

Perceived Quality of Public Open Spaces Physical Characteristics for Sustainable Urban Development in Ilesa, Nigeria

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Abstract- Open spaces are important to sustainable neighbourhoods. They contribute to social interaction, environmental health as well as overall quality of urban life. These spaces in many Nigerian cities, are sometimes neglected or inadequately integrated into the urban fabric, leading to reduced social and ecological benefits. This study evaluates the role of open spaces in promoting sustainable urban development in Ilesa, Nigeria. Using quantitative method approach, the research examines how the design, planning, accessibility, and management of public open spaces influence social cohesion, environmental sustainability and community well-being. The outcome of this study aims to offer insights that inform urban design, planning and policy interventions for creating more livable, inclusive and resilient neighbourhoods in urban areas.

Keywords: *Design, Planning, Social Interaction, Sustainable Neighbourhoods and Urban Development*

I. INTRODUCTION

The public open spaces are vital constituents of human settlements that enhances public and communal life. The public open spaces are necessary urban infrastructure as they provide areas for social interaction, recreation and environmental needs. Rapid urbanization, congestion of urban areas and decline in open space quality are issues around the world since late twentieth century that have necessitated expansion of open spaces and outdoor environment as important physical and social space (Payamidazad et.al 2018) that may encourage livable cities.

Quality of public open spaces contributes greatly to social, economic and environmental sustainability in a settlement due to the facts that open spaces are utilized for many purposes. These spaces include parks squares, plazas, green corridor, recreational

grounds among others; they provide ecosystem services, enhanced healthy living and social interaction. A good urban (open) space is an essential counterpart to home and work space (Mehta, 2007 cited in Jamie et. al, 2016). This points to the fact that Public open spaces are important elements in the community. They also contribute to urban resilience and environmental balance (Ghel 2011; Carmona, 2016).

The physical features of the open spaces such as accessibility, layout, landscape, lighting, seating, signage, safety amenities as well as maintenance have significant influence on their usage, functionality, inclusiveness, contribution to sustainable potentials and sustainable development goals (Nordh et. al, 2009; Madureira et. al, 2015; UN-Habitat, 2013). However, public open spaces in many Nigerian towns and cities often suffer from poor physical facilities, inadequate planning and obvious neglect. This is also manifested in Ilesa, a historic city in Osun State, South West Nigeria.

Furthermore, Chen et al. (2016) noted that in urban and landscape planning studies, the quality and quantity of open spaces in the community have been eliciting increasing attention. This calls for more empirical data on physical, spatial distribution and usage pattern of the open spaces in cities such as Ilesa. Moreover, lack of such knowledge poses threat to local authority and urban planners to implement germane sustainable urban development goals interventions. An understanding of physical features of public open spaces in Ilesa is of paramount importance to inform inclusive urban planning policies to promote environmental justice as well as to foster economic development and social cohesion.

This study focuses on examining the physical characteristics of a purposively selected public open space in Ilesa with a view to identifying limits and opportunities that will enhance evident based insights to aid better design and management of public open spaces in contributing to sustainable development goal 11 which is to make cities inclusive, safe, resilient and sustainable in medium-sized Nigerian cities.

II. LITERATURE REVIEW

The Conception of Open Spaces

Open spaces and outdoor spaces are term used interchangeably in literature to means spaces outside the four wall of a building (Fadamiro, 2006; Oyedokun et al. 2020; Ukpong & Agbabiaka, 2022; Yussuf et al. 2020; among others). The concept of open space is multi-dimensional in nature as researchers and authors view it from various perspectives. Chen et al (2016) noted that a well-designed open space encourages social communication and outdoor activity, it is a community asset that could potentially contribute to social harmony of the community as well as health of local residents.

The public open spaces are arena where public life unfolds (Bild et al., 2016). They are “all places publicly owned or of public use, accessible and enjoyable by all for free and without a profit motive” (UN Habitat, 2018). Fadamiro (2006) defined open spaces as “landed area not built upon” they are in form of natural landscapes, definite cultural areas, artificial designed areas, huge green areas as well as small outdoor rooms that are almost entirely enclosed. In another study by Maruani and Amit-Cohen (2007) urban open spaces as reported by Wang et al (2013) is a type of open spaces that has maximum people’s interaction with natural environment as it also has the highest accessibility for the population;

The urban open space planning therefore has the ultimate aim of fulfilling its inhabitant recreational needs; the examples of urban open spaces include urban parks, urban squares, plazas, community gardens among others (Wang et al., 2013).

Open spaces consist of green and grey spaces that are for public consumption; its examples include private green space, public green space, civic space and functional space (Rakhshandehroo et al., 2007) as revealed in Fig 2.3.

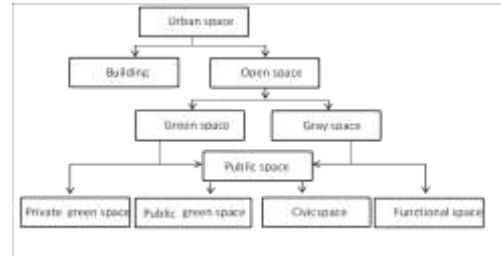


Figure 2.3: Open spaces in urban morphology
 Source: Rakhshandehroo et al. (2017)

Urban open spaces are revealed as “publicly accessible open places designed and built for human and enjoyment” (Francis, 1987). Open spaces according to urban development of Vienna (2015) was defined as “all undeveloped space sealed or unsealed or green” that are important element of urban infrastructure. Likewise, Thompson (2013) described urban open space as vital public infrastructure created and maintained for public good; historically, the urban open spaces play a vital role in political, economic and cultural life from early civilization to modern age. According to Kumar and Sharma (2018) spaces usually have a given role in any settlement; it is a container of different functions as described in Table 2.1.

Table 2.1: Description of Open Spaces

S/N	OPEN SPACES	DESCRIPTION
1.	Private open spaces	Enclosed by fences or walls that helps to keep and maintain visual privacy e.g. yard.
2.	Semi-private open spaces	These are defined by hedges or hard edges with no significant structure as demarcation of the edges on a piece of land. They include open or partially enclosed or partially screened front, side and rear yards.

3. Semi-public open spaces	They are spaces in front of houses; they include spaces formed by the façade of buildings as they contain front yard and landscape for right of way where sidewalks and area for street tree planting can be found.	educational facilities; it enhances creation of healthy places as well as quiet areas and it provides opportunities to make contact and enjoy the natural world.
4. Neighbourhood open spaces	These are “local street parkways, small parks, boulevard, median and garden paths that links visually the private spaces with the neighbourhood parks and the larger community”.	Johnson and Andrews (2009) also added that open space(s) reinforces civic pride and local identity; it aids mitigation as well as adaptation to climate change; economically, it boosts tourism potentials, cultural activities and leisure; it provides ecosystem services and green infrastructure; it promotes opportunities for production of local foods; it is an avenue to improve social and physical inclusion as well as accessibility; it protects and aids understanding of cultural, historical and archaeological value.
5. Community open spaces	These include public greens, medians on larger boulevards, stream corridors, sport fields, larger neighbourhood parks, bicycle paths, jogging paths, green ways, cemeteries and stream corridors.	In another study by urban development of Vienna (2015) the functions of open spaces are highlighted as; nature conservation (it provides habitat for plants and animals, it also promotes biodiversity as well as serve as biotope network and ecosystem protection); recreation and everyday life (it provides avenue for social gatherings/meeting point, recreation and a place of mobility for walking and cycling); ecosystem services (this deals with air quality, urban climate control and water for households) and urban fabric restructuring (it is significant for structuring the urban fabric, identity creation and orientation). In summary, the study stated that “the protection of nature and landscape is part of city life and this idea needs to be continued by recognizing our natural and cultural heritage”.

Source: Kumar and Sharma (2018)

The Benefits of Open Spaces

The benefits of open spaces as explained by Alwah et al. (2020) are indicated as follows: to provide ecosystem services to the people, this is neither limited to improving climate nor promotion of social justice by fostering social interactions but it is also an arena for sport, leisure and recreational activities. It also promotes tolerance and understanding among multicultural individuals as well as provision of health benefits by improving fitness when used for physical activities thereby contributing to wellbeing and enhancing quality of life.

The benefits of high-quality open space(s) according to Johnson and Andrews (2009) are: it enhances an area physical character thereby shaping the existing and future development activities; it enhances and protects ecological habitats and biodiversity; it aids urban regeneration and raise property values; it provides play and recreational facility for young people and children; it may serve as popular outdoor

III. METHODOLOGY

This study was carried out at Ilesa, Osun Sate, Nigeria. Ilesa city was selected for this study because is one of the major traditional cities in the State after Osogbo and Ile Ife (the cradle of Yoruba Civilization). The city also has a centripetal force of uniting a group of Ijesa speaking communities in the state, which is a reflection of what is obtainable in other cities of like characteristics. The study adopted quantitative research design through questionnaire to elicit information from users of the neighbourhood open spaces in Ilesa. The open space used for this study was a public square at the heart of Ilesa city called Ereja square.

The square was purposively selected because it is centrally accessible and it serves as an open space that is used by people of all ages, religious affiliations, political parties, social status, among others. The square is utilized for both traditional and modern activities and it as such used for various functions that include cultural, economic, ceremonial, religious, political (campaigns and elections) activities and lot more. Information obtained from the square administrator revealed that the square can accommodate an average of 5,000 users.

Studies such as Badiora and Ojo (2021) as well as Yoade et.al (2018) had shown 10% of the population is adequate for sampling. Therefore, with 10% population, 500 users were utilized for questionnaire administration. However, a total of 496 copies of questionnaire were recovered representing 99.2%; this demonstrated a reliable outcome as established by previous studies such as Yoade et.al (2018) and Olla (2017).

IV. RESULTS AND DISCUSSION

The quality of physical features in the neighbourhood open spaces were assessed and discussed in this section. The physical characteristics features were grouped into three categories.

They are accessibility parameters, safety and hygiene parameters as well as Sport and other parameters. The accessibility parameters consist of road, walkway, remarked entrance, parking lots, public transportation, ramps, kerbs, paved area, hedges and trees as well as boundary elements.

The second category is the safety and hygiene parameters which comprise water supply, public toilet, waste disposal, cleanliness, surveillance/cctv camera, first aid box, fire precaution, security post and night lighting. Sport and other parameters include game court, playing field, track, seating space, podium/stage, seating space covering (canopy or shed) that is, protector from weather elements, passive leisure space, refreshment and scenic space.

7.3.1 Perceived Quality of Accessibility Parameters

The quality of accessibility parameters of the physical features of neighbourhood open spaces shown in Table 7.2 and Figure 7.4 revealed that 8 out of 10 attributes had positive ratings at Ereja square. Attributes such as public transportation means (M.I. = 2.64, M.D. = 0.56) and ramps (M.I. = 0.00, M.D. = -2.08) were ranked first and last respectively. Hedges and trees (M.I. = 1.80, M.D. = -0.28) had negative rating while other attributes were positively rated. They include space boundary (M.I. = 2.53, M.D. = 0.45), road (M.I. = 2.52, M.D. = 0.44), remarked entrance (M.I. = 2.34, M.D. = 0.26), parking facilities (M.I. = 2.32, M.D. = 0.24), pedestrian protection/kerbs (M.I. = 2.30, M.D. = 0.22), pavement (M.I. = 2.18, M.D. = 0.10) and walk way (M.I. = 2.13, M.D. = 0.04).

A cursory look at the findings indicated that ramp had no rating at the square. This implied that the physically challenged users were not taken care-of at the square. This also call for more inclusivity agenda at Ereja square. Consequently, lowly rated attributes such as walk way and pavement should be improved upon.

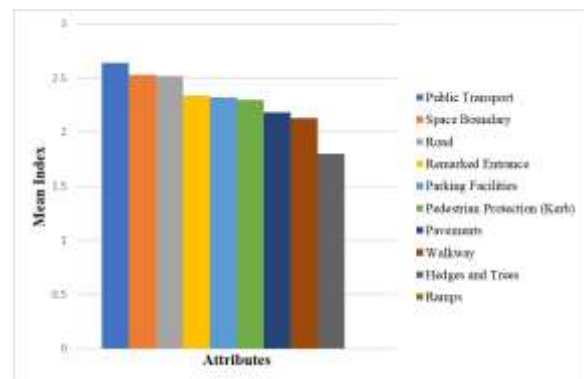


Figure 7.4: Accessibility Features in Ereja Square
 Source: Researcher's fieldwork, 2024

7.3.2 Perceived Quality of Safety and Hygiene Parameters

Findings presented in Table 7.3 and Figure 7.7 showed the perceived quality result of safety and hygiene parameters of the physical features in the public open space. It was revealed that at Ereja square 6 out of 12 attributes were rated positively with public toilet and first aid facility ranked as first

and last respectively. Water supply (M.I. = 2.60, M.D. = 0.28), security personnel (M.I. = 2.59, M.D. = 0.27), cleanliness (M.I. = 2.41, M.D. = 0.09), security post (M.I. = 2.38, M.D. = 0.03) were ranked second, third, fourth, fifth and sixth with positive ratings.

In contrast, night lighting (M.I. = 2.26, M.D. = -0.06), fire safety precaution (M.I. = 2.14, M.D. = -0.18) and waste disposal (M.I. = 1.79, M.D. = -0.33) had negative ratings. Attributes such as CCTV cameras and other surveillance facilities were not available at the square. This implied that the users of Ereja square were deprived of safety facilities such as surveillance to curb crime but they were comfortable with hygiene facilities such as water supply and public toilet.

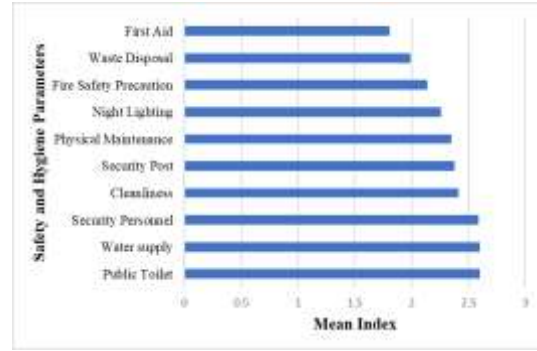


Figure 7.7: Safety and Hygiene Parameters of Ereja Square

Source: Researcher's fieldwork, 2024

Table 7.2: Physical Characteristics Parameters at Ereja Square

Attribute s	Accessibility Parameters				Attributes	Safety and Hygiene Parameters				Attributes	Sport and other Parameters			
	SMV	MI	MD	R		SMV	MI	MD	R		SMV	MI	MD	R
Public Transport	1310	2.64	0.56	1 st	Public Toilet	1291	2.60	0.28	1 st	Seating Space	1258	2.54	1.23	1 st
Space Boundary	1254	2.53	0.45	2 nd	Water supply	1290	2.60	0.28	2 nd	Passive Leisure Space	1117	2.25	0.94	2 nd
Road	1249	2.52	0.44	3 rd	Security Personnel	1286	2.59	0.27	3 rd	Covering Seating Space	1108	2.23	0.92	3 rd
Remark ed Entrance	1160	2.34	0.26	4 th	Cleanliness	1196	2.41	0.09	4 th	Refreshment Facility	1096	2.21	0.90	4 th
Parking Facilities	1152	2.32	0.24	5 th	Security Post	1182	2.38	0.06	5 th	Podium/Stage	1046	2.11	0.80	5 th
Pedestrian Protect. (Kerb)	1140	2.30	0.22	6 th	Maintenanc e	1167	2.35	0.03	6 th	Scenic Space	850	1.71	0.40	6 th
Pavement s	1082	2.18	0.10	7 th	Night Lighting	1122	2.26	-0.06	7 th	Playing Field	0	0	NA	NA
Walkway	1054	2.13	0.04	8 th	Fire Safety Precaution	1063	2.14	-0.18	8 th	Game Court	0	0	NA	NA
Hedges and Trees	893	1.80	-0.28	9 th	Waste Disposal	988	1.99	-0.33	9 th	Track	0	0	NA	NA
Ramps	0	0.00	-2.08	10 th	First Aid	898	1.81	-0.51	10 th	Protection from Weather	0	0	NA	NA

			Surveillance	0	0	NA	NA		
Total	1029	20.75	Total	11483	23.15	Total	6475	13.05	
	4								

Grand Mean (Acc. Parameter): 2.08
 Grand Mean (Safety & Hygiene. Parameter): 2.32
 Grand Mean (Sport and other Parameters): 1.31
 Source: Researcher’s fieldwork, 2024

V. RECOMMENDATIONS AND CONCLUSION

7.3.3 Perceived Quality of Sports and Other Facilities

Presented in Table 7.4 and Figure 7.10 is the findings on quality of sports and other facilities within the NOS. A cursory look at users’ response at Ereja square showed that all the available 6 out of 10 attributes were rated positive. while 4 out of the remaining 10 were not available in the city square.

Recommendations

The following points were recommended based on the findings of this study;
 Improvement of physical structures such as provision of more functional lighting, seating space, water points, toilets, recreational and refreshment facilities. Implementation of policies on urban reform to strengthen and protect public spaces from encroachment as well as integration of public open spaces into urban development plans.

seating space (M.I.=2.54, M.D.=1.23) was ranked first among the attributes while scenic space (M.I.=1.71, M.D.=0.40) had the least ranking. Passive leisure space (M.I.= 2.25, M.D.= 0.94) covering on seating space (M.I.=2.23, M.D.=0.92) refreshment (M.I.= 2.21, M.D.= 0.90) and podium or stage (M.I.=2.11, M.D.=0.80) were ranked second, third, fourth and fifth respectively. Contrarily, facilities such as playing field, track and game court were not available at the square. These findings indicated that Ereja square being a self-evolving square and traditional open space is not synonymous to having facilities such as field, track and game court.

Maintenance and safety measure should be establishing to oversee repairs, sanitation and security of public open space.

Incorporation of green infrastructure such as trees, shrubs, permeable walkways, biodiversity buffer zones among others to enhance climate resilience and environmental sustainability measures.

Need for taking data to inform data-driven decision making that will enhance quality and all-round development of public open spaces.

CONCLUSION

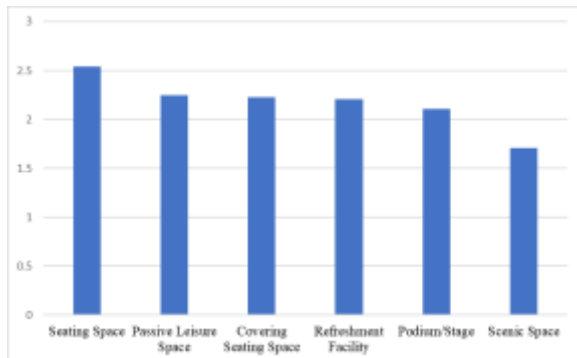


Figure 7.10: Other Facilities Parameters in Ereja Square

Source: Researcher’s fieldwork, 2024

This study assessed the implications of physical characteristics of public open spaces for sustainable urban development in Ilesa. Findings of the study revealed that while there is presence of public open spaces in various forms, they remain underdeveloped and lack necessary infrastructure (such as inadequate seating, lighting, shading elements among others); Thereby making them not well harnessed to reach their full potentials. Lack of accessibility, inclusive and safety features also affect usage potentials of public open spaces to contribute meaningfully to users’ health to enhance quality of life in relation to sustainability outcomes.

The study emphasized that inadequate responsive design, physical planning and community involvement may give way to underutilization and deterioration of public open space in Ilesa. Therefore, it is imperative to integrate sustainable principles in designing, planning and managing these open spaces in order to achieve resilient and livable settlements.

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