



Addis Ababa University

College of Social Science

Department of Geography and Environmental Studies

**Characteristics of Urban Recreational Parks and Visitation for
Environmental and Social Benefits: The Case of Six Selected Parks
in Addis Ababa**

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June 09, 2022

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**A thesis submitted to the College of Social Science, Department of Geography
and Environmental Studies, Addis Ababa University for the partial
fulfillment of the requirements for master's degree in Geography and
Environmental Studies (Specialization in Urban and Regional Development
Planning)**

June 09, 2022

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**ADDIS ABABA UNIVERSITY
COLLEGE OF SOCIAL SCIENCES
GEOGRAPHY AND ENVIRONMENTAL STUDIES**

**Characteristics of Urban Recreational Parks and Visitation for
Environmental and Social Benefits: the case of Six Selected Parks in Addis
Ababa**

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DECLARATION

I affirm that the work titled “Characteristics of Urban Recreational Parks and Visitation for Environmental and Social Benefits: the case of Six Selected Parks in Addis Ababa.” was carried out by the author Tibebu Assefa. This thesis has been submitted in partial fulfillment for the requirements of MA Degree in Geography and Environmental Studies (Specialization in Urban and Regional Development Planning), in Addis Ababa University under the supervision of my advisor Dr. Aklilu Amsalu. The information derived from the literature have been accordingly acknowledged in the text and a list of references provided. No part of this work has been presented for another degree in any institution.

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ACKNOWLEDGMENTS

First, I would like to thank almighty God who allowed me to succeed in my study. Second, my especially thank goes to my research adviser, Dr. Aklilu Amsalu for providing guidance and feedback throughout this study. Third, I would like to thank those who supported me in data collection, Mr. Alebele Alemehneh and Mr. Abebaw Tasew. Last but equally important, my thank goes to my wife Dr. Mahlet Getahun and my children (Barock and Mikiyas) for allowing time to undertake my study.

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ABSTRACT

Urban recreational parks have a role in providing environmental and social benefits. These benefits are not yet used due to lack of effective intervention that improve urban park characteristics which can attract the parks visitor's interest as well as improve the environmental benefits. This study is aimed at investigating the role of park characteristics in providing environment and social benefits. For this, the study employed descriptive and inferential research design with mixed approaches. The data were collected from primary and secondary data sources. The primary data sources were a survey of 385 park visitors, three key informant interview, and researcher observation in the six recreational parks. The secondary data sources were from studies, government documents, online and off-lines materials. Sample recreational parks in the city were selected through a stratified purposive sampling basing the recreational park size and administrative level. The data were analyzed using descriptive and inferential analysis method. The qualitative data were analyzed using content analysis. Based on visitors' response, it was found that recreational parks have environmental (78%) and social (65%) benefits. Among the park characteristics in the sampled parks, vegetation and climate comfort were the highest whereas accessibility, management and maintenance were ranked the lowest by park visitors. In addition, the findings indicated that better facilities, events in the parks and vegetation were among the major characteristics of park that attract visitors. Furthermore, it was found that 37.7% park visitors were visiting parks weekly. Moreover, 43.9% recreational park visitors usually spent 1 to 2 hours in recreational parks and about 82% of visitors preferred to come in weekends. The park visitors ranked the city parks and had set the criteria for ranking which is important to understand what attract visitors to visit a certain recreational parks. These findings indicated that the park characteristics has a relation with park visitation which has an impact in achieving environmental and social benefits from recreational parks.

Keywords: Recreational, Park, Visitation, Social, Environmental, Benefits,

CHAPTER ONE

1. INTRODUCTION

1.1. Background

Urban recreational parks have environmental and social benefits. The environmental benefits of urban recreational parks are included improve air quality, cooling effect, mitigation urban heat, carbon sequestration, prevent flooding etc. The social benefits from the recreational parks include creating of social cohesion, making social event like wedding, birthday etc. which able to increase to develop social activities, which eventually will promote people's well-being (van Vliet et al., 2021). Moreover, it serves as urban green space which have playgrounds, sport fields, and residential greenery which can promote mental and physical health. This will have a great positive impact for the health of urban residents by providing psychological relaxation, stress alleviation, supporting physical activity, reducing exposure to air pollutants, noise and excessive heat (Braubach et al., 2017). Further, recreational parks have economic benefits, as nearby parks mostly have a positive impact on property prices - thus demonstrating that people's appreciation of parks in their living environment (Tempesta, 2015).

Addis Ababa City has about 27 major recreational parks. These are distributed across the city. They are administrated by federal government, city, sub-cities, woredas and neighbor level based on their sizes. The recreational parks are important to keep the proportion of green spaces in the city. As the city has low per capita green spaces, maintaining these parks standards and expand development of green spaces such as additional parks are very crucial. Therefore, this study will help to understanding park characteristics and visitors' preference for visitation which will support in the development and utilization of recreational parks. As we develop more parks, we can maintain the green spaces for better environmental and social benefits. The standard for green space for Ethiopian, Africa and WHO are 15 m²/ person, 7m²/person and 9m²/capita respectively (Sileshi Azagew & Worku, 2020a). Addis Ababa green space was found 0.9 m²/capita (Addis Ababa EPA, 2022). It is also far behind some of the African cities such as Tunis-Tunisia (14 m²), Nairobi-Kenya (37.3 m²), and Kumasi-Ghana (4.7 m²).

The city needs to expand the green spaces to meet these standards which is essential for health and community well-being. Therefore, developing recreational parks will have a high role in expanding green spaces which can provide different benefits to the community, among the most are the social and environmental benefits. The city needs to have green spaces strategy, policy, plans and monitoring document that can improve the green space. These need to be backed up by well-structured system that enable to enforce and monitor the green spaces. To do these, the engagement from the public, private and communities and other relevant actors are very crucial(Bosena yirga Ayele,Tebarek Lika Megento, 2022) . These should be strengthened as the city is urbanizing and the population growth is alarming to accommodate the land requirement for housing, roads, and other infrastructure.

This study investigated the recreational park characteristics and park visitation for the role of environmental and social benefits. Moreover, it investigated the park characteristics such as facilities, design, green spaces on visitors' satisfaction, frequency of visits and visitors' characteristics such as age, gender, and profession (income) and its impact on frequency of park visitation.

1.2. Statement of the Problem

The city is losing its grip on green spaces due to competing development sectors. These are house building, economic activities, roads, and other built-up environments. The total area of Green spaces in 1986 was 5468.22 km², by the year, 2014 it shrunk to 3846.51 km²(Gezahegne, 2014). The Green spaces area within the time span of 28 years had shrunk by 1621.69 ha. The land use of urban agriculture decreased significantly (by 11.9%) followed by urban forest (by 3.7%). Addis Ababa City has among the lowest per capita green spaces which is 0.9 m²/person(Addis Ababa EPA, 2022) . The city greenspace is very low compared to national, Africa and WHO guideline or standards(S Azagew & Worku, 2020).

Recreational Parks have a role to keep the green spaces of the city (K. Williams & Green, 2001). Empirical evidence indicates that the presence of natural areas in urban contexts is very important for the quality of human life and the sustainability of cities(Chiesura, 2004). The urban green spaces have a lot of benefits such as carbon sequestration, improve air quality, buffer for

flood prevention, maintain biodiversity and helps people to have a social cohesion and interact with the environment etc. (Tempesta, 2015)

Therefore , the declining of greenspaces share in the city has a lot of disadvantage for the city, The accessibility indicators also revealed that the city residents have no sufficient recreational UGI(Silesi Azagew & Worku, 2020b). These is partly because urban recreational parks are underutilized due the park characteristics which have poor services and facilities (Hailegiorgis, 2017). Understanding the park characteristics and park visitor preference will have an impact in increasing the coverage of city's green spaces. Which in turn increase the park visitation and thereby contribute to environmental and social benefits. These helps the city and its resident perspective for urban green spaces particularly for recreational parks.

The urban recreational studies in the past had showed issues on accessibility, economic valuation, the environmental roles, the challenges such as tragedy of commons, management of recreational parks in the city. For example, studies by Seifu & Stellmacher, (2021), Silesi Azagew & Worku, (2020b), Azagew & Worku, 2020, Silesi Azagew & Worku, 2020c, and Yeshitela, (2020) focused on the accessibility and parks utilization challenges in the city. Whereas Feyisa et al., (2014), Habtamu et al., (2021), Marshet & Teshome (2015) and Samson Warkaye, K.V. Suryabhagavan, (2018) focused on environment benefits such as carbon sequestration and cooling. In addition, (Tensaye, 2017), Andualem & Oyekale, (2012) and Woubishet Mulatu & Ginbo, (2020) had a focus on economic benefits.

This study focused on the recreational park characteristics on the environmental and social benefits through analysis of the recreational park characteristics by considering thirteen elements and the visitors characteristics such age, gender, income (profession), their preference and frequency of visit. With its focus, it investigated the park and visitors' characteristics on park visitation which have an impact on improving the environmental and social benefits of recreational parks.

1.3. Objectives

The study will have main and specific objectives as outlined below.

1.3.1. General Objective

The main objective of the study is to characterize urban recreational parks and park visitation to analyze environmental and social benefits in Addis Ababa City.

To meet the general objective, the following sections have specific objectives of the study.

1.3.2. Specific Objectives

The specific objectives of the research include to:

- i) Investigate the urban recreational parks characteristics on park visitation, social and environment benefits.
- ii) Investigate the urban recreational park visitors' characteristics, park visitation and social benefits.

1.4. Research Questions

1.4.1. Research Questions

- a) What are recreational park characteristics contributing to environmental benefits?
- b) What are the recreational park characteristics and relationship with park visitation and social benefits?
- c) What are the characteristics of park visitors?

1.5. Significance of the Study

The study will be used to generate knowledge for different stakeholders which are working in the urban green spaces. These include institutions, practitioners, decision-makers, researchers etc. It will identify the major role played by urban recreational parks in providing environmental and social benefits which are affected by recreational parks characteristics and visitors' preference. As the study focuses on assessing the role of recreational parks in the environmental and social benefits. The research expected to contribute the following major contributions. These are:

- Stakeholders in the sectors can get insight about the role of parks in maintaining green spaces and its role in the environmental and social benefits,
- The local institutions who are working in the recreational parks can draw lessons that strengthening development and utilization of recreational parks,
- Furthermore, decision and policy makers can look at the findings and find a way of reflecting it in different strategies, policies and plans in the city and
- Scholars and researchers would benefit from the results of this study in that it will be used as a reference.

1.6. Scope of the Study

The study has outlined the geographical, conceptual, and methodological scopes. The geographic scope of the study is Addis Ababa City recreational parks. The conceptual scope of the study is limited to the urban recreational park characteristics on urban park visitation to increase social benefits and their environmental benefits. The methodological study followed to assess the urban recreational characteristics was park visitors survey, observation, and key informant interview. The study has used descriptive, inferential research design and mixed research approaches. Sample representative parks were selected based on their representation. The result of the study showed that the analysis of recreational park characteristics on the environment and social services.

1.7. Limitation of the Study

The study used the perception of the park visitors to understand the characteristics of urban recreational parks and their preference about the park's characteristics. The sample size was taken from each six recreational parks from the total sample size calculated divided into six equal parts. In addition, while comparing existing recreational parks in the city. The study consider that parks visitors had a knowledge of all existing recreational parks in the city.

1.8. Organization of the Thesis

This thesis consists of five chapters. chapter one deals with the background of the study, objectives to be achieved, the significance, scope, research questions, and the problem of the statement of the study. Chapter two presents the related literature reviewed in this study. Chapter three deals with an explanation of the sampling area, research approach, data collection, data analysis for the research under study. Chapter four describes the result and discussion of the analysis. And the final chapter deals with the conclusion and recommendation.

CHAPTER TWO

2. LITERATURE REVIEW

The theoretical and empirical research from different sources on urban recreational parks provide the context of parks in the green spaces, types and definitions, factors determine the development and utilization, and urban recreational park characteristics and park users' preference. Based on the review, most researchers had studied the development and utilization of parks particularly focusing the parks accessibility, economic value, biodiversity, environmental benefits but there are gaps needs to be filled about the city recreational park characteristics and park visitors' preference for environmental and social benefits. This section reviewed various secondary data sources such as articles which were done about the city recreational parks to answer the research questions.

2.1. Recreational Urban Parks

Recreational parks are categorized under a green space. The green spaces are fall under the big umbrella of open spaces. Open spaces are any unbuilt land within the boundary of a village, town or city which provides, or has the potential to provide, environmental, social and/or economic benefits to communities (K. Williams & Green, 2001). A recreational park is an area of natural, semi-natural, or planted space set aside for human enjoyment and recreation or for the protection of wildlife or natural habitats. It may consist of grassy areas, rocks, soil, and trees, but may also contain buildings and other artifacts such as monuments, fountains or playground structures(Sadeghian & Vardanyan, 2015). Urban parks are located in urban areas and are set aside for public uses, including: recreation, aesthetic appreciation, and cultural and educational aspects(Imad M. Assali, 2015).

Urban recreational parks are divided into two based of the nature of intensive development in the parks i.e., active, and passive recreation. The active recreation is that which are required an intensive development and often involves cooperative or team activity, including playgrounds, ball fields and skate parks. The passive recreation is that which emphasizes the open-space aspect of a park and which involves a low level of development, including picnic areas and trails(Kara et al., 2011). Some of the examples of active recreation parks includes, these are:

sports fields, ball fields, playgrounds and play areas, golf courses, marinas, waterfront, swimming pools, skating rinks or skateparks, outdoor theaters, gymnasiums, meeting space, game rooms, bicycling and horseback riding. The passive recreation parks have walking and jogging ,hiking and nature walks ,wildlife viewing and bird watching ,painting ,photography ,cross country skiing ,rustic picnic areas ,snow shoeing ,fishing, canoeing ,hunting ,hand-gliding ,kite-flying ,frisbee ,horseback riding and bicycling (Western Reserve Land Conservancy, 2018). Most of Addis Ababa city parks are included in this study are active parks where there is an investment by the owners i.e., private or government.

Recreational parks can also be classified based on character, purpose, and size. The parks per character are classified into two types: (i) artificial park and (ii) natural park. The Artificial parks are prepared artificially with great care by experts in the park layout. These are planted with grass, shrubs, flower, and trees. The water may be introduced in the form of fountains and pools. The benches with suitable design may be provided(Gaurav. H .Tandon, 2017). The importance of artificial landscape is immense when a park is deprived of scenic values, or its site is devastated by the previous use. Construction of artificial landscape parks is costly and takes years. Addis Ababa City has both artificial and natural parks. For instance, the Friendship¹ and Entoto Parks can be taken as artificial and natural parks respectively.

The recreational classification on purpose are botanical parks and zoological parks(Gaurav. H .Tandon, 2017). The botanic parks are a place where most plants and trees species are collected , etc. (Banu Karaşah, 2013).For instance, Gulele Botanical Garden in the city can be taken as example here. The animals in zoos and aquaria serve as ambassadors for animals in the wild and inspire visitors to care for and understand natural ecosystems and the threats that these systems face. Children in particular that visit the zoo must be brought into contact with nature because they are the future caretakers of this planet (EAZA Executive Office, 2013). Addis Ababa City has zoo parks in the city such as Lion Zoo Park and Unity Park has also included animals in the park.

There is also classification of parks per size. these are small size parks (1ha to 4ha), medium size parks neighborhood parks (should not be less than 12 hectare) and large size parks 40

¹ It is also called Wodagnet Square Park

hectare(Gaurav. H .Tandon, 2017). Four types of parks are continue to exist in urban areas such as city park, district park, neighborhood park and pocket park (Nochian et al., 2015). Addis Ababa City parks are classified into four major categories excluding the federal managed parks. These are parks greater than 10ha (city-park), parks between 1-10ha (sub-city park), parks between 0.3 to 1 ha (woreda park) and parks less than 0.3ha (neighborhood park). The size of the parks is mostly fall under sub-city and woreda parks. The services coverages of the parks are considered to be 10km, 5km, 1.5km and 0.3 km radius respectively (Seifu & Stellmacher, 2021).

2.2. Urban Recreational Park Characteristics

The park characteristics such as facilities, design, size, green spaces, and other set up has a high correlation with the park visitation and maintain the environmental and social benefits. Park characteristics such as facility, amenity, safety, esthetics, and proximity correlated with higher park utilization for instance exercise and recreational walking(Aliyas et al., 2019). The finding of criteria on effective of urban park can be applied to any urban park to serve the visitors positive benefits regarding develop skill mental and physical. The criteria of comfort felt by the visitors were very important to the assessment of an effective urban park(Ahmad Shafee & Kamaruddin, 2019).

It was found that there is an associations between neighborhood park design characteristics and seniors' walking and energy expenditure during park visits which is important to increase the physical activities which can decrease the risk of various chronic diseases, e.g., diabetes, cerebrovascular diseases, and obesity, which represent leading causes of death in the senior population(Zhai et al., 2020). There is also an evidence that the provision of a playground or outdoor fitness equipment might be the best strategy to increase both park visitation and park-based park activities among at risk adolescent subgroups(Mertens et al., 2019). The park facilities are related to park use and physical activities. Therefore, it is important to consider the correlation between across demographic groups is important in planning for activity-friendly parks that are responsive to the needs of neighborhood residents(Kaczynski et al., 2014). The facilities and distance have an impact on the days of the week. For instance, but in the weekend, larger parks with picnic facilities are preferred while distance matters less. Most important are, however, cleanliness and maintenance, regardless of whether a park is visited on weekdays or the weekend(Bertram et al., 2017).

According to research in the Hawassa City, there is a relationship between park facilities, maintenance and the number of people visiting the park because parks with more facilities and activities attract more users and achieve their intended objective. Most respondents 85.7% of them indicated as parks are not well developed and maintained. While majority respondents indicated as parks lack basic facilities like toilet, shelter, and different facilities for active leisure and recreation, i.e., sport facilities, different participatory programs, play options and children friendly activities and facilities. As the economic growth and awareness of the people increase, people will demand for better services and facilities or else willingness to pay will be affected. Thus, it is important for the private and public recreational parks to upgrade their services and facilities over time to fulfill the needs of the people (Abate et al., 2019). The preference of park visitors with a quality of the existing neighborhood parks excellent or good, with the existing safety condition and the presence of high plant diversity receiving the highest number of high scores (Yeshitela, 2020).

According to Golkar, there are a few park characteristics which can promote to positive park utilization. These are accessibility, the level of management and maintenance, the range of activities, evidence of anti-social behaviors, permeability and movement, inclusiveness, the quality of public areas, climate comfort, lighting, vegetation, flexibility, vitality and safety and security (Bahriny & Bell, 2020).

These are the 13 Recreational Parks Characteristics and its definitions by Golkar.

- 1) **Accessibility to and within the park:** whether easy to get there and then how easy to move around within the park (very easy to very difficult).
- 2) **The level of management and maintenance:** meaning a combination of the overall management of the park and the maintenance of surfaces, vegetation, litter collection etc. (very well managed to very poorly maintained).
- 3) **The range of activities being pursued:** whether formally provided for or spontaneously carried out (very busy to very quiet).
- 4) **Evidence of anti-social behavior such as vandalism:** (very much to very little).
- 5) **Permeability and movement:** The degree of freedom of movement within the site using paths or crossing open areas (very free and permeable to very restricted).

- 6) **Inclusiveness:** how well the design provides for all gender and age groups or groups with various disabilities, such as surfaces and seating etc. (very inclusive to very restricted).
- 7) **The quality of public areas:** The overall functionality and suitability of facilities and outdoor furniture, public art, etc. (very good to very poor).
- 8) **Climate comfort:** Environmental considerations: Areas exposed to sun, degree of shade, air currents and prevailing winds, vegetation, air, and noise pollution.
- 9) **Lighting:** Important in the evenings since this is a popular time for park use (well-lit to poorly lit with dark areas).
- 10) **Vegetation:** The quality of the vegetation—its use in the design and its condition (very good to very poor).
- 11) **Flexibility:** The capability of adaptation of a place for different activities (very flexibly to inflexible).
- 12) **Vitality:** The overall sense of liveliness and popularity of the park—simultaneously the cause and effect of all other qualities (full of vitality to low in vitality).
- 13) **Safety and security:** The overall sense of how safe and secure the site is, e.g., policing, surveillance, visibility etc. (very safe and secure to not very safe and secure)

2.3. Environmental and Social Benefits of Recreational Parks

Addis Ababa City Parks are contributing recreational benefits to the city resident. Most of the previous studies were focusing about the environmental and economic aspects of their benefits. The environmental benefits studies were focusing about the cooling effect, carbon sequestration and mitigate urban heat of the parks. The economic benefits studies of parks focused on recreational value and economic value of park and residential pricing of houses in the park area. Most studies have not covered the social benefits that the city recreational parks are giving to the resident. In addition, there are studies also focused on biodiversity benefits of the city parks specifically Entoto natural park. The following section provides the summary of each finding from these studies.

A study conducted in the city park has showed that cooling effects of parks in relationships between park characteristics and temperature and urban tree vegetation varied with park specific characteristics including species composition, canopy intensity, size and shape of the parks. (Feyisa et al., 2014) . Therefore, the efficiency of public parks in coping up with the effect of

LST increase and UHI² effects plays a crucial role in decision making and development of smart green cities for the benefit of the present as well as future dwellers of this city(Samson Warkaye, K.V. Suryabhagavan, 2018). a variety of indigenous and endangered dry Afromontane Forest trees (16 species at Kotebe Metropolitan University and 32 species at Yeka Park) as well as the commonly known exotic tree species (18 species). They also complimented the potential roles of forests for climate change mitigation activities by storing 75.57 t ha⁻¹ and 77.55 t ha⁻¹ at Kotebe Metropolitan University and Yeka Park respectively(Habtamu et al., 2021). Biheretsige and Central Closed Public Parks were 149.18±5.28 t ha⁻¹ total carbon stock densities. The mean above and below ground carbon stocks were 25.4±3.7and 5 ± 0.75t ha⁻¹, respectively. Aboveground and belowground biomasses were 50.85±7.45and 10.2± 1.50 t ha⁻¹ while the total carbon stock in the litter was 5.175± 2.25 t ha⁻¹.(MarshetTefera & TeshomeSoromessa, 2015)

The hedonic pricing method to investigate the impact of urban green amenities on subjective as well as actual rental prices of residential houses in Addis Ababa City indicated that residents attach a positive value to urban green amenities.(Woubishet Mulatu & Ginbo, 2020). Moreover, the results show that travel cost, monthly income and number of dependents significantly influenced demand for recreational site ($p<0.10$). Potential annual use value of the park was estimated at Birr11,767,287 per annum(Andualem & Oyekale, 2012). To estimate the annual recreational values, the Truncated Negative Binomial model was employed and found Birr 18,239,782.05 and 19,389,895.00 for Hamle 19 and Future parks, respectively per year. This study is limited only the recreational values of the two parks excluding other use values and non-use values of the sites.(Tensaye, 2017). Some of researchers are also focused on the biodiversity contribution of the city parks such as in preserving lovebird(Tekalign & Bekele, 2012) and species composition in in the Entoto natural park(Esayas & Bekele, 2011).

The above studies have showed that the environmental and economic benefits of recreational parks in the city context. Moreover, a review of 225 articles by Tiziano has categorized the benefit delivered by parks as biodiversity, health and well-being, cooling effect, air quality and carbon dioxide sequestration, water regulation, tourism, social cohesion and increase the house prices (Tempesta, 2015).

² LTS= land surface temperature, UHI= Urban Heat Island

Therefore, urban recreational parks enhance the lives of residents in numerous ways. Parks provide green space and room to move for people in crowded city neighborhoods. It is also serving the resident by providing services alike libraries, museums, community centers, and performance spaces open doors to knowledge and ideas, culture, and enjoyment. In addition, they enable us to become involved and feel part of the community. Further, they increase the opportunity to gain and develop new friendships and increase self-esteem and confidence(Kara et al., 2011). For instance, urban parks systems play a critical role in achieving the objectives of the following public sectors: culture; recreation; community development; heritage; economic development; health and wellness; natural environment; education; and transportation(Schwartz, 2016). People after work usually need a place where to relax. For instance, in weekends, it is common practice people find a place to spent time to relax. It brings enjoyment of living, encourages relaxation, helps to utilize the leisurely hours of all age groups young and old alike into the desirable activities. Thus, this is making people to live rich and contended life. Without these and other community facilities, life could be colorless and difficult, especially for those who can't afford to travel or to pay high prices for services(Quillbot, n.d.).

2.4. Development and Utilization of Recreational Parks

2.4.1. *Recreational Parks in the City*

The total open space for greenery for the city has an impact to manage and develop the recreational parks. There are about 27 parks in the city including the newly constructed in the last three years. The area covered by a single park ranges from 0.1 ha to the 16 ha(Seifu & Stellmacher, 2021).These range doesn't include the newly constructed such as Friendship, Unity and Entoto Parks. Based on the area covered by the city parks, the parks categorized into four types: city park (greater than 10 ha), sub-city park (1- 10 ha), woredas park (0.3 to 1), and neighborhood park (less than 0.3ha). The total area covered by existing parks (excluding the currently developed Unity park -16ha, Sheger, and Entoto) is estimated 75 ha(Seifu & Stellmacher, 2021). Out of these old parks, Biresegie is the largest in size which is 15.9 ha in area. It was the only city park which is managed by the city administration. There are also new parks in the city such as Unity, Friendship and Entoto which are managed by Federal government. The city's per capita green area is estimated at 0.9 m²/person(Addis Ababa EPA, 2022). It is one of the lowest in the national, Africa and the world standard.

The development of urban parks in the city is challenged by urbanization, the management practices, and the tragedy of common. The increased urbanization and development have placed urban green infrastructures under extreme pressure, while unplanned urban growth has resulted in the loss of urban landscape and ecosystems (Alemaw Kefale, 2017). In addition, the infrastructural development, expansion of construction for settlement to accommodate the ever-growing population, utilization of fuel wood and charcoal as biofuel have been contributing to green spaces depletion in Addis. The management practice of the city park is another bottleneck for development of recreational park.

The main malpractices in the recreational parks' development are lack of proper planning, implementation, monitoring, and evaluation of the activities related to the use and conservation of green areas, wrong perception of green areas and their relationship with other development spaces, a tragedy of common's, illegal settlement and dumping of waste and open toilets and invasion of urban green areas by residential and/or commercial development activities (Tewelde *etal*, 2015). Moreover, a recent study has also affirmed that regulations and directives drafted by responsible bodies are not clear, while law enforcement is hardly applied to green spaces. It is also outlined that the organizational structure of city and federal governments has some overlapping duties that can create delays in implementation while also failing to provide proper monitoring and evaluation (Eshetu et al., 2021).

The city illegal settlements and the degradation of open green areas are another challenge for green spaces development. Open green areas in particular have been placed under extreme pressure, thus threatening their ability to maintain basic ecological, social and economic functions (Mpofu, 2013). One of the remedies devised to curb the 'tragedy of public spaces' in Addis Ababa City is the policy of outsourcing parks into the hands of private entrepreneurs. Nevertheless, there are worrying signals that "privatizing the management" of these public spaces would in effect lead to the 'privatization' of the spaces themselves. Private companies may start building structures (coffee shops, restaurant halls etc) which drastically reduce the size of the green area. Secondly, food and drink services offered at public spaces could be more expensive (Getachew Kassa, 2008).

A recent study has recommended that the user-centered model is found suitable for community green space management and the park-organization-user model is appropriate to explain the

governance approaches to improve the governance process for the community green space management(Bosena yirga Ayele,Tebarek Lika Megento, 2022). Another study has suggested that establishing a functional green infrastructure coalition partners from housing, road and urban agriculture authorities but also large land owners, informal settlers, urban farmers and local organizations are needed for better management of green spaces(Herslund et al., 2018).

2.4.2. Factor Affect Recreational Park Visitation

The major factors that the study come up with on the utilization of parks in the city are accessibility and quality of parks. There are also other factors like entrance fee, natural scene (vegetation and water body), distance, facility/services are among the main factors. In addition, factors like the park size, entrance fees, and distance to the city center significantly affect park use for all types of parks. Larger parks with entrance fees and closer proximity to the city center tend to have more visits. Moreover, the number of bus stops was positively related to check-in visits, suggesting that increased accessibility via public transportation leads to more visits(Zhang & Zhou, 2018). Some studies have showed that from supply side, the presence of water and facility density in the park have significant impacts on urban park vitality; the demand factors, such as the surrounding population density, were also positively related to park vitality. Moreover, higher levels of point of interest-based urban function mix, function density, and public transportation-friendly streets were associated with greater vitality of adjacent parks(Zhu et al., 2020).

The main motivation of willingness to pay towards the recreational parks are the view of the park, the great historical significance, the good service of the parks, the fairness of the entrance fee/ willingness to pay, easy access of the parks and the cleanness and good facility of recreational parks(Abate et al., 2019). The willingness to pay is also highly related to the income. The presence of a user fee, even a marginal user fee, is a substantial factor contributing to low-income individuals' choice of outdoor recreation settings. Low-income outdoor recreationists will travel significantly further to reach a non-fee setting than to reach a similar setting closer by(Lamborn et al., 2017). In addition, the proportions of the land cover in each park is important for its beauty and attraction of visitors. Starting from paved open green areas are more-or-less similar across all parks and trees are the most important land cover. Moreover, shrubs and water play incidental roles in the parks but water may be potentially relatively more important for users

due to its attractive quality and role in cooling the air(Bahriny & Bell, 2020). A study conducted in one of the city park showed that 24 % came to sit, relax and enjoy the environment; 21.27 % for eating/drinking; 19.4 % enjoying and admire scenic beauty and 13.62% to take walk(Tensaye, 2017).

Drawing on a comprehensive database of compiled characteristics of over 1500 urban parks and new methods and information on park visitation using social media data, it demonstrates that the landscape, built infrastructure, accessibility, and neighborhood attributes of a given park are likely to influence the number of visits it receives(Donahue et al., 2018). In addition, a study in Addis Ababa City showed that 2.8% of the city dwellers in Addis Ababa City has access to urban recreational parks within 400 m walking distance, and 11.3% of the city dwellers can access urban recreational parks within 800 m walking distance(Sileshi Azagew & Worku, 2020a). The result indicated age, monthly income, occupation, awareness about the parks, distance, traveled time to park, and mode of transport have significant ($p < 0.05$) association with frequency of park visit. Moreover, the time limitation and lack of different programs in the parks were also identified as the main constraints that affect park utilization(Sileshi Azagew & Worku, 2020c).

2.5. Conceptual Framework

Environment and social benefits in the recreational parks can be achieved through two main characteristics. These are the recreational park and the visitors' characteristics. The recreational park characteristics can contribute to environment and park visitation. The environmental benefits of the recreational parks mainly tied with the presence of features like vegetation, water bodies and natural scene which will contribute to carbon sequestration, air quality improvement, flood control and biodiversity and others(Tempesta, 2015) . In addition, the recreational park characteristics attract visitors to visit the park, as people want to refresh their mind with the landscape in the parks such as vegetation, nature, water body and natural scene. The visitor characteristics in relation to gender, age, occupation, were also analyzed.

To define the park characteristics, Golkar theory (Bahriny & Bell, 2020)of park characteristics were used which define the park characteristics into 13 elements as it is defined in the literature review above. These elements support parks to have a better park visitation thereby parks can deliver the social and environmental benefits.

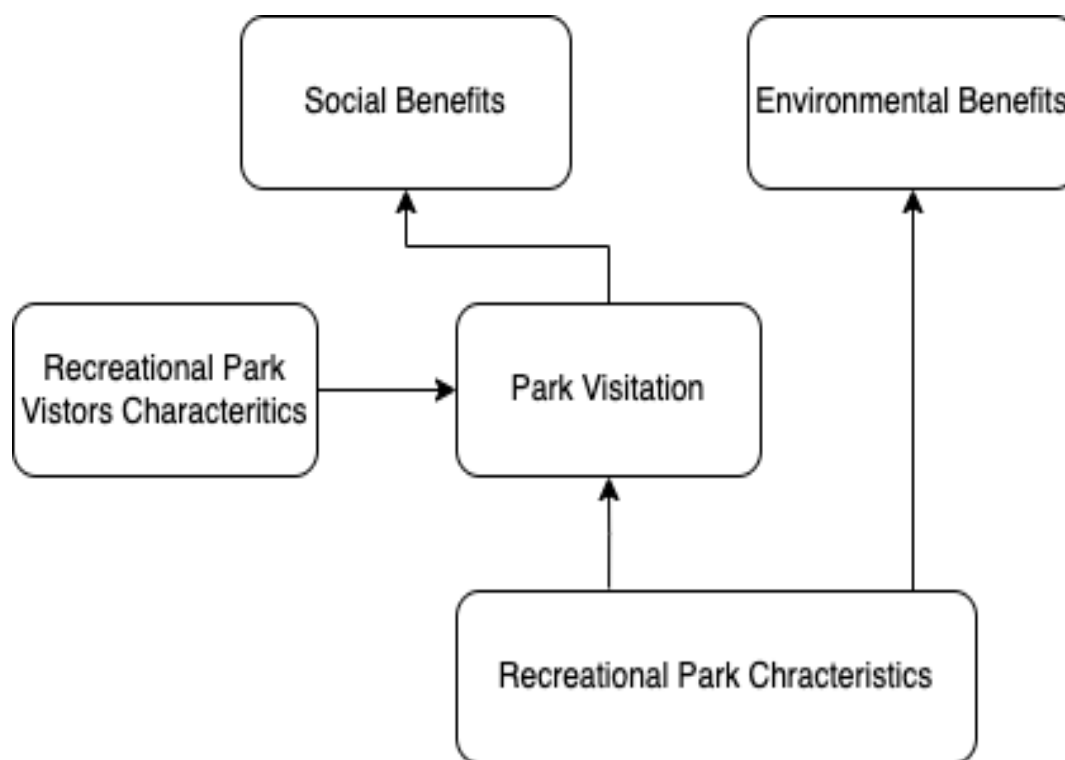


Figure 1: Conceptual framework for the study

The study has the following concepts and definition on the use of these key terms through the report.

- **Urban recreational Park:** A recreational park is an area of natural, semi-natural, or planted space set aside for human enjoyment and recreation or for the protection of wildlife or natural habitats. (Sadeghian & Vardanyan, 2015).
- **Recreational Park Characteristics:** The characteristics of the parks is define as the elements of parks as in the Golkar Theory (Bahriny & Bell, 2020).

- **Park visitors Character:** the age, gender, occupation (Bedimo-Rung et al., 2005)
- **Park visitation:** the frequency of visit per week, per month, per year etc(Imad M. Assali, 2015).
- **Social Benefits :** Urban parks contribute to social inclusion and cohesion the benefits the visitors get like social cohesion that is happen due to the events happening in the recreational parks with other visitors or accompany colleagues such as family, friends etc(Tempesta, 2015)
- **Environmental Benefits:** Parks harbor higher species richness than other types of urban green space, parks contribute to air pollution removal and carbon dioxide sequestration, Parks contribute to cooling as they have lower day and night temperatures than surrounding areas, Parks contribute to air pollution removal and carbon dioxide sequestration, Parks contribute to storm water/run off management(Tempesta, 2015)

CHAPTER THREE

3. METHODOLOGY

3.1. Study Area

Addis Ababa City is the capital city of Ethiopia. It is also known for its commercial center and the seat place for an international organization like Africa Union, United Nations, European Union, and others. The boundary of this assessment is defined by that of Addis Ababa, which is the Federal Capital and largest city in Ethiopia. The city covers a total area of 540km² and is characterized by low-lying flood plains surrounded by steep mountains the City (340km²) is designated as built-up and expansion areas with the remaining 200km² considered as urban green areas(Worku, 2014). The average temperature minimum and maximum temperature ranges 10.6 to 22.8°C According to the CSA projection, the city population is estimated to be 3.7 million in 2021. The population is growing an average of 2.5% per year(CSA, 2013).

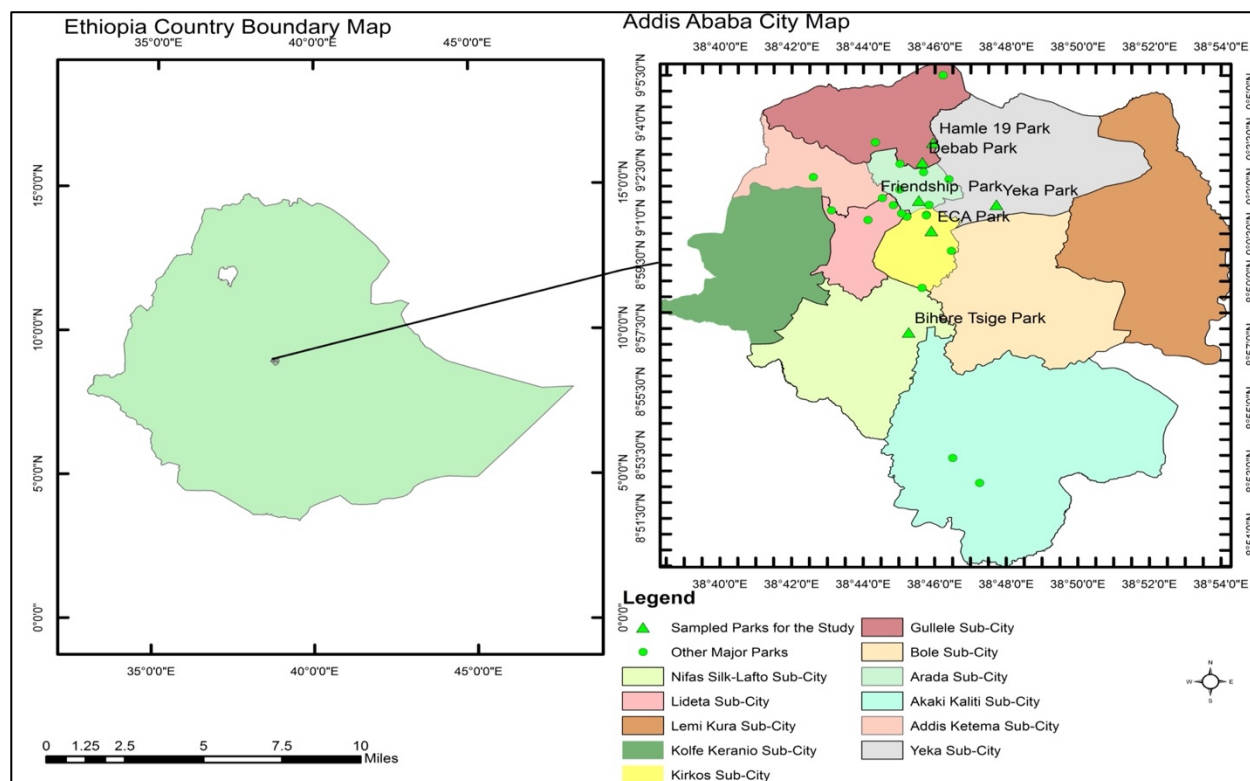


Figure 2: Addis Ababa City parks (Source: Autor Analysis)

The above map has showed that the Addis Ababa City has 11 sub-cities. The 6 triangle points that are shown in the map are the sampled city recreational park for this study³.

The Federal Democratic Republic of Ethiopia Government has a national vision for the country to “achieve middle-income status by 2025 in a climate-resilient and green economy”(Federal Democratic Republic of Ethiopia, 2011). The City of Addis Ababa is likely to play a crucial role in achieving this status and is, currently, developing a 10-year perspective plan. Addis Ababa is the main economic and industrial hub in the country with economic growth and rapid urbanization expected to continue. It contributes around 38% towards the national Gross Domestic Product (GDP), while only employing while 15% of the total workforce(The World Bank Group, 2017).

3.2. Research Design

The research design outlines the sampling plan, research instruments, data collection methods, data analysis and report. Th research approaches were a mix of quantitative and qualitative data. The research follows a descriptive and inferential research design which enables to make inquiry with narration of events and drawing of conclusions based on the information attained from samples drawn from unknown population size parameter(Scott M. Smith, n.d.). Descriptive research involves identification of attributes of a particular phenomenon based on an observational basis, or the exploration of correlation between two or more phenomena(C. Williams, 2007). Research Methods

The data were collected by employing both qualitative and quantitative approaches. The data sources were primary and secondary data sources. The primary data sources were procured through survey, key informant interviews and observation. The secondary data sources were

³ These are Friendship Square, Bihere Tsige, ECA, Hamle 19, Yeka and Debab Parks. The other circled points in the maps are the remining major recreational parks in the city. These are Africa Park No. 1, Akaki Park, Ambassador Park, Ethio-Cuba Park, Gola Park, Hamle 19 Park, Ethio-Korea Park, Lideta Park, Lion Zoo Park, Akaki Millennium Park, Nation, Nationalities and Peoples Park, Peacock/Addis Zoo Park, Sheger Park, Africa Park No. 2, Churchill View Park, Gedame-Eyesus Park,Kaleb Park, Kolfe Park, Teklehymanot Park, Hachalu Hundessa Park, Entoto Park and Unity Park.

obtained from written materials which are available on the internet and relevant government offices. The survey was conducted by employing stratified sampling of recreational parks in the city using the definition used by the city to categorize the urban recreational parks such as woreda, sub-cities, city, and national parks. The respondents were selected from the total population of park visitors as they were visiting the sampled recreational parks.

3.3. Populations, Samples and Sampling Techniques of the Study

The sampling plan were included population, sample unit, sample size, sampling procedure and sampling media. The populations in this study are the city parks and park visitors. The sampling units are the parks and parks visitors. The sampling size were determined for both number of parks and number of visitors administered in observation and survey respectively. The sampling procedure and sampling media show how they are selected and how they were reached respectively.

3.3.1. Population of the Study

The populations for the study were categorize into two. These are the number of parks in the city and the number of parks visitors who were visiting these parks. Both populations were defined as follows:

- **Parks Population:** There are 27 major known recreational parks in the city, the sample is drawn by taking a purpose sampling of one city level park, 2 sub-cities level park, one woreda level park and one national level parks. With a total of # 6 parks from # 27 parks in the city.
- **Parks Visitors population:** the number of recreational park visitors in the city.

3.3.2. Sampling Design

The sampling design were included identification of sampling unit, sampling size, sampling procedure and sampling media. The following sections describe each of them.

Sampling Unit:

The sample units are the city recreational parks and users/visitors of the city parks.

Sampling Size and Sampling Procedure

The sample size is the number of recreational parks and the number of visitors who will involve in the survey. The population of the recreational parks were considered the 27 major recreational parks in the city. These were categorized into four types based on the city park definition and which levels of administration is managing it i.e., national, city, sub-city and woredas parks. Sample representative parks were drawn purposively from national, city, sub-cities and woredas parks. The samples are Friendship square park from the national, Bihere Tsige Park from city park, Debaba park from woreda park and ECA, Hamle 19, Yeka Parks from Sub-cities parks as shown in the following below Table 5.

Table 1: Recreational parks sample size

Type of Park in the City	# Number of Parks in the City	# Sampled	Name of the Park
National	3	1	Friendship Square Park
City Park	1	1	Bihere Tsige Park
Sub-city Park	17	3	ECA, Hamle 19, Yeka Parks
Woreda Park	6	1	Debab Park
Total	27	6	

The sample size for the park visitors were sampled using unknown population sample size selection formula and equation(Scott M. Smith, n.d.).The following parameters were defined. These are:

- The Margin of Error (Confidence Interval) with a margin of error of +/- 5% with 95% confidence intervals (which is corresponds to a Z-score which has a Z Score equal to 1.96).
- The standard deviation (StdDev) was taken as 0.5 to give more number which would ensures the sample could be large enough to represent the population.

After defining the above values, the researcher had abled to calculate the needed sample size.

The values used for determining sample size is summarized

- Z-Score=1.96
- StdDev= 0.5
- Marginal error= +/- 5%

Necessary Sample Size = $(Z\text{-score})^2 * StdDev * (1-StdDev)$

$$\begin{aligned}
 & (\text{Margin of error})^2 \\
 &= ((1.96)^2 \times .5(.5)) / (.05)^2 \\
 &= (3.8416 \times .25) / .0025 \\
 &= 0.9604 / .0025 \\
 &= 384.16
 \end{aligned}$$

385 parks visitors were sampled as respondents. The visitors were randomly chosen in those six parks by allotting equal number of 64 respondents. Both weekdays and weekends were used were used to undertake the survey.

Sampling Media

The visitors were reached for survey when they were visiting the sampled recreational parks. Researcher used checklist apart from the survey to assess the sampled parks for selected parameters. Moreover, the researchers made an interview with relevant government bodies based on questions prepared for key informant interview in the Annex II.

3.4. Data Gathering Instruments and Procedures

The data from the primary sources were gathered using the data collection tools prepared for the purposes. The data collection tools are questionnaire, key informant questions and observation checklist. These data collection tools are annexed in Annex I, Annex II and respectively.

3.4.1. Questionnaire

A questionnaire was used a broad range of issues which were prepared to answer the objective of the research hypothesis and research questions. It was included a variety of questions as open and closed ended about the main sampling units the parks and users' characteristics like ranging from frequency of visits, the fit between what the parks are offering and what the residents need, safety, accessibility, comments on available facilities and vegetation, and suggestions for improvement etc. It also included survey of visitor's perceptions on the level of use, range of activities, quality of maintenance, evidence of anti-social activities and the demographic character of their catchment and current patterns of use. The recreational parks were assessed qualitatively using a five-point rating scale (where 1 was the lowest value and 5 was the highest value), so that we could compare representative sample park numerically, using the following criteria based on those of Golkar(Bahriny & Bell, 2020)

3.4.2. *Observation Checklist*

The observation checklist was used for assessing the parks based on pre-determined variables selected which one park should include. The variables are customized from different studies. The variables considered in the observational checklist were vegetation coverage, children playground, historical event show, food and catering services, wedding event, waterbed (poll), swimming pool, games, personal exercise, walking, sports, relaxing, sitting, watching, and eating. The checklist collected the data variables from six parks selected as sample from the recreational parks in the city.

3.4.3. *Key Informant Interview*

Three key informant interviews were used to validate the data obtained from both primary and secondary data. The interviews were done from those offices and workers who have a day-to-day work relationship in the city parks development and utilization. The main city offices which were included in the interviews were Addis Ababa Environmental Protection Authority, and Addis Ababa Urban Development and Beautification Bureau (AAUDBB).

3.5. **Validity and Reliability**

It is important to check the validity and the reliability of the research throughout the methodological process. These twin concepts provide the criteria by which we need to judge our choice of research methods. By validity is meant the success of a method in probing and/or assessing what is sets out to probe or assess. Reliability is a criteria that refers to the consistency of data stemming from the use of a particular research method(Bill, T., Gautam, S., & Taposh, 2014). The research has used varies methods to ensure the validity and reliability of the research. The external validity of the sampling method was checked which was very crucial for whatever the generalization outcome concerned. The research design and data collection tools were reviewed against the internal and content validity respectively. The researcher and the data collectors were informed on the face validity, test, and construct validity check. The data collection tools were developed by the researcher under close guidance of advisor and a data collection was carried out on 20 park visitors to check whether the data collectors familiarize with the questions. The respondents were also well-informed about the

objectives and how to fill, assess and give feedback on the significance of the contents, item length, simplicity of items, and details of the questionnaire. Based on their remarks, the instruments were amended before they were directed to the respondents to minimize errors. Therefore, the questionnaire was corrected to include some notes, concepts and clarification for the data collectors and respondents. The reality of the data was checked for its stability and equivalency.

3.6. Method of Data Analysis

The methods of data analysis are applied for both quantitative and qualitative data sources. The collected data had arranged, organized, and presented in a way to properly answer the research questions. The closed-ended items across sub-categories were computed and explored using frequency, percentage, and mean scores. The data analysis has used the descriptive and inferential statistics. The data encoded in the SPSS software. The descriptive analysis was undertaken on the park visitors' characteristics such as age, gender, occupation, frequency of visit, satisfaction, interest, preference etc. These were analyzed through percentage, frequency etc. In addition, the qualitative data analysis through content analysis. The overall methodology including the method analysis is provided in the following figure 3.

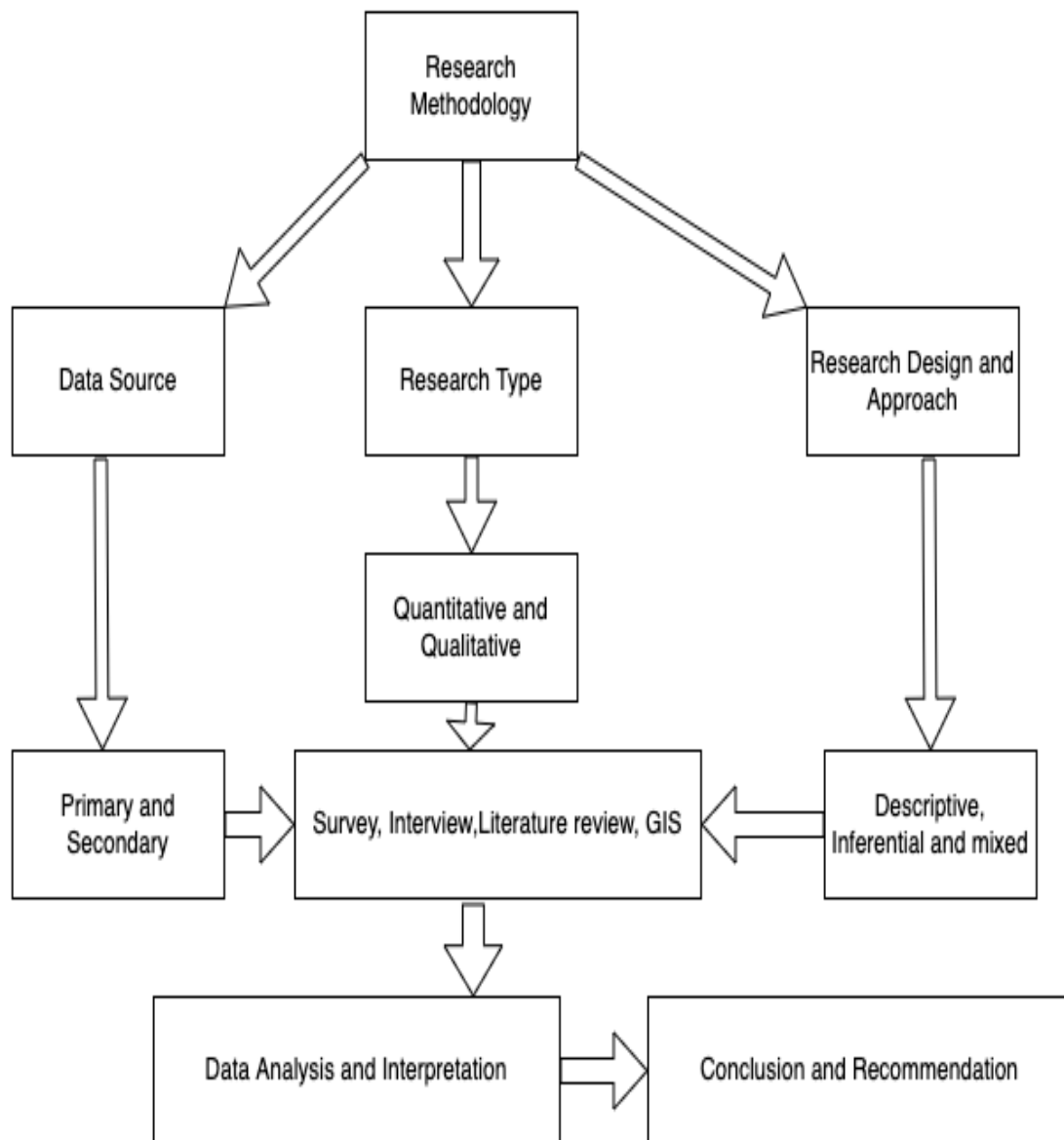


Figure 3: Research Methodology (Source, Autor from literature review)

CHAPTER FOUR

4. RESULT AND DISCUSSION

This study categorized the result into four main sections. The first section assessed the socio-demographic characteristics of the park users with respect to gender, age, and occupation. The second section investigated the role of parks in providing environmental and social benefits, the third section is the park characteristics and its visitation towards environmental and social benefits, and the fourth section is the park visitors characteristics and visitation which is an important component for delivering social benefits to the residents.

The findings outlined the environmental and social benefits, as well as factors that are important for realization of these benefits, these are recreational park and visitors' characteristics. Recreational parks have a role to play in proving environmental and social benefits. These benefits are mainly impacted by the recreational park characteristics and park visitation by visitors. The visitor's characteristics is important for park visitation and thereby to achieve the social benefits.

4.1. Socio-Demographic Characteristics of Park Visitors

4.1.1. *Age and Gender*

The respondent visitors categorized into age and sex groups. The age of the surveyed visitors categorized into eight age groups using CSA age categorization. It was found that about the majority (37 %) of the visitors were between 25-29 age groups, followed by 32% were 20 to 24 age group and 15 % were 30-34 age group (Table 2). When we look at interviewed visitors by sex, about 52 % were male and 48 %were female. The mean age of visitors for the male and female group was found 28 and 26 age respectively. The standard deviation of age group for both male and female groups were found six. This implies that the mean age is dispersed within the six-age difference, and this helps to accommodate the different age groups in the study.

Table 2: Age categories of interviewed parks visitors

Age Categories	Sex		%
	Male	Female	
15-19	3	17	5%
20-24	63	60	32%
25-29	68	72	37%
30-34	39	20	15%
35-39	17	9	7%
40-44	9	0	2%
45-49	0	4	1%
75-79	1	1	1%
% Percentage	52%	48%	

4.1.2. Occupation of Respondent Visitors

The visitors were from a variety of organizations and occupation who were randomly selected as respondent in the sampled recreational parks in the city while they were visiting these parks on spots. The respondent visitors' organizations and occupation are summarized as follows in Table 3. The visitors responded that about 21.8 % from government organizations, 5.9 % from non-governmental organizations, 9.7% from private companies, 31.5% were students and 3.8 % were unemployed. The visitors have different professions/occupations such as accountants (2.7%), bank workers with different profession (7.3%), construction workers (2.4%), drivers (2.2%), health workers (2.7%), lecturers (1.1%), teachers (4.6%), and tour guides (1.3%).

Table 3: Professions and organization types of visitors

Works	Frequency	Percent
Accountant	10	2.7
Bank Worker	27	7.3
Construction Worker	9	2.4
Driver	8	2.2
Government Worker	81	21.8
Health Worker	10	2.7
Lecturer	4	1.1
NGO	22	5.9
Private Worker	36	9.7
Student	117	31.5
Teacher	17	4.6
Tour Guider	5	1.3
Trader	11	3.0
Unemployed	14	3.8

4.2. City Recreational Parks Benefits

The perception of visitors about the benefits of recreational parks were analyzed. The highest percentage which is 78% of the visitors responded that recreational parks have social benefits. The environmental and physiological benefit of parks were shared by 65 % and 60 % of respondent respectively. The social benefits mentioned by respondents include of recreational parks were social events like wedding, friends spent together, family take time to talk and paly etc. The environmental benefits mentioned by the respondents include improve air quality, reduce urban heat impact. The respondents were also mentioned the economic value of recreational parks in creating jobs and income for youth, children, and women. Moreover, visitors are also come to recreational parks to get physiological relief such as connecting the environment and refresh their minds. In line with other research findings, the recreational parks have role in providing environmental and social benefits, Visitors especially nearby parks will also benefit in the parks which has conductive environment to do sports, readings etc(Tempesta, 2015).

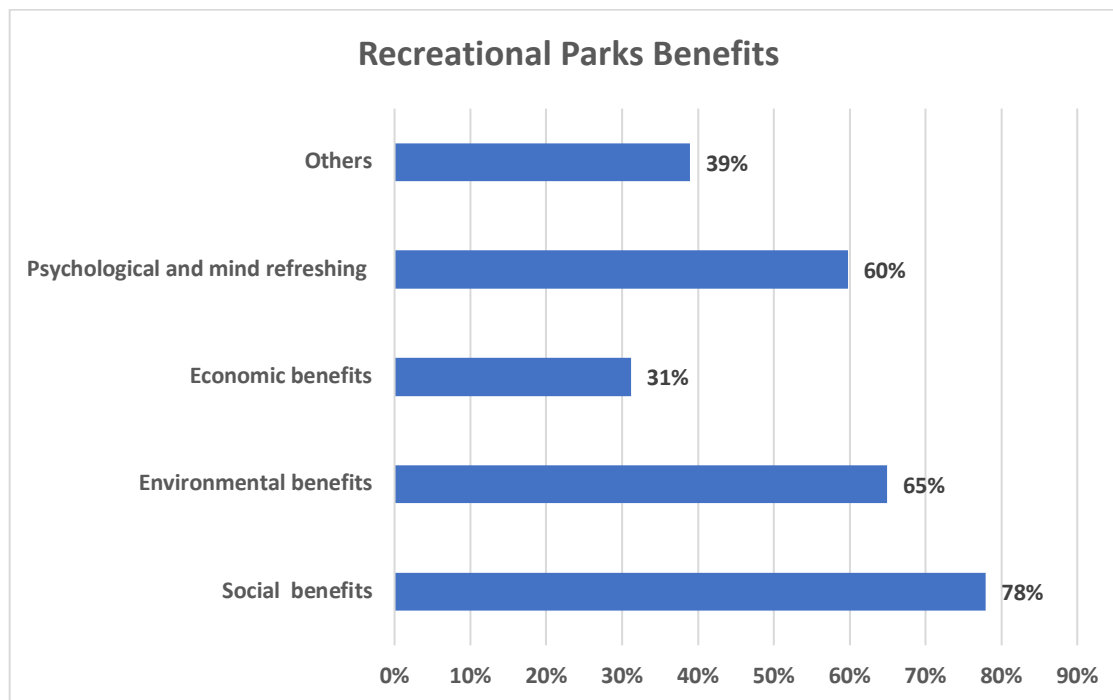


Figure 4: Recreational parks benefits

The environment and social benefits in the recreational parks analyzed using features in the active types of parks(Gaurav. H .Tandon, 2017). There are about thirteen elements included to assess the park characteristics through observation. Environmental benefits elements such as the presentence of vegetation coverage and water body. The social elements are the presence of children playground, historical event show, food and catering services, wedding, swimming pool, games personal exercise, walking, sport, relaxing, sitting, watching, and eating.

Recreational parks have a high role in providing the social and environmental benefits for the city residents. People came to parks for social and recreational reasons. If the parks can be developed with certain standard according to visitors interest such as through improved facilities and vegetation, it will attract more visitors (Hailegiorgis, 2017).Therefore, recreational parks should understand these and needs to strengthen the positive elements of park characteristics.

4.2.1. Environmental Benefits of Recreational Parks

The environmental benefits from the parks analyzed with the presence of the vegetation and water body in the recreational parks. The finding from the observation showed that most of the city recreational parks are endowed with a certain level of vegetation coverage and water body. In addition, all sampled parks except Hamle 19 and Debab have water bodies in the form of river, poll etc. The respondent visitors were also asked to rank the park vegetation and climate comfort of recreational parks with the five scale (from low 1 to highest 5). The findings showed that the mean average rank for the vegetation and climate comfort was found among the highest relative to other characteristics of parks which was 3.6 and 3.5 (see section 4.3) but the value is still not very big compared to the highest value of mean 5 and there should be additional works required to increase vegetation that consider the size of the parks.

The presence of water body whether natural and artificial increase the environmental benefits through creating a natural scene for biodiversity and increase the green space of the area by providing water to the ecosystem. The recreational parks are also important in maintain and cleaning the waterbody such as rivers. The riverside development through cleaning and creating recreational environment can increase the environmental benefits. The shagar project which include the friendship park is one example where the nearby rivers are clean based on the measure taken by the recreational park development project.

4.2.2. Social Benefits of Recreational Parks

The finding from the observation showed that most of the city recreational parks are endowed with a certain level of walking, eating, watching and personal exercise places and to some extent children playing grounds. Most of the parks lacks gaming zones, sporting activities etc. The table 4 shows the observational result of the parks which marked “X” showed that the present of the stated facilities in the recreational parks.

The observational findings had shown that most parks in the city had not included a range of facilities which the visitors could entertain with the range of activities. Due to this, the recreational parks hadn’t delivered their maximum potential for social benefits. The environmental situation in the park such as vegetation is one of the motivation factors for the

park users to visit a certain park. Therefore, the social and the environmental characteristics nature in the parks can support each other to bring more visitors in the recreational parks.

Table 4: Physical recreational parks assessment

S/N	Park Name	Children Playground	Historical event	Food and catering	Weeding	Swimming pool	Games	Personal Exercise	Walking	Sport	Relaxing	Sitting	Watching	Eating
1	ECA Park	x		x	x	x		x	x		x	x	x	
2	Bhire Tsge	x	x						x	x	x	x	x	
3	Hamle 19	x		x	x				x					
4	Wodagenet			x	x	x		x	x					
5	Yeka	x							x		x	x		
6	Debab		x	x			x	x	x	x	x	x	x	x

*The full pictures of the parks are Annexed.

In addition, the observational analysis had showed that visitors were accompanied by with family members, individually, with friends i.e., girl and boy friends. Some of the visitors were celebrating birthdays, wedding, some others were refreshing with nature and vegetation in the parks, some kids were playing especially in the weekends. Visitors who came as group for wedding, birth days or some social activities usually bring or rent materials such as chair, tables, music bands, DJ, or traditional solo player.

According to the key informant interview, there are about 16 city managed recreational parks within the Addis Ababa Urban Beautification and Green Development Bureau⁴. The average daily flow of visitors is different for different parks. For instance, Future Parks and Shalla Parks have an average 200- to 300 visitors per day and T/haimanot, Lideta and Ethio-cuba park have about 1800 to 3000 visitors per day. The numbers of visitors are high in the weekends. Most of

⁴ The parks include Addis Ketama, Asere, Bihre Tsige, Bole roundabout, Ethio-cuba, Futur, Gola, Hamle 19, Holland, Kolfe Zeg park, Korea Zemach, Lideta, London, Meleze Zenawi, Millennium, Refuge, Shaga, Shella, T/haymanot and Tesfa Kokob parks.

the recreational park entrance is free of charge. The cost incurred is mostly associated when we want to make social events like wedding, birthday or any social group gathering. The events are usually accompanied catering services, taking pictures and videos.

Park visitation makes people to interacting with colleagues, friends, and families etc. The finding showed that about 37.7 % of the respondent were visiting parks once per week, and about 14.1 % and 13.8% of the respondents were visiting the park monthly and couples' times per months respectively. About 6.2 % and 3.5 % respondents were visiting the park in within a few times a week and daily basis respectively. Most of the visitors in the daily basis categories are living in nearby the parks. A significant percentage of visitors (24.1%) had said they were visiting parks rarely. This result ties well with previous study in the city which has weekly (41%), monthly(47%) and occasional visit (57%)were higher (Sileshi Azagew & Worku, 2020c). Another study also showed the frequency of visitation was highest among visitors with an average of 3.5 to 3.8 times per month(Mertens et al., 2019) which is a little bite different with the finding with this study that about 13.8 % of the visitors were visiting the parks couples time per month.

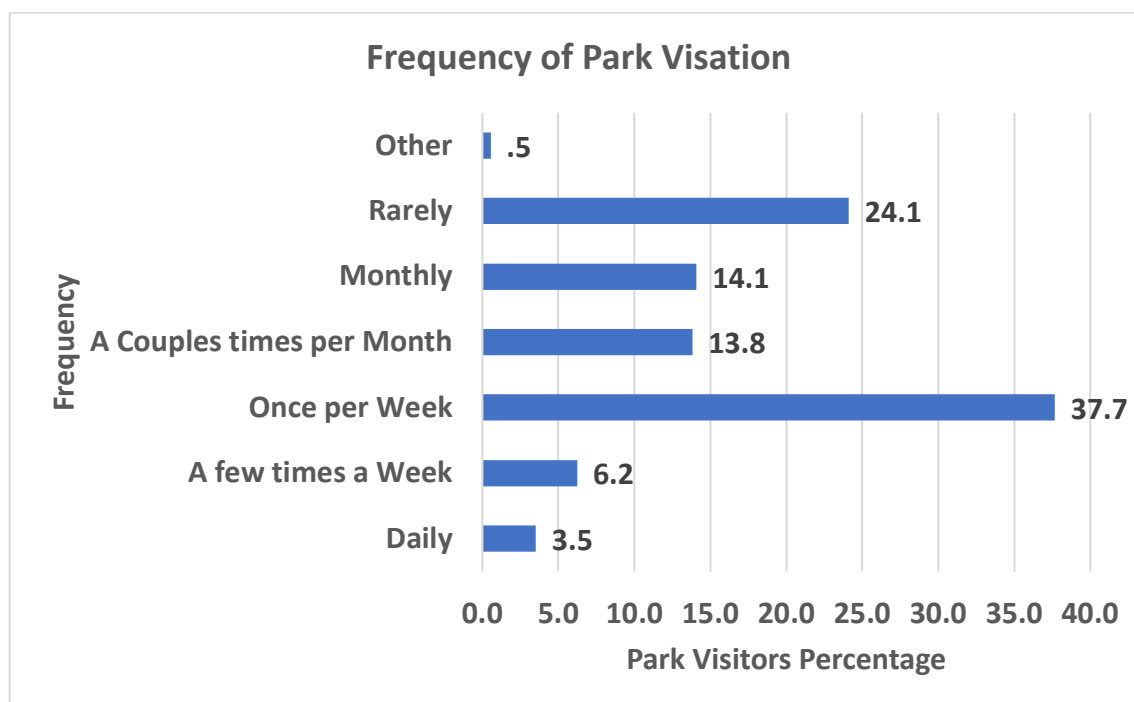


Figure 5: How often people visit parks

Most visitors preferred Sunday (65%) and Saturday (17.8%) for visit. The other data preference shared by the visitors were Friday (5.7%), Tuesday (5.1%), Thursday (3.2%), and Wednesday (2.2%). The lowest preference day for visit was Monday which is 0.8%. A previous study had revealed that 79.1% of the respondents preferred to visit parks during weekends and 13.3% and 7.6% of the respondents preferred to visit during week days and holidays, respectively (Andualem & Oyekale, 2012).

Most of the visitors were coming to the parks with friends (54.3%) and family members (40.9%) which includes such as wife, husband, children etc. The remaining visitors were coming individually (4.8%). It is similar with finding in Belgium that most park visitors (60.5 to 76.7%) were coming with their friends (Mertens et al., 2019). Most of the visitors (43.9%) were stayed about 1 to 2 hours' time in the park. It was found also that 24.8% visitors were spent about 31 to 60 minutes in the park. The hours spent for different visitors group is presented in Figure 6 below. A study has showed that the park stay duration ranges about 75 minutes to 85 minute among adolescent groups (Mertens et al., 2019).

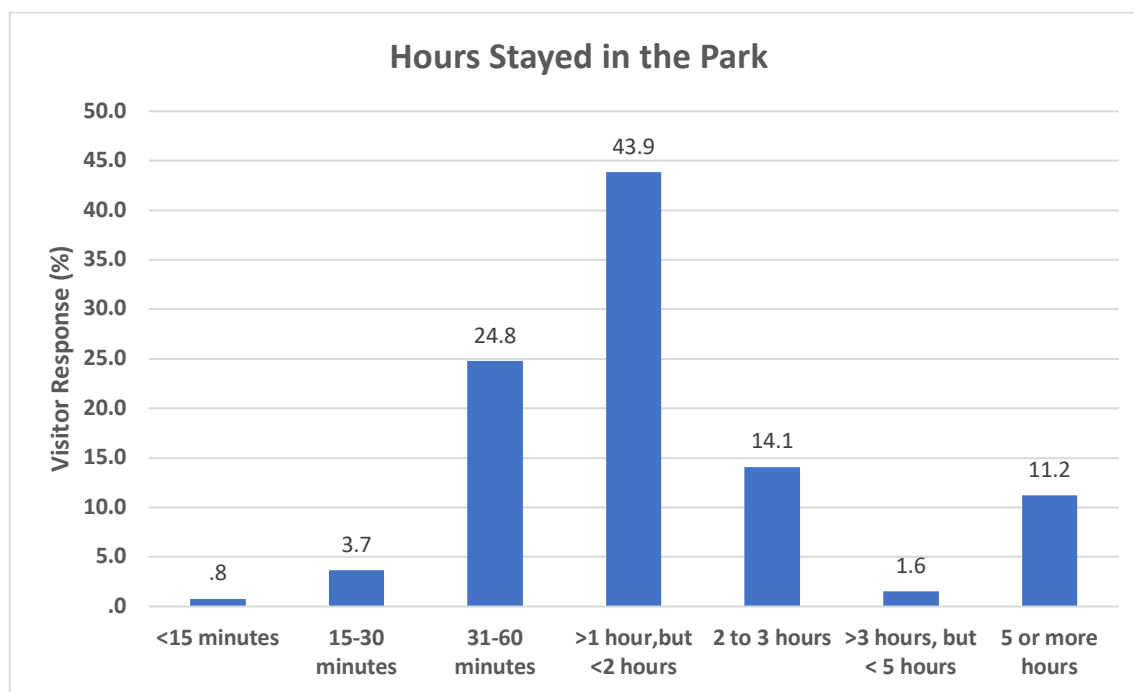


Figure 6: Hours stayed in the recreational parks

4.3. Recreational Park Characteristics

The city recreational park characteristics were analyzed through various characteristics used by Golkar theory of recreational park characteristics analysis which has about 13 park characteristics. The questions are aimed to understand the perception of the park visitors on the different element of city recreational parks characteristics. The visitors were given to rank the characteristics of parks they know into these five rated ranks from very low=1, low=2, medium=3, high=4 and very high=5. The mean value for all park characteristics ranked were between 2.4 and 3.6. The mean value is higher for vegetation and climate comfort characteristics of the parks whereas the lowest for accessibility and management maintenance. All the mean for the ranking for each park characteristics has shown in this web diagram at Figure 7. The finding is similar with Tehran, urban parks regarding their level of use, range of activities, quality of maintenance, evidence of anti-social activities(Bahriny & Bell, 2020).

The mean value for the park characteristics indicated that it is crucial to improve the park characteristics to have more park visitation, social and environmental benefits.

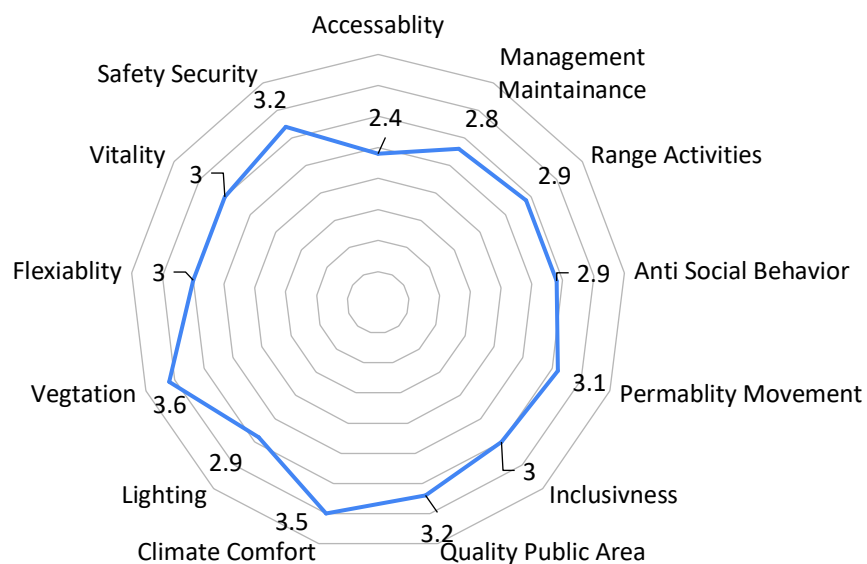


Figure 7: Ranks by visitors on 13 park characteristics

The frequency of visit by visitors and park characteristics were also analyzed through chi-square goodness of fit test and Cramer's V, the result has showed that there is moderate relationship between the park characteristics of accessibility, permeability movement, inclusiveness, lighting vitality and safety security and frequency of visits by the park visitors (Table 5)

Table 5: Frequency of visits and recreational parks characteristics

Park Characteristics	Pearson Chi-Square (value)	df	Asymp. Sig. (2-sided)	Cramer's V (value)	Approx. Sig.
Accessability	52.786	24	0.001	0.189	0.001
Management & Maintainance	39.136	24	0.026	0.163	0.026
Range Activities	39.346	24	0.025	0.163	0.025
Anti -Social Behavior	33.009	24	0.104	0.150	0.104
Permablity Movement	47.766	24	0.003	0.180	0.003
Inclusivness	46.246	24	0.004	0.177	0.004
Quality Public Area	33.838	24	0.088	0.151	0.088
Climate Comfort	36.915	24	0.045	0.158	0.045
Lighting	70.823	24	0.000	0.219	0.000
Vegatation	41.114	24	0.016	0.167	0.016
Flexiablity	33.136	24	0.101	0.150	0.101
Vitality	47.443	24	0.003	0.179	0.003
Safety & Security	47.109	24	0.003	0.179	0.003

While looking into some of the park characteristics of quality of public area, safety, and security of park characteristics, about 85.3% visitors responded that the recreational parks have enough seating places (85.3%). With regards to the information sign , it was very satisfied (37.1%) and, satisfied (36.1%), not enough (23.4%) and don't know (3.3%) by visitors. About 80.5 % of the visitors responded that the park is safe to visit. The remaining visitors raise some issues of safety such as related to theft, smoking in the park, waterlog during rainy season due to unmanaged ditches , and the park administrators should work to improve.

Within the context of park accessibility characteristics, the parks user transport options were also assessed during the interview, particularly related whether the availability of the car parking space within the park when the visitors are coming with their own car. According to the findings, about 45.5% visitors were using their own car to visit the recreational parks which is by far has different with the previous study that private car owner shared 4.2%(Sileshi Azagew & Worku, 2020c). The remaining uses various transport system including public buses, taxis, and ride. While looking into the car parking availability within the parks, about 44.4% visitors had able to park inside the parking space, 42.0% of visitors parked outside the park and 13.5% visitors in another parking places. Therefore, the park availability within the recreational park were not sufficient even if more than half of the visitors were coming without their own cars.

4.4. Park Visitors Characteristics

The park visitors' characteristics were analyzed based on the age, gender, and occupation type of the visitors. These characteristics were correlated with the frequency of visit.

The visitors gender and frequency of visits were count whether there is a correlation which the visitors responded their frequency of visits i.e., daily, a few times a week, once per week, a couple of times per months, rarely and others. The relationship was analyzed using chi-square goodness of fit test, Chi-Square, X^2 (degree of freedom = 6) the P value result = 0.482, $P < 0.05$. Cramer's Value= 0.122. The result showed that there is weak relationship between the gender and park visitation.

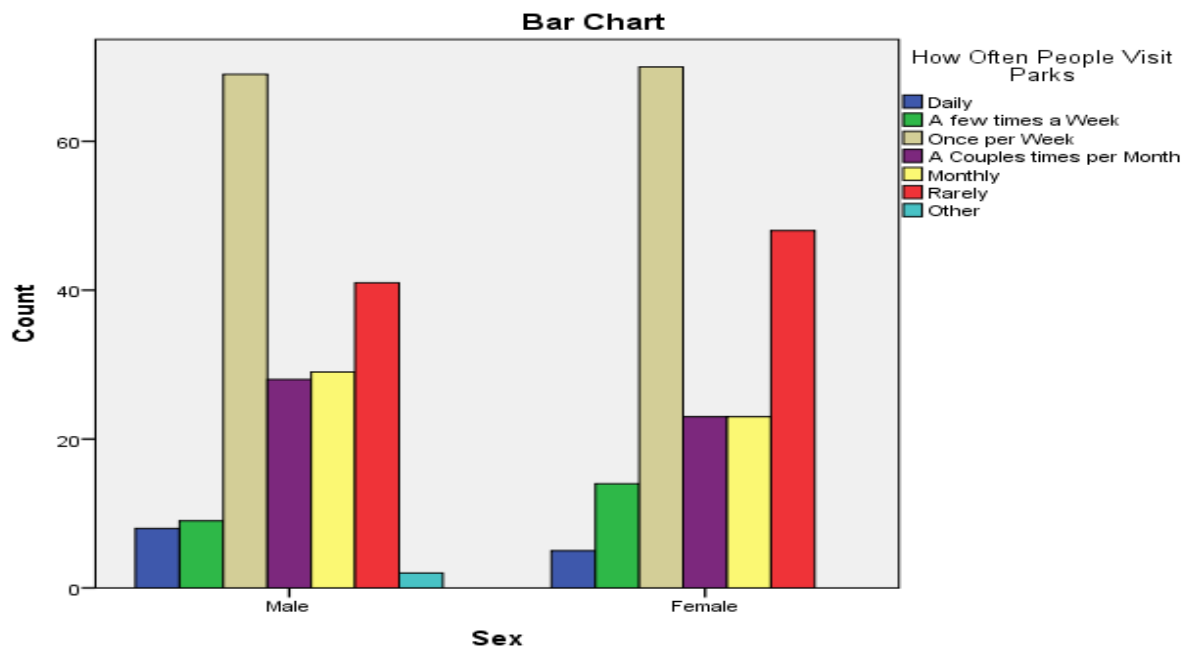


Figure 8: Gender and frequency of visit

The visitors age and frequency of visits were count whether there is a correlation which the visitors responded their frequency of visits i.e., daily, a few times a week, once per week, a couple of times per months, rarely and others. The relationship was analyzed using chi-square goodness of fit test, Chi-Square, X² (degree of freedom = 42) the P value result = 0.000, $P < 0.05$. Cramer's Value= 0.192. The result showed that there is weak relationship between the age and park visitation. The figure 9 showed that the three categories of age 20-24, 25-29 and 30-34 were found visit more recreational parks at different frequency within the sampled parks.

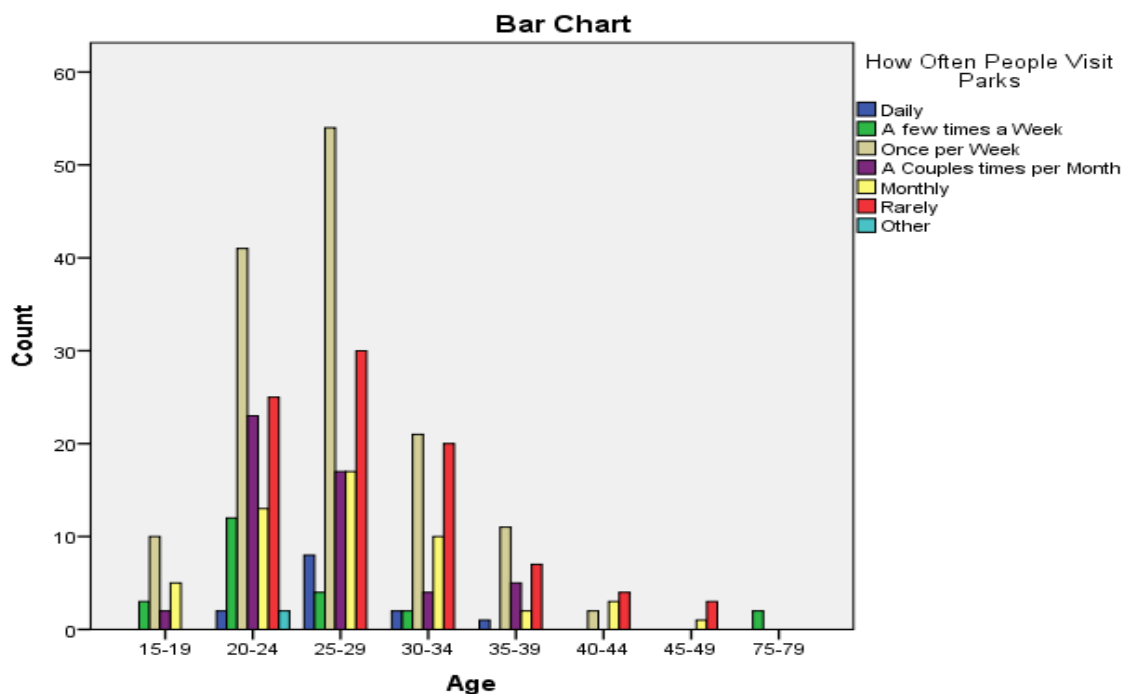


Figure 9: Age and frequency of visit

The visitor's occupation, type of organization and frequency of visits were count whether there is a correlation which the visitors responded their frequency of visits i.e., daily, a few times a week, once per week, a couple of times per months, rarely and others. The relationship was analyzed using chi-square goodness of fit test, Chi-Square, X² (degree of freedom = 78) the P value result = 0.715, $P < 0.05$. The result showed that there is no relationship between the job and park visitation. The assumption is the occupation ties with the income of people. But the park visitation has no relationship with the occupation, this could be as most recreational parks in the city are free of charge except for the services that used like catering, playing a specific game etc.

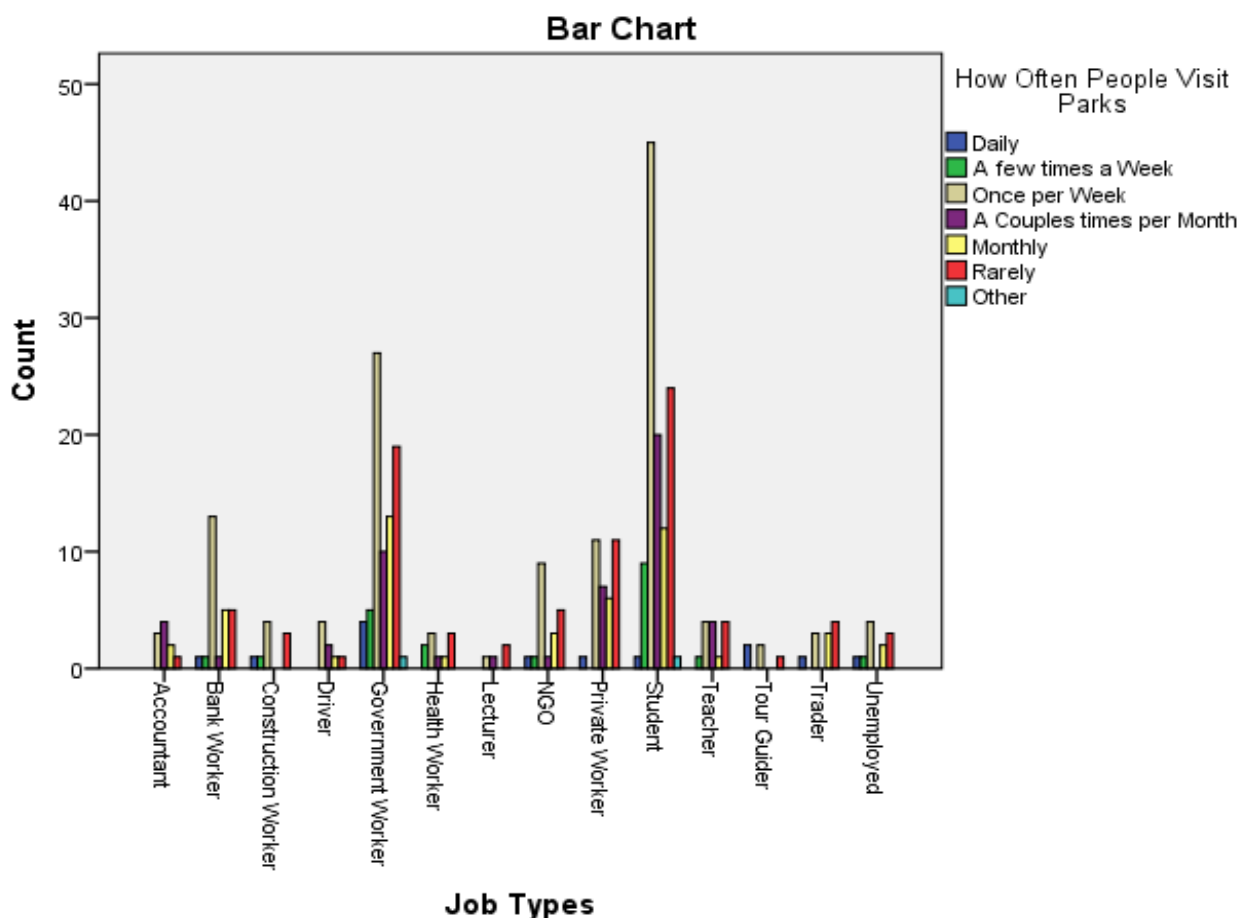


Figure 10: Job types and frequency of visit

4.4.1. Park Visitors Satisfaction on Existing Recreational Parks

The visitors were asked about whether they were stratified with the park facilities and safety of visiting parks. The satisfaction level of visitors was assessed through three closed options. These are whether the recreational parks are successful, acceptable, or unacceptable and need repair. The successful are all the park facilities are very good and the acceptable. The acceptable are the park facilities are fairly acceptable. The third option was totally unacceptable. Based on these, 42.1% of the visitors responded the park facilities are successful, and 46.3% responded that it is acceptable, and 11.6% unacceptable and need repair.

The satisfaction level of the visitors and frequency of visits were count whether there is a correlation which the visitors responded their frequency of visits i.e., daily, a few times a week, once per week, a couple of times per months, rarely and others. The relationship was analyzed using chi-square goodness of fit test, Chi-Square, X^2 (degree of freedom =) the P value result =

0.002, $P < 0.05$. The result has showed that there is relationship between the satisfaction level and park visitation. Those who say park characteristics successful and acceptable have more frequent visitors in all visit frequency categories than those who said unacceptable and need repair (Figure 11)

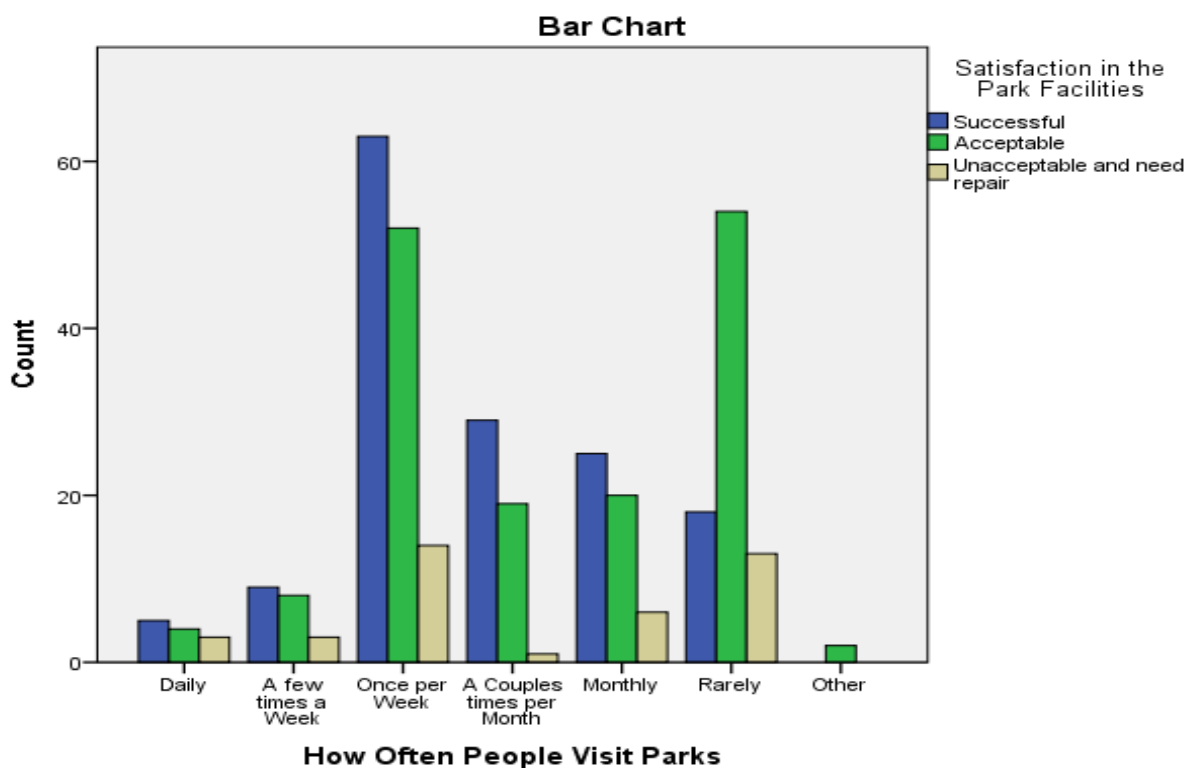


Figure 11: Satisfaction in the park facilities and frequency of visit

4.4.2. Park Visitors Preference for Visitation

4.4.2.1 Recreational Attributes of Visitors Preference

The park visitors were asked about what attribute of recreational parks are attract visitors. The finding showed that most visitors were encouraged to visit the parks if it has a better facility (52.5%), and more events (31.9%) (Figure 12). Some of the facilities mentioned by visitors are playgrounds, cafe, seating places, fountains, easy to be laying on the grass and reading books, riding bike and a nice view. The more the events in the parks like museums, gallery, music, and cultural events makes the visitors more to like to go the recreational parks. The finding has

confirmed that more varied vegetation is the third ranked elements that the recreational parks visitors make them to visit the parks.



Figure 12: Common attributes to visit recreational parks

In addition, about (92%) recommend the outdoor spaces should have trees, water body, pool. About 80.3% of visitors has an outdoor preference to play and enjoy the parks. Based on the previous study conducted in the Hamle 19 and Future Parks in the city , the main motivation to visit recreational park were found the view of the park, the great historical significance, the good service of the parks, the fairness of the entrance fee, easy access of the parks and the cleanness and good facility of recreational parks(Abate et al., 2019).

The results lead to similar conclusion from previous studies where the highest share of park visitors interested with a good facility in the park which enable them to enjoy and relax(Abate et al., 2019). This include eating/drinking facilities, a siting places etc. (Tensaye, 2017). The city recreational parks should develop their facilities to the interest of park visitors. The organizing program and event was another important element that can take interest of visitors (Sileshi Azagew & Worku, 2020a). This could be done through integrating different historical and cultural events. vegetation, landscape and accessibility were also the essential elements in the

park development to attract more visitors in the recreational parks(Zhang & Zhou, 2018) and (Zhu et al., 2020). This result highlights that the city recreational parks need to improve the facilities, green spaces to attract more visitors.

Visitors recommended some of improvement actions need to make on recreational parks to better deliver their environmental and social services. The finding showed that the parks should include exhibition (23.6%), followed by the accessibility and inclusion which shared by 17.9% and 14.3 % visitors respectively. The visitors are also suggesting affordability, green spaces, inclusiveness, job creation and income generating, playground and game, were the main areas suggested to improve the recreational parks for environmental and social benefits (Figure 13).

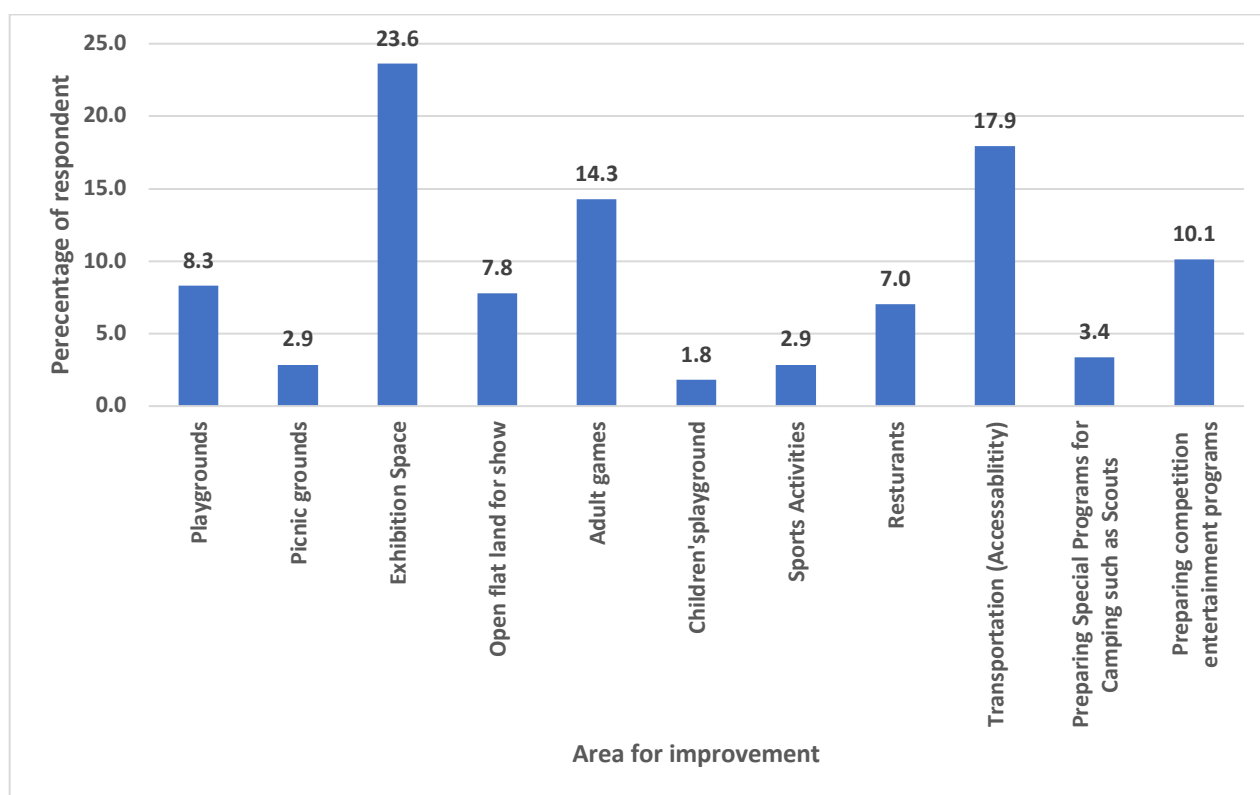


Figure 13: Recreational parks Improvement actions

4.4.2.2 Visitors Criteria to Rank Recreational Parks

The visitors were asked to rank the best four city parks in the city and the reason why they select these parks. The ranking was undertaken with two groups. The first group was the parks which were built before three years ago (old park) and the second group was the recently built parks (new park), these are Entoto, Unity and Friendship Parks. The visitors were requested to rank both groups separately. The findings have showed the first group i.e., Hamle19 Park, ECA, Debab, and Lion Zoo Parks got at the top ranked preference from visitors. The following Figure 14 shows how the visitors ranked the parks as first, second, third and fourth. If we looked at cumulative ranking values in the charts. It can be ranked as Hamle 19 Park, Lion Zoo park, Debab Park and Yeka park as first, second, third and fourth choices by visitors.

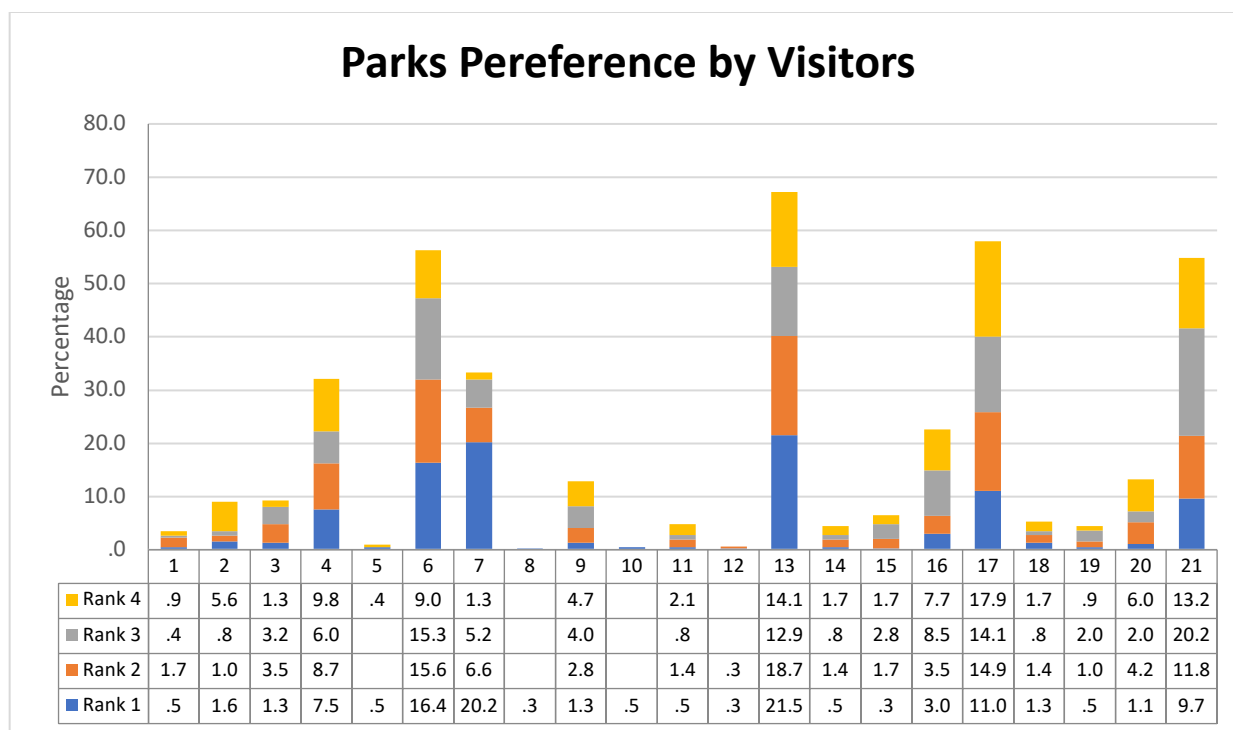


Figure 14: Parks preference by visitors (for the old parks)⁵

⁵ 1=Africa, 2= Akaki ,3=Ambasador ,4=Bihere Tsige ,5=Curchill View ,6=Debab ,7=ECA 8=Ethio-Cuba Park,9=Ethio-Korea Park,10=Gedame Eyesus Park,11=Gola Park,12=Gulele Botenic Garden,13=Hamle 19 Park, 14=Kaleb Park,15= Kolfe Park,16=Lideta park, 17=Lion Zoo Park, 18=Nation, Nationalities and Peoples, 19=Peacock/Addis Zoo Park, 20=Tekelehymanot Park, 21=Yeka Park

The recently built parks were ranked by visitors as shown in Figure 15. Based on these, Entoto park had the top or the first ranked (47.1 %), Wodagnet (Friendship) Park was the second ranked (38.9%) and Unity Park was the most third ranked (46.5%).

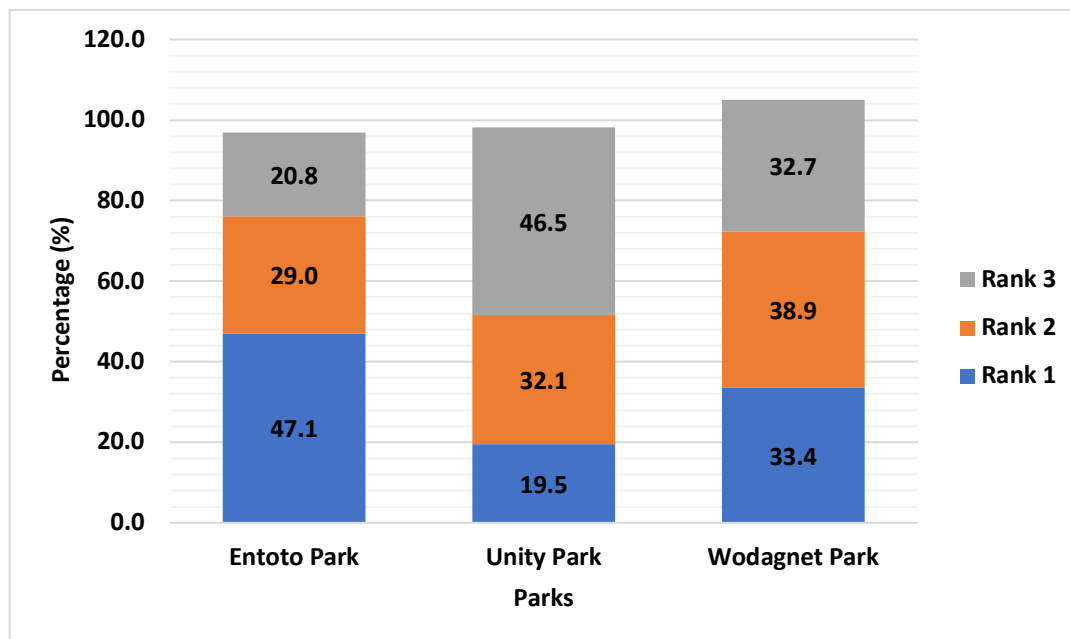


Figure 15: Parks preference by visitors (from the new parks)

In both recreational park's context, the old and the new ones, there are park characteristics that the visitors were used to rank the best recreational parks, these include the accessibility, green spaces and attractiveness and refreshing as shown in Figure 16. In line with this findings, previous studies had showed that these are the motivational factors to visit the recreational parks (Abate et al., 2019). Similarly with other research findings, landscape, built infrastructure, accessibility, and neighborhood attributes are likely to influence the number of park visits to receive (Donahue et al., 2018).

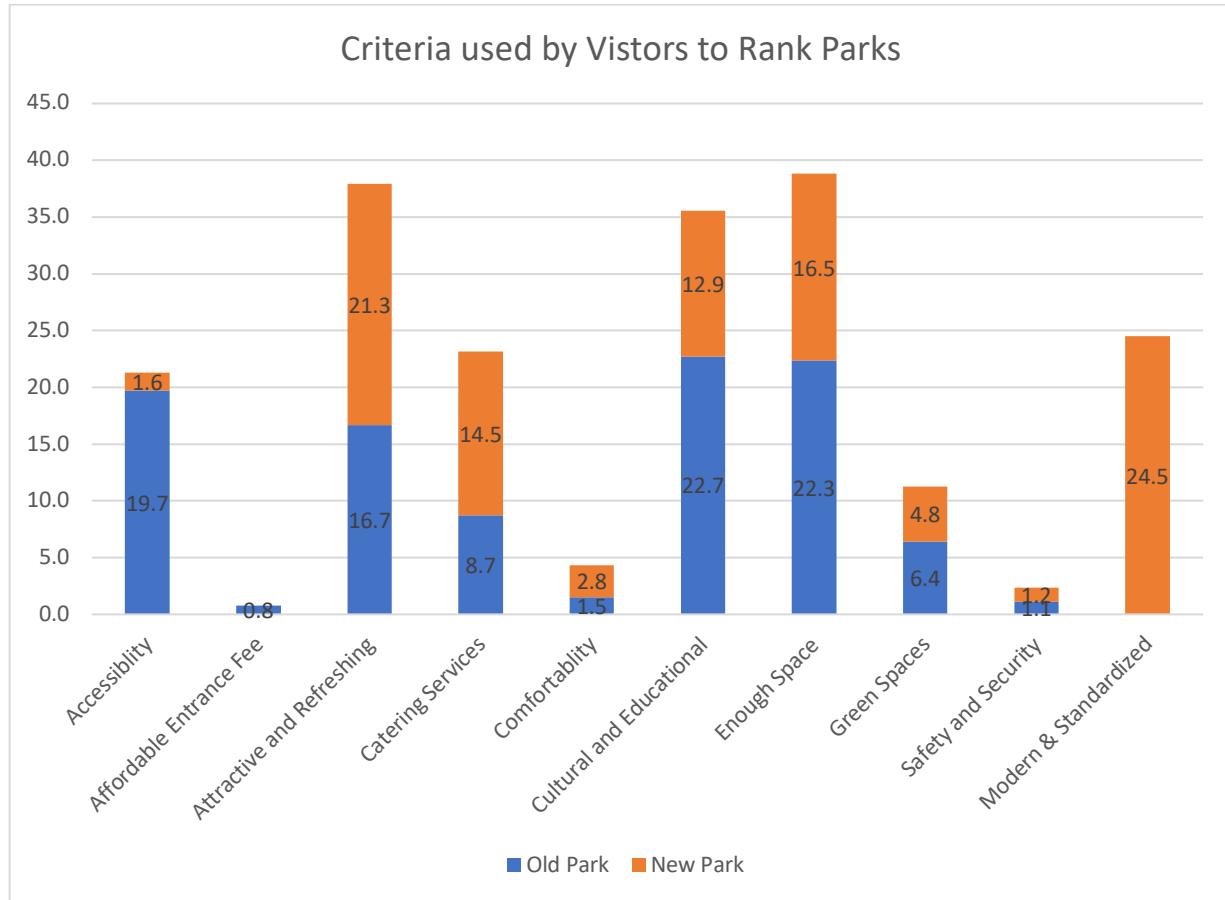


Figure 16:Criteria Used By visitors to rank recreational parks

The ranking from the parks has shown that different facilities, programs, and events are important for visitors to utilize and stay to visit recreational parks. The visitors ranking of parks and the criteria is very crucial to renovate recreational parks who have short fall of some of the visitors' interest.

CHAPTER FIVE

5. CONCLUSION AND RECOMMENDATION

5.1. Conclusion

Urban recreational parks have a role to play in delivering environmental and social services. For this, park and visitors' characteristics, and frequency of visitation are the crucial factors. Vegetation and water body in the parks have a lot of contribution to environmental benefits through improving air quality, reducing climate challenges, maintain biodiversity etc. In addition, visitors' characteristics need to be considered for better park visitation and thereby social benefits by making it inclusive to age, gender, income. Moreover, the findings have showed that accessibility, better facilities, and more events increase park visitation. The analysis showed there is relation between visitor satisfaction and frequency of park visitation.

The city recreational park characteristics were analyzed using thirteen recreational parks characteristics. The result showed that accessibility, management, and maintenance were among the lowest average, whereas vegetation, climate comfort are among the highest average. In addition, the analysis showed that there is relationship between park characteristics and park visitation such as accessibility, permeability, and inclusiveness.

Recreational park visitors usually come with friends, families, and some individually to perform social activities or, refresh mind. Most of the visitors spent at 1 to 2 hours' time in the park. It is interesting to see most parks has vegetation's and include children playground but lack events, gaming zones, historical and cultural shows. The findings showed that most visitors are interested to see recreational parks include the following elements such as cultural and educational component, enough spaces/large spaces, accessibility, attractive and refreshing, catering services, green spaces, comfortable, safety and security, and affordable entrance fee and modernity in recreational parks. Therefore, recreational parks need to consider park and visitors characteristics for better visitation, environmental and social benefits.

5.2. Recommendation

The following are recommended based on the study findings:

- Recreational parks have environmental and social benefits. Therefore, managing and developing parks should be the priority in urban planning and implementation. The city green spaces are among the lowest in Africa Cities and the WHO and national standards, recreational parks can play a significant contribution in increasing green spaces. Therefore, the city, specifically Addis Ababa Environmental Protection Authority and Addis Ababa Urban Development and Beautification Bureau (AAUDBB) should strengthen the management and development of recreational parks.
- The city recreational park characteristics were analyzed using thirteen recreational parks characteristics. It showed that the city should work to improve the recreational park characteristic where it is observed low qualities by visitors such as accessibility, management, and maintenance etc.
- It is important to understand visitors' characteristics and interest to design recreational parks which include the interest of different categories of people such as age, gender, income, etc.
- Parks visitors can be increase if there are better facilities and organize more events. Therefore, parks need to increase facilities such as walkways, catering services, green spaces, playground, and gaming zone etc.

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APPENDIXES

Appendix I: Survey Questions-Visitors

Park name _____

Data Collector Name _____

Your age _____ Your Work _____

Sex M () F () citizen () or other () _____

Part I: General Question about all Parks in the City

Q1. Which parks in the city that the most fill your interest, rank four park?

From the Old

1) _____ 2) _____ 3) _____ 4) _____

From the new

1) _____ 2) _____ 3) _____ 4) _____

Q2. Why these are interest to you?

For the old

For the new

Q3. How often do you usually visit parks?

(a) daily (b) a few times a week (c) once per week (d) a couple times per month (e) monthly
(f) rarely (g) _____

Q4. On what day do you prefer to visit parks? (a) Sat. (b) Tue. (c) Fri. (d) Sun. (e) Wed.
(f) Mon. (g) Thur.

- Q5.** On a typical day when you come to this park, how long do you usually stay? (a) <15 minutes (b) 15–30 minutes (c) 31–60 minutes (d) >1 hour, but <2 hours (e) 2 to 3 hours (f) >3 hours, but <5 hours, (g) 5 or more hours
- Q6.** With whom do you prefer to visit parks? (a) with your family (wife/husband, wife/husband & children) (b) with your friend (s) (c) with others, who ?

- Q7.** Do you use a car when you come to parks? (a) yes (b) no
- Q8.** where do you park your car? (a) outside the park (b) inside the park (c) in another place
- Q9.** What would encourage you a lot to visit a Park? (You can choose more than one answer)
(a) Improved safety (b) Better facilities (c) More events (d) Easier to get to (e) More varied vegetation (f) Other, specify-_____

Part II: General Question Specific to the Park Sampled

- Q10.** Are there enough seating areas in the park? (a) yes (b) no (c) don't know (d) others
- Q11.** Do you feel safe walking around the park? (a) yes (b) no (c) don't know (d) others
- Q12.** How do you feel about the information signs in the park? (a) Very satisfied (b) satisfied (c) not enough (d) don't know
- Q13.** What are the benefits of parks you know and mention from each 1) Social _____ 2) Environmental _____ 3) Economic _____ 4) psychological and mind refreshing _____ 5) others _____?
- Q14.** What is your point of view of this park in terms of facilities such as comfort stations, snack pavilion, picnic shelters, play pavilion and parking? (a) successful (b) acceptable (c) unacceptable and need repair.
- Q15.** What improvement would like to see in the future? (a) playgrounds (b) picnic grounds. (c) exhibition space (d) open flat land for show (e) adult games (f) children's playground (g) sports activities (h) restaurants (i) transportation (j) preparing special programs for camping, such as scouts (k) preparing competition entertainment programs. (l) others, _____.

Q16. Do you prefer some kinds of women's activities or special programs for elderly people and handicapped in the park? (a) yes (b) no if the answer is (yes), which kind of activities do you suggest:

Q17. Do you have any suggestions or needs or even some thoughts you believe will serve to develop the park's condition?

Q18. Do you want outdoor staying spaces to have facilities that can provide shade, regardless of the season? For example, trees.

Q19. Do you prefer outdoor staying spaces to have ponds, pools, or streams? Please explain your answer.

Q20. Is there any unused area in the park, or has negative activities?

(a) Yes (mention where) _____

(b) How it can be reused? _____

(c) no

(d) don't no

Q20. Rank this item

How do you these factors	Ranking				
	1 Very Low	2 Low	3 Medium	4 High	5 (very High)
Accessibility to and within the park,					
The level of management and maintenance,					
The range of activities being pursued,					
Evidence of anti-social behavior,					
Permeability and movement,					
Inclusiveness,					
The quality of public areas,					
Climate comfort,					
Lighting,					
Vegetation,					
Flexibility					
Vitality,					
Safety and security					

Our questions are nearly finished. Do you have anything else to add? Have I overlooked anything? Thank you for your valuable opinions.

Appendix II: Key Informant Interview

Q1. What types of parks are available in the city?

Q2. How many people visit the park each day, what days are people interested to visit the park?

Q3. What are the major services the parks give to the community?

Q4. Who is managing the day-to-day operation of the park?

Q5. Do parks have standards?

Q6. What are the government plan and objective to develop parks?

Appendix III: Observation Checklist

Park Name	Activity and Park Feature																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

1. Vegetation Coverage

2. Children Playground

3. Historical event show

4. Food and catering services

5. Weeding

6. Water body (poll)

11. Sport

12. Relaxing

13. Sitting

14. Watcing

15. Eating

16. Other (specify)

Appendix IV: Recreational Parks Pictures

ECA Park



Bhire Tsge Park



Hamle 19 Park



Friendship Square Park



Yeka Park



Debab Park

