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An Assessment of Livability Levels in Ikot Ekpene Local Government, Akwa Ibom State

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ABSTRACT

The study aimed to assess the livability levels in Ikot Ekpene Local Government Area. Data was collected through questionnaires, direct observations, and enumeration of infrastructure in the region. A total of 624 respondents were randomly selected to participate in the study. A framework with 19 indicators was developed, and weights were assigned to these indicators to determine the mean livability score (MLS). Hierarchical cluster analysis was then used to evaluate the physical indicators of livability in the area. The analysis revealed communities with varying livability levels, with Ikot Ekpene Urban having the highest MLS of 38.895, while Ifuho II had the lowest MLS of 2.053. The findings indicate that Ikot Ekpene Local Government generally has a low level of physical livability, suggesting a need for improved access to essential facilities such as public water supply, electricity, and healthcare services for residents.

1. Introduction

Places used for human habitation are the basis for their survival and development. These settlements provide spaces for various human activities, including residence, work, education, health, culture, and entertainment (Ma, 2016). The quality of human settlements normally exerts great influence on human health and wellbeing. To describe and measure urban environmental quality, the terms livability and related concepts such as sustainability, quality of life, and wellbeing are popularly used. As the goal of urban planning and development, livability has attracted widespread attention in the field of urban planning and urban geography. However, there is still no unified definition and connotation of livability. Etim et al., (2023) described it as an "ensemble concept with no precise or universally agreed upon definition". The definitions of livability vary from place to place and at varying time frames, due to the fact that the concept is relative.

The livability of settlements refers to how conducive an environment is for residents in terms of comfort, sustainability, and quality of life. Livable settlements typically offer a balance between natural and built environments, access to amenities, social equity, economic opportunities, and effective governance. Urban design, infrastructure, housing affordability, and environmental sustainability are key factors shaping livability. Livability and quality of life are closely interrelated, with livability directly impacting the well-being of individuals in a settlement. Livability encompasses the elements of the built environment and services that make a location conducive to everyday life, such as access to housing, transportation, public spaces, and economic opportunities. These factors in turn influence residents' quality of life, which reflects their personal satisfaction and happiness within the environment they inhabit. A highly livable settlement typically offers access to essential services like healthcare, education, and recreation, all of which contribute to the physical and mental well-being of its residents. For instance, access to green spaces and recreational areas has been shown to improve mental health, reduce stress, and enhance social interactions, which are key components of quality of life (Dadhich & Hanaoka, 2023).

Additionally, a well-connected public transportation system reduces commute times, allowing individuals more time for leisure and family, thereby enhancing life satisfaction (Shaping Sustainable Cities, 2023). Conversely, in settlements where livability is compromised—due to issues such as urban sprawl, poor infrastructure, or environmental degradation—quality of life often suffers. Urban sprawl can lead to longer commute times, increased pollution, and reduced access to amenities, all of which contribute to lower life satisfaction.

Burton (2014) defines livability as physical quality of place and the way it is planned. A livable environment refers to a place where the built structure promotes quality of life by supporting the basic needs of its residents. According to Ghasemi et al., (2019), the founding premise is that the urban form and environment, the economic values, and social sustainability are interconnected and that living neighbourhoods should be comprised of a built landscape that encourages, rather than impedes healthy and sustainable living. For the purpose of clarity, it is pertinent to distinguish the concept of livability from sustainability.

Livability and sustainability are two interrelated concepts in urban planning, each focusing on different aspects of urban environments. Livability pertains to the quality of life experienced by residents in a given area, encompassing various factors that contribute to a comfortable and enjoyable living environment. These factors include safety, access to amenities such as schools and healthcare, efficient transportation systems, community engagement, and overall health. A livable settlement fosters social cohesion and promotes a high standard of living by ensuring that residents can easily access essential services and recreational opportunities (Florida, 2017; Zahran et al., 2016).

Conversely, sustainability in urban planning emphasizes the long-term viability and health of the environment. This concept encompasses environmental protection, economic viability, social equity, and resilience against change. Sustainable urban planning seeks to minimize pollution, conserve natural resources, and protect ecosystems while promoting social and economic opportunities for all community members (Akpabio, 2010). A sustainable approach to urban development not only addresses the environmental impact of urbanization but also enhances the overall quality of life for residents by ensuring that resources are available for future generations.

The relationship between livability and sustainability is inherently synergistic. While livability focuses on the immediate well-being and satisfaction of residents, sustainability considers the broader implications of urban planning decisions. For instance, the integration of green spaces into urban areas can enhance livability by providing recreational opportunities and improving mental health, while simultaneously promoting environmental sustainability through biodiversity conservation and air quality improvement (Burgess et al., 2017; Tzoulas et al., 2007). Additionally, efficient public transportation systems reduce traffic congestion and pollution, making urban areas more livable while also contributing to sustainability goals.

In the context of settlements—whether rural villages, or peri-urban areas—failing to plan for livability can lead to a range of adverse effects that compromise the community's sustainability and residents' well-being. Without consideration for livability, settlements may suffer from inadequate infrastructure, such as poor road networks, insufficient water and sanitation facilities, and limited access to healthcare and educational services. This can result in isolation, where essential services are challenging to reach, particularly impacting vulnerable populations like the elderly or children.

The absence of green spaces, recreational areas, and communal facilities can hinder social cohesion, reduce recreational opportunities, and negatively affect physical and mental health. Economically, poorly planned settlements can lead to limited local job opportunities and over-reliance on distant urban centers for employment, increasing commuting times and costs for residents. Environmental issues, such as soil degradation, water scarcity, and loss of local biodiversity, may also arise from unplanned expansion and unsustainable land use practices.

Over time, settlements that lack livability-focused planning may experience outward migration, particularly of younger generations seeking better living standards, which can erode community vitality and economic resilience. As populations shift, these areas may face a cycle of decline, with abandoned infrastructure and diminishing local investment, reducing the settlement's overall sustainability and future prospects. With the aforementioned in mind and the dearth of research on livability at the settlement level, this study aimed to bridge this gap by assessing the levels of livability of settlements in Ikot Ekpene local government area, Nigeria.

Conceptual framework

Ruut Veenhoven's livability theory (1993) emphasizes the importance of societal conditions in fostering human well-being. According to the theory, livability refers to the capacity of a society to provide its inhabitants with a high quality of life. This encompasses not only economic stability but also social cohesion, environmental quality, healthcare, and personal freedoms, which together enable individuals to lead fulfilling lives. Veenhoven highlighted that a liveable environment depends on both objective factors—such as infrastructure, public services, and economic opportunities—and subjective factors like individual happiness and life satisfaction (Veenhoven, 1993).

In the context of Ikot Ekpene Local Government Area (LGA), located in Akwa Ibom State, Nigeria, the livability framework sheds light on the opportunities and challenges faced by its inhabitants. While Ikot Ekpene LGA is known for its rich cultural heritage and historical significance as the "raffia city," the overall quality of life is shaped by factors such as infrastructure, environmental conditions, and social services. Ikot Ekpene LGA, like many LGAs in Nigeria, grapples with a mix of rural and urban dynamics that influence livability in distinct ways. Infrastructure development in Ikot Ekpene LGA remains a key determinant of its livability. Roads, healthcare facilities, and educational institutions are insufficiently developed, limiting residents' access to essential services. Poor road conditions, especially in rural parts of the LGA, hamper transportation and economic activities, which affects the overall well-being of residents (Akpan, 2022). Veenhoven's theory suggests that a society's livability improves when there is better access to these services, yet in Ikot Ekpene, the lack of infrastructure continues to be a significant impediment to quality of life. Efforts to improve these areas, such as the recent construction of better roads connecting Ikot Ekpene to Uyo and Aba, signal progress, but more needs to be done to address internal connectivity within the LGA.

3. Methodology

The study area is Ikot Ekpene local government area situates between Latitudes 5°10′ and 5°30′ North of the Equator and Longitudes 7°30′ and 7°45′ East of the Greenwich Meridian. The local government covers an area of 125 km^2 (Etim, 2021). Ikot Ekpene is bounded to the North by Obot Akara local government, to the South by Essien Udim local government to the East by Ikono local government and to the West by Obot Akara local government (See Figure 1). This study employed a descriptive research design to assess the livability across various settlements in Ikot Ekpene Local Government Area, Akwa Ibom State, Nigeria. Data collection was conducted through direct observation and interviews with community representatives, focusing on key livability factors such as water supply, power supply, quality of telecommunication services, waste disposal, healthcare services, road conditions,

education facilities, market access, recreational spaces, security services, and overall environmental cleanliness. Ikot Ekpene Local Government Area is made up of 65 settlements (Etim, 2021), however a total of 48 settlements were sampled.

The livability score for each settlement was determined using the livability scales designed American Association of Retired Persons (AARP). This scale has seven livability categories; housing, neighbourhood, transportation, environment, health and employment opportunity. A settlement's total livability score is an average of scores on these seven categories. Each neighbourhood was scored on a scale from 0-100, with mean livability score being 50. Settlements with more livability practices earn a score above 50, while those facing obstacles to livability score lower. The AARP livability scale has a total of 61 indicators which are grouped under seven categories, however this was reduced to 19 indicators due to the peculiarities of the study area. This scale was however supplemented by physical enumeration of infrastructural facilities in each settlement.

Data analysis involved the computation of descriptive statistics, including frequencies, percentages, and mean scores, to summarize the livability conditions in each settlement. The results were then presented in tabular form to facilitate comparison across the different sectors. The analysis allowed for the identification of settlements with relatively high or low livability indices, thereby highlighting areas that require more focused infrastructural and service interventions. Furthermore, the livability index was used to assess the overall quality of life in the region and to inform potential policy recommendations for improving livability in underserved areas. By integrating both qualitative and quantitative data, the study offered a comprehensive assessment of the settlement clusters, contributing valuable information for regional planning and development strategies aimed at enhancing livability and sustainability.

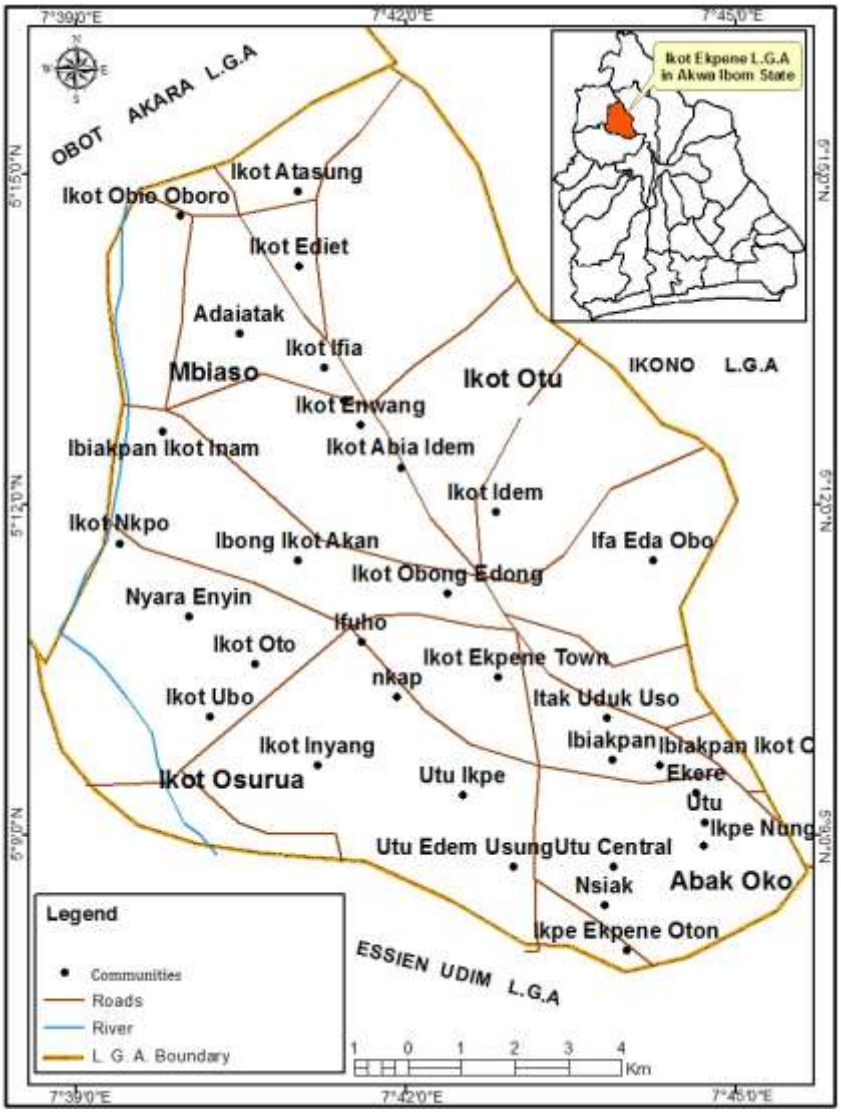

Figure 1: Map of Ikot Ekpene LGA, Akwa Ibom State

To find out the level of physical indicators of livability in Ikot Ekpene, hierarchical cluster analysis was used. This procedure enabled grouping of settlements into clusters so that members of a cluster have a high degree of natural association among themselves while the clusters show relative distinction from one another (Ofem, 2016). A - 19 framework-based indicators grouped under 3 domain indicators of (physical, social and economic) was developed, weights were assigned to the indicators and the livability index determined as presented below.

4. Data Presentation and Analysis

Table 1 Settlement Clusters and Livability index

Sector	**Settlements/Communities**	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**Q**	**R**	**S**	**GT**	**MS**
1	Abak Ifia	3	3	3	3	3	4	4	2	4	3	6	3	4	4	4	1	2	4	3	**63**	3.316
	Abiakpo Ikot Obio Ntin	4	3	3	4	3	4	3	2	3	3	5	2	4	3	4	1	2	3	2	**58**	3.053
	Adatak	1	3	2	3	1	4	2	2	2	2	7	3	3	3	1	1	2	2	3	**47**	2.474
	Ibiakpan Ikot Inam	3	3	3	1	3	4	1	1	1	3	5	3	3	3	1	1	2	1	3	**45**	2.368
	Ikot Akpa Enuek	4	2	3	4	3	3	4	2	4	3	4	3	5	4	4	1	4	4	3	**64**	3.368
	Ikot Atasung	3	3	3	3	3	4	3	2	3	3	4	3	4	4	1	1	2	3	3	**55**	2.895
	Ikot Ediet	3	3	3	3	3	4	4	2	4	3	6	3	5	4	1	1	2	4	3	**61**	3.211
	Ikot Obong Otoro	2	3	3	3	3	4	3	2	3	3	6	3	4	3	2	1	2	3	3	**56**	2.947
	Ikot Oto Nto Ama Okop	2	3	1	4	3	3	3	2	3	2	5	3	4	4	2	1	2	3	3	**53**	2.789
	Ikot Uso Udo	3	2	3	1	3	4	1	1	1	2	5	1	3	3	4	1	2	1	3	**44**	2.316
	Obong Okpo Eto Ikot Imo	1	3	2	1	3	4	2	2	2	3	5	3	4	4	1	1	2	2	3	**48**	2.526
2	Ata Essien Mbiaso	1	3	3	4	3	3	2	1	2	3	4	3	4	4	2	2	4	2	3	**53**	2.789
	Ibong Ikot Akan	3	3	3	3	3	4	7	2	7	3	8	1	5	4	4	2	2	7	4	**75**	3.947
	Ifuho	3	3	1	4	3	3	19	2	19	2	10	3	3	4	4	3	2	19	3	**110**	5.789
	Ikot Obio Okpon	2	2	3	3	3	4	2	2	2	2	8	3	4	3	2	1	2	2	3	**53**	2.789
	Ikot Oto	3	3	3	4	1	2	4	2	4	3	5	3	5	4	4	2	3	4	4	**63**	3.316
	Ikot Ubo	3	3	3	2	1	2	2	2	2	3	8	3	3	3	4	1	1	2	3	**51**	2.684
	Ikot Udo Usung	4	3	2	4	1	3	1	2	1	3	4	2	5	3	1	2	1	1	3	**46**	2.421
	Mbiaso Ikot Obio Ekong	2	3	3	4	3	3	3	2	3	3	6	3	3	4	4	1	2	3	3	**58**	3.053
	Mbiaso Nto Obodom	1	3	3	4	3	3	2	1	2	3	6	3	5	3	4	1	3	2	4	**56**	2.947
	Nyarenyin Ikot Udom	1	3	3	1	1	4	3	2	3	3	6	3	4	3	4	1	1	3	3	**52**	2.737
	Nyarenyin Ntong Uno	4	3	3	4	1	3	5	2	5	3	5	3	5	3	4	2	2	5	4	**66**	3.474
	Okop I	2	3	3	3	3	4	4	2	4	3	4	3	4	4	2	1	2	4	3	**58**	3.053
3	Abiakpo Ikot Essien	3	3	1	4	3	3	38	2	38	2	19	3	4	4	4	1	2	38	4	**176**	9.263
	Ibiakpan Akananwan	3	3	1	4	3	3	78	2	78	2	13	3	4	4	4	1	2	78	4	**290**	15.263
	Ikot Abia Idem	3	3	3	4	3	4	11	2	11	3	15	2	4	4	4	2	2	10	4	**94**	4.947
	Ikot Ekpene Urban	3	3	1	4	3	4	224	2	225	2	20	3	4	4	4	2	2	225	4	**739**	38.895
	Ikot Enwang	2	3	1	4	2	3	5	2	5	2	7	3	3	4	2	1	2	5	4	**60**	3.158
	Ikot Idem	1	4	1	1	2	1	1	1	1	2	5	3	3	3	4	1	2	1	4	**41**	2.158

	Ikot Obong Edong	3	3	1	4	3	3	22	2	22	2	19	3	4	4	4	1	2	22	4	**128**	6.737
	Ikot Out	2	3	1	4	3	3	4	2	4	2	6	3	3	4	2	1	2	4	4	**57**	3.000
	Ikot Udoe	2	4	1	4	2	3	2	2	2	2	5	3	3	3	2	1	2	2	4	**49**	2.579
	Itak Ikot Udo Okop	3	3	1	4	3	3	9	2	9	2	7	3	4	4	4	1	2	9	4	**77**	4.053
4	Abiakpo Edem Idim	3	4	1	4	3	4	4	2	4	2	8	2	3	4	4	1	1	4	3	**61**	3.211
	Abiakpo Idaha	2	3	1	4	3	3	3	2	3	2	8	2	3	4	2	1	2	3	3	**54**	2.842
	Abiakpo Ntak Inyang	3	3	1	4	3	3	7	2	7	2	15	3	4	4	4	1	2	7	4	**79**	4.158
	G.R.A	3	3	1	4	3	4	21	2	20	2	8	2	4	4	4	4	2	21	4	**116**	6.105
	Ifuho II	1	3	1	2	2	1	1	1	1	2	10	2	1	3	1	1	2	1	3	**39**	2.053
	Ikot Akpan Abia	1	4	1	3	3	4	3	1	3	2	10	2	4	4	2	1	2	3	3	**56**	2.947
	Ikot Inyang	3	4	1	4	3	4	7	2	7	2	8	2	4	4	2	1	2	7	4	**71**	3.737
	Ikot Osurua	2	3	1	4	3	3	2	2	2	2	15	3	3	4	2	1	2	2	3	**59**	3.105
	Nkap Ikot Ebok	2	4	1	4	3	3	5	2	5	2	8	2	3	4	2	1	2	5	4	**62**	3.263
	Utu Edem Usung	3	3	1	4	3	4	11	2	11	2	7	3	3	3	4	1	2	11	4	**82**	4.316
	Utu Ikot Essienam	3	3	1	4	3	4	4	2	4	2	8	2	3	4	4	1	2	4	4	**62**	3.263
	Utu Ikpe	2	3	1	4	3	3	4	2	4	2	8	2	4	4	4	1	2	4	3	**60**	3.158
5	Abak Oko	3	4	3	4	3	3	6	2	6	2	7	1	3	4	2	1	2	6	3	**65**	3.421
	Abak Ukpom	3	3	1	4	3	4	5	2	5	3	9	3	4	4	4	1	2	5	3	**68**	3.579
	Ibiakpan	3	3	1	4	3	4	4	2	4	2	17	3	4	4	4	1	2	4	4	**73**	3.842
	Ibiakpan Nto Akan	3	3	3	3	3	1	2	1	2	2	12	1	3	4	1	1	2	2	4	**53**	2.789
	Ibiakpan Ikot Obio Ekere	3	3	3	4	3	3	7	2	7	2	18	3	3	4	4	1	2	7	4	**83**	4.368
	Nsiak	3	4	3	4	3	4	9	2	9	2	7	3	4	4	4	1	2	9	4	**81**	4.263
	Uruk Uso	3	3	1	4	3	4	31	2	31	2	20	2	4	4	4	1	1	31	4	**155**	8.158
	Utu Ikot Ekpenyong	3	4	1	4	3	4	6	2	6	2	8	3	4	4	2	1	2	6	4	**69**	3.632

Key: A =WATER SUPPLY; B = POWER SUPPLY; C = QUALITY OF TELECOM SERVICES; D = WASTE DISPOSAL; E = DRAINAGE; F = PUBLIC TRANSIT; G = BUS STOP; H = TYPE OF ROAD; I = NEAREST PETROL STATION; J = QUALITY OF INTERNET SERVICES; K=HOUSE/HECTARE; L=SECURITY; M=PUBLIC SCHOOL; N=HEALTH FACILITY; O= JOBS; P=LOCAL GOODS; Q=LOCAL CROPS; R=RETAIL SHOPS; S=NEAREST MARKET

The result of the analysis as presented in table 1 shows the various communities and the facilities examined there. A livability index was developed based on accessibility and nearness to basic facilities. The result of the cluster analysis is presented in Table 2 showing a regrouping of the communities based on their livability index. The settlements were clustered based on their level of livability as shown on Table 2.

Table 2 Cluster Analysis of the level of physical livability indicators in Ikot Ekpene

Cluster Membership

Case	5 Clusters
1:Abak Ifia (1)	1
2:Abiakpo Ikot Obio Ntin (1)	1
3:Adatak (1)	1
4:Ibiakpan Ikot Inam (1)	1
5:Ikot Akpa Enuek	1
6:Ikot Atasung (1)	1
7:Ikot Ediet (1)	1
8:Ikot Obong Otoro (1)	1
9:Ikot Oto Nto Ama Okop II	1
10:Ikot Uso Udo (1)	1
11:Obong Okpo Eto Ikot Imo	1
12:Ata Essien Mbiaso (2)	1
13:Ibong Ikot Akan (2)	1
14:Ifuho (2)	2
15:Ikot Obio Okpon (2)	1
16:Ikot Oto (2)	1
17:Ikot Ubo (2)	1
18:Ikot Udo Usung (2)	1
19:Mbiaso Ikot Obio Ekong (2)	1
20:Mbiaso Nto Obodom (2)	1
21:Nyarenyin Ikot Udom (2)	1
22:Nyarenyin Ntong Uno (2)	1
23:Okop I	1
24:Abiakpo Ikot Essien (3)	3
25:Ibiakpan Akananwan (3)	4
26:Ikot Abia Idem (3)	1
27:Ikot Ekpene Urban (3)	5
28:Ikot Enwang (3)	1
29:Ikot Idem (3)	1
30:Ikot Obong Edong (3)	2
31:Ikot Otu (3)	1
32:Ikot Udoe (3)	1
33:Itak Ikot Udo Okop (3)	1
34:Abiakpo Edem Idim (4)	1
35:Abiakpo Idaha (4)	1
36:Abiakpo Ntak Inyang (4)	1

37:G.R.A (4)	2
38:Ifuho II (4)	1
39:Ikot Akpan Abia (4)	1
40:Ikot Inyang (4)	1
41:Ikot Osurua (4)	1
42:Nkap Ikot Ebok (4)	1
43:Utu Edem Usung (4)	1
44:Utu Ikot Essienam (4)	1
45:Utu Ikpe (4)	1
46:Abak Oko (5)	1
47:Abak Ukpom (5)	1
48:Ibiakpan (5)	1
49:Ibiakpan Nto Akan (5)	1
50:Ibikpan Ikot Obio Ekere (5)	1
51:Nsiak (5)	1
52:Uruk Uso (5)	3
53:Utu Ikot Ekpenyong (5)	1

Source: SPSS Output (2024)

The result of the analysis in Table 2 shows a regrouping of communities according to their livability index, thus higher the value, the higher the level of physical livability. The result shows that Ikot Ekpene Urban has a high level of physical indicator of livability with an index of 38.895. Ibiakpan Akananwan follows next with an index of 15.236, Abiakpo Ikot Essien has an index of 9.263, while Uruk Uso had an index of 8.158. Ikot Obong Edong G.R.A and Ifuho, has a low livability index of 6.737, 6.105 and 5.789 respectively. 46 other communities making up 86.79% of the settlements have a very low level of physical indicators of livability. The result therefore shows that there is a low level of physical indicator in Ikot Ekpene except in the urban areas.

Table 3: Regrouping of communities based on level of livability

Communities	Level of Physical indicators	Percentage
Abak Ifia, Abiakpo Ikot Obio Ntin, Adatak , Ibiakpan Ikot Inam, Ikot Akpa Enuek, Ikot Atasung , Ikot Ediet, Ikot Obong Otoro, Ikot Oto Nto Ama Okop II, Ikot Uso Udo, Obong Okpo Eto Ikot Imo, Ata Essien Mbiaso, Ibong Ikot Akan, Ikot Obio Okpon, Ikot Oto, Ikot Ubo, Ikot Udo Usung, Mbiaso Ikot Obio Ekong, Mbiaso Nto Obodom, Nyarenyin Ikot Udom, Nyarenyin Ntong Uno, Okop I, Ikot Abia Idem, Ikot Enwang, Ikot Idem, Ikot Otu, Ikot Udoe, Itak Ikot Udo Okop, Abiakpo Edem Idim, Abiakpo Idaha, Abiakpo Ntak Inyang, Ifuho II, Ikot Akpan Abia, Ikot Inyang, Ikot Osurua, Nkap Ikot Ebok, Utu Edem Usung, Utu Ikot Essienam, Utu Ikpe, Abak Oko, Abak Ukpom, Ibiakpan, Ibiakpan Nto Akan, Ibikpan Ikot Obio Ekere, Nsiak, and Utu Ikot Ekpenyong	Very Low	86.79%
Ifuho, Ikot Obong Edong, G.R.A	Low	5.66%
Abiakpo Ikot Essien, Uruk Uso	Moderate	3.77%
Ibiakpan Akananwan	High	1.89%
Ikot Ekpene Urban	Very High	1.89%
	Total	100

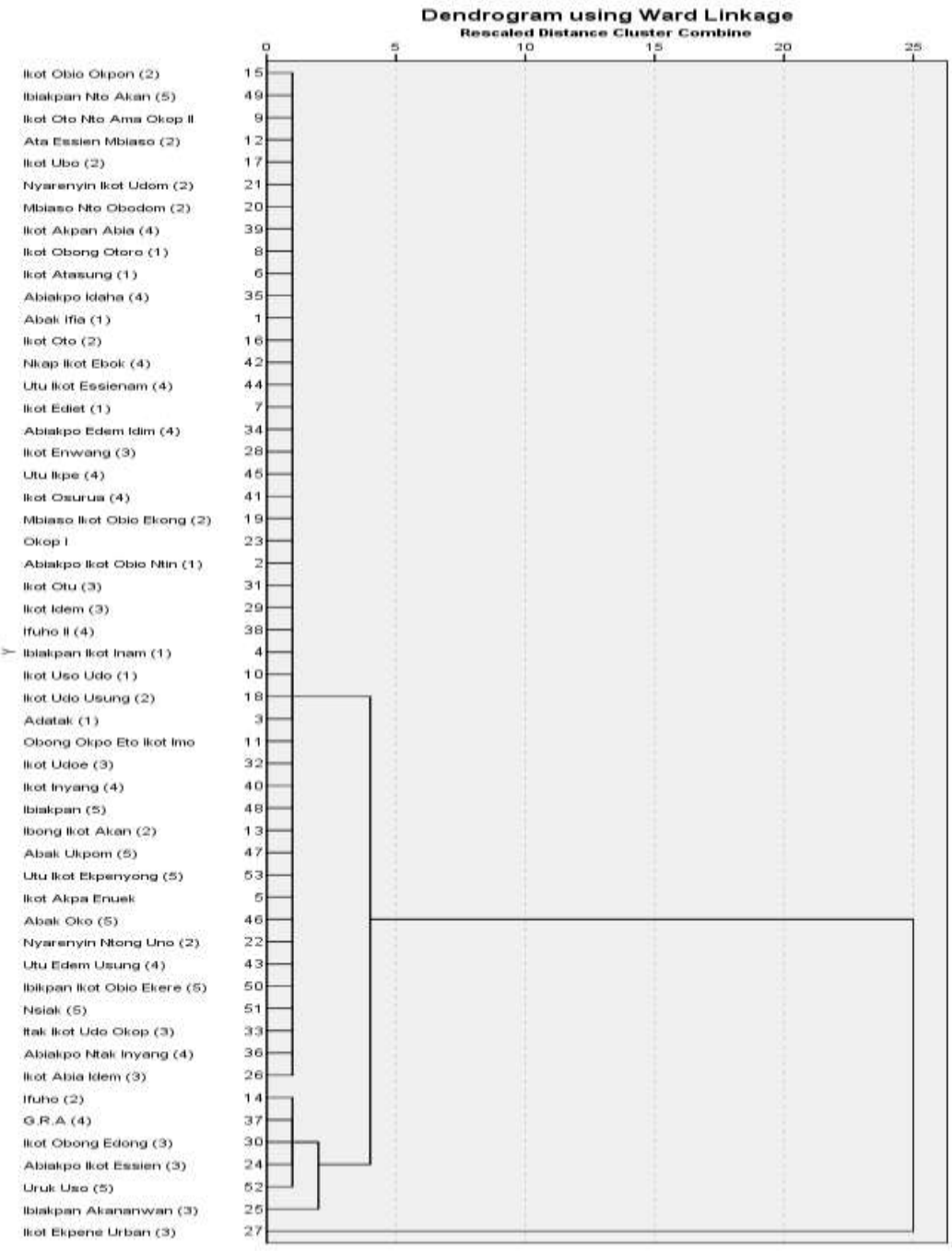

Figure 2: Dendrogram showing cluster analysis of communities in Ikot Ekpene local government based on livability index

5. Discussion of Findings

The findings of this study reveal significant disparities in the livability conditions across the 48 settlements in Ikot Ekpene Local Government Area. These disparities highlight the uneven distribution of infrastructure and services within the region, impacting the quality of life in various communities. Settlements with higher MLS were predominantly those closer to the urban centre, where access to basic amenities like water supply, healthcare, education, and waste disposal services were generally more reliable. These areas benefited from better-maintained roads, market access, and security services, which contributed to a higher standard of living. This pattern underscores the correlation between proximity to urban areas and improved livability, reflecting how centralized infrastructure investment tends to favour urban cores over more remote settlements.

In contrast, the more peripheral and rural settlements exhibited lower MLS, mainly due to inadequate or inconsistent access to basic services, this collaborate the findings of Etim et al (2023). Many of these areas reported poor water supply, unreliable power, limited healthcare services, and inadequate waste management systems. The lack of well-maintained roads further compounded the isolation of these settlements, limiting their access to markets and healthcare facilities. This not only hampers economic activity but also diminishes the residents' quality of life and overall sense of well-being

(Dempsey *et al*, 2012). The deficiency in these critical services reveals a pressing need for targeted infrastructural development and resource allocation to bridge the gap between urban and rural communities.

The study also identified that recreational spaces and environmental cleanliness were among the most neglected aspects across both urban and rural settlements. Even in areas with relatively higher MLS, public spaces for leisure and community engagement were limited or poorly maintained. This deficiency affects the social well-being of residents and highlights a gap in urban planning that could be addressed to enhance the overall livability. Additionally, environmental cleanliness was rated poorly across several communities, suggesting challenges with effective waste disposal and sanitation. This situation poses health risks, particularly in densely populated areas, where poor environmental conditions can exacerbate public health issues.

Overall, the study emphasizes the importance of balanced infrastructural development and equitable distribution of services to improve livability across all settlements in Ikot Ekpene. While urban areas may continue to benefit from investments, it is crucial that rural and peripheral settlements receive more attention in future development planning. The findings suggest that targeted interventions in road infrastructure, water supply, healthcare, and waste management could significantly improve livability in underserved areas. Moreover, incorporating recreational spaces and enhancing environmental management practices would contribute to a more holistic improvement in the quality of life for all residents. These insights provide a foundation for policy recommendations aimed at achieving sustainable and equitable development within the local government area. The grouping of settlements thus provides a framework for understanding where development efforts are most needed. It also reveals that the disparities in livability between urban and rural settlements are not merely a result of geographical distance but also of systemic infrastructural inequality. Policymakers can use these groupings to prioritize investments and implement tailored development strategies that address the specific needs of each group, particularly the rural and peri-urban areas, which are often left behind in terms of infrastructural development. Overall, the grouping serves as a critical tool for planning, enabling more effective allocation of resources to ensure that all communities, regardless of their location, can achieve an acceptable standard of living.

6. Limitations and Strengths of the study

This study had several limitations. The livability index used in this study faces several limitations, including subjectivity in indicator selection and weighting, exclusion of certain livability dimensions, temporal limitations, and challenges with generalization to other regions. The choice and weighting of physical indicators in the index are influenced by subjective judgment, even though these indicators are grounded in existing literature. Different perspectives on what constitutes livability can affect the index's applicability to other regions. The study also captures livability indicators at a single point in time, which may miss trends or shifts over time, as livability is dynamic and can be influenced by rapid urbanization, population growth, or policy changes. Finally, the unique socioeconomic and infrastructural characteristics of Ikot Ekpene may limit the findings' generalizability to other areas, as the factors influencing livability in this context may differ considerably from those in other urban or rural settings, especially outside Nigeria.

The study's key strengths lie in its focus on objective, physical indicators of livability, its grounding in established literature, and its attention to a specific regional context. Its reliance on indicators backed by existing literature enhances the study's credibility and aligns with recognized frameworks, ensuring that the selected indicators reflect common standards in livability research. Furthermore, focusing on Ikot Ekpene allows for an in-depth understanding of the unique socioeconomic and infrastructural characteristics that influence livability in this region, offering valuable insights that could inform local policy and planning.

7. Conclusion and Recommendation

The livability of Ikot Ekpene LGA is marked by significant disparities between its urban, peri-urban, and rural settlements. The urban centre enjoys relatively better access to infrastructure, healthcare, education, clean water, and other essential services, which enhance the quality of life. In contrast, peri-urban and rural areas face notable challenges in these sectors, resulting in lower living standards and limiting their residents' overall well-being. This imbalance underscores the need for focused development efforts to bridge the gap and ensure that all communities within the LGA experience equitable growth and improvement in livability.

Addressing these challenges requires targeted interventions, particularly in infrastructure development, healthcare expansion, and economic empowerment programs for rural areas. The expansion of basic services and opportunities in underserved regions can help reduce the growing divide and foster balanced, sustainable growth. By engaging local communities in development processes and prioritizing equitable resource distribution, Ikot Ekpene can achieve better integration and improved livability for all its residents, creating a more resilient and prosperous future for the LGA.

Competing interests

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Availability of data and materials

The datasets generated and analyzed in this study are not publicly available; however, they are available from the corresponding author upon reasonable request.

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