SUSTAINABLE URBAN OPEN SPACES THROUGH HYBRIDIZATION AND MULTIFUNCTIONALITY

Submitted by

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ABSTRACT

Cities are constantly changing in terms of both forms and functions as they enlarge and grow. As new spaces are created, some of them serve more than one purpose. Urban open spaces serve as the crucial foundation for building thriving communities and cities, playing an indispensable role in fostering the physical, social, psychological, and economic wellbeing of their inhabitants. These public areas are instrumental in creating an environment where diverse individuals can actively participate in a wide array of activities, which are vital components of their daily lives. By facilitating inclusive engagement and interaction, urban spaces promote a sense of belonging, encourage social cohesion, and stimulate the growth of vibrant, resilient communities that flourish with cultural exchange, creativity, and progress. These pockets also have possibilities to include trees and vegetation. The types of urban open spaces and their

various uses are vast. The most common type among them, is the residential park. Parks are civilized natural open spaces for various functions of the neighbourhood. Their role in an urban precinct has varied greatly over the years according to changing needs and lifestyles of people. The theory of hybridization helps to understand some of these processes, and explains the changes in urban spaces based on functions/programs. This paper is to study how hybridization and multifunctionality can play a role in making a park sustainable for future changes. To determine whether a park is sustainable, it is important to examine the actual reasons that are unique to each park and account for its longevity. It is critical to investigate what can be done to make parks last or sustain. People are catered to in parks, so understanding what people want from parks, how they perceive them, what they use them for, and what role parks and their spaces play for their users, will help in identifying the problems in parks today and how to bring about changes to cater to a wider user group. Using four parks in Chennai as case studies, they are analysed to better understand user needs and behaviour, as well as ways to improve the parks and their surroundings via a user survey. The identified problems are linked to the literature review in order to arrive at potential solutions that are later recommended. Based on an analysis of park elements that satisfy different protected needs of people, as well as the growing need for development in cities today, a conclusion is drawn highlighting the need for multifunctionality in parks today to enhance its people-based surroundings as opposed to the consumerism-based leisure and entertainment spaces in contemporary malls and other spaces.

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1. INTRODUCTION

1.1 GENERAL

Urban open spaces are essential to well-planned cities that strive to strike a balance between societal needs and environmental preservation. The stakeholders—the urban population directly impacted by these urban open spaces and public realms—are kept together by the social and economic ties. Urban open spaces play a pivotal role in shaping the dynamics of urban precincts, exerting an immense influence on their social, economic, and environmental fabric. Consequently, the quality of life experienced by urban dwellers depends upon the presence and accessibility of these spaces, which foster a sense of identity, belonging, and connection to one's surroundings. Indeed, urban open spaces serve as catalysts, not only for establishing a physical expanse, but also for nurturing a communal spirit and cultivating a shared sense of place. Furthermore, these areas play an equal role in promoting sustainable urban growth. The development of the urban ecosystem is directly impacted by the existence and sustainability of urban open spaces, and the degradation of the urban environment is caused by their absence.

1.2 AIM

The aim of this study is to study, observe and understand how hybridization and multifunctionality aid in the sustainability of an urban open space.

1.3 OBJECTIVE

1. To understand urban sustainability in the contemporary setting and its challenges.

2. To illustrate the role of hybridization in creating multifunctional public spaces

3. To understand the characteristics and prerequisites of multifunctionality for sustainable spatial development, by specifically focusing on public open spaces in urban contexts

1.4 SCOPE OF STUDY

1. This research argues for multifunctional spaces as an essential element for sustainable urban design. It outlines the development of the concept multifunctionality through a method of hybridization, and attempts to understand its use within urban design practice.

2. The scope of the study is limited to open spaces in the urban context of Chennai with a focus on parks.

1.5 NEED FOR STUDY

In today's rapidly expanding world, the importance of multi-functional urban spaces cannot be overstated. With urban sprawl and the challenges associated with vertical living and horizontal growth on the rise, cities across the globe are recognizing the need for such spaces to alleviate these issues. One effective way to achieve this is through the incorporation of greenscape within these areas, creating serene green spaces that not only add to the aesthetic appeal of the neighbourhood but also contribute to the overall sustainability of our cities. Furthermore, these multipurpose public areas, often manifested as large paved plazas, have proven their significance in promoting social interaction, recreation, and community engagement in cities worldwide. Neighbourhood chowks, those vibrant small urban squares positioned amidst bustling cities, and the iconic city markets, exist in India to serve the same purpose. These dynamic spaces thrive as multifunctional hubs that effortlessly adapt to the needs of the community, harmoniously merging with the lively streets that lead up to them. These lively spaces offer an array of opportunities, serving as vital sources of employment, are multicultural, attract people from all walks of life and impart a unique urban experience.

1.6 METHODOLOGY

The research method is qualitative and based on bibliographic studies through books, articles, research papers and practical observation to explore urban sustainability, architectural hybridization, and the role of urban open spaces in Chennai (Figure 1). The study begins with a clear introduction, outlining the research objectives. The literature review encompasses three key areas. Firstly, it defines sustainable development in the context of Chennai, identifying characteristics and challenges. Secondly, it examines

hybridization in architecture, focusing on overlapping programs in multifunctional spaces. Lastly, it delves into the type and relevance of urban open spaces.

Live case studies from Chennai and surveys provide real-world insights. Case studies offer practical examples, while surveys explore the needs and behaviours of residents.

The analysis and conclusion stage involve a comparative study of findings from case studies and surveys. This enables a comprehensive understanding of the urban landscape, contributing to the broader discourse on sustainability and urban design in Chennai.
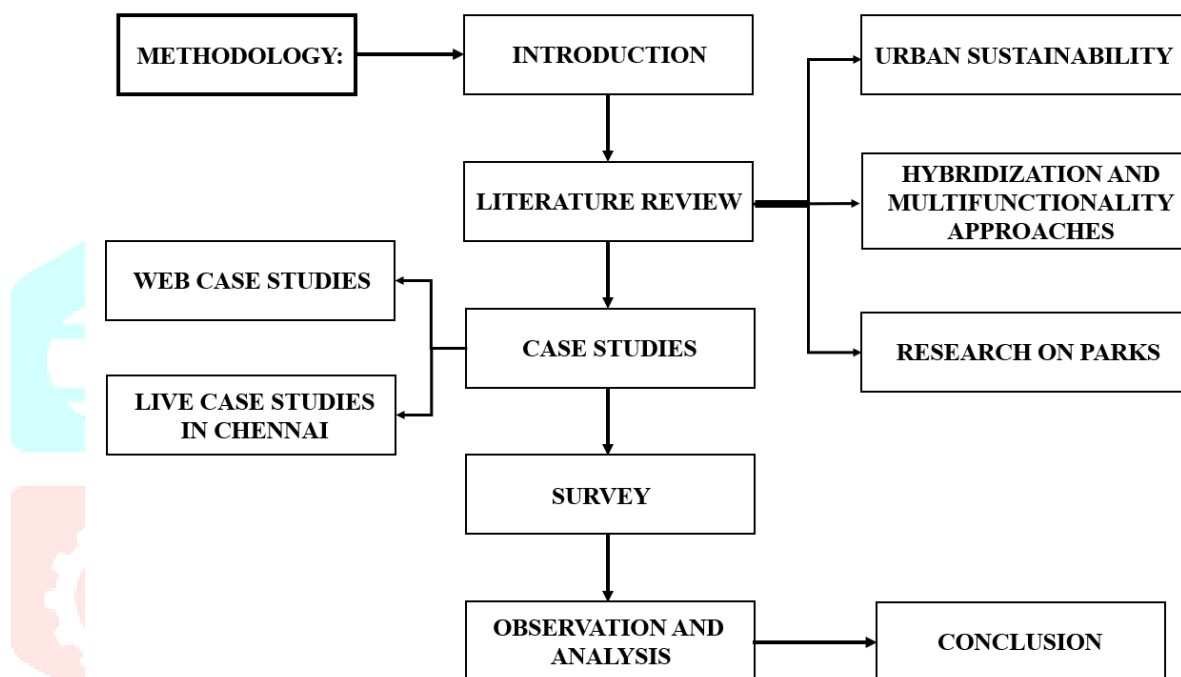
Figure 1: *Methodology of dissertation flowchart*

2. LITERATURE REVIEW

2.1 SUSTAINABILITY

2.1.1 SUSTAINABILITY OF URBAN OPEN SPACES:

Open spaces also play an important role in the sustainable development of urban areas. Developments of urban open spaces could be done by improving the current facilities, services, policies, and regulations relating to urban open spaces by adopting comprehensive strategies that take into account the economic, social, cultural, environmental and planning parameters. This all-encompassing strategy makes sure that these spaces not only cater to the various needs

of the people but also help the neighbourhood as a whole to be resilient and vibrant. Inclusive and thriving urban environments that endure can be built by paying careful attention to these integrated approaches.

2.1.2 SOCIAL ASPECTS:

Urban open spaces provide people with gathering spaces that allows them to interact and socialize. Distinctive urban open spaces contribute to a precinct's distinct identity and character. They can reflect the community's history, culture, and values, creating a sense of place that people can identify with and be proud of. This contributes to the development of a sense of community and belonging. They provide venues for cultural events, festivals, marketplaces, and leisure activities, as well as opportunities for residents and visitors to connect. This social cohesion has the potential to improve the overall quality of life within the urban precinct. Green spaces in urban areas are easily accessible and provide opportunities for exercising such as jogging, cycling, and walking. These areas encourage a healthier lifestyle and can help to reduce stress and improve mental well-being. Green spaces also promote relaxation and provide an escape from the stress of city life.

2.1.3 ECONOMIC ASPECTS:

Open spaces that are well-designed can increase the value of land and bring in business opportunities to the neighbourhood. Water features, sculptures, and well-designed landscapes all contribute to an urban precinct's visual appeal. These features can improve the visual appeal of the area. Well-maintained open spaces with adequate lighting and surveillance can improve safety and security in urban areas by discouraging criminal activity and providing places for people to gather together, thereby increasing natural surveillance. People are frequently willing to pay higher prices for safe properties near parks and attractive public spaces. Furthermore, these spaces can help local economies by attracting tourists, hosting events, and increasing pedestrian traffic to local businesses.

2.1.4 ENVIRONMENTAL ASPECTS:

Urban open spaces support biodiversity, manage microclimates, and lessen the impact of the urban heat island. In these areas, trees and vegetation reduce carbon dioxide emissions, enhance air quality, and reduce flooding by absorbing extra rainwater. Open areas can act as focal points for connectivity and transportation by providing hubs for shared bicycles, pedestrian pathways, and public transportation. These areas can promote environmentally friendly transportation options and increase accessibility.

2.2 ELEMENTS OF SUSTAINABLE URBAN OPEN SPACES

Sustainable urban open spaces are multifaceted environments that consider various key elements to promote their sustainability and utility. These spaces embrace green infrastructure, incorporating elements like trees, shrubs, and native plants, which offer benefits such as shade, improved air quality, and support for biodiversity. Water management is another critical aspect, with techniques like rain gardens, permeable surfaces, and Sustainable Drainage Systems (SuDS) playing a role in reducing flooding and enhancing water quality. Energy efficiency is prioritized through the integration of energy-efficient lighting and solar-powered amenities, with a focus on reducing energy consumption.

Waste reduction strategies are also implemented, including the use of recycling bins, composting facilities, and education programs, which collectively minimize waste generation within the open space. Furthermore, accessibility and inclusivity are central to their design, ensuring that these spaces are welcoming and usable for all, including people with disabilities, with features like ramps, tactile paving, and diverse seating options.

Enhancing the user experience is another crucial dimension. Open spaces aim to provide opportunities for both active and passive recreation, meeting the needs of various user groups. Community engagement is fostered by involving the community in design, maintenance, and programming, which instils a sense of ownership and stewardship for long-term sustainability. Proximity to public transportation options encourages a reduced carbon footprint in commuting to the open space.

Preservation and economic considerations are also integral. Open spaces often maintain cultural and historical elements to contribute to a sense of identity and heritage.

Simultaneously, they generate economic value through tourism, local businesses, and events, ensuring long-term financial sustainability.

To adapt to changing needs and emerging trends, open spaces incorporate flexible designs, ensuring continued relevance and usefulness. Safety and security measures, such as well-lit pathways, surveillance, and emergency response systems, enhance the overall sustainability of these spaces.

Ultimately, these sustainable urban open spaces seek a harmonious balance between ecological, social, and economic aspects. They promote community well-being, environmental stewardship, and a strong sense of place, all while focusing on long-term preservation without risking inactivity or overdevelopment.

2.3 HYBRIDIZATION AND MULTIFUNCTIONALITY

Hybridization in architecture and open spaces is the process of integrating different elements, functions, or design principles to create dynamic, flexible, and sustainable environments that respond effectively to contemporary urban challenges and user demands. Hybridization seeks to break down traditional boundaries and categories, resulting in spaces that serve multiple purposes and accommodate diverse user needs. Multifunctionality is the ability of a single space to serve various purposes at once. Multifunctionality in the context of urban open spaces aims to meet multiple demands within a constrained space.

2.3.1 STRATEGIES FOR HYBRIDIZATION IN URBAN DESIGN

In the realm of urban design, strategies for hybridization play a vital role in reshaping our cities for the better. They foster the seamless integration of diverse functions in a single space, a concept exemplified by Mixed-Use Developments. Such projects not only enhance efficiency but also encourage vibrancy within urban areas. Furthermore, Adaptive Reuse takes centre stage as industrial, historical, or underutilized spaces are transformed into new, versatile purposes. This adaptive approach to existing structures not only preserves cultural heritage but also injects new life into urban landscapes.

Creating Transitional Zones is another innovative technique in urban design, acting as flexible connectors that seamlessly link indoor and outdoor spaces. The embrace of Green

Infrastructure contributes to urban sustainability by incorporating natural elements such as parks, green corridors, and urban gardens into city planning. This not only enhances environmental resilience but also provides spaces for people to connect with nature.

Cultural Hybridization is integral to urban design, infusing a rich tapestry of cultural elements into the city's fabric, creating a diverse and inclusive environment. Modular and Flexible Design and Leveraging Technology respond to the ever-evolving needs of a modern city. These strategies promote quick adaptability, incorporating smart infrastructure, and ensuring urban spaces remain relevant in the digital age.

Moreover, a community-focused approach is paramount. Community Engagement ensures that residents and users actively participate in shaping the spaces they inhabit, fostering a sense of ownership and stewardship. Resilience and Sustainability, alongside Transit-Oriented Development, contribute to a greener and more connected urban environment. The use of Temporary and Pop-Up Installations and the incorporation of public art further activate and enrich urban spaces, adding cultural significance and vibrancy. By prioritizing Pedestrian-Friendly Design, urban areas become more accessible, fostering walk able communities and promoting a sense of belonging. In the context of "Strategies for Hybridization in Urban Design," these diverse urban development principles converge to create urban spaces that are not only hybrid in function but also dynamically interconnected, sustainable, and culturally enriched. They are a testament to the evolving and hybrid nature of modern cities.

2.3.2 ROLE OF HYBRIDIZATION IN REACHING SUSTAINABILITY GOALS

Hybridization in urban development holds a pivotal role in achieving sustainability goals by offering a multifaceted approach to address a range of objectives. Hybrid open spaces seamlessly integrate various functions, reducing the need for separate developments and promoting efficient land use. They also encourage sustainable transportation methods, such as walking and cycling, while reducing reliance on private vehicles, which aids in decreasing greenhouse gas emissions and air pollution. Embracing renewable energy sources, energy-efficient lighting, and passive design strategies, these spaces contribute to enhanced energy efficiency. Hybrid open spaces often incorporate green infrastructure elements like green roofs, urban gardens, and permeable surfaces, which manage storm water, improve air quality, and support biodiversity, thus enhancing environmental quality and urban resilience. Beyond

environmental concerns, these spaces also contribute to cultural and social sustainability, fostering community engagement and a sense of belonging. Additionally, they attract businesses, tourists, and investments, contributing to local economic development and supporting sustainable urban growth. Designed with adaptability and resilience in mind, hybrid open spaces withstand and recover from shocks and stresses, ultimately promoting long-term sustainability. Their integration of natural elements creates opportunities for urban wildlife and biodiversity, contributing to local ecosystem health. Moreover, by reducing the urban heat island effect through vegetation and reflective materials, they mitigate the impact of extreme temperatures and enhance urban microclimates. These spaces also play a significant role in promoting public health and well-being, offering opportunities for relaxation, exercise, and recreation while reducing stress and improving the overall quality of life. Furthermore, they support local economies by sourcing materials and services locally, participating in sustainability initiatives like farmer's markets and sustainable food production, and furthering the cause of environmental and economic sustainability.

2.3.3 BENEFITS OF MULTIFUNCTIONALITY AND HYBRIDIZATION

Multifunctionality and hybridization in urban development offer a multitude of advantages that contribute to more efficient, sustainable, and resilient cities. One of the most significant benefits is the optimum use of limited land resources, as these approaches allow cities to address diverse needs within a single space. This minimizes the demand for urban sprawl, a key driver of environmental degradation. Additionally, the adaptability of urban open spaces is enhanced, making them more resilient to changing urban dynamics and the effects of climate change. Sustainability is promoted through the incorporation of ecological elements and resource-efficient design, ensuring the long-term health of cities. These spaces also foster community building by offering a variety of activities, promoting social interaction, and cultivating a sense of local identity and culture. Moreover, they support public health and well-being by providing opportunities for physical activity, mental well-being, and community engagement. Finally, multifunctional spaces that encourage collaboration between different sectors can fuel innovation and foster solutions to sustainability challenges, demonstrating the interconnectedness of urban design and holistic sustainability.

2.4 HISTORICAL INSIGHTS

2.4.1 HISTORICAL EVOLUTION OF PARKS IN URBAN PLANNING

The historical development of parks and their evolving significance in urban planning reflects a captivating journey from the concept of enclosed safety to a more open and accessible approach. This evolution can be traced back to the origin of the term "impark," signifying the act of enclosing a piece of land with a barrier, whether permeable or semi-permeable in nature. In the early days of human settlements, the creation of the first parks was grounded in the fundamental need to secure a plot of land. Beyond mere property delineation, these enclosures were intended to protect children, crops, and domesticated animals from the perceived dangers of the outside world, creating a safe haven within.

As societies continued to evolve, so did the concept of parks. The emergence of more extensive barriers signalled a shift towards safeguarding larger groups of families and communities. The idea of personal parks became an interest of kings, introducing a new dimension to the evolution of these spaces. This transition marked the inception of spatial concepts frequently generated within the parks of the ruling class. These concepts were eventually transplanted onto the streets and public spaces of the towns under their dominion, influencing the overall urban layout and design. The historical progression of parks took shape through two distinctive phases, aptly named "boundless" and "bound." The "boundless" phase was exemplified by Louis XIV, who continually extended the roads of Versailles and granted access to the park for his subjects. This transformation characterized his "park" as an expansive and unbounded space. The visionary Capability Brown played a key role during this era, dismantling the concept of boundaries and perceiving nature as a garden. The general public was afforded access to many of England's royal and noble parks, representing a significant departure from the traditional notion of imparked spaces. Contrastingly, the "bound" phase emerged in the 19th century, as exclusive new areas known as "public parks" were established. These parks, although accessible to the impoverished, were tightly contained, locked at night, and placed under rigorous control. This era marked a return to the concept of parks as enclosed spaces, albeit with a new social dimension.

The climax of this transition arrived with the visionary work of Frederick Law Olmsted, whose legacy is tied to the interlacing of cities with parks. However, his innovative approach signified

a departure from the traditional "imparked" idea. The green space extended beyond defined boundaries, challenging the ancient concept of a compact, protected city. This journey through history illuminates the changing role of parks in urban planning, reflecting the dynamic and evolving nature of these spaces as they adapt to the shifting needs and aspirations of society (Turner, 2014).

2.4.2 WORLDWIDE GROWTH

The history of urban parks across different civilizations reveals a dynamic evolution in the way society perceives and utilizes these spaces. In ancient Egypt, domestic and temple gardens were crafted, laying the foundation for the integration of green spaces into urban settings. This innovation dates back to a time lost in the annals of history. Moving forward to the 9th to 7th centuries BC, the Assyrians expanded the concept by adding hunting parks to the landscape, marking a blend of leisure and nature in their urban design. Western thought, spanning various eras, initially kept nature distinct from social spaces, emphasizing a clear boundary between the two. During the vast expanse of the Roman Empire from the 1st century BC to the 5th century AD, the concept of parks took on multifaceted dimensions. These spaces served purposes ranging from domestic pleasure, exercise, and hunting to the fine arts and the celebration of the emperor's godlike status. Over various eras, the Greeks enhanced the concept further, introducing public gardens within city walls, which functioned as both meeting places and market venues. The 18th-century English garden brought a transformative perspective, presenting nature as a commoditised yet harmonious environment. In the 17th and 18th centuries, French landscape designers regarded parks as aesthetic compositions, highlighting the visual and artistic elements of these spaces. The 19th century witnessed the emergence of urban parks in response to the changing demands of society. These spaces, arising in this century, provided venues for social interaction and relaxation after industrial work. Normative uses of urban space expanded with the introduction of parks, reshaping the way people engaged with the city. In the 19th century, cemeteries had already served as social meeting places, public gardens were introduced in the United States to control and uplift the working class. Central Park in New York City, established in 1858, stands as a remarkable example of this development, highlighting the urgent need to preserve space for recreation within rapidly expanding urban environments. These spaces were enclosed for safety and offered public baths and libraries. Their purpose was to provide a refuge for tired workers, allowing them access to

fresh air and diverting them from excessive alcohol consumption. As the 20th century progressed, parks evolved to promote physical fitness and organized sports, particularly during WWI and economic depression. The parks were used to channel youthful energy, persuade workers to stay fit for the nation's sake, and solve urban problems. In the 1960s, a more recreational approach emerged, as parks embraced the hippie culture and the need for outdoor activities. Today, parks are recognized as interconnected green spaces with multiple objectives, blending recreation, conservation, and integration with various land uses. This history reflects the evolving needs and values of society, government objectives, and cultural shifts in the United States.

Despite this historical trajectory, many urban parks today do not align with the traditional concepts of domestic gardens, temple gardens, or hunting parks. They may offer limited value to the public, yet they continue to play a crucial role in modern city living. These spaces serve as social meeting places and frameworks for the imagination, redefining the uses of urban space and contributing to the vitality of contemporary urban environments. With these lessons from history, and drawing on patterns of similarity today (example, incorporating religion, leisure, social interaction, resting, celebrations, art, exercise, markets, exhibits, visual appeal, etc into parks of today), we can understand about the users of contemporary era and their needs, behaviour and responses to the parks in their community. This helps to shape parks and their role in human lives and accommodating the growth and changing mindsets. Analysing why only particular uses and perceptions of a park has lasted and why other uses of it has diminished reflects on, again, the changes in region, humans, and their self awareness. This requires looking at history through a finer lens concentrating on Tamil Nadu as the region of study, and the culture and habits that were usually performed in parks being accommodated in their households or areas of daily use (Turner, 2014).

2.4.3 TRADITIONAL ALTERNATIVES OF PARKS IN TAMILNADU:

The transformation of urban living and the shifting lifestyles and needs of people have played a pivotal role in redefining the significance of parks and open spaces within cities. This evolution can be traced back to traditional Tamil Nadu homes, where various types of spaces served as centres for family and community life, profoundly impacting the way we view public spaces today. In traditional Tamil Nadu homes, central courtyards were a common feature,

especially in rural areas. These open spaces within homes provided a private yet communal environment for family gatherings, leisure activities, and games. Shaded and cool, courtyards were particularly suitable for daytime activities, reflecting the need for private, natural settings within urban environments. Verandas, balconies, and thinnai (seating areas) extended from the main structures of homes, offering semi-private spaces for relaxation and socializing. These spaces facilitated interactions with neighbours and passersby, contributing to the social fabric of the community. Moreover, traditional games like kabaddi, goli, and pallanguzhi were often played in open areas within or near homes, emphasizing the integration of recreation into the domestic sphere. In rural areas, village commons served as central hubs for community events, gatherings, festivals, and sports, highlighting the importance of communal spaces. Temples and religious centres were not merely places of worship but also acted as social and cultural epicentres. Communities would congregate around these temples for religious ceremonies, cultural performances, and social interactions, underscoring the multifaceted nature of these spaces. Even the streets and bazaars were more than just places for commerce; they were social centres where people exchanged news, engaged in social activities, and fostered community bonds. Fields, open grounds, riverbanks, and lakesides provided settings for various activities, from sports to traditional games and community celebrations. The historical context of these spaces within Tamil Nadu homes and communities serves as a lens through which we can understand the evolving role of parks and open spaces in modern urban environments. The obvious pattern that could be observed is the continuation of most of the above mentioned activities even today, in a common shared space irrespective of the bonding within the community around that space, and naming it a park. As our lifestyles and urban needs continue to change, it is imperative to consider these historical foundations when planning and designing public spaces that serve the diverse social, recreational, and cultural requirements of urban populations. Improving the bonding and catering to diverse set of social groups that have emerged today in a way that does not harm the sentiments of others will increase the sustainenance of these parks and simultaneous safeguarding of precious green land and its biodiversity.

2.5 PARKS IN THE PRESENT DAY

2.5.1 PERCEPTION OF AUTHORS

Why can't modern cities provide people with the outdoor space they desire? This question highlights the complexities of urban growth in the modern world. Rapid urbanization and high population density can leave little area for the green and recreational spaces that city dwellers desire. The rising cost of land, urban infrastructure demands, fiscal limits, and zoning policies that promote commercial expansion can all complicate outdoor space allocation. Various authors have added their perspectives to this.

"Some of the land should be properly imparked, to make it safe and to make it special. The remainder should be properly disimparked, to set it free. Only thus will the people's needs be met"

"distinguish park space from green space; bounded space from boundless space; "the public' from "the park'. Use walls and fences to protect imparked land from unimparked land. Cities need both. But the two should never be confused"

-Tom Turner, urbanist and landscape architect

"what the consumer wants': safety, comfort, and convenience."

- Peter Drucker, American economist and business theorist

"...popular space was surrounded by diverse land uses, which generate a diversity of open space uses"

"In the twenty first century, there is little hope for a large municipal park with tawdry facilities designed for the needs of a previous generation"

-Anonymous

"our city parks occupy only one small niche of the universe of open-space forms. Parks should not be open spaces. They should not be places where people are allowed to do anything. The very essence of a park is safety. Bounded space must not be confused with boundless space, though both are necessary. History is a good starting point for reconsidering park functions."

"what attracts people most... is other people"

"people sit most where there are most places to sit"

-American urbanist and landscape architect William H. Whyte

"the physical types of open space presently designed are astonishingly limited"

-Richard T. LeGates and Frederic Stout (City Reader)

2.5.2 CONTEMPORANEITY

Contemporary urban park design embodies several significant trends and features. These parks are marked by their innovative design elements, where the use of colour and unconventional geometries is seamlessly integrated into furniture and lighting fixtures. Moreover, they adapt to the challenges posed by current urban conditions, including high population density. This has given rise to proposals that were once deemed unthinkable, such as rooftop gardens, exemplified by the Toni Areal's Roof Garden by Studio Vulkan Landscape Architecture. These parks subtly merge urban elements, like surrounding buildings, with lush vegetation that thrives through a process of controlled deterioration. They harmoniously blend nature with architectural structures. Furthermore, modern urban parks are versatile, designed to serve multiple functions and accommodate diverse activities and user needs. They often combine green spaces with amenities like sports facilities, playgrounds, cultural venues, and relaxation areas. Examples include the iconic Central Park in New York City, USA. Many of these parks also incorporate cultural and artistic elements, including public art, sculptures, and performances, celebrating local culture and adding aesthetic value. Parc Güell in Barcelona, Spain, and Millennium Park in Chicago, USA, are notable illustrations. Moreover, contemporary parks leverage technology to enhance user experiences and promote sustainability, incorporating features like Wi-Fi access, interactive installations, and renewable energy sources. These attributes collectively define the ever-evolving landscape of urban parks in the 21st century. Parks and recreational places will most certainly continue to adapt in response to changing lifestyles, urbanization, and environmental concerns.

2.5.3 TRENDS IN URBAN PARKS

Urban park development has adapted to the shifting needs and preferences of city residents. These trends encompass various aspects of park design and usage, reflecting a dynamic

relationship between parks, the urban environment, and their diverse user groups. Incorporating technology into parks is a modern approach to enhance visitor experiences. Current parks offer navigation aids, information resources, and interactive elements, with future plans involving even more immersive technologies like augmented reality and virtual reality. Additionally, the implementation of smart park infrastructure ensures sustainability and safety. Sustainability is at the forefront of contemporary park design. Parks now focus on reducing environmental impact by utilizing renewable energy sources and fostering native plant species to promote biodiversity and resilience. They have evolved into multi-purpose spaces with flexible layouts, accommodating diverse activities and user groups. Community engagement is a vital aspect of park development. Parks today emphasize inclusivity, community-driven initiatives, digital communication tools, and sensory-friendly and universally accessible designs. Biodiversity conservation has gained importance, with parks planning to expand native plantings, wildlife-friendly habitats, and research partnerships. These green spaces are adapting to modern work trends, offering outdoor workspaces and co-working areas. Artistic integration is a growing trend, enhancing the aesthetic appeal of parks with public art and creative designs. These dynamic trends reflect urban parks' crucial role in fostering well-being, sustainability, inclusivity, and community engagement in ever-evolving cities.

2.5.4 FACTORS INFLUENCING PARK PERFORMANCE

Analysing the literature review and drawing on similar patterns, it could be concluded that there are some factors that affect a park's success rate. Some of them are intrinsic and extrinsic factors. They relate to people's needs, park's needs as well as to the society's or area's needs. The effectiveness of urban parks is a result of a complex interplay of various factors, which collectively shape their performance and popularity among communities. These factors are fundamental to a park's success, interrelating and creating a cohesive framework.

The physical aspects of a park are essential. A park's location can significantly influence its usage, with those situated in densely populated areas and easily accessible locations experiencing higher footfall. The design and amenities offered by a park are equally crucial. Well-designed parks with a variety of features, such as playgrounds, walking trails, sports facilities, and green spaces, are more likely to attract a diverse range of users. Regular maintenance is essential to keep a park attractive and safe, as neglected parks with overgrown vegetation, broken equipment, or litter can discourage use. Furthermore, the perception of

safety and security plays a vital role in attracting park-goers. Parks that have visible security measures and are well-lit tend to be more appealing to users, while parks with a reputation for safety concerns may be underutilized.

Active community engagement can make a significant difference in the success of a park. Parks that involve residents in planning, programming, and maintenance tend to have higher levels of usage. Community-driven events and activities can also attract users, fostering a sense of ownership and attachment to the park. Moreover, parks that offer a variety of programs and events, such as fitness classes, cultural festivals, and educational workshops, tend to attract more visitors. The alignment of the park with local culture and preferences is essential, as this ensures that the park meets the interests and needs of the community it serves.

Several external and environmental factors influence park usage. The presence of other recreational options, such as private clubs, sports facilities, or entertainment venues, can impact park competition, affecting visitor numbers. Economic conditions and income levels of the surrounding community can also influence park usage, with some residents lacking the resources or time to use the park regularly. Additionally, the ownership and management of a park can vary, impacting the consistency of funding and maintenance. Lastly, weather and climate can be significant determinants, with extreme conditions like heat, rain, or cold affecting the number of park visitors.

A comprehensive understanding of these factors is essential for effective park management and the enhancement of their overall success. Parks that strike a balance between physical design, community engagement, and external considerations tend to thrive, becoming integral components of the communities they serve.

3. CASE STUDY AND SURVEY

3.1 CLASSIFYING PARKS IN CHENNAI

Based on practical observation the parks in Chennai can be classified into fully used parks, semi-used parks and abandoned parks. Full-fledged use of parks include Anna Nagar Tower park, Sivan park, Jeeva park, Natesan park, Nageswara Rao park and many other public parks that are used by the neighbourhood community on a day-to-day basis. Semi-used parks mostly include those public parks that are not used daily due to its location or other factors like cleanliness, amenities, etc. Abandoned parks are mostly just empty ground of land where a park once stood and which people used, but is not useless and hosts anti-social activities. Parks in many areas in Chennai are abandoned or poorly used due to many factors like poor lighting and accessibility, lack of diverse surrounding uses, poor maintenance, and lack of safety. For this study, the fully used parks are considered for analysis.

3.2 ASPECTS OF THE STUDY

People's happiness is crucial for the success of a public area, and this is equally true for urban parks. Frequent visitors to the park are aware of the park's issues and degree of satisfaction in regard to a variety of factors, such as social cohesion—a location where people gather to interact—physical places for recreational activities, hobby development, a sense of being around nature, and so on. Thus, a park's ability to improve is judged by how contented its visitors are. To understand the disparity in user satisfaction levels, it is vital to examine their demands and actions. The best parks include those that offer an attractive and age-appropriate setting while also meeting the social, cultural, and emotional demands of people of all ages.

In addition to the most commonly known established factors that are predefined requisites for sustainability, it is vital to look carefully at the real causes that are unique to each park that make it last as long as it did to see if a park is sustainable. It could be the expansion of structures and individuals around it, new functions, policies, and rules established in the park, selective timings and classes of people permitted, and improved safety/security. It is critical to investigate what can be done to make parks last or sustain. People are catered to in parks. So we must first understand what people want from parks, how they perceive them, what they use them for, and what role parks and their spaces play in their lives.

The nine Protected Needs are arranged in three groups:

"Group 1 focuses upon tangibles, material things (Protected Needs 1-3), group 2 focuses upon the person (Protected Needs 4-6), and group 3 focuses upon community (Protected Needs 7-9):

(1) To be provided with the material necessities for life

(2) To realize their own conception of daily life

(3) To live in a liveable environment

(4) To develop as a person

(5) To make their own life choices

(6) To perform activities valuable to them

(7) To be part of a community

(8) To have a say in the shaping of society

(9) To be granted protection by society" (Di Giulio and Defila, 2020).

Examining each age group, gender, their activities, and how they use parks will help us understand how green public spaces function as inclusive areas for need satisfaction, what activities people do in green public spaces and how these relate to need satisfaction.

According to Di Giulio and Defila (2020), there are three factors affecting the protected needs of a person (Figure 2). They are the social norms and regulations (e.g., explicit rules or implicit guidelines about what people can or cannot do in the space, who can or cannot use the space and when), material arrangements (all the physical amenities that help people meet their needs), skills, competencies and emotions (what people feel or react to certain situations and what kind of need is met at different settings).
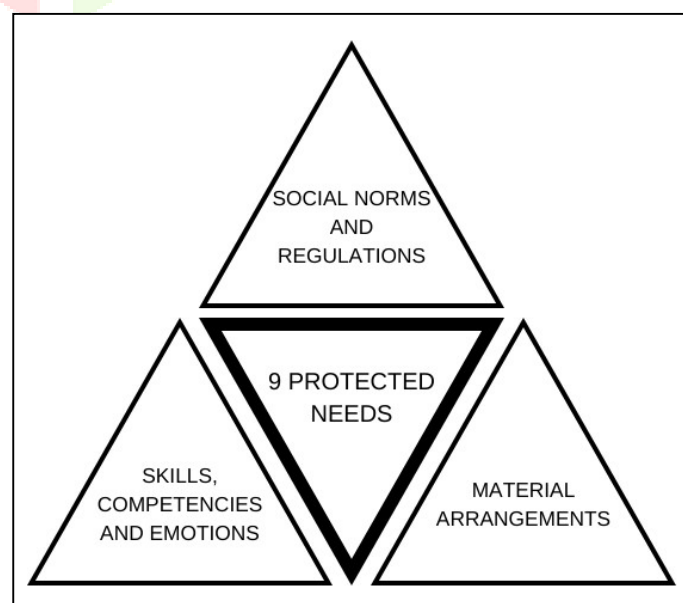

Figure 2*: The factors affecting protected needs.*

3.3 CASE STUDIES

3.3.1 ANNA NAGAR TOWER PARK(15.35 acres)

Chennai's thriving Anna Nagar neighbourhood is an example of well-thought-out urban design. This well-kept neighbourhood features a well-planned layout with a blend of contemporary apartment buildings, residential plots, busy business complexes, tree-lined avenues, and wide roads. Anna Nagar has been planned to meet the requirements of its people; it has parks that are large, convenient bus stops, and zones set aside for schools. The striking park tower, the highest in Chennai, is especially noteworthy and contributes to the area's allure (Figure 3). Anna Nagar's parks serve the local community as well as drawing tourists from surrounding areas due to its strategic location and size, making it a major attraction in North Madras. This expansive urban environment is a prime example of how well-thought-out planning can be.

Figure 3: View of Anna Nagar tower park

3.3.1.1 USER GROUPS

- Families with Kids: On weekends, families from not only Anna Nagar but also from other areas in Chennai flock to the park for budget-friendly outings, benefiting from well-maintained play areas and a variety of entertainment options.
- Friend Groups from Nearby Colleges: These parks serve as convenient meeting spots for post-school or college activities, such as dance practice, gatherings, and birthday celebrations.
- Elders: The parks provide a welcoming space for the elderly to enjoy leisurely walks, engage in social interactions, and observe the surroundings, fostering regular meetups.

- Kids with Parents: Parents with young children find the parks ideal for enrolling their kids in classes and activities like silambattam, dance practice, and skating.

- Couples: During quieter afternoons, couples seek the privacy, shade, and tranquillity offered by the parks, while some visit in the evenings to enjoy the spectacle.

- Neighbourhood Residents: On weekday evenings, the parks become routine destinations for neighbourhood residents, who engage in activities such as walking, playing, and socializing.

- Varied Backgrounds: individuals spanning different socio-economic backgrounds visit the park. This encompasses middle-class professionals engaged in government or IT roles, residents from the upper-middle class, and low-income groups residing in both nearby neighbourhoods and along the Cooum River.

- Gender Distribution Patterns: The composition of park visitors fluctuates throughout the day. During non-peak hours like afternoons and early mornings, men predominantly occupy the space. In contrast, late mornings see a surge in female visitors, culminating in an even gender ratio in the evenings. These shifting patterns contribute to the parks' inclusive ambiance.

Figure 4: *The park as a third space*

3.3.1.2   ELEMENTS AFFECTING PARK USES

- Transport: bus stops nearby with moderate connectivity through bus(most areas have to get on 2 to 3 buses to reach and have to walk a long distance); very good metro connectivity; Availability of good vehicle parking for both 2 and 4 wheelers. Moderate walkability (during peak hours there are a lot of vehicles that makes it difficult for pedestrians)

- The availability of space to conduct coaching classes and other hobbies makes it very attractive for resident community.

- And the visual hindrance provided by the trees and the layout of the park make it a semi-private space for couples and other users to sleep or rest or work especially during afternoon. It is like a quiet bubble that allows people to concentrate or rest.

- Also helping that is the flexible timings of the park. Open from 5:30 am to 7 or 8pm.

- It is a famous tower, so people want to see it and climb it. The park is like a third space where people come to gather before proceeding to other hotspots or weekend entertainments.

- Commercial stretch in front of the park cater to its users in terms of food, small rides for kids and eateries and toy shops.

- Availability of large and well-maintained public toilet block as well as drinking water. Access to water and toilets means users are able to spend extended periods at the park.

- The park as a third space: Third space to hang out and pass time before going someplace else. It becomes a better space for passing time than the neighbourhood streets, restaurants as it is a natural zone and helps with the hot climate and is also free of cost. It is open for the major portion of the day and so caters to different users at different times of the day. This park serves multiple functions and grows according to people's needs (Figure 4).

- There is lots of space to breathe and safe areas for those who enjoy bicycling and living an active lifestyle outside. Anna Nagar has become the hub of the active lifestyle community thanks to its many parks, green areas, and walking and jogging paths. The "SMART BIKE" initiative by Chennai Corporation, which offers the ability to rent bicycles, has been widely implemented in Anna Nagar.
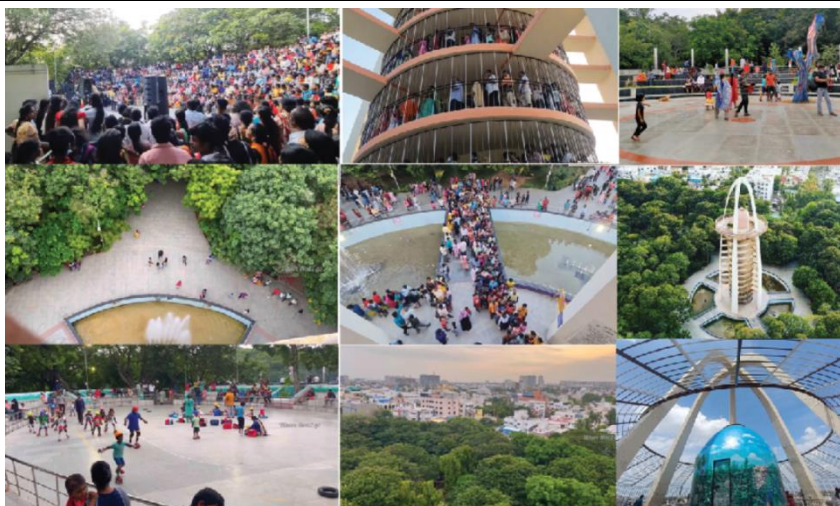
Figure 5: *Activities at Anna Nagar Tower Park*

3.3.1.3   CHALLENGES/FAILURES

- A private club had encroached on a portion of Anna Nagar Tower Park, but no one had the courage to complain because the club was frequented by the upper class.

- Maintenance challenges - some areas are unhygienic, unclean and lack visual passive surveillance and are a threat to safety because of being open at major timings throughout the day.

- Some vegetation is overgrown and fountains have stagnant water and not functioning properly.

- Some parts are poorly lit.

- The areas where there are a lack of designated spaces for activity, there are very few people hanging out. This leads to much of the shaded areas going waste being unused.

- Way finding is a problem sometimes and all the activities in the park are not fully realized or used.

- Exploiting the tower by youngsters by scribbling on walls, sitting in the ramp that leads up and blocking the way. Lack of separate sports facilities.

This is a residential park with sightseeing and family oriented activities in addition to serving as a conventional park. Table 1 depicts the information about the park, users, its failures and the protected needs of the various age groups it meets.

Figure 6: *Challenges in the park*

Table 1: Anna Nagar Tower park - Analysis

User Group	Age Group	Typical Timings	Activities and Social Functions in the Park	Elements That Facilitate Activities	Challenges/Obstacles Faced	Protected Needs Met
Families with Kids	Mixed Ages	Weekend	- Family outings, budget-friendly play areas, mixed entertaining activities - Picnics and group gatherings - Child play and exploration	- Well-maintained play areas - Clean and safe environment - Open spaces for picnics	- Park maintenance challenges - Litter and unclean areas - Crowded play areas	Material Necessities, Community
Friend Groups	College-Aged	After School	- Gatherings of friends - Dance practices - Hangouts and bonding - Birthdays and celebrations - Admiring the tower - Making social media content (Reels)	- Social spaces for gatherings - Availability of tower for sightseeing - Open areas for socializing - Shaded spots for hangouts	- Privacy and quiet for personal conversations - Management of large groups - Park hours may not align with late-night outings	Community, Activities, Realizing Daily Life
Elders	Elderly	Regular Meetups	- Walking and socializing - Group meetups and chit-chat - Observing park activities - Routine exercise and relaxation	- Walking paths and seating areas - Meeting spots for socializing - Quiet areas for contemplation	- Safety and cleanliness - Crowd management during peak hours - Access to resting spots	Material Necessities, Community, Realizing Daily Life

Kids with Parents	Kids and Parents	Classes and Play	- Organized classes for young children (e.g., Silambattam, dance practice, skating) - Family play and bonding	- Designated areas for classes - Play equipment and spaces - Shaded zones for family activities	- Safety and supervision - Scheduling classes and playtime - Crowded classes and play areas	Material Necessities, Activities
Couples	Mixed Ages	Afternoon	- Seeking privacy and shade - Quiet moments together - Enjoying the park's ambiance - Spectacle in the evenings	- Shaded areas for privacy - Quiet zones and seating - Aesthetic park layout - Visual hindrance for privacy	- Privacy and solitude - Maintenance of quiet areas - Limited secluded spots	Realizing Daily Life, Privacy
Neighbourhood Resident	Mixed Ages	Weekday Evenings	- Routine activities such as walking, playing, and community meetings - Social interactions with neighbours	- Walking paths and social spaces - Seating areas for routine activities	- Safety and cleanliness - Conflicting use of shared spaces - Coordination of community meetings	Realizing Daily Life, Community

3.3.2 DR. NATESAN PARK (4 acres)

Originally intended to be a residential haven, T.Nagar, Chennai's first beautifully planned urban neighbourhood, has grown into a prestigious retail centre and is currently recognized as India's largest shopping district. Thanks to the Smart City initiative, T.Nagar, a symbol of the city's expansion, has undergone a thoughtful redesign. A thriving commercial corridor seamlessly weaves through a rich tapestry of apartments, homes, offices, temples, schools, and colleges to create this vibrant area. T.Nagar's parks provide a peaceful, green haven amidst the vibrant urban landscape, drawing tourists and locals from all over Chennai. T.Nagar is a special and beloved neighbourhood in the city because of these lush pockets of peace and quiet that offer a welcome counterpoint to the area's busy activity.

3.3.2.1   USER GROUPS

- Shoppers' Respite: North Usman Road Park attracts visitors shopping in the area, providing them with a space to relax before continuing their journey home or to restaurants. Additionally, the park's proximity to several temples makes it a convenient stop for devotees.

- Evening Office Gatherings: Nearby offices draw office-goers to the park, who often visit with their families in the evening. It serves as an ideal place for both work and leisure-related catch-ups with friends and colleagues.

- Schoolchildren's Playground: The park's location near schools makes it a popular choice for children who arrive after school hours, typically around 4 pm. They engage in playful activities within the park and indulge in local eateries just outside.

- Community Gathering Space: With a substantial number of nearby residences, the park functions as a shared communal area for the local neighbourhood. It's a versatile space for hosting various activities, fostering a sense of community.

- Elders' Retreat: The park also caters to the needs of senior citizens, who frequent it for their daily morning and evening walks. It serves as a meeting point for social interactions among older age groups.

- Dynamic and Diverse Demographics: North Usman Road Park hosts a dynamic and diverse user base, welcoming an equal mix of local residents and visitors from other parts of Chennai. This diversity contributes to the park's inclusive ambiance.

- Gender Dynamics: Gender-wise, the park sees a slightly higher female presence, especially in the evenings. This can be attributed to its proximity to residential areas and the availability of goods catering to women's interests in the adjacent shopping areas.

- Age Groups: Visitors in their 20s to 40s make up the majority of the park's users, as they frequently explore its offerings and engage in recreational activities.

- Proximity Matters: Visitors who live nearby tend to frequent the park more often, visiting four to five times a week or more, compared to respondents residing farther away, who visit only two to three times a

week. The park's accessibility is a key factor in its popularity among locals.

Figure 7: Activities at Natesan park

3.3.2.2   ELEMENTS AFFECTING PARK USES

• Tennis Coaching and other classes: The park features a dedicated tennis court for children, offering coaching opportunities.

• Eco-Friendly Amenities: Natesan Park is home to a plant propagation centre and a children's play zone, with an emphasis on environmental sustainability. It also boasts decorative and eco-friendly light fixtures.

• Abundant Tree Cover: The park's abundant tree cover provides shade and a pleasant ambiance. Adjacent to the park, the Corporation

playground and basketball court attract various user groups, making it a popular gathering spot.

- Diverse User Groups: The park caters to a wide range of visitors. Children frequent it for relaxation and play, while men and elders use it as a regular meet-up spot. Women prefer it for evening walks with friends.

- Community Gathering: Natesan Park is a favoured place for quick catch-ups with friends, post-shopping relaxation, and dining. The presence of nearby shops, commercial areas, eateries, and food joints adds to its appeal.

- Optimized Timings: The park operates from 5 am to 10 am and from 4 pm to 9 pm. This schedule limits undesirable activities and contributes to a safer neighbourhood.

- Metro Impact: Due to the construction of the metro, part of Panagal Park is inaccessible, leading to reduced foot traffic. As an alternative, Natesan Park has gained popularity.

- Well-Maintained Environment: The park is known for its cleanliness, visual connectivity, and safety. It features additional shaded structures like pergolas, gazebos, and tensile structures, along with seating along the pavements.

- Multipurpose Area: Natesan Park is equipped with a multipurpose area designed for various activities, including training exercises, yoga, and karate. It offers easy way finding, enhancing safety and security.

- Facilities and Amenities: The park provides a range of facilities and amenities suitable for diverse user groups. Key features include an open gym and yoga areas, making it a vibrant centre for active lifestyles in T. Nagar.

Figure 8: *Elements affecting park users*

3.3.2.3   STEPS TOWARD SUSTAINABILITY

- Solar mobile charging stations

- Sewage treatment plants to promote greenery

- Smart city initiatives to increase inclusivity, awareness of trees and cleanliness of surroundings.

- Planting indigenous trees and plants beneficial to the neighbourhood.

3.3.2.4   CHALLENGES/FAILURES

- Public Transport Connectivity: The park faces challenges in terms of public transport accessibility, as bus routes have been redirected due to ongoing metro construction. Future proximity to the metro is expected to enhance accessibility.

- Parking Situation: While private vehicles are parked along the road outside the park, the area is known for heavy traffic, affecting ease of access.

- Railway Station Proximity: The park is relatively distant from the nearest railway station, impacting the accessibility for those relying on trains.

- Parking and Hawker Issues: User satisfaction is hindered by inadequate parking spaces and encroachments by hawkers. These issues have contributed to concerns about accessibility.

- Restroom Condition: Restrooms within the park are present but are poorly maintained, affecting the overall user experience.

- Seating and Hygiene Concerns: Users have raised concerns about the lack of clustered or group seating options, limited hygiene, and issues

related to littering. The absence of new activities has also led to a decrease in user groups.

- Restricted Restroom Access: Restrooms inside the park are only accessible during park hours. As a result, open urination is prevalent in the surrounding area, causing inconvenience to joggers, drivers, and nearby residents. Encroaching food vendors exacerbate the situation.

- Senior Citizen Houses and Old-Age Home: The presence of senior citizen houses and an old-age home nearby has raised concerns among residents due to perceived threats and challenges in the vicinity.

Compared to Jeeva Park, a nearby park, which has been designed with more areas for physical activity, Dr. Natesan Park has more green space. Most of all, it is a community park. All year long, Natesan Park hosts a variety of festivals and special events, including food fairs, music performances, cultural performances, and Chennai sangamam. These events promote a sense of community while providing a platform for local small businesses and artists to display their products and skills. Table 2 depicts the information about the park, users, its failures and the protected needs of the various age groups it meets.

Table 2: Dr.Natesan park - Analysis

User Group	Age Range	Typical Timings	Activities and Social Functions in the Park	Elements That Facilitate Activities	Challenges/Obstacles	Protected Needs Met
Shoppers	20-40s	Throughout the day	Resting, shopping breaks, temple visits	Proximity to shopping areas, availability of goods	Limited public transport, heavy traffic	Rest and Shopping Needs
Office Goers	20-40s	Evenings	Evening relaxation, meet-ups	Proximity to nearby offices, open gym, yoga areas	Limited public transport, traffic	Relaxation and Socializing
School Children	Varied	After school hours (around 4 pm)	Play, snacking at informal eateries	Playground, play zone for children, nearby schools	Less amenities/play equipments	Play and Snacking Needs
Local Residents	Varied	Throughout the day	Shared common space, host community activities	Community park, special events, cultural shows	Lack of clustered seating, cleanliness	Community and Activity Space
Elders	Varied	Mornings and evenings	Walking, meet-ups with friends	Well-maintained park, shaded areas, senior citizen homes	Lack of public restrooms, open urination	Exercise and Socializing
Visitors	Varied	Throughout the day	Rest, quick catch-ups, exploration of the area	Proximity to shopping areas, special events	Limited public transport, heavy traffic	Rest and Exploration Needs

3.3.3 NAGESHWARA RAO PARK (4 acres)

Natesan Park, situated in Mylapore, Chennai, is a vibrant urban green space born from the transformation of a neglected pond into a community asset. Shaded by old-growth trees, the park offers a cool and inviting environment. Catering to a diverse mix of families, from middle-class to lower-middle-class backgrounds, and residents of informal settlements, the park stands as a communal hub. Its proximity to temples, a church, educational institutions, commercial areas, and residences further enhances its significance in the local community's life. Natesan Park thrives as a harmonious space where diverse social and recreational activities coexist.

3.3.3.1   USER GROUPS

- Natesan Park caters to a broad spectrum of visitors, accommodating a variety of activities and social engagements.
- School children are a common sight, arriving at the park after their school hours to enjoy snacks available from nearby vendors.
- College students and couples find solace in the park's tranquil environment during late hours, relishing time spent with friends and seeking moments of privacy.
- The park serves as a favoured spot for shoppers and churchgoers, offering a "third space" for relaxation and connection outside their usual routines.
- Some individuals opt for a peaceful respite on the park's benches, taking moments to rest and unwind in the midst of urban bustle.

3.3.3.2   ELEMENTS AFFECTING THE PARK USES

- Operating Hours and Safety: Natesan Park operates during specific hours from 5:30 am to 10 am and 4 pm to 7 pm. These restrictions are in place to discourage antisocial behaviour and enhance safety for the local community.

- Facilities: The park offers a range of amenities, including dedicated children's play areas and a badminton court, catering to diverse user groups.

- Community Engagement: In recent times, the park has evolved into a venue for weekly music concerts, primarily organized for the Brahmin community in neighbouring areas. These events are facilitated by a private company, fostering community engagement.

- Weekend Activities: On weekends, the park hosts various activities, such as dance classes, music concerts, silent reading sessions, book exchanges, and art exhibitions. Additionally, the park serves as a venue for events like the Chennai Photo Biennale, health camps, and civic forums, contributing to its vibrant community atmosphere.

- Seating Arrangements: The park features clustered seating arrangements, providing suitable spaces for group discussions and meetups, which are particularly popular among regular park users and elderly individuals. Furthermore, the availability of free Wi-Fi enhances the park's social status and transforms it into an informal workspace for students.

- Convenient Accessibility: The park primarily attracts residents from the nearby locality, who can conveniently walk to the park due to the excellent footpaths available for pedestrians. This accessibility enhances the park's popularity among the local community.

Figure 9: Activities at Nageshwara Rao park

3.3.3.3   SOCIAL BEHAVIOUR

When we observed working-class and impoverished men engaging in meaningful or constructive activities within the parks, their presence was regarded as desirable. For instance, in Nageshwara Rao Park, there's a hip-hop dance group hailing from the nearby Kapalithottam slum that practices and teaches dance. The leader of this troupe shared that park guards, park-

goers, and municipal representatives generally supported the use of park space for their activities. This support stemmed from the belief that it kept the 'slum boys' engaged in productive pursuits, diverting them from potential trouble.

In all three parks, we also witnessed groups of young men participating in sports like badminton and football. A significant number of interviewees voiced their approval for these initiatives, recognizing the importance of providing young people, particularly those from working-class, lower-middle-class, and underprivileged backgrounds, with access to public green spaces for leisure. This observation suggests the presence of an inclusive ethos within the parks, even though underlying social tensions remain regarding who can use these areas and under what conditions. Virtually all our respondents were in agreement that it is crucial to support courtship activities among young individuals, especially those from less privileged backgrounds. Such individuals often lack access to alternative venues in the city, and these activities should not be discouraged or criminalized.

3.3.3.4   STEPS TOWARD SUSTAINABILITY

By emphasizing the value of public spaces in urban growth through awareness installations, Nageshwara Rao Park provides its visitors with an educational aspect. Regular nature walks through the park are another way that it educates visitors about the wide variety of healthy trees and plants that grow there. The park created a composting yard with three pits in 2009 as part of an environmentally conscious initiative to turn garden waste

collected from eight bins into compost. The Chennai Corporation owns the park, which is maintained in part by Sundaram Finance, which provided funding for this sustainable project.

Figure 10: Steps toward sustainability

3.3.3.5   CHALLENGES/FAILURES

Maintenance Issues: Nageshwara Rao Park faces problems like stagnant fountains, poor evening lighting, neglected areas, and inadequate seating.

These issues impact the park's overall attractiveness, particularly during the monsoon season.

Parking Limitations: Two-wheeler parking is available along the surrounding roads, but there's no space for four-wheelers. However, this is generally not a significant concern since most park users prefer walking.

Social Acceptance: Some senior, upper-class park goers express concerns about children from a nearby slum playing cricket in the park. They worry about potential health risks, like getting hit by cricket balls.

In addition to being a typical neighbourhood park, this park doubles as a recreation area and is well-known for its range of events and activities, such as music concerts, and serves as a venue for up-and-coming artists and small businesses. The community's socializing qualities and multifunctionality draw a wider range of user groups to the park. Table 3 depicts the information about the park, users, its failures and the protected needs of the various age groups it meets.

Table 3: Nageshwara Rao park - Analysis

...up	Age Range	Preferred Timings	Typical Activities	Supporting Elements	Challenges/Obstacles	
...ds	Varied	After school hours (late afternoon)	Buying snacks, playing	Play spaces, snack shops outside the park, good footpaths, excellent walkability	Maintenance issues (fountains, lighting), unusable during monsoon	S...
...e & ...s	Varied	Late hours (evening)	Socializing, relaxation	Weekly music concerts, dance classes, art exhibitions, clustered seating	Limited 4-wheeler parking, poor lighting, social tensions	S...
...& ...s	Varied	Throughout the day	Rest, third space	Proximity to shopping areas, nearby church, well-maintained footpaths	walking distance is long	R...
	Varied	Various (including overnight)	Bench sleeping, sports	Sports facilities, good walkability, community acceptance	Sparse vegetation, poor lighting, maintenance issues	R...
...ity & ...s	Varied	Varies with events	Music concerts, art exhibitions, educational sessions	Free Wi-Fi, visual connectivity, regular events, environmental education	lack of facilities like drinking water or clean toilets.	...

3.3.4 SIVAN PARK (3acres)

Sivan Park serves as the solitary urban park in the neighbourhood, providing essential recreational spaces for residents of all ages. Part of the planned transformation of K.K. Nagar into a suburban community in the 1980s, the park is a central hub, featuring a prominent Sivan temple at its entrance, which lends its name to the park. While there are other sector parks, Sivan Park remains a vital communal space, addressing the need for affordable entertainment and green respite in this densely populated neighbourhood.

3.3.4.1   USER GROUPS

- Sivan Park, situated in close proximity to multiple residential areas, serves as a communal space with a wide range of users.

- Families and individuals in the workforce frequently visit the park during the evenings, utilizing it for leisure and social interaction.

- Due to its vicinity to a boys' school, students often gather at the park after school hours for recreation and socializing.

- The park's location near various places of worship, including temples, a mosque, and a church, attracts individuals attending religious services, adding to its diverse user base.

- The presence of the Sivan temple within the park enhances its appeal, with devotees visiting for religious activities and quality family time (figure 7).

- Temple-related events and celebrations further contribute to the park's vibrant atmosphere and diverse usage.

3.3.4.2   ELEMENTS AFFECTING PARK USERS

- The park operates within specific hours, from 5 am to 10 am and 4 pm to 9 pm, ensuring it is used primarily for constructive purposes and enhancing community safety.

Figure 11: Activities at Sivan park

- Inadequate lighting during late hours prompts young couples to engage in private activities within the park, sometimes causing disturbances to families.

- The park features numerous statues, waterfalls, and animal sculptures designed to appeal to children.

- A variety of informal eateries, shops, and entertainment options are available just outside the park's premises.

- The presence of a nearby police station contributes to the park's overall safety and reassures visitors, even during odd hours.

- The park benefits from excellent public transport connectivity, with bus stops opposite the park, offering frequent bus services. The nearest metro station is a bit of a distance away.

- Designated areas for activities such as yoga, karate, and other classes attract users spanning different age groups.

- Sivan Park has a dedicated group of long-standing senior citizens who continue to be a part of its vibrant community, shaping their memories and perceptions of the area.

- The park serves as a prominent landmark in KK Nagar, influencing 40% of respondents' associations with the neighbourhood.

- The absence of other affordable recreational options like beaches or museums drives people to visit the park and adjacent shop fronts for family outings and entertainment.

3.3.4.3   CHALLENGES OR FAILURES

- Sector parks are primarily used for early-morning jogging but face underutilization.

- Maintenance issues, including rusted furniture, insufficient night time lighting, and blind spots, have been reported.

- Antisocial activities are observed in these parks.

- Stagnant water during the monsoon season limits park usage.

Table 4: Sivan park - Analysis

User Group	Age Range	Preferred Timings	Primary Activities in the Park	Key Elements in the Park	Challenges or Obstacles They Face While Using the Park	Protected Needs Met in the Park
Families and Working People	All Ages	Evening (4pm to 9pm)	Leisure, Family Time, Socializing, Relaxation	Statues, Waterfall, Animal Sculptures, Open Spaces	Inadequate Evening Lighting, Littering, Limited Seating, Noise Disturbances	Recreation, Family Bonding, Social Interaction, Relaxation
Students	School-Age	After School Hours	Playground Activities, Peer Socializing, Sports	Playground Equipment, Open Play Areas, Benches	Maintenance Issues (Rusted Equipment), Antisocial Behavior, Safety Concerns	Recreational Space, Social Interaction, Physical Activity
Religious Visitors	All Ages	Temple Visits	Worship, Family Gatherings, Participating in Temple Activities	Sivan Temple, Prayer Spaces, Religious Amenities	Seasonal Disruptions (Monsoon), Crowded During Festivals, Limited Privacy	Spiritual Experience, Family Togetherness, Religious Practices
Religious Places Nearby	All Ages	During Religious Visits	Worship, Reflection, Community Engagement, Family Gatherings	Proximity to Religious Sites, Religious Structures	Littering, Traffic Congestion, Limited Parking, Noise from Traffic	Spiritual Experience, Accessibility to Religious Sites

| Middle and Lower-Income | All Ages | Evening (4pm to 9pm) | Affordable Recreation, Socializing, Budget-Friendly Options | Informal Eateries, Affordable Vendors, Entertainment Choices | Unclean Facilities, Traffic Congestion, Littering, Limited Seating | Affordable Entertainment, Social Interaction, Budget-Friendly Options |
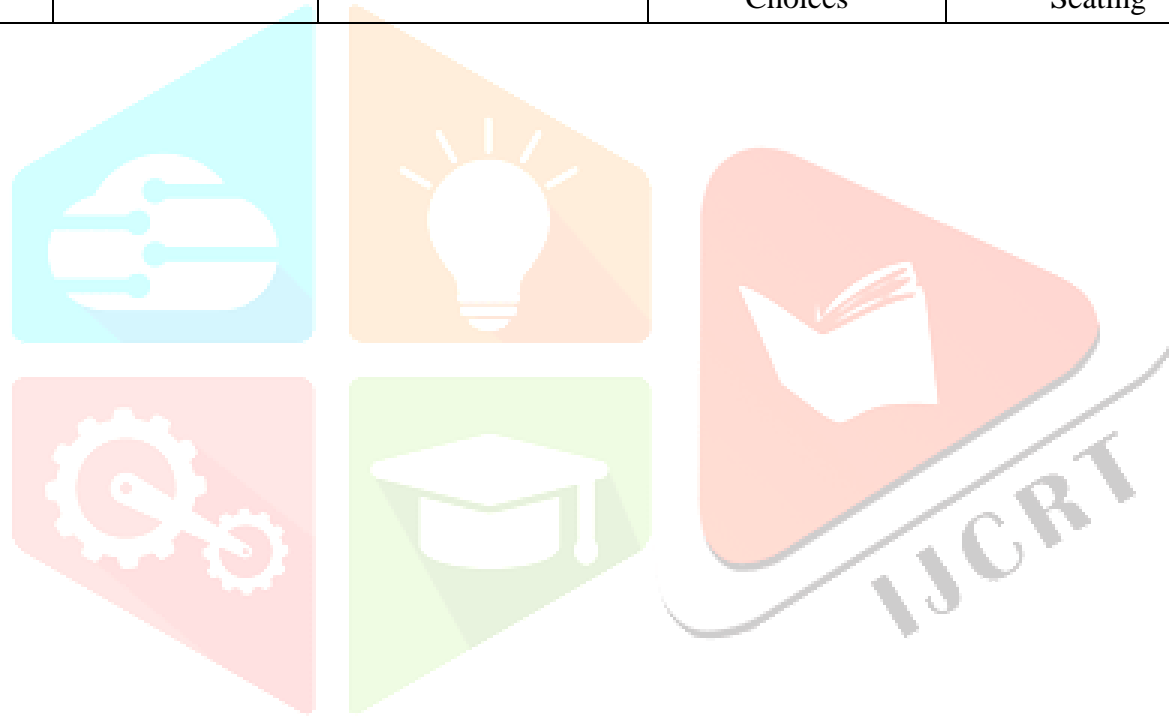
- Littering is a significant concern, exacerbated by the high number of visitors frequenting the stores and restaurants outside the parks.

- Traffic congestion and limited parking space due to vehicles parked in front of the police station affect the parks.

- Poor maintenance of water fountains and restrooms inside the parks has been noted.

Table 4 depicts the information about the park, users, its failures and the protected needs of the various age groups it meets.

3.3.5 ANALYSIS OF CASE STUDY:

Parks and other green public spaces are essential for supporting a diverse range of daily routines and activities. They function as a community asset that can be planned, conserved, and enjoyed. A broad spectrum of people, differing in age, gender, and socioeconomic status, visit these parks. However, park usage patterns show discernible variations throughout the day. Men in their middle-class, middle-aged demographic predominate when it comes to early morning workouts. More women show up as the morning wears on, looking to unwind and work out. Parks such as Anna Nagar Tower park serve as a rest area for day labourers and a meeting point for young couples and students in the afternoon. Early evening finds parents watching their kids play, and fitness enthusiasts head back to their workouts. The parks become social hubs with food vendors in the late evenings. Parks don't permit vending inside of their boundaries and typically open from 5 a.m. to 10 p.m., with a midday closing. Notably, certain behaviours are discouraged and subject to social norms and regulations in the parks. It is undeniable that these green public spaces play a crucial role in promoting connections, free and open interaction, and privacy for specific social groups, despite the fact that their diverse user base has different needs and preferences. The parks foster a feeling of community by enabling people to interact and participate in cultural events, dialogues, and connections that are frequently difficult to find in other urban settings. As a result, green public spaces become essential elements in forming and improving urban life, serving various demographic groups and promoting the general well-being of the community.

Table 5: Inference from case studies.

Aspect	Anna Nagar Tower Park	Dr.Natesan Park	Sivan Park	Nageshwara Rao Park
Location	Well-planned area, commercial and residential neighbourhood.	Residential neighbourhood, with a rich commercial stretch.	Planned suburban neighbourhood, unique node with very less options for entertainment.	Diverse neighbourhood with many old-growth trees around residences and retail streets.
Park Size	15.35 acres	4 acres	3 acres	4 acres
User Groups	Diverse, including families, students, elders, couples, neighbourhood residents	Diverse, including school kids, college students, couples, shoppers	Predominantly middle and lower middle income groups in and around the area.	Draws a diverse range of park visitors from the vicinity of the neighbourhood especially senior citizens, for a range of activities
Third Space	Serves as a third space for relaxation, entertainment, and socialization	Acts as a third space for shoppers, churchgoers, students	Serves to be a destination space and a main attraction of the area.	Serves as a third space for rest and community activities
Activities	Various activities for all user groups, mainly a popular sightseeing and playing spot.	Range of activities, cultural events. Mainly includes a routine of activities set by community members.	Varied activities with religious elements, families, sightseeing, playing and shopping.	Diverse range of activities including exhibitions, classes, concerts and routine park activities.
Elements	Open gym, play areas, shaded spots, Anna Tower.	Play spaces, music concerts, Wi-Fi, yoga/classes space Trees and shade, Shopping and eating spots outside.	Statues, sculptures, yoga space, temples, open gym, play, fountains and waterfall.	Old-growth trees, shaded areas, gathering spots and walking tracks.
Transport	Good metro connectivity, ample parking	Adequate parking, walk able, connectivity	Public transport, good connectivity	Limited public transport connectivity and parking.
Challenges	Limited public transport connectivity during metro construction	Parking issues, cleanliness, social acceptance	Limited lighting, maintenance, rainy season	Limited parking, social acceptance
Community Involvement	Initiatives taken to maintain the park and its trees by community.	Various community engagement initiatives and events.	Regular uses of park and the temple.	Installations, nature walks
Social Behaviour	Approval of constructive activities, including dance and sports	Support for any other activities among young people and students.	Events organized and acts as a community space.	Approval of constructive activities including dance, music and sports

Sustainable Measures	PASUMAI initiative to maintain park and the many trees in it.	Composting yard, nature walks, installations, lots of greenery.	Lots of trees and biodiversity.	Compost yard, nature walks and awareness of the many trees planted there.

3.4 SURVEY

Talking to people about how they interact with parks, what they enjoy (Figure 8) and find annoying (Figure 9) about going there, how they feel about being in different areas, where they feel safe or unsafe, and what they consider to be meaningful to their lives, as well as the material arrangements of these spaces (such as landscaping, lighting, infrastructure, and other facilities) and park accessibility within the city, can give insight into the state of Chennai's parks currently and how they might be improved by resolving the problems that different user groups encounter.
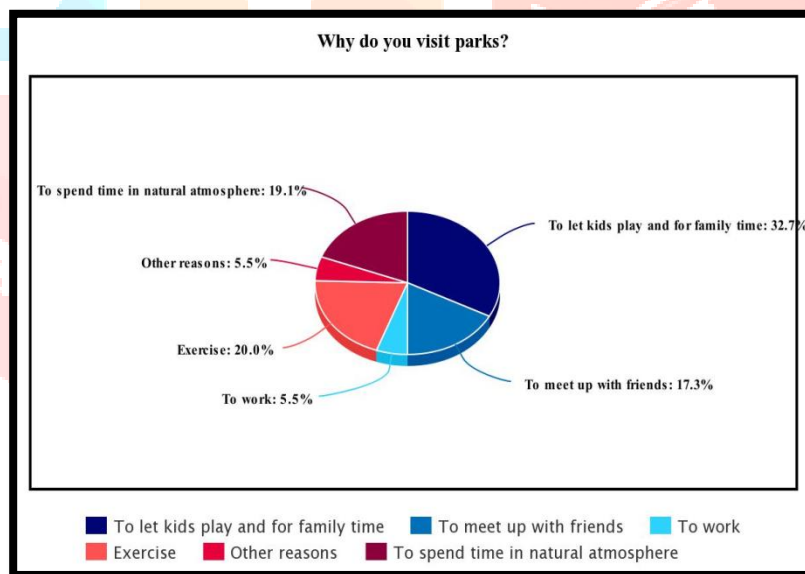

Why do you visit parks?

To spend time in natural atmosphere: 19.1%
Other reasons: 5.5%
Exercise: 20.0%
To work: 5.5%
To let kids play and for family time: 32.7%
To meet up with friends: 17.3%

Legend: To let kids play and for family time | To meet up with friends | To work | Exercise | Other reasons | To spend time in natural atmosphere

Figure 12: Reasons for visiting a park

Reasons for not visiting park (Figure 9):

- Time constraints
- Poor maintenance
- Long distance from their place of stay, work or study.
- Abandoned park nearby
- Lack of interest due to preconceived notions

- Over-crowding and exploitation

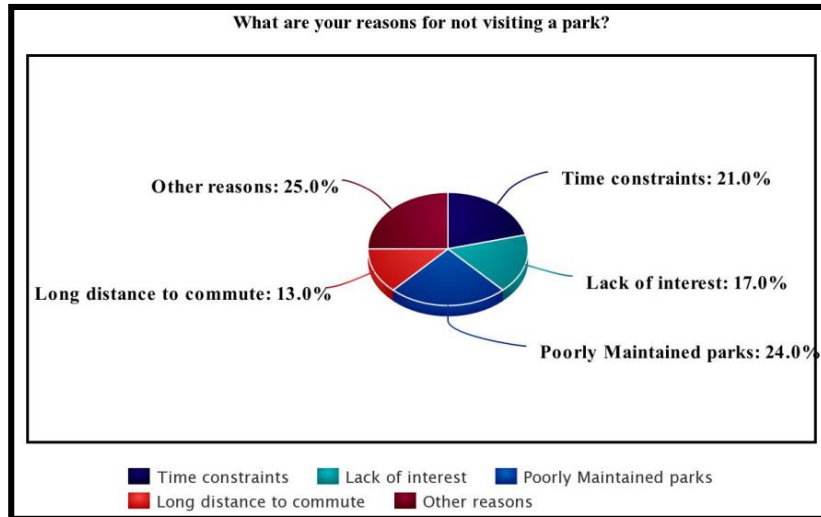- Lack of interest due to better entertainment available.
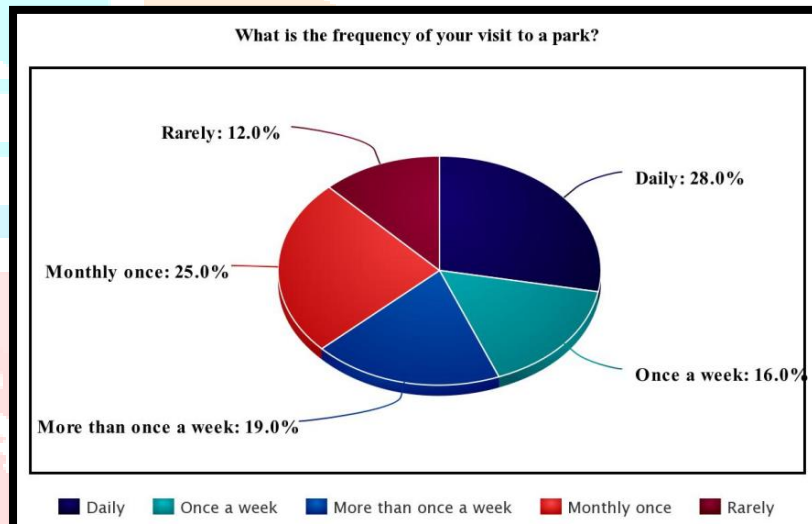

Figure 13*: Reasons for not visiting a park*

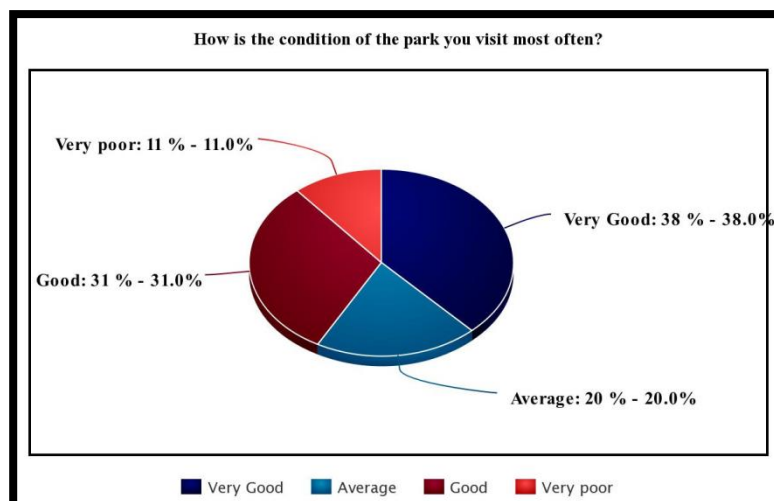***Figure 14****: Frequency of visiting a park*

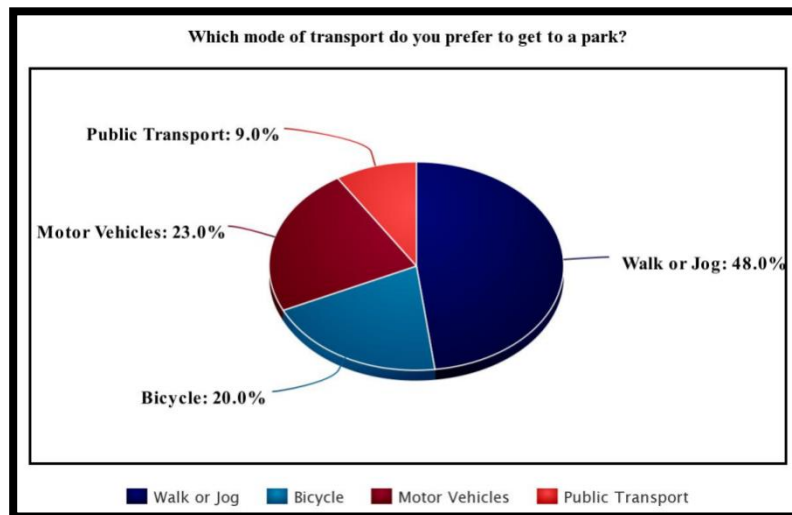*Figure 15: Condition of parks*

Figure 16: Mode of transport preferred

What according to you is the most important/preferred feature in a park? (Figure 9) -order of responses from most common to least common

- Nature
- Seating or space to gather
- Walking, jogging and cycling facilities
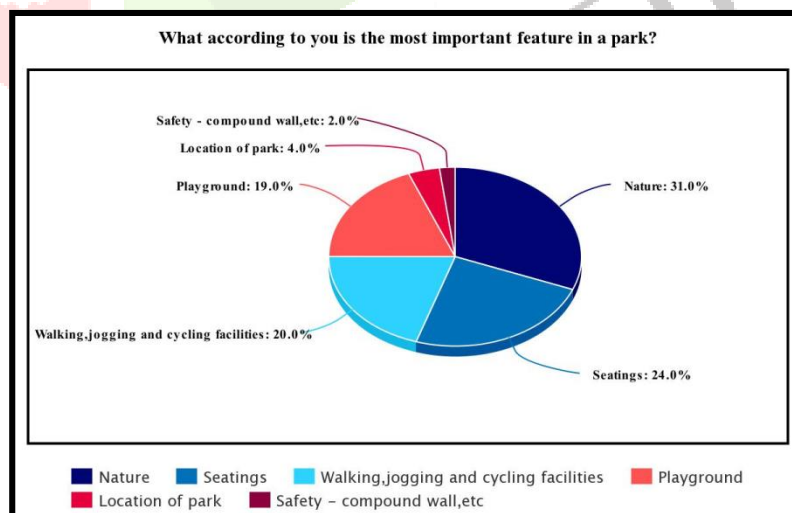- Playground for children
- Location
- Boundaries and walls

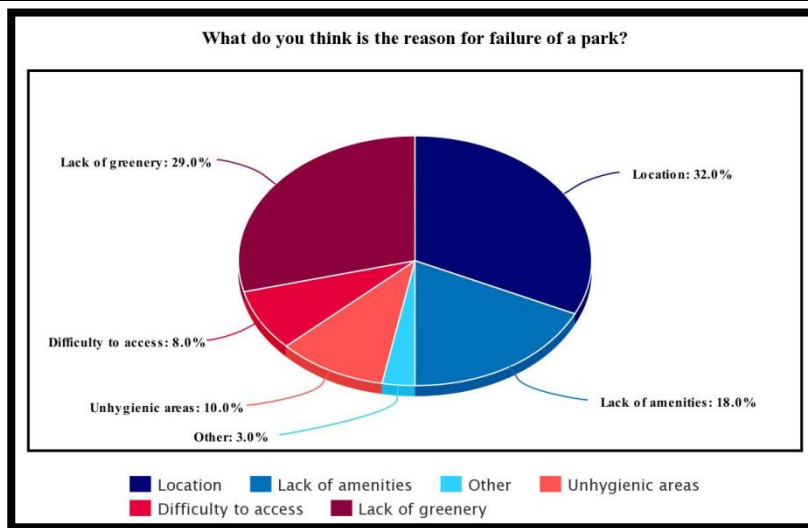*Figure 17: Important features in a park*

Figure 18: Reasons for failure

What could be changed to make parks better?

- Better lighting

- More trees and well-maintained indigenous greenery

- More activities, functions, events and programmes to be organized

- Stricter rules on cleanliness, littering and exploitation

- Awareness, inclusivity and accessibility.

- Improved toilet facilities.

- Pet friendly zones and better kids play

- Recreational programs like – self defence classes for adults and kids, exercise equipment, cycling, games, etc.

- Better way finding and safety measures.

- Better parking and road access.

- Porous boundary walls enclosing the park and preventing encroachment.

- Integrating art into parks.

3.4.1 ANALYSIS OF SURVEY RESULTS

- The majority of regular park users consist of senior citizens and school children, with a higher male predominance.

- Occasional park visitors outnumber those who frequent them regularly.

- Parks are primarily sought for recreation and relaxation, ranking higher than other purposes.

- Key factors for park user satisfaction include a strong connection to nature, high-quality amenities, and a positive social atmosphere.

- Inactive, neglected, or misused parks face challenges like amenity shortages, accessibility issues, obstructive vegetation, safety concerns, and a history of antisocial behaviour.

- Among park features, nature and seating arrangements are most favoured.

- Eateries and retail offerings in parks are secondary attractions as the park itself is considered an entertaining destination.

- Many park users are interested in cultural activities, events, markets, and classes hosted in parks, including specialized programs. Respondents are open to paying extra for such programs.

- Community engagement for park maintenance is endorsed by some respondents.

- Adequate park lighting significantly influences user behaviour in the evenings, enhancing safety and vibrancy.

- Diversifying the park system is desired, with ideas like interactive fountains, gardening areas, sports zones, dog-friendly spaces, and improved children's play areas.

- Exploiting existing parks and public land to the fullest extent is suggested. Respondents propose adding lighting for extended use and multi-purpose indoor spaces for rain days.

- A subset of respondents is receptive to the idea of working or studying in parks if provided with charging stations and suitable infrastructure.

3.5 DISCUSSION

Parks and other green public areas have a certain appeal that transcends their natural surroundings. These areas are important because they can provide much-needed shade, which is something that many of the people who responded to the survey highlighted. Shade is extremely important, especially in areas like Chennai with hot, sunny climates. Parks are different from other outdoor spaces, like beaches, which frequently don't have enough natural shade, making them unusable in the middle of the hot summer months. Green public spaces are essential for more than just providing shade; they also play a crucial role in varying the microclimate in urban environments. They offer an alternative to the prevalent practice of seeking solace and comfort in heavily air-conditioned spaces. Parks can serve a greater range

of purposes while using less material and energy than other entertainment venues in the city, even though air-conditioned complexes and malls provide relief from the region's heat and humidity. Moreover, green areas help to lessen the impact of the urban heat island in places like Chennai. This phenomenon happens when temperatures in city centres are much higher than in surrounding areas because of things like human activity (like air conditioning and transportation) and the built environment (roads, buildings). These results may have implications for urban planning, as they show that, although businesses may serve particular demographic groups, parks have the potential to become more all-encompassing, resource-efficient, and long-lasting sources of enjoyment for a wider range of community members.

It is imperative that parks of the future take into account the diverse expectations and preferences of their users, regardless of their age. Users expect better facilities based on current facilities, according to the survey and case studies. In addition to maintaining spaces' cleanliness and functionality, mixing programs appears to be bringing in more people and diversity to park users. Thus, combining different programs in a unique way in a single space can encourage social behaviour and active use. For instance, a park could combine cultural and fitness areas by providing middle-aged adults who are concerned about their health with morning yoga sessions and turning into an outdoor theatre in the evening for family- and young adult-friendly cultural events. Playgrounds and green markets combined on weekends can make for a fun family outing that promotes physical activity outside while fresh produce is being purchased. The addition of picnic areas with outdoor bookcases appeals to readers of all ages, from young children to senior citizens, by offering a peaceful setting for reading and relaxation. Designing parks with outdoor gyms and surrounding areas for senior citizens to congregate, mingle, and engage in mild exercise can benefit seniors looking for social interaction as well as fitness-conscious adults.

Incorporating kid-friendly play areas with interactive sculptures and art installations also encourages children's play and creativity while providing families and art enthusiasts with opportunities to appreciate art. Parks with food courts and interactive displays can provide educational opportunities for outdoor dining and satisfy a variety of age groups and interests. By implementing these multipurpose tactics, parks can develop into dynamic environments that satisfy a range of user expectations and support the long-term viability of urban green spaces.

4. CONCLUSION

This dissertation has delved into the intricate relationship between urban park-making as a social practice and the growth dynamics within the urban landscape. Urban parks, often seen as "commoning" spaces, foster values of conviviality, care, and sharing, standing in opposition to the consumerism that is sweeping through urban areas. These green public areas fulfil a variety of human needs, including those related to leisure, community building, and nature interaction.

Our study showed that, in these parks, people do not all meet their needs in the same way. Social variables like age, gender, and class have a big impact on how people interact with these areas and how well their needs are met. Furthermore, elite interests frequently have a say in how parks are provided, which raises questions about inclusion and accessibility. It is essential to embrace hybridization and multifunctionality in park design in order to address these issues.

In addition to being fundamental design concepts, hybridization and multifunctionality are also critical tactics for meeting the changing and varied needs of city dwellers. Parks can guarantee the provision of basic amenities like spotless facilities, communal seating, and functional water fountains by prioritizing functionality over aesthetics. The park's relevance to a variety of groups is increased by adding features like urban vegetable gardens, skill-training programs, and community gathering places. Furthermore, important components of developing inclusive green spaces include putting accessibility first and encouraging community involvement. The behaviour of park users and the frequency of visits are influenced by additional elements such as proper lighting, well-kept infrastructure, and the enforcement of park rules. In addition, community involvement in park planning and administration can help customize the area to suit neighbourhood needs.

Tighter regulations for dumping trash or abusing the parks, along with penalties for breaking the rules, would guarantee a responsible attitude to park upkeep and usage. These changes foster a sense of belonging, personal growth, and material well-being, ultimately transforming parks into vibrant, commons-based urban assets.

In the end, developing sustainable urban open spaces requires a change in urban planning that prioritizes inclusivity and shared resources for all. By reserving a sizeable chunk of urban space for communal and public use, this strategy counteracts the dominant interests of

powerful groups and lessens the privatization of these areas. By embracing hybridization and multifunctionality, we can create more fulfilling, sustainable, and inclusive urban environments, breaking away from the dominant consumerist model of development.

In conclusion, urban parks provide areas for people to come together, learn, and develop; they also encourage city maintenance and communal spaces. These parks improve everyone's quality of life by acting as catalysts for thriving, equitable, and resilient cities. As public spaces make an important part of the future of cities, they provide a platform for inclusivity and diversity within the changing urban landscape.

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