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## **SPATIAL AND PHYSICAL QUALITIES OF PUBLIC RECREATIONAL PARKS IN ADDIS ABABA:**

**The Case of Selected Inner City Recreational Parks**

A Thesis Submitted to the School of Graduate Studies of Addis Ababa  
University in Partial Fulfillment for Master Degree in  
Urban Design and Development

By

Salem Gulilat Tilahun

May 2023

ADDIS ABABA, ETHIOPIA



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Advisor: Darik Zebenigus Wuhib

Author: Salem Gulilat Tilahun

**Ethiopian Institute of Architecture, Building Construction and City Development (EiABC)**

Addis Ababa University

May 2023

Addis Ababa

This thesis is submitted to Ethiopian Institute of Architecture, Building Construction and City Development (EiABC) and to school of graduate studies of Addis Ababa University in partial fulfillment of the requirements for the degree of Masters of Science in Urban Design and Development.

Thesis Title: **Spatial and Physical Qualities of Public Recreational Parks In Addis Ababa:**  
The Case of Selected Inner City Recreational Parks

By: Salem Gulilat Tilahun  
May: 2023

**Approved by Board of Examiners:**

Lecturer **Darik Zebenigus**  
(PhD Candidate)

Advisor

-----

Signature

-----

Date

Assistant Prof **Alazar Assefa**  
(PhD)

External Examiner

-----

Signature

-----

Date

Assistant Prof **Nebyou Yonas**  
(PhD)

Internal Examiner

-----

Signature

-----

Date

Assistant Prof **Dagnachew**  
**Adugna** (PhD)

Chairman

-----

Signature

-----

Date

Assistant Prof **Dagnachew**  
**Adugna** (PhD)

Graduate Program Director

-----

Signature

-----

Date

## DECLARATION

I, the undersigned, declare that this thesis (**Spatial and Physical Qualities of Public Parks in Addis Ababa: The Case of Selected Inner City Recreational Parks**) is my original work and has not been presented for a degree in any other university, and that all sources of materials used for the thesis have been duly acknowledged.

Signature: \_\_\_\_\_

Name of the student: Salem Gulilat Tilahun.

Date: \_\_\_\_\_

## CONFIRMATION

I state that Salem Gulilat Tilahun has carried out this research work on the topic “**Spatial and Physical Qualities of Public Recreational Parks in Addis Ababa: The Case of Selected Inner City Recreational Parks**” under my supervisions and it is sufficient for the partial fulfillment for award master’s degree of in Urban Design and Development.

Darik Zebenigus Wuhib

Advisor:

\_\_\_\_\_

Signature

\_\_\_\_\_

Date

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## **Abstracts**

*Public spaces are an important part of cities as they contribute to improvements in quality of life and urban development. Additionally, urban residents' "quality of life" is the result of their interactions with the physical and urban environment. Many studies indicate that public recreational parks are fundamental physical component of a city to attain livability, environmental quality, social integrity and sustainability. They also show that they are a driving force to improve quality of life. The Addis Ababa city administration launched projects on public space in response to the inadequate physical and spatial quality to rehabilitate and newly develop the substandard recreational parks. However, the lack of standard criteria for the design and quality assessment of public space, especially public recreational parks, made it difficult to maintain the physical and spatial quality of the parks. Research on the human aspects of uses and related activity in recreational parks is also disregarded. There is also an inefficient and inconsistent evaluation on the recreational park spatial and physical changes by the responsible organization. The general objective of this study is to assess the success of public recreational parks' physical and spatial quality in the inner city of Addis Ababa. It focuses on operating three public recreation parks in Addis Ababa, Ambassador Park, Lideta Park, and Sheger Park. In the study, the case study method was employed using observational studies and closed-ended questionnaires. The selected case study areas were analyzed according to Site Specific Assessment frameworks, use and user, accessibility, amenities & furniture, comfort & safety, and a green environment, using quality indicator scores ranging from one to five. The study's findings indicated that the recreational spaces in the case study locations, Lideta Park and Sheger Park, are inadequate, below site-specific standards, and have poor spatial and physical quality. The parks have fewer users with low social interaction, and the users were unsatisfied. Ambassador Park gets a medium score despite, inclusion, sustainability, and energy efficiency issues. The park has better physical and spatial quality where users have a better experience of public space and quality of life. Users prefer to enjoy and stay longer and engage in social interaction. Therefore, using research-based planning approaches, general recreational park standards must be developed and implemented to improve the quality of existing recreational parks and guide newly designed public recreational spaces.*

**Key Words:** Public Space, Public Recreational Parks, Spatial and Physical Quality Dimension

## Acronyms

<b>AA</b>	Addis Ababa
<b>AACC</b>	Addis Ababa City Council
<b>AARBGADAA</b>	Addis Ababa City Government River Basins & Green Areas Development and Administration Agency
<b>CPI</b>	City Prosperity Index
<b>ETB:</b>	Ethiopian Birr
<b>GDP</b>	Growth Domestic Product
<b>QOL</b>	Quality of life
<b>WHO</b>	World Health Organization
<b>PPS</b>	Project for Public Spaces
<b>SDG</b>	Sustainable Development Goal
<b>UGI</b>	Urban Green Infrastructure
<b>NUGIS</b>	National Urban Green Infrastructure Standards
<b>UN-Habitat</b>	United Nations Human Settlements Program

## **Local Terms**

**Birr:** The unit of currency in Ethiopia

**Derg:** A military government during 1970

**Wereda:** Secondary level administrative office hierarchal under sub-city

## **General Notes**

Unless specified, all the pictures taken and maps and charts generated by the author

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# **Chapter One: Introduction**

## **1.1 Background of the study**

The 2016 Global Public Space Program annual report indicates that "public space is vital to a prosperous city. A well-designed and managed public space is a key asset for a city's performance and positively impacts its economy, environment, safety, health, integration, and connectivity. "Public space is a primary ingredient in an urban environment, and it is a place of encounter where public life unfolds" (Madanipour, 2015). The quality of life for people in cities is directly related to the state of their public spaces. Public spaces enhance community cohesion and civic identity and support the urban density levels required for environmentally and economically sustainable cities"(UN-Habitat, 2016).

Public recreational parks are multi-purpose public spaces in the city that offer social, economic, and environmental benefits (Urban Park Online, 2001). They improve the quality of urban life and enhance the image of a city. These public spaces are valuable for people and provide diverse recreation and social interaction opportunities. Those having a solid character are welcoming, inclusive, and have beautiful looks (Cabe Space, 2003). Urban recreation parks are open spaces that often provide play and sports areas, recreation facilities, and entertainment (Torkildsen, 2005).

Ethiopia is an under-urbanized Sub-Saharan African country, and the urban population of 21.2% of the total population is increasing rapidly, with an annual rate of urbanization of 4.63% (Tegenu, 2010). According to the United Nations Economic Commission for Africa 2019 report, the urban population will reach 42.3 million by 2037. The country engaged in rapid and comprehensive development activities to secure sustainable and reliable growth, including Sustainable Development Goal 11, "Make cities and human settlements inclusive, safe, resilient and sustainable."

Addis Ababa is the capital city, congested with high population growth and facing urban development challenges (The World Bank Group, 2015). However, the city adversely affected

the quality of life dimension regarding the low level of public space (UN-Habitat city prosperity index, 2018). The report recommends the necessary sustainable and strategic policy attention over the coming years (UN-Habitat, 2018). Accordingly, the country formulates policies, strategies, and urban green infrastructure standards at a national level to create the framework for municipalities to provide effective and sustainable urban green infrastructure (UGI) for their citizens to protect public health and environmental quality. However, there still needs to be more specific design guidelines and standards to keep the public space quality and provide quality public recreational parks.

The Addis Ababa City Council (AACC) Structural Plan of 2017 considers and classifies public space under the land use application and environmental section. It estimated the per capita green space in the city at one square meter per person, below the World Health Organization (WHO) standard of 9 square meters per person and the African standard of 7 square meters per person (AACC, 2017). The AACC structural plan ambitiously proposed establishing new public recreational parks with a total size of 2730 ha and classified into 2437 ha of City Park, 237 ha of Sub-city Park, and 56 ha of Wereda Park until 2027 to increase the per capita green space. However, the AACC structural plan focuses on improving the per capita green space and needs to consider the existing public recreational parks' spatial and physical quality gap (AACC, 2017).

Therefore, this research assesses the existing public recreational parks spatial and physical quality of the selected case area in Addis Ababa, and forward valuable recommendations on the spatial and physical quality standards.

## 1.2 Problem statement

Addis Ababa is the capital city, the main economic and diplomatic center where 25% of the country's urban population inhabits. The fast-growing population and migration will double the city population within 10 to 15 years (The World Bank Group, 2015). This population growth demands basic infrastructure and services aligned with livable public recreational space. Hence the city is experiencing multiple problems related to its spatial development and provision of quality public spaces in proportion to the growth. "The availability of retail facilities, space for outdoor activities, and public gatherings are minimal, and also there is a big deficiency in terms of parks and green spaces, while the existing ones are poorly managed" (AACPPPO, 2017).

Public recreational parks in the city are well manifested by poor spatial and physical quality and substandard physical conditions. Public spaces in Addis Ababa are characterized by poor material quality, function, image, and the absence of public life (Kumlachew, 2007). As a result, those spaces are not functional for the public regarding access and linkage, uses and activity, comfort and image, and the absence of social interaction. The UN-Habitat report states that Addis Ababa is doing poorly in the quality of life dimension, mainly due to the low public space level in the cities (UN-Habitat, 2018). In addition, the absence of design guidelines and research regarding public spaces specific to a public park is a significant challenge for proper design and planning. As a result, the designer failed to create public spaces that improve the quality of life for people in the community regarding physical activity, social interaction, and mental well-being.

Different initiatives have been undertaken to develop new parks and renovate substandard recreational public parks in the inner city due to poor spatial and physical quality. However, the absence of basic guidelines on the public recreational park design and quality evaluation documents became a challenge to maintain the recreational parks' spatial quality and physical quality with standards. In addition, research on the human dimensions of uses and activity regarding recreational parks needs to be addressed. Moreover, public spaces are complex and must evolve through improvements and refinements. The city greenery and public space-related responsible institutes have an inefficient follow-up and documentation on the park development.

## **1.3 Objectives of the study**

### **1.3.1 General objective**

This research aims to assess the spatial and physical quality of recreational parks in the inner city of Addis Ababa.

### **1.3.2 Specific objectives**

1. To evaluate the spatial and physical quality of the public recreational park in the study areas based on Site Specific Assessment.
2. To explore the possible direction and forward valuable recommendations on the public recreational park's spatial and physical quality standards.

## **1.4 Research questions**

### **1.4.1 General research question**

What are the spatial and physical qualities of the recreational parks in the inner city of Addis Ababa?

### **1.4.2 Specific research questions**

1. What are the public recreational parks' spatial and physical quality levels in the study case areas, Ambassador Park, Lideta Park, and Sheger Park?
2. What spatial and physical quality levels need enhancement, and how do public recreational parks meet the standard spatial and physical quality?

## **1.5 Significance of the study**

A built form in a city alone cannot support the livability of its dwellers and needs quality and adequate public spaces. More importantly, public recreational parks are vital to the city's social, economic, and physical well-being. It provides the public access to recreational opportunities, increases property values, outgrowth local economies, combats crime, protects cities from environmental impact, strengthens the diversity of culture, and enriches social activities. The

research is essential to direct the city's green infrastructure plan, create attractive and safe places to live and work and enhance the inhabitants' quality of life.

The study will better understand the relevance of public recreational parks and their spatial and physical quality gaps. Consequently, it helps researchers, the Addis Ababa City Government River Basins & Green Areas Development and Administration Agency, and the city developers as a baseline reference to conduct frequent and comprehensive assessments on public recreational parks and the study case areas. It also provides urban design solutions to public recreational parks' spatial and physical qualities. As a result, planners and governors use actual data and document to forward the right decisions and properly plan.

## **1.6 Scope of the study**

### **Thematic:**

The research focuses only on Fenced public recreational parks' spatial and physical quality but have access to middle and low-income people. The quality assessment of the public recreational parks is executed based on the analytical framework of five dimensions (use and user, accessibility, amenities and furniture, comfort and safety, and green environment) and 20 indicators adopted and contextualized from the UN habitat public space site-specific assessment, 2020.

### **Spatial:**

The research is limited to Addis Ababa's geographical boundary within three study areas, Ambassador Park, Lideta Redevelopment Park, and Sheger Park. These public recreational parks are located in the Arada, Lideta, and Gulele Sub-city.

### **Temporal:**

Due to the time limitation of the academic calendar, the study was conducted during the dry season and with a timeline from 8:00 am, morning to 5:30 pm evening time.

## **1.7 Limitations of the study**

The main limitation while conducting the research were time, budget, and access to the information. Data collection was difficult and time-consuming because some respondents needed to be more timely responsive and not open to questionnaires. Regarding the budget, the nature of the research method requires frequent data gathering for an extended time; as a result, it demands more funding for data collectors. The absence of contextual research on recreational parks and insufficient historical, physical, and spatial data on the case area was also significant challenge.

## **1.8 Organization of the Research**

The first chapter briefly introduces the public spaces and recreational parks in Addis Ababa by explaining the problems related to their current spatial and physical quality condition and the research problem, research questions, objectives, scope, limitations, and significance of the study. After reviewing the available literature, chapter two enlightens the reader about public space, public recreational parks, and theories on public recreational parks' spatial and physical quality. This chapter also defines terms and concepts. Chapter three explains the site selection criteria for the study area, research methodology, and material. This chapter briefly describes the various techniques and tools adapted and used to gather the necessary information for the study, and also the case study is introduced and explained. Chapter four discusses the result with the theoretical background and physical and spatial quality dimensions, and indicators. Summary of result also presented in this chapter according to the research objectives with the main results of the research paper. Chapter five, last chapters contains a conclusion and recommendations based on the research results, with site specific recommendation and general recommendation for issues being considered.

## **Chapter Two: Literature Review**

### **2.1 Introduction and definition**

Cities have a significant role in generating cultural, societal, financial, and environmental benefits to the user and providing a quality life to dwellers. Public spaces are a vital part of a city system and have the power to connect people and cities. These places are formed by the people's history, cultural values, political influence, and ideology (Carmona, 2010).

#### **2.1.1 Public space**

A place is more than a geographical location. It is a space occupied by a person or a thing endowed with meaning and value (Hillsdon, 2006). It also has a unique combination of physical form, the activities that occur there, and the sense of place attachment; that is, how people feel about the place (Project for Public Space, 2016). This space is a publicly or privately owned place with 'physical' (space) and 'social' (activity) dimensions. The physical public space support or facilitates public life and social interaction while the sociocultural activities and events occur in those spaces (Matthew Carmona, 2003). It is primarily outdoor spaces that do not require special access such as keys, admission fees, or membership, and it's a place and space that shapes our everyday experience and reflects diverse life activities. For example, public recreational parks, open spaces, sidewalks, public squares, and spaces those are part of our transportation networks, such as a place for recreating, meeting, playing, buying and selling, and socializing, are considered as public spaces. However, it is also a space where tragedies and violent crimes happen. It is termed "incivilities or, sometimes, 'quality of life' crime" (Jacobe, 1961).

#### **2.1.2 Public life**

Public space influences the individual and community's physical, social, economic, emotional, and ecological health and way of life. Public life is the social activity that occurs in public space

and involves relatively open and universal social contexts, in contrast to private life, which is intimate, familiar, shielded, controlled by the individual, and shared only with family and friends (Banerjee, 1998). Quality public life results from people interacting with the urban environment (Das, 2008). Shared open space is an essential element of the urban environment that positively contributes to the quality of life (Madanipour, 1999).

## 2.2 Classification and type of public space

According to the 2018 UN-Habitat reports, public space is categorized under streets, open spaces, public facilities, and markets, and this is summarized as follows in Table 2.1.

Table 2.1: UN-Habitat Classification of Public Space

	Public space	Elements
1	Street	Avenues and boulevards, squares and plazas, pavements, passages and galleries, bicycle paths, sidewalks, traffic islands, tramways and roundabouts
2	Public Open Space	Parks, gardens, playgrounds, public beaches, riverbanks and waterfronts.
3	Public facilities	Public libraries, civic/community centers, municipal markets and public sports facilities.
4	Markets	Fixed premises, public venues and other services (collective and not, public and private),

*Source: United Nations Human Settlements Programme (UN-Habitat) 2018, Global Public Space Programme: Annual Report. <https://unhabitat.org>.*

### 2.2.1 Public open space

Public open space is an area that is intentionally left unbuilt or undeveloped that is accessible to the public. Public open spaces include parks, gardens, play spaces, beaches, riverbanks, waterfronts, publicly accessible bushland, and outdoor playing fields and courts (Janson & Neil,

2010). They provide us with places to exercise, play, rest, participate in social activities, and contribute to healthy, happy, and resilient communities (Great Public Space Guide, 2021)

The national recreation and park association of the United States classifies public parks based on their service levels, such as mini-parks, neighborhood parks, community parks, regional, natural resource areas, sports complexes, special use, school parks, and open lands. However, the UN-Habitat categorizes public parks based on their coverage area and catchment, as listed in Table 2.2 below.

Table 2.2: The UN-Habitat Public Park Classification

No	Public open spaces: Categories	Type	Distance from households	Average Space Size	Use
1	Local/pocket open public spaces	small park	5 minutes' walking distance or 400meters,	0.03 to 0.04hectares	recreation purposes
2	Neighborhood public open spaces	Neighborhood level park	5 minutes' walking distance or 400meters,	0.04 and 0.4hectares	recreation purposes
3	District/city open spaces	Districts level	10 minute walking distance or 800 meters	0.4 to 10 hectares	recreation purposes ,sport field, nature spaces
4	Regional open space/Larger city parks	City Level Park	-	10 and 50 hectares	recreation purposes ,sport field, nature spaces
5	National/metropolitan open public spaces	large spaces	-	50 and 200 hectares	recreation purposes ,sport field, nature spaces

Source: United Nations Human Settlements Programme (UN-Habitat) 2018, Global Public Space Programme: Annual Report. <https://unhabitat.org>.

## **2.2.2 Public recreational park and uses**

Parks are open spaces that provide citizens with active and passive recreation opportunities (Clayton, 2003). Public Recreational Park is a land that has been earmarked for public use to facilitate outdoor recreational activities (Solecki and Welch, 1995). And enclosed recreational parks are fenced and landscaped green areas intended for social and recreational activities and aesthetic or display purposes (AABPCDA, 2019). According to Broadhurst's (2005) definition, recreation is participating in activities in leisure time. These activities may have physical, social, or emotional content and can be passive or active while catering to various user groups.

Public recreational parks provide recreational sites that are safe and comfortable, easily accessible, and close to places of work, residents, and residential environments (Isreal, 2019). However, studies indicate that a park's spatial and physical qualities and services influence the number and types of users it is likely to attract or repel (Ozguner, 2011). For example, a Recreational Park with more playground facilities attracts children and their parents or guardians more than the younger generation.

- **Active recreational activities**

Based on the 2016 Ethiopian national urban green infrastructure standard definition, active recreation is a physical activity that a person voluntarily undertakes for mental and physical satisfaction in their leisure time. It is often done in green open spaces and is associated with play and fun. Individual activities such as leisure walks and physical exercise similar to those in gyms would also fall under this term (Solecki and Welch, 1995).

- **Passive recreational activities**

It refers to activities that can be done individually or in groups. These activities do not require structured outdoor facilities, such as resting, sitting, napping, or even chatting would fall under this term (Solecki and Welch, 1995).

Recreational parks are also classified according to their functions and intended purpose, such as sports activity, children's playground-only space, gardening, burial, and churchyard. In addition, according to Mohammad and Zhirayr (2015), recreational parks are classified based on their ownership and management, owned by the public and private developers and institutions.

Table 2.3: Classification of Public Recreational Parks and Green Areas

<b>Type</b>	<b>Description</b>
Public park and gardens	Area of land normally enclosed, designed, constructed, managed, and maintained as a public park or garden. These may be owned or managed by the community groups.
Private garden or grounds	Area of land normally enclosed and associated with a house or institution and reserved for private uses
Amenity green space	Landscaped areas providing visual amenity or separating different buildings or land uses for environment, visual or safety reasons and used for variety of informal or social activities such as sunbathing , picnics or kick bouts.
Play space for children and teenagers	Areas providing safe accessible opportunities for children’s play usually linked to housing areas.
Sports areas	Routes including canals, river corridor and old railway lines, lining different areas within a town or city as part of a designated and managed network and used for walking, cycling or horse riding, or linking town and cities to their surrounding countryside or country parks.
Natural/ Semi-natural green spaces	Areas of undeveloped or previously developed land with residual natural habitats or which have been planted or colonized by vegetation and wildlife including woodland and wetland areas.
Allotments and community growing spaces	Areas of land for growing fruit, vegetables and other plants, either in individual allotments or as a community activity
Civic Space	Squares, streets and waterfront promenades, predominantly of hard landscaping that provide a focus for pedestrian activity and can make connections for people and for wildlife
Burial grounds	Includes church yards and cemeteries
Other functional green space	Maybe one or more types as required by local circumstance priorities

Source: National Recreation and Park Association, <https://www.nrpa.org/>

## **2.3 Successful public space and recreational parks**

The spatial and physical quality is a driver of use and a factor contributing to how much time people spend in a place, including social and physical activities and their level of comfort in and enjoyment and ownership of a space (Wood & Foundation, 2003). Quality public space is an attractive and successful outdoor place for people to enjoy and uses physical space and socio-cultural interaction (Delivering Quality Places, nd). These places improve social interaction, public health, and the environment, provide economic development opportunities, attract investment and promote tourism, increase property value and retail rents, improve safety and inclusion, and create place identity (UN-Habitat, 2018).

A public recreational park's spatial and physical quality is as important as access to public space, as quality makes people feel safe, welcome, and included. Quality is reflected in a public space's physical form, how it's designed, maintained, and integrated with its environment, and through the activities it supports and the meaning it holds. "Great places provide diverse opportunities for social interactions, have a strong character, and are welcoming, inclusive, and beautiful" (Project for Public Spaces, 2016).

The personal experiences with the physical environment and people in a city drive to experience a quality of public life. It also has a vital role in positively influencing local identity and providing a stage for our public lives (Project for Public Space, 2016).

A city's quality of public life is a sum of personal experience with the physical environment and people. Pleasant public open space is well designed and managed, which aids 'livability' in that community. It enhances the local people's quality of life and increases the sense of physical and social in an area. Quality is reflected in a public space's physical form, how it's designed, maintained, and integrated with its environment, the activities it supports, and the meaning it holds.

## **2.4 The importance of public recreational parks for city residents**

Public recreational parks provide a space for social and cultural exchange, improve physical and psychological health, strengthen communities, support the local economy, and make cities and neighborhoods more attractive places to live and work (Sherer, 2006). The presence of natural

areas contributes to the quality of life in many ways, which enrich human life with meanings and emotions (Henderson, 2014).

#### **2.4.1 The social and cultural benefits of parks**

Literature shows that people and communities require an ideal space for self-expression and a sense of community. Parks produce essential social and community benefits, provide free air recreation, make neighborhoods more livable, and offer recreational opportunities for young children, youth, and low-income families. In addition, it allows people to demonstrate their feelings and interact with others formally and informally.

Public recreational parks can help satisfy people's needs, shape, define, protect significant human rights, and convey special cultural meanings (Carmona and Tiesdell, 2007). Well-designed public recreational parks can reduce opportunities for crime and the fear of crime. (The Scottish Government, 2008) These spaces shape the cultural identity of an area, are part of its unique character, and provide a sense of place for local communities (Cabe Space, 2013).

Parks encourage the development of stable neighborhoods with strong communities. "Residents of neighborhoods with greenery in common spaces are more likely to enjoy stronger social ties than those surrounded by barren concrete" (Sherer, 2006).

#### **2.4.2 The economic benefit of parks**

Pleasant and well-maintained environments attract business and increase the number of people visiting retail areas. A high-quality public domain can significantly impact the city's economic life. Good parks, squares, gardens, and other public spaces become essential business and marketing tools to attract investment and tourism and add land value.

As evidence, the towns of Emmen, Appeldoorn, and Leiden in the Netherlands, a garden bordering water, increase the house price by 11 percent. In the United States of America, Dallas city, the public green spaces in residents' back gardens increase the house price by 15 percent (Cabe Space, 2013).

Public recreational parks' spatial and physical quality has an excellent opportunity to support economic development and trade by attracting people and activities into the area. It also added to

the diversity of urban areas so that it can also generate and improve incomes. Healthy and attractive public parks stimulate investment and consumption, improve security, provide small and medium enterprises opportunities, and foster urban-rural linkages (Cities Alliance, 2018).

### **2.4.3 The environmental benefit of parks**

Public recreational parks play a critical role in mitigation and adaptation strategies to climate change. It can minimize carbon emissions by absorbing carbon from the atmosphere. It can act as a sustainable drainage system, solar temperature moderator, source of cooling corridors, wind shelter, and wildlife habitat. The park contributes to a city's structure by improving air quality, caring for biodiversity, water, and soil, and providing retention space (The Scottish Government, 2008). It also allows people to understand the city's structure, find their way around, and connect the natural and built environment. Green open space also increases people's appreciation for and stewardship of the natural environment (Project for Public Spaces, 2016).

### **2.4.4 The physical and mental well-being benefits of parks**

Recreational spaces are essential components of healthy and sustainable urban environments. According to Sherer (2006) postulation, parks, and open spaces improve the physical and psychological health of the individual, strengthen communities, and make cities and neighborhoods more attractive places to live and work.

Successful spatial quality and better physical environment of parks improve people's mental well-being, anxiety, and depression, and help do green exercise. Well-maintained public recreational parks can help improve physical and mental health by encouraging people to walk more, bike and skit, play sports, or enjoy a green and natural environment (Cabe Space, 2013).

"Longer working hours, reduced vacation time, and growing health concerns are just some of the reasons the need for public spaces in the centers of cities is increasingly important; Recreational activities determine the quality of one's life" (Zoe, 2006).

## **2.5 The spatial and physical quality indicators and dimension of public space**

Different scholars and professionals studied and developed theories in various ways to understand and connect the spatial and physical quality of public space indicators and their effect on people's lives. In addition, new methods emerged to provide a systematic process to measure the spatial quality elements and physical structures have on people's behavior and life. For this research Jan Gehl's observation method, William H. Whyte place making methods or the great public space, and UN habitat public space assessments are discussed.

### **2.5.1 Behavioral mapping by William H. Whyte and Project for Public Spaces**

In the 1970s, Whyte has systematically studied people's behavior in public spaces in American cities. These observations were supposed to serve, and still do serve, as a basis for architects in designing public spaces or their changes and modifications. Whyte and his colleagues developed several methods to study the patterns of human behavior and their basic schemes for designing public spaces to best serve people. Counting and behavioral mapping were the most used methods.

Whyte and his colleagues assumed that a thorough knowledge of the patterns of human behavior could create basic schemes for designing these spaces to best serve people. They have gradually developed several methods, the most used of which are counting and behavior mapping.

Whyte and his colleagues assumed that a thorough knowledge of the patterns of human behavior could create basic schemes for designing these spaces to serve people ultimately. They have gradually developed several methods, the most used of which are counting and behavior mapping.

Whyt's work was followed by an activity founded in 1975 by the Project for Public Spaces (PPS) Foundation. She still promotes and further develops his work. The foundation's primary goal was to contribute to revitalizing local public spaces as a space for meetings and community life. During its existence, the foundation has developed several programs: parks, squares, water fountains, streets, transport, markets, public buildings and architecture, artwork in public space and urban furniture, etc. These programs help cities and local communities create public spaces and revitalize the local community. The four questions on Figure 2.1 can help evaluate the

quality of public space and public life and also identify whether a place is doing well and areas for improvement.

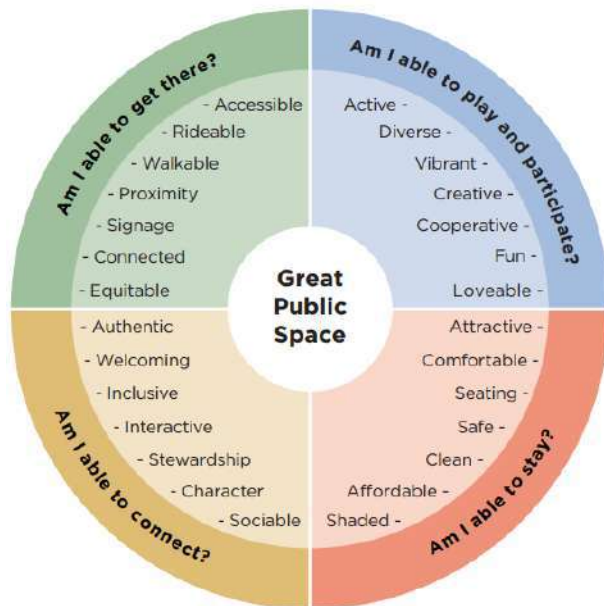


Figure 2.1: Project for Public Spaces, quality of life and great public space indicators  
 Source: *Project for public space*, [www.pps.org](http://www.pps.org)

## 2.5.2 Method of observation by Jan Gehl's

Jan Gehl's methods derive from Jan Gehl's research in Copenhagen, assembled in his book "Life between buildings" from 1971. He theorizes that good architecture ensures interaction between public space and public life. Gehl proposes the method of observation with systematic measurement. "Anyone who decides to observe life in the city will quickly realize that you must be systematic to get useful knowledge from the complex fusion of life in public spaces" (Gehl and Svarre, 2013). He focused on the person in public space and created a sophisticated methodology of activities in public spaces. These activities are divided according to their social character into three categories - necessary, optional, and social.

### A. Necessary activities

These activities are more or less forced, will occur throughout the year, and are independent of the exterior environment. Among other activities, this group includes most of those related to

walking (Jan Gehl, 2013). Because the activities in this group are necessary, their incidence is influenced only slightly by the physical framework. Such as going to work, shopping, and waiting for the bus. In other words, all activities involved are required to participate to a greater or lesser degree.

### **B. Optional activities**

Activities are carried out by their participants only when they wish and where space and time allow, depending on the quality of the outdoor spaces and pleasant weather. This category includes activities such as walks in the fresh air, standing and observing the surrounding life, and sitting and sunbathing. "When outdoor areas are of poor quality, only strictly necessary activities occur" (Jan Gehl, 2013).

### **C. Social activities**

These activities arise from activities related to the other two categories of activities. They develop in conjunction with other activities where people are in the same place, meet, pass each other, or just observe.

All activities depend on the presence of other people in public places. They include children playing, greeting and conversing, public activities of various kinds, and the most widespread social activity - passive contact, simply observing and listening to other people (Gehl and Svarre, 2013).

Social activities appear spontaneously because people move and stay in the same places. Social activities are indirectly supported where necessary and optional activities are provided with better conditions.

Physical environment quality

	Bad quality	Good quality	Selective tendency
<b><u>Necessary</u></b> activity	●	●	Equalization
<b><u>Spontaneous</u></b> activity	●	●●●●●	Good quality salient
<b><u>Social</u></b> activity	●	●	Good quality modest

Figure 2.2: Method of observation by Jan Gehl's, simplified type of outdoor space  
 Source: *Life between Buildings*, Jan Gehl, 2002.

It's an illustrative representation of the relationships between the physical quality of outdoor spaces and the relative incidence of outdoor activities. Table 2.4 shows a detailed evaluation of the quality of public spaces, according to Gehl. It defines three basic categories of criteria: protection, comfort, and enjoyment.

Table 2.4: Jan Gehl's, quality criteria for of public urban spaces

<b>Protection</b>		
Protection against traffic and accidents – a sense of security • Pedestrian protection • Elimination of traffic fear	Protection against harm by others • A vibrant public sphere • Clear streets • Overlap of day and night functions • Good lighting	Protection against unpleasant sensory experience Protection against unpleasant sensory experiences • Wind • Rain and snow • Cold / hot • Pollution • Dust, noise, glare

<b>Comfort</b>		
<p>Opportunities for walks</p> <ul style="list-style-type: none"> <li>• Pedestrian area</li> <li>• Interesting facades</li> <li>• No obstacles</li> <li>• Good surfaces</li> <li>• Accessibility for everyone</li> </ul>	<p>Opportunities to stand and linger</p> <ul style="list-style-type: none"> <li>• Fancy edge / attractive stop/stay zones</li> <li>• Standing support</li> <li>• Facades with good details, inviting to stay</li> </ul>	<p>Seating opportunities</p> <ul style="list-style-type: none"> <li>• Seating zones</li> <li>• Taking advantage of: view, sun, people</li> <li>• Good seating</li> <li>• Benches for rest</li> </ul>
<p>Opportunities to see</p> <ul style="list-style-type: none"> <li>• Adequate display of distances</li> <li>• Unlimited views</li> <li>• Interesting paintings (views)</li> <li>• Lighting (when it's dark)</li> </ul>	<p>Opportunities to talk and listen</p> <ul style="list-style-type: none"> <li>• Low noise</li> <li>• Street furniture,</li> </ul>	<p>Opportunities for play and exercise</p> <ul style="list-style-type: none"> <li>• Physical activity, exercise</li> <li>• Games and street entertainment</li> <li>• Day and night</li> <li>• Summer and winter</li> </ul>
<b>Enjoyment</b>		
<p>Scale</p> <ul style="list-style-type: none"> <li>• Buildings and premises designed on a human scale</li> </ul>	<p>Opportunities to enjoy the positive aspects of climate</p> <ul style="list-style-type: none"> <li>• Light/Shadow</li> <li>• Heat/cold</li> <li>• Shelter from wind/breeze</li> </ul>	<p>Positive sensory experiences</p> <ul style="list-style-type: none"> <li>• Good design and details</li> <li>• Quality materials</li> <li>• Nice views</li> <li>• Trees, plants, water</li> </ul>

Source: *Twelve Quality Criteria - Gehl* (<https://www.gehlpeople.com>)

### 2.5.3 Public space site-specific assessment

The UN-Habitat promotes public spaces as a keystone for sustainable cities to ensure good quality of life. The program has developed a guideline on achieving quality public space, a site-specific assessment consisting of activities and tools that help understand the quality of the selected area and future design and planning solutions on the site through participatory approaches. This guide helps researchers gather and analyze information, creating a logical

transition from needs to design within five minutes of walking distance, illustrated in Figure 2.3.

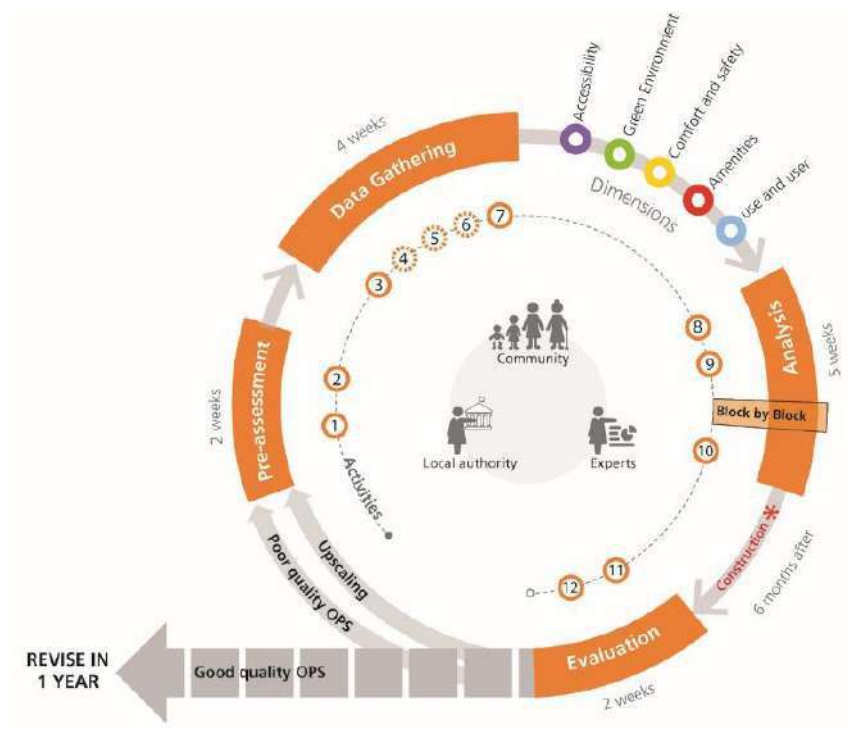


Figure 2.3: Public space site-specific assessment cycle  
 Source: *The Site-Specific Assessment Guidelines*

The quality assessment tools measure public spaces' quality by assessing five dimensions and 20 indicators. Accessibility, green environment, comfort and safety, amenities and use, and user are the five dimensions, and depending on the local context, the assessment allows elimination, add, and priorities specific indicators.

### A. Use and User

Public space should be inclusive to all groups of users. According to the UN 2018 pass assessment, a good quality public space is designed to accommodate everyone. People from all backgrounds can enjoy the space, especially the most vulnerable groups. In the study, the use and user of public parks analyzed how the space is being used and by whom, the number and variety of users accessing the public space, and activities observed in the public space among time and space.



Figure 2.4: Effective use of public space during covid 19 pandemic time  
*Source: Noam Galai/Getty Images*

## **B. Accessibility**

Accessibility is one of the significant dimensions to determine the quality of public space, and it focuses on access to the site in terms of perception and the physical aspect. Public space should be a perception of welcoming and easily reached by walking, cycling, or using public transport, especially by the elderly and people with special needs. The presence of qualitative and inclusive facilities for the user, such as pedestrian walkways, public transportation, bike, and private vehicles, are significant dimensions.



Figure 2.5: Safe and inclusive access with proper pavement  
*Source: Connecting People to Parks: A Toolkit to Increase Safe and Equitable Access to Local Parks and Green Spaces, 2021*

## **C. Amenities**

Amenities and furniture are the physical features that make public spaces more attractive and comfortable, and exciting to their users. As a result, it includes the availability, distribution, and

quality of lighting, amenities for recreational structures, seating, waste bins, bike racks, signage and emergency items, and water and toilets.



Figure 2.6: Amenities for public space users like public sit, waste bin and shading  
Source: *Project for public space*, <https://www.pps.org/article/six-parks-we-can-all-learn-from>

#### **D. Comfort & Safety**

Public spaces must allow all individuals to interact safely and respectfully. This dimension looks at peoples' perceptions and feelings, significantly impacting their well-being and time in public. Places that are well maintained are often perceived as comfortable and safe, while vandalized and poorly-cared spaces can have the opposite effect. Smell, sound, sight, physical condition, and a space's overall identity can be deal-breakers for comfort. Perception of safety is subjective. While some might feel safe using a space, others feel threatened by a lack of visibility, concentration of certain groups, and lack of activities or historical events.



Figure 2.7, Comfort and safety public  
Source: <https://coxurbanfurniture.com.au/how-to-choose-the-best-site-amenities-for-your-park/>

## E Green environment

This dimension tackles environmental aspects that can improve the health and well-being of the residents. Green spaces provide a balance between development and nature, and it has become more and more sought after in dense cities. Well-designed public spaces with adequate green coverage and water management can significantly impact air quality, reduce noise pollution, and reduce heat and temperature. Trees, grass, and other green vegetation provide wildlife habitat, prevent soil erosion, and support adaptation to and mitigation of the effects of climate change.



Figure 2.8: Blue and Green environment serve the user and mitigate climate change

Source: *Connecting People to Parks: A Toolkit to Increase Safe and Equitable Access to Local Parks and Green Spaces, 2021*

The five dimensions and 20 indicators of quality assessment tools are summarized in table 2.5 below.

Table 2.5: Site Specific Assessment Dimensions and Indicators

	<b>Dimensions</b>		<b>Indicators</b>
1	Use	1.1	Number and variety of users accessing the public space
		1.2	Number and variety of activities observed in the public space among time and space
2	Accessibility	2.1	Accessibility and presence of qualitative and inclusive facilities for private vehicles
		2.2	Accessibility and presence of qualitative and inclusive facilities for bikes
		2.3	Accessibility and presence of qualitative and inclusive facilities for pedestrians
		2.4	Accessibility and presence of qualitative and inclusive facilities for public transports
3	Amenities and	3.1	Presence and quality of lighting

	Funitures	3.2	Presence and quality of amenities for recreational structures
		3.3	Presence and quality of seating
		3.4	Presence and quality of waste bins
		3.5	Presence and quality of bike racks
		3.6	Presence and quality of signage and emergency items
		3.7	Presence and quality of water and toilets facilities
4	Comfort and Safety	4.1	Perception of safety & level of security of the public space
		4.2	Quality of censored experience
		4.3	Overall care of the public space, through maintenance and decor
		4.4	Presence of a public space identity, defined by cultural background and users' enjoyment
5	Environmental Component	5.1	Quality of biodiversity and microclimate conditions in the public space
		5.2	Environmental and community resilience
		5.3	Presence of energy efficient elements in the public space

*Source: Public Space Site Specific Assessment, 2020*

## 2.6 Contextual review

Addis Ababa is a fast-developing city, and being the seat for the African Union and having an international image, it needs to meet international standards in many aspects. However, the planned public green areas are unevenly distributed and unavailable, and the city has developed only 41.36% of its designed urban green spaces (Tensaye, 2017). According to the World Health Organization standard, the green space per capita is 9 m<sup>2</sup> per person and 7 m<sup>2</sup> per person for Africa. However, in the case of Addis Ababa there are over 18 functional recreational parks in the city with total area coverage of 113.7 ha, which puts the current per capita available green space of Addis Ababa at less than 1 m<sup>2</sup> per person. According to international standards, the city has the lowest green space per capita (Kebede, 2004) Most Parks in Addis Ababa were established in the 1970s. In spite of a long span of time, they need more maintenance and address visitors' interests these days (Tensaye, 2017). The finding of the survey conducted by the Addis Ababa Government Parks and Cemetery. Development and Administration Agency indicated that lack of design guidelines, clear enforcement laws, and public park regulations were

considered challenges to designing and assessing the recreational park quality and setting a standard for public parks in the city.

The 1999 City Greenery Strategy recognizes parks as green infrastructure components used as recreational places for city dwellers, enhance tourism, help the landscape beauty and historical and conservation sites, and as sports festivals places. The strategy document indicates that parks should accommodate infrastructures such as access roads and service buildings, recreational playing equipment, amenity and furniture, plantation, and green landscape (Greenery Strategy, 2010). In addition, the city structure plan proposed green development projects to contribute to the city's livability, shown in Table 2.6 and Figure 2.7.

Table 2.6: Green Development project of Addis Ababa City

<b>Green Development</b>		<b>Development time and location</b>	
		In the 1 <sup>st</sup> five years	In the 2 <sup>nd</sup> five years
Park Development	City	Gottera, Makelawi, Adwa and Repi	Asco, Saris, Meri, Torhailoch, Lebu and Winget
	Sub-city	20 Places	30 Places
	Woreda	120 locations	
	Special Park	Gullele Botanical Garden and Peacock zoological park	
River buffer development		Along Banteyiketu-Kurtume River and kechene-Kebena River (29km)	Along Kebena River (22km)
Mountain areas development		Entoto, Gullele, Yeka, Ankorcha, Lebu, Ertuna, Repi	Entoto, Gullele, Yeka, Ankorcha, Lebu, Ertuna, Repi
Ambient air quality monitoring stations		Legedadi-Dire and Gefersa-Gerbi water development	Aba Samuel Lake

*Source: Addis Ababa Structural plan (2014)*

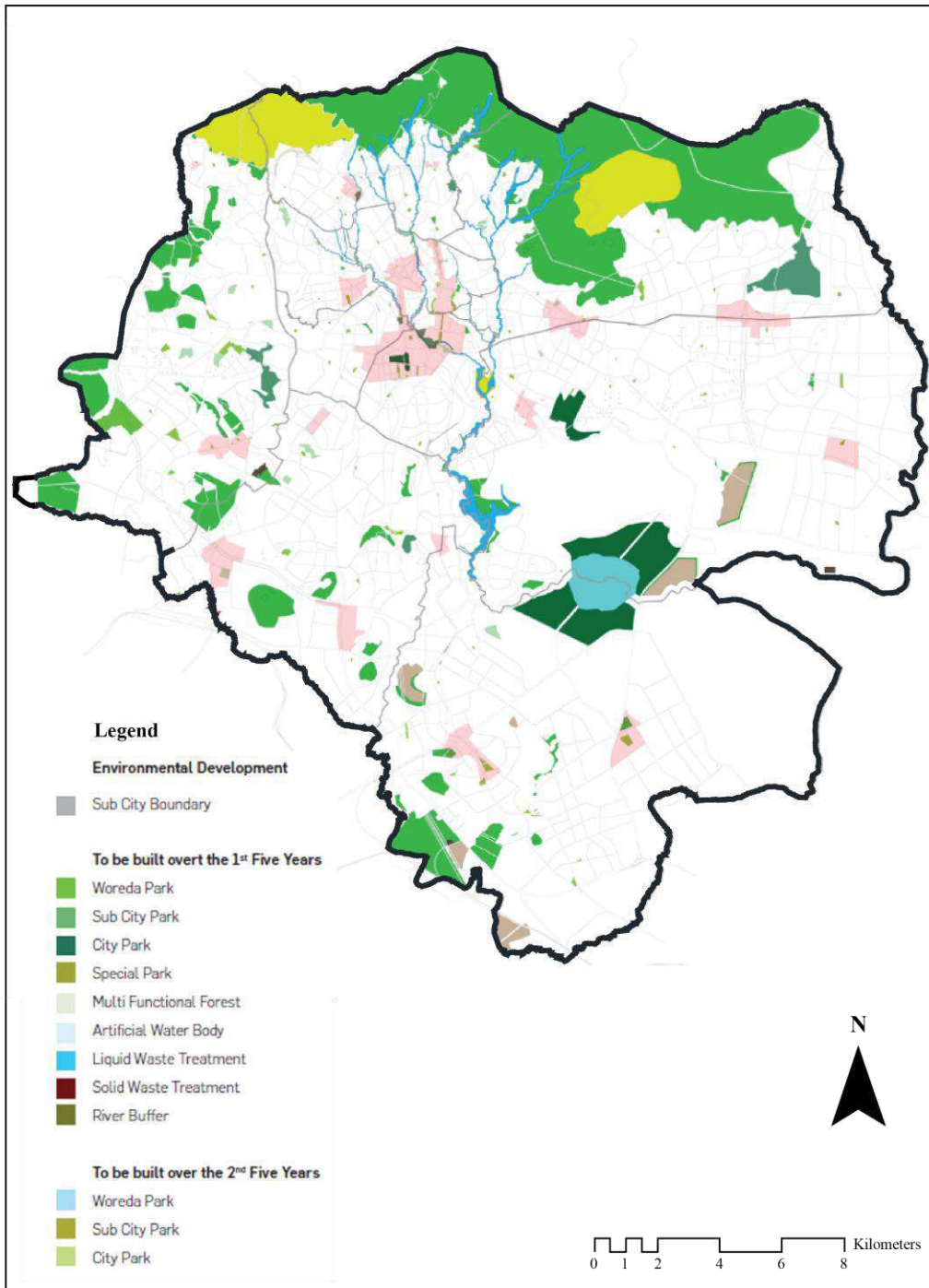


Figure 2.9 : The Addis Ababa city structure plan proposed green development  
 Source: 2014, Addis Ababa City Structure Plan Summary Report Addis Ababa City Planning  
 Project Office (2017-2027)

Recreational parks in the city were mainly used for weddings, graduation, and other community activities. Besides, they are used by the local people as relaxing areas, reading areas, and meeting places.

### 2.6.1 Park classification

Recreational parks are established to provide recreational and other social services. The Addis Ababa City Structure plan 2017-27 (ACPPO) indicates that 2730 ha recreational parks are proposed in Addis Ababa at the City, Sub-city, and Woreda levels.

According to the Ethiopia National Urban Green Infrastructure Standard, public recreation parks are categorized under public green open space and have a hierarchy based on park location, capacity, and accessibility, as shown in Table 2.7 and Figure 2.8.

Table 2.7: National Urban Green Infrastructure Standard Recreation Parks

	<b>Park Hierarchy</b>	<b>Maximum Distance</b>	<b>Carrying Capacity (Size)</b>	<b>Accessibility</b>
1	Neighborhood park	500 m	0.5 ha	located on local or collector streets
2	Wereda park	1,000 m to 1,500 m	3 ha,	located on local or collector streets
3	Sub-city park	4,000 m	8 ha	located on arterial streets
4	City Park	6,000 m	15 ha	located on arterial streets

*Source: Ethiopia National Urban Green Infrastructure Standard, 2015*

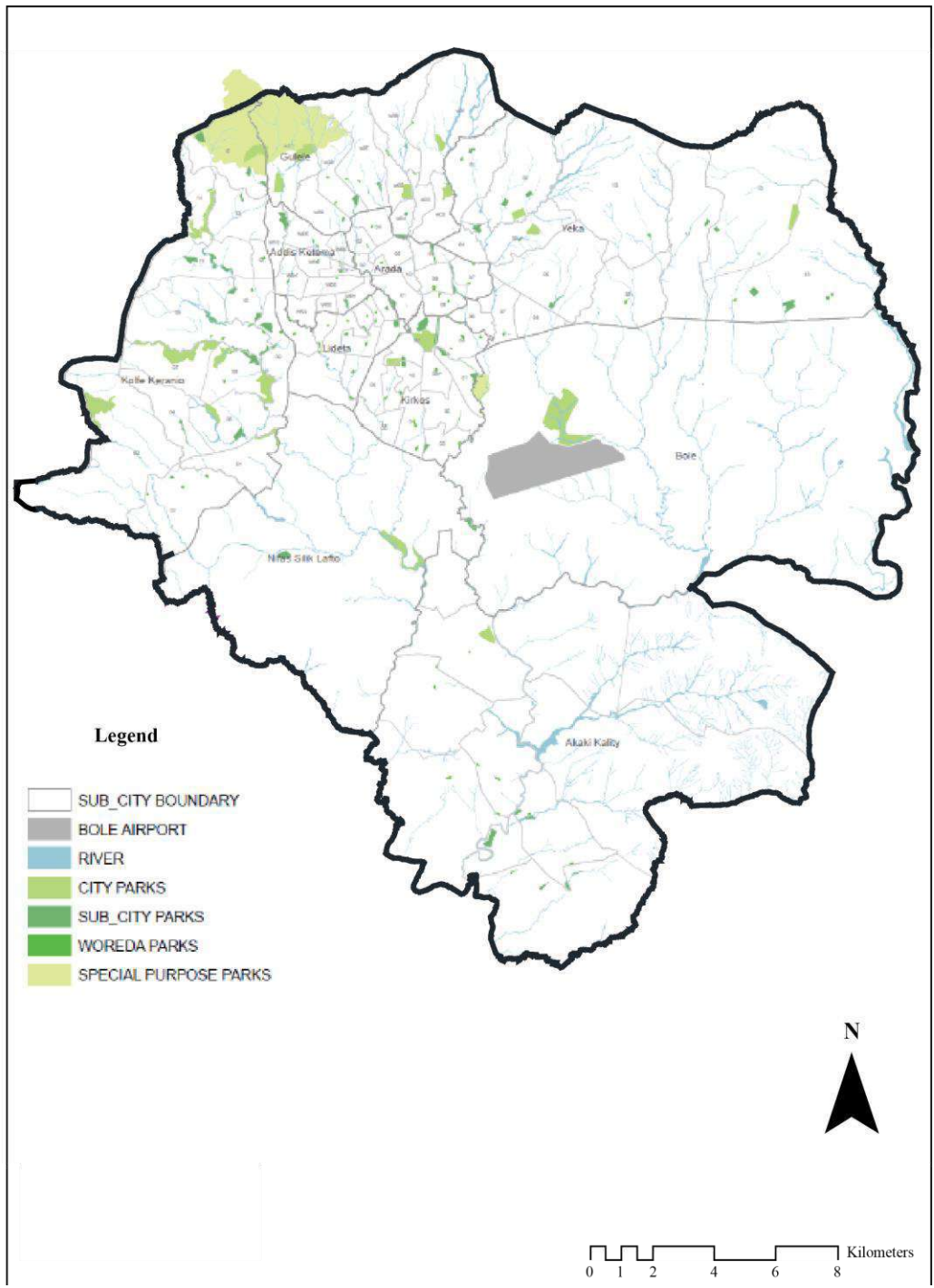


Figure 2.10: The Addis Ababa city structure plan parks classification  
 Source: 2014, Addis Ababa City Structure Plan Summary Report Addis Ababa City Planning  
 Project Office (2017-2027)

## 2.6.2 Local standards

The Ethiopian National Urban Green Infrastructure Standard intends to establish fundamental minimum standard requirements for developing and managing Urban Green Infrastructure (UGI). The development of this UGI standard is based on the experiences of international and national cities in developing and managing UGIS. These National Urban Green Infrastructure Standards (NUGIS) require local governments to provide citizens with effective and sustainable urban greening infrastructure (UGI) to protect public health and environmental quality and improve the livelihoods of all Ethiopians. It also creates a framework for improving the quality of life. It outlines basic minimum requirements to be met while planning, implementing, and operating urban green infrastructure in Ethiopian cities and communities.

According to the 2015 Ethiopia National UGIS document urban green spaces which ecologically well-functioning, aesthetically beautiful, socially useful, and offer adequate, suitable, and environmentally sound green and open spaces to meet the community's recreational, social, economic, and environmental its demands:-

- To create metropolitan areas with improved microclimates for better working, living, and recreational activities.
- To enhance city air quality.
- To control river flow and safeguarding river banks improve storm-water management and quality.
- To optimize ecological, social, and cultural advantages and increase biological variety by safeguarding and enhancing urban wildlife habitats, sensitive natural regions, and rare and endangered species.
- To preserve cultural resources, historical landmarks (heritage), and locations with unique significance.
- To catalyze the sector's economic development in terms of growth opportunities for micro, small, and medium-sized enterprises.

## A. Recreational park general standards

The Ethiopian National Urban Green Infrastructure Standard set general standards for recreational parks. The standards listed in Table 2.8 are classified under four sections: green component, grey component, facilities, and operation and maintenance.

Table 2.8 Recreational park general standards

<b>Recreational park general standards</b>	
<b>1</b>	<p><b>The green components</b></p> <ul style="list-style-type: none"> <li>• Green coverage in all parks should be in a ratio of at least 75 % green components (i.e. trees, grasses, other plants) and at most 25 % other components.</li> <li>• Competent authorities shall ensure that within a park, at least 50 % of trees are fruit trees to support food security.</li> <li>• Plant species should be appropriate to the desired function for different areas in the park and should contribute to the character of the site.</li> <li>• A diversity of plant species (ornamental trees, fruit trees, shrubs, vines, groundcovers, grasses and herbaceous plants) should be assured in order to guarantee the biodiversity of parks.</li> <li>• Competent authorities shall ensure that enough space is provided for plants to grow healthy and that they do not intrude park pathways or adjacent streets and sidewalks. Within a park, all trees should be planted at least 3 m away from a pathway, sidewalk or property line. If this is not possible, the minimum standards of NUGIS 2 ‘Rights of way’, 2014 or most recent, shall be followed.</li> </ul>
<b>2</b>	<p><b>The gray components</b></p> <p><b>Pavements, steps and ramps</b></p> <ul style="list-style-type: none"> <li>• Pavements should be permeable and made of natural materials.</li> <li>• Slopes of pathways should not exceed 10 %. In areas accessible for persons with disabilities, slopes of pathways should not exceed 6 %.</li> <li>• Steps should be made of natural materials.</li> </ul>

### **Lights**

- Competent authorities should use suitable outdoor lighting in harmony with the existing surrounding and with the specific use of particular zones of the park.
- Outdoor lighting should be aesthetically pleasing, functional, and sustainable.

### **Seats**

- Seats should be provided in both sunny and shady areas and with view into the landscape.
- Seats shall be provided with view towards playgrounds.

### **Fences and walls**

- Competent authorities should ensure that the design of fences and walls fulfils architectural and aesthetic requirements and the appearance should be in harmony with adjacent structures.
- Fences and walls should be designed in accordance with the character of the site and should serve as integrating elements. Living fences and walls shall be preferred when conditions permit.

### **Sculptures and monuments**

- Competent authorities may choose to put up sculptures, monuments and/or artwork to create a unique identity for an area.

## **3 Facilities**

### **Litter bins**

- Competent authorities shall provide an adequate number of litter bins in all parks. Additional litter bins shall be placed at all park entrances and near sources of higher production of waste, e.g. food corners and small retail shops.

### **Food corners and small retail shops**

- Competent authorities may allow food corners and small retail shops. If so, they should be well integrated in the park design and owners shall be made responsible for keeping the area clean and disposing solid waste out of the park.

<b>4</b>	<b>Operation and maintenance</b>
<ul style="list-style-type: none"> <li>• High levels of cleaning and litter removal in parks shall be achieved to keep areas clean and to deter visitors from littering. Therefore, cleaning shall be of an adequate frequency and reliability to discourage the dumping of household waste in or adjacent to parks.</li> <li>• Facilities in the park shall be regularly maintained and checked for safety. The frequency for safety checks shall depend on the respective facility.</li> <li>• Competent authorities should involve the private sector, i.e. MSEs, for park operation and maintenance.</li> <li>• Competent authorities shall give the following responsibilities: <ul style="list-style-type: none"> <li>- Neighbourhood parks should be managed by the community in the neighbourhood and overseen by the Woreda Administration;</li> <li>- Woreda parks should be managed by the Woreda Administration;</li> <li>- Sub-city / City park should be managed by the Sub-city / City administration;</li> </ul> </li> </ul>	

*Source: Ethiopia National Urban Green Infrastructure Standard, 2015, Addis Ababa*

## **B. Recreational park-specific standards**

### **Sub city recreational park**

Sub-city Level Park serves a broader purpose than the neighborhood and Woreda parks. It offers various recreational and cultural activities, active and passive, and may hold special events. It includes a playground for children between the ages of 2 and 10, an adventure playground with additional amenities, a hard surface basketball court, a volleyball court, a football field, and a table tennis court. It also emphasizes protecting distinctive landscapes and open areas and shall have the listed service and add to the general standards.

- shall have an adequate number of toilets;
- shall have on-street as well as off-street parking space;
- should have storage facilities and service buildings;
- should integrate some storm-water management practices;

- should have first aid services
- should include some urban agriculture
- should have composting facilities
- may have an internet café

### **Woreda level recreational park**

It is a fundamental and focused unit of the park system. It serves the residents of a broader neighborhood and shall provide for their recreational (active and passive) needs. The park shall accommodate playgrounds for children aged 2-10 years and formal sports facilities (e.g., half-hard surface basketball court, table tennis). Other than the general standard, the Woreda shall have

- On-street parking space; may have some off-street parking space
- Public toilets

### **Neighborhood level recreational park**

Neighborhood Park serves the residents in the close-by neighborhood and, in a limited way, provides for their daily recreational (active and passive) needs. It shall have a small playground for children aged 2-10 years and small formal sports facilities (e.g., a half-hard surface basketball court, table tennis). And also, toilets and parking spaces are not required however, the listed facilities shall be available:

- litter bins
- seat and tables
- Lighting.
- Toilets and parking spaces are not required.

## **2.7 International Cases**

The selected international case studies of the recreational parks located in inner cities of Texas, Dallas, and Bangkok, Thailand, show the successful spatial and physical quality of the recreational parks based on their use and user, accessibility, safety and comfort, physical infrastructure, and amenities and environmental responsiveness.

## Case study Name: Klyde Warren Park

Location: Dallas, Texas

The densely populated mixed-use areas to the north and the city's downtown cultural district were connected by Klyde Warren Park. The park acts as a hub of activity for Dallas and its visitors. It was created to give tourists a sense of discovery. The park, which was designed to bridge the gap created by the Woodall Rodgers Freeway between the two neighborhoods, serves as a center for culture and the arts where locals congregate in a variety of pedestrian-friendly areas like a children's park, reading room, great lawn, restaurant, performance pavilion, fountain plaza, games area, and dog park.

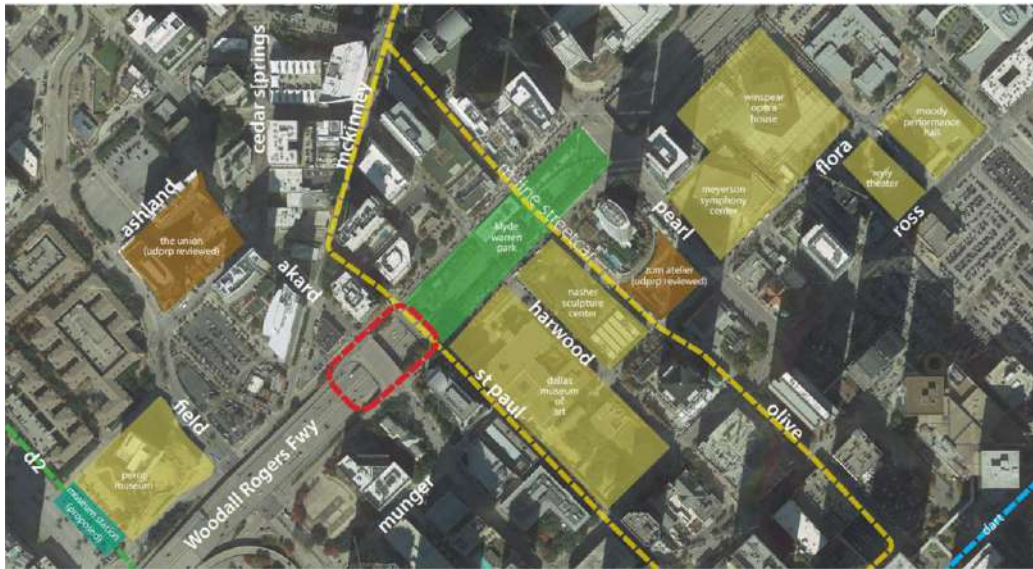


Figure 2.11: Klyde Warren Park site map

Source: *Klyde Warren Park*

The park spans five acres and has 322 trees and 37 native species, and it acts as a physical, social, and cultural center that spans the Woodall Rodgers Freeway between Pearl and St. Paul Streets. It can accommodate 10,000 people. It is a hectic location that offers daily free events for the public, including yoga, book signings, outdoor concerts, and movies. The park opened in October 2012 after the deck's construction started in October 2009.

Klyde Warren Park was created to bring in foot traffic, boost the value of nearby businesses, and foster community by creating a lively public area. Since streetcar, bicycle, and pedestrian accessibility were added to the park, the city center's walkability has grown dramatically. With its integration of native plants, stormwater reclaiming, and use of solar and geothermal energy for park buildings, Klyde Warren Park is a showcase for sustainable public space with its spatial and physical qualities.

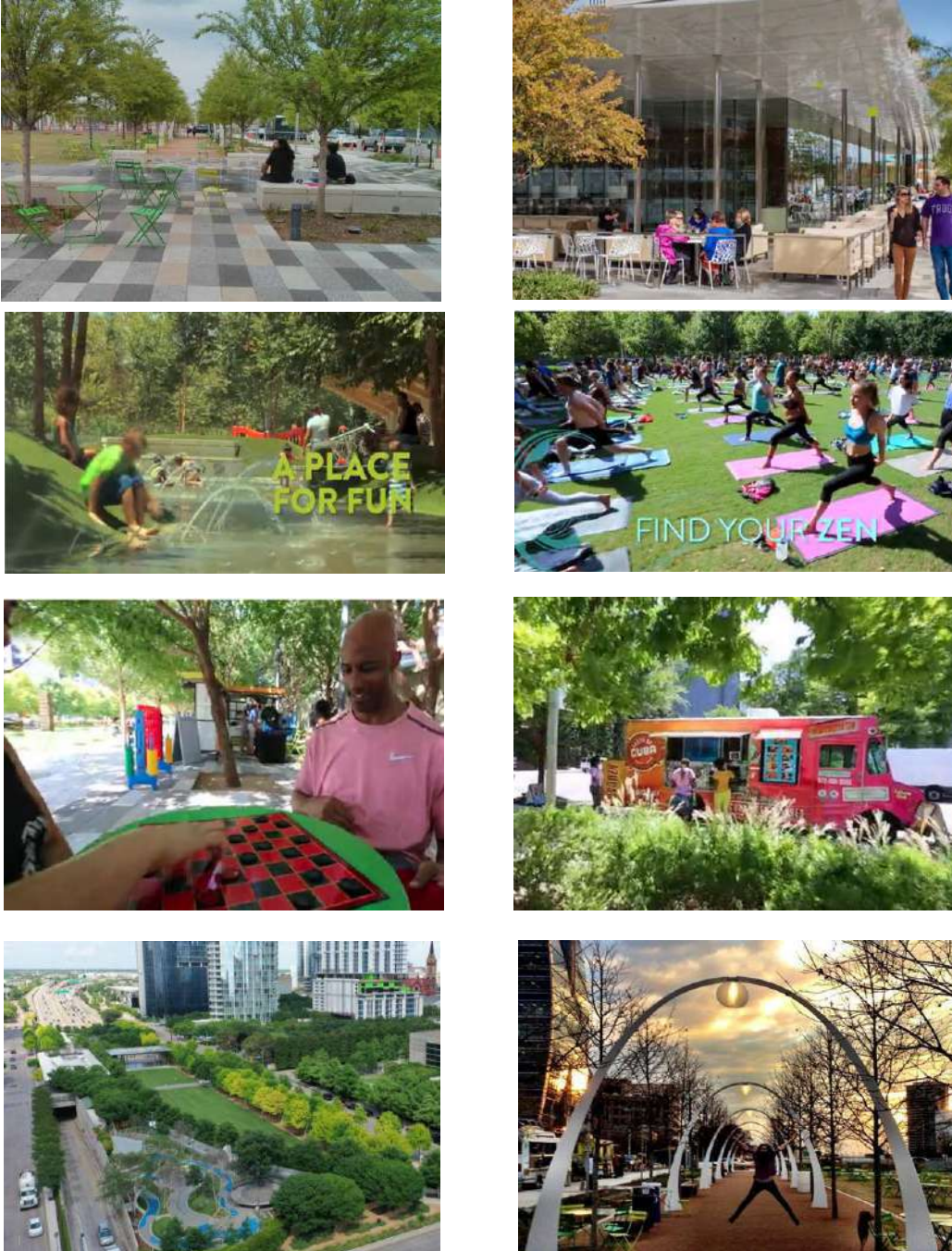


Figure 2.12: The spatial and physical qualities of Klyde Warren Park  
Source: Klyde Warren Park

The park is a feat of engineering and design. It is even with the street level and preserves clearance for the highway below. The deck is made of more than 300 concrete beams arranged in groups with spacing between the groups. Concrete slabs span the spaces connecting to the bottoms of the beams and forming trenches. The trenches act like planter boxes, allowing the trees to grow to the desired size. Combining Geo-foam and specially-designed soil helps keep the deck from being too heavy.

### **Lesson learnt: The case of Klyde Warren Park**

#### **Accessibility**

Accessibility and connectivity were essential considerations when Klyde Warren Park was built. Easily accessible by foot, trolley, and bicycle from uptown, downtown, and the arts district, the park contributes to a more walkable city center.

The streetscape on all four sides of the park provides safe, inclusive, inviting, and engaging pedestrian conditions to enhance the park's experience further.

The streetscape around the park and pedestrian connectivity through the park consider existing and future pedestrian movements when designing interior and exterior pedestrian facilities.

- The park has contributed significantly to the local social environment; 90.9% of park users surveyed responded that adding it significantly improved their quality of life.

#### **Use and Activity**

The park is one of the most visited places due to its vibrant activities and inclusiveness. The Children's Park has been expanded and enhanced, including new play equipment and climbing.

- Family picnic areas will give the youngest visitors more room to learn, explore, imagine, and play.

#### **Amenities and Furniture**

- The park has amenities and supports day and night activities. The space closest to Pearl Street transformed into an iconic water fountain that beckons children to play during the day, and it lights up the sky at night with shows that delight guests in much the same way the Eiffel Tower show welcomes visitors to Paris.

#### **Comfort and Safety**

- The park is safe and comfortable for users, and its cover over the freeway reduces traffic noise for surface-level pedestrian traffic and adjacent buildings. And physical infrastructure and amenities, paths and pavements, benches, tables and chairs, lighting,

dust bins, toilets, water fountains, and children's playgrounds are well-designed and responsive to the landscape.

- The park has flexible space where visitors can set on portable furniture, permanently built benches and staircases, and open green space.
- The park has a permanently shaded, built physical structure that serves as a service area and restaurant.
- The park enhanced the resident life quality and had a \$2.5B economic impact on Dallas city. The project will further enhance the land value around the park, and adjacent commercial rents have increased by 32%.

### **Environment**

- The park trees act as a natural bio-filter, reduce storm-water run-off, and mitigate urban heat. The sustainable landscaping includes 37 native plant species and 322 trees, transforming a former freeway into a beautiful urban oasis. The addition captures 18,500 lbs. of carbon dioxide through planted trees and reduces storm-water drainage by 64,214 gallons annually.
- The park has solar panels on the light poles and a high-efficiency lighting management system, helping conserve energy.

### **Case study Name: Benchasiri Park**

Location: Khlong Toei District, Bangkok, Thailand

The park is a tribute to H.M. the Queen on the 5th Cycle Birthday on 12 August 1992. It is greatly appreciated for many royal duties of H.M. the Queen that undertaken for long time concerning in improving environment and the conserving natural resources as well as for better quality of life of her Thai people. Built on 11.6 acres (47,000 m<sup>2</sup>) next door to the Emporium shopping complex, it serves to commemorate the fifth cycle (sixtieth) birthday anniversary of Queen Sirikit on 12 August 1992. The construction started in 1990 with full support from various agencies. Despite the fact that value of the land in this business center location was over 4,000 million Baht. Because of the greatness of our Queen, this valuable park appears here to responds the community need for relaxation after daily work that hard to find such huge green space in this built-up area.



Figure 2.13: Benchasiri Park Site map *Source: Google Map*

This park was constructed to respond to community needs based on the result of research about the needs of nearby dwellers. The park's landscape comprises 70% of a vast green space to show the beauty of clear blue sky because this area is crowded with skyscrapers. In addition, big trees around the park create a shady and calm environment. The park renders a serene atmosphere, distinctly contrasting with the outside world. As a tribute, a 3-meter sculpture of H.M. the Queen is standing in a standing posture.

Moreover, two Thai-styled pavilions are in the park's front part. These pavilions exhibit H.M. the Queen's kind activities. According to the concept of "Park of Sculptures," several sculptures created by well-known artists are presented throughout the area, reflecting delicate art, new idea, and the philosophy of artists. Some pieces are decorated with a fountain that adds the feeling of liveliness.

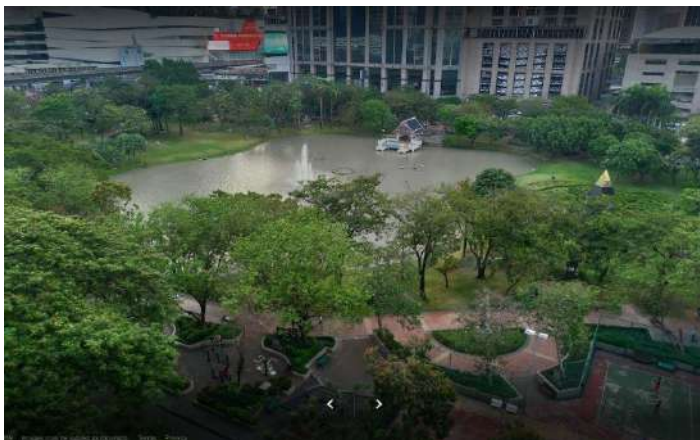




Figure 2.14 The spatial and physical qualities and activities of Benchasiri Park  
*Source: touristbangkok.com*

### **Lesson Learnt: The case of Benchasiri Park**

#### **Accessibility**

- The park has good accessibility and connectivity to its surroundings, and also, in the park compound, every user can easily move around.
- The paved area is available for exercising and outdoor sports playing. And also, the park has a swimming pool for the park users.

### **Use and Activity**

- The park has a multi-purpose outdoor court to support volleyball, basketball, and skating. Trees surround this large area for shade which attracts sports activity and jogging.
- The playground attracts many children, and the playground equipment is provided for adventure. The park has a multi-purpose outdoor court to support volleyball, basketball, and skating.
- The park has roller-skating grounds, a meeting place for teenagers who enjoy roller skating and those who enjoy watching this daring sport.
- Benchasiri Park is a place for music and festivals. It is one of the various recreational activities provided in the park. People can enjoy listening to Thai and western music performances for relaxation in the evening at the weekend. In addition to being a recreational place, a park is a place for Dharma and a venue for Buddhist activities. Every Sunday of each month, from 06.30 - 08.30, Buddhists can make merit and listen to the sermon.

### **Amenities and Furniture**

- Benchasiri Park is vibrant and has a variety of activities and services, such as playgrounds, vast lawns, nightly aerobics, basketball sessions, and occasional weekend concerts. It is popular among Thai and foreign children during weekends. It is safe and comfortable and well-equipped with playing equipment. It is hectic on holidays.

### **Comfort and Safe**

- The playground attracts many children, and the playground equipment is provided for adventure, seeking, and climbing.

### **Environment**

- The park consists of 20% of the water garden, which can play a supplementary role in collecting excess volume rainfalls before gradually draining into a typical drainage system. It can act as flood control for this area.

## Summary

This chapter reviews relevant literature from scholars' publications and documents on public space, recreational parks, and spatial and physical quality evaluation methods and approaches. It helps to understand the basic definition and knowledge of public space and public recreation parks in urban environments and their benefit to the city inhabitants.

According to the review, public space is defined as outdoor areas without particular entry requirements like keys, admission fees, or memberships and an environment that influences our daily lives and reflects various human activities. And also, public recreational parks are defined as spaces designated for public use to allow for outdoor recreation and offer opportunities for both active and passive enjoyment to their inhabitants.

Theories and methods emerged to provide a systematic process to measure public space spatial quality elements and physical structures, such as William H. Whyte and Project for Public Spaces, Jan Gehl, and Public Space Site Assessment Methods, were reviewed. The William H. Whyte and Project for Public Spaces developed four questions, Am I able to get there?, Am I able to play and participate?, Am I able to connect?, and Am I able to stay?, to assess the quality of public space. Also, Jan Gehl studied a good interaction between public space and public life and set public space quality criteria based on three classification, protection, comfort, and enjoyment. The Public Space Site Assessment method outlined William and Jan Gehl's quality criteria and evaluation methods within five dimensions and also 20 indicators.

From the theoretical discussions and methods, it concluded that recreational public spaces have myriad benefits for inhabitants, and the spatial and physical quality of public spaces affect the quality of life of the people. Furthermore, public space's spatial and physical quality is evaluated based on its accessibility, use and user, comfort and safety, amenities and furniture, and the physical environment.

Finally, the international case study on recreational parks was investigated by looking at the spatial and physical settings that attract park users and the qualities leading to the successful utilization of the public space, and this indicated the five public space quality dimensions accessibility, use, and user, comfort and safety, amenities and furniture, and the environment.

## **Chapter Three: Research Design and Methodology**

### **3.1 Research Design and Approach**

The research design shows the overall research process while conducting the research. In other words, it is a blueprint for the collection and analysis of data. Sharjah's book states, "a research design is a logical and systematic plan prepared for directing research study" (Shajaha, 2014).

This research uses an exploratory multiple case study approach to address the research objectives to evaluate the spatial and physical quality of a public recreational park operated in the inner city of Addis Ababa. A case study approach allows in-depth, multi-faceted explorations of complex issues in their real-life context in a specific geographical area or a minimal number of individuals as the subjects of study (Dawson, 2007).

Multiple sources of evidence are used to develop the various dimensions of view to improve the research's accuracy and strength. The required data were collected using primary and secondary data sources. Primary data was gathered through direct observation using pictures, counting, and mapping. In addition, a site survey questionnaire was used to identify and measure people's satisfaction with the spatial and physical qualities of the public recreational parks. On the other hand, different research documents, books, journals, and reports were used from government offices, libraries, and internet search engines as secondary data.

This study uses mixed, qualitative, and quantitative methods and data analysis. "The qualitative method is important in the behavioral sciences where the aim is to discover the underlying motives of human behavior" (Kothari, 2004). A closed-ended questionnaire survey was conducted to collect and analyze quantitative data using random sampling. "Quantitative research generates statistics through large-scale survey research, using methods such as questionnaires or structured interviews" (Dawson, 2007).

An exploratory study was used, and qualitative and quantitative data were analyzed using five dimensions, analytical framework, and scoring levels. Quantitative data were analyzed using

Microsoft software excel and presented using graphs, charts, and tables, and descriptive was used as the final both qualitative and quantitative data reports. Exploratory studies allow researchers to gather information and summarize, present, and interpret data for clarification (Burgess, 2003).

### **3.2 Data Types**

Quantitative and qualitative data were used in the research. Numerical data of the case area was conducted using counting. It provides data on the number and variety of activities and users accessing the public space among time and space. In addition, the qualitative data were collected using mapping, photography, and direct observation.

### **3.3 Data Source**

In this research, both primary and secondary data sources are explored to collect the required data.

#### **3.3.1 Primary Data**

Primary data was gathered through direct observation using pictures, maps and measurements, people and activity counting, and on site surveys questionnaires to understand and measure user perception and satisfaction with the public park's qualities.

#### **3.3.2 Secondary Data**

Secondary data was collected from the Addis Ababa City Administration River Basin and Green Area Development Administration Agency, Minister of Urban Planning and Development, and Addis Ababa Plan Commission to understand and analyze the existing recreational park's physical condition, public park quality standards, and strategies. In addition, public space and recreational park's related documents were reviewed from books, journals, maps, reports, and internet sources.

### **3.4 Sampling Design**

The study sample includes the sampling techniques, sampling population, and sample size of the enclosed public recreational park of the selected study area.

### **3.4.1 Sampling Techniques**

A simple random sampling method was used to conduct a questionnaire survey in this study. Each element in the population has an equal chance of getting into the sample, and all choices are independent of one another (Kothari, 2004).

### **3.4.2 Sample Population**

A target Population is a set of persons or objects that possesses at least one common characteristic (Smith, 2015). For this study, the target population is the actual public recreational park users in the study site.

### **3.4.3 Sample Size**

In the case study, items were studied continuously and intensively, and a small sample was used for observation and analysis. By observing the characteristics of a carefully selected representative sample, one can make certain inferences about the characteristics of a population from which it is drawn (Atkinson & Flint, 2001). For this research, 280 sample sizes were used in each park from the average park user of 1020, a confidence level of 95%, a population proportion of 50%, and a margin of error of 5%. The survey was conducted for fifteen successive days.

$$n = N * X / (X + N - 1),$$

$X = Z_{\alpha/2} * p * (1-p) / MOE^2$ , and  $Z_{\alpha/2}$  is the critical value of the Normal distribution at  $\alpha/2$ , for a confidence level of 95%,  $\alpha$  is 0.05, and the critical value is 1.96),

MOE is the margin of error,

p is the sample proportion, and

N is the population size.

## **3.5 Method of data collection and tools**

The data collection and the spatial and physical quality evaluation tool were adopted and used to understand better the strengths and areas for improvement of a public recreational park. The evaluation tool takes people through a series of questions to identify how they use public spaces.

### **3.5.1 Desk Research**

The literature review was executed by reviewing different theories and similar theses evaluated to understand the meaning and type of public space and recreational park and the elements that create a great public space and public life. Published recreational park design manuals, books, journals, newspapers, and reports were also studied to understand and assess the spatial and physical quality challenges, and recreational park design manuals, and urban design books were reviewed to put possible direction toward the spatial and physical quality standards.

### **3.5.2 Direct Observation**

User behavior and activities are mapped and observed using different data-collecting tools to understand public life better and how people use the spaces. According to Gehl and Svarre (2013), direct observations are the primary tool for studying the interaction of public space and public life. Therefore, multiple tools, mapping, counting, tracing, and photography are used as direct observation tools.

#### **A. Counting**

Counting was applied to conduct numerical data of the case area. It provides data on the number and variety of users accessing the public space, how many are staying, stationary activities, and the number and type of activities observed in the public recreational parks in time and space.

The counting was done for four consecutive weeks and at peak hours. The peak hours are classified three times per day in four-hour intervals.

#### **B. Behavioral Mapping**

People and their activities are mapped to understand and analyze how they use the public recreational park, where they sit or stand, and how they enter and exit. Both stationary activities and the physical setting of natural features and amenities were mapped in mapping activities. This technique was executed on three case areas at different day hours, working and weekend days. Observation forms were prepared for the activity and physical setting in separate mapping forms.

### **C. Trace**

Indirect observation of human activity was observed using trace leftover physical evidence like trampled paths over grass or gravel surface, signs of wear on the bench, furniture, staircases, dirt, and other litter.

### **D. Photography**

In this research, photography is used to document and illustrate the interaction and behavior of people with the public recreational park space and the physical setting of the surrounding environment.

### **3.5.3 Questionnaire Survey**

A formal list of closed-ended questions was prepared to conduct and identify the diversity and inclusivity of users, how many people use the park, and their service satisfaction. Questionnaires give a detailed answers to complex problems (Mugenda and Mugenda, 1999).

The questions were structured according to five categories and general inquiries:

1. Use and user
2. Accessibility
3. Amenities & furniture
4. Comfort & safety
5. Green environment

Based on the above question framework and sample size, 280 questionnaires were prepared for each case area and conducted using structured and semi-structured questionnaires. Respondents were selected using random sampling methods to cover various groups of people and social backgrounds. Questionnaires were conducted on-site with people using the places during the survey. The data collected from the questionnaires were also qualitatively and quantitatively analyzed. (*Annex II*)

### 3.6 Method of data analysis and presentation analytical framework

The collected data were analyzed according to the structure's five dimensions adopted from the site-specific assessment: use and user, accessibility, amenities & furniture, comfort & safety, and a green environment. The findings mapped and underlined the main challenges and opportunities based on the 20 indicators and their advanced quality score ranging from one to five for each dimension, directing the research to provide technical recommendations and solutions. (*Annex III*)

Quantitative data from the survey questionnaire were analyzed using Microsoft software and summarized in descriptive analyses, tables, graphs, and charts. And also, qualitative data were reported in descriptive form along with the quantitative presentation.

Table 3.1: Summary of the spatial and physical quality dimensions

<b>Dimensions</b>		<b>Indicators</b>	<b>Data collection</b>	<b>Analysis Methods</b>
<b>Use</b>	1	Number and variety of users accessing the public space	observation	graph, chart and descriptive
	2	Number and variety of activities observed in the public space among time and space	observation	graph, chart and descriptive
<b>Accessibility</b>	3	Accessibility and presence of qualitative and inclusive facilities for private vehicles	observation and survey	chart and descriptive
	4	Accessibility and presence of qualitative and inclusive facilities for bikes	observation and survey	chart and descriptive
	5	Accessibility and presence of qualitative and inclusive facilities for pedestrians	observation and survey	chart and descriptive
	6	Accessibility and presence of qualitative and inclusive facilities for public transports	observation and survey	chart and descriptive
<b>Amenities and Furniture</b>	7	Presence and quality of lighting	observation	chart and descriptive
	8	Presence and quality of amenities for recreational structures	observation and survey	chart and descriptive
	9	Presence and quality of seating	observation and survey	chart and descriptive

	10	Presence and quality of waste bins	observation and survey	chart and descriptive
	11	Presence and quality of bike racks	observation	chart and descriptive
	12	Presence and quality of signage and emergency items	observation	chart and descriptive
	13	Presence and quality of water and toilets facilities	observation and survey	chart and descriptive
<b>Comfort and Safety</b>	14	Perception of safety & level of security of the public space	observation and survey	chart and descriptive
	15	Quality of censorial experience	observation	chart and descriptive
	16	Overall care of the public space, through maintenance and decor	observation and survey	descriptive
	17	Presence of a public space identity, defined by cultural background and users' enjoyment	observation	descriptive
<b>Environmental Components</b>	18	Quality of biodiversity and microclimate conditions in the public space	observation	descriptive
	19	Environmental and community resilience	observation	descriptive
	20	Presence of energy efficient elements in the public space	observation	descriptive

### 3.7 Criteria for selecting case areas

The following five criteria were considered on site selection.

1. Public recreational parks are located in urban areas, city center and intermediate zone.
2. Public recreational parks are administered or managed by city and sub-city levels due to their large population service, carrying capacity, and data availability.
  - A Sub-city Park should be around 8 ha (sub-city) and can serve up to 160,000 people in a radius of 4,000 m, with a carrying capacity of 0.05 ha/1,000 pop.
  - A City Park should be more than 15 ha (city) and can serve up to 300,000 people in a radius of 6,000 m, with a carrying capacity of 0.05 ha/1,000 pop.
3. Public recreation parks were recently renovated and maintained by the city Addis Ababa City Government River Basins and Green Areas Development and Administration Agency and the sub-city environmental and green office.

4. Public recreation parks provide full service and have particular uses for the public.
5. Public recreational park has historical significance to the inner city.

According to the 2021 survey by Addis Ababa city administration river basin and green area development and administration agency, there are 23 public recreational Parks in Addis Ababa, including those under reconstruction and categories into city, sub-city, wereda and neighborhood level shown on Table 3.2.

Table 3.2: List of available recreation park in Addis Ababa city

<b>No</b>	<b>Location</b>	<b>Name</b>	<b>Size in Meter square</b>	<b>Owner/ Administer</b>	<b>Status</b>	<b>Special Function</b>
1	Yeka Sub-City	Yeka Park	22081	Sub City	Open to the public	-
		Ferensay Park	54201	Wereda	Open to the public	-
		Kaleb Park	5000	Wereda	Open to the public	-
2	Nefas-Silk Sub-City	Behere Tsige Park	142796	Sub-city	Under construction	-
		Kentiba Bitwedded W/Tiasdik Goshu memorial Park	82000	(AARBGA DAA)	Closed to the public	Historical and Memorial new park
3	Lideta Sub-City	Gola Park	9625	Wereda	Open to the public	-
		Teklehaymanot Park	4371	Wereda	Open to the public	-
		Ethio-Cuba memorial Park	29803	Sub-city	Open to the public	Memorial Park
		Lideta Meleso Malmat Park	12192	Sub-city	Open to the public	Housing Project Park
4	Arada Sub-City	Ambassador Park	9393	City/ Agency	Open to the public	Renovated and Historical

5	Gulele Sub-City	Korea Zemachoch memorial Park	30209	Sub-city	Open to the public	Memorial Park
		Hamle-19 Park	67968	Sub-city	Open to the public	
		Sheger Park	44395	(AARBGA DAA)	Open to the public	Historical Park and Heritage
		Debab Park	8619	Wereda	Open to the public	-
6	Kolfe Sub-City	Kolfe Park	20000	Wereda	Open to the public	-
		Holland Park	68604	Wereda	Closed to the public	-
7	Kirkos Sub-City	Africa Park	68604	Other	Open to the public	-
		ECA/ St.Estifanos Church Park	167900	Other	Not open to the public	-
8	Akaki Sub-City	Akaki Park	62518	Sub-city	Partially open	-
9	Addis-Ketema Sub-City	Gedam Eyesus Park	4128	Wereda	Open to the public	-

*Source: Addis Ababa city administration river basis and green area development and administration agency, annual magazine, 2021*

Table 3.3 shows, selected recreation park based on the above five criteria, Ambassador Park, Lideta park new, and Sheger Park. Those are located at the core and intermediate zone, administrator by the agency and sub-city, they are open to the public and give service, and have special significance for the residence.

Table 3.3: Selected public recreational Parks based on five selection criteria

No	Location	Name	Size in Meter square	Owner/ Administer	Status	Special criteria
1	Lideta Sub-City	Lideta Meleso Malmat Park	12192	Sub-city	Open to the public	Housing Project Park
2	Arada Sub-City	Ambassador Park	9393	City/ Agency	Open to the public	Renovated
3	Gulele Sub-City	Sheger Park	44395	(AARBGA DAA)	Open to the public	Historical Park and Heritage

Source: Addis Ababa city administration river basis and green area development and administration agency, annual magazine, 2021

### 3.8 Introduction about case area, case city Addis Ababa

Addis Ababa is the capital city of Ethiopia, and it is located between 8°49' 55.929 "and 9°5' 53.853 " north latitude and 38°38'16.55" and 38° 54' 19.547 " east longitudes with the altitude ranging from 2,355 to 3300 meters.



Figure: 3.1: Current map of Ethiopia. Addis Ababa urban centers

The city climate zone is categorized under subtropical highland and receives a mean annual rainfall of 1200 mm and a mean annual temperature of 16 °C (Tensaye Abate, 2019). From the 2007 population census led by the Ethiopian national statistics authorities, Addis Ababa covers an area of 51948.85 hectares and has 2,739,551 inhabitants, about 60% of the country's total urban population.

The Addis Ababa city management structure is divided into 11 sub-cities, as shown in Figure 3.2. These are Addis Ketema, Akaki-Kality, Arada, Bole, Gulelle, Kirkos, Kolfe-Keranio, Lemi Kura, Lideta, Nefasilk-Lafto, and Yeka. The study areas, Ambassador Park, Lideta Park, and Sheger Park, are located in Arada Sub-city, Lideta Sub-city, and Gulele Sub-city.

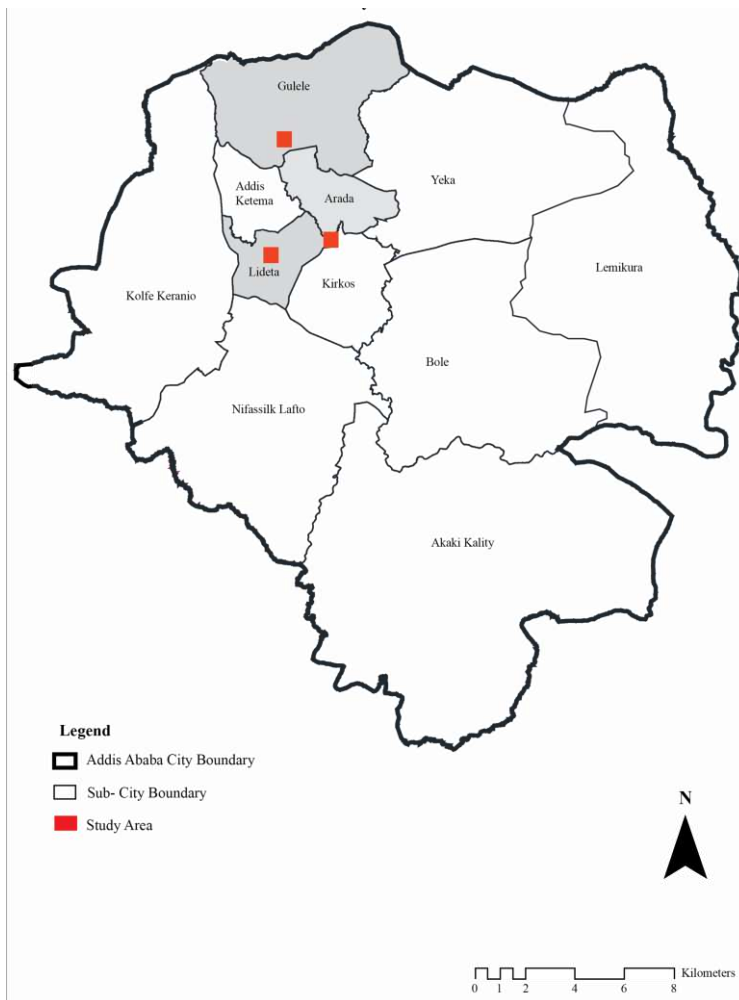


Figure 3.2: Addis Ababa city administration Sub-Cities

### 3.8.1 Case study area

The case study area, Ambassador Park, Lideta Park, and Sheger Park, were selected based on site selection criteria. According to the Addis Ababa city administration integrated land information center 2014 ATLAS report, this park is in the Arada sub-city, Lideta Sub-City, and Gulele Sub-city.

Arada sub-city, situated in the central part of Addis Ababa, covers 950 hectares with a total population size of 212,000 and an average density of 223 people per hectare. Lideta sub-city and Gulele sub-city, respectively, covers 918.27 and 3119.1 hectares. Lideta sub-city has 193,458 population sizes with an average density of 210.64 people per hectare and also, the Gulele sub-city has 267,381 population sizes with an average density of 85.72 people per hectare.

#### 3.8.1.1 Ambassador Park

As illustrated on Figure 3.3, Ambassador Park is located in Arada Sub-City Woreda 01, Addis Ababa, the oldest and most historical site at the city core. It is the city's most significant urban public recreational space due to its close location in the main city center.



Figure 3.3: Arada Sub-City administration

Previously, a private business enterprise had administered the park for the past ten years. Then, the city administration has taken the management and ownership to solve the public park's bad behavior and reputation. Furthermore, the city administration renovated the park at the cost of 49 million birrs, and on February 2021, officially inaugurated. Private design consultant companies were a part of the design and construction project.

Ambassador Park surrounding land uses are dominated by public service and administration, such as residence, mixed residence, and commerce land use are distributed within walking distance. Green spaces and parks are also accessible within 400 meters radius. The road networks comprise motorways, arterials collectors, and local roads, and also within the radius, different modes of transportation are used except bicycles and trains. The proportion of land uses illustrated below in Figure 3.4 is as follows, 23% public service, 17% roads, 14% administration, 13% commerce, 10% mixed residence and green Space, 9 % Residence, and 4% under construction.

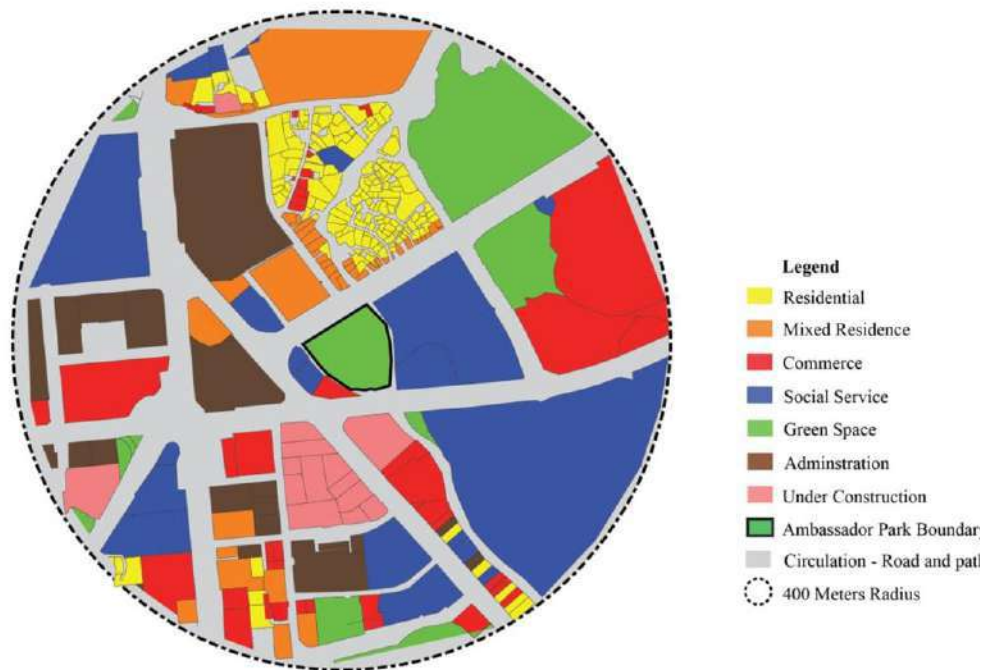


Figure 3.4: Ambassador Park Surrounding land use (400m radius)

The park has a shared boundary with different landmarks, as illustrated in Figure 3.5, including the Bantikety River, Zewditu hospital, and Ambassador Theater. Various public institutions and governmental organizations are located near the recreational park and such as; the Seventh Day Adventist church, Filwha Hotel, Ethiopia Hotel, Transport Minster office, Minster of Defense, Ethiopian Broadcasting Corporation, Ethiopian Postal Service Enterprise Main Office, Commercial Bank Head office, commercial /private shops, kindergarten, residential, public transportation node.

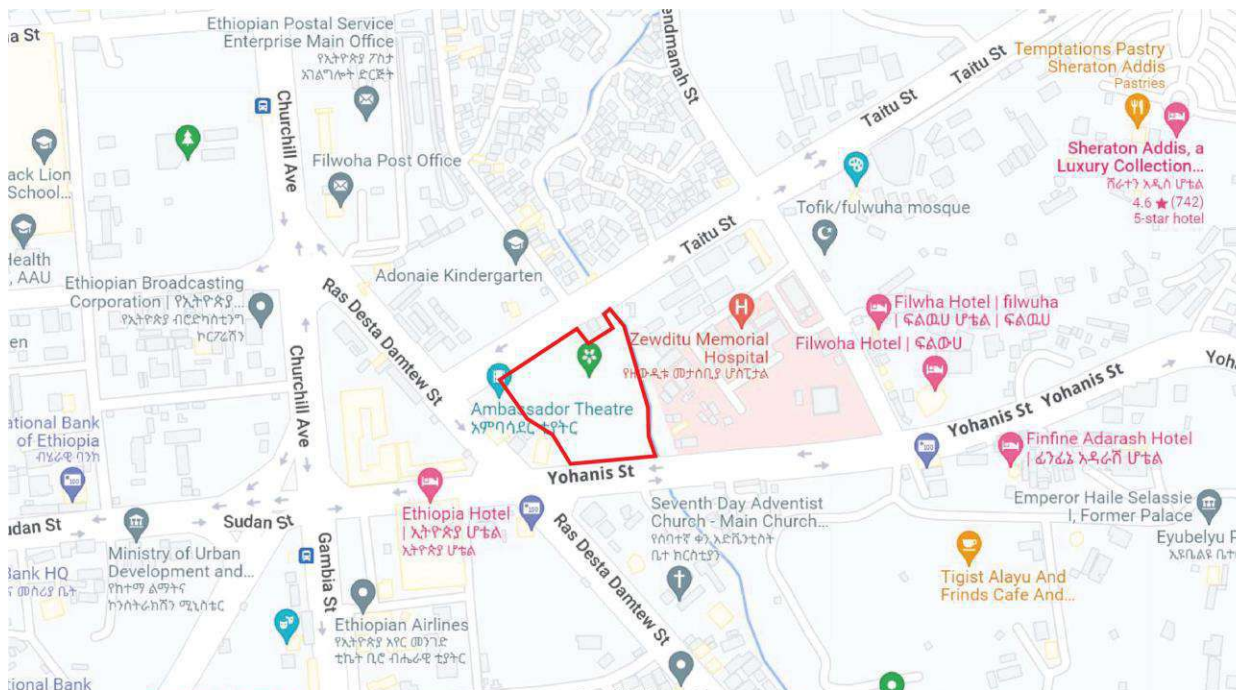


Figure 3.5: Google map of Ambassador Park and its surrounding  
 Source: Google Map, 2020

Ambassador Park covers a 9393-meter square area with endemic trees, plants, flowers, and ground cover. The park serves the public Monday to Sunday from 8:30 am to 1:30 pm. The park has shops, a cafeteria and coffee space, a game zone for children, toilets, an outdoor setting area, a green area for photo shooting and festivals, and an office with WiFi service. Well-furnished public seat with pedestrian walkways, benches, waste bins, an artificial lake, generator, water reservoir, are integrated infrastructure.

The park management charges users an entrance fee of 30 Birrs per person and 150 Birrs for children to use the playground and 3000 birrs for particular event and photo and or video shooting.

### 3.8.1.2 Lideta Park

As illustrated on Figure 3.6, Lideta Sub-City is situated in the center of Addis Ababa, the current Wereda 08/09. In 2015/16, the park was constructed as part of the Lideta condominium housing project and was expected to serve the resident and surrounding users.

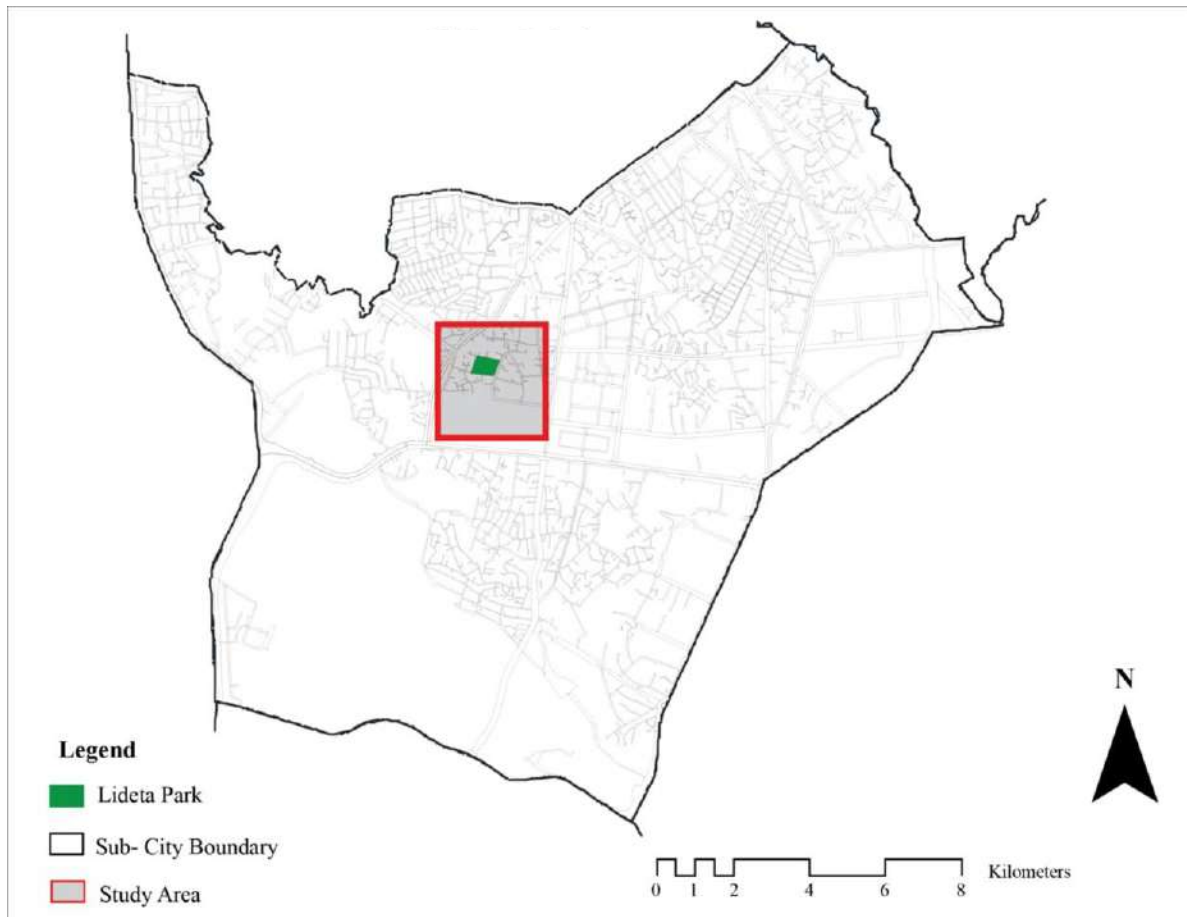


Figure 3.6: Lideta Sub-City administration

Mixed residences dominate the land use adjacent to Lideta Park within a 400-meter radius. Within 20 years, the morphology and land use changed from pure residence to mixed and commerce uses due to the housing development. Manufacturing, storage and social service land use are distributed sparsely. Road networks comprise train ways, motorways, arterials collectors, and local roads, and foot, car, and bus are uses as modes of transportation. The proportion of land uses illustrated below on Figure 3.7 accordingly, 30% Residence, 22% Mixed Residence, 13% Road, 12% Manufacturing and storage, 9% Commerce, 7% Public service, 5% Green Space and 2% Administration.

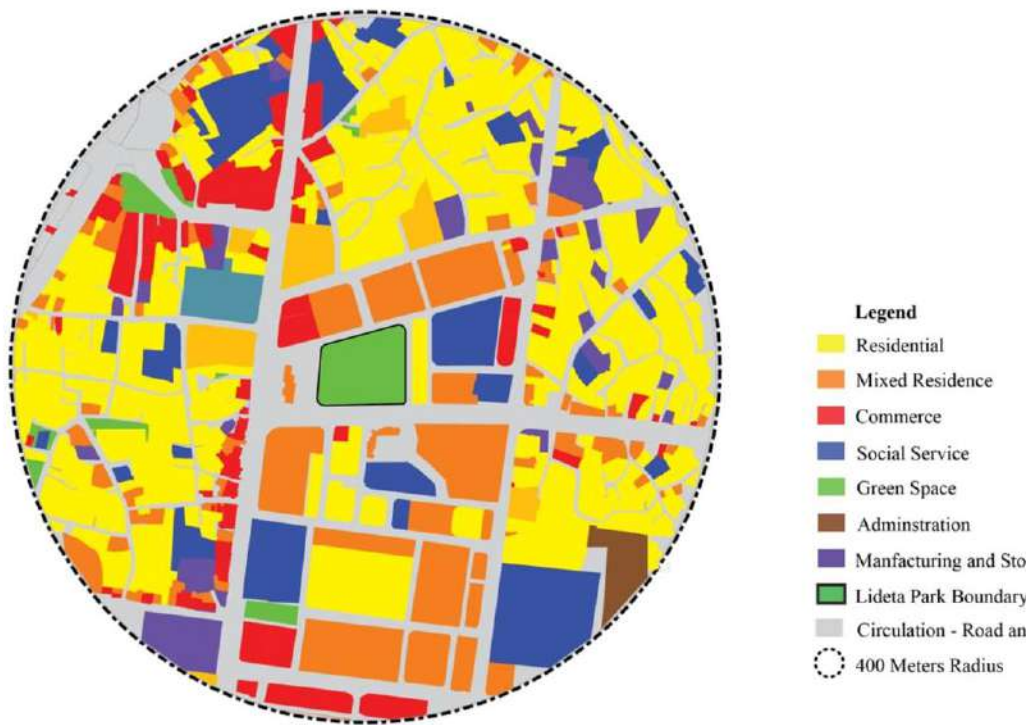


Figure 3.7: Ambassador Park surrounding land use (400m radius)

As illustrated on Figure 3.8 public and private institutions are situated in the neighboring distance of the park. This includes condominium houses, commercial buildings, church, bar and restaurant, shops, hospital, schools, and Federal High court. In addition that the site is active and business zone due to its near distance to the market district, Abenet, Sebategni, and Teklehaymanot.

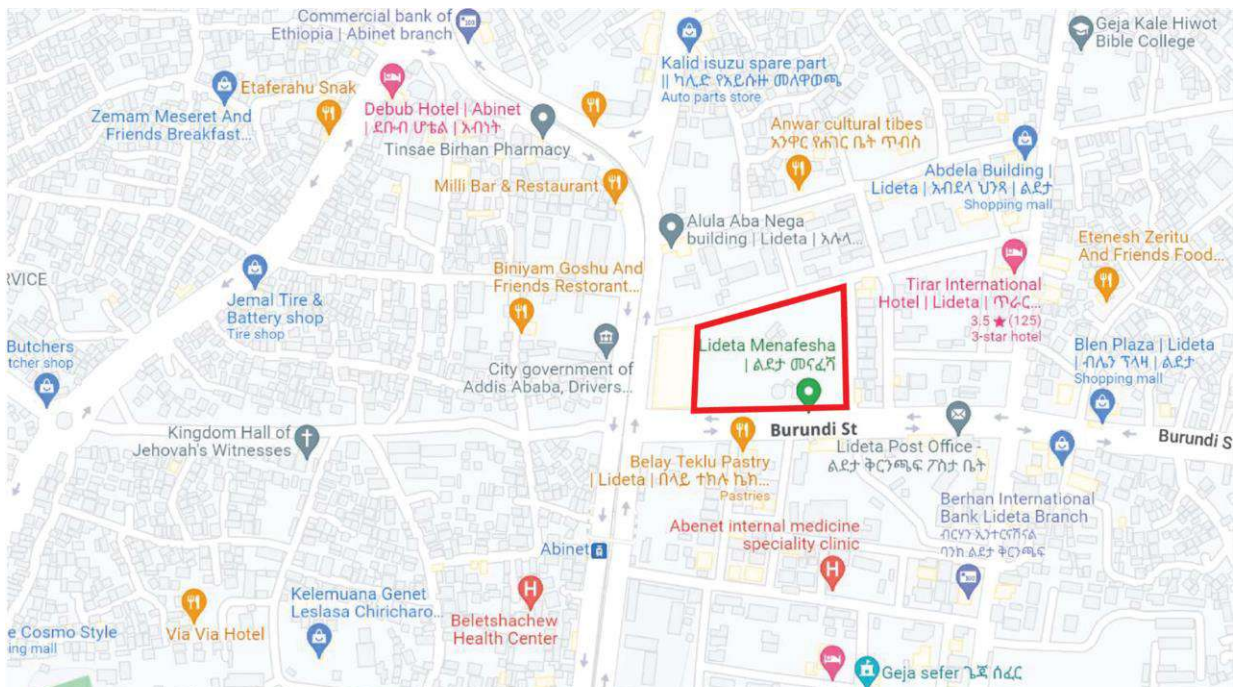


Figure 3.8: Google map of Lideta Park and its surrounding  
*Source: Google map, 2020*

The park covers a 12192 meters square area and has green cover with trees, plants, and flowers. It gives service to the public Monday to Sunday from 8:30 am to 5:30 pm. The park has a public toilet and shower, book shop, cafeteria, children playing ground, outdoor setting, and green space for events and celebration such as weddings, birthdays, and any photo or video shooting.

The park is administer by Lideta Sub-city and plan to be hand over to the administration of Addis Ababa Administration river basin and green area development administration agency. The park is free of charge for park visitors, but for special event such as video and photo shooting charges 2000 birr.

### 3.8.1.3 Sheger Park

Sheger Park is a landmark and historical park located in Addis Ababa Gulele Sub-city woreda 08 around Addisu Gebeya and it illustrated below on Figure 3.9. The park constructed it in the early 1930s by Armenian before the Italian occupation and was used as a residence for Bessmelian (Muse Yakob). Later it was owned by the city administration and served as an office and prison. In 1978 the place was reformed by Guad Mengistu Haile-Mariam, the Durg Regime leader, as public park and officially inaugurated and opened to the public in 1980. This is illustrated on Figure 3.10 and 3.11 below.

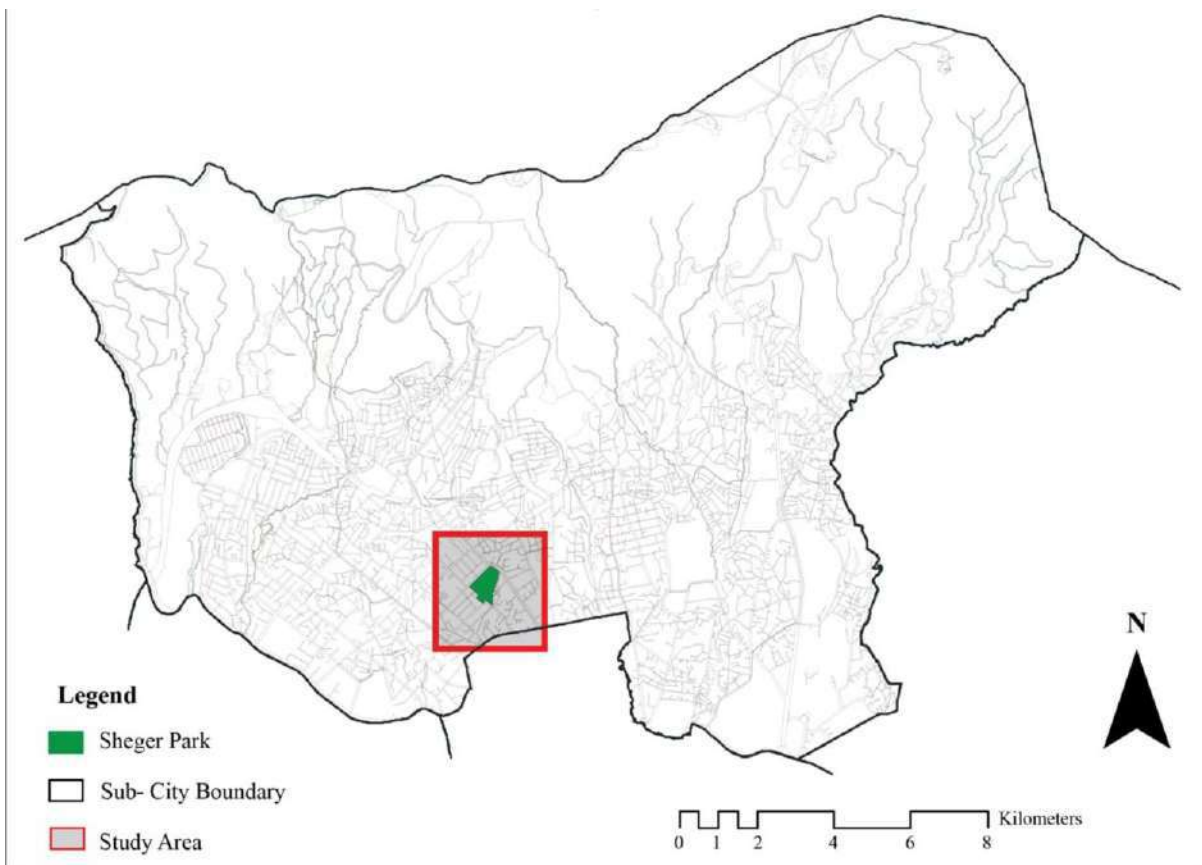


Figure 3.9: Gulele Sub-City administration



Figure 3.10: Muse Yakob Historical House



Figure 3.11: the 1980 Sheger Park inaugural

The 400 meters radius land uses shows on Figure 3.12, Sheger Park's surrounding area is distributed alternatively with residential uses and considered as a neighborhood park. Mixed residence and commerce land uses are distributed on the major road, and also green space and social service, administration, manufacturing and storage, under construction land uses are located in the residential area. The road networks comprise motorways, local roads and foot, car, and bus are modes of transportation. The proportion of land uses are 28% Residence, 13% Mixed Residence, 12 % Commerce, 12% Green Space, 11% Road, 7% Public service, 8% Administration, 6% Manufacturing and storage, and 3% under construction.

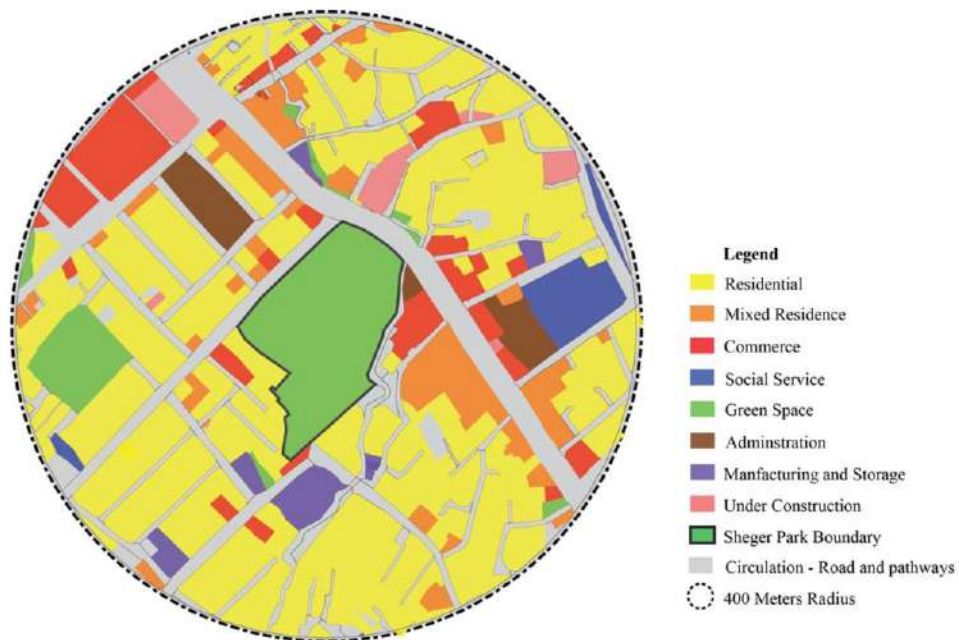


Figure 3.12: Sheger Park Surrounding land use (400m radius)

The city's administrative vital events registration agency institute is located in the Sheger Park compound. Residence and government institutions are located close to the park, such as Gulele Sub-city police station, apartment, hotel and guesthouse, private commercial shops, mosque, and Addisu Gebeya Health Center are illustrated on Figure 3.13 below.

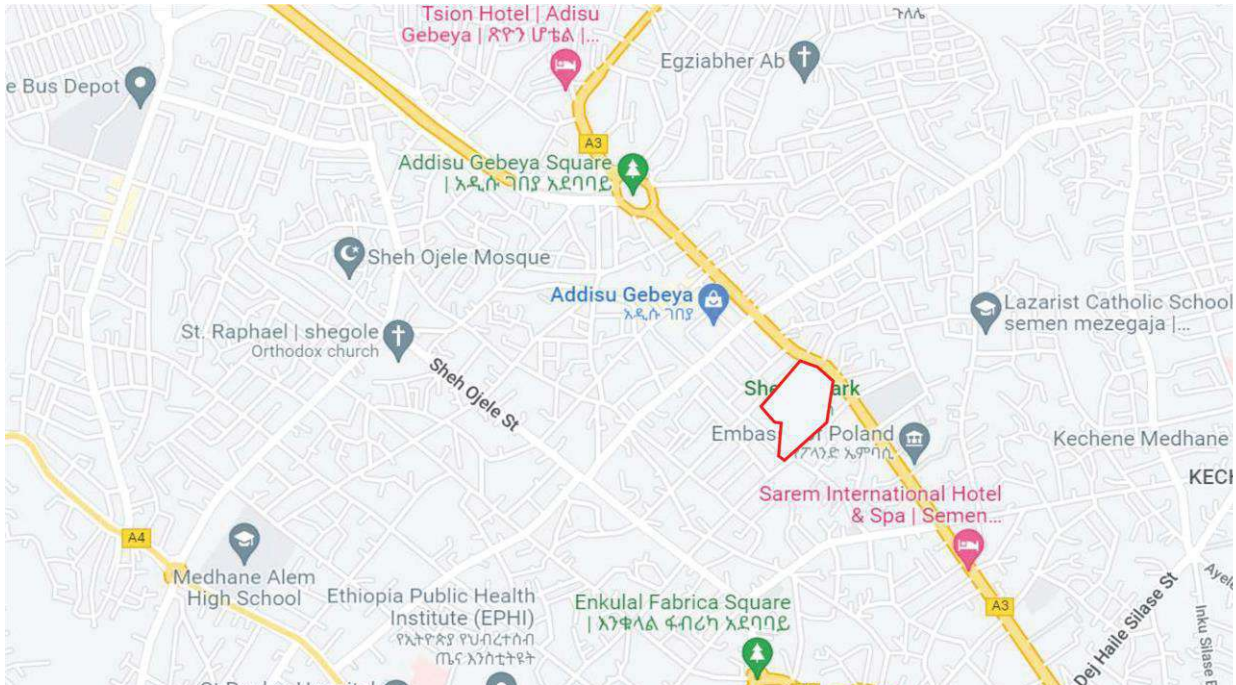


Figure 3.13 Google map of Sheger Park and its surrounding  
*Source; Google Map, 2020*

Sheger Park is covered by endemic trees, plants, and flowers and has a 44395-meter square area. The park has a game zone for youth (pool, tabletop foosball), children's game zone, ground tennis, cafeteria, green area for video and photo shooting area for weddings, birthdays, and any celebration, and an outdoor gathering place. The park serves the public Monday to Sunday from 8:30 am to 5:30 pm and the park charges entrance fee 20 birr and 2500 birr for special event and wedding.

## **Summary**

This research uses an exploratory multiple-case study approach to address the research objective. Secondary data, such as desktop research, was used to address the research's first and third objectives, to assess the public recreational park spatial and physical quality dimensions and recommending possible directions toward the findings. Primary data such as direct observation, counting, and mapping were used to gather spatial and physical quality data and addressed the second research objective and also questionnaire and evaluation criteria with 20 indicators adopted from Site Specific Assessment to evaluate the recreational parks spatial and physical qualities.

The survey's quantitative results were analyzed with Microsoft's XL program and condensed into tables, graphs, and charts for descriptive analyses. And also, qualitative data were reported in descriptive form along with the quantitative presentation.

Furthermore, from 23 public recreational Parks in Addis Ababa 3 study sites, Ambassador Park, Lideta Park, and Sheger Park, were selected according to site selection criteria. The selection criteria include public recreational parks in urban areas managed by the city administration, recently renovated, full-service parks, and parks with significant uses in the inner city.

## **Chapter Four: Result**

The five dimension of the public space site assessment were found as an approach and methods for assessing the spatial and physical quality dimensions of public recreation parks in this study. Spatial and physical quality indicators with the assessment score range 1 to 5 Likert scales evaluate the recreational park quality dimensions, use and user, accessibility, amenities, comfort and safety, and environment. The survey questionnaires and site observation result of the study area are organized based on each case area, Ambassador Park, Sheger Park, and Lideta Park.

### **4.1 Ambassador Park**

#### **4.1.1 Use and User**

##### **A. Number and variety of users accessing the public space**

Ambassador Park is open to the public from 8:30 am -7:00 pm, Monday to Sunday. The recreational park comprises various users and activities, and users are categorized in terms of age, gender, and physical condition. The study followed to determine who frequently used the public recreational park on different timelines and days.

Table 4.1 and 4.2 below shows the numbers of users and their variety during the daytime. The study was conducted using the counting method for a month and reported the average result weekly. Out of the 5329 people, 35% are youth who fall below the age of 18- 35 and are major recreational park users in the area, followed by 25% children below the age of 12 and teenage aged 13-18 years, 20%. In addition, those 35-65 years make up 13% and the elderly above 65 years 7%.

Table 4.1: Numbers of users of Ambassador Park based on their age categories and in days ranges

No	Age	Days of the week							Total user based on Ages	Total user based on Percent
		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday		
1	Under 12 Years	94	72	94	142	120	441	320	<b>1283</b>	<b>25%</b>
2	12 -18 Years	75	58	75	113	96	352	256	<b>1025</b>	<b>20%</b>
3	19 -35 Years	132	101	131	199	168	617	448	<b>1796</b>	<b>35%</b>
4	36 – 65 Years	49	37	49	74	62	229	167	<b>667</b>	<b>13%</b>
5	Above 65 Years	25	20	26	40	33	123	90	<b>357</b>	<b>7%</b>
	Total user per a day	<b>375</b>	<b>288</b>	<b>375</b>	<b>568</b>	<b>479</b>	<b>1762</b>	<b>1281</b>	<b>5129</b>	<b>100%</b>

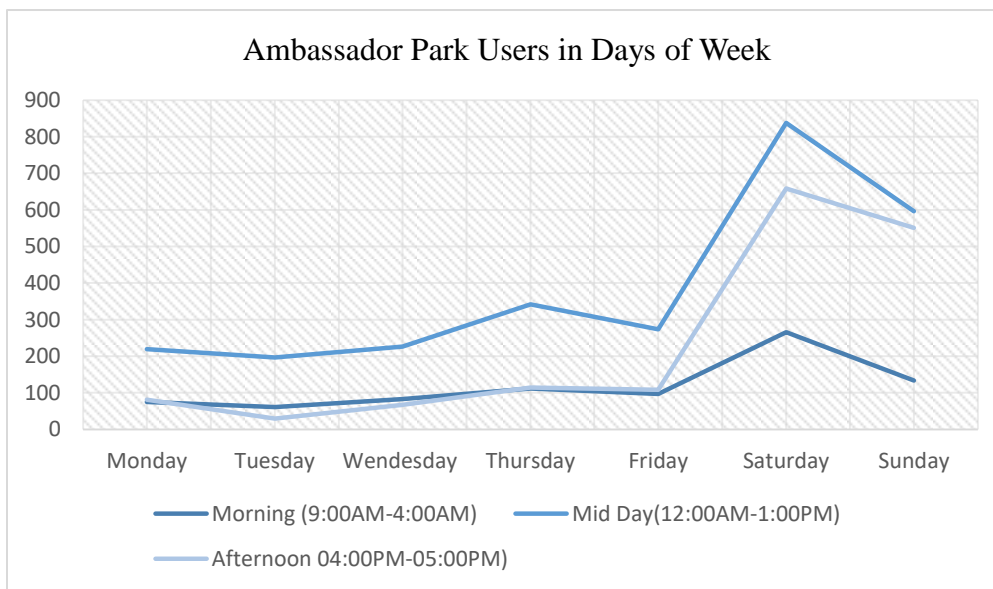
Table 4.2: Numbers of users of Ambassador Park based on their gender and physical condition

No	Age	Days of the week							Total user based on Ages	Total user based on Percent
		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday		
	Total Users	<b>375</b>	<b>288</b>	<b>375</b>	<b>568</b>	<b>479</b>	<b>1762</b>	<b>1281</b>	<b>5128</b>	
1	Gender									
	Male	<b>220</b>	<b>178</b>	<b>223</b>	<b>330</b>	<b>282</b>	<b>1025</b>	<b>755</b>	<b>3013</b>	<b>58.57%</b>
	Female	<b>155</b>	<b>110</b>	<b>152</b>	<b>238</b>	<b>197</b>	<b>737</b>	<b>526</b>	<b>2115</b>	<b>41.43%</b>
2	Disabled Users	<b>14</b>	<b>11</b>	<b>16</b>	<b>28</b>	<b>19</b>	<b>52</b>	<b>73</b>	<b>213</b>	<b>3.99%</b>
	Male	<b>9</b>	<b>7</b>	<b>12</b>	<b>17</b>	<b>11</b>	<b>40</b>	<b>49</b>	<b>145</b>	<b>68%</b>
	Female	<b>5</b>	<b>4</b>	<b>4</b>	<b>11</b>	<b>8</b>	<b>18</b>	<b>24</b>	<b>68</b>	<b>32%</b>

The analysis infers that more than 80 percent of recreational park users are below 35 years, including children and teenagers. In addition, of the overall users, 58.57 % are male, and 41.43% are female, and from this statistical data, 3.99% of users are people with disability.

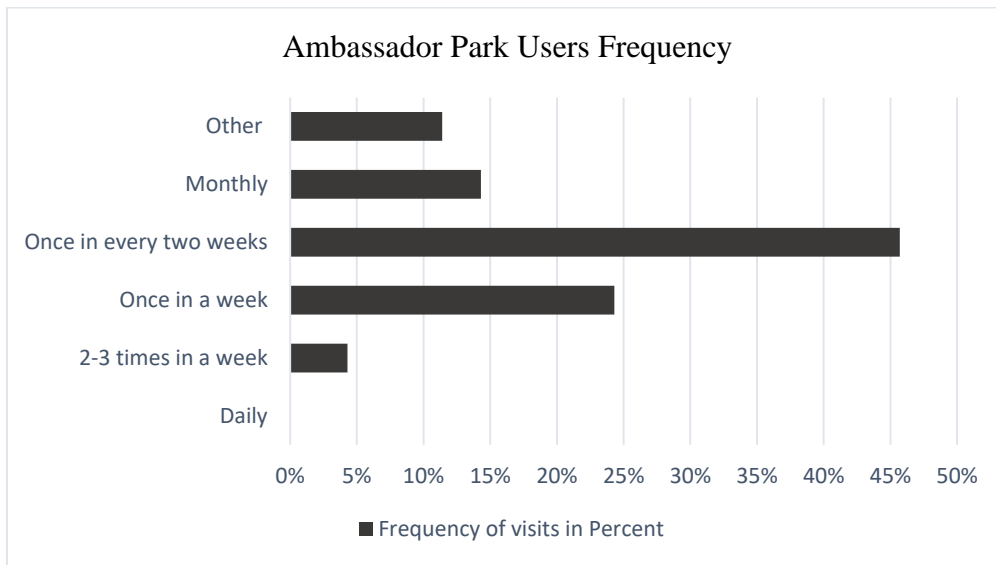
The number of users increases in the mid-day (11:30 a.m. to 1:00 p.m.) and the afternoon (04:00 p.m. to 05:00 p.m.) and on weekends, shown in Chart 4.1 below. It infers that the park's average number of weekend users is threefold that of those used on weekdays.

Chart 4.1: The number of users in a day’s interval of Ambassador Park users in days of week



The assessed questionnaires on Chart 4.2 informed the recurrence of visits and how it varies. 45.7% of users visit once every two weeks, 24.3% once a week, and 4.3% visit 2-3 times a week, the same as those who visit the park daily. In addition, 14.3% of users visit the public recreational park monthly, while those who occasionally and rarely see the public recreational park of their favorite make up 11.4%.

Chart 4.2: The level of user's recurrence of Ambassador Park



It projects that 84.3% of users visit the park within a month, and not a single person stops by to see the park day by day. The park charges users an entrance fee of 30 Birrs per adult and 150 Birrs for children to use the playground.

**B. Number and variety of activities observed in the public space among time and space**

The park has formal economic activities and gives the service of a café and restaurant, traditional coffee shop and business centers, a children's playground, and a venue for different events, photo/video shooting illustrated in Figures 4.1 to 4.5.

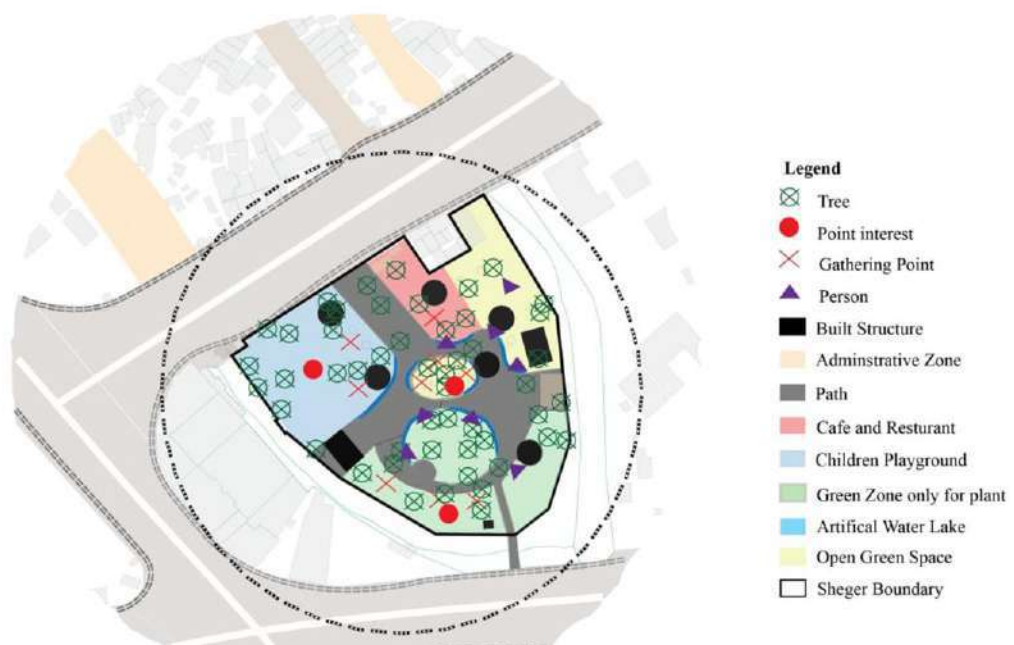


Figure 4.1: Ambassador Park use and activity spatial zone



Figure 4.2: Children playground



Figure 4.3: Photo and video shooting



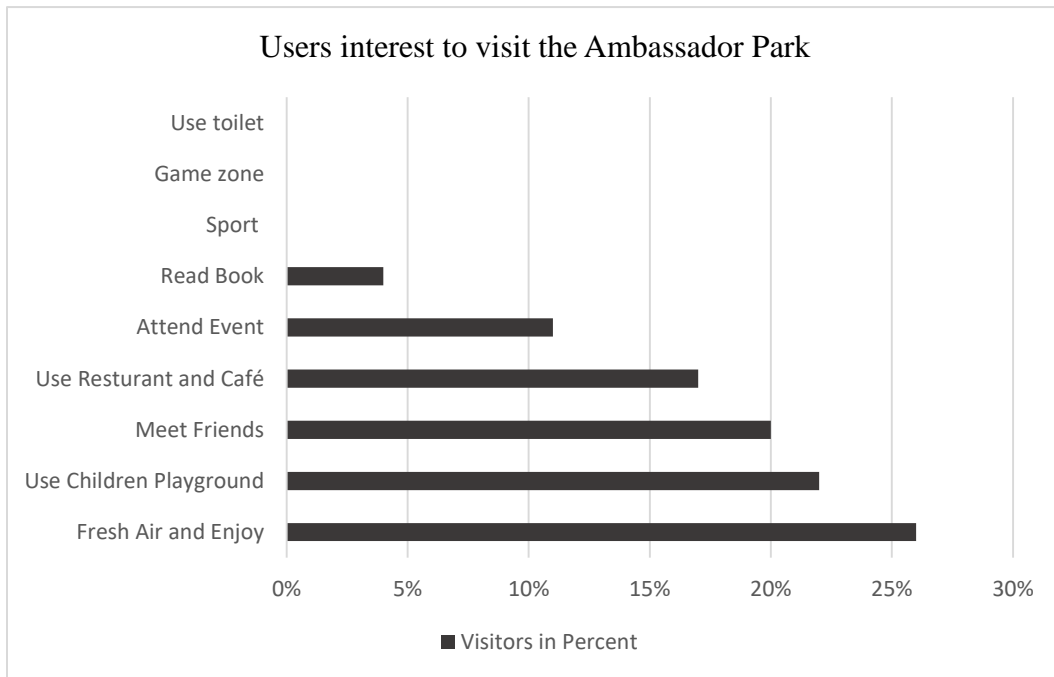
Figure 4.4: Café and restaurant



Figure 4.5: Outdoor coffee shop and place

The motivation behind the visits to Ambassador Park and the type of visitation varies. According to user's responses to the survey on Chart 4.3, users came to the park to get fresh air and enjoy the surroundings 26 %, visited the children's playground 22%, met people and friends 20%, used restaurants and cafeteria with 17%, attend events 11%, and read books 4 %.

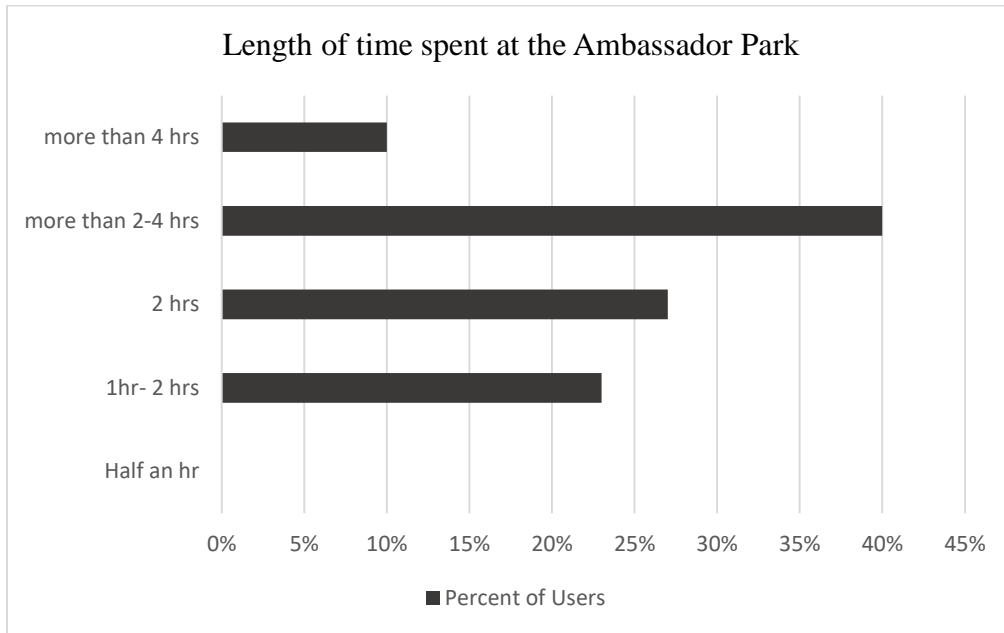
Chart 4.3: Users interest to visit Ambassador Park



Depending on the user's interest and engagement activity, the time of stay in the park differs. From overall survey respondents shown on Chart 4.4, no visitors stay in the park for half an hour or less, 23% between half and an hour, 27% for one to two hours, 40% for two to four hours, and 10% for longer than four hours. The visitors also prefer to visit and use the recreation park's outdoor sitting area and children's playground space, 62% and 38%, respectively.

Park users found outdoor seating spaces more comfortable for people to sit and enjoy fresh air, sit and talk with friends, and read books. As a result, they prefer to spend more hours, 2 to 4 hours. In addition, the children's playground accommodates different game zone, and it gives the privilege to children to play and experience while their parents sit and use other services in the park.

Chart 4.4: Length of time spent at the Ambassador Park



### 4.1.2 Accessibility

Ambassador Park's vicinity has continuous accessible travel paths and provides safe and inclusive movement to all pedestrians. Pedestrian walkways are considered safe and inclusive to pedestrians, meaning they have tactile pavement, curb ramps, and pedestrian crossing.

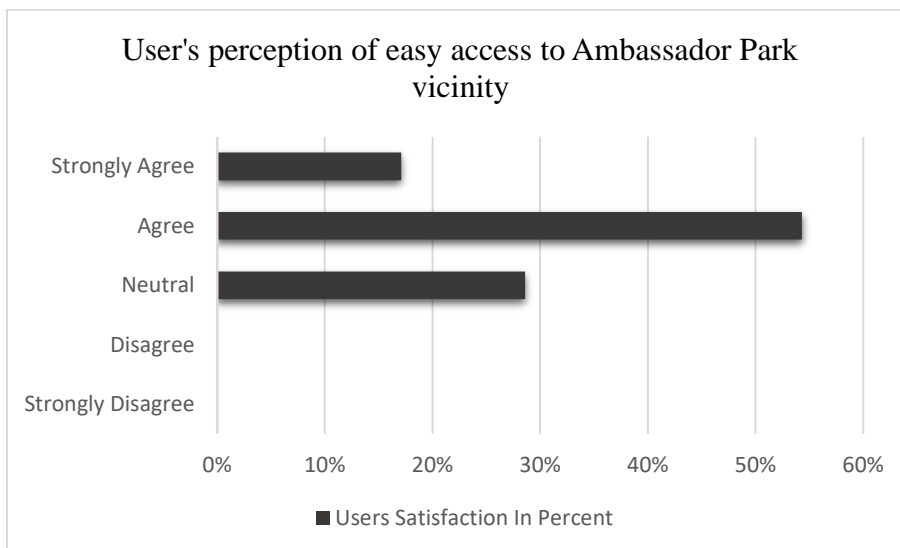
As illustrated in Figure 4.6, the site is accessible from a different direction and enclosed by three major streets, Taitu Street, Ras Desta Damtew Street, and Yehanis Street. Its location is suitable for public transportation and private car users. Taxi and bus stops are within walking distance, 5 to 10 minutes or 400 meters.



Figure 4.6 : Showing that Ambassador Park surrounding accessible routes, Google map 2020

A network of paths, streets, public transport, and signage are the primary determinant factors that visitors access the park without any distress. Ambassador Park has two gates along Taitu Street and Yehanis Street. However, users can only access the front gate from Taitu Street, and visitors are forced to walk or drive to the front entrance to access the park. Accordingly, visitors responded to the satisfaction survey on the ease of access to the park, and 17.1% of users strongly agreed, 54.3% agreed, and the rest 28.6 % responded neutral on Chart 4.5 below.

Chart 4.5, User's perception of easy access to Ambassador Park vicinity



The 360 photography in Figure 4.7 shows from the Taitu street direction and displays the different angles of view of the surrounding Ambassador Park. The median section of the street has a pedestrian island and pedestrian crossing. On-street parking on both sides of the roads, and the site has good way-finding elements such as tactile, crossing, and signage aligned with the park entrance.



Figure 4.7: Panoramic View of Ambassador Park surrounding access routes

### Accessibility inside the park

There is no designated parking space inside the park compound, and vehicles are only allowed to load and offload items for the business centers, shops, and offices at the park entrance. The pavement surface is even and comfortable for walking, cycling, and wheelchairs, with the right design and inclination of the ramps. Still, it missed having tactile pavement paths for visually impaired people at service points. Figure 4.8 to 4.12 illustrates the park access route inside the park and its surrounding.



Figure 4.8: Ambassador Park road network and pedestrian walkways



Figure 4.9: Access to service in compound centers



Figure 4.10: Ramp Access for wheelchair



Figure 4.11: Access Point at Front Entrance



Figure 4.12: Access Point at Back Entrance

In addition, from the survey on Chart 4.6 shows that 37.1% of respondents strongly agree that the park is easy to move around the space and the rest 62.9% respond agreed. Chart 4.7 also indicates from the total respondent, 87 % agreed, and 13 % strongly agreed that the park is easy to access by disabled people and elderly.

Chart 4.6: User's perception of easy access to inside Ambassador Park

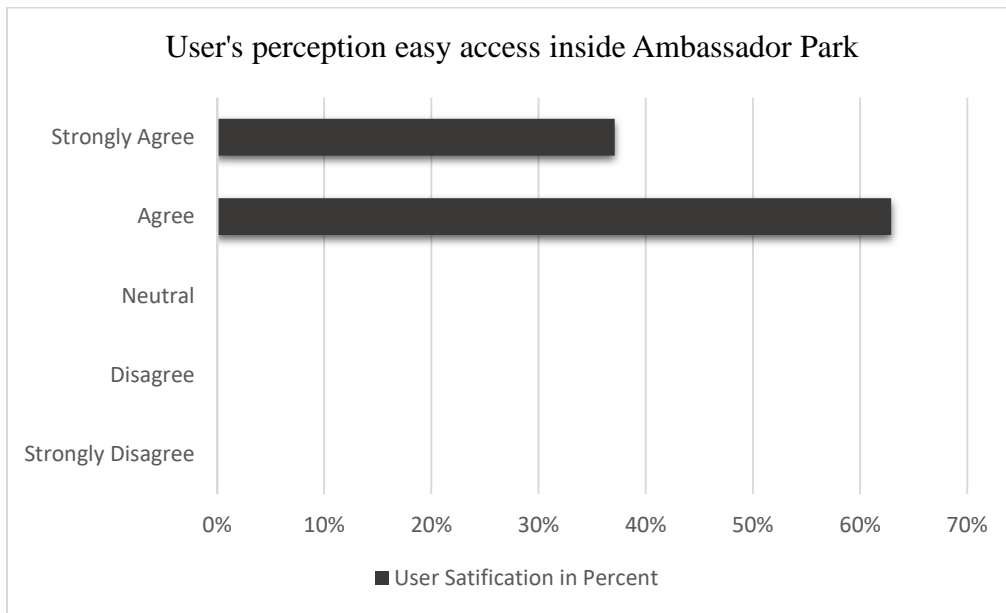


Chart 4.7: User's perception of easy access to inside Ambassador Park by disability and elderly

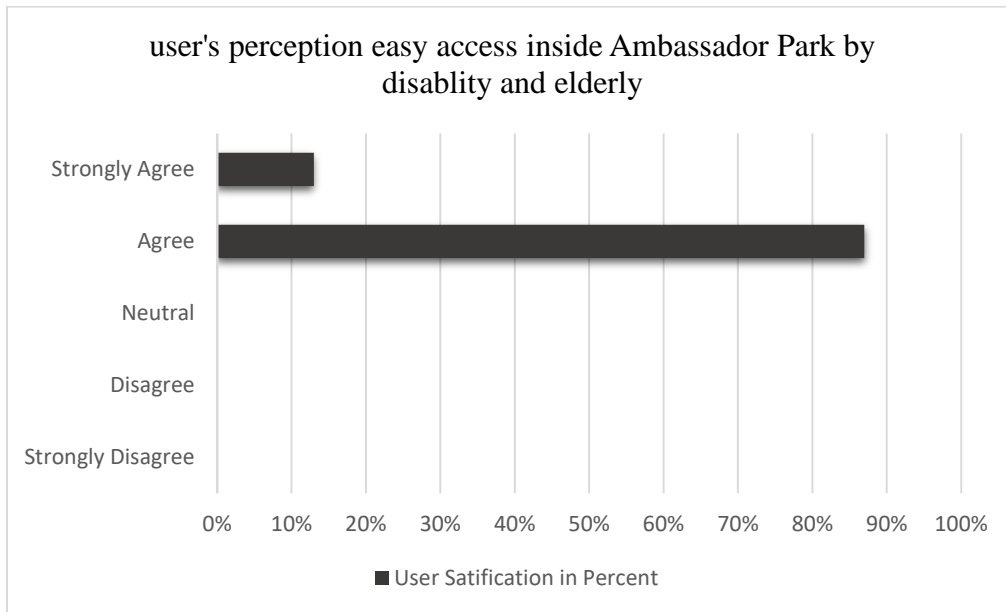


Table 4.3 shows the length of the journey to the park and the mode of transportation. Almost 80% of users live and work outside the park territory, and the travel time takes them more than an hour to arrive at the park. In comparison, 20% of respondents live and or work at the nearest location within walking distance and access the recreational park within 5 to 15 minutes. Of all

respondents, 60% use public transport (bus and taxi), 25.7% use a private car and ride, and 14.3% walk.

Table 4.3: length of the journey to the park and the mode of transportation

No	Travel time/ hrs.	No of Respondent	Respondent In percent	No of Respondent	Respondent In percent	Mode of Transportation
1	5 – 15 min (Walking Distance less than 400meters )	14	20%	9	64.3%	walking
				-	-	cycling
				4	28.6%	Public bus/taxi
				1	7.1%	Private Car
2	Less than an hr.	10	14.3%	1	10%	walking
				-	-	cycling
				5	50%	Public bus/taxi
				4	40%	Private Car
3	1 to 2 hours	38	54.28%	-	-	walking
				-	-	cycling
				29	76.4%	Public bus/taxi
				9	23.6%	Private Car
4	More than 2hrs to 4 hours	8	11.42%	-	-	walking
				-	-	cycling
				4	50%	Public bus/taxi
				4	50%	Private Car

### 4.1.3 Amenities and Furniture

Amenities and furniture used in the park have various designated purposes and create a sense of place and identity on the site. The park is more aesthetically appealing and physically comfortable and has pathway lights, seating furniture, waste bins, an artificial lake, unique food kiosks, and children's recreational structures. In addition, the park has a proper drainage system, a generator, and water reserves with a pumping system, which is illustrated in Figures 4.13 and 4.14 below.



Figure 4.13: Water reserve with pumping system



Figure 4.14: Generator house

### A. Presence of natural and artificial lighting

The park has enough natural light during the daytime, and canopy trees and plants have proper spacing to penetrate the sunlight. In addition, at night, the park has artificial outdoor light placed at 4 meters distance from the service zone, pedestrian walkways, and seating area. The park's natural daylight and artificial light are illustrated in Figures 4.15 and 4.16 below.



Figure 4.15: Natural Lighting in the park during day time

*Source: Abbas Shash, Twitter*



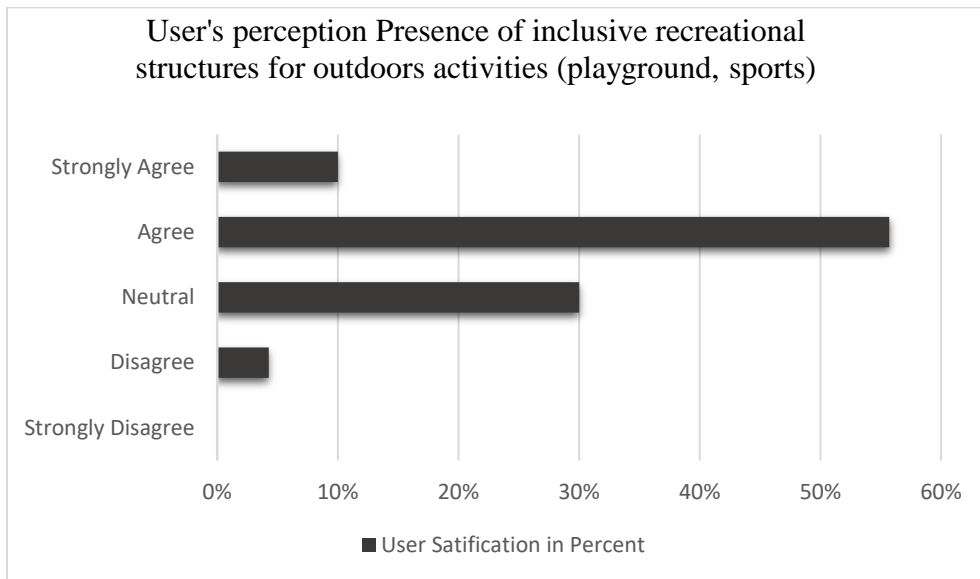
Figure 4.16: Artificial Lighting in the park during night time

*Source: Abbas Shash, Twitter*

## B. Presence of inclusive recreational structures for outdoors activities

Ambassador Park has recreational structures only for children; however, the park does not have a particular recreational structure, sport and playground, for youth, disabled, and elderly other than the outdoor seating facility. On Chart 4.8, users responded to their satisfaction with the availability and quality of service accordingly; 4.28% disagreed, 30% were neutral, 55.72% agreed, and 10% strongly agreed.

Chart 4.8: Presence of inclusive recreational structures for outdoors activities



## C. Presence and quality of seating and waste bin facility

In figures 4.17 and 4.18, the wooden seating types of furniture and waste bins are placed in proper standards (respecting the UGI standard) at different locations with different arrangements and designs to serve their purpose effectively. As a result, the seating furniture creates the settings for resting, sitting and eating, and social encounters with others and where the spatial quality of the space and activities are guided.



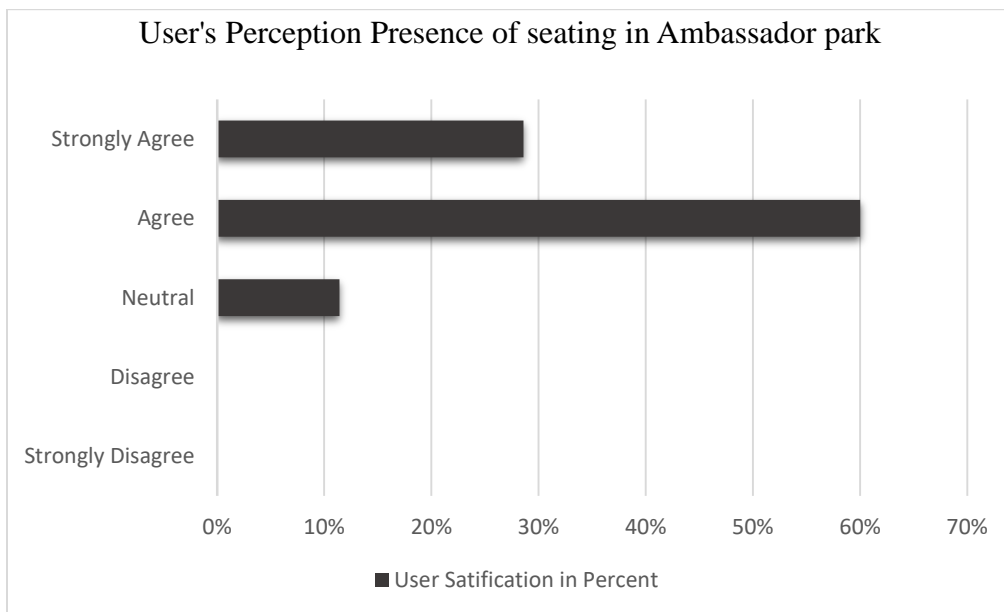
Figure 4.17: Seating Furniture for small group with waste bin



Figure 4.18: Seating Furniture for social small gathering

Ambassador Park has enough and various furniture, seating benches, and waste bins with standard dimensions and quality. The users' survey on Chart 4.9 indicates that 11.42% responded neutral on the available seating furniture in the park, 60% agreed, and 28.58% strongly agreed. Furthermore, waste bins are placed a short distance from the seating facility, along pedestrian walkways and the service zone. Users responded on the availability of enough waste bin facilities, respectively strongly agreed with 7.2% and agreed with 92.8%.

Chart 4.9: User's perception Presence of seating facilities



#### D. Presence and quality of toilets facility

Access to safe, clean water and sanitation without social or physical barriers for all visitors is determining factor for the physical quality of the park. Ambassador Park has safe access and clean and adequate toilets for the users, as illustrated in Figures 4.19 and 4.20 below. However, the design doesn't accommodate physically disabled people and elderly. Accordingly, Chart 4.10 shows that 57.13% of respondents agreed, 28.57% were neutral, and 14.3% disagreed about the park's availability and quality of toilet facilities.

Chart 4.10: User's perception of presence and quality of toilet facility in Ambassador Park

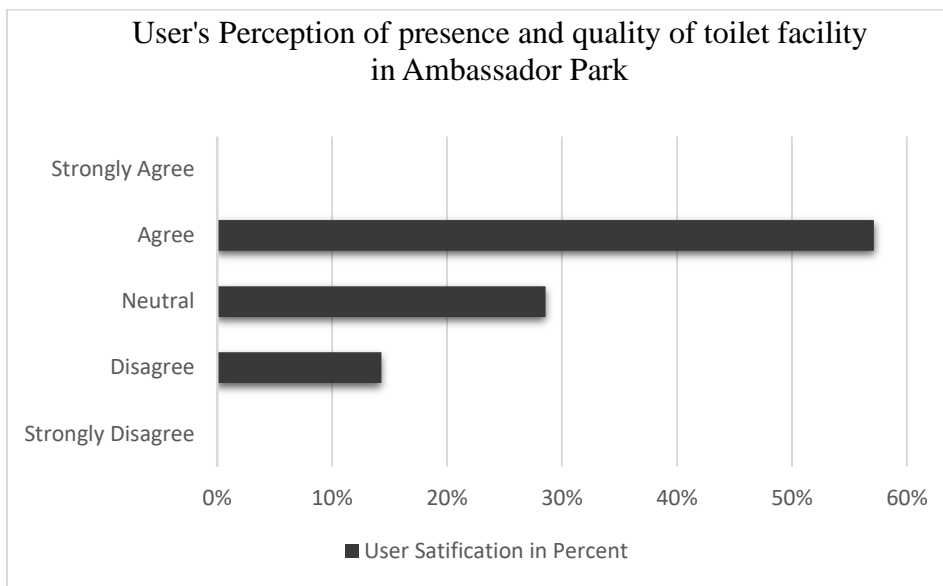


Figure 4.19: User Friendly access to public toilet



Figure 4.20: Clean toilet indoor space with hand wash and seat

## **E. Presence and quality of signage and emergency items**

Signs are most effective at communicating information and safety messages in the park. From site observation, Ambassador Park does not have signage. As a result, it is difficult for users, especially people with hearing disabilities, to access services and facilities. Users are also not informed about the park rules and regulations on what to do or not to do in the recreational park.

### **4.1.4 Comfort and Safety**

#### **A. Perception of safety and level of security**

Healthy behavior in the public recreational park increases social capital by providing a meeting place where people can develop social ties and a safe and comfortable space. Ambassador Park has good social behavior meaning that the recreational park is well-fenced to protect from intruders, vandalism, and theft, and smoking is prohibited. As illustrated in Figure 4.21, the park has passive and active surveillance, security guards, and CCTV.



Figure 4.21: Passive and Active Surveillance

Figure 4.22 illustrates the safe environment for children in the Ambassadors' children's playground and the park compound. Furthermore, the user's satisfaction survey on Charts 4.11 and 4.12 showed that 77.14% agreed and 22.86% strongly agreed on the presence of safety and comfort in the park. In addition, the park is safe for children to play and move around, and parents and users responded 55.7% strongly agreed, and 44.3% agreed.

Chart 4.11: User's Perception of presence of safety and level of security of Ambassador Park

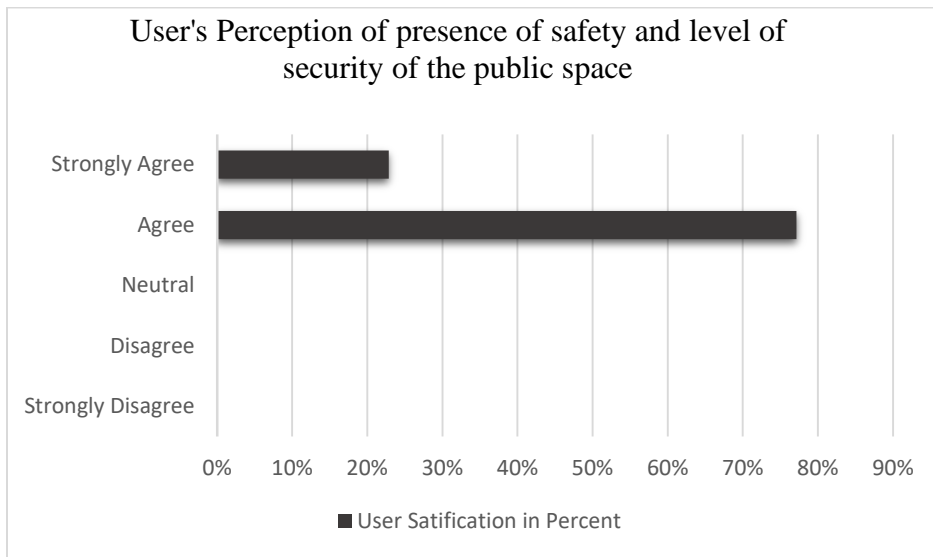


Chart 4.12: User's Perception of presence of children's playground space safety of the Ambassador Park

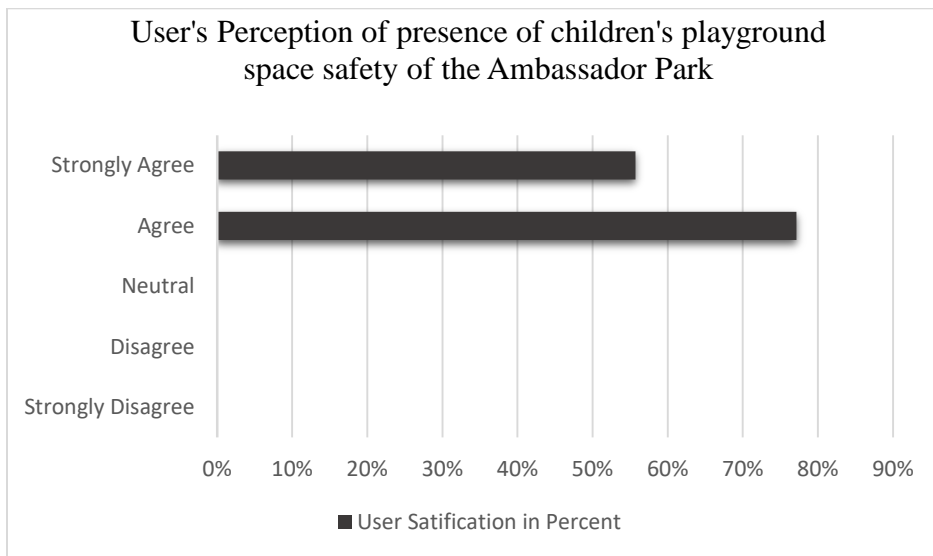


Figure 4.22: Safe Children Playing Area  
Source: Abbas Shash, Twitter

## B. Quality of sensorial experience

- **Presence of pleasant views**

As illustrated in Figure 4.23 to 4.25, the park has a beautiful outlook, and the stone tower and artificial lake are scenic parts of the park and give aesthetic pleasure to the space. The green canopy of trees and plants increases the aesthetic quality of the recreational area with its physical function and creates a sense of space. In addition, the park's built structure (hexagonal kiosks, benches, handrails, and waste bins) adopts natural elements and is constructed using wood and stone to harmonize with nature.



Figure 4.23: Artificial Lake in the park  
*Source: Abbas Shash,, Twitter*



Figure 4.24: Beautiful Fauna and Flora  
*Source: Abbas Shash, Twitter*



Figure 4.25: Panoramic View of Ambassador Park of visual quality

- **Presence of pleasant smell**

Ambassador Park is affected by unpleasant smells and smock drift by the wind from the adjacent polluted river and Zewditu Hospital's medical waste burn. As well as, the vulture scavenger birds' feces smell affects the park users. Despite their droppings, sharp nails and beaks leave deep scratches on trees, handrails, benches, and pavement and deprive the park's material quality and physical infrastructure. It is also illustrated in Figures 4.26 and 4.27 below.



Figure 4.26: Smock affect outdoor area



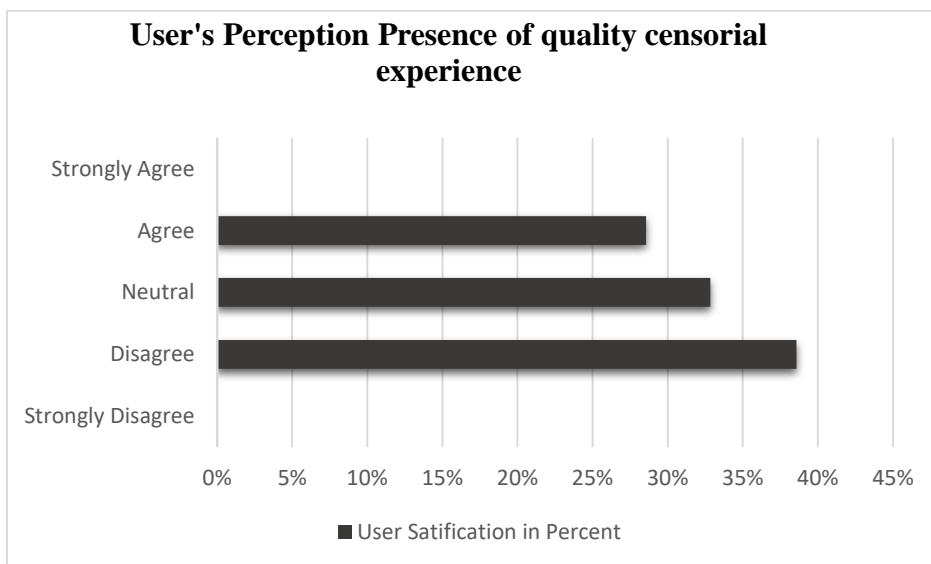
Figure 4.27: Benches affected by scavenger

- **Presence of pleasant sound**

Ambassador Park, street-level noise exposure depends on traffic volume pick hours and ranges from 61.8 dB to 72.2dBs from the Taitu Street and Yehanis Street direction. Seating spaces along the two principal streets are more affected than any other space in the compound. In addition, the loud music in the park also creates discomfort for the visitors.

The park user’s satisfaction survey on Chart 4.13 indicates the presence of quality sensory experiences such as protection from noise, dust, and smell. Users responded 38.58% strongly disagreed, 32.85% were Neutral, and 28.57% agreed.

Chart 4.13: User’s Perception Presence of quality censorial experience



### C. Presence of covered areas from rain and heat

As illustrated in Figure 4.28, Ambassador Park has features sheltered from the sun, but people are not protected from rain during the wet weather. On Chart 4.14, 17.25% of users responded strongly disagreed, 48.57% were neutral, and 34.28% agreed on the facility of shelter from the sun and rain.

Chart 4.14: Ambassador Park User's Perception Presence of covered areas from rain and heat

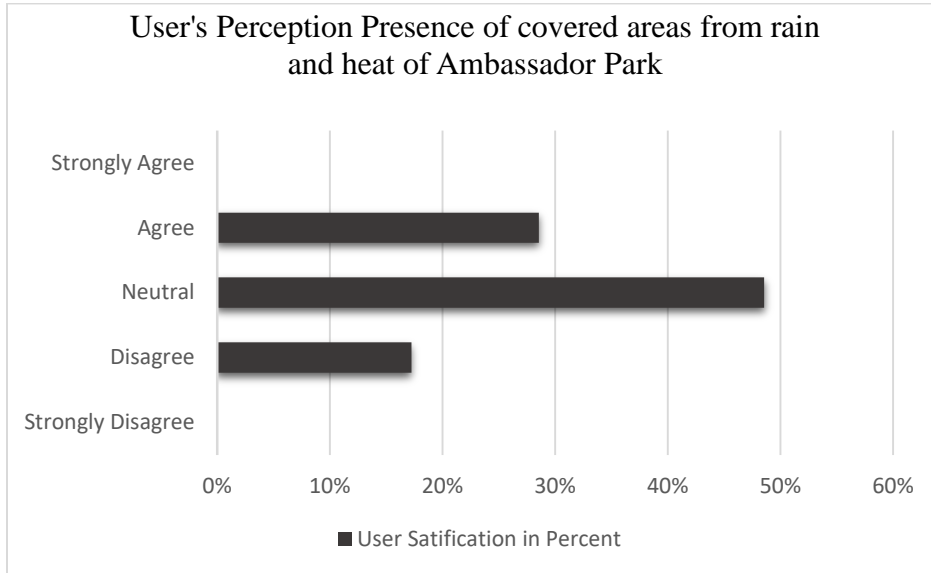


Figure 4.28: Shade outdoor seating area

## 4.1.5 Green Environment

### A. Presence and quality of biodiversity

Ambassador Park comprises different biodiversity endemic plants, trees, grasses, shrubs, and other plants. AACPPO gathered data, and site observation shows that it has a green coverage ratio of 75 % green/soft components (trees, shrubs, plants, green surface) and 25 % other components. Figures 4.29 and 4.30 illustrate the existing biodiversity and landscape of the park.



Figure 4.29: Fauna and Flora in Ambassador Park

Source: <https://zanalandscaping.com/>



Figure 4.30: Green Cover and landscape

Source: Abbas Shash, Twitter

### B. Environmental and community resilience

The park uses active and passive approaches to manage the surface water runoff in the rainy season. The large green area of the park is porous, and it maintains standard slopes with vegetation which contribute to the surface water runoff mitigation. And also, the impervious surface of the park is well-designed with curbstones and drainage system expansion, as illustrated in Figure 4.31.



Figure 4.31: Impervious surface with drainage line

### **C. Presence of energy efficient elements**

The park uses energy in a non-cost-effective manner to provide a service. Particularly, the park lacks energy-efficient systems such as solar energy systems, waste composting systems, usage of recyclable material, and rainwater collector.

#### **Site Specific Assessment result**

Based on site observation, surveyed data, and quality assessment score Ambassador Park has good spatial and physical quality. On the quality assessment score comfort and facility has the highest rank as shown on Table 4.4 below.

Table 4.4: Quality Assessment of Ambassador Park

<b>No</b>	<b>Dimension</b>	<b>Quality Assessment</b>
1	Use And Users	3.17
2	Accessibility	3.06
3	Facilities	3.79
4	Comfort	3.96
5	Green Coverage	2.78
Average		3.35

## 4.2 Lideta Park

### 4.2.1 Use and User

#### A Number and variety of users accessing the public space

Lideta Park is open from 8:30 am to 5:30 pm, Monday to Sunday, and the recreational park comprises various users. On the survey, users were categorized based on their age, gender, and physical condition. The study evaluates the volume of users throughout different timelines and days.

Table 4.5 and Table 4.6 shows that out of overall respondents, 35.72% are youth who fall below the age of 19- 35 are major recreational park users in the area, followed by 21.42% aged between 36- 65, 21.14% teenage 13-18 years. In addition, those above 65 years make up 11.72% and children below the age of 12 were 10% of the recreational park users. The analysis infers that more than 62.86% of recreational park users are below 35, including children and teenagers. Also, of the overall users, 53.49% are male, 46.51% are female, and 1.07% are disabled.

Table 4.5: Numbers of users of Lideta Park based on their age categories and in days ranges

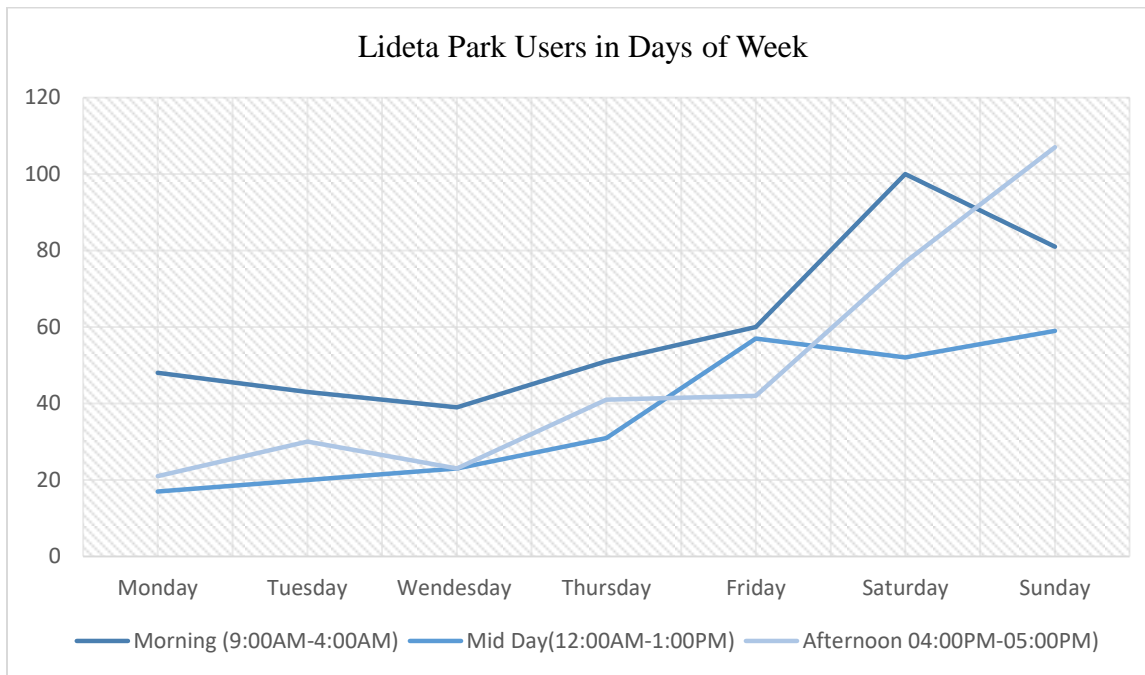
No	Age	Days of the week							Total user based on Ages	Total user based on Percent
		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday		
1	Under 12 Years	9	9	9	12	16	23	25	<b>93</b>	<b>10%</b>
2	12 -18 Years	18	20	18	26	33	48	52	<b>215</b>	<b>21.14%</b>
3	19 -35 Years	30	33	30	44	57	82	88	<b>364</b>	<b>35.72%</b>
4	36 – 65 Years	19	20	18	26	34	49	53	<b>219</b>	<b>21.42%</b>
5	Above 65 Years	10	11	10	15	19	27	29	<b>121</b>	<b>11.72%</b>
	Total User per days	<b>86</b>	<b>93</b>	<b>85</b>	<b>123</b>	<b>159</b>	<b>229</b>	<b>247</b>	<b>1022</b>	<b>100%</b>

Table 4.6: Numbers of users of Lideta Park based on their gender and physical condition

No	Age	Days of the week							Total user based on Ages	Total user based on Percent
		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday		
	Total User per days	<b>86</b>	<b>93</b>	<b>85</b>	<b>123</b>	<b>159</b>	<b>229</b>	<b>247</b>	<b>1022</b>	<b>100%</b>
1	Gender									
	Male	<b>46</b>	<b>50</b>	<b>47</b>	<b>69</b>	<b>85</b>	<b>129</b>	<b>127</b>	<b>553</b>	<b>52.4%</b>
	Female	<b>40</b>	<b>43</b>	<b>43</b>	<b>54</b>	<b>74</b>	<b>100</b>	<b>120</b>	<b>469</b>	<b>47.6%</b>
2	Disable	<b>2</b>	<b>2</b>	<b>-</b>	<b>-</b>	<b>1</b>	<b>4</b>	<b>2</b>	<b>11</b>	<b>1.07%</b>
	Male	<b>2</b>	<b>2</b>	<b>-</b>	<b>-</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>9</b>	<b>81%</b>
	Female	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>19%</b>

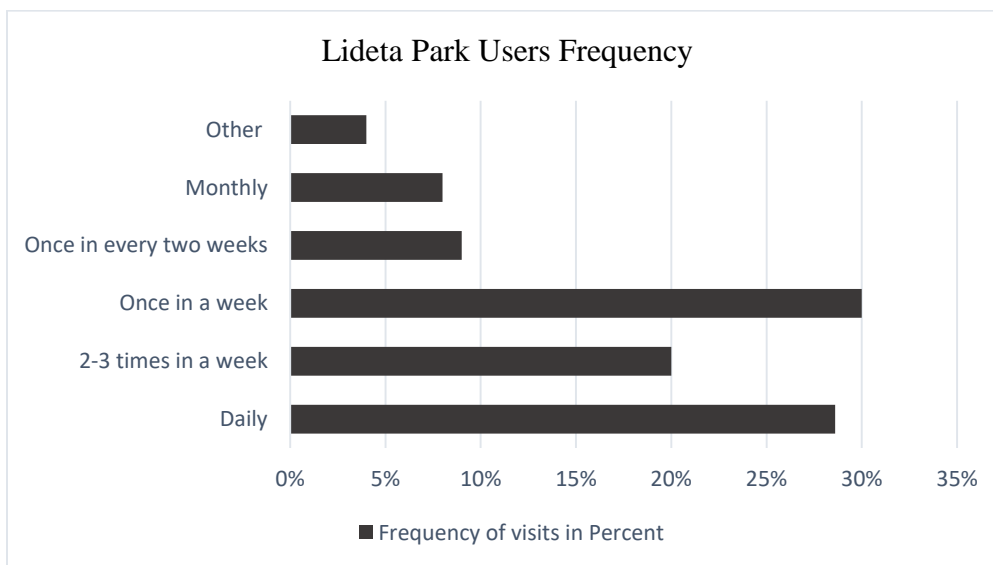
The number of users is higher in the morning time (8:30 a.m. -10:00 a.m.) on the day of weekdays and also on weekends. As shown in Chart 4.15 below, 53.43% of average users use the recreational park on weekdays, and 46.57% of average users on weekends.

Chart 4.15: The number of users in a day's interval of Lideta Park users in days of week



The frequency of public recreational park users varies, and it is listed based on its hierarchy, 30% visit once a week, 29% daily, and 20% once a time for two weeks. 9% visit the public recreational once in two weeks, and 8% visit monthly, while those who occasionally and rarely visit the public recreational park of their choice make up 4%, illustrated in Chart 4.16.

Chart 4.16: The level of users' recurrence of Lideta Park



## B. Number and variety of activities observed in the public space among time and space

Lideta Park accommodates a variety of activities and gives service to the public. café and restaurant, book shop, children's playground, venue for photo/video shooting which is illustrated in Figures 4.32 to 4.36. The survey shown in Chart 4.17, users come to the park to get fresh air and enjoy the surroundings were responded 36%, read books 24%, meet people and friends 29%, visit children's playground 6%, and photo shooting 6%.

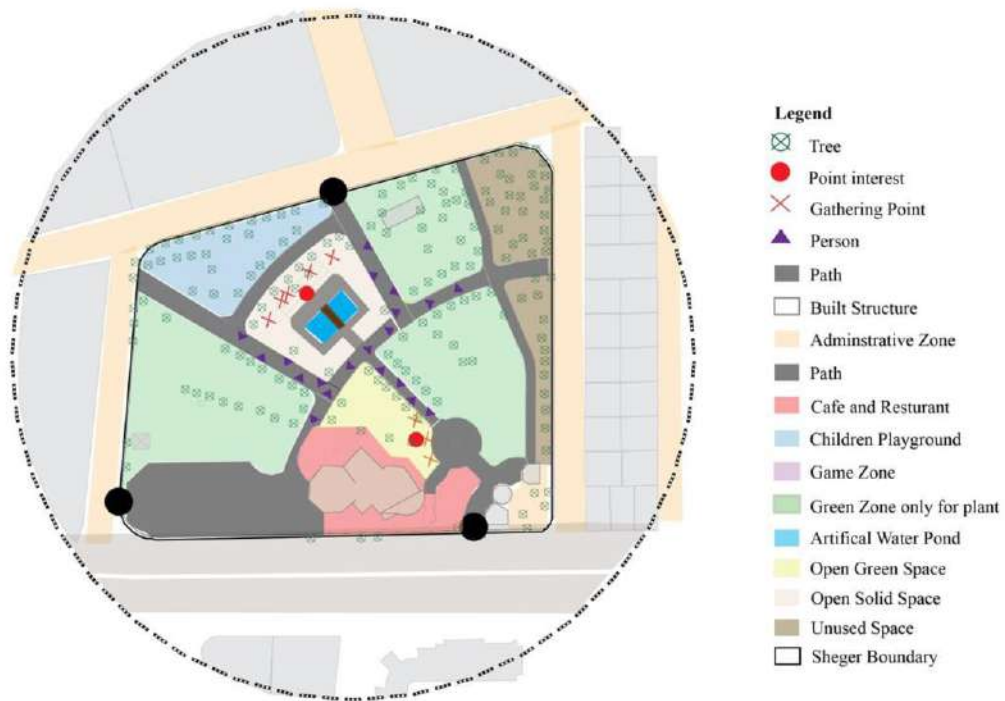


Figure 4.32: Lideta Park use and activity spatial zone



Figure 4.33: Book shop and outdoor reading space



Figure 4.34: Café and restaurant

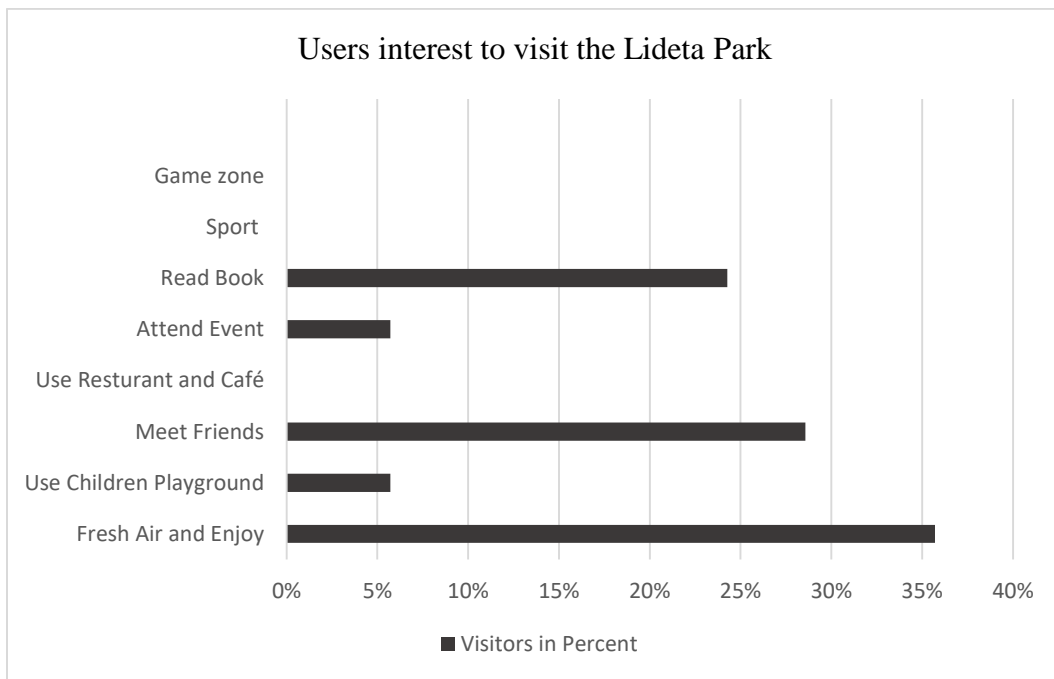


Figure 4.35: Children playground



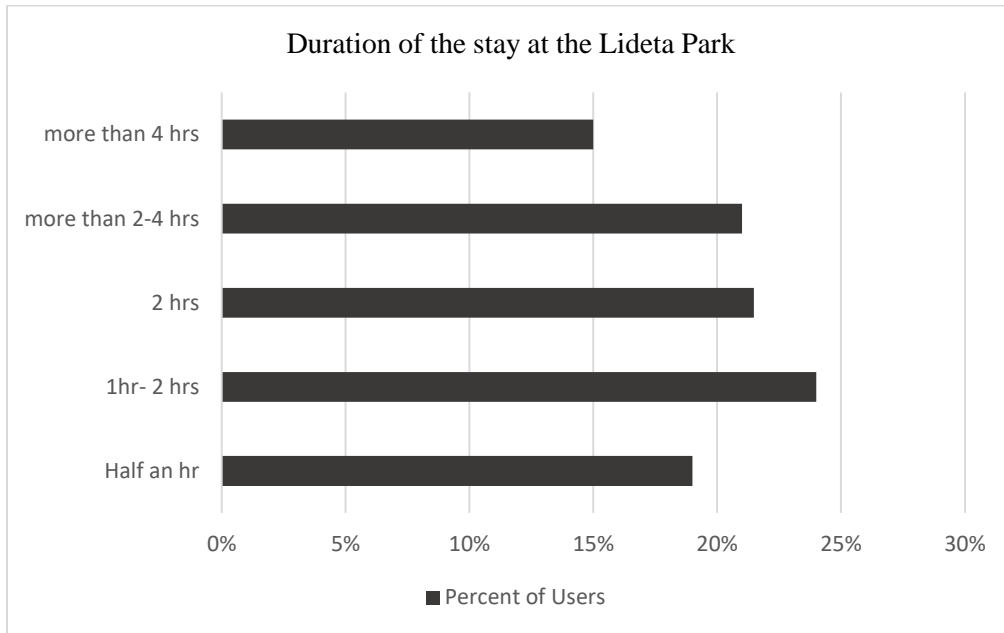
Figure 4.36: Outdoor Seating space

Chart 4.17: Users interest to visit Lideta Park



Of all survey respondents, most users preferred to stay for 1-2 hours respond 24%, followed by 21 % each between half an hour and 2-4 hours, 19% for half an hour, and the last 15% of users stayed more than four hours and it shows on the Chart 4.18 below.

Chart 4.18: Length of time spent at the Lideta Park



#### 4.2.2 Accessibility

Figure 4.37 illustrate that Lideta Park is accessible within walking distance from Balcha Hospital (Lideta bus/ taxi station). The park is also situated between Lideta to Darmar roads and is accessible using public transportation and private car. The pedestrian walkways toward the park are safe and inclusive for pedestrians and have proper pavement with tactile, curb ramps, and zebra crossing.



Figure 4.37: Lideta Parks' surrounding access routes, Google map 2020

As shown on Chart 4.19, 2.85% of users responded disagreed, 41.44% were neutral, and 55.71% agreed that people could find the park easy to access through a network of paths, streets, public transport, and signage. The park has three entrances, and people can access the front and back gate illustrated in Figures 4.38 and 4.39 below.

Chart 4.19: User's perception of easy access to Lideta Park vicinity

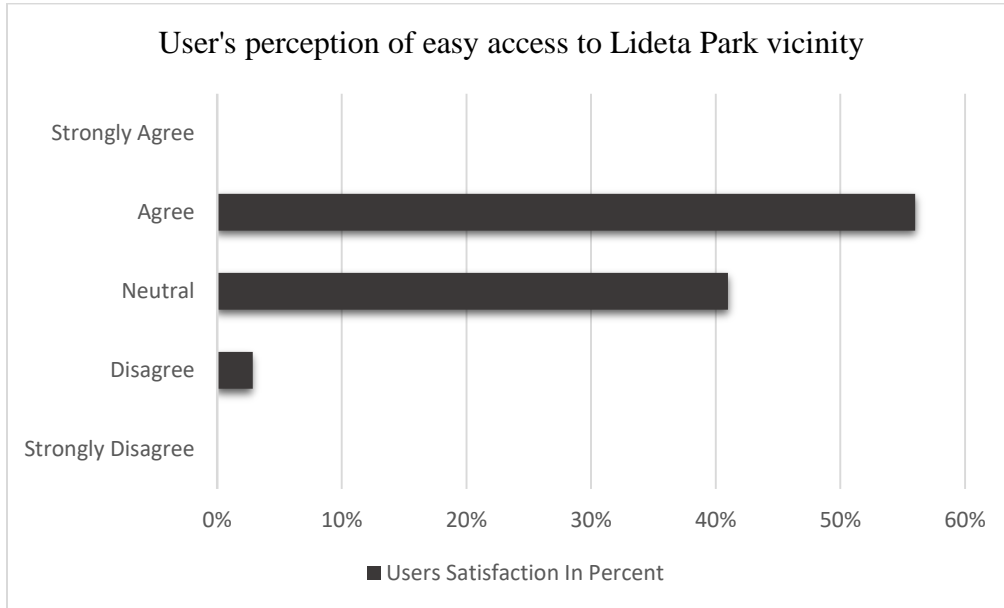


Figure 4.38: Pedestrian Access to the Park



Figure 4.39: Lideta Park main entrance

The 360 photography in Figure 4.40 shows the park surrounding from a different angle. The median section of the street, the zebra crossing, the pedestrian refuge with the crossing sign, and there is on-street parking on both sides of the roads.



Figure 4.40: Panoramic view of Lideta Park surrounding access routes

### Accessibility inside the park

Lideta Park has no designated parking space and a path for vehicles and cycles inside the park. Figure 4.41 to 4.45 illustrate that pedestrians use cobblestone circulation paths which is bumpy and unsuitable for wheelchairs, and the ramp is only available at the entrance, not in the compound.

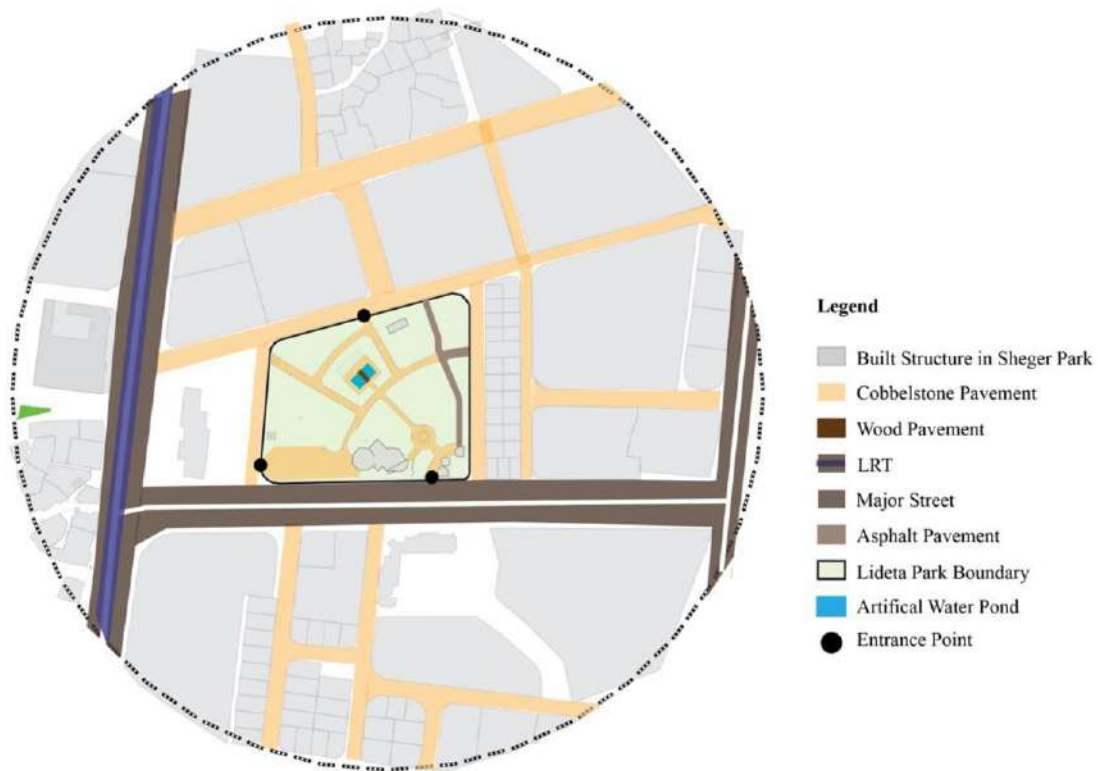


Figure 4.41: Lideta Park road network and pedestrian walkways



Figure 4.42: Cobblestone Pedestrian path



Figure 4.43: Pedestrian step asphalt path



Figure 4.44: Access to raised seating platform



Figure 4.45: Uneven stair access to restroom

In addition, from the user's satisfaction survey on Charts 4.20 and 4.21, 37.14% of users agreed that the park is easy to move around the space by all ages, 55.71% were neutral, and 7.14% responded disagreed. The park accessibility for disabled people and the elderly responded, 20% strongly disagreed, 44.28% disagreed, and 35.71% were neutral.

Chart 4.20: User's perception of easy access to Lideta Park vicinity

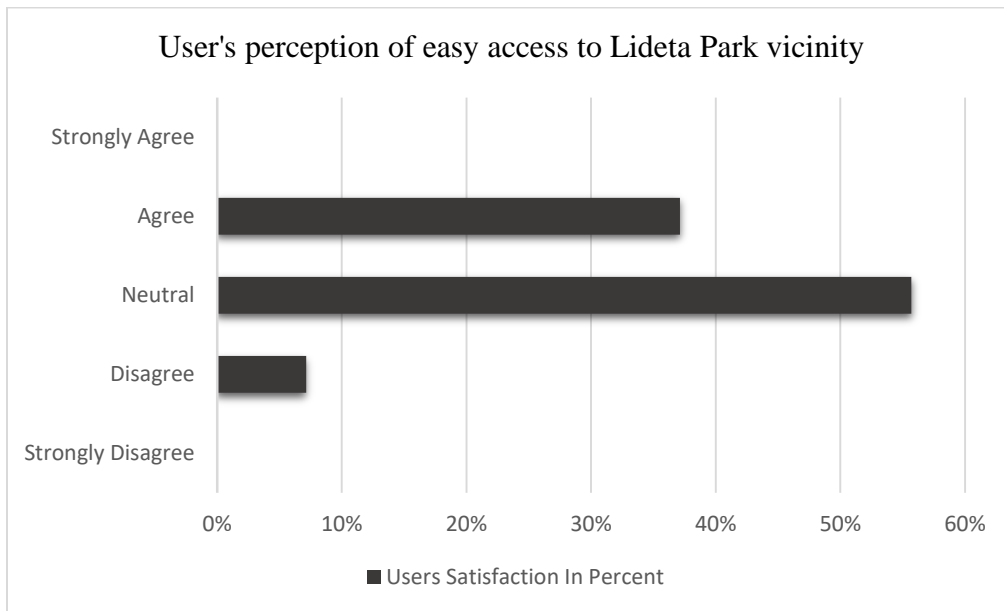


Chart 4.21: User's perception of easy access inside Lideta Park by disability and elderly

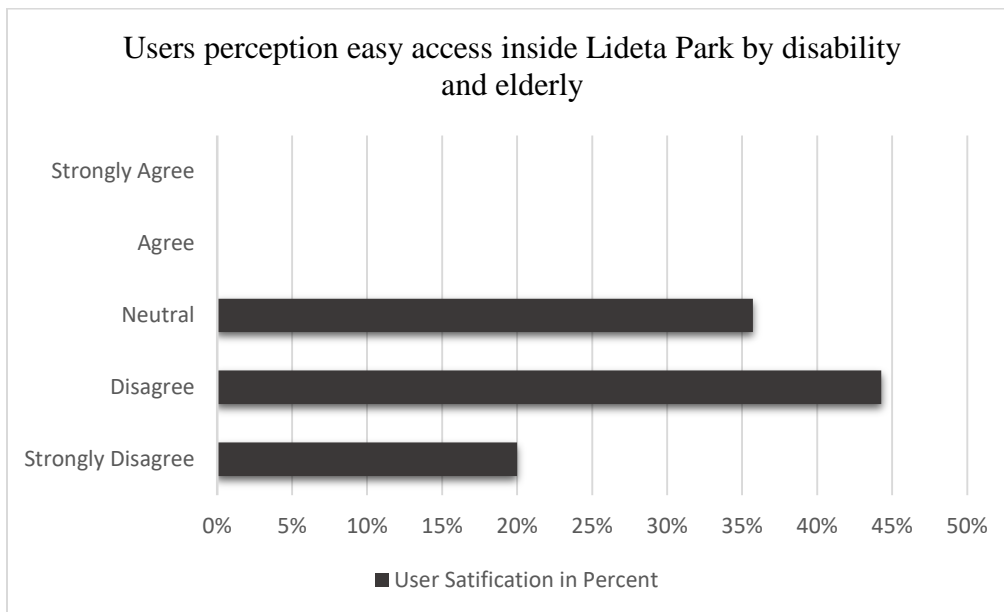


Table 4.7 shows the length of the journey to the park and the mode of transportation used. Out of the total number of respondents, 78.57% access the park from a nearby location and 92% of use walking, and 8% use public transport. 11.43% of respondents took a journey of less than 1hr, 60% used walking, and 40% used public transportation. 90% of respondents used public transport, and 10% used a private car.

Table 4.7: Length of the journey to the park and the mode of transportation

No	Travel time/ hrs.	No of Respondent	Respondent In percent	No of Respondent	Respondent In percent	Mode of Transportation
1	5 – 15 min (Walking Distance less than 400meters )	55	78.57%	50	92%	walking
				-	-	cycling
				5	8%	Public bus/taxi
				-	-	Private Car
2	Less than an hr.	8	11.43%	5	10%	walking
				-	-	cycling
				3	50%	Public bus/taxi
				-	40%	Private Car
3	1 to 2 hours	7	10%	-	-	walking
				-	-	cycling
				6	90%	Public bus/taxi
				1	10%	Private Car
4	More than 2hrs to 4 hours	0	0	-	-	walking
				-	-	cycling
				-	-	Public bus/taxi
				-	-	Private Car

### 4.2.3 Amenities and Furniture

Lideta Park's raised platform creates a vantage point and places identity in the park. The park has dysfunctional fountains and a water pond, possibly adding more aesthetical value if well maintained. The park's spatial and physical comfort is challenged by the existing poor and lacking infrastructure such as an electric line, water pumping systems, drainage lines, and generators.

### **A Presence of natural and artificial light**

Lideta Park has good natural light and clear visual sight, as illustrated in Figures 4.46 and 4.47. Trees are placed in standard clearance width at the corner of the park and along walkways. However, the park does not have artificial light, and users only access and use the park in the daytime.



Figure 4.46: Natural light during day time

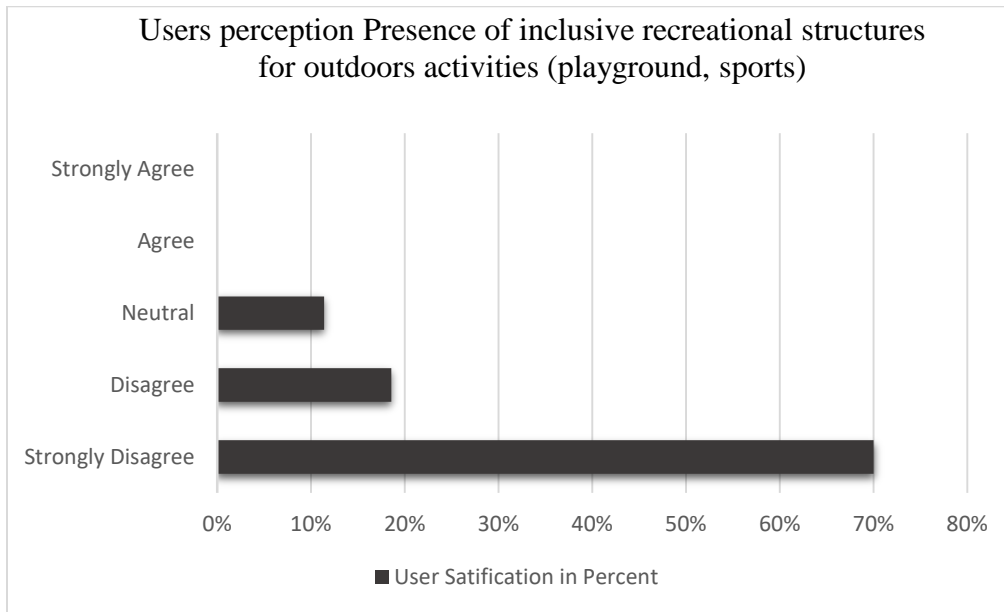


Figure 4.47: Clear visual connection to wider space of the park

### **B Presence and quality of amenities for recreational structures**

Users' satisfaction with the presence and quality of amenities for recreational structures were assessed, such as the children's playground, youth game zone, seating space, and sports ground field. Chart 4.22 shows that out of the total number of respondents, only 11.43% responded neutral, 18.57% of users strongly disagreed with the facility, and 70% disagreed. Therefore, the statistics infer the lack of diverse and inadequate recreational facilities to satisfy the users' needs.

Chart 4.22: Presence of inclusive recreational structures for outdoors activities (playground, sports)



### C Presence and quality of seating and waste bin facility

Wooden and metal-made seating furniture is placed linearly by the side of the pedestrian walkways, and a raised concert platform is situated at the park's edge. However, both seating facilities do not respect the standard seating size, as shown in Figures 4.48 to 4.51.

In addition, the survey on Chart 4.23 indicate that 14.28% of user responded disagreed, 14.26% strongly disagreed, 27.14 % were neutral, and 44.3% agreed with seating facility availability and variety. Users responded on the availability of enough waste bin facilities respectively, 14.28% disagreed, 45.71% were neutral, and 40% agreed. In addition, uncovered waste bins are only placed on the pedestrian walkways and are not easily accessible in the park compound, particularly for people using the seating space. Therefore, from the site observation and user survey, the furniture's typical design, poor quality, and arrangement in the space cause an adverse physical and spatial quality and do not encourage the user to interact.



Figure 4.48: Wooden furniture alongside of pedestrian walkways



Figure 4.49: Raised concert platform seating area

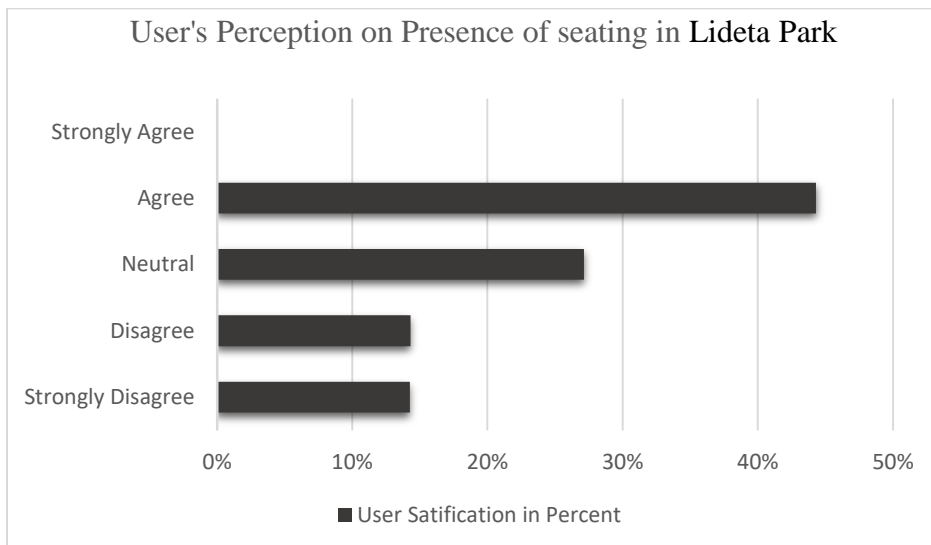


Figure 4.50: Metal-made furniture alongside of pedestrian walkways



Figure 4.51: Uncovered waste bins

Chart 4.23: User's perception on presence of seating facility in Lideta Park



## D Presence of toilet

The public toilet is located at the edge of the park and is not accessible to physically disabled people, illustrated in Figures 4.52 and 4.53 below. The park also gives shower services with payment to people working and living in the nearby market district (Sebategnia, Abenet, and Autobustera). As shown on Chart 4.24, Users responded to the availability and quality of toilet facilities in the park accordingly; 30% strongly disagreed, 50% disagreed, and 20% were neutral.

Chart 4.24: User's Perception of presence and quality of toilet facility in Lideta Park

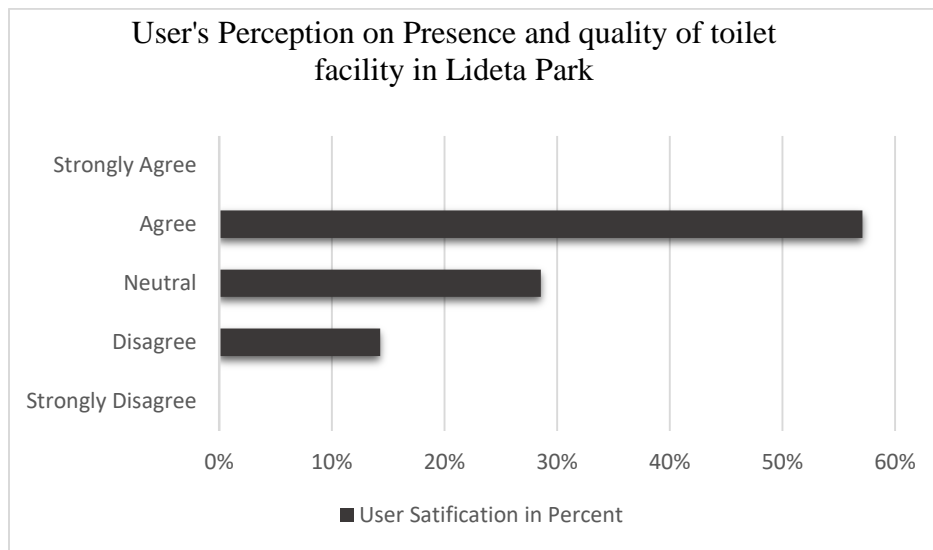


Figure 4.52: User unfriendly and uneven access to public toilet



Figure 4.53: Toilet indoor space with hand wash and seat

## **E Presence and quality of signage and emergency items**

The park has signage marks at the entrance and near the toilet. As shown in the Figure 4.54, it is difficult to visually trace the information due to its small size, hidden location, improper sign height, and poor appearance.



Figure 4.54: Substandard signage

## **5.2.4 Comfort and Safety**

### **A Perception of safety and level of security**

Lideta Park is well-fenced to protect from intruders, vandalism, and theft. However, homeless people access and use the park as shelter, illustrated in Figure 4.55. They prefer the children's playground area because it is behind the raised platform, covered by shrubs, and out of sight. As shown in Figure 4.56, the park also serves as a home for street dogs living in the park compound with uncovered utility holes. The park also has security guards; however, it has poor passive and active surveillance.



Figure 4.55: Homeless people using children's playground as shelter



Figure 4.56: Street dogs shelter place in Lideta Park

Accordingly, from the overall satisfaction survey on Charts 4.25 and 4.26, 58.57% of users responded neutral, 28.57% agreed, and 12.86% strongly agreed on the presence of safety and comfort in the park during the daytime. In addition, the children's playground is not covered by grass and does not have a safety surface, illustrated in Figures 4.57 and 4.58. Parents responded that 62.85% strongly disagreed with the quality and safety of children's playground space, and the rest, 37.15%, disagreed.

Chart 4.25: User's Perception of presence of safety and level of security of Lideta Park

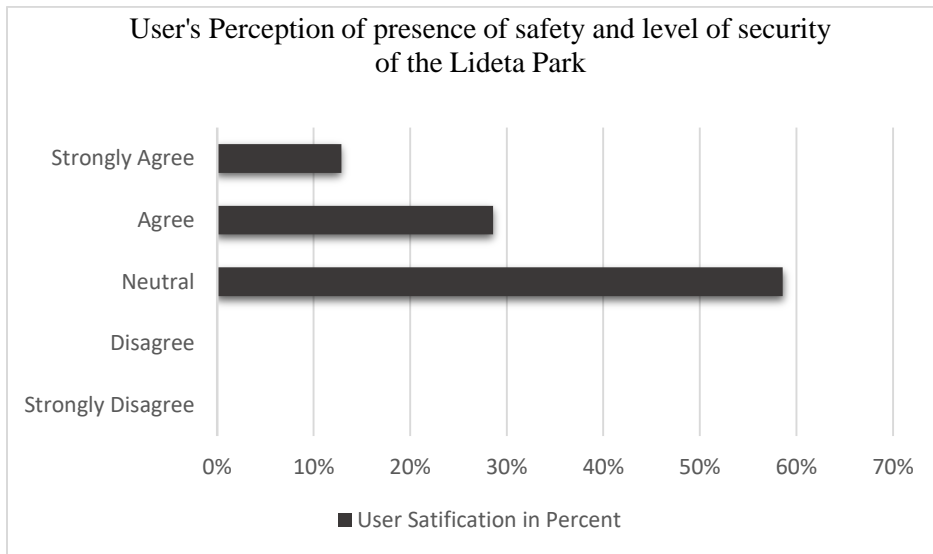


Chart 4.26: User's Perception of presence of children's playground space safety of Lideta Park

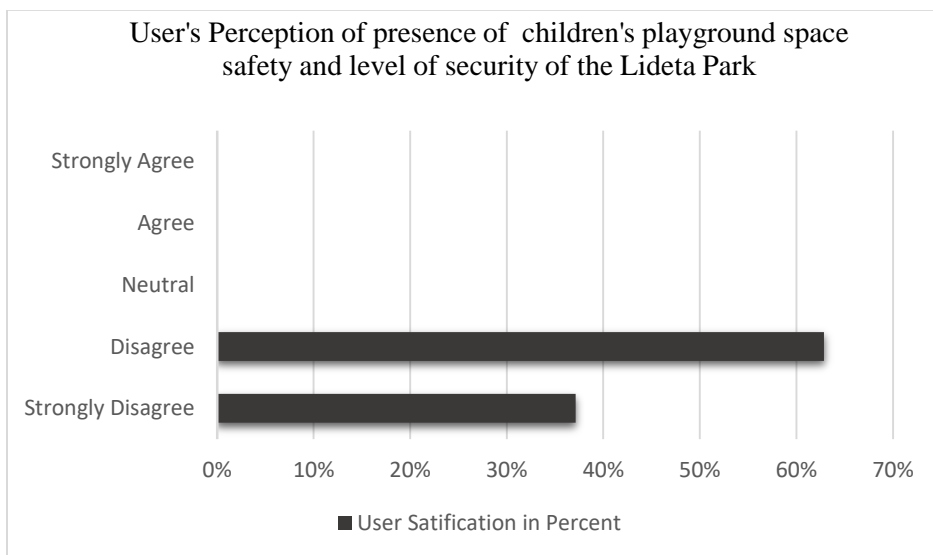




Figure 4.57: Children playground



Figure 4.58: Uncovered manholes in the park compound

## **B Quality of sensorial experience**

### **Presence of pleasant views**

The park has a beautiful view from the raised platform toward the artificial pond and the main entrance, as shown in Figures 4.59 and 4.60. And unfortunately, the water and fountain were expected to be interesting viewpoint to the park however, both are completely out of function.



Figure 4.59: Panoramic view toward the water pond



Figure 4.60: Panoramic view toward the raised seating platform

Figures 4.61 and 4.62 show that the park is poorly maintained and clean. Also, there is a quarry of leftover construction materials and broken furniture repair waste in the compound, affecting the park's circulation and visual quality.



Figure 4.61: Repair waste at entrance



Figure 4.62: Construction waste in the park compound

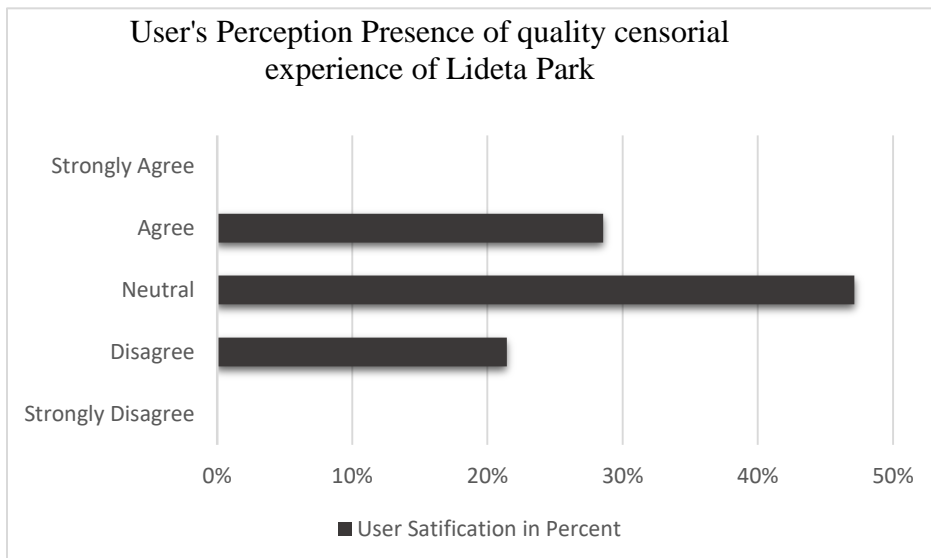
### C Presence of pleasant smell

A pleasant smell has positively influenced visitors. However, the field experiment reveals that the park neither has a pleasant or nasty fragrance.

### D Presence of pleasant sound

The park is affected by high-volume sounds and noise from nearby bars and restaurants. The finding shows that 52.7 dB to 74.6 dB are the park's sound level range. The survey on Chart 4.27 indicates that 21.43% of users disagreed that they are protected from noise, dust, unpleasant smells, smock, or pollution, 47.14% responded neutral, and 31.43% agreed.

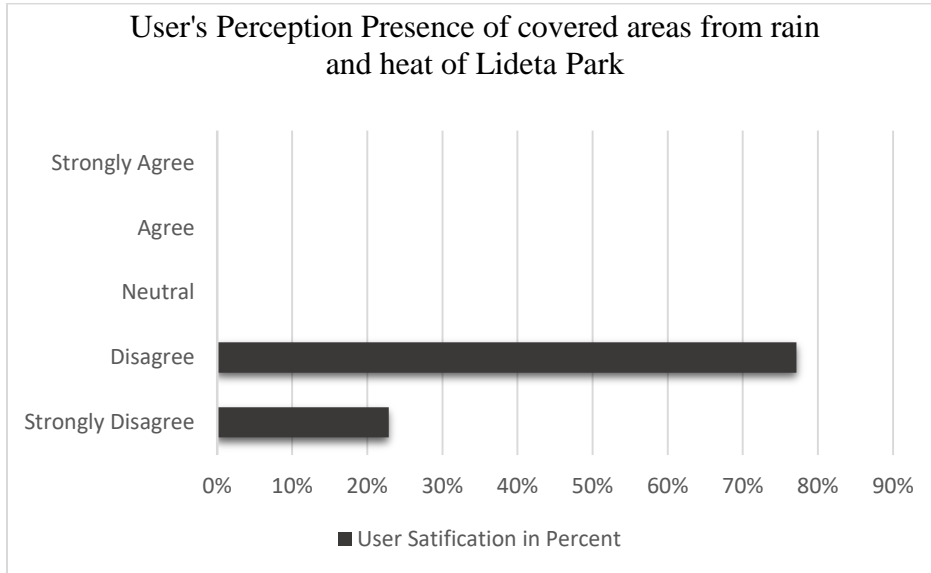
Chart 4.27: User's Perception Presence of quality censorial experience of Lideta Park



### E Presence of covered areas from rain and heat

The park does not have features sheltered from sun and rain. Accordingly, users responded 22.85% strongly disagreed, and 77.14% disagreed with the presence of covered area or shade from rain and heat, as shown in Chart 4.28.

Chart 4.28: User's Perception Presence of covered areas from rain and heat of Lideta Park



## 4.2.5 Green Environment

### A Presence and quality of biodiversity

Lideta Park's green coverage is composed of different biodiversity of plants, trees, grasses, and shrubs. It has 80 % green and soft components and 20 % hard components, illustrated in Figures 4.63 and 4.64 below.



Figure 4.63: Green cover and landscape



Figure 4.64: Hard surface integrated with green cover

## **B Environmental and community resilience**

As illustrated in Figures 4.65 and 4.66, Lideta Park is not free from storm-water flood risk because it does not have an active rainwater mitigation system. The park has a nonfunctional fountain and an artificial pond with no water filtering system or outlet. The permeable cobblestone pedestrian walkway with curb stone has no drainage line.



Figure 4.65: Fountain



Figure 4.66: Artificial Lake

## **C Presence of energy efficient elements**

From site observation, the park does not respond to the energy-efficient, meaning that it does not have a rainwater collector, or recyclable material, does not have composting, and does not use solar energy.

## **Site Specific Assessment result**

Based on observation and surveyed data, the quality assessment score of Lideta Park is below the standard. On the quality assessment score, the park scored the highest rank on green coverage and accessibility and lowest on the facility and use and user, as shown in Table 4.8 below.

Table 4.8: Quality Assessment of Lideta Park

No	Dimension	Quality Assessment
1	Use And Users	2.20
2	Accessibility	2.82
3	Facilities	1.75
4	Comfort	2.53
5	Green Coverage	2.92
Average		2.44

## 4.3 Sheger Park

### 4.3.1 Use and User

#### A Number and variety of users accessing the public space

Sheger recreational park is well known as venue for wedding event and photo shooting. From the field observation, the frequent visitors use the park on different timelines and days, and the park is open only daytime from 8:30 am - 5:30 pm Monday to Sunday.

Table 4.9 and Table 4.10 shows below, the numbers of users and their variety during the daytime. Out of 652 numbers of users 42.7% are youth who fall below the age of 18- 35 and they are major recreational park uses in the area, followed by 30.4 % teenage between the age of 13- 18 and children below the age of 12 years, 14.9%. In addition, those 35-65 years make up 10 % and the elderly above 65 years 2 % of the recreational park users.

The analysis indicates that more than 88% of recreational park users are below 35 years, including children and teenagers. Also, of the overall users, 77.5 % are male, 22.5% are female, and 0.4% are people with disability.

Table 4.9: Numbers of users of Sheger Park based on their age categories and in days ranges

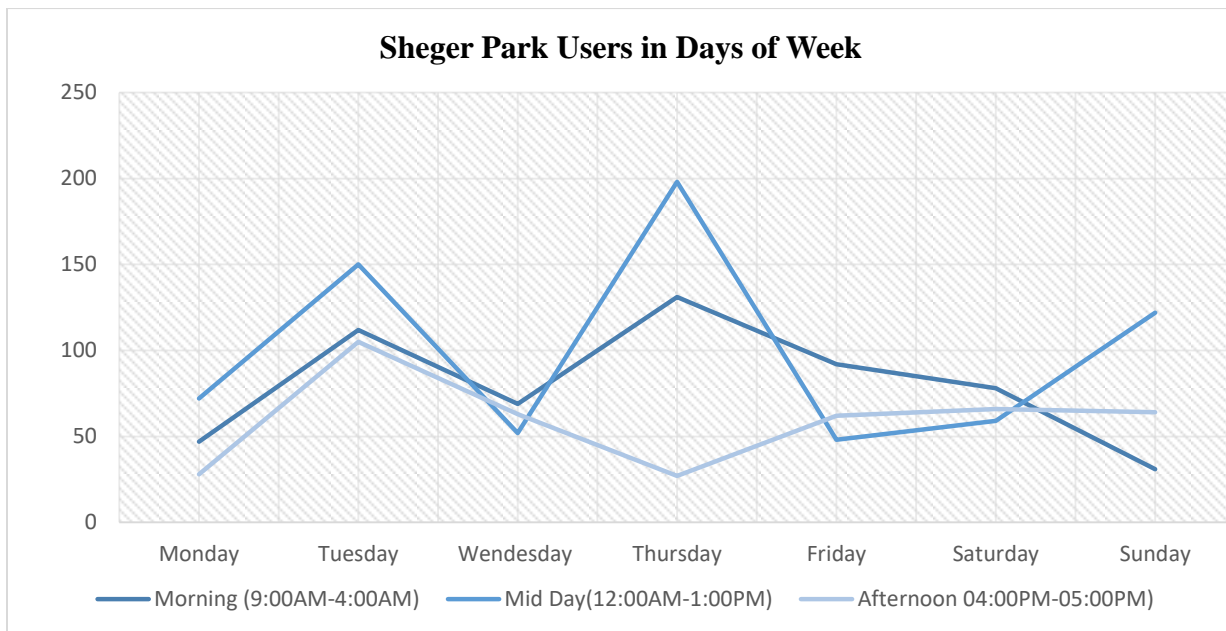
No	Age	Days of the week							Total user based on Ages	Total user based on Percent
		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday		
1	Under 12 Years	22	55	27	53	30	30	32	<b>259</b>	<b>14.9%</b>
2	12 -18 Years	44	111	56	108	62	62	66	<b>509</b>	<b>30.4%</b>
3	19 -35 Years	63	157	79	151	86	87	93	<b>716</b>	<b>42.7%</b>
4	36 – 65 Years	15	37	18	35	20	20	22	<b>167</b>	<b>10%</b>
5	Above 65 Years	3	7	4	7	4	4	4	<b>33</b>	<b>2%</b>
	Total User per days	<b>147</b>	<b>367</b>	<b>184</b>	<b>354</b>	<b>202</b>	<b>203</b>	<b>217</b>	<b>1684</b>	<b>100%</b>

Table 4.10: Numbers of users of Sheger Park based on their gender and physical condition

No	Age	Days of the week							Total user based on Ages	Total user based on
		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday		
	Total User per days	147	367	184	354	202	203	217	1684	100%
1	Gender									
	Male	113	300	141	273	156	156	167	1306	77.5
	Female	34	67	43	81	46	47	50	378	22.5
2	Disabled Users	-	-	3	1	-	2	1	7	0.4%
	Male	-	-	2	1	-	2	-	6	78.57
	Female	-	-	1	-	-	-	1	1	21.43

The number of users increases in the morning time of the day and on Tuesday and Thursday due to preferable days for photo shootings and this illustrated on Chart 4.29 below. More people use the sports field and the children's playground on weekends, and the number and variety of users also increase on weekends.

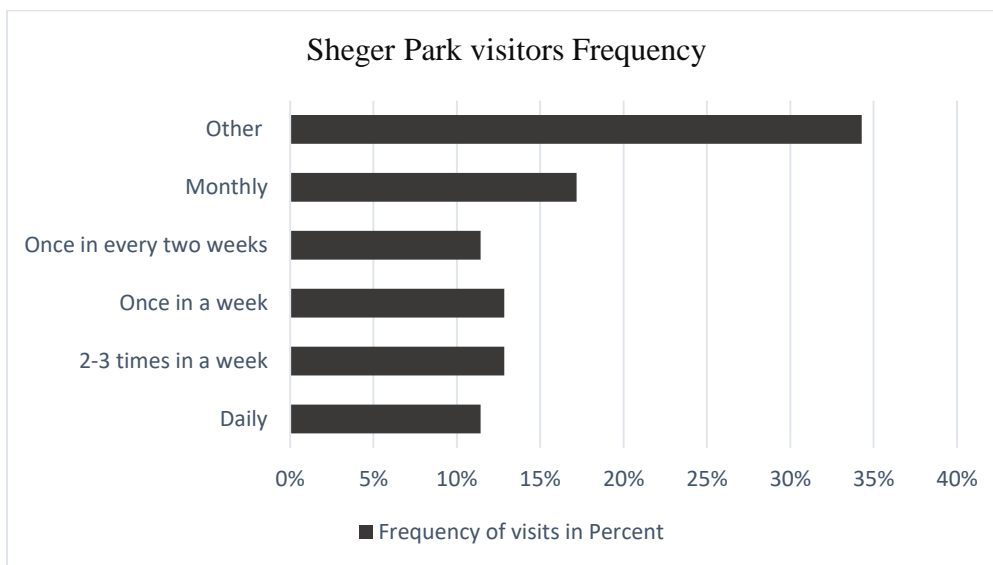
Chart 4.29: number of users in a day's interval of users of Sheger Park users in days of week



The assessment illustrated on Chart 4.30 informed the recurrence of users and how it varies. The frequency of users increases during the wedding season and on specific days, Tuesday, Thursday, and weekends. The survey indicates 11.42% of users visit the park daily, and the same percentage once every two weeks, 12.85% once a week and 2 to 3 times a week each, 17.18% visit the public recreational park monthly, 34.28% respond occasionally and rarely.

Sheger Park charges users' an entrance fee of 10 Birr per adult and for children to use the playground 50 Birr and for particular event photo and video shooting cost 2500 Birr.

Chart 4.30: The level of user's recurrence of Sheger Park



The prominent users are one-time users and they visit the park for special events like weddings and video shooting. In addition, the park has regular users particularly come to use the sport field and play pool and foosball.

### **B Number and variety of activities observed in the public space among time and space**

Figure 4.67 shows formal economic activities at the front area of the park, such as cafés and restaurant, butcher house, traditional coffee shop, children's playground, and youth's game zone.

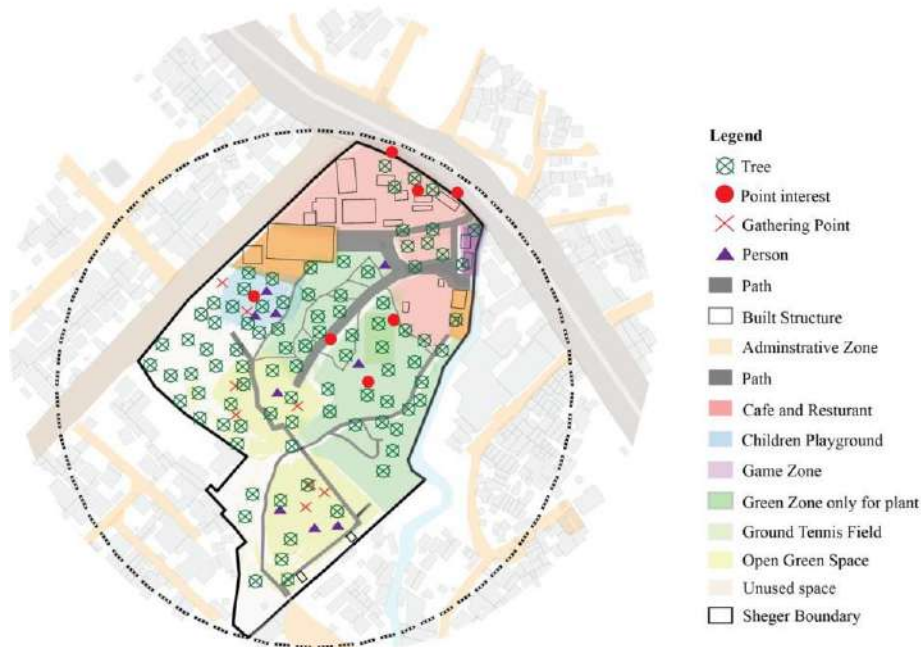


Figure 4.67: Sheger Park Spatial Zone, Uses and Activities

Activities like the ground tennis field and outdoor seating are located inside the park compound. The activity and services are illustrated below from Figure 4.68 to 4.73.



Figure 4.68: Café and restaurant



Figure 4.69: Butcher house and restaurant



Figure 4.70: Youth's game zone



Figure 4.71: Outdoor recreation area



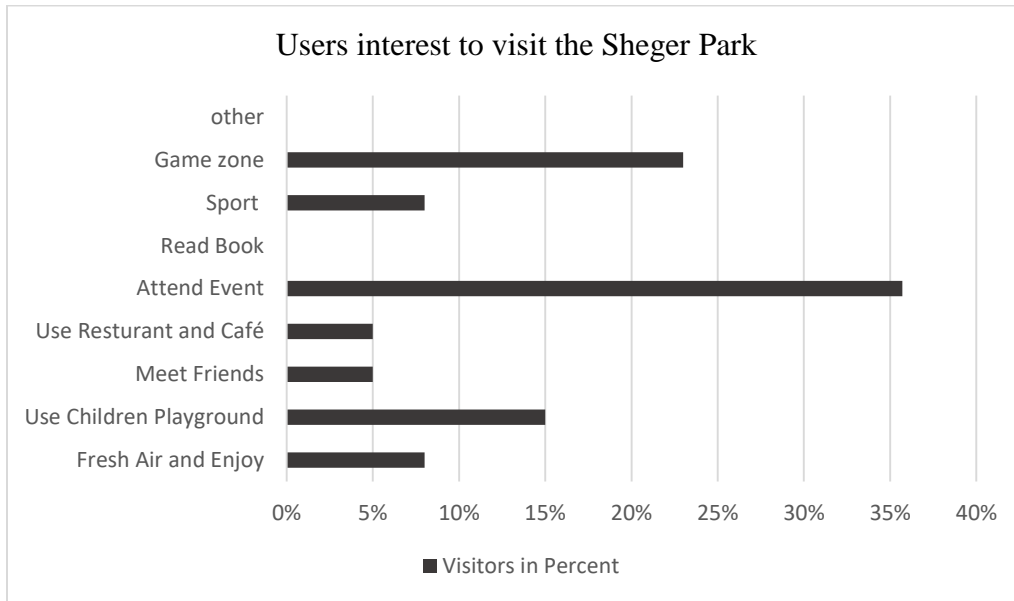
Figure 4.72: Children's playground



Figure 4.73: Ground Tennis Field

Users interested and type of visitation accessed accordingly, and 8% users responded each on "to get fresh air and enjoy the surroundings" and "to use the ground tennis/sports field. Furthermore, 5 % favor to meet people, and the same percentage of visitors responded "to use restaurant and cafeteria, 15 % visit children's playground, 23% use youth's game zone and photo shooting 36 % shows Chart 4.31.

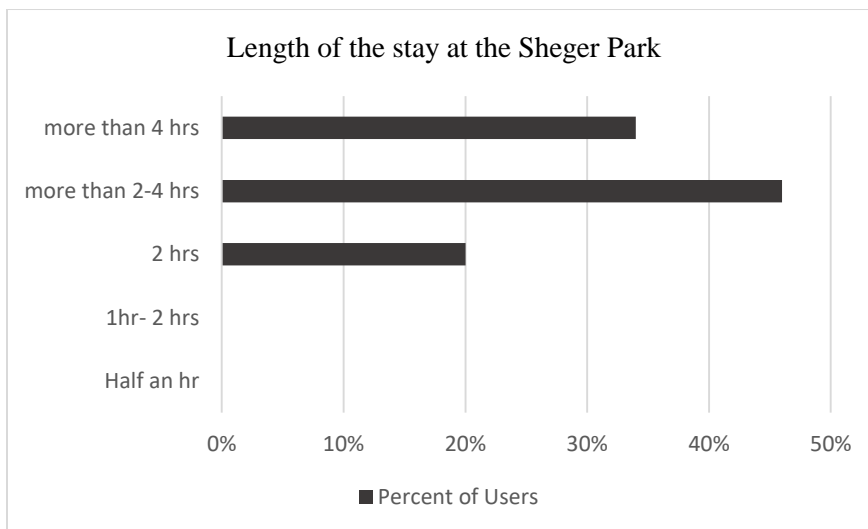
Chart 4.31: Users interest to visit Sheger Park



Depending on the user's intended activity, the time of stay in the park differs. From the overall survey, 52% respondents prefer to visit and spend more time in the outdoor green area, 27% game zone, 7% sports field, and 14% children's playground.

The majority of the users visit the park for events and photo shooting and also to use the playing fields. Therefore this activities incurs more time to stay in the park. On Chart 4.32 shows that from overall survey respondents, 20% of visitors stay in the park for one to two hours, 45.72% for 2 to 4 hours, and 34.28% for longer than four hours.

Chart 4.32: Length of time spent at the Sheger Park



### 4.3.2 Accessibility

Sheger Park is a landmark for the site and it's located between Addisu Gebeya to Piassa road, 2.8km from St George Church. Public transport like buses and taxis are available, and their stops are within walking distance.

Pedestrian walkway along the Addisu Gebeya to Pissa road respects pedestrian safety and has continuous accessible travel paths, illustrated on Figure 4.74. It is inclusive for all types of users and has tactile pavement, ramp, and zebra crossing. However, the walkways from the other side of the park have a shared zoon where pedestrians and vehicles share the roadway.



Figure 4.74: Showing that Sheger Park surrounding accessible routes, Google map 2020

From the site observation the park has three entrances with no signage. Users can only use the front gate to access the park directly, and the second gate accessible to users on weekends to access only the children's playground and illustrated below on Figure 4.75 and 4.76. Accordingly, users responded to the survey on the easy access to the park 30% disagreed, 51.42% were neutral, and 18.57% agreed and it shows on Chart 4.33.

Chart 4.33: User's perception of easy access to Sheger Park vicinity

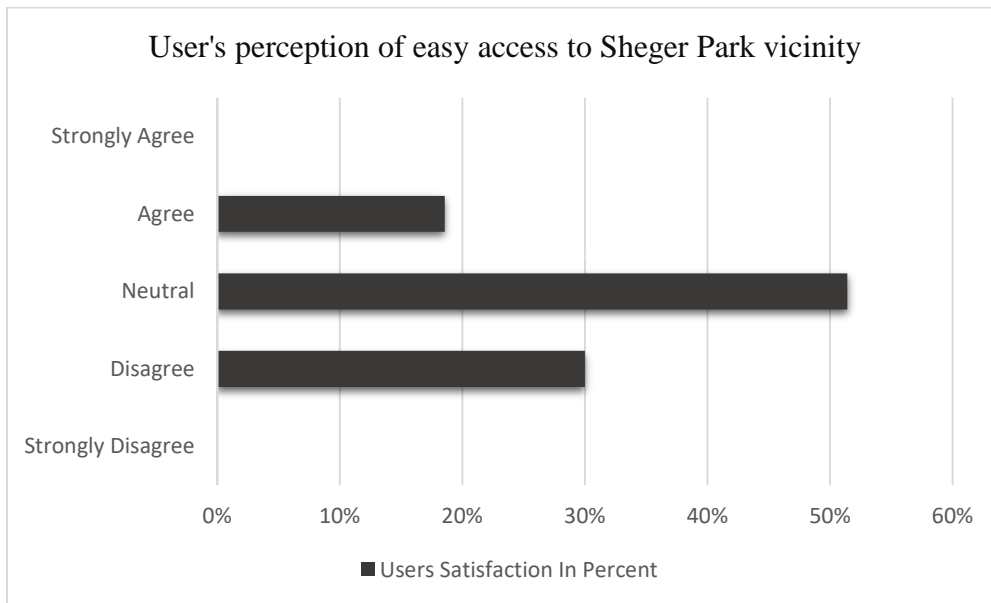


Figure 4.75: Main Entrance



Figure 4.76: Pedestrian walkways to the

The 360 photography on Figure 4.77 shows the park access from the Addis Ababa administration, vital events registration agency, and children's playground entrance. The shared street, for vehicles and pedestrians, does not have zebra cross signs and speed limits.



Figure 4.77: Panoramic view of Sheger Park surrounding access routes

Topography has a significant negative influence on walking and cycling. Sheger Park has a steep slope, and the pedestrian circulation is not well designed toward the landscape and are not connected. The steps are uneven and the pedestrian walkways does not have ramp, no tactile and bumpy cobblestones pavement. Due to this, users particularly, children, visually impaired, elderly, and physically disabled people find it difficult to access and visit the park.

### B Accessibility inside the park

Access routes in the park compound are not well designed and not networked to the service points. The pedestrian walkways did not consider children, disabled and elderly people and even some part of the park is hard to be access due to its substandard access design and poor pavement material. On Figure 4.78 Sheger’ Park access routes and pedestrian walkways pavement types are illustrated below.

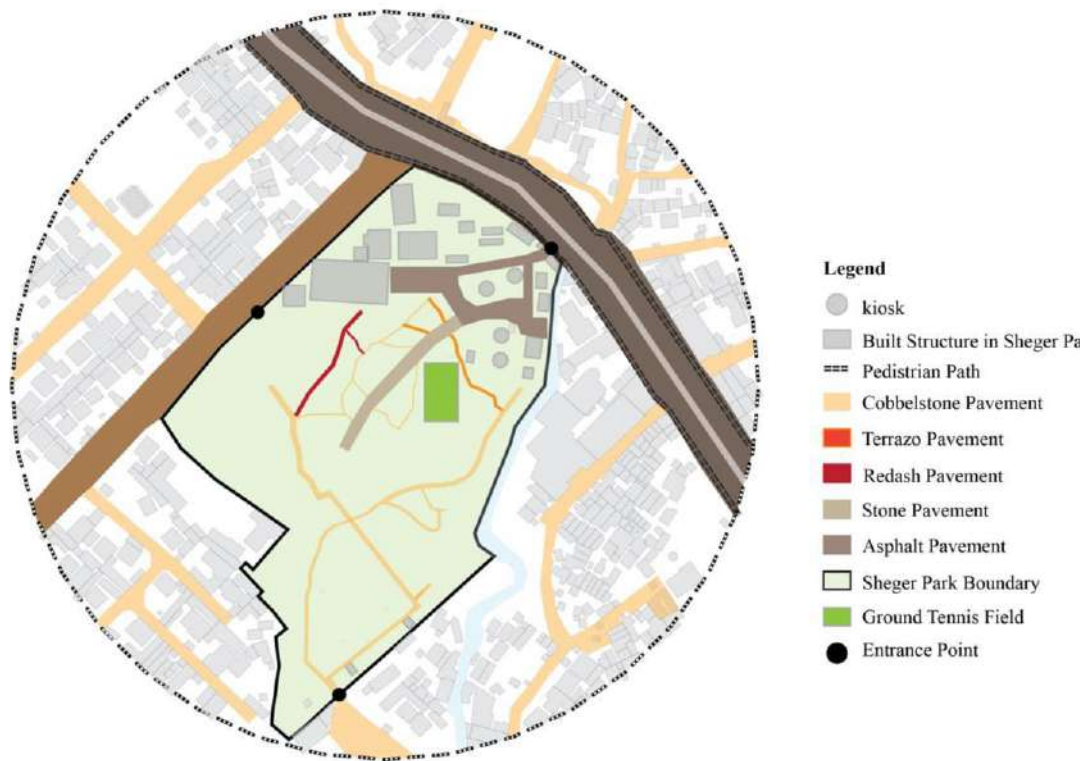


Figure 4.78: Sheger Park pedestrian walkways and pavement type

As illustrated on Figure 4.79 to 4.84 several walkways are obstructed by trees, not accessible and neglect the standard circulation clear width. About 32.85% of respondents strongly disagreed

with easy access to move around the space, 40% of respondents disagreed, and the rest, 21.14%, were neutral shows on Chart 4.33.

Chart 4.34 shows three-fourth of respondents, 75.7%, strongly disagreed with accessing the park by physically disabled and elderly people, and 24.3% disagreed.



Figure 4.79: Uneven red ash stair



Figure 4.80: Inconsistent walkways



Figure 4.81: Bumpy cobble walkways blocked by tree trunk



Figure 4.82: Mud walkways



Figure 4.83: Disconnect walkways



Figure 4.84 Tree obstruct walkways

Chart 4.34: Users perception easy access inside Sheger Park by disabled and elderly people

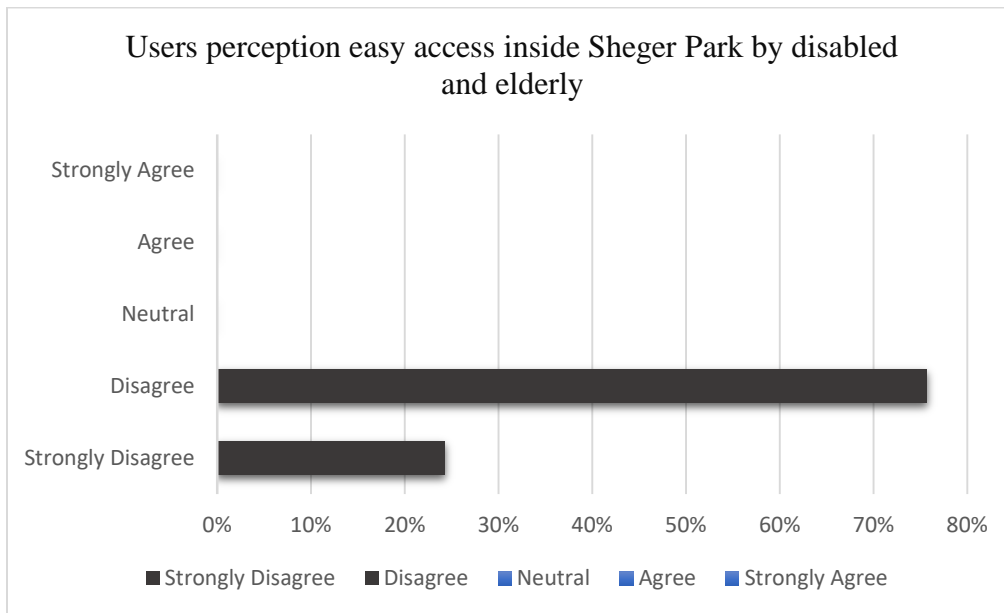


Table 4.11 shows that 82.1% of respondents live and work outside Arada Sub-City location, and took a journey of more than an hour. The survey indicates 87.5% uses a private and rental car of the overall respondents, and 13.4% uses public transportation. In comparison, 17.9% of respondents live/work at the nearest location within walking distance (less than 400m), and accessing the recreational park took them a 5 to 20 min walking journey time.

Table 4.11: Length of the journey to the park and the mode of transportation

No	Travel time/ hrs.	No of Respondent	Respondent In percent	No of Respondent	Respondent In percent	Mode of Transportation
1	5 – 15 min (Walking Distance less than 400meters )	14	13.4%	9	64.3%	walking
				-	-	cycling
				4	28.6%	Public bus/taxi
				1	7.1%	Private Car
2	Less than an hr.	10	2.9%	1	10%	walking
				-	-	cycling
				5	50%	Public bus/taxi
				4	40%	Private Car

3	1 to 2 hours	38	62.1%	-	-	walking
				-	-	cycling
				29	76.4%	Public bus/taxi
				9	23.6%	Private Car
4	More than 2hrs to 4 hours	8	20%	-	-	walking
				-	-	cycling
				4	50%	Public bus/taxi
				4	50%	Private Car

### 4.3.3 Amenities and Furniture

#### A. Presence of natural and artificial lighting

The closely planted and depth crown of canopy trees and the dense shrubs limit visual connection and natural light penetration in a particular park area. As shown on Figure 4.85, it creates a hiding space for intruder and animal due to absence of natural and artificial lights. In contrast, the park also has spread-out trees with clear widths where natural light easily penetrates and users can have sunbath, illustrated on Figure 4.86 below.



Figure 4.85: Limited natural light and vista at dense plant area

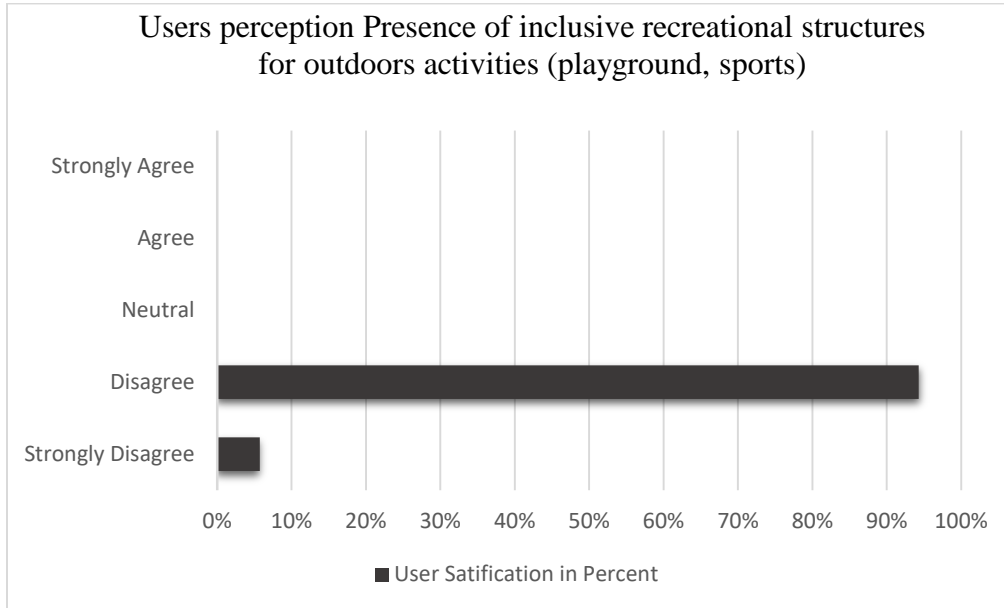


Figure 4.86: Open area with enough natural light

### **B Presence of inclusive recreational structures for outdoors activities (playground, sports)**

Recreational structures such as a children's playground, game zone (pool and foosball), and ground tennis field are available for outdoor recreational activities. However, users responded 5.72% strongly disagreed, and 94.28% disagreed with the availability and service of outdoor recreational facility and shown on Chart 4.35 below.

Chart 4.35: Presence of inclusive recreational structures for outdoors activities



### **C Presence and quality of seating and waste bin facility**

Quality and adequate facilities specifically designed to meet the needs of park users and can improve residents' well-being and social network. Outdoor shelters are also an excellent spot for spectators to watch people and activities, to connect and socialize with people. However this activates were not visible due to the poor quality of outdoor seating areas.

In the park, concrete and wooden seating furniture are unintentionally placed in random patten and difficult to access, as a result, users are not observed using the seating spaces. As shown on Figure 4.87 to 4.89 their poor quality discourage user to access and use the space and stay for long hours,

From the site observation, the park has 12 seating pieces of furniture with poor quality, substandard dimensions, and insufficient number, and a deteriorated waste bin only found at the tennis playground court.



Figure 4.87: Concrete Furniture on swampy surface



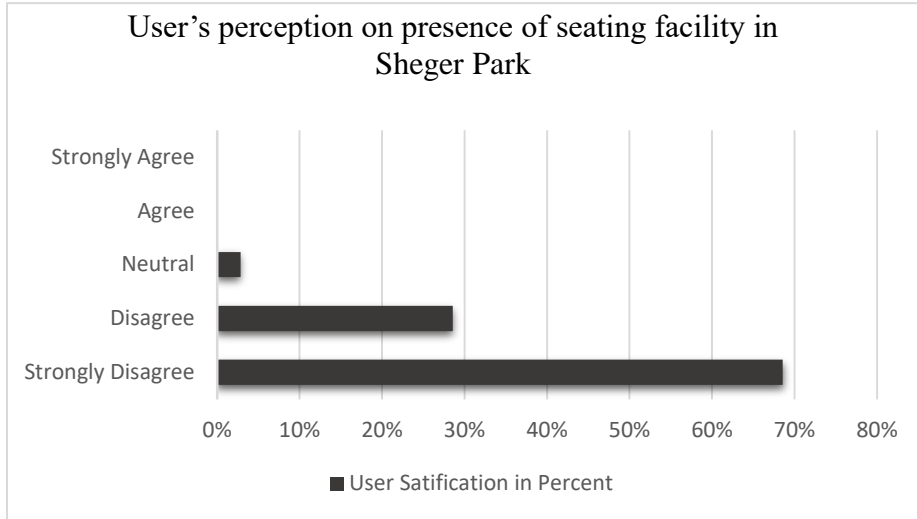
Figure 4.88: Wooden Furniture supported with stone surface



Figure 4.89: Worn out plastic waste bin in the park

Chart 4.36 the survey indicates that 68.57% strongly disagreed with the presence of enough furniture facility with standard dimensions, 28.57% disagreed, and 2.85% were neutral. In the survey, all respondents strongly disagreed on the availability of waste bins. In addition, dressing room and storage facility are unavailable, and users for photo shooting are forced to change their clothes on the park walkways and suffer from carrying their carry-on.

Chart 4.36: User perception on presence of seating facility in Sheger Park



**D Presence and quality of toilets facility**

As illustrated on Figure 4.90 to 4.92 the park has a shared toilet, which is poorly maintained and full of dirt. Its outlet is directly connected to the sewerage line and gives service without water. The deprived hygiene and bad toilet smell are severe challenges for the user and the surrounding. In addition, the toilet is inaccessible and not inclusive to user's particularly, children, elderly and physically disabled. Accordingly, 88.57% of respondents strongly disagreed, and 11.4% disagreed with the park's availability and quality of toilet facilities and it shown on Chart 4.37.

Chart 4.37: User perception on presence of seating facility in Sheger Park

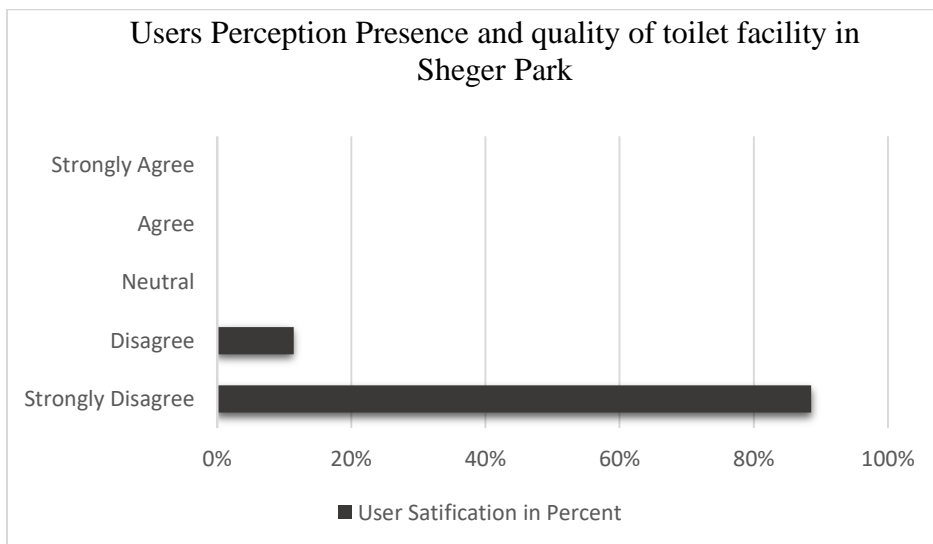




Figure 4.90: User unfriendly access to the toilet



Figure 4.91: Dirt toilet indoor space



Figure 4.92: Toilet sewerage line

As illustrated on Figure 4.93 the signage is available at the entrance of the park. The location and size standards are not appropriate, and it is unfortunate to trace by user from a distance. Users are challenged to access services and are not well informed about where to go and what to do.



Figure 4.93: Substandard signage

### 4.3.4 Comfort and Safety

#### A Perception of safety and level of security

The spatial quality and arrangement of a recreation park directly impact people's perceptions of safety and willingness to use a space. Sheger Park has two zones; the first zone has natural surveillance and accommodates more public services such as, a children's playfield, a game zone, a café and restaurant, and a parking space. As illustrated on Figure 4.94 the second green zone has tall trees, shrubs, vines, and plants densely spaced and creates an impenetrable canopy. As a result, users feel unsafe and uncomfortable using the area alone because the park's visual connection is limited, and there is an absence of active surveillance and artificial lights.



Figure 4.94: Poor Surveillance in the green zone of Sheger Park

Even though the park is fenced to prevent the theft and vandalism of people, animals such as hyenas and street dogs access the park, and users cannot use the park in dark times. Accordingly, from the overall satisfaction survey on Chart 4.38 and 4.39 shows, 38.57% of users strongly disagreed, 42.56% disagreed, and 18.57% were neutral on the presence of safety and comfort of the park. In addition, the children's playground does not have a safe ground surface and is located at the edge of a steep place. The access route is challenging to access it during the wet weather due to its mud surface cover and absence of ramp, illustrated on Figure 4.95 to 4.97. Parents responded that 28.57% strongly disagreed, 55.7 % disagree, and the rest, 15.73%, neutral that the park is safe for children to play and move around.

Chart 4.38: User's Perception of presence of safety and level of security of Sheger Park

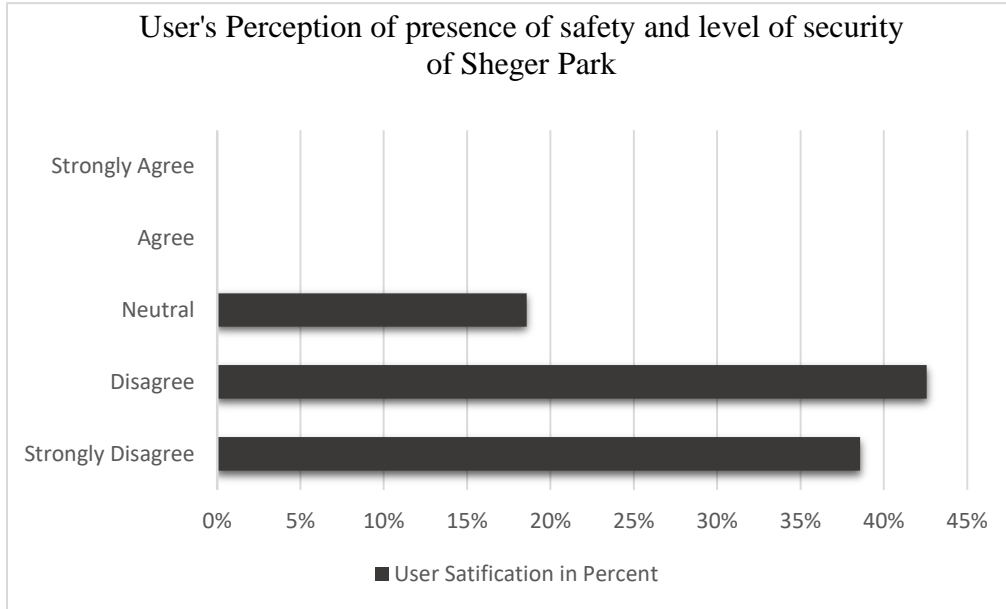


Chart 4.39: User's Perception of presence of safety and level of security of Sheger Park

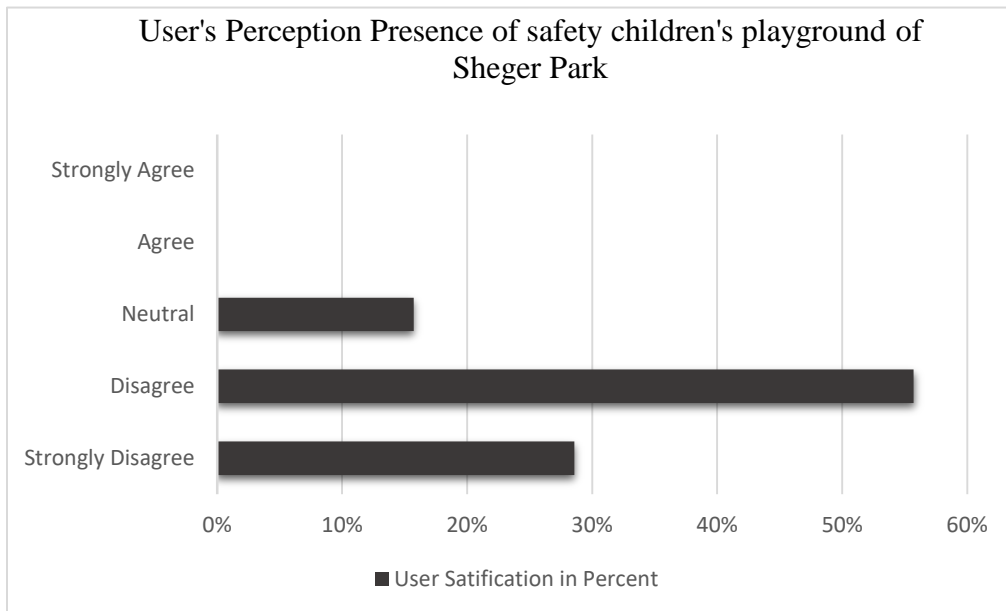




Figure 4.95: Steep landscape at children playground playing area



Figure 4.96: Access to children playground with no ramp



Figure 4.97: Children playground playing area red ash surface

## **B Quality of censored experience**

- **Presence of pleasant views**

As illustrated on Figure 4.98 to 4.100 the park creates an image of a forest that has a pleasant view of nature for users. The stone quarry, dense canopy, shaded walkways, and blooms of flowers are the most beautiful part of the park, and the shared sports field, children's playground, and game zones promote socialization. However, users are unhappy and discontent because of the park is not well-maintained and clean.



Figure 4.98: Shaded walkways



Figure 4.99: Flower landscape



Figure 4.100: Stone quarry with dense canopy

### **Presence of pleasant smell, and sound**

The park has a major challenge on availability of basic infrastructure and this affects the overall park quality and services. For example, the park does not have a water facility, and the plant gets water from the sewerage line directed from an adjacent polluted river. As a result, the contaminated water creates an unpleasant odor, and the wet surface facilitates the breeding of insects and causes discomfort to users, illustrated on Figure 4.101 and 4.102. In contradiction, the park is protected from noise, smog, and dust pollution. And the finding shows the range of noise from 33.2db to 56.4 db. Accordingly, the user satisfaction survey indicates that 27.2% strongly disagreed, and 72.8% disagreed on the protection from unpleasant noise, dust, and smell.

Chart 4.40: Users' perception Presence of quality censorial experience

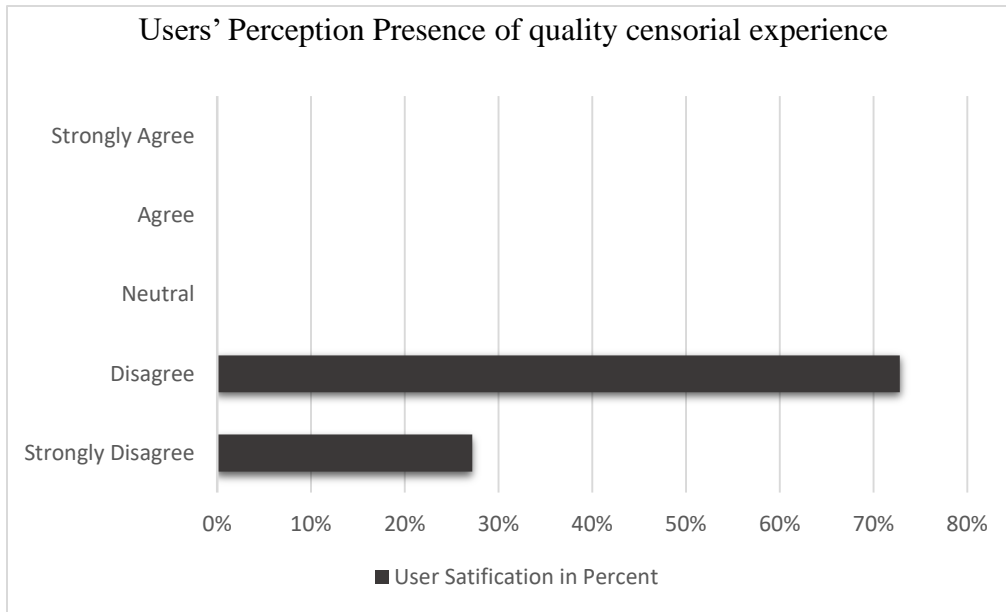


Figure 4.101: sewerage water watering the park plant

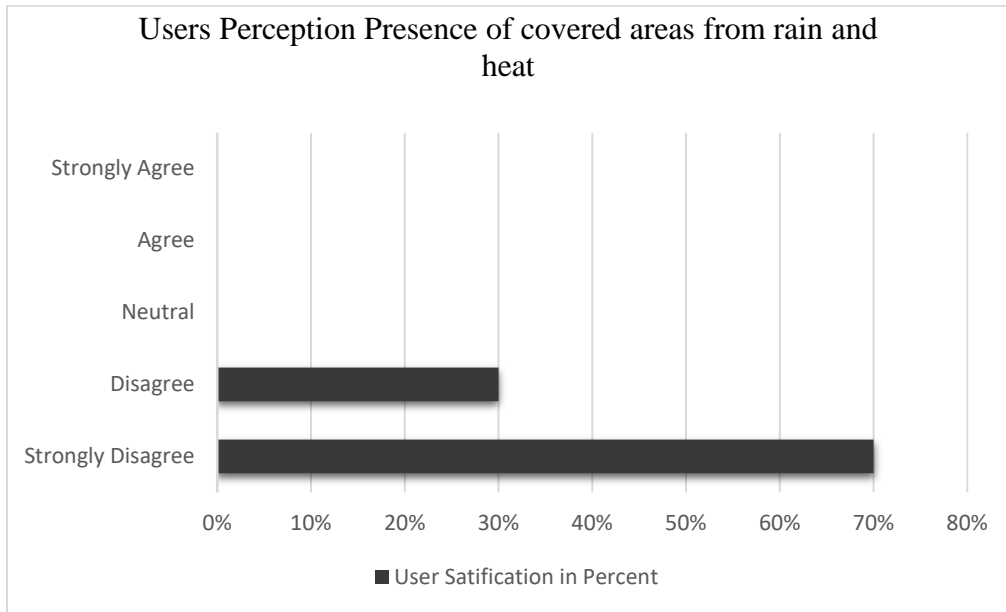


Figure 4.102: sewerage residual creates algae and insect breeding surface

### C. Presence of covered areas from rain and heat

The park do not have sheltered feature and users are not protected from rain during wet season. On the Chart 4.41 shows that, 70% of users responded strongly disagreed, and 30% disagreed with the availability or facility of feature shelter from the sun and rain.

Chart 4.41: Users Perception Presence of covered areas from rain and heat



### 4.3.5 Green Environment

#### A Presence and quality of biodiversity

As illustrated on Figure 4.103 and 4.104, the park has native and non-indigenous plants, and flowers such as Gerar, Zegba, Tikur Enchant, Habesha Tide, Weyra, and Koso are native trees. From the non-indigenous plant list Araucaria, Red bottlebrush, Grevillea Robusta, and Jacaranda plants are found. Different species of flowers, like Duranta, Geranium, Berberina, Mexican cigar, Aster Flower, and Rose, are available in the park. The park covers 86.36% of the total area with trees, grass, and shrubs with green/soft components and 13.64 % with hard surfaces such as paved circulation and car parking place.



Figure 4.103: Canopy Trees with green landscape



Figure 4.104: Fauna and flora green landscape with hard surface

## **B Environmental and Community Resilience**

The park groundwater table is near the surface, however it do not utilize the natural water source for recreational and consumption purposes. Furthermore, the unfiltered polluted sewerage water creates hazard environment for the plant, people, and the environment. In addition that, the park is not correctly designed with proper drainage and sewerage lines. As the result, the risk of flood, soil erosion, and sliding is observed in the park, and their severity increases in the wet weather. As shown on Figure 4.105, the management of the park tried to cover the surface with plants and grass to mitigate these challenges and somehow solve the soil erosion problem.



Figure 4.105: Eroded area of the park

### C Presence of energy efficient elements

From site observation the park do not respond to the energy efficient and it lacks rain water collector, recyclable material, composting, and solar energy.

### Site Specific Assessment result

Based on observation and surveyed data of Sheger Park, the quality assessment score is very poor in terms of public space spatial and physical quality. On the quality assessment score the park scored highest rank on comfort and lowest on facility as shown on Table 4.12 below.

Table 4.12: Quality Assessment of Sheger Park

No	Dimension	Quality Assessment
1	Use And Users	1.58
2	Accessibility	2.04
3	Facilities	1.24
4	Comfort	2.21
5	Green Coverage	2.17
Average Score		1.8

### Site Specific Assessment summarized result of case study area parks

The site specific quality assessment results of Ambassador Park scored, 3.35 which is above the average and the other Lideta Park and Sheger Park scored, 2.4 and 1.8 respectively, which below the quality assessment standard range of 5 illustrated on figure 4:106.

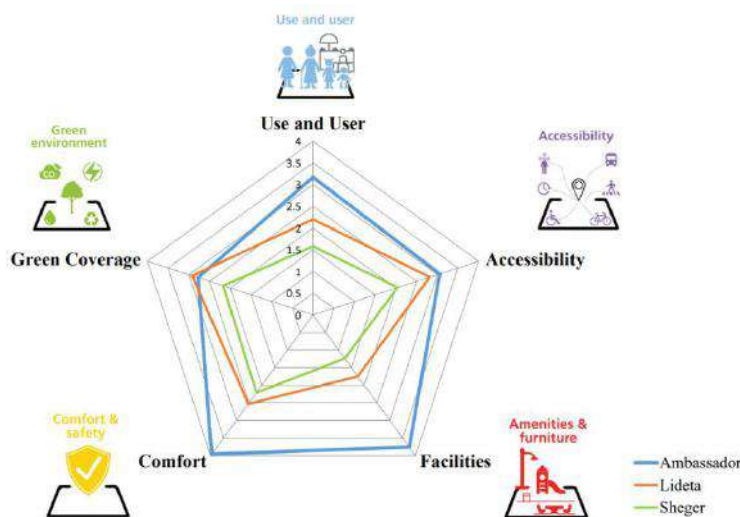


Figure 4:106 Quality Assessments of Ambassador Park, Lideta Park and Sheger Park

## 4.4 Summary of Results

### 4.4.1 The spatial and physical quality levels of the public recreational park based on Site Specific Assessment

#### A. Use and users

##### Number and variety of users accessing the public space

- Public space is considered more inclusive when the internal spaces of the park can serve different user groups in such a way that all are provided for without the need to interfere with each other's interests. Ambassador Park, 80 % of recreational park users, are below 35; most users are youth and children. In Lideta Park, 62.86% and in Sheger Park, 88% are the majority of users aged between 12-35, and lesser users are children and elderly, respectively.
- In gender diversity, males are the dominant users of all the parks. Moreover, in Sheger Park, female users are less than in other parks. The survey indicated that the park is not inclusive, comfortable, and secure for females, the elderly, and disabled.
- Users visit Ambassador Park during lunch breaks and on weekends. However, at Lideta Park and Sheger Park, most users visit the park in the morning and on weekends. The number of Lideta Park users has increased due to the park being located in a mixed-residence condominium. In the case of Sheger Park, the sports field and photo shooting are significant activities that invite users.
- Users are obliged to pay an entrance fee to access both Ambassador and Sheger Park; however, Lideta Park is free of charge. The notion of paying to use a space may push people away, and from site observation, retired elderly people use Lideta Park as socializing space, and they prefer the park because it's free of charge. Even though the income collected from the entrance fee supports the management and maintenance of the space, it pushes away low-income communities and limits user numbers.

- The number and variety of users increase when there is enhanced access, diverse service, and activity. Ambassador Park is located at the city core and accommodates more activity, with a variety and increased number of users. Lideta Park and Sheger Park has limited activity with less number of user and diversity.

**Number and variety of activities observed in the public space among time and space**

- Multiple and carefully chosen activities in a space add to the richness of public space performance at different times of the day. Ambassador Park is rich with diverse activities, including walking, socializing, children's play, options for family outings, events, and social gatherings, and opportunities to engage with the fauna and flora. From the user survey, 68% of users visit the park for optional activities such as getting fresh air, enjoying the surroundings, using the children's playground, and meeting friends. However, these activities should be supported with basic infrastructure and amenities unless these activity decreases, even if there is physical space for people. According to Jan Gehl's theory, only strictly necessary activities occur when outdoor areas have poor quality. In Sheger Park, the dominant users are photo shooting attendants because the park has few amenities to accommodate optional activities like sunbathing, getting fresh air and meeting people, and socializing. Both optional and necessary activities occurred in Lideta Park. Users use the park as a socializing space to meet friends, host Ider meetings and community gatherings, get fresh air, and sunbathe.
- Depending on the user's interest and available activities and amenities, the physical and spatial space comfort of staying in the park differs. Users stayed 2 to 4 hrs in Ambassador Park because users engaged with outdoor activities, and the park has well designed space with amenities and coexisting space for users. In the case of Sheger Park, most users visited the park to use the children's playground and game zone and for photo shooting and users stayed more than 2 hrs in the park. Exceptionally, in Lideta Park, one-fifth of users stayed half an hour, especially during mid-day, and users spent their break hours.
- The number and variety of recreational park users depend on the availability of activity, service, easy access, well-designed amenity, and presence of physical comfort. The Quality Assessment Score indicates that Ambassador Park has a better number and

variety of users, with a higher score of 3.17 than the others. Furthermore, Lideta Park and Gulele Park have a list score of 2.20 and 1.58 out of 5.

## **B. Accessibility**

### **Accessibility and presence of qualitative and inclusive facilities for private vehicles, bikes, pedestrians, and public transportation**

- All park surroundings, within a radius of 400 meters, are accessible using public transport, have continuous travel paths, and provide safe and inclusive movement to all types of pedestrians. These parks also have more than one entry point; however, only their primary entrance is open to the public. As a result, neglect the adjacent land use and public activity, and users are forced to walk long routes to find access points.
- Sheger Park has less access to its compound, and its inner routes are disconnected, not even in standard pavement material and design. It is not user-friendly and inclusive, and disabled users are hindered from moving around the park. Lideta Park has accessibility issues due to its substandard design and poor construction material. In contrast, Ambassador Park has well-connected and inclusive routes that provide easy access to the activities and amenities. However, the survey indicates that Sheger Park and Lideta Park users are not satisfied with their current physical condition of access routes. In addition, from the Quality Assessment Score, Sheger Park and Lideta Park scored 2.34 and 2.82, respectively, whereas Ambassador Park scored 3.06.

## **C. Amenities and furniture**

### **Presence and quality of lighting**

- Ambassador and Lideta Park have good vistas, and daylight easily penetrates the park through spread-out trees due to its clear widths. Users can sit or stand in the sun and get tree shade space when needed. However, in Sheger Park, natural light is limited, and users feel discomfort spending a long time.
- Concerning artificial lights, Lideta Park and Sheger Park do not have artificial light, and there is no service and activity during the evening time. It is necessary to understand the

basic amenities and the overall configuration of the space to support activities for a more extended period.

#### **Presence and quality of seating and waste bins**

- Presence and quality seating keep people in the space for a long time. Ambassador Park has a variety of comfortable seats with waste bins where users stay longer; however, Sheger Park has few numbers of seating with poor quality and an absence of waste bins that limit the user's comfort and the physical quality of the park. Lideta Park has substandard seating furniture that affects the comfort of users.

#### **Presence and quality of public toilet**

- Users are hindered access to clean water and toilet in Sheger Park and Lideta Park; in contrast, Ambassador Park has better facilities. However, it still overlooks disabled users to accommodate the service. The absence of these facilities discourages users from visiting and staying in the park.

#### **Presence and quality of signage and emergency items**

- All the parks do not have signage and emergency items, and users encounter difficulty getting information and services in the compound. Users lose their sense of direction and visual connections to the space.
- The quality assessment score of the third dimension, Ambassador Park, has better amenities and furniture, and it has the highest score of 3.79. Lideta Park and Sheger Park have list scores of 1.75 and 1.24, respectively. It depicts that both Lideta Park and Sheger Park are below the standard level.

### **D. Comfort and safety**

#### **Perception of safety & level of security of the public space**

- All parks are fenced to protect them from intruders, vandalism, and theft. The user's perspective and site observation identified that Ambassador Park is well-maintained, user-friendly, safe, and secured. As a result, the spatial arrangement of sitting and playing areas and the visual clearance between plants create better surveillance. In addition, the

park has a children's safe environment and diverse activities, which attract more users and make the space more active and public. The physical and spatial conditions would sustain the observing eye. As Jane Jacobs argues, public spaces would be safer if they were zoned for an intricate mingling of different uses and observed in Ambassador Park. On the contrary, Lideta Park is not children-friendly because of its degraded physical quality of amenities and vulnerable space, concealed children's playground, and absence of surveillance. Sheger Park's green zone is out of active surveillance, and more than 80% of users feel insured, and the park children's playing area is not comfortable and safe.

### **Quality of sensorial experience**

- Ambassador Park is scenic compared to Lideta Park and Sheger Park due to its well-designed and managed space. However, the park has encountered bad smells and smocks from nearby surroundings. The same challenge is also observed in Sheger Park, where a polluted river with a foul smell and a dreadful environment crosses the park. All respondents wanted a better quality sensory experience of Sheger Park. Regarding sound pollution, except for Sheger Park Green Zone, all the parks are affected by loud sounds from nearby bars and vehicles.

### **Overall comfort using the public space through maintenance, design, and ambient conditions.**

- Environmental quality encourages people to spend more time in outdoor activity in any weather condition. In this study, all parks are not functional during wet weather due to the absence of shelter and shade space.
- From the quality assessment of comfort and safety, Ambassador Park got the highest score, 3.96, followed by Lideta Park, 2.53, and Sheger Park, 2.21. Sheger Park is below the standard and needs to be a safer and more comfortable recreational place for public users.

## **E. Green Environmental components**

### **Quality of biodiversity and microclimate conditions in the public space**

- The quality of biodiversity and microclimate of the recreational park directly impacts the user's and nearby residents' quality of life. All parks meet their green coverage and respect the local green infrastructure green proportion standards, 75% green surface. Sheger Park has a variety of fauna and flora that is endemic and non-indigenous. The green environment improves the park's spatial quality of the environment and promotes outdoor recreational space and an active lifestyle. Furthermore, Ambassador park's green coverage and landscape elements create physical comfort for users and enhance the visual quality of the park.

### **Environmental and community resilience**

- Ambassador Park has an active storm-water mitigating system. It manages runoff water during wet weather, and users can access and use the park service. However, in the case of Lideta Park and Sheger Park, an active storm-water mitigating system is absent that hinders users' physical access. In addition, in Sheger Park, this also affects the existing landscape setup and causes land sliding and soil erosion which affect the spatial layout of the park and degrade the physical environment.

### **Energy Efficient**

- None of the parks are energy efficient, and all are dependent on the municipality's infrastructure and energy supply. They do not have rainwater collectors, recyclable material, composting, or solar power. Particularly in Lideta and Sheger Park, water is a scarce resource, affecting the plant's growth and the landscape quality of the park.
- A public recreational park must be versatile in its landscape and add an essential element of plants, trees, and the overall pattern to create a huge visual impact. Sheger Park has quality biodiversity. However, it is not designed and does not respond to the landscape, and the park is not preferable to users. In contrast, users prefer Ambassador Park due to its attractive and accessible landscape. It indicates that the intervention of spatial design and enhanced spatial quality is vital in creating functional and accessible public green space, use rises, and a variety of needs for people are met.

- Ambassador and Lideta Park have proper landscape interventions and functional space; however, the Quality Assessment Score showed 2.78 and 2.72, respectively, and Sheger Park scored 2.17 out of 5.

In general Lideta Park and Sheger Park are below the site-specific standards, 2.44 and 1.8 out of 5, respectively, and have poor physical and spatial quality. The parks have fewer users with low social interaction, and the users were unsatisfied. Despite its sustainability, inclusivity, and energy efficiency concerns, Ambassador Park receives a rating of 3.35 out of 5. Users enjoy a higher quality of life and better public space because of the park's improved physical and spatial qualities. Users prefer to enjoy and stay longer and engage in social interaction.

## **Chapter Five: Conclusion and Recommendation**

### **5.1 Conclusion**

Public recreation parks significantly enhance the urban centers' livability, environmental quality, and sustainability. Despite these circumstances, the physical and spatial quality of recreation parks in developing cities like Addis Ababa is far from ideal, and these public spaces are poorly designed and maintained. As a result, it failed to meet successful public space requirements, where everyone can relax, recreate, learn, and improve the quality of public life. Therefore, this study intends to evaluate the current spatial and physical quality of chosen inner-city recreational parks, Ambassador Park, Lideta Park, and Sheger Park.

Five quality evaluation dimensions determine these recreational parks' spatial and physical quality: use and users, accessibility, comfort and safety, amenities and furniture, and environmental components. And the research results indicate few users and activities in the two study case areas, Lideta Park and Sheger Park. The dominant number of users is below the age of 35. In addition, both parks have limited activities and access that hinder the number and variety of users. Since Ambassador Park offers a wide range of services that are accessible and inclusive, a significant number and types of users visit the park. Lideta Parks and Sheger Parks, in contrast, have few visitors and activities. The gardens are also inaccessible and not inclusive to accommodate children, the elderly, and people with disabilities.

Amenities and furniture are crucial for creating vibrant and functional public recreational spaces. Public infrastructure and amenities, including toilets, lamps, seats, waste bins, and floor furnishings, must increase the public space's visual and physical liveliness. Additionally, this amenity should take into account all park users. These components are successfully accommodated in Ambassador Park. However, In Lideta Park and Sheger Park, people are dissatisfied because of the absence of amenities and furniture, such as public sets, lights, and toilet facilities. A lack of maintenance, poor management, and insufficient attention to parks also challenges the physical quality of these parks.

In addition, comfort and safety are the other dimensions that evaluate spatial and physical quality. Unfavorable factors, including noise, air and water pollution, inefficient use of space,

security issues, poorly maintained physical infrastructure, a lack of cleanliness, and absence of shade structure, have a detrimental impact on Lideta Park and Sheger Park users. However, Ambassador Park offers high security and safety, providing all users with a pleasant and inviting environment.

The last quality dimension is the environmental component; all parks are green and have incredible biodiversity. In terms of ecological resilience and energy-efficient, all parks are not responsive to this element. As a result, the level of biodiversity and the park's microclimate immediately affect the user's comfort and the neighbors' quality of life of park users.

Therefore, the research has demonstrated that the recreational spaces of Lideta Park and Sheger Park need to be improved and below site-specific quality standards. Despite issues with inclusion, sustainability, and energy efficiency, Ambassador Park gets a medium physical and spatial quality score. Therefore, Ambassador Parks' users have a better experience and perception of quality public recreational space, and the park also improves the quality of life for users and adjacent residents.

## **5.2 Recommendation**

The need to provide quality public recreational parks within the most densely populated areas of Addis Ababa is critical and challenging. The scope of these recommendations addresses the physical and spatial quality of public recreational parks within the Addis Ababa city and Study Area. In light of this, the research carried out in Ambassador Park, Lideta Park, and Sheger Park examined referring site-specific assessment dimensions such as use and activities, accessibility, comfort image, amenity and furnishings, and green environment. The outcome showed significant issues with these public areas' spatial and physical quality. Therefore, using research-based planning approaches, general recreational park standards must be developed and implemented to improve these public spaces in the city.

While the spatial and physical quality standards are at the core of all public recreational parks in Addis Ababa, the following specific and general recommendations should be considered in this study area. Each recommendation point contains topics to be considered and addressed to meet the standard public recreational park qualities.

## **5.2.1 Site specific recommendation for Ambassador Park**

### Specific recommendation for Ambassador Park

- According to the needs and expectations of the user group, diverse uses should be made available in the park. Additionally, these places must be furnished with amenities that may be used every day of the year—for example, a Game zone for youth and elderlies.
- The park should include adjustable seating for various space arrangements and user counts.
- Restrooms and unique functional rooms should be close to key circulation routes to maximize user safety and include all users, including disabled people.
- The park should provide educational materials, a map, clear and prominent signage stating park operations' opening and closing times, and innovative way-finding to connect various spaces.

### Specific recommendations for Lideta Park and Sheger Park

- In the case of Lideta Park and Ambassador Park, both are below the site-specific assessment standard and have significant issues with all indicators. Therefore, the parks should consider the site specific recommendation and adopt the forwarded points to enhance and adequately utilize the recreational park and positively impact the quality of life.

## **5.2.2 Site specific recommendation for Lideta Park and Sheger Park**

### **A. Uses and User**

- The topography and particular characteristics of a site, as well as its surrounding community's existing and planned physical form and architecture, should be considered in the design of the public recreational park to create vibrant public spaces that are distinctive to the location.
- In planned conditions, consider nearby planned development and infrastructure improvements to design with the flexibility to integrate those assets and constraints into a cohesive neighborhood plan.

### **Flexible space for diverse activity**

- Recreational parks should allow people to gather in a common place and share a range of activities and physical experiences that can be either active or contemplative. These
- Public spaces should encourage a diversity of uses by delivering unique spaces and features that accommodate social interaction. These facilities should use a range of programming strategies to serve various users.
- Recreational parks should accommodate different events and activities like food festivals, markets, games, concerts, and/or sports, and other activities over different times of the year. And also, these public spaces should consider integrating seasonal landscaping and appropriate infrastructure for these events. As a result, it is essential to encourage opportunities for interaction, including for all ages and all experiences, which are active recreation, contemplation, and social gathering.

### **Multi-use space and infrastructure**

- Give preference to multi-use spaces, play fields, and courts instead of specialized uses. Physical elements built inside public recreational parks should be designed for flexible uses to accommodate changes in the program and demographics.
- Consider movable seating to allow flexibility in accommodating different spatial configurations and numbers of users. Consider including space for informal community-scale events such as performances, exhibitions, kiosks, and cafes.
- Create versatile spaces by providing continuous areas of green cover or pavement surrounded by paths. And these should consider females and males, kids and seniors, and disabled people walking through or lingering.

### **The recreational park should have diverse program and operations**

- Design flexible public recreational parks to host different activities throughout the day, week, or year. Design spaces for evening activities to give those who work and/or study during the day an opportunity to enjoy public spaces.
- Consider space for programming and events at different scales to attract diverse users.

## **B. Accessibility**

- Public recreational parks must be welcoming and accessible to all. They should be conveniently situated within walking distance from public transportation stops.
- Utilize the terrain, topography, landscapes, and microclimate that already exist. Use the existing topography to guide park design, reduce the need for extensive digging or grading, and help storm water management. And also, it should consider balanced terracing to accommodate significant grade changes and to enhance views and surveillance.
- Successful public spaces are connected to the neighborhoods they are located in and are easy for everyone to access, including children, elders, and those with disabilities. The pedestrian experience should be given priority in connections: arrival, space navigation, choice of various activity and destination clusters, and then exit. In addition, public recreational spaces should be integrated into the network of existing park activities and services, other public spaces, ecological and historic areas, and community destination areas.

### **Public recreational parks should provide access to all pedestrian**

- Public recreational parks should prioritize pedestrian circulation over other modes of transportation (motorized cars, bicycles) and provide easy access for pedestrians by the area near public transportation and nearby infrastructure for pedestrians.
- Provide ample space for pedestrian flow and circulation, especially in areas with heavy pedestrian traffic or where the project is expected to increase pedestrian traffic.

### **Public recreational parks should provide access to the all**

- Recreational parks should make the public space feel welcoming to all and need to meet the needs of diverse communities to promote equitable access. The park should also consider children, seniors, and individuals with disabilities and Integrate universal access into the site design.
- Recreational parks should provide different access points with prominent features so all users can access easily and be welcomed through the optional entrance.

- Place loading areas away from main entries and storefronts surrounding the public space, when possible. Provide vegetated buffers to loading areas surrounding the public space.

### **Public recreational park should integrate mobility and parking**

- A network of streets, sidewalks, and paths that provide secure pedestrian access and crossings to recreational areas should be connected to public recreational parks so that they are close to and easily accessible from modes of transit.
- Public recreational parks should offer shared parking on streets or nearby surface lots, even though they do not require designated parking lots.
- Provide clear and creative way-finding to connect different spaces, a park map, clear and noticeable signage indicating park operations opening and closing times, and instructional materials.
- Consider graphic and visual language to connect a network of access routes with activates and service in public recreational park.

### **C. Comfort and Safety**

- Public recreational parks should serve as hubs for social interaction, communal pride, and a sense of identity. They must offer various opportunities for socializing, playing, relaxing, and being appealing, safe, secure, and engaging.
- The park should consider principles of crime prevention through environmental design by providing open lines of sight throughout parks. Encourage natural surveillance by strategically placing furniture, bushes, and trees.
- Adequate lighting should be provided to draw attention to the public recreational parks as the heart of the community and distinctive structures and features during the day and at night. In addition, it should consider seasonal lighting and provide sufficient light levels to support pedestrian safety and security in central spaces and pathways at night.
- Recreational parks should provide sufficient transparency at the ground level and visual clearance, particularly at gathering areas, children's playgrounds, entrance points, and view corridors. Hence, it provides passive surveillance and the ability to see or perceive certain activities and spaces in and around public recreational parks.
- The park should maintain the landscape to have permanent visibility across recreational spaces. And also should provide suitable native tree species with high canopies and low

shrub species along walkways and more remote play areas to improve sightlines and reduce hiding spots. It should also consider consistent maintenance to improve and upkeep their functional and physical features.

#### **D. Amenity and Furniture**

- In recreational parks, amenities should be located in places that maximize use and the overall park purpose should support by the furniture, sports amenities and special features.
- Seating and tables should offer a diversity of configurations with cozy and long-lasting materials that are usable by people of all ages and abilities. Permanent seating should be placed where desired along connected walkways and along connecting pathways. Seating should be placed to enhance vistas and lines of sight throughout the space. In addition, it should consider mobile furnishings that let guests choose and congregate in smaller or larger groups when desired.
- In recreational parks, amenities should be located in places that maximize use, and the overall park purpose should support by the furniture, sports amenities, and unique features.
- Seating and tables should offer a diversity of configurations with cozy and long-lasting materials usable by people of all ages and abilities. Permanent seating should be placed where desired along connected walkways and connecting pathways. Seating should be placed to enhance vistas and lines of sight throughout the space. Additionally, it should consider mobile furnishings that let guests choose and congregate in smaller or larger groups when desired.
- Trash and recycling bins should be positioned in areas with easy access for collection and upkeep.
- Bike Racks should be placed next to transport stops, close to shared parking spaces, and close to playgrounds. Create bike racks that are appealing, entertaining, and useful.
- Recreational Park should provide attractive and functional drinking water or fountains. It should also be close to active recreation sites accessible to everyone, like playground courts with multiple uses, trailheads, and exercise equipment.

- Restrooms and/or special functional rooms should be close to main circulation routes in recreational parks that permit them to maximize user safety and be inclusive. Example ramps, toilet sits for disabled.
- The kiosk should be located in a way that maximizes use yet minimizes interruption of primary park spaces.
- Integrate interactive public art into the designs of recreational parks, and it can be a landscape featured piece or part of the architectural elements of the spaces, such as the paving or a paving feature, the light poles, an interactive water feature, bench, furnishings, signage, and an element of the landscape.
- Consider special signage or branding that reflects the historical or natural character of the recreation park. It must allow users and residents to interpret distinctive neighborhood features like ponds, tree groves, or historical components.
- Consider providing Wi-Fi access in public recreational parks and the park functional areas like the library and outdoor sitting area.

#### **E. Green Environment**

- The environmental well-being of the broader community must be encouraged in public recreational parks. They naturally enhance health and habitat by keeping areas cooler, assisting in cleaning and filtration cleaning and filtration of the air and water, and serving as green infrastructure. Public recreational parks also promote better environmental management, education, and responsible contact with the environment.
- Use native plant and tree species that do well in the local climate. Native plants often tolerate drought, are hospitable to native fauna, and help create a natural link between the recreational park and natural resources. For
- Vegetation of recreational areas should consider both aesthetically pleasing and practical soft landscaping materials and the choice of plants should be based on their theme.
- Consider using a diverse palette of plant and tree species that provide different colors, forms, and textures throughout the year. Additionally, various plant species reduce the risk of widespread destruction due to pests or harsh environmental conditions.
- Use recyclable, recycled, and environmentally friendly products and consider interactive design solutions to enhance the relationship between people and the natural environment.

- Recreational Park should feature green roofs on buildings, bio-swales, rain gardens, conservation landscaping, and permeable pavers to reduce storm water runoff. It should provide a design solution that balances recreation space and habitat restoration/conservation.
- Consider solar exposure and natural ventilation in the placement of park spaces, paths, and amenities. These components are crucial for increasing park activities during various seasons. In addition, include features to mitigate undesirable microclimatic conditions, such as structures to provide shade and screening to buffer wind and noise.

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## SPATIAL AND PHYSICAL QUALITIES OF PUBLIC RECREATIONAL PARKS IN ADDIS ABABA:

### The Case of Selected Inner City Recreational Parks

Salem Gulilat Tilahun, Darik Zebenigus Wuhib

Addis Ababa University

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#### Abstract

*Public spaces are an essential part of cities as they contribute to improvements in quality of life and urban development. Additionally, urban residents' "quality of life" results from their interactions with the spatial and physical urban environment. Many studies indicate that public recreational parks are a fundamental physical component of a city to attain livability, environmental quality, social integrity, and sustainability. They also show that they are a driving force in improving quality of life. The Addis Ababa city administration launched different projects in response to the inadequate physical and spatial quality to rehabilitate and develop substandard recreational parks. However, the lack of standard criteria for the design and quality assessment of public space, especially public recreational parks, made it challenging to maintain the physical and spatial quality of the parks. Research on the human aspects of uses and related activity in recreational parks is also disregarded. There is also an inefficient and inconsistent evaluation of the recreational park's spatial and physical changes by the responsible organization. The general objective of this study is to evaluate the success of public recreational parks' physical and spatial quality in the inner city. It mainly focuses on the current operation of three public recreation parks in Addis Ababa, Ambassador Park, Lideta Park, and Sheger Park. In the study, the case study method was employed using observational studies and closed-ended questionnaires. The selected case study areas were analyzed according to Site Specific Assessment frameworks, use and user, accessibility, amenities & furniture, comfort & safety, and a green environment, using quality indicator scores ranging from one to five. The study's findings indicated that the recreational spaces in the case study locations, Lideta Park and Sheger Park, are inadequate, below site-specific standards, and have poor spatial and physical quality. The parks have fewer users with low social interaction, and the users were unsatisfied. Despite issues with inclusion, sustainability, and energy efficiency, Ambassador Park gets a medium score. The park has better physical and spatial quality where users have a better experience of public space and quality of life, and users prefer to enjoy and stay longer and engage in social interaction. Therefore, using research-based planning approaches, general recreational park standards must be developed and implemented to improve the quality of existing recreational parks and guide newly designed public recreational spaces.*

Key Words: Public Space, Public Recreational Parks, Spatial and Physical Quality Dimension



## **1. Introduction**

The 2016 Global Public Space Program annual report indicates that "public space is a vital component of a prosperous city. A well-designed and managed public space is a key asset for a city's functioning and positively impacts its economy, environment, safety, health, integration, and connectivity. "Public space is a primary ingredient in an urban environment, and it is a place of encounter where public life unfolds" (Ali Madanipour, 2016). The quality of life for people in cities is directly related to the state of their public spaces. Providing public spaces enhances community cohesion and civic identity and supports the urban density levels required for environmentally and economically sustainable cities"(UN-Habitat, 2016).

Public recreational parks are multi-purpose public spaces in the city that offer social, economic, and environmental benefits (Urban Park Online, 2001). They improve the quality of urban life and enhance the image of a city. These public spaces are valuable for people and provide diverse recreation and social interaction opportunities. Those having a solid character are welcoming, inclusive, and have beautiful looks (Cabe Space, 2003). Urban recreation parks are open spaces that often provide play and sports areas, recreation facilities, and entertainment (Torkildsen, 2005).

Ethiopia is an under-urbanized Sub-Saharan African country, and the urban population of 21.2% of the total population is increasing rapidly with an annual rate of urbanization of 4.63% (Tegenu, 2010). According to the United Nations Economic Commission for Africa 2019 report, the urban population will reach 42.3 million by 2037. The country engaged in rapid and comprehensive development activities to secure sustainable and reliable growth, including Sustainable Development Goal 11, "Make cities and human settlements inclusive, safe, resilient and sustainable."

Addis Ababa is the capital city of Ethiopia, congested with high population growth and facing urban development challenges (The World Bank Group, 2015). However, the city performed adverse on the quality of life dimension in terms of the low level of public space (UN-Habitat city prosperity index). The report recommends the necessary sustainable and strategic policy attention over the coming years (UN-Habitat, 2018). Accordingly, the country formulates policy,

strategies, and urban green infrastructure standards at a national level to create the framework for municipalities to provide effective and sustainable urban green infrastructure (UGI) for their citizens to protect public health and environmental quality. However, there is still a gap in specific design guidelines and standards to keep the public space quality and provide quality public recreational parks.

The Addis Ababa City Council (AACC) Structural Plan of 2017 considers and classifies public space under the land use application and environmental section. It estimated the per capita green space in the city at one square meter per person, below the World Health Organization (WHO) standard of 9 square meters per person and the African standard of 7 square meters per person. (AACC, 2017). The AACC structural plan ambitiously proposed establishing new public recreational parks with a total size of 2730 ha and classified into 2437 ha of City Parks, 237 ha of Sub-city Parks, and 56 ha of Wereda Parks until 2027 to increase the per capita green space. However, the AACC structural plan focuses on increasing the per capita green space, ignoring the existing public recreational parks' spatial and physical quality gap.

Therefore, this research aims to evaluate existing public recreational parks' spatial and physical quality in selected inner-city recreational parks. The study shows the knowledge gap in how it falls to provide a quality public recreational park for everyone to relax, learn, recreate, and enhance public life. Furthermore, it is very relevant to researchers, urban planners, and developers to formulate foundation knowledge on the spatial and physical quality of public recreational parks and help the decision-makers lead a direction and uses it as a guideline to the city recreational park development and provision of public infrastructure.

## **2. Materials and Methods**

### **Study Area Description**

Addis Ababa is the capital city of Ethiopia, and it is located between 8°49' 55.929 "and 9°5' 53.853 " north latitude and 38°38'16.55" and 38° 54' 19.547 " east longitudes with the altitude ranging from 2,355 to 3300 meters. The city climate zone is categorized under subtropical highland and receives a mean annual rainfall of 1200 mm and a mean annual temperature of 16 °C (Tensaye Abate, 2019). From the 2007 population census led by the Ethiopian national

statistics authorities, Addis Ababa covers an area of 51948.85 hectares. It has 2,739,551 inhabitants, about 60% of the country's total urban population.



Figure: 2.1 Current map of Ethiopia. Addis Ababa urban centers

### **Study site selection criteria**

1. Public recreational parks which have defined boundaries and are bonded by the built forms in the city center and intermediate zone.
2. The second criteria for the study are public recreational parks at Sub-city Park and city park levels are considered due to their large population service and carrying capacity
3. The third criteria are public recreation parks recently being maintained by the city Addis Ababa City Government River Basins and Green Areas Development and Administration Agency and or the sub-city Environmental and green.
4. Public recreation parks give full service and have special uses to the public.
5. The last classification is the functional and historical significance of the park in the inner city

The case study areas, Ambassador Park, Lideta Park, and Sheger Park, were selected based on the above five selection criteria. According to the Addis Ababa city administration 56 integrated land information center 2014 ATLAS report, these parks are sited in Arada sub-city, Lideta Sub-

City, and Gulele Sub-city. Arada sub-city, situated in the central part of Addis Ababa, covers 950 hectares with a total population size of 212,000 and an average density of 223 people per hectare. And also, the Lideta sub-city and Gulele sub-city covers 918.27 and 3119.1 hectares, respectively. Lideta sub-city has a 193,458 population size with an average density of 210.64 people per hectare. Also, the Gulele sub-city has a 267,381 population size with an average density of 85.72 people per hectare.

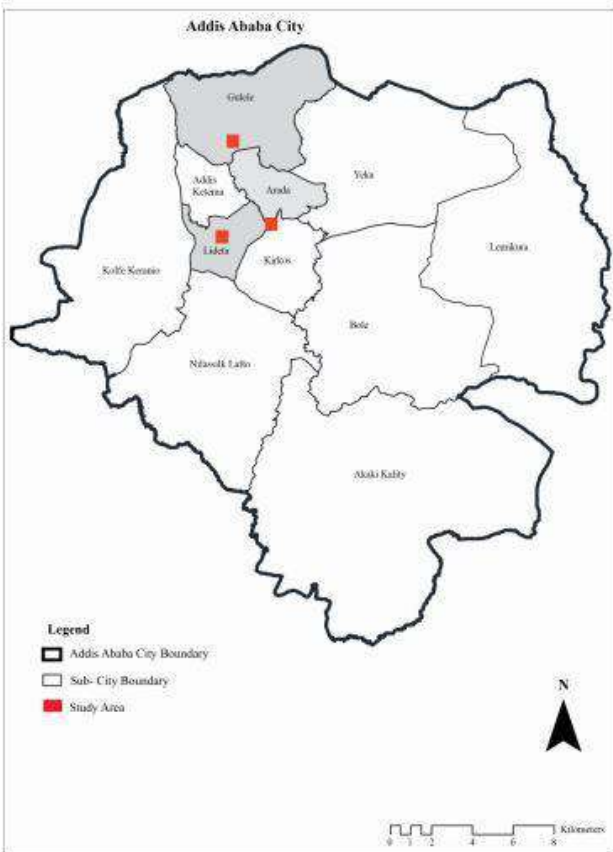


Figure 2.2 Addis Ababa city administration Sub-Cities boundaries

### 3. Research Methods

An exploratory multiple case study approach is used to address the research objectives to evaluate the spatial and physical quality of a public recreational park operated in the inner city of Addis Ababa. A case study approach allows in-depth, multi-faceted explorations of complex issues in their real-life context in a specific geographical area or a minimal number of individuals

as the subjects of study (Dawson, 2007). Multiple sources of evidence are used to develop the various dimensions of view to improve the research's accuracy and strength. Data were collected using both primary and secondary data sources. Preliminary data was gathered through direct observation using pictures, counting, and mapping. In addition, a site survey questionnaire was used to identify and measure people's satisfaction with the spatial and physical qualities of the public recreational parks.

On the other hand, different research documents, books, journals, and reports were used as secondary data from government offices, libraries, and internet search engines. This study combines both qualitative and quantitative methods and data analysis. "The qualitative method is important in the behavioral sciences where the aim is to discover the underlying motives of human behavior" (C.R.Kothari, 2004). A closed-ended questionnaire survey was conducted to collect and analyze quantitative data using random sampling. "Quantitative research generates statistics through the use of large-scale survey research, using methods such as questionnaires or structured interviews" (Dawson, 2007)

#### **4. Analysis and Discussion**

This section presents the results and discussion of selected case areas based on the five dimensions, use and user, accessibility, amenities and furniture, comfort and safety, and green environment.

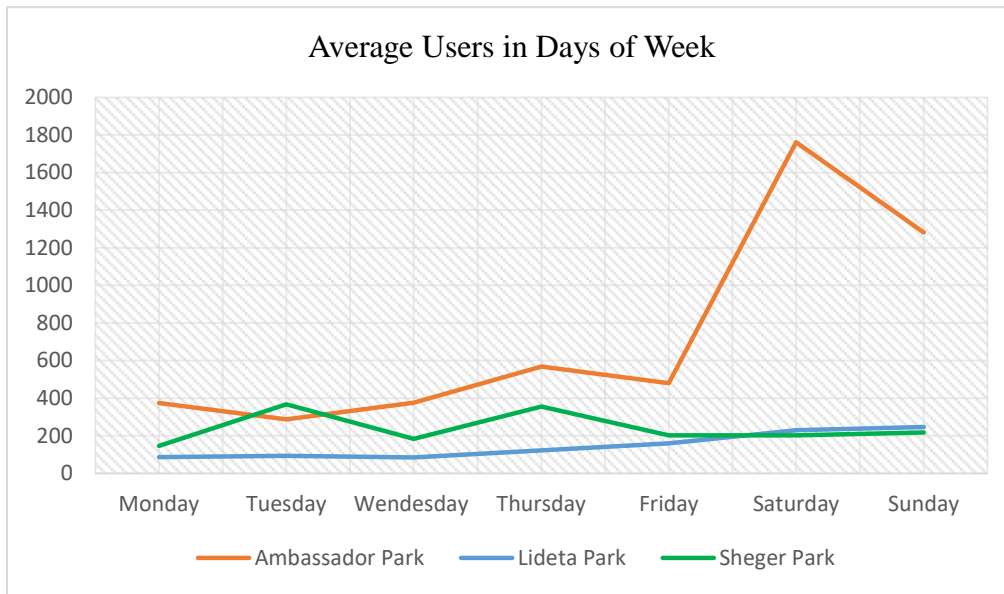
##### **4.1 Use and User**

All Parks are open to the public in a day time from Monday to Sunday, and the parks are composed of various users and activities, such as a café and restaurant, traditional coffee and restaurants, a children's playground, and photo/video shooting events. Additional activities and services are accommodated in Lideta Park, a book shop, Sheger Park, a game zoon for youth, and a ground tennis sports field.

The average number of users in a day's interval varies in each park and the day's timeline. The number of users increases in the morning in Lideta Park and Sheger Park; however, in mid-day and afternoon in Ambassador Park. Weekend days have the highest pick for Ambassador and Lideta Parks; however, Sheger Park has the highest visitors on weekdays. The dominant

recreational park users are below 35, 80% in Ambassador Park, 62.86% in Lideta Park, and 88% in Sheger Park. In Ambassador Park, users mainly visit the park to get fresh air, use the children's playground, meet friends and use restaurants and cafés, Lideta Park to get fresh air, meet friends and read books, and Sheger Park attends events, use the children playground and youth game zone.

Chart 4.1: Average number of users in a day's interval of recreational Park users in days of week



## 4.2 Accessibility

All parks are accessible using public transport, and its surrounding area within a radius of 400 meters have continuous accessible travel paths and provides safe and inclusive movement to all type of pedestrians. These parks have more than one entry point; however, only their primary entrance is open to the public to access the park. Users need to walk along route to find access points, and also it neglects the adjacent land use and public activity.



Figure 4.1 Ambassador Park surrounding accessible routes and entrances



Figure 4.2 Lideta Park surrounding accessible routes and entrances



Figure 4.3 Sheger Park surrounding accessible routes and entrances

## Access in the park

Sheger Park has the poorest access to service in its compound. Its inner routes are disconnected, not even in standard pavement material and design. It is not user-friendly and inclusive, and disabled users are hindered from moving in and around the park. Lideta Park also have accessibility issue in the recreational park due to its substandard design and poor construction material. In contrast, Ambassador Park has well-connected and inclusive routes that provide easy access to the activities and amenities.

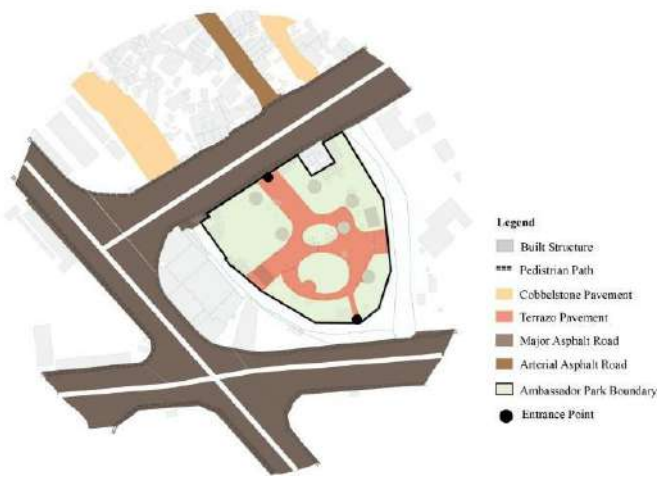


Figure 4.4 Ambassador Park accessible

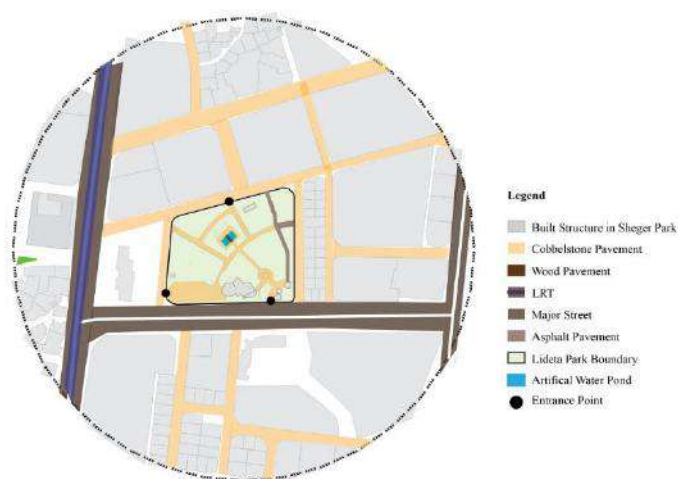


Figure 4.5 Lideta Park accessible

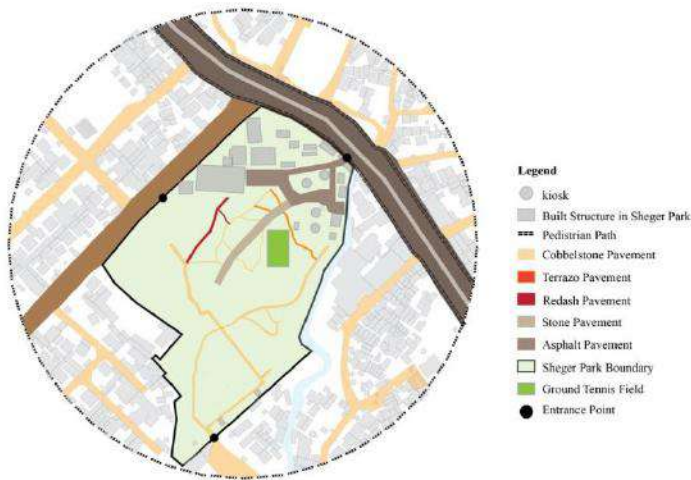


Figure 4.6 Sheger Park accessible

### 4.3 Amenities and furniture

Ambassador and Lideta Park have good vistas, and daylight easily penetrates the park through spread-out trees due to its clear widths. Users can sit or stand in the sun and get tree shade space when needed. However, in Sheger Park, natural light is limited, and users feel discomfort spending a long time. Concerning artificial lights, Lideta Park and Sheger Park do not have artificial light, and there is no activity during the evening time. It is necessary to understand the basic amenities and the overall configuration of the space to support activities for a more extended period.



Ambassador Park



Lideta Park



Sheger Park

Figure 4.7 Natural Lighting in the park during day time Ambassador Park, Lideta Park and Sheger Park

Both Ambassador Park and Lideta Park has enough natural light during the daytime, canopy trees and plants have proper spacing to penetrate the sunlight. But In case of Sheger Park, trees are planted closely with depth crown of canopy and the dense shrubs that limits the visual connection and natural light penetration in a green zone of the park. During night artificial outdoor light are absent in Lideta Park and Sheger Park there is no activities in the park.

### **Presence of inclusive recreational structures for outdoors activities**

Presence and quality seating keep people in the space for a long time. Ambassador Park has a variety of comfortable seats with waste bins where users stay longer; however, Sheger Park has few numbers of seating with poor quality and an absence of waste bins that limit the user's comfort and the physical quality of the park. Lideta Park has substandard seating furniture due to its poor design and maintenance that affects the comfort of users.



Ambassador Park



Lideta Park



Sheger Park

Figure 4.8 Seating furniture and structure in Ambassador Park, Lideta Park and Sheger Park

Users are also hindered access to clean water and toilet in Sheger Park and Lideta Park; in contrast, Ambassador Park has better facilities. However, it still overlooks disabled users to accommodate the service. The absence of these facilities discourages users from visiting and staying in the park. In addition that all the parks do not have signage and emergency items where users encounter difficulty getting information and services in the compound. Users lose their sense of direction and visual connections to the space.



Ambassador Park



Lideta Park



Sheger Park

Figure 4.9 Toilet in Ambassador Park, Lideta Park and Sheger Park

#### 4.4 Comfort and safety

All parks are fenced to protect from intruders, vandalism, and theft. The site observation identified that Ambassador Park is well maintained, user-friendly, safe, and secured. As a result, the spatial arrangement of sitting and playing areas and the visual clearance between plants create better surveillance. In addition, the park has children's safe environment and diverse activities, which attract more users to the park and make the space more active and public. The physical and spatial conditions would sustain the observing eye. As Jane Jacobs argues, public spaces would be safer if they were zoned for an intricate mingling of different uses and observed in Ambassador Park. On the contrary, Lideta Park is not children-friendly because of its degraded physical quality of amenities and vulnerable space, concealed children's playground, and absence of surveillance. Sheger Park's green zone is out of active surveillance, and more than 80% of users feel insured and discomfort.



Ambassador Park



Lideta Park



Sheger Park

Figure 4.10 Children playing area Ambassador Park, Lideta Park and Sheger Park

Ambassador Park has scenic and attractive view compared to Lideta Park and Sheger Park due to its well-designed and managed space. However, the park has encountered bad smells and smock from nearby. The same challenge is also observed in Sheger Park, where a polluted river with a foul smell and a dreadful environment in the park. All respondents were unsatisfied with the quality of the sensory experience of Sheger Park. In terms of sound pollution, except for Sheger Park green zone, all the parks are affected because they are located on a major street, and loud sound comes from nearby bars and vehicles. Environmental quality encourages people to spend more time in outdoor activity in any weather condition. In this study, all parks are not functional during wet weather because of the absence of shelter and shade space.



Ambassador Park



Lideta Park



Sheger Park

Figure 4.11 Children playing area Ambassador Park, Lideta Park and Sheger Park

#### 4.5 Green Environment

All parks comprises different biodiversity plants, trees, grasses, and shrubs, and particularly Sheger Park has native plants, and flowers such as Gerar, Zegba, Tikur Enchant, Habesha Tide, Weyra, and Koso. Ambassador Park, Lideta Park and Sheger Parks has 75 %, 80% and 86.36% ratio of the green coverage respectively and met the local green coverage ratio standards ratio of 75 % green/soft components and 25 % other components.

Lideta Park and Sheger Park do not have an active and passive rainwater mitigation system and are not free from the risk of storm-water floods. In addition that, Sheger Park is on the high risk of flood, soil erosion, and sliding and the severity increases in the wet weather and the groundwater table is near the surface, however the park did not utilize the natural water source for recreational and consumption purposes. Furthermore, the unfiltered polluted sewerage water creates hazard environment for the plant, people, and the environment. In contrast Ambassador Park uses active and passive approaches to manage the storm water or the surface water runoff of the compound in the rainy season. The impervious surface of the park is well designed with curbstones and expansion of the drainage system.



Ambassador Park



Lideta Park



Sheger Park

Figure 4.12 Green cover of Ambassador Park, Lideta Park and Sheger Park

All the park fails to use energy cost-effectively to carry out a manufacturing process or provide a service. In other words, the parks do not respond to energy-efficient systems such as absence of solar energy systems, waste composting systems, usage of recyclable material, and rainwater collector. In the overall site-specific assessment, the spatial and physical quality of the parks were assessed based on score levels from zero to five. Ambassador Park scored about average and has good quality. And also, Lideta Park and Sheger Park scored below the standard and have poor spatial and physical qualities.



Figure 4.13 Quality Assessment of Ambassador Park, Lideta Park and Sheger Park

## 5. Conclusion

Public recreation parks enhance livability, environmental quality, and sustainability in urban centers. Despite these circumstances, the physical and spatial quality of recreation parks in developing cities like Addis Ababa is far from ideal. These public recreational spaces in the city are poorly designed and maintained. As a result, it fails to make a successful public recreation park where everyone can relax, recreate, learn, and improve the quality of public life. Hence, this study intends to evaluate the spatial and physical quality of chosen inner-city parks currently used as public recreation areas. The present study mainly deals with three study case areas: Ambassador Park, Lideta Park, and Sheger Park. Their levels of physical and spatial qualities are affected and determined by the use and users, accessibility, comfort and safety, amenities and furniture, and environmental components of the recreational spaces.

Five quality evaluation dimensions determine these recreational parks' spatial and physical quality: use and users, accessibility, comfort and safety, amenities and furniture, and environmental components. And the research results indicate few users and activities in the two study case areas, Lideta Park and Sheger Park. The dominant number of users is below the age of 35. In addition, both parks have limited activities and access that hinder the number and variety

of users. Since Ambassador Park offers a wide range of services that are accessible and inclusive, a significant number and types of users visit the park. Lideta Parks and Sheger Parks, in contrast, have few visitors and activities. The gardens are also inaccessible and not inclusive to accommodate children, the elderly, and people with disabilities.

Amenities and furniture are crucial for creating vibrant and functional public recreational spaces. In a recreational park, a variety of public infrastructure, and amenities, including public toilets, lamps, seats, waste bins, and floor furnishings, must increase its visual and physical liveliness. Additionally, this amenity should take into account all park users. These components are successfully accommodated in Ambassador Park. However, people are dissatisfied because they are missing from Lideta Parks and Sheger Parks. These Parks also face physical challenges, such as lack of maintenance and deterioration caused by poor management and insufficient attention to parks, as well as lack of comfort and convenience caused by the absence of design and upkeep.

Unfavorable factors, including noise, pollution, inefficient use of space, security issues, poorly maintained physical infrastructure, a lack of cleanliness, and absence of shade structure, have a detrimental impact on Lideta Park and Sheger Park recreational park users. However, Ambassador Park offers a high level of security and safety, providing all users with a pleasant and inviting environment.

The level of biodiversity and the park's microclimate immediately affect the user's comfort and the neighbors' quality of life. All of the parks are considered to be green and have great biodiversity. However, Lideta Park does not have plant diversity. In terms of environmental resilience and energy-efficient, all parks are not responsive to this element.

Therefore, the research has demonstrated that the recreational spaces of Lideta Park and Sheger Park are deprived and below site-specific quality standards. Despite issues with inclusion, sustainability, and energy efficiency, Ambassador Park gets a medium score on physical and spatial quality. Therefore, Ambassador Parks' users have a better experience and perception of quality public recreational space, and the park also improves the quality of life for users and adjacent residents.

## **6. Recommendation**

The need to provide quality public recreational parks within the most densely populated areas of Addis Ababa is important and at the same time challenging. The scope of these recommendations addresses the physical and spatial quality of public recreational parks within the Addis Ababa city and study Area. In light of this, the research carried out in Ambassador Park, Lideta Park, and Sheger Park examined referring site-specific assessment dimensions such as use and activities, accessibility, comfort image, amenity and furnishings, and green environment. The research finding showed significant issues with these public areas' spatial and physical quality. Therefore, using research-based planning approaches, general recreational park standards must be developed and implemented to improve these public spaces in the city.

Recreational parks should design flexible public spaces to host and attract different activities throughout the day, week, or year and accommodate different events and activities like markets, games, concerts, and/or sports, food festivals, and other activities. And also, these public spaces should consider integrating seasonal landscaping and appropriate infrastructure for these events. As a result, it is essential to encourage opportunities for interaction, including for all ages and all experiences, which are active recreation, contemplation, and social gathering.

Public recreational parks must be welcoming and accessible to all. They should be conveniently situated within walking distance of public transportation stops. Successful public spaces should be connected to the neighborhoods they are located in and are easy for everyone to access, including children, elders, and those with disabilities. In addition, public recreational spaces should be integrated into the network of existing park activities and services, other public spaces, ecological and historic areas, and community destination areas.

The park should consider principles of crime prevention through environmental design by providing open lines of sight throughout parks and integrating physical infrastructure. This encourages natural surveillance by strategically placing furniture, lighting, bushes, and trees. The recreational park should serve as a hub for social interaction, communal pride, and a sense of identity. They must offer various opportunities for socializing, playing, relaxing, and being appealing, safe, secure, and engaging.

Amenities should be located in places that maximize use, and the overall park purpose should support by the furniture, sports amenities, and special features. Seating, tables, waste bin, and public arts should offer a diversity of configurations with cozy and long-lasting materials that people of all ages and abilities use. Permanent seating should be placed where desired along connected walkways and connecting pathways. Seating infrastructure should be placed to enhance vistas and lines of sight throughout the space. In addition, it should consider mobile furnishings that let guests choose and congregate in smaller or larger groups when desired.

The recreational park should provide attractive, functional drinking water or fountains and inclusive restrooms. It should also be close to active recreation sites and main circulation routes to provide easy and safe access to the service. Signage should integrate with the landscape and reflect the recreation park's historical or natural character.

Public recreational parks also promote better environmental management, education, and responsible contact with the environment. It should use native plant and tree species that do well in the local climate and consider using a diverse palette of plant and tree species that provide different colors, forms, and textures throughout the year.

Recreational parks should use recyclable, recycled, and environmentally friendly products and consider interactive design solutions to enhance the relationship between people and the natural environment. And also, it should consider green roofs on buildings, bio-swales, rain gardens, conservation landscaping, and permeable pavers to reduce storm water runoff. It should provide a design solution that balances recreation space and habitat restoration and mitigate undesirable microclimatic conditions, such as structures to provide shade and screening to buffer wind and noise.

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## Annex II

### Ethiopian institute of Architecture, Building Construction and City Development, (EiABC)

#### Masters of Science in Urban Design and Development

This questionnaire intended for academic purpose as a prerequisite for Master thesis in urban design and development at Ethiopian institute of Architecture, Building Construction and City Development, (EiABC), Addis Ababa University. It is designed to conduct a research on the titled “Evaluation quality of recreational park” and use to understand user satisfaction and experience on recreational park qualities in Addis Ababa the case of Sheger Park, Ambassador Park, and Lideta Park. The respondent information is kept strictly confidential.

Instruction: Please mark on a box that matches to your response and write your answer on open end questions.

#### Part I General Background of Respondent (Demographic information)

1.1 What is your gender?

Female  Male

1.2 What is your age range?

Under 10  10 -17  18- 29  30 – 45  45-60   
Above 60

1.3 Do you identify with any particular community?

Vision impair  Deaf/hard to hear  Physical/locomotion disabled   
Other

## Part II; Activity and service questions

This section focus on the user experience and presence of different inclusive activities in the public recreational park.

2.1 How often do you visit the park?

Daily  Weekend  Once in a week  Once in month

2.2 Why do you visit the park?

Get fresh air and enjoy the surrounding

Sport and playground area

Read books

Game zone

Visit children playground

Meet people and friends

Attend event, watch sport

Eat and drink

Use restaurant and cafeteria

Use toilet and shower

Other

2.3 How long do you spend at the park?

Half an hour or less

Between half and an hour

One to two hours

Two to four hours

Longer than four hours

2.4 Which part of the park do you like most or preferred to visit?

Outdoor sitting area

Sport and playground area

Game zone

Children playground

Restaurant and cafeteria

3.1 How do you travel to the park?

On foot

Bike

Taxi

Bus

Car

3.2 How long your journey does it takes?

0-5mins

5-10min

10-20min

20mins and more

### Part III; User satisfaction questions

This section of the questionnaire composed of questions on users satisfaction based on the five public space quality evaluation parameters (use and user, accessibility, amenity and furniture, safety and comfort and green environment). Therefor you are kindly request to rate by put mark in the box to what extent you strongly agree to strongly disagree according to the Likert scale given below.

**Strongly agree = 5    Agree = 4    Neutral=3    Disagree =2    Strongly disagree =1**

	Statement	Respond the level of your satisfaction to the cause				
		Strongly disagree	disagree	Neutral	agree	Strongly agree
scale		1	2	3	4	5
<b>A. Use and User</b>						
1	There are divers and inclusive activities in the park among time (for children, elderly, disable people, etc)					

<b>B. Accessibility</b>						
1	People find it easy to access the park, through a network of paths, streets, public transport and signage					
2	People can easily access the public space through multiple entrances					
3	Easy to move around the space by of all ages and physical condition					
4	people walking are protected from all vehicles including cyclist					

<b>C. Amenities &amp; furniture</b>						
		Strongly disagree	disagree	Neutral	agree	Strongly agree
<b>scale</b>		1	2	3	4	5
1	There are enough seating facilities with standard dimension					
2	There are shops, cafes, community services or economic activity in the park					
3	There is toilet facility in the park with adequate service quality					
4	There are enough wastes bin facilities in the park					
5	The signage are in standard quality and well informative					
6	There is accessible and inclusive pedestrian walkway and path					

<b>D. Comfort and Safety</b>						
		Strongly disagree	disagree	Neutral	agree	Strongly agree
<b>scale</b>		1	2	3	4	5
1	The park is clean with well-maintained amenities.					
2	There are comfortable place in the park to sit, stay, or relax and amenities are provided					

3	In the park people can sit in the shade or in the sun					
4	There are enough trees, grass and plants to make the public space shaded and comfortable					
5	The park is safe to stay in day time					
6	The playground in the park is safe for kids to play					
7	The park is visually attractive with scenic qualities					
8	The park provide interesting atmosphere and activities to meet and socialize with people					
9	Presence of good social behaviors (no drinking, no sleeping, no smoking, no vandalism, etc) in the park					

<b>E. Green Environment</b>						
		Strongly disagree	disagree	Neutral	agree	Strongly agree
	<b>scale</b>	1	2	3	4	5
1	You are protected from noise, dust, unpleasant smells, smock or pollution.					
2	In park there are features sheltered from sun, and rain in the park.					

**Part VI General Question**

<b>F. General Question</b>						
		Strongly disagree	disagree	Neutral	agree	Strongly agree
<b>scale</b>		1	2	3	4	5
1	The park overall quality and service is satisfying?					

2 If you have an improvement priority what might it be?

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Thank you so much for your genuine cooperation

በኢትዮጵያ ኦርኮቴክቸር ፣ ህንፃ ግንባታ እና ከተማ ልማት ተቋም

አዲስ አበባ ዩንቨርሲቲ

አርበን ዲዛይን እና ዲቨሎፕመንት የድህረ ምረቃ ክፍል

ይህ መጠይቅ በኢትዮጵያ ኦርኮቴክቸር፣ ህንፃ ግንባታ እና ከተማ ልማት ተቋም (አዲስ አበባ ዩንቨርሲቲ)፣ በአርበን እና ዲቨሎፕመንት የድህረ ምረቃ ትምህርት ለጥናታዊ ፅሁፍ ይረዳ ዘንድ የተዘጋጀ ነው። ጥናቱ በአዲስ አበባ የሚገኙ የህዝብ መኖሪያዎች (አንባሳደር መኖሪያ፣ ሸገር መኖሪያ እና ልደታ መኖሪያ ) መሰረት ያደረገ ሲሆን ለተገልጋዩ ያላቸው የአገልግሎት ደረጃ፣ ጥራት እና ብቃት የሚፈትሽ ነው።

መመሪያ: ከዚህ በታች ያሉትን ጥያቄዎች ከክፍል1 እስከ 4 የተቀመጡ ሲሆን መልስ

በተዘጋጀው ሳጥን ወይም ስንጠረዥ ዉስጥ የ √ ወይም X ምልክት እና በፅሁፈ ያስቀምጡ።

ክፍል: 1 የግል መረጃ

1.1 ያታ

ሴት  ወንድ

1.2 እድሜ

ከ 10 አመት በታች  10- 17  18-29  30 -45   
45-60  ከ 60 አመት በላይ

1.3 የአካል ጉዳተኛ ነገር አዎ  አይደለሁም

ከሆኑ አይነቱን ይግለፁ

የማየት  የመስማት  የእንቅስቃሴ መገታት  ሌላ \_\_\_\_\_

1.4 አደራሻ ፣

የመኖርያ፣ ክፍለ ከተማ እና ወረዳ \_\_\_\_\_

የስራ ወይም የት/ቤት ክፍለ ከተማ እና ወረዳ \_\_\_\_\_

**ክፍል: 2 በመናፈሻ የሚጠቀሙት አገልግሎትና የሚያከናውኑት ተግባር**

2.1 የመናፈሻ አገልግሎት ለመጠቀም በየስንት ጊዜ ይመጣሉ ?

በየቀኑ

በሳምንት አንድ ቀን

በሁለት ሳምንት አንድ ጊዜ

በወር አንድ ጊዜ

ሌላ ካለ ይጥቀሱ \_\_\_\_\_

2.2 በመናፈሻው ቅጥር ግቢ ውስጥ ምን ዓይነት አገልግሎት ለመጠቀም ይመጣሉ?

ንፅህናት ለመቀበል እና በአረንጓዴ ቦታ ለመናፈስ

እስፓርት ለመስራት (ጄም፣ የሜዳ ቴኒስ፣ የእጅ/አግር ካስ)

መፅሀፍ ለማንበብ

ጌም ለመጫወት (ፑል፣ ጆተኒ)

የህጻናት መጫወቻ ቦታ ለመጠቀም

ጎደኛ ወይም ሰዎችን ለማግኘት

ድግሶች ለመካፈል (ልደት፣ ሰርግ፣ ባዛር እና ኮንሰርት)

ካፌ እና ሬስቶራንት ለመጠቀም

የመፀዳጃ ወይም ሻወር ቤት ለመጠቀም

የግል ወይም የቤተሰብ ግዜ ለማሳለፍ

የኢንተርኔት አገልግሎት ለመጠቀም

ሌላ ካለ ይጥቀሱ \_\_\_\_\_

2.3 በመናፈሻ ቅጥር ግቢ ውስጥ ለምን ያህል ሰአት ይጠቀማሉ/ይቆያሉ?

30 ደቂቃ

ከ1 - 2 ሰአት

ከ2 - 3 ሰአት

ከ3 - 4 ሰአት

ከ4 ሰአት በላይ

2.4 የመናፈሻውን የትኛውን ቦታ ይመርጣሉ/ ይወዳሉ?

ውጭ ላይ ያሉ መቀመጫ ቦታ

የእስፓርት ማዘውተሪያ ቦታ

የህጻናት መጫወቻ ቦታ

ካፌ እና ፊት-ፊት

ገም (ፑል፣ ጆተኒ) መጫወቻ ቦታ

ሌላ ካለ ይጥቀሱ \_\_\_\_\_

2.5 ወደ መናፈሻው ለመምጣት የትኛውን የመጎጠሚያ አገልግሎት ይጠቀማሉ?

በእግር

በብስክሌት

በታክሲ

በባስ

በግል መኪና

2.6 ወደ መናፈሻው ለመምጣት ምን ያህል ጊዜ ይፈጅታል?

5 ደቂቃ

5-10 ደቂቃ

10-30 ደቂቃ

30 ደቂቃ በላይ

ሌላ ካለ ይጥቀሱ \_\_\_\_\_

**ክፍል: 3 የተናፋሽ እርካታ መመዘኛ ጥያቄዎች**

ይህ የደንበኛ እርካታ መመዘኛ ጥያቄዎችን የያዘ ሲሆን በአምስት ክፍል የተዋቀረ ነው እነዚህም አገልግሎትና ተጠቃሚ፣ ተደራሽነት ፣ ቁሳቁስና መሰረተ ልማት አንዲሁም አረንጓዴ አካባቢ ናቸው። በዚህ መሰረት የደንበኛ እርካታ ጥያቄዎችን ከአንድ እስከ አምስት በተቀመጡት የመመዘኛ ደረጃዎች መልስ ያስቀምጡ። የእርካታ ደረጃዎቹ ፦

- በጣም አልስማማም - 1
- አልስማማም - 2
- ገለልተኛ - 3
- እስማማለሁ - 4 እና
- በጣም እስማማለሁ 5

ሀ. መናፈሻ አገልግሎት እና ተናፋሽ						
በመናፈሻ ያገኙትን እርካታ						
		በጣም አልስማማም	አልስማማም	ገለልተኛ	እስማማለሁ	በጣም እስማማለሁ
	መለኪያ	1	2	3	4	5
1	በሁሉም እድሜ (ህጻናት፣ ወጣት፣ አዋቂ እና አዛውንት) ተመራጭ የሚሆን አገልግሎት በመናፈሻ ውስጥ አለ።					
2	ለአካል ጉዳተኞች ተመራጭ የሚሆን አገልግሎት በመናፈሻ ውስጥ አለ።					

ለ. የመናፈሻ ተደራሽነት						
በመናፈሻ ያገኙትን እርካታ						
		በጣም አልስማማም	አልስማማም	ገለልተኛ	እስማማለሁ	በጣም እስማማለሁ
	መለኪያ	1	2	3	4	5
1	ወደ መናፈሻ ለመምጣት የሚያግዙ አመቺ መንገድ (የእግረኛ እና መኪና መንገድ)፤ የህዝብ የመኒጅኒር ፤ መናፈሻ ጠቋሚ ታፔላ አለ።					
2	ወደ መናፈሻ ለመግባት ከተለያዩ አቅጣጫ ባሉት መግቢያ በሮች መጠቀም ይቻላል።					
3	በመናፈሻ ቅጥር ግቢ ውስጥ ለተናፋሽ (ህጻናት፣ ወጣት፣ አዎቂ እና አዛውንት በቀላሉ ለመዘዋወር አመቺ ነው።					
ለ	በመናፈሻ ቅጥር ግቢ ውስጥ ለአካል ጉዳተኛ በቀላሉ ለመዘዋወር አመቺ ነው።					
4	ተናፋሽ እግረኞች ወደ መናፈሻ በሚወስድ መንገድ እና በመናፈሻ ቅጥር ግቢ ውስጥ ከመኪና እና ከሳይክል እንቅስቃሴ የተጠበቀ ነው።					

<b>ሐ. የመናፈሻ መገልገያ ቁሳቁስና መሰረተ ልማት</b>						
<b>በመናፈሻ ያገኙትን እርካታ</b>						
		በጣም አልሰማም	አልሰማም	ገለልተኛ	እስማማለሁ	በጣም እስማማለሁ
	<b>መለኪያ</b>	1	2	3	4	5
1	በመናፈሻ ቅጥር ግቢ ውስጥ ለመቀመጫ አመቺ የሆኑ ወንበሮች ወይም ደረጃዎች አሉት። (ለህጻናት፣ ወጣት፣ አዎቂ እና አዛውንት፣ አካል ጉዳተኛ) ያማከለ ነው።					
2	በመናፈሻ ቅጥር ግቢ ውስጥ ሱቆች፣ ካፌ እና ፊትቶራንት ፣ የመፅሀፍት ማዕከል እንዲሁም የንግድ እንቅስቃሴዎች አሉ።					
3	በመናፈሻ ቅጥር ግቢ ውስጥ የመፀዳጃ ወይም ሻወር ቤት ደረጃውን የጠበቀ ፣ በበቂ ሁኔታ እና ንፅህና አለ።					
4	በመናፈሻ ቅጥር ግቢ ውስጥ የቆሻሻ ማጠራቀሚያ ደረጃውን የጠበቀ ፣ በበቂ ሁኔታ እና ንፅህና አለ።					
5	በመናፈሻ ቅጥር ግቢ ውስጥ መረጃ ተቋሚ ታፕላ በግልፅ፣ ለእይታ በሚነበብ መልኩ በበቂ ሁኔታ አለ።					

6	በመናፈሻ ቅጥር ግቢ ውስጥ ለሁሉም ተናፋሽ (ህጻናት፣ ወጣት፣ አዎቂ ፣ አዛውንት እና አካል ጉዳተኛ) አመቺ የእግረኛ መንገድ አለ።					
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መ. የመናፈሻ ምቹት እና ደህንነት						
በመናፈሻ ያገኙትን እርካታ						
		በጣም አልስማማም	አልስማማም	ገለልተኛ	እስማማለሁ	በጣም እስማማለሁ
	መለኪያ	1	2	3	4	5
1	መናፈሻ ቅጥር ግቢው ንፅሁ እና በአግባቡ የተጠበቀ ነው።					
2	በመናፈሻ ቅጥር ግቢው ለመቀመጥ፣ ለመቆም ወይም ለመዝናናት አመቺ ቦታ እና ቁሶች አለ።					
3	በመናፈሻ ቅጥር ግቢው ፀሀይ ለመሞቅ ሆነ ጥላ ለማግኘት የሚያገለግሉ መቀመጫዎች አለ።					
4	በመናፈሻ ቅጥር ግቢው በቂ የሆነ ዛፍ፣ አፅዋት፣ አበቦች፣ አመቺ በሳር የተሸፈነ መሬት አለ።					

5	በመናፈሻ ቅጥር ግቢ ውስጥ ለመዝናናት ደህንነት የተጠበቀ ቦታ ነው ።					
7	በመናፈሻ ቅጥር ግቢው የህጻናት መጫወቻ ቦታ ለልጆች አመቺ እና ለመዝናናት ደህንነቱ የተጠበቀ ቦታ ነው።					
8	መናፈሻው ለእይታ ሳቢ እና ማራኪ ቦታ ነው።					
9	መናፈሻው ማህበራዊ ግንኙነትን የሚያበረታታና የሚጋብዝ ነው።					
10	በመናፈሻ ቅጥር ግቢ ውስጥ መልካም ስነምግባር አለ ። (ማጨስ ፣ መቃም ፣ መስከር፣ መላከፍ ፣ ማሰፈራራት እና ዘረፋ የለም)					

<b>ሠ. አረንጓዴ አካባቢ</b>						
<b>በመናፈሻ ያገኙትን እርካታ</b>						
		በጣም አልሰማም	አልሰማም	ገለልተኛ	እስማማለሁ	በጣም እስማማለሁ
	<b>መለኪያ</b>	1	2	3	4	5
1	መናፈሻው ከድምፅ ፣ ከሽታ ፣ ከአየር/ጭሰ ብክለት የተጠበቀ ነው።					

2	በመናፈሻ ቅጥር ግቢ ውስጥ ከፀሀይና ዝናብ የሚያስጠልል ቦታ አለ።					
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<b>ፈ አጠቃላይ አገልግሎት</b>						
<b>በመናፈሻ ያገኙትን እርካታ</b>						
		በጣም አልስማማም	አልስማማም	ገለልተኛ	እስማማለሁ	በጣም እስማማለሁ
	<b>መለኪያ</b>	1	2	3	4	5
1	የመናፈሻ አጠቃላይ ይዘት እና አገልግሎት የሚያረካ ነው ።					

**ክፍል 4 የግል አስተያየት**

1. በመናፈሻ ቅጥር ግቢ ውስጥ ከተመለከቱት ወይም ካጋጠምዎ ችግሮች ቅድሚያ ቢሰጣቸው እና ቢስተካከሉ የሚሉት ካለ ይግለፁ።

ስለ ቅን ትብብር ከልብ አመሰግናለሁ!

**Ambassador Park Advanced digital scoring - Instructions**

Now it is possible to score the quality of the public space. The **score of each dimension depends from the result of the indicator and the weighting system applied**, depending from the priority (sheet 1 - prioritization of indicators). The **indicators results depend from the answers given to the sub-indicators**. Rank with a score from 1 (Strongly Disagree) to 5 (Strongly Agree) the sub-indicators, using the grey cells.

Note that not all the questions need an answer. There might be some sub-indicators that are not applicable in your specific case study. For instance a tiny pocket place in the suburbs might not need the presence of public toilets or other specific services. Therefore, no score should be applied for these questions and the final indicator score would only consider the other answers. The minimum questions that must be ranked are indicated with a (\*). However, large public spaces located in mixed use neighbourhood in the city centre (review sheet 1), have a great impact and attract social life. In this case, all the questions should be answered.

The scores indicated will automatically generates **two charts**: one showing the quality assessment considering the five dimensions and one showing the alignment with the SDG 11.7.1 and its three criteria: how accessible, how inclusive and how safe is the public space.

Some **comments** are provided to guide the users while scoring the quality of each indicator and sub-indicator.

dim	indicators	priority	observation scale	sub-indicators / questions	quality scoring					
					answers (1 > 5)	indicator	weight	weighted score	dimension	
Use and users	Number and variety of <b>users</b> accessing the public space	yes	*	site	Number of users during the day	4	3.33	1.1	3.67	3.17
			*	site	Number of users during the night	2				
			*	site	Variety of users in the space (age, gender, ability, ethnicity)	4				
	Number and variety of <b>activities</b> observed in the public space among time and space	-	*	5-min-walking	Amount of mixed use in frontage building	4	2.67	1	2.67	
			*	site	Presence of vacant unit in frontage building	1				
			*	site	Presence of different inclusive activities in the public space among time (for all including disable people)	4				
			*	5-min-walking	Presence of non-designed, temporary activities, organised by the local governance and the community	3				
Accessibility	Accessibility and presence of qualitative and inclusive facilities for <b>private vehicles</b>	-	*	5-min-walking	Presence of areas reserved for private vehicles movement	2	2.00	1	2.00	
			*	5-min-walking	Quality of reserved area in terms of dimensions, design, location and conditions	2				
			*	5-min-walking	Level of traffic on the streets	3				
			*	5-min-walking	Presence of inclusive and free parking area for private vehicles (including for people with disability)	1				
	Accessibility and presence of qualitative and inclusive facilities for <b>bikes</b>	-	*	5-min-walking	Presence of areas reserved for bikes movement	1	1.00	1	1.00	
			*	w	Quality of reserved area in terms of dimensions, design, location and conditions	1				
			*	5-min-walking	Level of use of the bike lane	1				
	Accessibility and presence of qualitative and inclusive facilities for <b>pedestrians</b>	-	*	5-min-walking	Presence of areas reserved for pedestrian movement	5	4.25	1	4.25	
			*	5-min-walking	Quality of reserved area in terms of dimension, design, location and conditions	5				
			*	5-min-walking	Presence of pedestrian crossing	5				
*			5-min-walking	Presence of ramps for wheelchairs with correct design and inclination (10%)	5					
*			5-min-walking	Presence of functional sound crossing devices	1					
*			5-min-walking	Presence of tactile pavement paths	5					
Accessibility and presence of qualitative and inclusive facilities for <b>public transports</b>	-	*	5-min-walking	Overall perception of accessibility	5	5.00	1	5.00		
		*	site	Presence of by-law and restrictive access rules (operational use, time-frame, fees or physical obstacles)	3					
		*	5-min-walking	Presence of public transport	5					
Presence and quality of <b>lighting</b>			*	5-min-walking	Presence of public transport	5	5.00	1	5.00	
			*	5-min-walking	Level of use of public transport	5				
			*	5-min-walking	Quality of transport facilities, in terms of dimension, design and location	5				
			*	5-min-walking	Presence of natural lighting	5				
			*	5-min-walking	Presence of artificial lighting	5				

Amenities and furniture	Presence and quality of <b>lighting</b>	-		5-min-walking	Quality of light source, in terms of quantity, design and distribution	5	3.00	1	3.00	3.79
				5-min-walking	Quality of illumination power (50 lux)	5				
	Presence and quality of amenities for <b>recreational structures</b>	-	*	5-min-walking	Presence of inclusive recreational structures for outdoors activities (playground, sports, etc.)	5	4.67	1	4.67	
				5-min-walking	Quality of recreational structures in terms of dimensions, design and location for children and disabled people	4				
				5-min-walking	Level of use of recreational structures	5				
	Presence and quality of <b>seating</b>	-	*	site	Amount of primary or secondary seating (benches, mobile chairs, stairs, etc.)	4	4.00	1	4.00	
				site	Quality of seating in terms of dimension, design, material and location	4				
				site	Level of use of seating elements	4				
	Presence and quality of <b>waste bins</b>	-	*	site	Amount of waste bins	5	4.67	1	4.67	
				site	Quality of waste bins in terms of design, dimensions and location	4				
				site	Level of use of waste bins	5				
	Presence and quality of <b>bike racks</b>	-	*	5-min-walking	Amount of bike racks	5	3.67	1	3.67	
				5-min-walking	Quality of bike racks in terms of design, dimension and location	5				
				5-min-walking	Level of use of bike racks	1				
Presence and quality of <b>signage and emergency items</b>	yes	*	5-min-walking	Amount of signage	1	1.00	1.1	1.10		
			5-min-walking	Quality of signage in terms of design, dimensions and location	1					
			5-min-walking	Level of use of signage	1					
			5-min-walking	Presence of emergency facilities (fire extinguisher, defibrillators etc.)	1					
			5-min-walking	Quality of emergency facilities in terms of conditions and location	1					
Presence and quality of <b>water and toilets facilities</b>	no		5-min-walking	Presence of drinkable water sources facilities	1	3.78	0.9	3.40		
			5-min-walking	Quality of water sources facilities in terms of quantity, design, and distribution	5					
			5-min-walking	Level of use of water sources facilities	5					
			5-min-walking	Presence of public toilets	4					
			5-min-walking	Quality of public toilets in terms of quantity, design location and accessibility for PWD	1					
			5-min-walking	Level of use of public toilets	3					
		*	5-min-walking	Presence of drainage system	5					
			5-min-walking	Quality of drainage system in terms of dimensions, materials, location and installation	5					
	5-min-walking	Presence of obstruction in the drainage system (garbage, etc.)	5							
Comfort and safety	Perception of <b>safety</b> & level of <b>security</b> of the public space	no		5-min-walking	Presence of crime related behaviour (robbery, harassments, other crimes, etc)	5	4.14	0.9	3.73	
			*	5-min-walking	Presence of good social behaviours (no drinking, no sleeping, no smoking, no vandalism, etc)	5				
				5-min-walking	Presence of traffic incidents (historical records)	1				
				5-min-walking	Presence of active surveillance elements (CCTV or guards)	5				
			*	5-min-walking	Presence of natural surveillance/ Guard house (number of façade openings facing the public space)	5				
			*	5-min-walking	Level of safety perceived by community during the day	5				
			*	5-min-walking	Level of safety perceived by community during the night	3				
	Quality of <b>sensorial experience</b>	-	*	5-min-walking	Presence of pleasant sounds (natural sounds, music, no traffic noise, etc)	3	3.00	1	3.00	
				5-min-walking	dB recorded correspond or is less than the maximum recommended dB for the surrounding land use	2				
				site	Presence of pleasant smell (flowers, bakery, no garbage, no polluted water, etc)	3				
	<b>Overall comfort</b> using the public space, through maintenance, design and ambient conditions	-	*	5-min-walking	Presence of a waste management system	4	4.60	1	4.60	
				site	Quality of cleaning service in terms of frequency and results	5				
				site	Community attention of keeping a clean environment	4				
			*	site	Presence of vandalism	5				
			site	Presence of pleasant wind	5					
*			site	Level of temperature for human activities (15-25 C)	5					
			site	Level of comfort using the space during study seasons	5					
	site	Presence of covered areas from rain and heat (shades, etc.)	3							

	Presence of a public space identity, defined by <b>cultural background and users' enjoyment</b>	-	*	site	Design quality and aesthetic value of furnitures, façades, pavements	5	4.50	1	4.50	
				site	Presence of community care signs (art, urban agriculture, flowers, etc)	5				
			*	5-min-walking	Presence of positive reputation regarding the public space and the neighbourhood (no stigma or bias, etc)	5				
				5-min-walking	Presence of cultural aspects/historical events defining the identity of the space	3				
				5-min-walking	Presence of remarkable buildings/physical landmarks (church, fountain, sculptures, etc.)	5				
environmental components	Quality of <b>biodiversity and microclimate</b> conditions in the public space	-	*	5-min-walking	Ratio of green coverage	5	4.83	1	4.83	2.78
				5-min-walking	Conditions of greenery in terms of maintenance	5				
				5-min-walking	Variety of biodiversity (trees, flowers, etc.)	5				
				5-min-walking	Presence and variety of fauna	5				
				5-min-walking	Quality of air in terms of co2 and particulate (measured)	5				
			*	5-min-walking	Perception of air quality from the community	4				
	Environmental and community <b>resilience</b>	-		5-min-walking	Presence of waterbodies (rivers, lake, etc.)	1	2.50	1	2.50	
				5-min-walking	Quality of water in terms of pollution	1				
			*	5-min-walking	Presence of environmental risks (flooding, erosion, soil degradation)	5				
				5-min-walking	Resilience of the community against risks and hazard	3				
	Presence of <b>energy efficient elements</b> in the public space	-		5-min-walking	Presence of solar or geothermal power elements (solar lighting, automated irrigation, etc)	1	1.00	1	1.00	
			*	5-min-walking	Presence of recyclable waste bins	1				
			5-min-walking	Presence of composting	1					
			5-min-walking	Presence of rain water collector or water filtering system	1					
Number of indicator related to this SDG criteria										
Maximum score - perfect alignment with the SDG criteria										
Resulting score of the indicators related to this SDG criteria										
Percentage of alignment with the SDG 11.7 criteria										

	Quality assessment
use and users	3.17
accessibility	3.06
facilities	3.79
comfort	3.96
green coverage	2.78







**Lideta Park Advanced digital scoring - Instructions**

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Some **comments** are provided to guide the users while scoring the quality of each indicator and sub-indicator.

dim	indicators	priority	observation scale	sub-indicators / questions	quality scoring					
					answers (1 > 5)	indicator	weight	weighted score	dimension	
Use and users	Number and variety of <b>users</b> accessing the public space	yes	*	site	Number of users during the day	3	2.33	1.1	2.57	2.12
				site	Number of users during the night	1				
			*	site	Variety of users in the space (age, gender, ability, ethnicity)	3				
	Number and variety of <b>activities</b> observed in the public space among time and space	-	*	5-min-walking	Amount of mixed use in frontage building	3	1.67	1	1.67	
			*	site	Presence of vacant unit in frontage building	1				
			*	site	Presence of different inclusive activities in the public space among time (for all including disable people	1				
	*	5-min-walking	Presence of non-designed, temporary activities, organised by the local governance and the community	1						
	*	site	Presence of social interactions	3						
	*	5-min-walking	Presence of formal and informal economic activities (food sellers, kiosks/shops, etc)	1						
Accessibility	Accessibility and presence of qualitative and inclusive facilities for <b>private vehicles</b>	-	*	5-min-walking	Presence of areas reserved for private vehicles movement	3	2.75	1	2.75	2.82
				5-min-walking	Quality of reserved area in terms of dimensions, design, location and conditions	3				
				5-min-walking	Level of traffic on the streets	4				
			*	5-min-walking	Presence of inclusive and free parking area for private vehicles (including for people with disability)	1				
	Accessibility and presence of qualitative and inclusive facilities for <b>bikes</b>	-	*	5-min-walking	Presence of areas reserved for bikes movement	1	1.00	1	1.00	
				w	Quality of reserved area in terms of dimensions, design, location and conditions	1				
				5-min-walking	Level of use of the bike lane	1				
	Accessibility and presence of qualitative and inclusive facilities for <b>pedestrians</b>	-	*	5-min-walking	Presence of areas reserved for pedestrian movement	5	2.88	1	2.88	
				5-min-walking	Quality of reserved area in terms of dimension, design, location and conditions	4				
			*	5-min-walking	Presence of pedestrian crossing	3				
			*	5-min-walking	Presence of ramps for wheelchairs with correct design and inclination (10%)	1				
				5-min-walking	Presence of functional sound crossing devices	1				
			5-min-walking	Presence of tactile pavement paths	4					
	*	5-min-walking	Overall perception of accessibility	2						
	*	site	Presence of by-law and restrictive access rules (operational use, time-frame, fees or physical obstacles)	3						
Accessibility and presence of qualitative and inclusive facilities for <b>public transports</b>	-	*	5-min-walking	Presence of public transport	5	4.67	1	4.67		
			5-min-walking	Level of use of public transport	5					
			5-min-walking	Quality of transport facilities, in terms of dimension, design and location	4					

Amenities and furniture	Presence and quality of <b>lighting</b>	-	*	5-min-walking	Presence of natural lighting	5	2.00	1	2.00	1.75
			*	5-min-walking	Presence of artificial lighting	1				
			*	5-min-walking	Quality of light source, in terms of quantity, design and distribution	1				
			*	5-min-walking	Quality of illumination power (50 lux)	1				
	Presence and quality of amenities for <b>recreational structures</b>	-	*	5-min-walking	Presence of inclusive recreational structures for outdoors activities (playground, sports, etc.)	1	1.00	1	1.00	
			*	5-min-walking	Quality of recreational structures in terms of dimensions, design and location for children and disabled people	1				
			*	5-min-walking	Level of use of recreational structures	1				
	Presence and quality of <b>seating</b>	-	*	site	Amount of primary or secondary seating (benches, mobile chairs, stairs, etc.)	3	2.67	1	2.67	
			*	site	Quality of seating in terms of dimension, design, material and location	2				
			*	site	Level of use of seating elements	3				
	Presence and quality of <b>waste bins</b>	-	*	site	Amount of waste bins	3	2.67	1	2.67	
			*	site	Quality of waste bins in terms of design, dimensions and location	2				
			*	site	Level of use of waste bins	3				
	Presence and quality of <b>bike racks</b>	-	*	5-min-walking	Amount of bike racks	1	1.00	1	1.00	
*			5-min-walking	Quality of bike racks in terms of design, dimension and location	1					
*			5-min-walking	Level of use of bike racks	1					
Presence and quality of <b>signage and emergency items</b>	yes	*	5-min-walking	Amount of signage	2	1.40	1.1	1.54		
		*	5-min-walking	Quality of signage in terms of design, dimensions and location	2					
		*	5-min-walking	Level of use of signage	1					
		*	5-min-walking	Presence of emergency facilities (fire extinguisher, defibrillators etc.)	1					
		*	5-min-walking	Quality of emergency facilities in terms of conditions and location	1					
Presence and quality of <b>water and toilets facilities</b>	no	*	5-min-walking	Presence of drinkable water sources facilities	1	1.56	0.9	1.40		
		*	5-min-walking	Quality of water sources facilities in terms of quantity, design, and distribution	1					
		*	5-min-walking	Level of use of water sources facilities	1					
		*	5-min-walking	Presence of public toilets	3					
		*	5-min-walking	Quality of public toilets in terms of quantity, design location and accessibility for PWD	2					
		*	5-min-walking	Level of use of public toilets	3					
		*	5-min-walking	Presence of drainage system	1					
		*	5-min-walking	Quality of drainage system in terms of dimensions, materials, location and installation	1					
*	5-min-walking	Presence of obstruction in the drainage system (garbage, etc.)	1							
Comfort and safety	Perception of <b>safety</b> & level of <b>security</b> of the public space	no	*	5-min-walking	Presence of crime related behaviour (robbery, harassments, other crimes, etc)	3	2.14	0.9	1.93	
			*	5-min-walking	Presence of good social behaviours (no drinking, no sleeping, no smoking, no vandalism, etc)	4				
			*	5-min-walking	Presence of traffic incidents (historical records)	1				
			*	5-min-walking	Presence of active surveillance elements (CCTV or guards)	1				
			*	5-min-walking	Presence of natural surveillance/ Guard house (number of façade openings facing the public space)	1				
			*	5-min-walking	Level of safety perceived by community during the day	4				
			*	5-min-walking	Level of safety perceived by community during the night	1				
	Quality of <b>sensorial experience</b>	-	*	5-min-walking	Presence of pleasant sounds (natural sounds, music, no traffic noise, etc)	2	2.50	1	2.50	
			*	5-min-walking	dB recorded correspond or is less than the maximum recommended dB for the surrounding land use	2				
			*	site	Presence of pleasant smell (flowers, bakery, no garbage, no polluted water, etc)	3				
<b>Overall comfort</b> using the public space, through maintenance, design and ambient conditions	-	*	5-min-walking	Presence of a waste management system	3	2.70	1	2.70		
		*	site	Quality of cleaning service in terms of frequency and results	3					
		*	site	Community attention of keeping a clean environment	3					
		*	site	Presence of vandalism	3					
		*	site	Presence of pleasant wind	4					
		*	site	Level of temperature for human activities (15-25 C)	4					
*	site	Level of comfort using the space during study seasons	3							

			*	site	Presence of covered areas from rain and heat (shades, etc.)	1					
				site	Design quality and aesthetic value of furnitures, façades, pavements	1					
				site	Presence of community care signs (art, urban agriculture, flowers, etc)	2					
	Presence of a public space identity, defined by <b>cultural background and users' enjoyment</b>	-	*	5-min-walking	Presence of positive reputation regarding the public space and the neighbourhood (no stigma or bias, etc)	4					
				5-min-walking	Presence of cultural aspects/historical events defining the identity of the space	3					
				5-min-walking	Presence of remarkable buildings/physical landmarks (church, fountain, sculptures, etc.)	2	3.00	1	3.00		
			*	site	Amount of people spending time in the space rather than passing through	3					
environmental components	Quality of <b>biodiversity and microclimate</b> conditions in the public space	-	*	5-min-walking	Ratio of green coverage	5					
				5-min-walking	Conditions of greenery in terms of maintenance	3					
				5-min-walking	Variety of biodiversity (trees, flowers, etc.)	5					
				5-min-walking	Presence and variety of fauna	5	4.50	1	4.50		
				5-min-walking	Quality of air in terms of co2 and particulate (measured)	5					
			*	5-min-walking	Perception of air quality from the community	4					
	Environmental and community <b>resilience</b>	-			5-min-walking	Presence of waterbodies (rivers, lake, etc.)	1				2.58
					5-min-walking	Quality of water in terms of pollution	2				
			*	5-min-walking	Presence of environmental risks (flooding, erosion, soil degradation)	3	2.25	1	2.25		
	Presence of <b>energy efficient elements</b> in the public space	-			5-min-walking	Resilience of the community against risks and hazard	3				
		*	5-min-walking	Presence of solar or censored power elements (social lighting, automated irrigation, etc)	1						
			5-min-walking	Presence of recyclable waste bins	1						
			5-min-walking	Presence of composting	1	1.00	1	1.00			
			5-min-walking	Presence of rain water collector or water filtering system	1						
Number of indicator related to this SDG criteria											
Maximum score - perfect alignment with the SDG criteria											
Resulting score of the indicators related to this SDG criteria											
Percentage of alignment with the SDG 11.7 criteria											

#### Quality assessment

use and users	2.12
accessibility	2.82
facilities	1.75
comfort	2.53
green coverage	2.58







**Sheger Park Advanced digital scoring - Instructions**

Now it is possible to score the quality of the public space. The **score of each dimension depends from the result of the indicator and the weighting system applied**, depending from the priority (sheet 1 - prioritization of indicators). The **indicators results depend from the answers given to the sub-indicators**. Rank with a score from 1 (Strongly Disagree) to 5 (Strongly Agree) the sub-indicators, using the grey cells.

Note that not all the questions need an answer. There might be some sub-indicators that are not applicable in your specific case study. For instance a tiny pocket place in the suburbs might not need the presence of public toilets or other specific services. Therefore, no score should be applied for these questions and the final indicator score would only consider the other answers. The minimum questions that must be ranked are indicated with a (\*). However, large public spaces located in mixed use neighbourhood in the city centre (review sheet 1), have a great impact and attract social life. In this case, all the questions should be answered.

The scores indicated will automatically generates **two charts**: one showing the quality assessment considering the five dimensions and one showing the alignment with the SDG 11.7.1 and its three criteria: how accessible, how inclusive and how safe is the public space.

Some **comments** are provided to guide the users while scoring the quality of each indicator and sub-indicator.

dim	indicators	priority	observation scale	sub-indicators / questions	quality scoring					
					answers (1 > 5)	indicator	weight	weighted score	dimension	
Use and users	Number and variety of <b>users</b> accessing the public space	yes	*	site	Number of users during the day	2	1.67	1.1	1.83	1.58
				site	Number of users during the night	1				
			*	site	Variety of users in the space (age, gender, ability, ethnicity)	2				
	Number and variety of <b>activities</b> observed in the public space among time and space	-	*	5-min-walking	Amount of mixed use in frontage building	2	1.33	1	1.33	
			*	site	Presence of vacant unit in frontage building	1				
			*	site	Presence of different inclusive activities in the public space among time (for all including disable people	2				
			*	5-min-walking	Presence of non-designed, temporary activities, organised by the local governance and the community	1				
	*	site	Presence of social interactions	1						
	*	5-min-walking	Presence of formal and informal economic activities (food sellers, kiosks/shops, etc)	1						
Accessibility	Accessibility and presence of qualitative and inclusive facilities for <b>private vehicles</b>	-	*	5-min-walking	Presence of areas reserved for private vehicles movement	1	1.25	1	1.25	
				5-min-walking	Quality of reserved area in terms of dimensions, design, location and conditions	1				
				5-min-walking	Level of traffic on the streets	2				
			*	5-min-walking	Presence of inclusive and free parking area for private vehicles (including for people with disability)	1				
	Accessibility and presence of qualitative and inclusive facilities for <b>bikes</b>	-	*	5-min-walking	Presence of areas reserved for bikes movement	1	1.00	1	1.00	
				w	Quality of reserved area in terms of dimensions, design, location and conditions	1				
				5-min-walking	Level of use of the bike lane	1				
	Accessibility and presence of qualitative and inclusive facilities for <b>pedestrians</b>	-	*	5-min-walking	Presence of areas reserved for pedestrian movement	2	1.38	1	1.38	
				5-min-walking	Quality of reserved area in terms of dimension, design, location and conditions	1				
			*	5-min-walking	Presence of pedestrian crossing	1				
			*	5-min-walking	Presence of ramps for wheelchairs with correct design and inclination (10%)	1				
				5-min-walking	Presence of functional sound crossing devices	1				
				5-min-walking	Presence of tactile pavement paths	2				
	*	5-min-walking	Overall perception of accessibility	1						
	*	site	Presence of by-law and restrictive access rules (operational use, time-frame, fees or physical obstacles)	2						
Accessibility and presence of qualitative and inclusive facilities for <b>public transports</b>	-	*	5-min-walking	Presence of public transport	3	3.00	1	3.00		
			5-min-walking	Level of use of public transport	3					
			5-min-walking	Quality of transport facilities, in terms of dimension, design and location	3					

Amenities and furniture	Presence and quality of <b>lighting</b>	-	*	5-min-walking	Presence of natural lighting	3	1.50	1	1.50	1.07
			*	5-min-walking	Presence of artificial lighting	1				
			*	5-min-walking	Quality of light source, in terms of quantity, design and distribution	1				
			*	5-min-walking	Quality of illumination power (50 lux)	1				
	Presence and quality of amenities for <b>recreational structures</b>	-	*	5-min-walking	Presence of inclusive recreational structures for outdoors activities (playground, sports, etc.)	1	1.00	1	1.00	
			*	5-min-walking	Quality of recreational structures in terms of dimensions, design and location for children and disabled people	1				
			*	5-min-walking	Level of use of recreational structures	1				
	Presence and quality of <b>seating</b>	-	*	site	Amount of primary or secondary seating (benches, mobile chairs, stairs, etc.)	1	1.00	1	1.00	
			*	site	Quality of seating in terms of dimension, design, material and location	1				
			*	site	Level of use of seating elements	1				
	Presence and quality of <b>waste bins</b>	-	*	site	Amount of waste bins	1	1.00	1	1.00	
			*	site	Quality of waste bins in terms of design, dimensions and location	1				
			*	site	Level of use of waste bins	1				
	Presence and quality of <b>bike racks</b>	-	*	5-min-walking	Amount of bike racks	1	1.00	1	1.00	
*			5-min-walking	Quality of bike racks in terms of design, dimension and location	1					
*			5-min-walking	Level of use of bike racks	1					
Presence and quality of <b>signage and emergency items</b>	yes	*	5-min-walking	Amount of signage	1	1.00	1.1	1.10		
		*	5-min-walking	Quality of signage in terms of design, dimensions and location	1					
		*	5-min-walking	Level of use of signage	1					
		*	5-min-walking	Presence of emergency facilities (fire extinguisher, defibrillators etc.)	1					
		*	5-min-walking	Quality of emergency facilities in terms of conditions and location	1					
Presence and quality of <b>water and toilets facilities</b>	no	*	5-min-walking	Presence of drinkable water sources facilities	1	1.00	0.9	0.90		
		*	5-min-walking	Quality of water sources facilities in terms of quantity, design, and distribution	1					
		*	5-min-walking	Level of use of water sources facilities	1					
		*	5-min-walking	Presence of public toilets	1					
		*	5-min-walking	Quality of public toilets in terms of quantity, design location and accessibility for PWD	1					
		*	5-min-walking	Level of use of public toilets	1					
		*	5-min-walking	Presence of drainage system	1					
		*	5-min-walking	Quality of drainage system in terms of dimensions, materials, location and installation	1					
*	5-min-walking	Presence of obstruction in the drainage system (garbage, etc.)	1							
Comfort and safety	Perception of <b>safety</b> & level of <b>security</b> of the public space	no	*	5-min-walking	Presence of crime related behaviour (robbery, harassments, other crimes, etc)	4	2.14	0.9	1.93	
			*	5-min-walking	Presence of good social behaviours (no drinking, no sleeping, no smoking, no vandalism, etc)	4				
			*	5-min-walking	Presence of traffic incidents (historical records)	1				
			*	5-min-walking	Presence of active surveillance elements (CCTV or guards)	1				
			*	5-min-walking	Presence of natural surveillance/ Guard house (number of façade openings facing the public space)	1				
			*	5-min-walking	Level of safety perceived by community during the day	3				
			*	5-min-walking	Level of safety perceived by community during the night	1				
	Quality of <b>sensorial experience</b>	-	*	5-min-walking	Presence of pleasant sounds (natural sounds, music, no traffic noise, etc)	3	2.00	1	2.00	
			*	5-min-walking	dB recorded correspond or is less than the maximum recommended dB for the surrounding land use	3				
			*	site	Presence of pleasant smell (flowers, bakery, no garbage, no polluted water, etc)	1				
	<b>Overall comfort</b> using the public space, through maintenance, design and ambient conditions	-	*	5-min-walking	Presence of a waste management system	1	1.90	1	1.90	
			*	site	Quality of cleaning service in terms of frequency and results	1				
			*	site	Community attention of keeping a clean environment	1				
*			site	Presence of vandalism	3					
*			site	Presence of pleasant wind	2					
*			site	Level of temperature for human activities (15-25 C)	4					
*	site	Level of comfort using the space during study seasons	4							

		*	site	Presence of covered areas from rain and heat (shades, etc.)	1				
			site	Design quality and aesthetic value of furnitures, façades, pavements	1				
			site	Presence of community care signs (art, urban agriculture, flowers, etc)	1				
	Presence of a public space identity, defined by <b>cultural background and users' enjoyment</b>	-	*	5-min-walking	Presence of positive reputation regarding the public space and the neighbourhood (no stigma or bias, etc)	3			
				5-min-walking	Presence of cultural aspects/historical events defining the identity of the space	3	2.25	1	2.25
				5-min-walking	Presence of remarkable buildings/physical landmarks (church, fountain, sculptures, etc.)	2			
		*	site	Amount of people spending time in the space rather than passing through	1				
environmental components	Quality of <b>biodiversity and microclimate</b> conditions in the public space	-	*	5-min-walking	Ratio of green coverage	5			
				5-min-walking	Conditions of greenery in terms of maintenance	3			
				5-min-walking	Variety of biodiversity (trees, flowers, etc.)	5	4.50	1	4.50
				5-min-walking	Presence and variety of fauna	5			
				5-min-walking	Quality of air in terms of co2 and particulate (measured)	5			
			*	5-min-walking	Perception of air quality from the community	4			
	Environmental and community <b>resilience</b>	-		5-min-walking	Presence of waterbodies (rivers, lake, etc.)	1			
				5-min-walking	Quality of water in terms of pollution	1	1.00	1	1.00
			*	5-min-walking	Presence of environmental risks (flooding, erosion, soil degradation)	1			
	Presence of <b>energy efficient elements</b> in the public space	-		5-min-walking	Resilience of the community against risks and hazard	1			
			*	5-min-walking	Presence of solar or censored power elements (social lighting, automated irrigation, etc)	1			
				5-min-walking	Presence of recyclable waste bins	1	1.00	1	1.00
				5-min-walking	Presence of composting	1			
			5-min-walking	Presence of rain water collector or water filtering system	1				
Number of indicator related to this SDG criteria									
Maximum score - perfect alignment with the SDG criteria									
Resulting score of the indicators related to this SDG criteria									
Percentage of alignment with the SDG 11.7 criteria									

	Quality assessment
use and users	1.58
accessibility	1.66
facilities	1.07
comfort	2.02
green coverage	2.17





