

## ANALYZING THE SATISFACTION INDEX FOR THE NEED OF PUBLIC PARKS IN HYDERABAD CITY, SINDH

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### ABSTRACT

Social cohesiveness and recreational activities depend on a favorable natural environment surrounding the community. The psychology and behavior of users (humans) in response to the interaction of inhabitants with their environment have received increased attention in public parks. When tackling these concerns, public parks' significance is becoming more and more apparent. The study characterizes the attributes of public parks and spatial distribution, found in Hyderabad city. Evidence of clustering of both present conditions and mislaid aesthetic quality postulates spatial analysis of the public parks of Hyderabad city. The study assesses the impact of public parks on inhabitants' social lives in Hyderabad. For evaluating the research, SPSS-20 and ArcGIS software were used to do the statistical calculations for the study analysis. The various studies show that standard analysts, recommend 380 interviews for cities with populations of more than one lac; in shaping social cohesion among the inhabitants of the city, 480 interviews were taken from locale to gauge the impact of public parks and analyze satisfaction of users. The research confronted Hyderabad, numbering about 22 various parks. However, based on this analysis, the backlog for active and passive use was 225 acres and 150 acres, respectively, for the 2 million population intake. The Yeh's Index of satisfaction equate, the distinctive satisfaction index of 27.582 percent of the user gauged by investigating various responses from inhabitants. A summary of the current situation between public parks and the effects on social cohesiveness among the populace revealed a significant, high level of dissatisfaction among city inhabitants. In the urban areas to support public park resilience, spreading sustainable behavior is suggested as the potential benefit of social cohesion. This study's findings may be used to develop suggestions for strategies that can be used to enlighten planning research studies and more evidence emerges become available. Some recommended policies encourage coordination and cooperative efforts, the development of new urban territories, and development with improved long-term sustainability.

**Keywords:** Natural Environment, Recreation, Public Park, Social Cohesion, Resilience, Hyderabad.

### INTRODUCTION

Hyderabad is a city that is located along the Indus River. The terrain of the Hyderabad tract has historically not supported robust greenery or vegetation. Through past decades with the constructive passage of time, in road development of the city, many public parks on the outskirts were established within different periods. Nevertheless, as

the population grew, most of them were either destroyed, left abandoned, or brought under irrelevant use. Despite the fact that there is a lot of room inside the city boundaries for further growth and there is enough provision for the people to accommodate in better means. In the review of an analysis of Hyderabad's development trends, the municipal government planned operations to maintain public recreational amenities and infrastructure for its citizens.

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Where the most effective method for defining settlement design patterns and analyzing urban clusters in a city is a visual language. People who reside around public parks have access to conveniences and recreational opportunities. As a result of the numerous parks neglected, facing the lack of development of a sufficient leisure or sports infrastructure; the spaces in public parks should be classified specifically for identification. Hyderabad's youth and senior inhabitants had few options for leisure time or to breathe in a clean natural atmosphere. In spite of Hyderabad's high ranking as Sindh's second-largest commercial and industrial city after Karachi, there are very few recreational alternatives for visitors traveling from all over Pakistan. Planners and decision-makers can benefit from this study and use it as an approach to facilitate public park space planning and research in the future.

Contemporary urban landscape problems are frequently solved using a variety of innovative paradigms. Computer programmers can combine various pieces of land to determine which one is best for certain land use activities, (Kyushik, 2001). The capability of computers to retain geographical data makes it useful for planning land use, including landscape design. A number of tools and procedures are being made available for discovering problems with land-use planning, thanks to advanced technological advances in computer-related sectors (Seong-Hoon, et al., 2007; Chandio, et al., 2011).

## AIM AND OBJECTIVE

This study's overarching goal is to assess the inner-city landscape of Hyderabad and identify its public park provisions i.e. with respect to the present and future growth scenarios. The research investigates the existing conditions of public parks which may help in identifying the satisfaction of users and causes of urban regions' disregard for planning of public parks in the urban areas.

## METHODOLOGY

The interviews and questionnaire survey conducted mainly from authorities and inhabitants of the city. Statistical Package for Social Sciences (SPSS-20) and ArcGIS were utilized in this study to achieve the research's aim and objective; it helps to gather analytical and graphical representation respectively. Whereas Yeh's index of satisfaction is used to evaluate each frequency analysis and determine the degree of ignorance and backlog instance.

## Analysis and Interpretation of Data

The obtained data is examined in two phases; the first stage determines the level of inhabitant satisfaction or dissatisfaction with the current system, which aids in highlighting the concerns that are being disregarded in the planning of public parks and landscapes of urban areas. It examines how people use the facilities provided for recreation and how they perceive the expenses associated with those facilities. It raises concerns about why individuals engage in this type of pastime nowadays and their attitude toward more contemporary forms of recreation, while performing a survey for Hyderabad city's open-space planning and design support the formation of ecological networks. By using the satisfaction index formula, which is given below, the overall Yeh's index of satisfaction (YIS) of the user has been calculated.

$$100 \times \frac{\text{Satisfied-Dissatisfied}}{\text{Total no. of Respondent}} = \text{YIS}$$

This formula evaluates the satisfaction or dissatisfaction level as a whole, by subtracting responses from the respondent; i.e. satisfied and dissatisfied respectively and dividing from the total number of responses and getting the respective percentage by multiplying the whole by 100 (Batool, et al., 2016).

## RESULTS AND DISCUSSION

In order to investigate the issues and their scope, the data analysis's findings are of utmost significance. The purpose of this work is to observe and gather numerous interrelated data from the questionnaire survey and ArcGIS analysis, as seen in the SPSS and ArcGIS data analysis results, and to discuss these results. More of the graphical representation shows the availability and distances of Parks with respect to residential area densities.

### Analyzing Provision Division and the Availability of Parks

An authoritative test for the goodness of fit is the statistical technique (Justel, et al., 1997). SPSS is particularly supportive in examining results acquired by surveys (Chandio, et al., 2013). For investigating the distribution and availability provision of urban public park areas, SPSS-20 has assisted in presuming occurrences for the analysis of the availability and provide distribution in Hyderabad city. The analysis of frequencies beheld at the variables that were least likely to

be present when determining whether a public park or active/passive recreation facility existed.

While going through the survey the provision offered in parks has a cumulative percentage of 46% for passive and active use, according to survey, compared to 34% and 31% for playgrounds and rides for children, respectively. In fact, different age groups visit these locations at a cumulative rate of 49%, as shown in figures 1 and 2.

The aforementioned diagrams show the percentages of passive and active provision and the availability of parks. Figure 2 reveals a frequency analysis of the respondents' responses about the availability of kids rides, visits by age groups primarily, and playground provision, whereas figure 3 is a digital high-resolution image from the Arc GIS, showing public parks availability within Hyderabad city.

Figure 3 presenting the Public Parks in Hyderabad, digital high resolution image from GIS shows the availability of public parks. The image also shows the map of Hyderabad indicating its position in province Sindh, road patterns within city and integration of road/street and parks with in city.

**Area Standard for Both Active and Passive Recreation (per population intake)**

The USAID report from the 2010 census (USAID, 2014) states that the population of Hyderabad City is rapidly increasing, reaching a population rate of 1919053 and expanding over an area of 1020 sq. km. The standards stated in the national reference manual NRM (Division, 1986) state that 242 acres should be the total area for passive recreation for the 2 million population intake; however, the

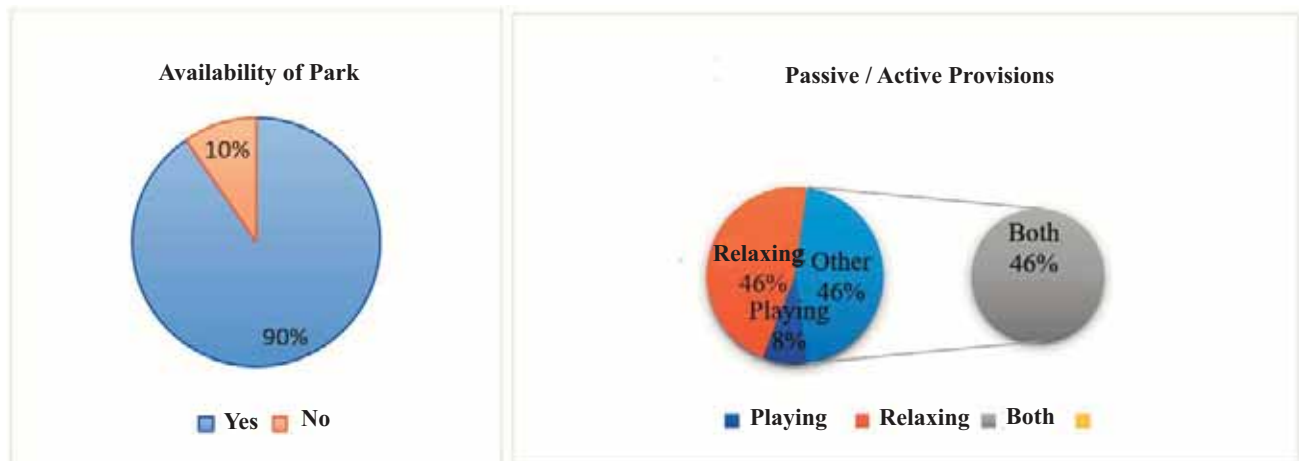


Figure-1: Parks Availability Frequency Analysis Provisions.

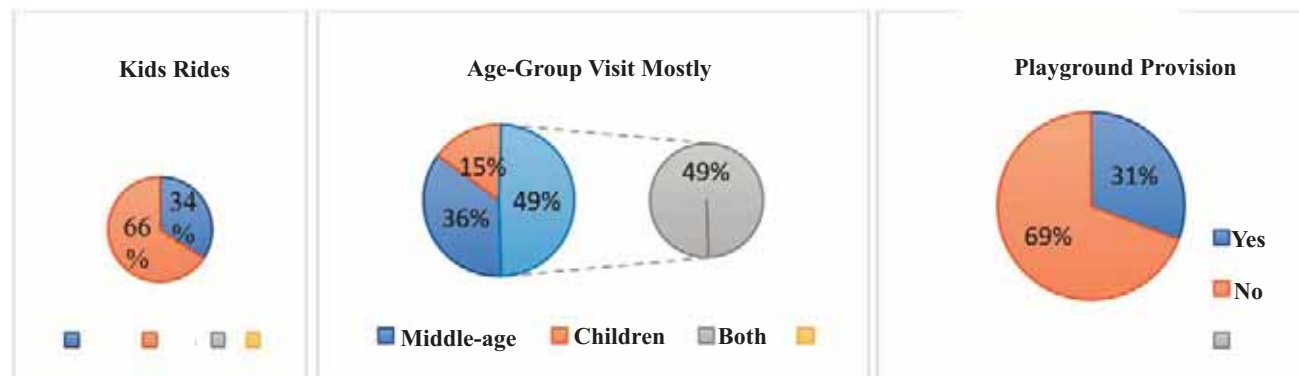


Figure-2: Existing Attributes Frequency Analysis Diagram

amount of parkland actually available is only 92.08 acres, as determined by ArcGIS, for a population of 1919053. While NRM estimates that for a 2 million population, the active recreation area should be 445 acres, there are only 220.18 acres as calculated by means of ArcGIS; as shown below in table 1.

Hyderabad's district administration provides information on a variety of parks and open spaces, (District Govt. Hyderabad, 2009). The approximate total area for active use is 220.18 acres, while the approximate total area for passive use is 92.06 acres, according to surveys and spatial analysis done with Arch GIS. In contrast, the Hyderabad region has 312.84 acres (126.28 hectares) of designated urban open space for active and passive uses, which is a very modest size by national standards (Division, 1986). Tables 2 and 3 list the quick computations that were produced from the examination of spatial data.

Figures 4 and 5 show the evaluation of the current recreational spaces, both active and passive; in conformity with the necessary national standards to meet the demands of Hyderabad residents, they demonstrate the backlog areas of 225 acres for active recreation use and 150 acres for passive recreation usage, respectively.

The space that is currently available for active usage, is only 220 acres, although standards state that it should be 445 acres to accommodate a population of 2 million.

Figure 5 shows only 92 acres are currently available for passive usage, but requirements state that for approximately 2 million population intake there should be 242 acres available.

### Analyzing The Condition of Public Parks Spaces

The sub-criteria for the variable for urban open spaces in the current scenario has been used frequently to examine

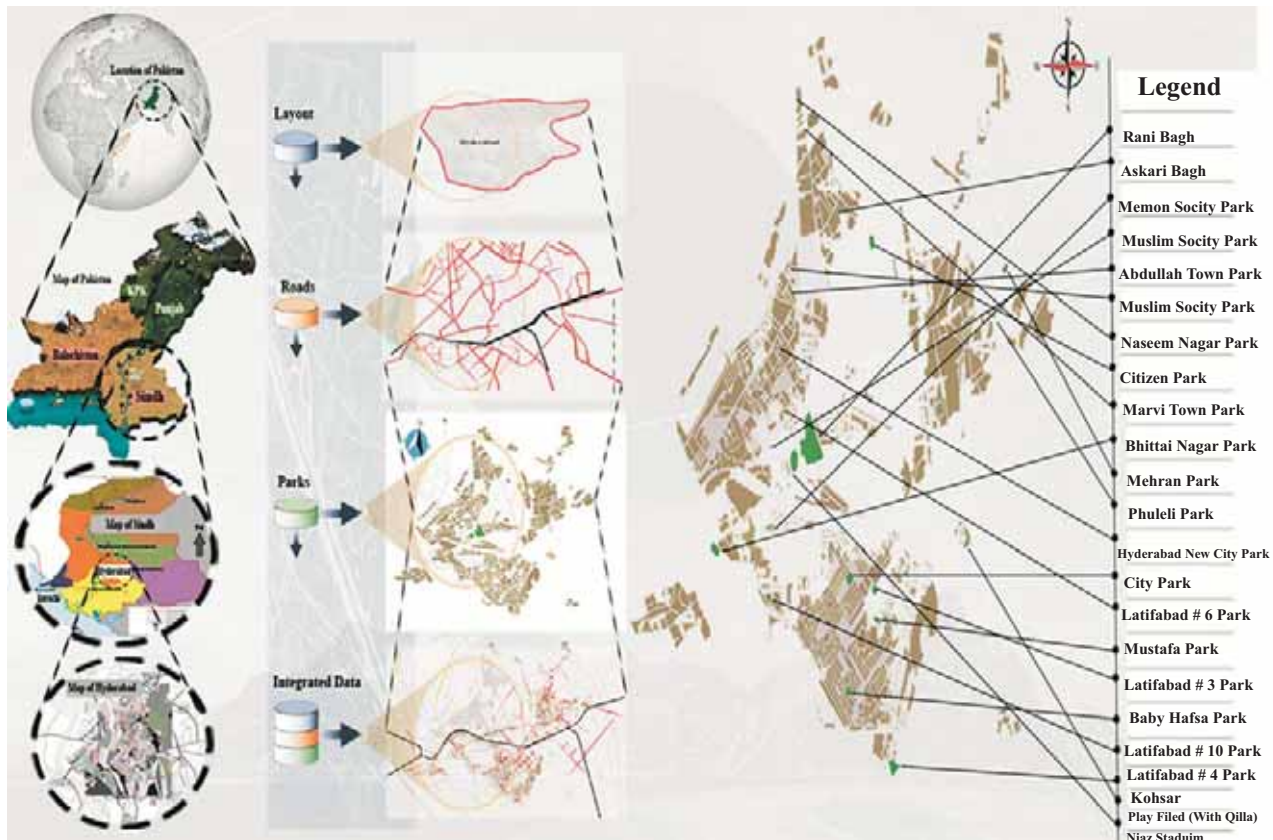


Figure-3: Public Parkistan in Hyderabad, Digital High Resolution Image from GIS

**Table-1:** Standard Area

<b>2010 Census Population (USAID)</b>	<b>1.9 Million Population</b>	<b>Entailed Standard Area (2 Million Population)</b>
Passive Recreation (Existing Area)	92.08 acres	242 acres
Active Recreation (Existing Area)	220.18	445 acres

**Table-2:** Enlisted Hyderabad City's Public Parks (Passive Recreational Use) Hyderabad Master Plan, 2009

<b>Public-Park (Passive Recreational Use)</b>	<b>Size in Area</b>	<b>Public-Park (Passive Recreational Use)</b>	<b>Size in Area</b>
Mehran Public-Park	05	Rani Bagh Public-Park	50.76
Phuleli Public-Park	03.96	Askari Park Public-Park	03.45
New Hyderabad City Public-Park	07.86	Memon Society Park	00.34
City Public-Park	00.86	Muslim Society-Park	00.46
Latifabad unit no.6 Public-Park	03.55	Abdullah Town Public-Park	00.12
Musttafa Public-Park	01.88	Naseem Nagar Public-Park	00.42
Latifabad unit no.3 Public-Park	00.51	Citizen Public-Park	01.23
Baby Haffsa Public-Park	02.04	Marvi Town Public-Park	00.12
Latifabad unit no.10 Public-Park	02.75	Bhettai Naggar Public-Park	00.27
Latifabad unit no.4 Public-Park	02.49	Bhettai Naggar Public-Park	00.18
Kohisar Public-Park	02.40	Muslim Society Public-Park	01.31
Accumulated Area		92.06 (in acres)	

**Table-3:** Enlisted Hyderabad City's Public Parks (Active Recreational Use)

<b>Active Recreational Use</b>	<b>Play Pitch (inside Qilla)</b>	<b>Niyaz Stadium</b>	<b>Sport Complex Hyderabad</b>	<b>Accumulated Area in Acres</b>
Size in Acres	2.93	27.25	242 acres	220.18

conditions (Chandio, et al., 2013; Fang and Julie, 1998). In Figure 6, the frequency analysis chart for evaluating the state of public park places is mentioned. According to survey responses from 138, 332, 210, and 298 respondents (out of 480), the size of the park, the availability of playground equipment, the architectural aesthetics, and the welcoming atmosphere are all in poor condition. The survey shows that neighborhood parks are rarely maintained whereas community parks' open spaces have been completely ignored. As a result, no statistically significant change has been found among the sub-criteria variables examining the state of urban open spaces, indicating that the observed variables' availability is not sufficient.

#### **Analyzing the Physical and Functional Aspects Ignorance Level**

A survey covering the pertinent characteristics of urban open spaces has been done in order to investigate the reasons why landscape provision and public park design are neglected in urban areas, which are given in Table 4. The ignorance level is defined, with respect to the activity criteria of the physical and functional aspects attributes, investigating ignorance level respectively.

The analysis through questionnaire survey shows that Taluka Municipal Authority (TMA) exhibits the least concentration in upholding such spaces for inhabitants of Hyderabad city and became the cause that occupant may not get proper places for social cohesion, cultural ethics and recreational activities as these should be the defining characteristics of any urban open space that may be recognized at a very elementary level. However, the survey found that these particular areas are not self-maintained or self-organized, despite the fact that accessibility and connection within the specific region are acceptable and give access to all age groups up to the least-ignored level; therefore, they give up providing the potential user a good impression of being

secure and appealing. The ecological activities highlight the relationship between characteristics created by man and characteristics created by nature, which is an uncommon phenomenon and somehow manifests at an unnoticed and ignored level.

#### **Satisfaction Index Assessment**

The satisfaction-index aids in suitable contribution through analysis of significant frequencies for the reasons why public park design is ignored in urban areas. The YIS (Yeh's index of satisfaction) equation uses two points as the satisfied and unsatisfied states to determine the degree of satisfaction. Where the total 480 responses gathered (as per population need) to analyze the statistical impact of each variable.

Table 5 shows the satisfaction level does not fluctuate significantly, but the varying frequency percentages of the various variables emphasize the variance in the satisfaction index. According to the satisfaction index for the relevant urban open space variable, Hyderabad has an abundance of open spaces, albeit they may not fully satisfy the needs of the city's current population in accordance with the necessary standards for area distribution.

In contrast to the overall availability of playgrounds and kiddie rides, which are hardly ever observed even with the slightest satisfaction, architectural appearances have diverted their places. Most likely both trees and plants suffer from the same level of ignorance, as do the pedestrian paths, which are present but in the worst condition. Paddocks are offered, but safety precautions are infrequent or absent in some areas, where it is said that there are a rising number of antisocial acts; as a result, locals avoid or rarely prefer visiting these places. Meanwhile, such areas somehow display a lack of vegetation and water features, as well as a lack of furniture and lighting fixtures, and the state of the plant life adjacent to the road or street is at its most unpleasant.

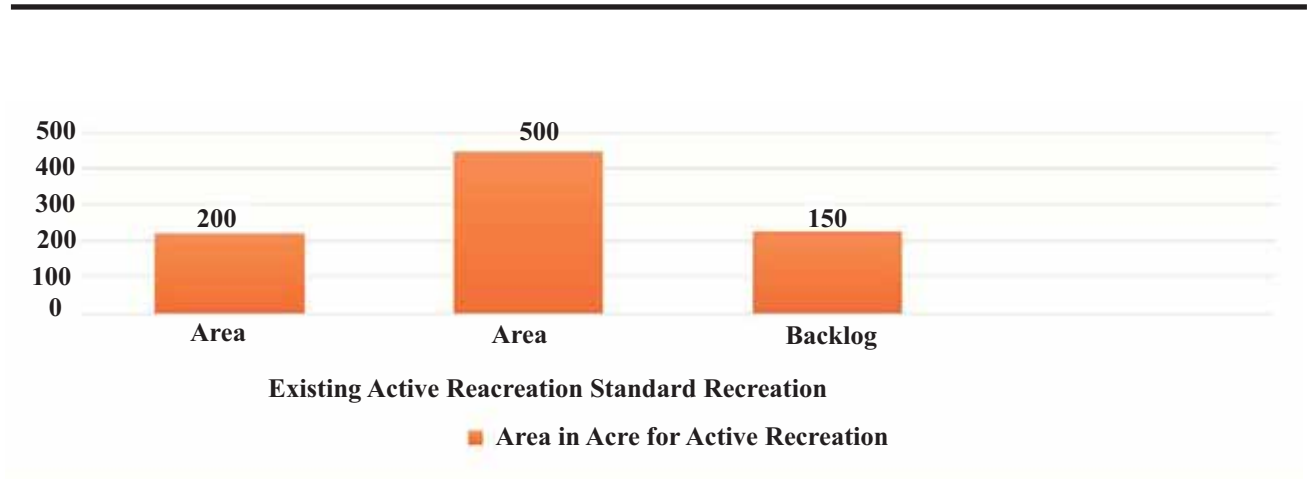


Figure-4: Public Parks in Hyderabad, Digital High Resolution Image from GIS

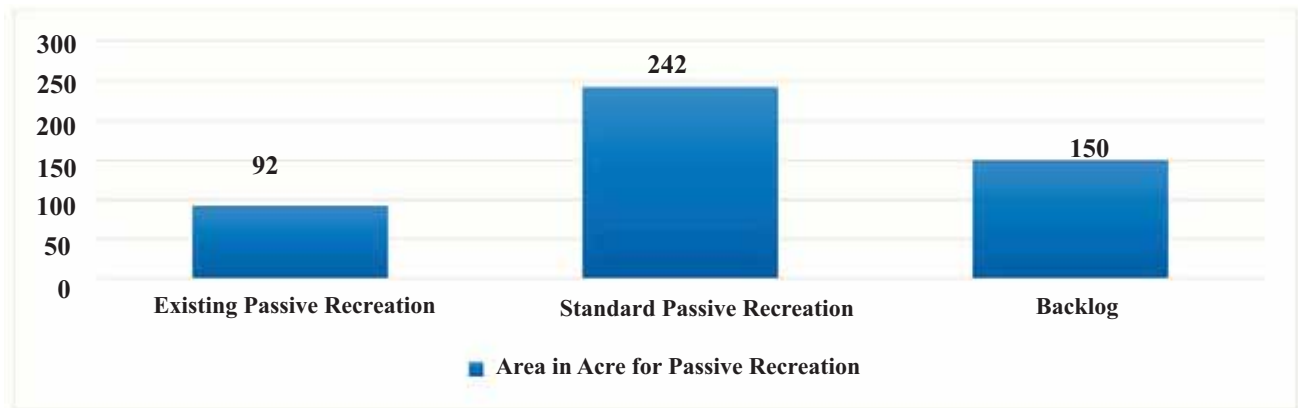


Figure-5: Passive Recreation Area Assessment

Whereas the frequencies of each variable are evaluated through Yeh index of satisfaction subtracting satisfied responses from dissatisfied responses of occupants and dividing the whole from the total number of responses and multiplying by a hundred. However, the research discovered that the average satisfaction index as whole was 27.582 percent when putting the satisfaction index via the Yeh index calculation. This represents a level of discontent with Hyderabad's public parks, and numerous modifications are required to address these problems.

## CONCLUSION

The research underscored Hyderabad with a growing population intake of around two million, lacking public park facilities. The spatial analysis is done by using Arc-GIS for assessing availability and area assessment since it can pinpoint the location and expected park boundary limits, within the city. The questionnaire survey and interviews were conducted to analyze the impact and conditions of various attributes and assessed by using frequency analysis in SPSS-20 as they

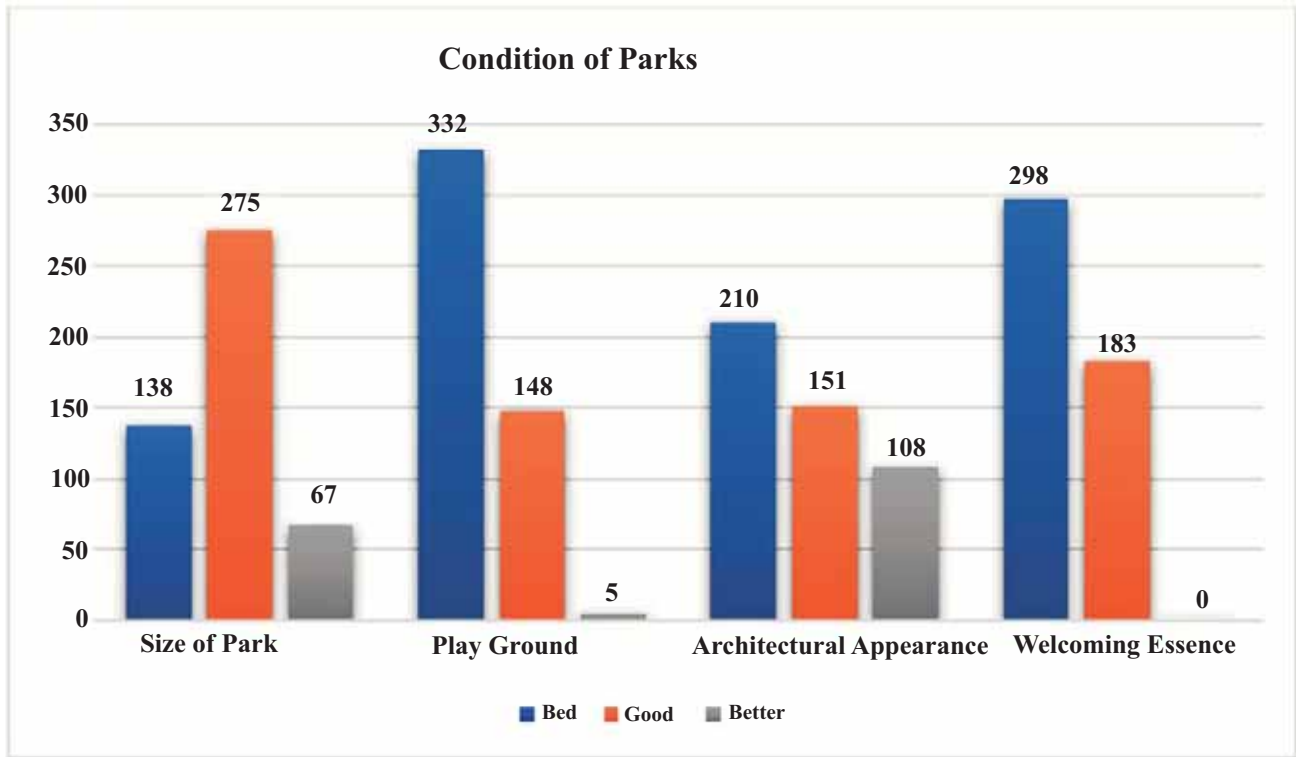


Figure-6: Analyzing Condition of Public Park Spaces

Table-4: Assessment for Physical and Functional Aspects

Aspect	Activity	Attributes	Ignorance Level
Physical	Profound	Connectivity & Accessibility Self-Organization Self-Maintained Enclosure Complexity	Less Ignored
	Ecology	Greenery and Water Bodies Legibility Landmarks & Image Ability	Being-Ignored
Functional	Receptive	Social Cohesion Sports and Games Cultural Ethics	Less Ignored
	Democratic	TMA Maintenance Involvement All Age-Groups Access	Least Ignored



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*Table-5:* Assessment of Satisfaction - Index

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<b>Variables</b>	<b>Satisfying</b>	<b>Dissatisfying</b>	<b>Frequency Percentage</b>	<b>Satisfaction Index</b>
<b>Park Presence</b>	<b>434</b>	<b>45</b>	<b>81</b>	<b>Satisfying</b>
<b>Size</b>	<b>171</b>	<b>138</b>	<b>33</b>	<b>Mediocre Satisfying</b>
<b>Architectural Appearances</b>	<b>248</b>	<b>232</b>	<b>3.33</b>	<b>Below Satisfying</b>
<b>Presence of Rides</b>	<b>165</b>	<b>315</b>	<b>-31.25</b>	<b>Un-Satisfying</b>
<b>Provision for Playgrounds</b>	<b>148</b>	<b>332</b>	<b>-38.33</b>	<b>Un-Satisfying</b>
<b>Security Measure</b>	<b>192</b>	<b>289</b>	<b>-20.208</b>	<b>Un-Satisfying</b>
<b>Sitting Fixtures</b>	<b>297</b>	<b>183</b>	<b>23.75</b>	<b>Mediocre Satisfying</b>
<b>Lighting Fitting</b>	<b>270</b>	<b>210</b>	<b>12.5</b>	<b>Mediocre Satisfying</b>
<b>Enclosure Facility</b>	<b>337</b>	<b>143</b>	<b>40.416</b>	<b>Mediocre Satisfying</b>
<b>Pedestrian Passages</b>	<b>309</b>	<b>171</b>	<b>29</b>	<b>Mediocre Satisfying</b>
<b>Pathways Conditions</b>	<b>209</b>	<b>271</b>	<b>-12.9</b>	<b>Below Satisfying</b>
<b>Tree and Plants Availability</b>	<b>407</b>	<b>73</b>	<b>70</b>	<b>Satisfying</b>
<b>Tree and Plants Condition</b>	<b>219</b>	<b>261</b>	<b>-8.75</b>	<b>Below Satisfying</b>
<b>TMA Maintenance</b>	<b>136</b>	<b>344</b>	<b>-43.33</b>	<b>Below Satisfying</b>
<b>Locale/Residents Involvement</b>	<b>167</b>	<b>313</b>	<b>-30.416</b>	<b>Below Satisfying</b>
<b>Aniti-Social Activity Intake</b>	<b>217</b>	<b>263</b>	<b>-9.58</b>	<b>Below Satisfying</b>
<b>Vehicular Parking</b>	<b>155</b>	<b>325</b>	<b>-35.416</b>	<b>Below Satisfying</b>
<b>Street/Road Greenery</b>	<b>385</b>	<b>132</b>	<b>52.5</b>	<b>Satisfying</b>
<b>Street/Road Lightening</b>	<b>281</b>	<b>199</b>	<b>17.08</b>	<b>Mediocre Satisfying</b>

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were being interviewed by diverse respondents. Any city's sustainability can be greatly influenced by its urban landscape, the research conclude that the needs of potential consumers are largely disregarded, which provides a highly unsatisfactory impression of the city's public parks and urban landscape as a whole. This investigation determined that the average satisfaction index was up to 27.582 percent, with 225 acres and 150 acres backlog area for active and passive recreation respectively (for a populace intake of 2 million). The research demonstrates that these areas give city dwellers a very limited

opportunity for social cohesion connection and share constructive time together. Acquired results revealed a sizable backlog region, which amply demonstrates that current scenarios may not fully satisfy the needs and necessities of the current population in order to provide standard services. Authorities must create plan that can provide a future development program for managing Hyderabad's residents significant need for public parks, where they can interact among each other with standardized facilities.

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