

Analysis and Evaluation of Recreational Spaces

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Abstract— In today's urban society, recreational space plays a crucial role in the lives of people where they spend their free time mostly doing passive activities rather than active. A recreational space can be attractive only if it is useful for all the users and satisfy their needs if provided with all amenities and facilities up to their standards and liking, they should at least satisfy their bare minimum need for it to be useful in their day-to-day life. For a recreational space to be useful it should satisfy the user under certain parameters which are basic in nature those are accessibility, facilities and amenities, aesthetic, maintenance, management and should be useful to all age group people. Based on the above parameter analysis and evaluation of recreational space adjacent to New Canal Road (including Sinhgad walking trail, Pune Mahanagarपालिका Baludyan and Tukai Mata Jogging Garden) has been carried out. This recreational stretch has been created for leisure of residence of Sinhgad road area. In this research we will study the behavior pattern of the users for this recreational space through its analysis and evaluation on parameters through primary and secondary survey based on which it will guide us to understand the current scenario and accordingly we can make essential development which can be concluded based on the inferences obtained and the parameters on which the survey is carried out. This procedure can also be used for the development of similar kind of recreational space in any part of Pune.

Keywords— *Useful, satisfy, attitude, behaviour, recreational, need*

I. INTRODUCTION

Recreation is considered as activity through which leisure may be experienced and enjoyed but it is also seen as a social institution, socially organized for social purposes (Laidler, 1990). Recreation is about activities, pastimes, and experiences which are freely chosen. They are usually undertaken in free time and produce feelings of wellbeing, fulfillment, enjoyment, relaxation and satisfaction (Recreation Rendezvous). Recreation is important in promoting quality of life. It increases self-esteem and confidence, gives people the opportunity to make their own choices and involves and make them feel part of the community. It allows people to contribute their skills and feel a sense of belonging and accomplishment. Vast land use changes occur during times of dramatic socio-spatial transformation, all the economic, political, social and cultural changes of a globalized world have their relation to space (David, 1998). Currently such changes are driven by globalization and urbanization. Transformations affect water, air, energy resources and, particularly, human populations (Baschak & Brown, 1995). And, at the same time, demands for outdoor recreation grow. The natural and cultural landscape becomes the ultimate resource providing open space for human leisure activity. Recreation has formed one of the basic human needs for activities which are essential for the mental and

physical well-being of the individual and the community as a whole. It therefore encourages participation in recreational pursuits and seeks to ensure that appropriate opportunities are available to meet the needs of the people. Recreation is accepted as an essential activity for which land must be allocated. It is also an essential land use element in urban design. These functions are particularly important in a high density, high-rise built environment like area along Sinhgad Road. As a result, it is important to study the usefulness of recreational spaces in such areas.

II. METHODOLOGY

A. Literature

Secondary data was reviewed initially through previous thesis, research papers, books published, etc.

B. Data collection and sampling

1. Qualitative and quantitative survey
2. Primary survey:
3. Sample count and
4. Interview with the users (questionnaire)

C. Data analysis

Data collected through google form survey will be analyzed through Likert scale method

III. LITRETURE REVIEW

To understand the relation between recreational spaces and human life below are some of the research papers studied based on which analysis and evaluation of recreational spaces was carried out.

Report on the public use of Central Park New York. (Douglas Blonsky 2011) Central Park being an urban park in middle-upper Manhattan, New York City is the most visited urban park in the United States being centrally located and unrestricted access have created an immeasurable significance on the people residing there. The survey conducted was useful in quantifying the factors like the volume and pattern of use of the park throughout the year (count of the people), nature of the park use (activity categories - active or passive, nature of the park visits, frequency of visit, duration). Characteristics of the park users (residence of the visitor, age group). Perception and attitude of the park users (safety and maintenance, users likes and dislike about the place, their willingness to pay). (Blonsky, 2011)

Evaluating the urban green space benefits and functions at macro, meso and micro level: case of Bhopal City. (Prashanti

Rao and Dr. Kshama Puntambekar – SPA Bhopal 6 June 2014) This research paper show cased that recreational spaces at urban level are integral part of city landscape providing tangible and intangible benefits and functions at various spatial levels perform differently. that is City level (Macro), Zonal level (Meso) and ward level (Micro). Methodology used was quantitative analysis - Per capita Green = Total area under green / Total population (UDPFI guidelines were used as base of comparison) and qualitative analysis - Primary survey, photo documentation, observation and secondary data collection analyzed through scaling technique (Likert scale). The paper helps to understand the factors like accessibility, aesthetics, age group, Maintenance and Management and space function which affect the benefits of the recreational space which will be used in my research in order to evaluate the required result. (Puntambekar, 2014)

On measuring the recreational vale of open spaces. (Aliza Fleischer and Yacov Tsur) The research method in this paper estimates the recreational benefits of beaches, urban parks and national parks in Israel based on the location of different types of green spaces and the number of times the people are visiting that space. Model used in was calibrated on revealed preferences by HML and 2 stage model (MNL and NMNL). The survey concluded that based on the ease of accessibility maximum people approached that area. beaches generate the largest benefits as majority of population resides close to beach. Urban parks generate the second largest benefit followed by national parks as urban parks are more accessible to the population that largely resides in urban centers. Only conclusion part is used in my study that is the accessibility factor which has a significant impact on the use of green space. (Tsur, 2009)

Perceived environment and public open space use: a study with adults from Curitiba, Brazil by Rogério César Fermino, Rodrigo Siqueira Reis, Pedro Curi Hallal, and José Cazuza de Farias Júnio (15 March 2015). A cross-sectional study with household surveys was conducted in 1,461 adults from Curitiba, Brazil interviewed in person. The study environment was evaluated with the Neighborhood Environment Walkability Scale, and the public open space use was evaluated using the ordinal scale (increased use). The study showed that open space may depend on gender preference, how can improvement and maintaining the recreational space attract more users. But it does not provide data on the physical activities (frequency, intensity, type or time) performed within the public open space and its usage. (Rogério César Fermino, 2015)

A. Summary of literature

The literature study done through the previous research papers and report indicates that a recreational space has an important impact on the life of people in terms of the tangible benefits: Economic benefits, planning benefits, ecological benefits. Intangible benefits: social benefits, health benefits, improves quality of life. Usefulness of a recreational space is a subjective matter; it may change according to the user's perception. Recreational spaces are used by the users if the spaces are benefiting the user and the factors affecting the benefits are mainly based on five parameters those are as follows:

1. Types of facilities,

2. Age group,
3. Accessibility,
4. Aesthetics,
5. Maintenance and
6. Management of the green spaces.

All the above factors will be considered to quantify the usefulness of recreational space at. Based on the above factor's questions are constructed for each factor rated on Likert scale (5 – point) measuring the attitudinal behavior and the average of each factor will be calculated separately and average of all the factors will give rate of usefulness of that recreational space.

TABLE 1. SHOWING STANDARDS ACCORDING TO UDPFI GUIDE LINES FOR WALKING DISTANCE TO THE RECREATIONAL SPACE.

Sr. No.	Standards according to UDPFI guide lines for walking distance to the recreational space		
	Recreation amenities	Area per 1000 population (In Ha)	Suggested walking distance
1	Tot Lots	0.5	0.2 km
2	Gardens	0.8	0.8 – 1.2 km
3	Parks	1.2	0.8 – 1.6 km
4	Children's playground	0.8	0.3 – 0.5 km
5	Adult Playground	1.5ha per 50000 population	1.5 – 3.0 km

TABLE 2. AREA REQUIREMENT FOR ORGANISED GREEN SPACE (URDPFI)

Sr. No.	Area requirement for organized green space		
	Category	Population served per unit	Area Requirement (HA)
1	Housing area park	5000	0.5
2	Neighbourhood park	15000	1
3	Community parks	1 lakh	5
4	District park	5 lakhs	25
5	Sub city park	10 lakhs	100

IV. CASE STUDY AREA

The urban recreational area constructed by municipal corporation located in Tukai Nagar is huge stretch of open space spread along 2.68-kilometer; area 147,000 square meter divided into four parts due to crossing of vehicular roads. which is a major point of attraction for people residing in its adjacent for all age people. Each part has its own importance in regards with its facilities and amenities. First part mainly walking trails, second part kids play area, open gym, garden area, seating plazas. Third part walking trails and open ground space for outdoor sports and fourth part has garden area with jogging track, kids play area, walking trails and places for senior citizen gatherings and seating with well-designed landscape. The open space has canal water body adjacent to it along stretch which creates a scenic beauty around attracting different kind of birds making more people to visit this place. Aim of this study is to analyze and evaluate the usefulness of existing recreational space, report is based on users' data collected from case study area that includes: 1) Interviews and observations of users exiting the Park and 2) Sample survey. The data was collected on six survey dates on a Saturday, Sunday and at weekday. On each survey date with two volunteers during morning hours (5am to 10am) and evening hours (4pm to 8:30pm). Google questionnaire was given to them and position were assigned to them collecting the samples of the users entering the park and interview them. The samples collected were based on age group categories mentioned in the questionnaire format that is Quota sampling method was used. At least 50 samples were collected. This helped in understanding the attitude of all age group users in the recreational space. Due to limitation of time, cost and resources the findings are based on the user's perspective of

Sinhgad road residents and accordingly can be used for recreational space implementation, development and management for any kind of recreational space development elsewhere in Pune.

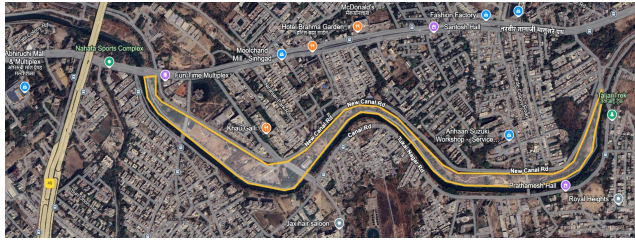


Fig. 1. Google map showing recreational area stretch.

V. QUESTIONS FORMED ON THE BASE OF PARAMETERS IDENTIFIED THROUGH QUALITATIVE ANALYSIS WHICH WERE FURTHER SCALED ON LIKERT SCALE.

Six essential parameters identified in case of a recreational space to be useful based on which questions were constructed to be asked to the visitor with options of stated and revealed preferences; based on which the attitude of the user and usefulness of the recreational area was evaluated. The method used was of Likert Scale.

A. Questions framed for the survey to be carried out..

Sr. no	Question no.	Question
Questions based on Facility parameter.		
1	13	Play area is sufficiently large.
2	14	Kids play area is sufficient.
3	15	Provision of open gym is useful.
4	16	Provision of Yoga Park is useful for exercise.
5	17	Parking area is adequate.
6	34	The facility to the nearby eating area is convenient as they are adjacently located.
7	35	Facility for drinking water is adequately provided.
8	36	Water supply for the park is sufficiently provided.
Questions based on Accessibility parameter.		
9	18	The park space brings peace and quiet.
10	19	The park space brings contact with nature.
11	20	The accessibility to different facilities inside the park is easy for old age people.
12	21	The accessibility to different facilities inside the park for disables is easy.
13	22	The accessibility to different facilities inside the park for kids is easy.
14	23	The street connectivity to the park is good for pedestrians.
Questions based on Aesthetics parameter.		
15	24	The landscape of the park is very pleasing.
16	25	The trees flowers, shrubs and grass add to the beauty of park landscape design.
Questions based on Maintenance parameter.		
17	26	The toilets in the park are clean.
18	27	The landscape in the park is well maintained.
19	28	The facilities available in the park are well maintained.
20	29	The lighting in the park during evening time is adequate.
Questions based on Management parameter.		
21	30	The security in the park is well managed.
22	31	Events conducted in the park are well managed.
23	32	Parking provision for the park user is well managed.
24	33	Community gatherings and social events in the park are well managed.

Fig. 2. Questions FRAMED FOR SURVEY

Based on five parameters the questions were formed. All the questions assumed same weight. Base on this scale each question was evaluated (from Q13 to Q37) and taking their average the results were derived.

Based on the google form survey following output mentioned in the figure below was derived:

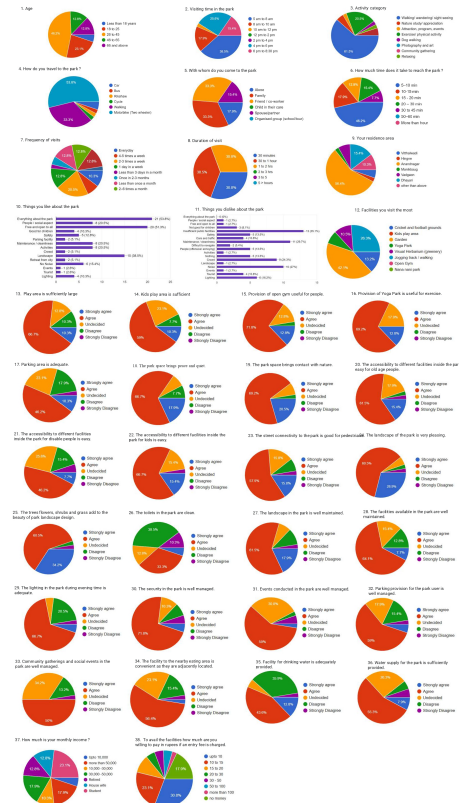


Fig. 3. Graph and pie charts showing percentage wise distribution of the survey answers.

B. Likert SCALE DESIGN

Scale design: The scale design was of five-point rating scale as follows-Strongly agree:1, Agree:2, Undecided:3, Disagree:4 and strongly disagree:5.

TABLE 4. LIKERT SCALE ANALYSIS

Sr.No.	Question number	Scale average	Sr.No.	Question number	Scale average
1	13	2.23	13	25	1.78
2	14	2.28	14	26	1.78
3	15	2.05	15	27	2.19
4	16	2.05	16	28	2.35
5	17	2.51	17	29	2.51
6	18	2.05	18	30	2.38
7	19	1.89	19	31	2.46
8	20	2.11	20	32	2.51
9	21	2.62	21	33	2.62
10	22	2.08	22	34	2.54
11	23	2.22	23	35	1.78
12	24	1.89	24	36	2.47

VI. INFERENCE BASED ON PARAMETERS (LIKERT SCALE)

A. Facilities:

The facilities are more on the agreeing scale as the visitors seem to be satisfied with the facilities provided in the park (seen from Q.13-Q.19). But for some facilities like eateries, drinking water and trees and shrub maintenance the visitor's satisfaction level was on disagreeing level (seen in Q.24-Q.26).

B. Age group:

Facilities according to all age group people have been provided in the park like kids play area for the age group of 4 to 13 years, play area for teenager's, gazebos as a relaxing space for old age people.

C. Accessibility:

The accessibility parameter was analyzed on the level of agreeing by visitors complained inside the park for old age people as well as kids.

D. Aesthetics:

Visitors were not on the agreeing level of satisfaction in terms of landscape design, environment, etc. (seen from Q.24-Q.25), in general opinion people do complain about less cleanliness, maintenance in the area and street dogs and foul smell of the adjacent canal water body.

E. Maintenance:

The level of satisfaction for maintenance was at disagreeing level as many visitors complained about cleanliness of the toilets, garden area (Q.26 to Q.29). Attention should be given in cleanliness and maintenance of the Central Park.

F. Management:

The level of satisfaction for management was on agreeing level as per the visitor's opinion mainly the parking facilities and events managed (Q.30 to Q.33).

G. Interview of the visitors at the Central Park

Negative Points:

1. No maintenance and cleanliness
2. The facilities are not well maintained. E.g.: Toilets, Water bodies (foul smell)
3. Eateries are very less and are only available outside the main gate one near the entrance are of less choices only Chat and tea/coffee.
4. The security staff were only near the entrance chilling and relaxing. The gates always being opened can also create security issues during late evening time.
5. Stray dogs are fed with biscuits. They can be hazardous for walkers. Hence, they can be taken out of the area for safer environment.

Positive points:

1. Centrally located as a result easily accessible.
2. Nice place to relax and quite environment.
3. Has a scenic beauty.
4. Good for children.

VII. ANALYSIS BASED ON SURVEY

Maximum age group of people who visit this recreational area is between 26 to 45 years (46.2%) accompanied by their family or friends (33.3%) and mostly by two wheelers (53.8%) mostly during 6am to 8pm (38.5%) that is for walking or jogging (61.5%) from a nearby at a distance of 5 to 10 minutes (48.6%) i.e Anandnagar area. Everyday (10.3%) users are less compared to 2-3 times (20.5%) a week visitors, they stay and enjoy the facilities for more than an hour (38.5%) enjoying landscape (42.1%) and are pleased that it is free and open to all. People dislike that the space is not well maintained and

cleaned (29.7%), noise and air pollution has also repelled most of the users but are satisfied with large and sufficient open spaces, kids play area, open gym, yoga park and peace and quiet in the garden area and brings contact with the nature. As per survey many people (29.7%) people are ready to pay (upto 10₹) and 21.6% to pay (10₹ to 15₹) for the development & maintaining the facilities in the park.

VIII. RECOMMENDATIONS

A. Facilities:

The facilities like eateries, drinking water are one of the main needed facilities at arecreational space at a walking distance of the park or mostly at the park site itself so that people can enjoy the food with nature.

B. Accessibility

Provision for pedestrians of foot over bridge to cross the road to the as the recreational space is cut with road having traffic during peak hours for the safety purpose.

C. Age group

Though gazebos are provided in the park as a relaxing space for old age people a Nana-Nani Park can be proposed in the park specifically for these age group of peoples.

D. Aesthetics

Though the landscape is very pleasing and soothing to the eyes it requires more shading trees in the premises.

E. Maintenance

Improvement regarding cleanliness and maintenance of the park as it is the main factor to attract the visitors to the park. Proper lighting, toilet should be maintained.

F. Management

For security purpose security cameras can be installed at every entrance, walkways, kids play area and ground to increase the security measures. People should be fined for littering round the park, minimum entrance fee which could be afforded by all the visitors to generate a certain amount of revenue can help in maintaining the park.

IX. SUMMARY

A recreational space is a very demanding space in today's modern world and an integral part of every human being's life. It is a space for transformation of our busy running life which refreshes our mind body and soul but useful in social and environmental way if the facilities and amenities provided are to the liking of the users visiting the space or else need to be upgraded so that it can be utilized to its full extend. Factors affecting the usefulness of a recreational space are accessibility, facilities, aesthetic, maintenance, management and they also should be approachable to all age group of people, accessible not to just any particular fraternity but inculcating a sense of belonging and togetherness in the society. Analyzing and evaluating usefulness of a recreational space will help in understanding the nature and behavior of the people using the recreational space, understand their demand and needs

accordingly we can develop the space. Though demands are a very subjective matter we can come to a common ground by creating certain categories which essential for a recreational space to be satisfying on the basis of which we can analyze and evaluate the current condition. These common grounds categories previously mentioned above, on the basis of which recommendations can be made.

X. FUTURE SCOPE

In future this type of survey can be conducted to analyze and evaluate any recreational space through which improvement and changes can be carried out for the satisfaction of the users using that space. This method can be used for recreational space implementation, development and management in the urban level plans done by corporation in Pune and similar development elsewhere in Maharashtra state. Also, instead of using stratified quota technique for survey sampling method you may also use random sampling method for more accurate sampling technique that is every third or every fifth person can be asked questions for survey sampling which can then be considered more accurate than approximate result.

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