, less-educated people, high income group people, new inhabitants of that area visited most. And also, in every demographic group, visitors have been increased after redevelopments. The selected public spaces only serve 6.44% of the Dhaka South City Corporation area in terms of walking distance (400-meter). 'Unclean toilet' is the major problem and almost around 65% to 85% respondents had complaints on it in most of the public spaces. Besides, Women, new inhabitants of that area, visitors who faced problems in accessibility and who can't feel safe and secure in the public spaces have less satisfaction with these public spaces.

CONCLUSION: This research has addressed the efficiency of redeveloped public spaces in Dhaka South City Corporation area. A strong community involvement in public space is beneficial to improve wellbeing. So, it was an important affair to investigate the association between the public involvement in public space and the quality of public space. The research findings may help urban planners and policy makers in the development sectors of Bangladesh.

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INTRODUCTION

In urban areas, public spaces are the main manmade places which designed to stimulate various physical activities and significant functions that effectively yield benefits and enhance the quality of life in cities (Chen *et al.*, 2016). There is a significant correlation between public space and urban life (Dhaliwal, 2012). Peoples are naturally social animals and public spaces are the stages to promote social and communal interaction and the representatives of culture and society (Carmona *et al.*, 2010). Urban public spaces offer people to gratify with an extensive latitude and fulfil their requirements of relaxation, comfort and socialization in a greater degree (Bierwiazzonek, 2018). Public spaces help to create social interaction, civic identity and culture phenomena by providing a place for social assignation (El-Husseiny and Kesseiba, 2012). By ensuring a common space and facilitating the procedure of social exchanges among neighbors, public space becomes a significant social arena (Abu-Ghazze, 1996). Sociability, uses and activities, comfort and image and access and linkages are the important components of public spaces which can ensure a sustainable and better public place (Sulaiman *et al.*, 2016). Usually, public spaces are considered as open spaces which include the streets, parks, playgrounds and amusement places, squares and other freely occupied and managed outside spaces in a city (Tonnelat, 2008). Actually, public space is the symbol of urban territorial recognition for the localities which can be considered or compared to a drawing room of the city (Maahsen-Milan and Oliva, 2014). Parks, playgrounds, squares, footways, shopping malls, community centers and schoolyards etc. are considered as public spaces (Carr *et al.*, 1992). Urban parks and playgrounds can contribute to social prosperity by giving urban inhabitants a place to recline, socialize and be in coalescence with nature

(Maller *et al.*, 2009). According to Nilufar (1999), public spaces can be classified into after mentioned four classes- urban parks, urban recreational areas, urban development open spaces and functional open spaces. Still, different types of open spaces require to be designed and developed with suitable size and with optimum location as indicating in Table 1.

Historically in Dhaka city, public spaces were considered as the main focal points of the city. There happened a rustical paradigm changes in Dhaka's public spaces and urban life in cope up with the transformation of the various socio-political period (Rahman *et al.*, 2014). Recently Dhaka South City Corporation (DSCC) have worked on the improvement of parks and playgrounds of its jurisdiction area where includes the development of 19 parks and 12 playgrounds under the project titled 'JOL SOBUJE DHAKA (In English- Dhaka City with Waterbodies and Greeneries) (Siddiqui, 2019). Redevelopment is any renewed construction on an area that has pre-subsisting uses which conveys a process of land development to improve the physical, economic and social framework of urban space (Caves, 2004). Cities that have well-developed street areas, urban greenery, parks, playgrounds and recreation facilities give an improved and better quality of life for their citizens (Andersson, 2016). To make successful cities, redevelopment and modernization of public spaces are important keys (UN-Habitat, 2015). The importance of emphasizing the urban space as a meeting place improvises the function of supporting social cohesion and an open democratic society (Gehl, 2010). Urban redevelopment program can be helpful to ensure more functional urban public spaces and it positively affects not only the physical and environmental territories but also the socio-economic and cultural development of a city (Ramlee *et al.*, 2015). Almost half of the world population lives in urban areas now and it is expected that it

Table 1: Planning standard for urban recreational open spaces in Dhaka (RAJUK, 2016)

Hierarchy of Open Space	Facility	Size [Minimum]	Distance From Home [Optimum]
Metropolitan Park/Playground	General woodlands with facilities	150 + acres	2-3 miles
District Park/Playground	Children's play, court games, some special facilities	50-75 acres	3/4 mile
Local Park/Playground	Children's play areas, informal games, quite areas	5-10 acres	1/4 mile
Mini Park/Playground	Sitting area, flower garden, children's play areas	under 2 acres	less than 1/4 mile

will be risen to two-third of the population (United Nations, 2018). According to the Population and Housing Census 2022, Dhaka South City Corporation area has the second highest population with around 4.3 million people among all the 12 city corporations of Bangladesh and has the highest density of Bangladesh with 39,353 people which is 35 times higher than the national overall density (Bangladesh Bureau of Statistics (BBS), 2022). According to the 'Ecological Threat Report 2022', Dhaka became the fourth among twenty most unsustainable megacities in the world and it's predicted that notable ecological threats will be observed (Institute for Economics and Peace, 2022). Bangladesh has been undergoing rapid urbanization ever since its independence in 1971 and nearly one-third of the population are living in urban areas now which creates difficulties in providing urban recreation facilities to the city peoples (Urban Development Directorate, 2016). As a result of overpopulation and urban migrants in Dhaka city, the public spaces are rapidly decreasing and the rate was alarmingly high (Byomkesh *et al.*, 2012; Nilufar, 1999). Urban green spaces of Dhaka city drastically declining because of the high growth of population and the expansion of infrastructures (Nawar *et al.*, 2022). Total urban green space in DSCC is underneath the standard and the green spaces all over DSCC area is not properly distributed (Rahman and Islam, 2022). Regional Development Planning (RDP) project survey (RAJUK, 2016) have found that 48% of the total Dhaka region are urban features and 52% non-urban features. Only 1142.42 acres (0.30%) of Dhaka's land is presently having considered as urban outdoor recreational places. The alarming issue is, in 2035 population will be increased and accordingly, required area for open spaces will be 25.3% for Dhaka (Nilufar, 2015; RAJUK, 2016). Because of the scarcity of proper safety and appropriate facilities, the parks and playgrounds of Dhaka city are not accessible (Islam *et al.*, 2015). Due to having fewer public spaces, people have become home-centric, domesticated, less-active and inoperative in Dhaka city and it affected on their mental health (Labib *et al.*, 2020). The public spaces of Dhaka should be more secured and in a close-distance location for the inhabitants and more divergent so that maximum sociodemographic groups can utilize the places (Sultana *et al.*, 2022). It should be developed by providing and ensuring equipment, safety and security, natural settings,

utility services etc. (Rahman and Zhang, 2018). Safe and inclusive public spaces nourish not only public and cultural life but also have ecological benefits for the cities (UN-Habitat, 2022). This study is targeting to analyze the post-development circumstances of redeveloped public spaces of DSCC. Research question for this research is- What are the conditions of public spaces after redevelopment? The selected objectives of the research are- to analyze various physical change and changes of visitors in public spaces after redevelopment, to evaluate the quality of public spaces after redevelopment and to provide recommendation for improving public spaces as better recreational facilities. The research survey was carried out in Dhaka South City Corporation area, Dhaka, Bangladesh in 2022.

MATERIALS AND METHODS

It's needed to assess the impact of the development of these public spaces on the community. Actually, it's one kind of post assessment of this redevelopment project that how successfully the public spaces attract the people of the community. It's necessary to examine the impact of this redevelopment of the parks and playgrounds because redevelopment is an important tool in urban planning as to utilize urban areas. The research process includes conceptualization, literature review, designing the research including sample design, data collection and analysis. Though the term 'Public Space' has included a broad number of public places, but this study has only considered parks and playgrounds as these places are degrading in accounts of numbers in Dhaka.

Study Area Profile

Dhaka, the capital city of Bangladesh has been divided into two city corporation zones named Dhaka North City Corporation (DNCC) and Dhaka South City Corporation (DSCC). DSCC area has been selected as the study area which have the population of 4,299,345 and 38 parks and playgrounds in its jurisdiction area. The latitude and the longitude of DSCC area of Bangladesh are respectively 23.72° North and 90.39° East. The area of DSCC was 45 km² but expanded to 109.2 km² in 2017; where 18 new wards have been added to 57 wards and become a total of 75 wards. As the newly added areas haven't been developed yet or in the process of development, this study has

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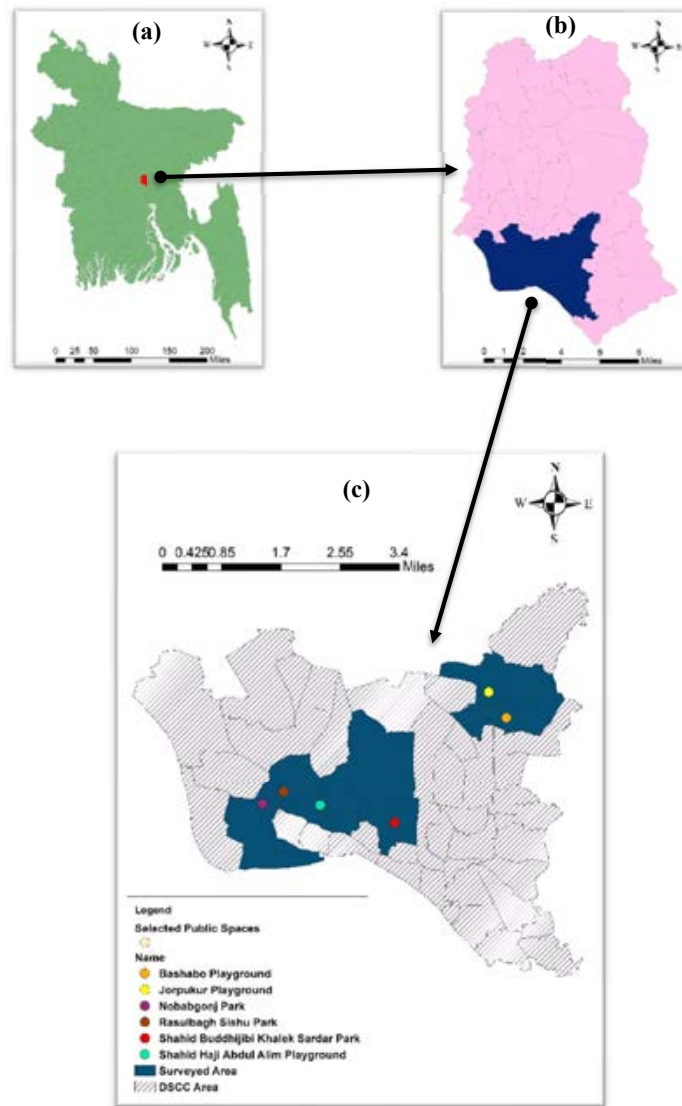


Fig. 1: Geographic location of the study area; (a) Bangladesh, (b) Dhaka City and (c) Dhaka South City

considered only old jurisdiction areas of DSCC.

The selection criteria of study area depend on the information of public spaces and the criteria are- government owned, recently redeveloped, well planned and equipped and located in specific neighborhood etc. 6 public spaces have been selected for this research and the selected public spaces are- Jorpuhur Playground, Bashabo Playground, Shahid Haji Abdul Alim Playground, Nobabgonj Park, Rasulbagh Sishu Park and Shahid Buddhijibi

Khalek Sardar Park which were shown in the study area map in Fig. 1 and the pictures of these public spaces were shown in Fig. 2. These public spaces are located in Ward 1, Ward 4, Ward 26, Ward 23, Ward 26 and Ward 33 respectively and their sizes are 3238 m², 10118 m², 3642 m², 2024 m², 1820 m² and 1376 m² respectively which are considered as mini parks (Bangladesh Bureau of Statistics (BBS), 2022; Bangladesh Bureau of Statistics (BBS), 2013; Dhaka South City Corporation (DSCC), 2020).



Jorpukur Playground



Bashabo Playground



Shahid Haji Abdul Alim Playground



Nobabgonj Park



Rasulbagh Sishu Park



Shahid Buddhijibi Khalek Sardar Park

Fig. 2: Selected parks and playgrounds

Data Collection and Analysis Technique

This research has followed a mixed method approach for preparing the research design of this study. To conduct observation and household survey, checklist and questionnaire have been used as data

collection tool. To find out the structural changes and newly installed infrastructures in renovated parks and playgrounds in DSCC, pictures have been collected with direct field survey and observation. 6 public spaces have been surveyed (observation survey) and

residents of the surrounding wards (Total 15 wards) have been interviewed. 15 respondents have been interviewed per ward. Random sample technique has been followed in survey. In this sample design, total sample size was 225, where the population of the surveyed area was 131030; whereas, the population of DSCC was 1.2 crores. To fulfil the first objective, information of public spaces and its infrastructures, respondents' demography, characteristics and changes in visitors, increment assessment of visitors in pre and post renovation period etc. have been evaluated. To fulfil the second objective, problems, service area of public spaces, accessibility in the public spaces after redevelopment have been analyzed. Also, satisfaction level associating with some variables named demography, visiting frequency, visiting time, spending time, distance, time to reach, better footpath connectivity, costs to visit, getting chance, access in all the place, feel safe in the public spaces etc. have been evaluated and analyzed with statistical tools like chi-square analysis and multiple regression analysis in SPSS. Chi-square analysis has been done to assess the differences in subgroups of demography of the visitors in post development period and regression model analysis has been done to assess the dependency of users' satisfaction on above mentioned variables. To assess the increment of visitors from pre development to post development, percentages of increment has been calculated in excel with bar differences evaluation using the Eq. 1 which shows that what percentages of the increment portion covers of the visitors in post development period's bar graph.

The calculation assesses the percentages of growth portion in compared to visitors in post development period. So, Percentages of Growth (Increment) is equals to-

$$\frac{(\text{Visitors in post development period} - \text{Visitors in pre development period}) \times 100}{\text{Visitors in post development period}} \quad (1)$$

Map analysis to evaluate service area of these public spaces has been done with buffer zone analysis with the radius of 400 meter and 1000 meter using ARCGIS tool. For data analysis and graph preparation, software like SPSS, Microsoft Excel and ARCGIS 10.5 have been operated and used.

RESULTS AND DISCUSSION

Demography of the Respondents

From Fig. 3, it is shown that 87 respondents have visited only after redevelopment and 19 respondents have visited only before redevelopment. There are 61 respondents who have visited both after and before development. There are also 58 respondents who have not visited the public space before and after the redevelopment.

From the demographic frequency table (Table 2), it is found that 'Shahid Buddhijibi Khalek Sardar Park' has the most respondents in terms of nearest public space and 'Rasulbagh Sishu Park' have the lowest. There are 33.8% female and 66.2% male respondents. Among the respondents, age group '21-30' is the highest and age group 'Above 50' is the lowest. Among the respondents, most of them are students. Most of the respondents are in 'Graduate' group. Most of the

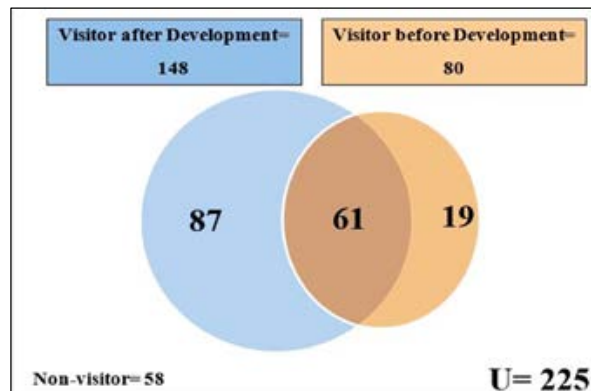


Fig. 3: Venn diagram of Frequency of Visitor and Non-user

Table 2: summary of respondents' background

Demography	Finding (Highest and Lowest)	Frequency	Percentages (%)
Nearest Public Space	Shahid Buddhijibi Khalek Sardar Park	62	27.6
	Rasulbagh Sishu Park	20	8.9
Gender	Male	149	66.2
	Female	76	33.8
Age	21-30	68	30.2
	Above 50	7	3.1
Occupation	Student	86	38.2
	Retired	3	1.3
Education	Graduate	68	30.2
	Below S.S.C	10	4.4
Income	40,001-60,000 TK	94	41.8
	10,001-20,000 TK	4	1.8
Duration of Residency	More than 12 years	80	35.6
	Less than 1 year	7	3.1

respondents includes in the income group of '40,001-60,000 TK'. Most of the respondents reside more than 12 years in their neighborhood.

Changes in Structures

The condition of physical structures in the pre and post renovation period of the public spaces has been assessed. Though these urban public spaces are in the jurisdiction of DSCC, these places were illegally occupied. These places were in the forms of vacant land, abandoned land, open field etc. Some of these places were informally used for playing areas for children; but also used for parking truck, mini bazar, garbage dump etc. Most commonly the public spaces have been provided playfield, boundary, seating place, footpath, drain and lighting after redevelopment as it had shown in Fig. 4. But the boundary looks like cave and it is been controlled by the authorities and most of the time the area has been locked up. The public spaces have been facilitated with various modern facilities like coffee shop, dustbin, washroom and CC TV camera etc. Most interesting equipment added to the public spaces are water filter for reusing rainwater. Most of public spaces have been used for playing, walking and gossiping place now. Most of the cases, the playfield is open only in the morning and afternoon.

Changes in Visitors and Chi-square Analysis

Change pattern of visitor in terms of demography (Gender, Age, Occupation, Education, Income, and Duration of Residency) has been assessed and chi-

square analysis has been done. In every sector, visitors have been increased after redevelopments of these public spaces compared to before. From the Chi-square analysis (Table 3), it has found that comparatively elderly people, less-educated people, high income group people, new inhabitants of that area visited most. When the value of Asymptotic Significance is less than 0.05 it indicates a correlation between two variables.

Using the Eq. 1, from these following graphs (Fig. 5), it has clearly shown that in every demographic group, visitors have been increased after redevelopments in the studied public spaces. From Fig. 3, there were 80 respondents among 225 who have visited before redevelopment and in case of after redevelopment, the number of visitors is 148 which indicates overall increment scenario. That means, before redevelopment, 36% of the residents have been visited in these public spaces and after redevelopment it has been increased and that was 66%. There was a 45% increment in visitors. In terms of gender group, major increments happened in female (52%). In terms of age group, major increments happened in 31-40 age group (58%). In terms of occupation group, major increments happened in housewife (53%). In terms of education group, major increments happened in below SSC (Secondary School Certificate) group (63%). In terms of income group, major increments happened in 10000–20000-taka income group (67%). In terms of residency period, major increments happened in 1-4 years residency group (60%).



Fig. 4: Newly Installed Infrastructure

Table 3: Chi-square analysis on association of demography with visitors after development

Characteristics	Visitors after Development		Result (Comparatively Visited Most)
	Pearson Chi-Square Value	Asymptotic Significance (2-sided)	
Gender	.090	.764	-
Age	11.032	.026	Elderly people
Occupation	7.320	.198	-
Education	11.076	.050	Less-educated people
Income	19.080	.001	High income group people
Duration of Residency	14.639	.006	Inhabitants who reside less time in that area

*p ≤ .05 (Significant)

Service Area of Public Spaces

The selected public spaces only serve 25.37% of the study area and 6.44% of the DSCC area in terms of walking distance (400-meter). When counts one kilometer radius, these public spaces serve 79.03% of study area and 29.71% DSCC area. Table 4 had shown the calculation of served area by the studied public spaces and the visual representation of this analysis

had shown in Fig. 6.

Problems in Public Spaces

From the assessment showing in Table 5, clean toilet or toilet problem was the major problems in most of the surveyed public spaces. Percentages shows the percent of affected respondents who faced that particular problem.

Regression Analysis of Satisfaction Level with Public Space

If the value of P (Significant) is less than 0.05, it indicates a correlation between two variables; and also, positive or negative value of β indicates the positive or negative

relation between dependent and independent variables. From the following table (Table 6), multiple regression model showed that some of the variables have the correlation with satisfaction level with public space after development.

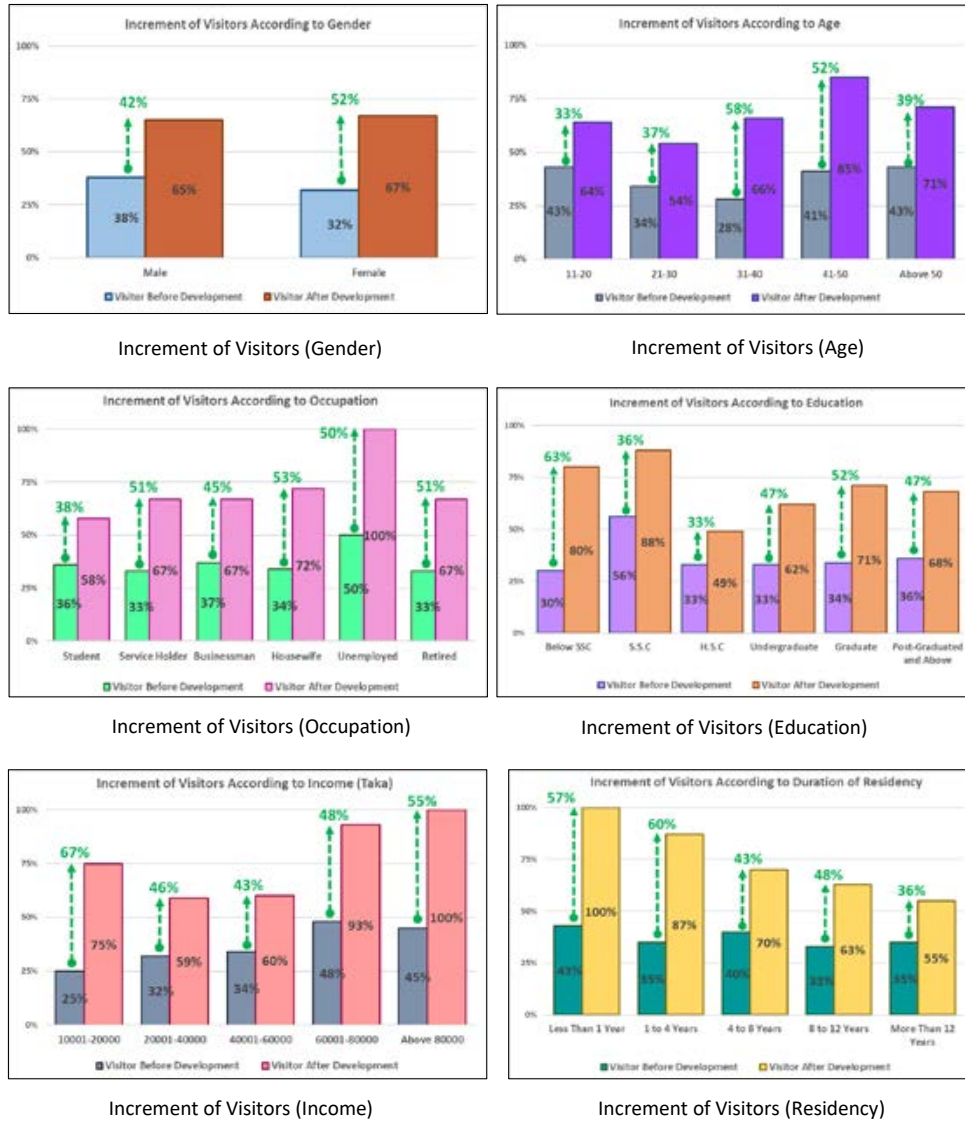


Fig. 5: Increment of Visitors According to Demography

Table 4: Calculation of service area

Jurisdiction Area	Area (km ²)	400-meter Service Area		1000-meter Service Area	
		Area (km ²)	Percentages	Area (km ²)	Percentages
DSCC	45	2.90	6.44%	13.37	29.71%
Study Area	10.92	2.77	25.37%	8.63	79.03%

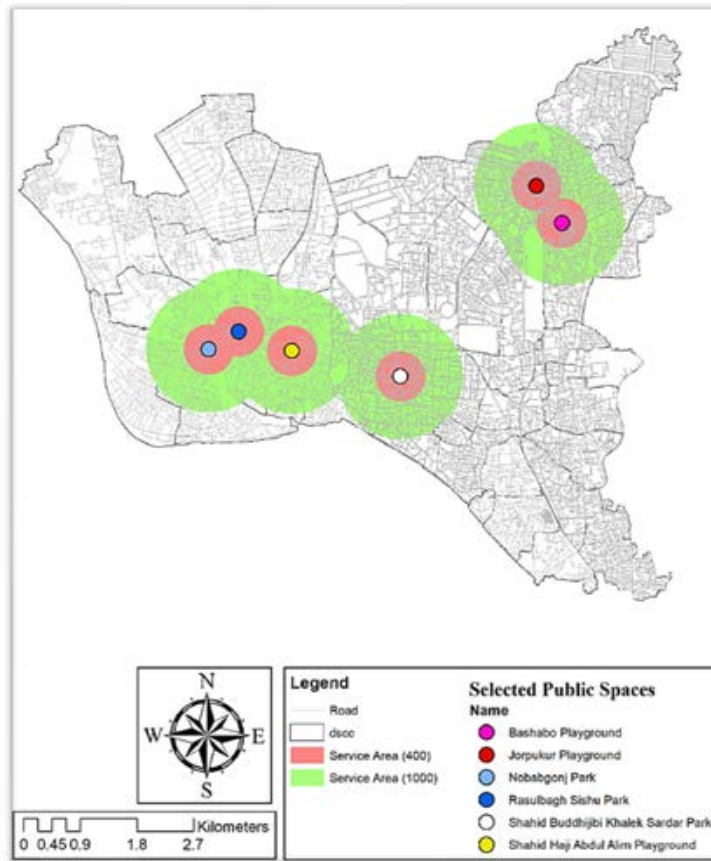


Fig. 6: Service area of the public spaces

Table 5: Public space wise major problems

Public Spaces	Major Problems				
	Priority-1	Priority-2	Priority-3	Priority-4	Priority-5
Jorpukur Playground	Lack of shed for shelter (73.70%)	Absence of enough bench (71.30%)	Playground/park is not open all the day (70.20%)	Air pollution (68.40%)	Small size (63.20%)
Bashabo Playground	No clean toilet (78.60%)	Crowded area (71.40%)	Lack of shed for shelter (57.10%)	Noisy area (54.20%)	Absence of enough bench (50.00%)
Nobabgonj Park	No clean toilet (84.60%)	Air pollution (82.40%)	Noisy area (76.90%)	No security (71.80%)	No restriction for anti-social people (61.50%)
Rasulbagh Sishu Park	Small size (100.00%)	Playground/park is not open all the day (92.30%)	Lack of playing equipment (84.60%)	Absence of enough bench (81.40%)	Existence of garbage and rubbish (76.90%)
Shahid Haji Abdul Alim Playground	Crowded area (68.20%)	No clean toilet (65.90%)	Noisy area (62.40%)	Air pollution (56.80%)	Playground/park is not open all the day (54.50%)
Shahid Buddhijibi Khalek Sardar Park	No clean toilet (75.60%)	Air pollution (62.20%)	Crowded area (57.80%)	Absence of enough bench (56.10%)	Noisy area (55.60%)

Table 6: Multiple regression model analysis of satisfaction level with public space

MODEL SUMMARY				
R (Correlation)		R Square		Adjusted R Square
.751		.565		.515
DESCRIPTIVE STATISTICS AND ANOVA				
Mean	Std. Deviation	N	F Statistic	Sig.
3.1297	.41853	148	11.416	.000
COEFFICIENTS				
Model		Dependent Variables		
		Satisfaction Level with Public Space		
		β (Beta)	P (Sig.)	
	(Constant)	3.018	.000	
	Gender	.168	.037	
	Age	-.015	.644	
	Education	-.029	.174	
	Income	-.095	.011	
	Duration of residency	.103	.001	
	Visiting frequency	.032	.436	
	Visiting time	.031	.376	
	Spending time	.049	.224	
	Distance	-.282	.001	
	Time to reach	-.171	.002	
Independent Variables	Better footpath connectivity	-.049	.516	
	Costs to visit	.066	.297	
	Getting chance	-.006	.951	
	Access in all the place	.143	.014	
	Feel safe	.166	.014	

*p ≤ .05 (Significant)

From Table 6, it was shown that the correlation (R) is .751. That means satisfaction level with public space after development is strongly correlated with independent variables. Coefficient of determination or the R-Square value is .565. That means 56.5% changes in the satisfaction level can be explicated by the independent variables with this regression model. Value of adjusted R-Square is .515 that indicates only 51.5% variation in satisfaction level can be measured by the independent variables in this model. Here, F value is 11.416 which is high enough to confirm the correlation between variables. The Model is given below following the Eq. 2. Satisfaction Level with Public Space = 3.018 + .168 (Gender) - .095 (Income) + .103 (Duration of Residency) - .282 (Distance of Public Space from Home) - .171 (Time Required to Reach) + .143 (Access in All the Place) + .166 (Feel Safe in Public Space)

$$[\text{Multiple Regression Model, } Y = a + b_1X_1 + b_2X_2 + b_3X_3 + \dots + b_nX_n] \quad (2)$$

Some prime and foremost findings from this regression analysis are- women are less satisfied than men, residents who have newly resided to the community are less satisfied, visitors who faced problems to get access in entire places and who can't feel safe and secure in the public spaces have less satisfaction. Besides, low-income groups' people are more satisfied than high income groups, residents who resided close to the public spaces and need less time to reach in the public spaces are highly satisfied with the public spaces.

CONCLUSION

This paper outlined the infrastructural changes, visitor's scenario and quality of redeveloped public spaces which have tried to assess and find out the workability and fruition of the public spaces. Normally, public spaces become more public and usable after redevelopment projects. But also, the maintenance should be considered carefully. Otherwise, the functionality will be hampered. Increasing in visitors

and revitalization of infrastructures can't ensure accessibility and quality of the public places. There is a huge lacking of public spaces in Dhaka City. So, People will forgather in the few available places. So, it's not just the provision of public places but also the assurance of the quality of these areas. But interestingly study found that visitors of these public spaces have been increases which means people are eagerly interested to visit these places though Dhaka city offers a little. Accessibility should be provided properly in the public spaces to attract more visitors from all the demographic groups of people. So, the number of visitors from all groups have been increased but every group should get accessible environment in public spaces. Though it's necessary to have public spaces in walking distances, but because of shortages of parks and playgrounds the selected public spaces only serve 6.44% of the DSCC area in terms of walking distance. So, Government of Bangladesh should develop and construct new public spaces. Ward-wise community development can be a good solution for this shortage. It can also ensure the proper distribution. The playfields are open only in the specific time in a day. The opening time of the playfields should be 7 am and the closing time should be 8 pm. The playfields have cave-looking boundary. So, the boundary should be redesigned. The playfields have been locked down in most of the time. It prohibits the access of people to these public spaces. After renovation of the studied parks and playgrounds these includes many advanced infrastructures and equipment like playfield, boundary, seating place, footpath, drain and lighting dustbin, washroom and CC TV camera, water filter for reusing rainwater etc. Yet, there are lacking of playing equipment like merry-go-round, still rings, swings, slides, playground climbers, spring riders, spinners etc. Along with children's equipment and infrastructures, adult people's equipment should be installed in the parks. Major problems of these parks and playgrounds are no clean toilet, small sized public spaces, and crowded area. To ensuring a hygienic environment in public spaces it should be included regularly-cleaned toilets, functioning water taps, continually-emptied waste bins, and thorough ongoing maintenance. Proper maintenance is needed of these washrooms as to maintain better quality. Women, high income groups, residents who have newly resided to the community are less satisfied with these public spaces. Visitors

who faced problems to get access in entire places and who can't feel safe and secured in the public spaces, residents who resided far from the public spaces and need more time to reach in the public spaces have less satisfaction. To maintain resilience of the public spaces, proper maintenance and security are needed. Better connectivity, safety and accessibility to do activities in all the area of public spaces should be provided as these issues directly connected to the satisfaction of the residents. Public spaces play an important role for developing community sense and strong community belongingness. As the elements of a city, not only the development of roads, houses and transportation is needed, but also the public spaces should be got attention and required to be acknowledged as important resources of a city. A good public space within a neighborhood helps to give the residents a sense of place where they can feel very homely and relate themselves close to the city and its' culture. Hence, for enhancing better functionality of Dhaka City it is a must to develop and improve the quality of existing public places. Policies and guidelines must be established defining better and optimum infrastructural design and management for these public spaces to create and develop a successful public space. So, renovation is a good practice for urban public spaces, but public spaces should be created as to enhance usability, public involvement, accessibility, restriction free, well equipped, well maintained and sustainability.

AUTHOR CONTRIBUTIONS

S. Sultana performed the introduction, literature review, referencing, research design, data collection and analysis and manuscript preparation. A.M. Khan prepared the research materials and methods, manuscript text and manuscript edition. A. Rahman helped in the data collection, analysis and interpretation of the data and compiled the data and manuscript preparation.

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CONFLICT OF INTEREST

The authors declare no potential conflict of interest regarding the publication of this work. In addition, the ethical issues including plagiarism, informed consent, misconduct, data fabrication and, or falsification, double publication and, or submission, and redundancy have been completely witnessed by the authors.

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ABBREVIATIONS

%	Percent
<i>a</i>	β (Beta) value of constant
<i>Adjusted R Square</i>	Adjusted coefficient of determination
<i>b</i>	β (Beta) value of independent variable(s)
<i>BBS</i>	Bangladesh bureau of statistics
<i>CC TV</i>	Closed-circuit television
<i>DNCC</i>	Dhaka north city corporation
<i>DSCC</i>	Dhaka south city corporation
<i>Eq.</i>	Equation
<i>F</i>	Fisher test (variation between sample means)

<i>Fig.</i>	Figure
<i>GIS</i>	Geographical information system
<i>Km²</i>	Square kilometer
<i>m²</i>	Square meter
<i>N</i>	Total case (sample)
<i>p</i>	Probability
<i>R Square</i>	Coefficient of determination
<i>R</i>	Pearson correlation coefficient
<i>RAJUK</i>	Rajdhani unnayan kartripakhya (capital improvement authority)
<i>RDP</i>	Regional development planning
<i>Sig.</i>	Significant
<i>SPSS</i>	Statistical package for social sciences
<i>Std. Deviation</i>	Standard deviation
<i>UN</i>	United nations
<i>X</i>	Value of independent variable(s)
<i>Y</i>	Value of dependent variable
β	Beta

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