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学位論文題名	The Integration of Urban Life with the Hierarchical Structure of Urban Parks Distribution in Developing Countries: A Case Study of Dhaka City, Bangladesh (発展途上国における都市公園分布の階層構造とそれにともなう都市生活の統合：バングラディシュのダッカ市の事例研究)
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【論文の内容の要旨】

The inhabitants of Dhaka city suffer from lack of proper urban facilities. The urban parks are needed for different functional and leisure activities of the urban dwellers. Again growing densification, a number of urban parks are transferred into open space in the Dhaka city. As a result, greenery of the city's decreases gradually. Moreover, the existing urban parks are frequently threatened by encroachment. The role of urban parks, both at community and city level, is important to improve the natural environment and social ties in urban life for future generations. Therefore, it seems that the urban parks need to be more effective for public interaction. The main objective of this research is to address the spatial structure and consequence of urban parks in Dhaka city, Bangladesh as an example of developing countries. Four approaches were selected to fulfill the study. Firstly, identifying the typology and characteristics of urban parks with their service area; secondly, regional differentiation of urban parks; thirdly, investigate the relationship of urban parks with physical and social environment; fourthly, proposed some models to accommodate the present condition.

Based on urban growth and structure, Dhaka city divided into two parts: old Dhaka or the historic core, and new Dhaka or northern expansion. The city is actually post colonial development, an effect

of modernization, still unplanned and organic in the nature. Old Dhaka predominantly built up with narrow streets and congested patterns with few open spaces and functional areas. In old city, green spaces and urban parks are unplanned and has a historical aspect. The modern city (New Dhaka), in contrast, allocated a more spacious layout and geometry. In the new part of the city, urban parks are better located and maintained. Moreover, Dhaka city has a detail park regulations which developed in 9th March, 1904. After liberation war, this park rules and regulations little changed and update in 1973 (Act No. VIII of 1973). According to the regulations, government make rules for the management and preservation of any park and also for regulating the use thereof by the public. All parks management by "Superintendent" means the person in executive charge of a park. But this superintendents are not same for all parks. In old Dhaka mainly located in the southern part of the city, so in here parks are managed by Dhaka South City Corporation (DSCC). And in new Dhaka most of the park managed by Dhaka North City Corporation (DNCC). This superintendents selected by the local government. Furthermore, Public Works Department (PWD) only takes care of large green spaces and urban parks, such as, Botanical Gardens, Zoo, Baldha Garden etc. Again, in this regulations also clearly mentioned the using restriction of parks and also some prohibit or regulate for park users.

The case study site covered eight urban parks of Dhaka metropolitan area of Bangladesh. Three aspects (Physical, Social and Living) were applied for this study. For physical aspect methods were used, RS (Remote Sensing) and GIS (Geographic Information System) of three periods of satellite images and aerial photos (Dhaka city). For social aspect methods were used questionnaire survey, observation, photographs, sketch and previous information about parks. And for living aspect, check table format, interview, case study, photographs and sketch were used. After calculation of all data analysis by descriptive statistics, result was showed by maps using GIS.

First approach: According to physical size, parks of Dhaka city were classified into four types: Small, Medium, Large and Extra Large parks. Small size parks of Dhaka city were situated beside the residential area and were used as daily purpose. Medium size parks were located beside commercial area and its used for daily and weekly. Large size parks were placed at city center and people mainly visited monthly to attended some events. Only one extra large size park was found in city boundary and people were come from every parts of the city area for tourism purpose. Moreover, in this research tried to measure the service area of parks in Dhaka city. For this analysis used average distance of park visitors consistent with different size parks and after applied this average

distance in buffer approach to prepare the service area maps. As a result, its proved that the service area of parks in Dhaka city different from the NRPA American standard. Unplanned urban grow and over population influence the service area of parks. According to accessibility of parks, in small and medium size parks people mainly visited from near place. In large size parks people came from different distance. Again in the extra large park covered the whole city area. Mainly distance from origin to parks, time and purpose control the accessibility of parks.

Second approach: The regional differentiation influence parks of Dhaka city. Based on regional differentiation, in old Dhaka parks were well vegetated but have maintenance problem. Intersection zone of old and new Dhaka parks were used in national occasion more than daily recreational purpose. In new Dhaka, parks were well organized and maintenance than other part of the city. Again based on distribution model of parks of developing countries, in old part of the city, parks were in traditional pattern, scatteredly situated and small size parks were high number than the other size park. On the other hand, in the new part of city, parks were more planned, modernization and also small and medium size parks were well distributed and balanced. Large parks situated in the city center beside sub CBD and easy to access. This parks mainly used for different events. Extra large park situated in city boundary and tried to serve the whole city.

Third approach: Physical and social environment of parks influence the type of parks. There is a relationship between park size and facilities. When park size increase facilities of the park also increase. In small and medium size park's facilities are lower than the large size parks. By using questionnaire data found that different size of park influence the characteristic of park's users. Moreover, distance of visitor related with some factors, such as respondent age, transport system, transport cost etc.

Fourth approach: To identify the park systems of Dhaka city used the concept of areal functional organization model. According to parks distributional model and areal functional organization model, in Dhaka old part of city dominated by first order functional area. And in new city, both small and medium size parks were good in number and well planned. So in here first and second order functional areas overlapping. Large size parks situated in city center and its mainly covered the center area of the city. According to the functional model, it is third order which cluster the focal point. Moreover, the extra large park which situated in city boundary, largely served the new part of city than the older part. It's fourth order functional area which cluster all focal point of the parks. As a result, it is clear that the park systems of Dhaka city constituted by fourth order park system which is compounded by different lower order park systems. Park systems in Dhaka city indicate the

hierarchical structure. This structure showed the vertical integration of parks by their different physical size.

Moreover, for the difference of urban structure such as, old and new cities, parks system also different. Based on urban structure, park systems were classified into two types. In old Dhaka number of small size parks were more than the other size parks. So in here park system mainly controlled by the first order park system. On the other hand, in new Dhaka small and medium size parks were well distributed and both first and second order park systems were active in here. As a result, it's found that the several order park systems show regional patterns of parks user which influence by different urban structure.

Overall findings of this research showed parks size and distance influence the user pattern and the parks distribution control by urban structure. This research tried to developed a new park systems for Dhaka city base on the users characteristics of parks. In Dhaka city, urban life (characteristics of park users) integrated with different order park systems which illustrate hierarchy structure of parks. Furthermore, this research tried to find out the spatial importance and efficiency of parks in urban area. Analyzed information and model will be helpful to urban planner for the future perdition and planning. Urban park is a important element of recreation facilities for urban people. It is easy to access for all aged and group of people. Developing countries, like Bangladesh where over population and lack of recreation facilities are already present, urban parks play a important role for constructing better urban life and society.