

Critical review of Empirical Evidences on the Practices, Management and Challenges of Public Spaces in Addis Ababa

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Abstract: *Urban Public Spaces are a physical space that unique and attractive space in urban area. Public space also allows all people from different background regardless of their personal, social and cultural differences to use public space. In addition, public space fulfills various societal needs with different functions and features in order to create connection between peoples and rest of the World. These spaces provide opportunities for leisure, contribute to the environment, promote awareness and understanding of nature, and also provide attractive areas in the midst of housing, offices, shops and other buildings. Hence, the main objective of this review article is to explore the practices, management and challenges of urban spaces in Addis Ababa by focusing on providing critical insights on empirical evidences. The review revealed that diverse typologies of public spaces are found in Addis Ababa City. The availability of diverse typologies will provide the residents with a variety of choices. However, the availability of diverse typologies is not enough. The residents of the town should use the available public spaces and the concerned bodies should properly manage the spaces. Equitably distributed and well-connected public spaces are vital in a city since they improve the level of accessibility and improve proximity to public spaces. Thus, in this review an attempt is made to identify the practices, uses and management of the public spaces in Addis Ababa.*

Keywords: *urban, public green spaces, Addis Ababa, practices, management, proximity, availability, accessibility, residents.*

1. Introduction: Conceptualizing Urban Public Space

Review pertinent literatures (Andrews (2014) Farahani & Maller, (2018); Green Space Scotland, 2017). , Kiavar(2011); Nasution and Zahrah (2014);Ramlee, M., et al(2015),etc) in the area of urban public space (UPS) divulged that currently, there is no universally accepted definition of urban green space, with regard to its health and well-being impacts. In this regard, stated that UPS may include places with ‘natural surfaces’ or ‘natural settings’, but may also include specific types of urban greenery, such as street trees, and may also include ‘blue space’ which represents water elements ranging from ponds to coastal zones. Hence, the typical green spaces in urban areas are public parks; other definitions may also include private gardens, woodlands, children’s play areas, non-amenity areas (such as roadside verges), riverside footpaths, beaches, and so on. The definitions are nuanced and context-specific.

However, Urban green space (UGS) are usually defined as publicly owned and accessible open spaces within urban and semi-urban areas that are wholly or partly covered by considerable amounts of vegetation (Farahani & Maller, 2018). Similarly, Andrews (2014) defined UGS as any natural features in the urban environment including parks, public gardens, allotments, domestic gardens as well as road side verges and street trees. Specifically, UGS includes parks, playing fields, play areas, gardens, woodland and other open vegetated spaces and water within our towns and cities (Green Space Scotland, 2017). In addition, Kiavar(2011) stated that unlike spaces of private life, UGS can be defined as the spaces which contain all the activities of public life, a place located in the city which is open to every age, sex and occupational group’s benefit. Accordingly, UGS places extend to streets, public spaces squares, parks and surrounding buildings. In this regard, Nasution and Zahrah (2014) stated that UGS is a free place for people to be accessed. Everybody is free to do many various activities at the place. Thus, UGS available to everyone and invariably serving its purpose as a place where people can meet and interact.

Ramlee, M., et al (2015) stated UGS are a physical space that unique and attractive space in urban area. Public space also allows all people from different background regardless of their personal, social and cultural differences to use public space. In addition, public space fulfills various societal needs with different functions and features in order to create connection between peoples and rest of the World (Ramlee, M., et al, 2015). These spaces provide opportunities for leisure, contribute to the environment, promote awareness and understanding of nature, and also provide attractive areas in the midst of housing, offices, shops and other buildings (Green Space Scotland, 2017).

As to its scope and coverage UGS cover both open spaces and indoor spaces (Kiavar, 2011). This divulges that the UGS is a broad concept that is used to indicate both open and indoor spaces. In this connection, open spaces include the city parks, disclosed parking areas, landscaped ways etc. Indoor spaces are mainly built spaces. Besides, outside public spaces cover pedestrian pathways, recreation and entertainment areas, some of shopping areas like bazaars and shopping street, transition areas and regions, streets,

roads, pavements and transport areas (Kiavar, 2011).

In addition, Nasution and Zahrah (2014) noted that UGS are generally areas used predominantly for recreation such as gardens, zoos, parks, and suburban natural areas and forests, or green areas bordered by urban areas that are managed or used for recreational purposes. Hence, in the context of this study, UGS is refers to urban green space that is open to the public and accessible for all urban residents, regardless of socioeconomic circumstances. In this study, the term UGS is conceptualized in its broad sense that incorporates city parks, disclosed parking areas, landscaped ways etc. However, in parks is the focus of this study.

Public open space is an open space having both green spaces and hard civic spaces with public access. It refers to land uses, and land covered with natural or man-made vegetation in the city and planning areas. This calls for proper management and use of the urban spaces. Urban public green space is a long-standing inclusive tool for safety and conservation of ecological sustainability by offering environmental services to public. Urban public green space comprises land of opened and permeable soft surfaces and includes soil, grass, shrubs, and trees as the major character openly available and managed. An open urban public space also includes civic spaces and green spaces and also covers a combination of public (or civic) and green space, where public spaces are chiefly solid spaces, for instance, squares, street fronts and surfaced areas (Vargas-Hernández et al., 2018).

Urban green spaces integrate a number of roles and facilities of a great importance to modern urban life. Urban planners and managers made many efforts to improve the lives of urban residents by enhancing the status of urban public green spaces. In certain towns and cities, innovative packages founded on environmental methods have been established for the preservation and management of nature in urban green space (Baycan-Levent and Nijkamp, 2009). Furthermore, policymakers and planners have initiated to pay much devotion to strategies intended to foster sustainable development and to advance the quality of life in urban centers by developing the strategy of urban green spaces.

UGS is a place originally created for the public needs of urban people. When the expanding needs, possibilities and demands of people in cities are considered, urban public spaces should also develop accordingly; otherwise they become unusable spaces that do not cope with the principles of design to meet the need (Kiavar, 2011). Generally, UGS is common living spaces for all people with different income, education and cultural level, for covering all needs and relationship network should ensure the security.

2. The Benefits of Urban Green Space

Urban green space (UGS) is very useful in the socio economic and healthy life of the local. For this reason, it is argued that urban green spaces make a big difference to our quality of life and quality of place (Green Space Scotland (2017). Several research findings (Arvanitidis (2007); Crompton (2005) & Wolf (2003) as cited in Arvanitidis, (2007), Farahani and Maller (2018); Green space Scotland (2017), etc.) revealed that the benefits that urban green space provide in terms of health and wellbeing, safer and stronger communities, active travel and play, economic development and inward investment, as well as a host of environmental services like climate change adaptation, air quality and natural flood management. In this connection, UGS contribute significantly to cooling and can reduce temperature extremes by several degrees. The impervious surfaces in urban green space can also slow the runoff of storm water during storm events, reducing floods and contribute to mitigation and adaption to global environmental change such as urban heat and climate change

In this connection, Arvanitidis (2007) stated that UGS plays an important role to improve the quality of urban environment, provide opportunities for relaxation, recreation, association and social interaction and they help communities to strengthen their social fabric. With this regard, UGS provides social benefits to the residents by providing ample recreational opportunities, by supporting social interaction and integration and by contributing to the improvement of mental and physical health (Madureira H, et al, 2018).

Urban green space is widely considered essential social and environmental infrastructure for a sustainable city, and provides the fabric of cities as social-ecological systems. Crompton (2005) as cited in Arvanitidis (2007) from an economic perspective good quality GS can add value to the surrounding property, both commercial and residential. Additionally, it helps to create a favorable image for a place, boosting retail sales (Wolf, 2003 as cited in Arvanitidis, 2007)

Besides, UGS support the development of a healthy environment of residents by providing clear air, water and soil and by helping to stabilize urban temperatures and the urban climate (Arvanitidis, 2007). Farahani and Maller (2018) also stated that UGS are considered as an important instrument in solving some of the problems associated with urbanization such as pollution and urban heat island effects.

Furthermore, Madureira H, et al (2018) noted that UGS are increasingly acclaimed as central elements in the promotion of environmental sustainability and quality of life in cities. Besides, they added that UGS provide environmental benefits, by mitigating of heat island effects, minimizing of pollutants in the air, promoting of biodiversity and noise reduction. Hence, public spaces play

an important role in the public life and enhance the quality of life (Ramlee, M., et al, 2015). Accordingly, it is divulged that good quality UGS improves the quality of life in cities enhancing their attractiveness to residents, employees, tourists, investors and firms (Nasution & Zahrah, 2014). On these grounds, urban green space can have a positive contribution to the competitiveness of places and their economic development (Arvanitidis, 2007). Generally, the physical elements and activities at public open space offer many benefits to quality of life: health, social interaction and economic value (Nasution & Zahrah, 2014). Madureira H, et al (2018) added that UGS provided various hygienists, social, cultural, aesthetic, functional, economic or ecological functions.

Generally, UN-Habitat (2019) broadly categorized the benefits of public green spaces as follows:

A. Health and well-being-related benefits

- Improving physical and mental health and wellbeing
 - Reducing noise levels in cities, and increasing comfort and general well-being
 - Providing protection from UV rays and sunburn •
- Promoting active mobility and healthy living.

B. Environmental benefits

- Improving air quality by filtering pollutants.
- Protecting and improving biodiversity and ecosystem services.
- Creating pleasant micro-climates.
- Protecting human settlements from storms and strong winds
- Reducing flood risks and improving booth soil and water quality.

C. Economic benefits

- Raising property values.
- Increasing footfall hence raising sales turnover.
- Helps attract and retain talent.
- Promoting place-attachment hence motivating local investment

2. Contextual Descriptions of Addis Ababa

Since this review specifically focuses on the practices, management and challenges of urban Public green Spaces in Addis Ababa, it is important to provide contextual description about the city. Ethiopia is a federal country located in the Horn of Africa. It shares borders with Eritrea to the north, Djibouti to the northeast, Somalia to the east, Kenya to the south, South Sudan to the west and Sudan to the northwest. With over 109 million inhabitants as of 2019, Ethiopia is the 12th most populous country in the world, the second most populous nation on the African continent (after Nigeria), and most populous landlocked country in the world. The country has a total area of 1,100,000 square kilometers (420,000 sq. mi). (World Bank, 2020).

Addis Ababa is the capital and largest city of Ethiopia. It is located on a well-watered plateau surrounded by hills and mountains, in the geographic center of the country. Addis Ababa is the hubs of the nation's transportation network. The city is also served by an international airport. Besides, the city is the Head Quarter of the African Union and the seat of diplomatic missions, international organizations and business communities (WGCFNR, 2017). As to its location, Addis Ababa is geographically located at 9° 38' 0"N between 38° 42' 0"E, with the lowest elevation of 2326m above sea level at Bole International Airport, in the southern periphery, and the highest over 3000m at Entoto Mountains, north of the city (Eyob, 2011). Besides, Addis Ababa is situated at the foot of Mount Entoto and forms part of the watershed for the Awash River catchment. With regard to its climate, Addis Ababa has a subtropical highland climate with average maximum temperatures ranging from 220 C to 250 C and average minimum temperatures between 80 C and 100 (Addis Ababa City Administration, 2010). This moderate climate makes Addis Ababa a comfortable and livable city for its residents and visitors. According to the Addis Ababa city Information (2012), the city has an estimated population of 3,194,999 and a total area of 51948.85 hectare (Addis Ababa city Information, 2012). The city has an estimated density of 5,607.96 people per square kilometer (CSA, 2005).

AACPC (2018) noted that in the last few years Addis Ababa is experiencing rapid economic growth and urban expansion. In addition to the fast economic growth, the city received significant population inflows and is experiencing unprecedented urban transformation and massive construction and infrastructure development. Because of the continuous economic transformation endeavors the population of the city has been increasing rapidly than ever (AACPC, 2018). Accordingly, Addis Ababa is expected to be clean, green and livable metropolitan city to serve the diverse needs of its residents and visitors, and to reduce the impacts of climate change, global warming and urban pollution (WGCFNR, 2017). Hence, the main objective of this review article is to explore the practices, management and challenges of urban public green spaces in Addis Ababa by focusing on empirical evidences. First the review describes the typologies of public spaces in Addis Ababa.

4. Typology of Public Spaces Located in Addis Ababa City Administration

The review pertinent literature in the area of public space divulged that currently, there is no universally accepted definition of urban space. Accordingly, the concept and categories of public spaces are defined contextually based up the scenario of countries. In 2019, UN-Habitat has conducted digital City-wide Public space Assessment and Inventory of Addis Ababa. After conducting a detailed and wide assessment, UN-Habitat concluded that the open public space, public facilities and streets are the three main categories of public space. Besides, it was noted that the typology of public spaces in Addis Ababa can be classified in three broad categories: Scale (Neighborhood and city level public spaces), archetype and nature - formal/informal. These formal and informal public spaces can vary according to their location, character, use and level of maintenance.

In the context of Addis Ababa city administration, the scale of public spaces is based largely on their catchment area ((WGCNFR, 2017; UN-Habitat 2019). Out of the 2,039 public spaces that were assessed, (253; 18.4%) covering an area of 6.29 km² are identified as city-level public spaces. Besides, the remaining (1119; 81.6%) covering an area of 10.23 km² were identified as a neighborhood level public spaces. Concerning the formality and informality, the assessment by(UN-Habitat 2019) revealed that, 81% (204) of the city level public spaces are identified as a formal public spaces, whereas, the remaining 18% (49) were classified as informal. From the total of 1119 neighborhood level public spaces, 608(54%) of the neighborhood level public spaces are formal spaces and the rest 46 %(511) are identified as informal public spaces.

The other issues are how to categorize the typology of public spaces located in Addis Ababa city administration. With this regard, UN-Habitat (2019) noted that the term open public space can be used to indicate all places that are publicly owned or of public use and accessible to all residents of the cities without a profit motive. In addition, open public space can be either soft or hard surfaced. Furthermore, they can be easily distinguished based on their size, function, use, surface cover and availability of facilities and services they are providing. The typology of public spaces can have a different spatial forms and typologies including sport fields, playgrounds, parks, squares, cemeteries and gardens among others.

Accordingly, WGCNFR (2017) and AACPC (2018), UN-Habitat (2019) identified that in Addis Ababa, 14 typologies of public spaces. However, the major typologies of the public spaces located in Addis Ababa city administration are the following:

- A. **Parks:** Parks refer to land that has been reserved for the purpose of recreation and enjoyment, preservation of natural environment, provision of green space and/or urban storm water management. Parks and open space vary in size, form and the range of functions that they perform. For the purposes of this assessment, they were categorized in four broad classes including woreda level, neighborhoods level, sub city level and at city level.
- B. **Playgrounds:** Play grounds are usually associated purely with play activities. Children and youth are the dominant users of these types of public spaces. More often than not, playgrounds are mono-functional and often serve residents of particular neighborhoods within which they are located.
- C. **Riparian areas:** Riparian areas generally encompass the vegetated strip of land that extends along streams, rivers, river banks, reservoirs and wet lands. It is the interface between terrestrial and aquatic ecosystems.
- D. **Garden:** Gardens have an ambiguous definition and vary from city to city. Generally, they are places with ornamental plants. They come in different shapes and sizes depending on the city and its planning regime.
- E. **Community square/yard:** These are shared spaces used by the community in their neighborhoods. These spaces are usually used most by the local community due to their close proximity and their situation in residential areas.
- F. **Water bodies:** Water bodies like rivers, wetlands, lakes and ponds are part of the public space ecosystem. Their contribution to enhancing and enriching biodiversity of the city is unmatched.
- G. **Square/plazas:** Squares/plazas are public spaces often defined by buildings and streets, are pylori-functional and diverse in both use and activities. A good example is the Meskele square in Addis Ababa.

The above lists indicate the diverse typologies of public spaces are found in Addis Ababa City. The availability of diverse typologies will provide the residents with a variety of choices (UN-Habitat, 2019). In addition, the typology of a public space has an influence in the use of a space and its demands insofar as maintenance is concerned.

As to area coverage of open public spaces, the assessment and inventory made by UN-Habitat(2019) revealed that Addis Ababa city has 246 community yards, covering 0.79Km² of the open public space area. Besides, 182 and cover (3.23km²) spaces were identified as parks. These account for the largest share of the open public space land (34%). Other key typologies identified include, playgrounds (160), water-bodies (76), gardens (71), plaza/squares (42) and riparian land (29). The total numbers of open public spaces within the urban footprint area of Addis Ababa are 806. Aggregately, they cover a total area of 9.49km², which account for 2% of the urban land.

Specifically, when the per-capita of currently existing urban is considered, the overall city average is 0.37m² and it ranges from 0 to 0.86m² at sub-city level. Among the sub-cities, Arada and Kirikos have relatively the highest ratio, while the other sub-cities have

the lowest park per person ratio (Azagew & Worku, 2020). The densest sub-cities such as Lideta (36,840 per km²) and Addis ketema (49,550 per km²) have a very small park per-capita in relation to other sub-cities. The percentage of urban parks to the total area of the city was 0.32% and ranges from 3.2 to 0.05% in sub-cities (Azagew & Worku, 2020).

It seems that area the coverage of open public spaces in Addis Ababa city administration is very limited. This could affect the use and the accessibility of the places to the residents of the city. Furthermore, it can be one of the challenges in the community use of the public places.

5. The Practices and Management of Public Spaces in Addis Ababa

As stated in the foregoing discussion, the diverse typologies of public spaces are found in Addis Ababa City. The availability of diverse typologies is not enough. The residents of the town should use the available public spaces and the concerned bodies should properly manage the spaces. UN-Habitat (2019) also noted that a successful and sustainable public space is measured in terms of three broad criteria, namely, inclusivity, accessibility and safety. These apply to all public spaces including streets, open public spaces and public facilities. They are a means to measure the sustainability and universality of public spaces. Equitably distributed and well-connected public spaces are vital in a city since they improve the level of accessibility and improve proximity to public spaces. The distance to public spaces, the way the public space managed, and criteria set by the management body to access public spaces can affect the use of public spaces. Thus, in this review an attempt is made to identify the practices, uses and management of the public spaces in Addis Ababa.

5.1. Proximity to Public spaces

Proximity is one of the factors that can be used to determine the accessibility of the community to public spaces. The closeness to public spaces can determine the residents' practice and use of open public spaces. It is noted that the shorter the travel distance to get to a public space, the more people use public spaces.

Accordingly, UN-Habitat (2019) in its research Digital City-wide Public space Assessment and Inventory, Addis Ababa analyzed the proximity of public spaces to the residents of the city. It was revealed that 164km² of urban land in Addis Ababa is within 400m of public spaces. This means that the population within this catchment area has public spaces within 5 minutes' walk from their work places or homes. This finding further suggests that 1 million of the city's 5 million people in the city are live within a walk-able distance to public spaces. Basically, 1 in every 5 people in Addis Ababa lives within 5 minutes' walk of public spaces. This means that the public spaces in Addis Ababa are accessible to the residents. The proximity and accessibility of the public spaces could also facilitate public use of the spaces.

5.2. The Ownership and Management of Public Spaces in Addis Ababa

The ownership and management of public spaces is one of the key factors that can facilitate or hinder the use and practices of public spaces. The management of the spaces can enable or inhibit the accessibility, enjoyment and inclusive of public spaces. In this connection, UN-Habitat (2019) stated that a space is truly public when it can be accessed for free and its users are allowed to participate in activities of their choice. Accordingly, it is very essential to understand the ownership and management of public spaces (Chen, et al2018).

Public spaces and streets are, and must be seen as, multifunctional areas for social interaction, economic exchange and cultural expression among a wide diversity of participants. Urban public space helps shape and makes cities. It is generally thought to be open and accessible to all residents. But it is a limited resource and there are competing users and uses of it (Chen, et al2018). Thus, how urban public space is organized reflects social realities and relations. Public officials have to balance the needs of multiple users – pedestrians, cyclists, motor vehicle drivers, formal retailers, informal retailers – together with pressures from different political interests. The management public space is no easy task (Chen, et al2018).

It is argued that urban governance is rooted in the belief that 'strong' local governments can manage and regulate urban spaces (Chen, et al2018). Successful cities are therefore cities where governments can deliver urban services, implement bylaws, formalize the informal sector, eradicate poverty, manage the economy etc. After a detail assessment, UN-Habitat (2019) found out that 1,426(69.9%) of the public spaces identified and grouped as owned by government and 361(17.7%) of the public spaces identified and grouped as owned by non-government. Besides, 148(7.3%) of the public spaces identified and grouped as owned by others and 104(5.1%) of the public spaces identified and grouped as no information on ownership. This data revealed that the majority of the city-level public spaces and the neighborhood level public spaces were owned and managed by the government. This could facilitate accessibility of the public spaces to its residents.

According Girma, Terefe and Pauleit, (2019), a management system that comprises pertinent stakeholders and offers adequate

resources can lead to urban green spaces that meet urban residents' desires and entice necessary activities. More advanced nations have created a fruitful ground to safeguard that green space planning and management meet the needs of urban dwellers. However, in developing countries including Ethiopia, numerous problems associated with the provision and management of urban dwellers is observed.

5.3. Accessibility of the Public spaces in Addis Ababa

As stated earlier, accessibility is the major factors to determine and measure a successful and sustainable public space. It is one the key elements to measure the sustainability level of public spaces as well as among the main elements for a city to prosper and sustain (UN-Habitat, 2019). Accessibility, deals more about the physical opportunity created as the use public spaces. Yilmaz, M (2018) stated that the physical environment and public services and public spaces in general should be as barrier-free as possible to fulfill the needs of all people equally. With this regard, it should be noted that people every society there are individuals who own different properties and different ages. Hence, all the individuals have the right to access the public space and use it. Specifically, the people with different disabilities in the society have to be able to use the built environment and public space in an independent and equal way (Yilmaz, 2018).

Accessibility to public spaces can be seen from different angles (Yilmaz, 2018). One is whether the public spaces can be with or without payment. Accessibility to public spaces can be affected by entrance fee. This is because the higher the price set as entrance fees of public space the less access for economically disadvantaged people. Besides, public spaces with reasonable entrances are supposed to be more welcoming and accessible to potential users. In connection to this, UN-Habitat (2019) reported that 52% of the public spaces have no clearly defined entrances. Only 18% of the open public spaces have well-defined entrances. However, 30% of the open public spaces do not require entrances. They can be accessed from any point. Accordingly, it seems that the public spaces are accessible to its uses. This could increase public use of the spaces.

Azagew and Worku (2020) specifically reported that, more than 126,383 and 520,957 population of the city resident are live within 3,234,458 m² and 15,881,803 m² service area of UPs respectively. This mean 2.8% of the city dwellers has access to UPs within 400 m walking distance, and 11.3% of the city dwellers can access UPs within 800 m walking distance. This indicated the mismatch in available urban park service area with the city population and the improper spatial distribution.

In addition, smooth accessibility to public space might be affected by availability of user friendly infrastructure. Infrastructure can also be a crucial enabler or barrier to accessibility and inclusive in public spaces. Accessibility & inclusivity universal design, for instance, design of walkways, entrances and amenities such as toilets can promote access to and inclusive in public spaces. In Addis Ababa however, public spaces are not friendly to persons living with disability. Only 11.4% of the open public spaces are designed to enable persons living with disability to access them. The city-wide public space assessment found that 64% of the public spaces have unrestricted access while the remaining 36% have either controlled access, limited access or restricted access. However, the level of accessibility varies across different scales. At the neighborhood level, 50% of public spaces have unrestricted access while at the city level, the amount of public spaces with unrestricted access falls to 41%. Of the unrestricted public spaces, 21% are community yards.

To understand the accessibility level of public spaces in Addis Ababa city, different factors were considered: infrastructure and management of public space. The accessibility assessment was based on various factors that were overlaid to obtain a weighted aggregate that was used to measure the accessibility of a public space. The factors that were put in consideration were level of access to a public space, i.e., restrictions, condition of infrastructure and its usability by all users. The weighted classification based the assessment shows that only 86.6%(1,765) of all the public spaces are "least accessible" missing many of essential infrastructures in the public spaces even though majority are "unrestrictedly" accessible. Public spaces 274 (13.4%) met the criteria set as "Moderately accessible" public spaces in the city Analysis made base on the criteria set to weight how accessible public spaces are in Addis Ababa city indicates a huge gaps, and none of the public spaces met the "Most accessible" public space criteria.

It was noted that lack of infrastructure in public spaces which meets everyone's' need and challenges seen as huge gap in Addis Ababa city. In recent years the city of Addis Ababa puts all parks to be accessed freely, which a great move to make public spaces more accessible and enjoyable to everyone. Accessible public spaces are important ingredients for bridging gaps in public spaces use and opening various opportunities for diverse people use. Accessible public spaces avoid urban divides at its bigger scales. Public spaces with good accessibility mechanism improve the quality parks and playgrounds. Hence, the concerned bodies should work to make the spaces accessible.

5.4. The Inclusiveness of the Public Spaces in Addis Ababa

An inclusive public space is one where everyone is welcome regardless of age, gender, sexual orientation, income, ethnicity or race. Public open spaces are places where diverse activities take place, social and economic exchanges occur and where a sense of

belonging is cultivated. It is noted that the presence of all people from diverse backgrounds, diverse genders, diverse ages and abilities in public spaces increases the level of perceived safety of public spaces and the city at large. The distribution, access and location of these spaces are important for building socially just, inclusive and cohesive cities and communities. For this reason, open spaces should be inclusive of this diversity.

To identify the inclusiveness of the public spaces of Addis Ababa, UN-Habitat (2019) assessed the presence of children, youth, women, men, older persons and persons with disabilities in public spaces of Addis Ababa. As the result, it was shown that 45.3% of the public spaces had youth present at the time of the survey. Women presence were reported in 37.2% of the spaces, children in 34.2%, the elderly in 26.1% and persons living with disabilities in 21.3% of the open public spaces. During the survey, UN-Habitat (2019) noted that children were observed mainly in playgrounds and youth, women, men, the elderly and persons with disability were observed mainly in community yards.

Besides, it was reported that in Addis Ababa, women and children were absent in over 52.7% of the public spaces and more than half of public spaces were devoid of 2/3 of the city population (UN-Habitat 2019). The inadequate diversity of users in Addis Ababa's public spaces suggests inadequate social opportunities, and lack of amenities and facilities that would make the spaces more pleasant and attractive. Accordingly, it is suggested that the city administration should devise pertinent strategies to bring these demographic groups to public spaces.

How Inclusive public spaces are in Addis Ababa city? In response to this question, the research conducted by UN-Habitat (2019) indicates that 61.3% (1,249) public spaces identified least inclusive, when 17.1 % (349) of the public spaces identified as least inclusive. Out of the total 2039 only 21.6% (441) public spaces ranked as most inclusive public spaces in Addis Ababa City.

Inclusive public spaces are a place for everyone to play, enjoy, socialize, and learn. Inclusive public spaces meets everyone's needs of outdoor engagement. Inclusive public spaces are public spaces with functional layout to address everyone's needs, which also implemented universal design codes to address access challenges especially for physically challenged people. In inclusive public spaces, physical infrastructures provide the needs of children, people with disability and for people with special needs. Inclusive public spaces could be best achieved through community participations, better designs with addressing all citizens' needs and better management of public spaces in the city.

5.5. Diversity of Public Spaces in Addis Ababa

The diversity of public spaces increases the opportunities for intergenerational dialogue and exchange, and social cohesion in the society. Such places are vibrant, safe and inclusive. UN-Habitat (2019) assessed the diverse of public spaces in Addis Ababa and concluded that public spaces in the city can be grouped in three broad categories: Multi-functional public spaces (Public spaces with multiple functions programmed for different times), Pluri-functional public spaces (Public spaces with multiple activities happening simultaneously) and Mono-functional public spaces (Public spaces with singular activity all the time).

The research by UN-Habitat (2019) found out that 65.5% (1,341) of the public spaces in the city were mono-functional. However, 30.4% (619) of the public spaces in the city are multi-functional public spaces on the other hand account for. It is argued that the higher the amount of pluri-functional public spaces in a city, the more vibrant, safer and more inclusive the city is. On contrary to this argument, the majority of public space is used for only singular activities. Further, only 29.5% (396) of the mono-functional public spaces were perceived to be safe. On the other hand, only a mere 8.4% (172) of all the open public spaces in the city are pluri-functional. Out of these, 32% (55) are perceived as safe. Moreover, the findings of the assessment indicate that pluri functional and multi-functional public spaces have more diverse users compared to mono-functional public spaces.

5.6. Safety of Public Spaces in Addis Ababa

Public space planning and design in a city needs to address the issue of safety of the residents. Safety in public spaces can be viewed through diverse lenses, from perception of insecurity to environmental safety, natural hazard and incidences of crime. Frightening and unsafe public spaces discourage people from using them, leading to deserted spaces. Besides, lack of safety is also among the main reasons why parents do not allow their children to go into public spaces.

The public spaces in Addis Ababa were rated based on the different elements which contribute to the safety or insecurity situations of public spaces and each and every public space rate in a harmonized way by weighting the different elements. The public spaces weighted between +10 to -10 where +10 is the safest public spaces in the city and -10 is the least safe public spaces in Addis Ababa city, and the finding revealed that majority of the public spaces identified as unsafe public spaces failing to achieve many of the criteria set. ~60% (1,211) which fall between (-1 to -6) category as the most unsafe public spaces in the city. As much as 36% (735) of the

public spaces fall in to the category of “partially safe” public spaces. The remaining 4.6% (93) public spaces fall into “very safe” public space in Addis Ababa city.

UN-Habitat (2019) reported that out of the 2,039 public spaces, 13.7% (280) of the public spaces were perceived to be safe both during the day and night while 578(28.3%) were perceived as unsafe day and night time. But, 27.9% (568) public spaces were perceived to be partially safe. The research finding further revealed that 85.5% of the spaces which were perceived to be unsafe during the night were dark and lacked public lighting. On the other hand, public spaces with lighting were perceived to be safer than those with no street lighting. With this regard, it was noted that about 45% of the public spaces which are perceived as safe have public lighting in them.

The number of public spaces with reported incidences were 1,025, representing 50.3% of public spaces. Some of these crimes include robbery, snatching, mugging, murder and antisocial activities. The availability of various landscape amenities and furniture is also a critical determinant of the perception of safety. The presence or absence of lighting and seating furniture has strong correlation with perceived safety. More than 50% of the public spaces with seating facilities were perceived to be safe while 40% were perceived to be partially safe. Only 8.8% of the public spaces with seating were perceived to be unsafe. In the same context, 45% of the public spaces with public lighting are perceived to be safe. Only 12.6% are perceived as unsafe spaces.

When public spaces become unsafe it become abounded places in a city, contributing for instability at the bigger scale and endangering especially the vulnerable groups. Accident, robbery, and crime are common in unsafe public spaces. Ensuring safe public spaces in a city contributes in reducing the crime rates at bigger scale. Safe public spaces contribute for the economy of a city by attracting tourists and, investments. A safe public space also contributes for stability of politics in cities and in a county. Safe public spaces are a place where visitors and residents live and interact with in a peaceful setting.

Mixed use, active, lively and inclusive public spaces increases their use and reduces insecurity especially of vulnerable groups such as women, children and people with disabilities. In order to improve the level of perceived safety in public spaces, a diverse mix of uses and effective urban design are important. Additionally, it is important to develop and implement pragmatic development control guidelines or building codes that encourage buildings at the ground level to open their windows and doors towards streets and public spaces. By maximizing the natural surveillance and pedestrian visibility, it is possible to ensure safety on streets and public spaces.

5.7. Landscape furniture and facilities of public spaces in Addis Ababa

These include seating, lighting and play furniture. Quality public spaces are well equipped with proper landscape amenities, in most case with durable and environmentally friendly materials. Public spaces with proper seating create excellent settings for resting, sitting, eating, waiting, and for meeting people and social interactions. Other Landscape amenities also add a sense of comfort and pleasure to public spaces, inviting people to stay and linger. When appropriately designed and well-integrated into a space, landscape furniture and amenities can act as pull factors into public spaces, adding to the experience of the spaces.

Landscape furniture available in the open public spaces in Addis Ababa include monuments, water fountains, seating, public lighting, artificial shade and waste receptacles. The presence of these amenities however varies across the urban divide. The assessment revealed that 69% of the open public spaces lack landscape furniture and amenities. Seating that is accessible, comfortable, movable, well maintained and well-positioned is critical for creating great people-places. The findings in the Addis Ababa indicate that the availability of seating in public spaces is limited. Out of the 2,039 public spaces, only 20% (408) of them have seating facilities even though majorities are not in good and usable condition.

Besides contributing to the comfort of public spaces, it was also observed that there are positive correlations between seating opportunities and perception of safety. 51.6% (211) of public spaces with seating are perceived as safe. On the other hand, only 8.8% (36) public spaces with seating are perceived to be unsafe. This relationship between seating and safety is linked to having more eyes on the street. Only 26.6% of the public spaces were observed to have public toilets, majority of which are in a poor condition. Furthermore, the existing ones are not disability friendly, hence being exclusionary. Drinking fountain is a very important urban basic service and enables universal access to clean drinking water in public spaces. The assessment revealed that not even one of the public spaces in the city has this basic amenity. In addition, only 21.3% (434) public spaces have garbage bins. This notwithstanding, the overall solid waste management in public spaces is poor, impacting the cleanliness of the spaces. Having garbage bins that can facilitate waste separation is important in improving solid waste management and encouraging the use of garbage bins for waste disposal.

5.7. Seating facilities in the Public spaces of Addis Ababa,

The availability of seating facilities in public spaces attracts people. Hence, it is one of the most important elements in public space. In public space when you think of to rest, you think of seating facilities as prior than everything Besides, well designed and

implemented seating opens various opportunities for people to interact informally, socializing and know each other. Seating also open opportunity for people to rest, relax, read books and newsletters. Innovative and environmentally friendly seating in public spaces are essential for public spaces to self-sustain.

UN-Habitat (2019) reported that in Addis Ababa city the availability of seating furniture's in public spaces is limited. With this regard, it was reported that out of the totally collected 2,039 public spaces, only 20% (408) of the public spaces and potential public spaces have seating facilities. Even the available seating facilities are not in a good condition and usable situations. In addition, the research report by UN-Habitat (2019) indicated that 202 (10.1%) public spaces out of 2,039 public spaces have sufficient seating's and seating arrangements for public space users in the city. Beside for the comfort of public space availabilities of seating contributing, it is identified that availability of seating's also has a contribution to the perception of safety in public spaces. Out of the total public spaces with seating facilities, 51.6% (211) of the public space perceived "very safe" public spaces. Furthermore, UN-Habitat (2019) stated that 40% or 161 public spaces perceived "Partially safe" and only the remaining 8.8% (36) public spaces perceived "Unsafe" public spaces by residents. The relation availability of seating and safety could be because seating increase safety and the "eyes on the streets".

The gap seen in the availability of seating in Addis Ababa's Public space is huge, only 408 out of 2,039 public spaces. Innovative, environmentally friendly, easy to maintain and unique seating of public spaces is vital to increase the usability of public spaces. It also contributes to safety and comfort of public spaces. In general, the availability of seating's increased the usability of public spaces in Addis Ababa, it also identified public spaces with seating facilities increased the safety perception residents as well public spaces usability. As part of this indication; 167 public spaces out of the 408 public spaces with seating seen are being used by elderly people, 239/408 by women, and 263/408 by men, 223/408 by children and 274/408 by the youth. More than 80% of the public spaces in Addis Ababa are without seating facilities and amenities. Further, public spaces with quality seating amenities are less than the expected average compared to the number of public spaces in the city. The number of public spaces with seating amenities and facilities accounts 20% (324) of the total available public spaces in the city. Out of these 202 public spaces have good size of seating to address the demand needs in the public space. Beside its' usability and comfort analysis, seating facilities in public spaces also analyzed if it is contributing to the safety situations of public spaces, and the findings in the city reveals that, 39.5 % (161) of the public spaces with seating facilities perceived "Partially safe" when 51.6% (211) perceived "very safe", out of the total public spaces with seating amenities only 8.8% (36) of the public spaces with seating facilities perceived "Not safe"

5.9. The Comfortability of public spaces in Addis Ababa city

Comfort in public space is among the most essential elements to make public spaces more usable and attracting by diverse users. If people are not comfortable one way or another they abandoned public spaces intentionally and unintentionally. To measure how public spaces are comfortable in Addis Ababa city, UN-Habitat (2019) conducted city scale assessment using integrated elements focusing on four main areas; 1) The environmental situation of public spaces, 2) The availability as well as conditions of landscape amenities 3) Measured the level of quietness or loudness of public spaces. 4) Public space usability by diverse users also weighted to rate on how comfortable public spaces area in the city.

UN-Habitat (2019) reported that the majority of the public spaces observed with uncollected garbage and littering, affecting the usability of the spaces. Land scape amenities and facilities also seen least implemented in public spaces in the city. During the mapping of the public spaces by the residents, students and government officials in the city; they measured the quietness of public space using the mobile application called "Sound Meter". Public spaces with over 70 dB sound disturbance level, labeled as contributing to the discomfort of using public spaces. However, the actual data collected from each public space indicates majority of the spaces have less sound disturbance level.

The four main elements used to weighting the public spaces in the city and categorized as "most comfortable" public space, "moderately comfortable" and "least comfortable" public spaces in the city. Accordingly, it was divulged that found majority of the public spaces in the city as "least comfortable" public spaces, accounting 88.3% (1,800) of the total. For reducing the number of public spaces leveled "least comfortable" the city should work on the improving the environmental situations of public spaces, availabilities and conditions of landscape amenities and facilities, and usability of public spaces. As low as 6(0.36%) of the public spaces out of the total 2,039 fulfills the criteria as "Most comfortable" public space in the city even though the number is too low for the city like Addis Ababa. Public spaces which full-fills the criterion for "Moderately comfortable" public spaces accounts 11.4% (233) of the total inventoried public spaces.

Public spaces which are implemented based on better design, new creativity, well studied functionality and innovative approaches always tend to be more comfortable and usable public spaces than public spaces built with no detail analysis of needs. Well maintain and clean public spaces also have a high chance to be comfortable in many ways and are appealing. Environmentally sounding public spaces, crime free parks and safe playgrounds, public spaces with good allocations of landscape furniture's and amenities also tend

to be more comfortable and usable.

6. The Challenges Encountered With Regard to the Public Spaces in Addis Ababa

Different research findings discussed in the preceding parts of this paper commonly stated that UGS is very useful in the socio economic and healthy life of the local. Accordingly, it is argued that urban green spaces make a big difference to our quality of life and quality of place. Despite significant benefits of UGS to quality of life, Nasution and Zahrah (2014) noted that now public open space in urban space over the world has to face some problems, such as the increasing of urban environments changing and the decreasing of public open space's function.

There are many challenges and constraints encountered with regard to public spaces in Addis Ababa. Generally, the challenges and constraints experienced in association with green areas of the city are categorized as institutional, social, and financial or economic. Addis Ababa City Plan Commission (AACPC, 2018) listed different challenges and constraints to the public urban spaces in Addis Ababa. Some of them are: public spaces and green development is not considered as part of city development, the reduction of public spaces coverage and spaces as most of public spaces were given for contractions of buildings and factories and places were covered by buildings and illegal house contraction. With this regard, out the total land allocated to urban public spaces, 78% was a victim of illegal settlements, illegal waste dumping and a home to street dwellers. Thus, the increasing density of built spaces in the inner part, the expansion of housing construction and restructuring of industrial areas in the peripheral part of the city is affecting these green components of the city

Besides, it is argued that public spaces contribute to defining the cultural, social, economic and political functions of cities. However, UN-Habitat (2019) reported that the value of public spaces is often overlooked or underestimated by policy makers, leaders and developers. There are a number of reasons for this, such as the lack of resources, understanding or capacity to use the possibilities of public space as a complete, multi-functional urban system. Furthermore, the lack of appropriate enabling frameworks, weak political will and the absence of the means for public engagement complicate the situation.

AACPC(2018) stated that without a clear rules or policy, it is difficult for local governments to priorities, spend and plan resources and to show how public space is valued, and to mitigate the negative impacts of site specific interventions (e.g. gentrification). Even the available rules and regulations are not implemented. Thus, the other challenge is the failure of the city administration to properly implement the rules and regulations to protect urban spaces. Furthermore, the conflicts of interests and overlapping of responsibilities between the work processes of the Sanitation, Beautification and Park Development Agency on one hand, and with those of the Addis Ababa Environmental Protection Authority on the other: In addition, there was a high staff turnover of professional workers who left for more paying jobs. This affected the institutional capacity of the agency to cover the whole city.

The other weakness lack of strong coordination among sub-cities in terms of working together towards better sanitation, beautification and park development. In this connection, inefficient follow-up and close supervision of the Sanitation, Beautification and Park Development Agency is other constraints. The failure is attributed to weak coordination and mobilization of communities, the youth, voluntary organizations, the private sector agencies and the public at large in managing the green areas near the main roads, homesteads, institutional yards and other public and private urban open green areas.

Moreover, Azagew and Worku (2020) stated that the per capita UPs of Addis Ababa city found to be 0.37m², which is far below the minimum standard set by Ethiopia UGIS and WHO. Moreover, the majority of the city population has no access to existing parks within the minimum walking distance that individuals are willing to walk. The problems were found to be underpinned by unavailability and uneven distribution of urban parks due to inadequate provision of these recreational facilities during the past decades.

7. Conclusions

Public open space is an open space having both green spaces and hard civic spaces with public access. It refers to land uses, and land covered with natural or man-made vegetation in the city and planning areas. This calls for proper management and use of the urban spaces. Urban public green space is a long-standing inclusive tool for safety and conservation of ecological sustainability by offering environmental services to public. Urban public green space comprises land of opened and permeable soft surfaces and includes soil, grass, shrubs, and trees as the major character openly available and managed. An open urban public space also includes civic spaces and green spaces and also covers a combination of public (or civic) and green space, where public spaces are chiefly solid spaces, for instance, squares, street fronts and surfaced areas. The spaces plays an important role to improve the quality of urban environment, provide opportunities for relaxation, recreation, association and social interaction and they help communities to strengthen their social fabric.

The main objective of this review article is to explore the practices, management and challenges of urban spaces in Addis Ababa by focusing on providing critical insights on empirical evidences. Addis Ababa is the capital and largest city of Ethiopia. It is located on a well-watered plateau surrounded by hills and mountains, in the geographic center of the country. With regard to its climate, Addis Ababa has a subtropical highland climate with average maximum temperatures ranging from 220 C to 250 C and average minimum temperatures between 80 C and 100 (Addis Ababa City Administration, 2010). This moderate climate makes Addis Ababa a comfortable and livable city for its residents and visitors. AACPC (2018) noted that in the last few years Addis Ababa is experiencing rapid economic growth and urban expansion. In addition to the fast economic growth, the city received significant population inflows and is experiencing unprecedented urban transformation and massive construction and infrastructure development. Because of the continuous economic transformation endeavors the population of the city has been increasing rapidly than ever (AACPC, 2018). Accordingly, Addis Ababa is expected to be clean, green and livable metropolitan city to serve the diverse needs of its residents and visitors, and to reduce the impacts of climate change, global warming and urban pollution (WGCFNR, 2017).

In the context of Addis Ababa city administration, the scale of public spaces is based largely on their catchment area((WGCFNR, 2017;UN-Habitat 2019). Out of the 2,039 public spaces that were assessed, (253; 18.4%) covering an area of 6.29 km² are identified as city-level public spaces. Besides, the remaining (1119; 81.6%) covering an area of 10.23 km² were identified as a neighborhood level public spaces. As to area coverage of open public spaces, the assessment and inventory made by UN-Habitat(2019) revealed that Addis Ababa city has 246 community yards, covering 0.79Km² of the open public space area. Besides, 182 and cover (3.23km²) spaces were identified as parks. These account for the largest share of the open public space land (34%). Other key typologies identified include, playgrounds (160), water-bodies (76), gardens (71), plaza/squares (42) and riparian land (29). The total numbers of open public spaces within the urban footprint area of Addis Ababa are 806. These lists indicate the diverse typologies of public spaces are found in Addis Ababa City. The availability of diverse typologies will provide the residents with a variety of choices (UN-Habitat, 2019). In addition, the typology of a public space has an influence in the use of a space and its demands insofar as maintenance is concerned.

This review revealed that 164km² of urban land in Addis Ababa is within 400m of public spaces. This means that the population within this catchment area has public spaces within 5 minutes' walk from their work places or homes. This means that the public spaces in Addis Ababa are accessible to the residents. The proximity and accessibility of the public spaces could also facilitate public use of the spaces. Successful cities are therefore cities where governments can deliver urban services, implement bylaws, formalize the informal sector, eradicate poverty, manage the economy etc. After a detail assessment, UN-Habitat (2019) found out that 1,426(69.9%) of the public spaces identified and grouped as owned by government and 361(17.7%) of the public spaces identified and grouped as owned by non-government. Besides, 148(7.3%) of the public spaces identified and grouped as owned by others and 104(5.1%) of the public spaces identified and grouped as no information on ownership. This data revealed that the majority of the city-level public spaces and the neighborhood level public spaces were owned and managed by the government. This could facilitate accessibility of the public spaces to its residents.

In addition, smooth accessibility to public space might be affected by availability of user friendly infrastructure. In Addis Ababa however, public spaces are not friendly to persons living with disability. Only 11.4% of the open public spaces are designed to enable persons living with disability to access them. It was noted that lack of infrastructure in public spaces which meets everyone's need and challenges seen as huge gap in Addis Ababa city. In recent years the city of Addis Ababa puts all parks to be accessed freely, which a great move to make public spaces more accessible and enjoyable to everyone. Accessible public spaces are important ingredients for bridging gaps in public spaces use and opening various opportunities for diverse people use.

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