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Analysis of Urban Park Uses by Sociotope Mapping in Korangi Town, Karachi, Pakistan

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ABSTRACT: Urban Park is an important contributing factor in improving quality of life. Parks and recreation services are often cited as one of the most important factors in surveys of how livable communities are. Parks provide gathering places for families and social groups, as well as for individuals of all ages and economic status, regardless of their ability to pay for access. This study is about analyzing the uses of 05 urban parks (Bara park, model park 51/b, model park 3 1/2, Owaisi shaheed park and Lucknow park) of Korangi town, Karachi. Objective are to identify user perspective towards urban parks through questionnaire survey, To analyze park uses by generating socio tope map in Arc GIS software, To suggest the improvements required to attract residents of vicinity. This study was conducted on the basis of questionnaire survey about facilities (general, health and appearance) provided how much people are satisfied, how much people are not satisfied, what facilities are required, what are not and demographic data of respondents. Results were tabulated in MS-Excel and three maps were generated showing current position of park activities from people's perspective in ArcGIS. Results showed that there was more need of provision of health activities in urban parks so we can attract people to use urban parks

Keywords: Urban Park, ArcGIS, livable, Questionnaire, Recreation, Sociotope Mapping, Urban parks.

I. INTRODUCTION

The vitality of parks is concluded as a place to create opportunities for recreational activities to promote social interaction among community and enhance physical activity in the urban environment [8]. Urban park multi functionality has often been emphasized as relating to recreation, social interaction, aesthetics, cultural heritage and ecological functions (Martina Artmann, 2017). Presently, in highly populated urban areas like Karachi, public green spaces often provide the only natural outdoor or recreation space not fulfilling an important function in promoting the general health of community members [7]. The development of environmental awareness has resulted in a strong demand by urban residents for green space for various purposes, including aesthetic enjoyment, recreation, and access to clean air or a relatively quiet environment [9]. The hustle and bustle environment of city push the people towards parks where they can enjoy nature, social interaction, physical activities, improve their health and encourage youth for sports. Professionals have become more concerned about the quality of the remaining green areas and research about the benefits of green areas from social and economical in the recent years [14]. One of the challenges faced is to identify and evaluate recreational and social values of urban green spaces attracting residents towards them [2]. This has created pressure on present urban parks. The existing open space provision is unsatisfactory both in quality and quantity [11]. Providing open green spaces is not a sufficient step by the policy makers as with time those green open spaces are not maintained due to lack of funds and public use. These spaces lack source of attraction and losses its worth. Most of the open spaces in Korangi, Karachi lacks of physical, general, health, aesthetic and other social values. Consequently, they are usually ignored or underestimated [5]. The objectives of this study were to identify user perspective towards urban open spaces through questionnaire survey, to analyze park uses by generating socio top map in Arc GIS software, to suggest the improvements required to attract residents of vicinity.

Sociotope mapping is defined as the commonly experienced and used place of a specific culture. The approach collects public meanings of using experiences and preferences regarding both qualitative and quantitative content of spaces from a specific community. Socio tope is generated by means of collecting opinions from professionals and local public of the area. The result is then transferred into spatial dimension and graded as biotope mapping approach [15] It is to develop a framework is created for how potential social utilities from urban green spaces can be quantitively analyzed [16].

The concept 'socio tope' was invented ad hoc during urban planning practical training at the Stockholm Urban Planning Administration 2000-2002. The socio tope map was also a pragmatic response to the need of a map which showed open space use values in Stockholm City", summarize the attempts to define the concept socio tope as *'the commonly perceived direct use values of a place by a specific culture or group'*. A socio tope map is in any case a response to central (local) authorities' increasing need to understand their citizens and their everyday urban environment.

The Stockholm socio tope map was made principally in five steps:

1. Open space definition.
2. Expert evaluation.
3. User evaluation.
4. Synthesis.
5. Mappin

II. MATERIALS AND METHODS

The study area selected was korangi town, karachi, Pakistan. This town belong to residential cum industrial use. Korangi town is an administrative area of Korangi district of a metropolitan city, where rapid urban growth has been observed in recent years. The study investigated the using of urban parks where the middle up income people live [1]. which portrays some of its outdoors recreational activities that are partially invisible in the daily life [13]. The research process was developed based on the literature analysis. Data was collected through primary sources such as questionnaires. Random survey was conducted to identify the specific purposes of urban park uses for people to visit urban parks [6].

The questionnaire consisted of a set questions about the social background, the frequency of visits, the perception of Public open space factors (Achmad Delianur Nasution*, 2015). To measure the urban park properties, Qualitative research is carried throughout research in town by local people through questionnaire and literature review (i.e articles, books, research papers and other available material on internet) further data is analyzed by using SPSS by simple frequency distribution analysis. The information on the uses of the urban parks by different types of users in the past, which was integrated with the spatial data using geographic information system (GIS) [17].

A base map of subjected area is generated using GIS (geographical information system) base maps and data retrieved from questionnaires is analyzed in GIS to know the social values and activities that attracts people to use urban parks frequently and what other social activities people desire to attract more public towards urban parks [3]. This study also investigates motivational factors in determining the feeling of satisfactions of urban park visitors [12].

A. Study Area

This study is about analyzing urban park uses through socio top mapping so existing urban parks are identified with help of municipal authority of korangi and from google maps. The identified functional parks were:

- Bara park
- Lucknow Park
- Model park 3 ½
- Model park 51B
- Owaise shaheed park.

Following Neighborhoods were selected in Korangi Town

- Bilal colony
- Charkha goth
- Gulzar colony
- Hasrat mohani colony
- Hundred quarters
- Allah wala town
- Gulshane-mehran
- Korangi sector 33
- Mustafa taj colony
- Nasir colony
- Zaman town
- Bhittai colony
- Qayyumabab

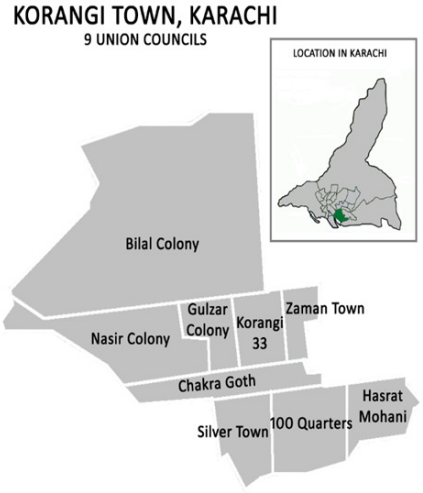

Fig. 1. Union council of Korangi town.

Population

According to bureau of statistics (BOS) 2017 the population of Korangi town is 1,071,560 and in 1998 it was 525,654 and annual growth rate of urban area of Sindh is 3.52.

Table 1: Population Projection.

S No	Year	Forecasted Population	Average Annual growth rate of urban area of sindh
01	2017	1071560	--------
02	2018	1,109,278	3.52%
03	2019	1,148,324	3.52%
04	2020	1,188,745	3.52%

Table 1 shows the population projection of korangi town, as in 2017 and growth rate is 3.52 % according to bereau of statistics, population in 2017 was 1071580. Further for sample size the population is projected as shown in table 1.

The Fig. 2 shows the location of parks i.e bara park, lucknow park, model park 31/2, model park 51/b and owaise Shaheed park. These parks were located by point data of shape files. After generating base map, all the variables will be symbolized by different colors and shapes, a range will be setup for no. of response in favor and against or according to questions. The size of shapes on different parks in socio tope map will describe the response of park users about what activities attracts them to use parks.

Fig. 2. Boundary of study area.

Analysis factors:

- Health
- Park appearance
- General facilities

III. RESULTS AND DISCUSSION

The analysed data indicated the numerous social functions available in formal urban parks many of which seem not to be known to the general public [4]. public preferences regarding urban parks are analyzed to evaluate the preferences in order to achieve appropriate standards for designing and running urban parks [10]. In Korangi town there were 25 spaces accommodated for parks but out of 25 only 5 parks were functional. 96 % respondents lived in apartments and town houses. 55.5% people have income between 30,000 to 50,000 rupees. 43% people visit Park weekly.

A. Bara park

In General facilities prayer area, lockers and sports equipment are not available but are required. Toilets and security are available but respondents are not satisfied with present condition.

in sports facilities, cricket, badminton, football and athletics are not available but required., in Appearance: fountains and birds are not available but required. In health activities gymnasium and cycling track is not available but required.

B. Model park 51/b

In General facilities, lockers and sports equipment are not available but required. In Appearance, birds and animals are not available but required. In Health, gymnasium and swimming pool is not available but required.

C. Lucknow park

In General facilities: Canteen, toilet, lockers and sports equipment are not available but are required. In Appearance: no improvement required. In Health, gymnasium and swimming activities are not available but required while jogging track requires improvement.

D. Model park 3 ½

In General facilities, Prayer area, toilets, lockers, waiting area and sports equipment are not available but required. Security and parking are available.

In Appearance: fountains, lake or pond and birds are not available but required. In Health: gymnasium, yoga activities, cycling and swimming activities are not available but required.

E. Owaise Shaheed park

In General facilities: Lockers and sports equipment are not available but required and prayer area and canteen are available but people are dissatisfied. In Appearance, lake or pond and birds are not available but required. Fountains are available but people are dissatisfied with its condition. In Health, gymnasium and yoga activities are not available but required. Jogging track is available but people are not satisfied

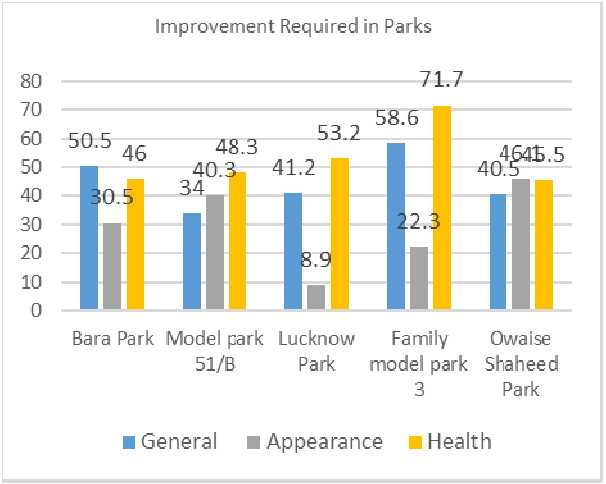

Fig. 3. Shows the parks that requires improvement in which type of activities.

In bara park more people want improvement in sports and health facilities, model park 51/b requires improvement in sports and health activities, lucknow park requires improvement and provision in sports and health activities. model park 3 ½ requires provision and improvement in general, sports, health and passive

In sociotope maps the circles to show the response of people were drawn with help of multiple ring buffer. The percentage from questionnaire data were in form of rings. Sociotope is generated by means of collecting opinions from professionals and public with interview and questionnaire. The result is then transferred into spatial dimension and graded as biotope mapping approach [14].

Fig. 4 shows that model park 3 ½ requires general facilities. Respondents of bara park, lucknow park, owaise shaheed park and model park 51/b are satisfied with general facilities.

Fig. 5 shows that model park 3 1/2, bara park, lucknow park, and model park 51/b require health facilities while respondents of owaise shaheed park don't want health activities

The figure 6 shows that all parks (bara park, lucknow park, model park 3 ½ , owaise shaheed park, and model park 51/b) are satisfied with park appearances and does not require improvement.

Fig. 4. Sociotope Maping of General Facilities.

Fig. 5. Sociotope Maping of Health Facilities.

Fig. 6. Sociotope Maping of park appearance.

Table 2: Improvement required in Parks.

S. No	Park	General	Appearance	Health
1	Bara Park	50.5	30.5	46.0
2	Model park 51/B	34.0	40.3	48.3
3	Lucknow Park	41.2	8.9	53.2
4	Family model park 3	58.6	22.3	71.7
5	Owaise Shaheed Park	40.5	46.1	45.5

Table 2 shows the parks that requires improvement in which type of activities in bara park more people want improvement in sports and health facilities, model park 51/b requires improvement in sports and health activities, lucknow park requires improvement and provision in sports and health activities, family model park 3 requires provision and improvement in general, sports, health and passive activities, owaise shaheed park requires improvement and provision in sports and passive activities.

IV. CONCLUSION

Park is a vital component in urban areas which is very important for human life in this polluted environment of Karachi. Unfortunately, parks are not given importance in Pakistan as required. This study was conducted to analyze what park uses are currently provided in korangi town, as this area is neither high income accommodated nor low income. This study was conducted on the basis of questionnaire survey about facilities (general, health, sports, appearance and passive) provided how much people are satisfied, how much people are not satisfied, what facilities are required, what are not and demographic data of respondents. The data acquired from on field survey was analyzed using SPSS in form of pie charts, graphs and tabulations. The data was put in Geographical information system (GIS) by using multiple ring buffer analysis to make socio tope maps of study area. All the facilities were given different colors ranging from high to low according to responses of respondents. This study elaborated the input required in parks to appeal people of Korangi town towards urban parks. Where most of parks were not developed and the developed ones required improvements and provision of further facilities. in bara park more people want improvement in sports and health facilities, model park 51/b requires improvement in sports and health activities, lucknow park requires improvement and provision in sports and health activities, family model park 3 requires provision and improvement in general, sports, health and passive activities, owaise shaheed park requires improvement and provision in sports and passive activities. The best park to visit was lucknow park and model park 3 1/2 parks.

V. FUTURE SCOPE

Urban parks are important component and should have a importance in every community for the wellbeing of humans in urban areas. This research will further help in identifying the requirements and better design guidelines according to needs of local people

Conflict of Interest: There is no conflict of interst between authors.

REFERENCES

[1]. Achmad Delianur Nasution*, W. Z. (2015). The Space is Not Ours, the Life of Public Open Space in Gated Community in Medan, Indonesia. *Social and Behavioral Sciences 202*, 144-151.

[2]. Andrej Christian Lindholst a, n. (2015). *Methods for mapping recreational and social values in urban green.* lagos: Office of the Honourable Commissioner, Lagos State for Physical Planning and Urban Development.

[3]. Dasimah binte umar. (2015). human interactions in open spaces. *social and behavioral sciences, volume 201*, 352-359.

[4]. Edyta Łasz kiewicz, P. C. (2020). Creating a Map of the Social Functions of Urban parks in a City with Poor Availability of Spatial Data: A Sociotope for Lodz. *urban context and urban-rural interaction,* , 183-187.

[5]. Fanhua kong A, H. Y. (2006). amenity value of urban green space: A case study in Jinan City, China. *landscape and urban planning 79,* , 240-252.

[6]. Godbey, G. (2009). *Outdoor Recreation, Health, and Wellness,.* Washington: Out door Resources Review Group.

[7]. I.D.wold. (2014). walking, hawking and running in parks. *Landscape and urban planning*, 89-103.

[8]. K. B.Shuib & H. Hashim. (2014). Community Participation Strategies in Planning for Urban Parks. *Sustainable Development and Planning VIII* (pp. 469-480). Malaysia: WIT Transaction on ecology and on the enviornment, vol 210 @ 2016 WIT press.

[9]. Miller, R. (1997). *Urban Forestry: Planning and Managing Urban Green Spaces.* Waveland Press, Inc.

[10]. Mobina Rouhi, M. R. (2018). Measuring Public Satisfaction on Urban Parks (A Case Study: Sari City). *Journal of History Culture and Art Research*, 457-473.

[11]. Muhammad Azam, F. B.-u.-H. (2012). open green spaces- Shah Faisal town, Karachi, Pakistan: A temporal prespective. *Karachi University Journal of Science*, 5-11.

[12]. Noralizawati Mohamed, N. O. (2012). Push and Pull Factor: Determining the Visitors Satisfactions at Urban Recreational Area. *Social and behavioral sciences, volume 49*, 175-182.

[13]. Nurhayati Abdul Malek, M. M. (2014). Community participation in quality assesment for green open spaces in Malaysia. *social and behavioral sciences, volume 168*, 219-228.

[14]. Ogbeide, E. (2012). *Mapping perceived green area values from adolescents.* stocklhms: Institutionen för naturgeografi.

[15]. Wan-yu Shih, J. H. (2009). Mapping Biotope and Sociotope for Green Infrastructure Planning in Urban Areas. *REAL CORP 2009: Cities 3.0 – smart, sustainable, integrative. Strategies, concepts and technologies for planning the urban futur* (pp. 745-749). Manchester, UK: Manfred SCHRENK, Vasily V. POPOVICH, Dirk ENGELKE, Pietro ELISEI.

[16]. Wedberg, J. (2019). *Accessibility to social utilities within urban green space.* Gothenburg: Department of Economy and Society, Unit for Human Geography.

[17]. Zaleckis, K. (2019). ntegrating Content Analysis Into Urban Research: Compatibility With Sociotope Method and Multimodal Graph. *sagepub*, 1-13.

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