The Urban Legibility Condition in Nigeria: a Narration of Residents' Experience in Ibadan Metropolitan Area

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Abstract: People's opinions have been an accepted tool for proffering solutions to various urban problems. Thanks to them, information is sourced to guide policy-makers and other environmentally concerned stakeholders in taking enlightened decisions about the future development of cities. Taking this into account, the study essayed to examine urban legibility across different residential zones of Ibadan metropolis with a view to providing information that could enhance the livability of the city and other ones with similar backgrounds. A total of 327 residents were selected for the survey, using the systematic sampling technique. The study revealed that the most predominant urban legibility elements used in navigation in the core and transition zones were the names of areas, while availability of nearby churches was the prominent urban legibility element in giving/receiving directions in the suburban.

The study revealed that a variation existed in the importance the residents attached to various urban legibility elements as well as the effectiveness of these elements across individual residential areas of the metropolis. Furthermore, the study established that locating places in Ibadan in terms of describing and taking descriptions is a challenging task. It is recommended that the government should work out modalities to locate all urban legibility elements, enlighten the public on the need to incorporate these elements in order to improve the street coordinate system in the study area and also develop and implement the existing development plan with integration of urban legibility elements.

Keywords: urban legibility, urban centres, residential areas, descriptions, metropolis, Ibadan

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1. Introduction

Human settlements grow by accretion (Ogunjumo, 2008), that is they grow by small addition here and there, now and then. The accretion mode of growth of settlements leads to formation of urban centres. They are an accumulation of activity-based areas that generate urban mobility. Such activities in urban space include living, working, worshipping, recreating, etc. The different locations of these activities could be seen as the reason for urban residents to move around the city in order to perform their regular and/or occasional tasks. Thus, places in urban centres serve as hosts or custodians of activities while the residents/visitors serve as patrons of the activities (Olaniyi, 2019). Therefore, the need to describe and identify places by residents and visitors raises the issue of urban legibility (Salawu, Angbo & Ebuga, 2014; Lynch, 1981).

According to Lynch (1997), urban legibility is the ease with which people understand the layout of a place. It is concerned with how places are located within the city and how residents find their way around the city (Olaniyi, 2019; Behnoush, 2017). In other words, urban legibility is the formation of a cognitive map of an urban environment within one's mind, which residents' use as a reference when navigating in an area (Olaniyi, 2019). This concept entails the way in which people are able to read an urban environment and hence perform way-finding tasks (Salawu, Angbo & Ebuga, 2014; Ramadier & Moser, 1998; Weisman, 1981; Lynch, 1960). The legibility of urban centres makes residents have the physical clarity of their city and guides them through their daily lives. In summary, urban legibility can therefore be referred to as an apparent clarity of the cityscape that directs people's movement, pattern of activities and forms of interaction in public spaces (Golnaz & Mostafa, 2015; Koseoglu & Onder, 2011).

Many cities, especially in developing countries, are not legible because they do not have a coherent system of addresses (World Bank, 2005). Strangers and residents in these parts of the world find it difficult to understand the environment without any previous introductions. In Nigeria, the extremely rapid growth of urban areas has created many illegible neighbourhoods. Also, organic developments in some old parts of Nigerian cities have further compounded the challenges of accessibility and location of places. Adding to this problem is the non-extension of the street identification system initially used in some old neighbourhoods into new ones (Olaniyi, 2019). This has made various functional parts of the Nigerian cities incoherent in pattern and

difficult to navigate for both residents and visitors.

A city is a thorough imagination of communities on the earth. This imagination becomes clear through massive signs which are more or less legible for residents or strangers (Ujang, 2012; Ujang & Shuhana, 2012; Ujang, 2014). Legibility in the image of a city provides a possibility that a person can easily find their location toward all points of that city (Gehl, 2010). Primarily, the concern for urban legibility is embedded in planning of urban centres. This has made elements of urban legibility prominent among the inputs of urban planning (Salawu, Angbo & Ebuga, 2014). In literature, elements that ensure visualization of a city to be legibly grasped are paths, edges, districts, nodes and landmarks (Mansouri, 2009; Golkar, 2005; Kelly & Kelly, 2003; Lynch, 1997). In furtherance of this is the street addressing system (Salawu, Angbo & Ebuga, 2014; Ghana Ministry of Local Government and Rural Development, 2010; World Bank, 2005). In this sense, streets and houses in urban centres need to be named and numbered for easy location (Salawu, Angbo & Ebuga, 2014). Combinations of these elements ensure that places in urban setting are easily describable, accessible, traceable and identifiable (Olaniyi, 2019; Mansouri, 2009; Golkar, 2005).

Urban legibility links urban users to their destinations in a complete movement system thereby making cities accessible, welcoming and easily understood (Kelly & Kelly, 2003). Legibility of cities makes it possible to locate a lot or dwellings on the ground and can be used by people, government officials, concessionaires, and other service providers (Behnoush, 2017; Farvacque-Vitkovic & Godin, 1998). Urban legibility makes it effortless to operate urban services (ambulances, fire trucks, taxis) and enhances collection for user-pay services, in particular those provided by utility concessionaires (water companies, electrical companies). Furthermore, rescue teams encounter fewer problems tracing distress calls, such as armed robbery or fire accidents during emergencies when cities are legible. In the same vein, it assists the government to maintain accurate records, such as voters' records, property records and drivers' licenses (National Geospatial Advisory Committee, 2014; Salawu, Angbo & Ebuga, 2014; Ghana Ministry of Local Government and Rural Development, 2010; World Bank, 2005).

Studies abound in the discourse of how places are located in cities. They works include works by the following authors: Olaniyi (2019), Baran, et al. (2014), Afon (2011), Abegunde (2011), Zhao (2010), Meilinger & Knauff (2008), Shokouhi (2003), O'Neil (1991), Zimring & Choi (1990), Kaplan & Kaplan (1989), Weisman (1981), Carr (1969), Cullen (1961), Lynch

(1960). Most of them state that every city's experience depends upon how it is formed, and the form defines how it is experienced. In other words, the researchers concluded that the spatial configuration of the environment closely influences residents' experience in the way-finding in an urban environment. Works that have identified the availability of urban legibility elements in cities include studies by Behnoush (2017), Long, Baran and Moore (2007), Appleyard (1976), Hart & Moore (1973); however, these studies did not examine the availability of urban legibility elements in relation to residents' experiences of locating places across different residential areas of a city. In order to bridge the identified gaps in literature from the previous studies, this study will examine residents' experience with urban legibility elements in different residential zones of Ibadan Metropolis, Nigeria, with a view to providing information that could enhance the livability of the inhabitants.

2. Materials and methods

2.1   The study area

Ibadan is located approximately between 7.37° and 7.67° North of the Equator, and between 3.88° and 4.17° East of the Greenwich Meridian. It is located in the south-western part of Nigeria. It is about 145 kilometers away from Lagos (the former Federal Capital of Nigeria) by road, and about 345 kilometers southwest of Abuja (the current Federal Capital City) as the crow flies. It is the largest indigenous city in tropical Africa comprising the municipality and the adjoining settlements thus forming a metropolitan area. Ibadan metropolitan area comprises eleven local government areas consisting of five urban local government areas in the main city Ibadan (North, Ibadan Northeast, Ibadan Northwest, Ibadan Southeast, Ibadan Southwest) and six local government areas in the adjoining settlements (Akinyele, Egbeda, Ido, Lagelu, Oluyole and Ona-ara).

According to the National Population Census (2007), the population of Ibadan metropolis was 2,550,593 in 2006. As of 2016, the CIA World Fact (2016) estimated the population of the metropolitan area to be 3.16 million (CIA World Fact, 2016). The inhabitants of Ibadan reside in the two distinct parts: the traditional and modern areas of the city. As common to most Nigerian cities, the combination of these two parts revealed three contrasting residential zones linked to three historical periods (Afon, 2011) with their nature and characteristics determined by social,

economic and physical patterns. These are: the pre-colonial residential development which is the core or traditional zones, the colonial/pre-independence residential development known as an intermediate or transition zone, and the post-independence residential development, also called the suburb (Afon, 2011).

The administrative and commercial importance of Ibadan has resulted in a rapid expansion and growth of the city, which leads to the need for urban legibility. Ibadan consists of different land uses and these activity-based areas are located in different parts of the city. So, in order to find it easy to identify different places in a city like Ibadan, there is a need for such a city to be legible. It is one of the responsibilities of the local authorities to carry out administration of street names and house numbering process to ensure that all properties in various settlements are officially addressed (Salawu, Angbo & Ebuga, 2014). However, in recent years dwellers of and visitors to Ibadan have become wary and discontented with description and identification of places of interest in the city.

2.2   Methodology

The study population comprised the residents of the eleven local government areas in Ibadan metropolis. Multistage sampling procedure was employed in this study. Simple random sampling technique was used to select one out of every three local government areas both in the municipality and adjoining settlement. Thus, two local government areas (Ibadan Northeast and Ibadan Northwest) were sampled out of the five in the main city and two local government areas (Akinyele and Egbeda) were also sampled in the adjoining settlement. Ibadan metropolis was stratified into four residential areas (Daramola, 2015). Three of the stratified residential areas (core, transition and older suburb) are in the municipality and the fourth (newer suburb) is in the adjoining settlement.

For the purpose of questionnaire administration, due to the homogenous nature of the residential zones, one ward in each residential zone of all selected local government areas was selected randomly without replacement. Through this method, residents from eight (8) wards cutting across the four different residential zones were surveyed. Presented in Table 1 are the selected wards according to their respective residential zones and local government areas.

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Table 1. Distribution of political wards into residential zones

LGA	Residential Zone and Sampled Wards								Total no of wards	Total no of sampled wards
	Core		Transition		Older Suburb		Newer Suburb			
	Total no of wards	No of sampled wards	Total no of wards	No of sampled wards	Total no of wards	No of sampled wards	Total no of wards	No of sampled wards		
Ibadan Northeast	6	1	3	1	3	1	_	_	**12**	**3**
Ibadan Northwest	6	1	3	1	2	1	_	_	**11**	**3**
Akinyele	-	-	-	-	-	-	5	1	**5**	**1**
Egbeda	-	-	-	-	-	-	5	1	**5**	**1**
Total	**12**	**2**	**6**	**2**	**5**	**2**	**10**	**2**	**33**	**8**

Source: INEC (2019) and authors' survey (2019).

Findings from the reconnaissance survey and information obtained from Oyo State Ministry of Local Government and Chieftaincy Matters revealed that there are 17,045 residential buildings in the selected wards of the selected four local government areas. These comprise 5,515 in the core, 4,437 in the transition, 4,317 in the older suburb and 2,776 in the newer suburb. One out of every 50th residential building in each ward was selected for the sample representing 2% of all the residential buildings in the eight (8) political wards chosen for the survey. Therefore, 110 buildings were sampled in the core, 89 buildings in the transition, 86 buildings in the older suburb and 55 buildings in the newer suburb. A total of 341 residential buildings will be selected from the four local governments (see Table 2). Thus, an adult resident was selected from each of the 341 selected buildings on which questionnaires were administered. This is because such a person is expected to have a good knowledge of how places within his/her environment are easy or difficult to describe and identify.

Table 2: Number of selected buildings in the residential zones

Local govt. areas	Residential Zone and Number of Selected Buildings								Total no. of bldgs	Total no. of sampled bldgs
	Core		Transition		Older Suburb		Newer Suburb			
	Total no. of bldgs	No. of sampled bldgs	Total no. of bldgs	No. of sampled bldgs	Total no. of bldgs	No. of sampled bldgs	Total no. of bldgs	No. of sampled bldgs		
Ibadan Northeast	3112	62	2580	52	2195	44	_	_	**7887**	**158**
Ibadan Northwest	2403	48	1857	37	2122	42	_	_	**6382**	**127**
Akinyele	-	-	-	-	-	-	1434	29	**1434**	**29**
Egbeda	-	-	-	-	-	-	1342	27	**1342**	**27**
TOTAL	**5515**	**110**	**4437**	**89**	**4317**	**86**	**2776**	**56**	**17045**	**341**

Source: INEC (2019) and authors' survey (2019)

Of the 341 questionnaires administered, 327 were recovered after being filled in. Analysis of the data was done using cross tabulation and Analysis of Variance (ANOVA).

3. Research Findings

This section discusses the profile of the respondents, the available urban legibility elements based on residential characteristics, and residents' experience with location/description of places in the study area.

3.1 Profile of the Respondents

The profile of the respondents comprised their age, gender, educational attainment, marital status, income status and household size, all these in relation to their residential zones (places of residence). Contained in Table 3 is the representation of the socioeconomic characteristics of the residents across the residential zones. In all, 59.0% of the respondents were male, while 41.0% were female. The availability of more male than female respondents for the study can be attributed to the trend in typical African societies, where household headship is usually ascribed to the male. Age is expected to play a significant role as maturity could affect level of environmental awareness (Mayer & Frantz, 2004; Schultz et al, 2005; Olowoporoku, 2018). This

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implies that older residents are expected to be more environmentally conscious and make more

Attributes	Core	Transition	Old Suburb	New Suburb	Total

trips within the metropolis than the younger counterparts (Ogunleye, 2017). For easy presentation, the quantitative data collected on age were transformed into categorical data of three categories to reflect the following age groupings: 18-30 years (youth), 31-60 years (young adults/active population), and over 60 years (retired/old adults). The grouping was based on dependency and active population in Nigeria (National Population Commission, 2006; Daramola, Olowoporoku & Aribisala, 2018). Across the study area, findings revealed that 30.9% of the respondents were youths, 64.2% were adults, while 4.9% were retired/old adults. The mean ages of the respondents in the core, transition, old suburban and new suburban residential zones were 40 years, 39 years, 37 years and 34 years, respectively. This implied that respondents in Ibadan metropolis were largely made up of young adults and members of the active population.

Also contained in Table 3 are the findings on the average income of residents in the study area. The findings were made on the income of residents across the identified residential areas within the metropolis. The initial quantitative data on residents' average monthly income were grouped into three for an easy analysis: low, medium and high. Incomes below ₦20,000 were categorized as low income. This is based on the prevailing Civil Service Salary Scale in the country. The minimum wage at the federal level in Nigeria is ₦18,000 while it ranges from ₦15,000 to ₦20,000 in the states of the federation. The medium monthly incomes were categorized as from ₦20,000 to ₦70,000 while residents earning above ₦70,000 were categorized as high income earners. Based on this categorization, variation in income classes existed across the four residential areas of the city. The findings revealed further that the average monthly incomes computed for the core, transition and older sub-urban and new suburbs were ₦28, 527, ₦42, 070, ₦35, 051 and ₦54 768, respectively, whereas the overall mean monthly income was ₦40,103. The ANOVA result (F= 12.817; p < 0.05) indicates that incomes varied significantly across the residential zones. The results are similar to those of some earlier studies carried out in Ibadan (Daramola, 2015; Afron & Faniran, 2013) where conclusions were made that residents' incomes vary across the residential areas of the city.

Table 3. Socio-economic attributes of the respondents

	Count (%)	Count (%)	Count (%)	Count (%)	Count (%)
Gender					
Male	65 (61.9)	49 (53.8)	49 (57.6)	30 (56.5)	193 (59.0)
Female	40 (38.1)	35 (41.7)	36 (42.4)	23 (43.4)	134 (41.0)
Total	**105 (100)**	**84 (100)**	**85 (100)**	**53 (100)**	**327 (100)**
Age (years)					
18-30	33 (31.4)	21 (25.0)	36 (42.4)	11 (20.8)	101 (30.9)
31-60	66 (62.9)	59 (70.2)	44 (51.8)	41 (77.4)	210 (64.2)
> 60	6 (5.7)	4 (4.8)	5 (5.9)	1 (1.8)	16 (4.9)
Total	**105 (100)**	**84 (100)**	**85 (100)**	**53 (100)**	**327 (100)**
Income					
<₦20000	28 (26.7)	13 (15.5)	12 (14.1)	8 (15.1)	61 (18.7)
₦20000-₦70000	59 (56.2)	50 (59.5)	37 (43.5)	17 (32.1)	163 (49.8)
>₦70000	18 (17.1)	21 (25.0)	36 (42.4)	28 (52.8)	103 (31.5)
Total	**105 (100)**	**84 (100)**	**85 (100)**	**53 (100)**	**327 (100)**
Household size					
≤5	42 (40.0)	31 (36.9)	30 (35.3)	34 (64.2)	137 (41.8)
6-10	59 (56.2)	50 (59.5)	53 (62.4)	19 (35.8)	181 (55.4)
>10	4 (3.8)	3 (3.6)	2 (2.4)	0 (0.0)	9 (2.8)
Total	**105 (100)**	**84 (100)**	**85 (100)**	**53 (100)**	**327 (100)**
Length of stay					
≤5	8 (7.6)	6 (7.1)	11(12.9)	26 (49.1)	51 (15.6)
6-10	50 (47.6)	24 (28.6)	31 (36.5)	15 (28.3)	120 (36.7)
>10	47 (44.8)	54 (64.3)	43 (50.6)	12 (22.6)	156 (47.7)
Total	**105 (100)**	**84 (100)**	**85 (100)**	**53 (100)**	**327 (100)**
Educational status					
No formal education	12 (11.4)	6 (7.1)	2 (2.3)	0 (0.0)	20 (6.1)
Primary	27 (25.7)	8 (9.5)	9 (10.6)	7 (13.2)	51 (15.6)
Senior secondary	36 (34.3)	29 (34.5)	27 (31.8)	5 (9.5)	97 (29.7)
Tertiary	30 (28.6)	41 (48.9)	47 (55.3)	41 (77.3)	159 (48.6)
Total	**105 (100)**	**84 (100)**	**85 (100)**	**53 (100)**	**327 (100)**

Closely related to residents' income status is their household size. As expressed by Bongaarts (2001) and Olowoporoku (2018a) household size has been positively correlated with environmental consciousness. A household was defined as a person or group of people with shared cooking and living arrangements Olowoporoku, Salami & Akintifonbo (2017). Thus, household size was measured by the number of people living together with common eating arrangement. Based on this, the household size of the residents was categorized into three. The

household sizes of one to five members were categorized as small, those with six to ten members as medium, while those with more than ten members was categorized as large. The findings revealed that the majority (55.4%) of families in Ibadan metropolis had between six and ten household members. However, the average household size computed for the core, transitional, older suburb and newer suburb was seven persons, six persons five persons and four persons, respectively.

Length of residence refers to the number of year(s) a household has been in the study area and it is considered relevant to this study. Lindell and Perry (2000), Daramola, Olowoporoku and Aribisala (2018) postulated that familiarity with environmental condition of a place is a function of length of residence. This is because the longer the period people live in an area, the more they are likely to understand various urban legibility landmarks there. For this study, the length of residence is divided into three categories of 1 to 5 years, 6 to 10 years and above 10 years. The findings revealed that 41.8% of the respondents had spent less than 5 years in their residential areas, 55.4% had spent 5 to 10 years. while 2.8% of the residents had lived for more than 10 years in their residential areas. Further findings revealed the mean length of residence in the core was that of 9 years, in the transition – 6 years, in the older suburb – 6 years and 4 years in the newer suburb. From this analysis, it could be deduced that the residents would be familiar with the various urban legibility elements in their areas.

Educational level plays a significant role in environmental awareness. Studies conducted by such researchers as Afolayan (1994), Kim, Pagliara and Preston (2003), Ajala and Olayiwola (2011) and Olowoporoku, Daramola and Buoro (2019) have all highlighted the importance of the educational level when assessing people's opinions about the subject-matter relating to the environment. Findings on residents' educational qualifications across the residential areas of Ibadan revealed that 11.4%, 25.7%, 34.3 and 28.6% of the residents in the core had no formal education, primary, secondary and tertiary education, respectively. In the transition zone, it changed to 7.1% for no formal education, 9.5% for primary education holders, 34.5% for secondary school education and 48.9% for tertiary education. There was an improved level of education in the older suburb as 2.3% of the residents had no formal education, 10.6% had primary education, 31.8% had secondary education, while 62.9% had tertiary education. In the newer suburb, 13.2% of the respondents had primary education, 9.5% had secondary education, whereas 77.3% of the respondents had tertiary education. The data collected on educational

attainment was transformed to determine the number of years respondents had spent at school. This was achieved using the 6-3-3-4 (primary-junior secondary-senior secondary-tertiary) educational system arrangement in the country. The findings revealed further that the average number of years spent in school computed for the core, transition, the older suburb and the newer suburb was 8 years, 12 years, 15 years and 16 years, respectively. This indicates that the number of years spent at school increases as distance increases from the core to the suburb of the city. This is further established by ANOVA results (F=14.99; p < 0.00) which indicated that educational attainment varied significantly with residential areas.

4.2 Availability of elements of urban legibility

Sequel to the examination of the socioeconomic characteristics of residents in Ibadan metropolis, findings were made on the availability of elements of urban legibility and the importance the residents attached to urban legibility elements in the study area. Impliedly, it assessed the importance attached to these elements by the residents in describing places to others or taking descriptions from others. In order to determine this, the respondents were provided with a list of legibility elements. Presented in Table 4 are the available urban legibility elements across the identified residential areas of the metropolis. The rating of the available urban legibility elements was premised on the assumption that the highest rated element in terms of availability will likely be the most noticeable element in describing places to others or taking descriptions in the study area.

In the core, the most predominant urban legibility element in the zone were area names, motor parks, mosques and churches as 85.7%, 82.9%, 81.0% and 78.1% of the respondents respectively identified them. Other predominant urban legibility elements in the area were bus-stops, street names and house numbers which were identified by 74.3%, 63.8% and 60.0% of the respondents, respectively The least identified urban legibility elements by residents in the core area were a palace (5.7%), the river (5.7%), a big tree (8.6%), a telecom mast (8.6%), an industrial plant (11.4%) and a complex (14.3%). A few respondents also indicated the presence of a bank (19.0%), the police station (19.0%), the quarter's name (22.9%) and a hospital (29.9%). In the transition zone, urban legibility elements with high occurrence were in contrast with those in the core area. In this zone, elements with high presence as indicated by the respondents were the area name (92.9%), churches (92.9%), house numbers (89.3%), schools (85.7%), banks (82.1%)

and names of streets (82.1%). Others included filling stations (78.6%), storey buildings (77.4%), shopping complexes (75.0%), tarred roads (73.8%) and markets (71.4%). Urban eligibility elements with the least presence as indicated by the respondents were mosques (13.0%), gates (14.2%), quarters names (14.3%), shrines (26.2%), a palace (29.8%%), the river (35.7%) and big trees (38.1%).

From the older suburb, the findings revealed that urban legibility elements with high presence in this residential zone as indicated by the respondents were churches (90.6%), schools (77.6%), tarred roads (75.3%), shopping complexes (74.1%), house numbers (71.8%), transformers (71.8%) and mosques (69.4%), while those with the least presence in the residential area were urban eligibility elements such as the quarter's name (22.4%), shrines (23.5%), a palace (27.1%), big trees (31.8%), compound names (35.3%), the house of a popular person (38.8%) and an industrial plant (38.8%). In the newer suburb of the city, the predominant urban legibility element as indicated by the respondents in this residential zone were churches (88.7%), house numbers only (77.5%), governmental buildings (75.5%), tarred roads (64.2%), transformers (64.2%), schools (62.3%) and mosques (60.4%), whereas the less predominant urban legibility elements were shrines (22.6%), a palace (30.2%), a big tree (35.8%), an industrial plant (35.8%), the house of a popular person (39.6%), a junction (39.6%) and a telecom mast (41.5%).

Table 4. Availability of urban legibility elements across the residential areas in Ibadan Metropolis

E*	Core	Transition	Old suburb	New suburb
	Available	Available	Available	Available
	Count (%)	Count (%)	Count (%)	Count (%)
1*	63 (60.0)	75 (89.3)	61 (71.8)	41 (77.4)
2*	67 (63.8)	68 (81.0)	53 (62.4)	29 (54.7)
3*	60 (57.1)	65 (77.4)	56 (65.9)	32 (60.4)
4*	43 (41.0)	37 (44.0)	30 (35.3)	18 (34.0)
5*	24 (22.9)	12 (14.3)	19 (22.4)	20 (37.7)
6*	46 (43.8)	35 (41.7)	53 (62.4)	32 (60.4)
7*	90 (85.7)	78 (92.9)	53 (62.4)	33 (62.3)

8*	47 (44.8)	46 (54.8)	56 (65.9)	40 (75.5)
9*	59 (56.2)	55 (65.5)	33 (38.8)	21 (39.6)
10*	78 (74.3)	78 (92.9)	52 (61.2)	24 (45.3)
11*	87 (82.9)	65 (77.4)	49 (57.6)	24 (45.3)
12*	61 (58.1)	72 (85.7)	66 (77.6)	33 (62.3)
13*	31 (29.5)	63 (75.0)	55 (64.7)	26 (49.1)
14*	82 (78.1)	78 (92.9)	77 (90.6)	47(88.7)
15*	85 (81.0)	71 (13.0)	59 (69.4)	32 (60.4)
16*	12 (11.4)	12 (14.2)	35 (41.2)	24 (45.3)
17*	15 (14.3)	22 (26.2)	20 (23.5)	12 (22.6)
18*	61 (58.1)	66 (78.6)	47 (55.3)	23 (43.4)
19*	20 (19.0)	69 (82.1)	54 (63.5)	24 (45.3)
20*	43 (41.0)	60 (71.4)	53 (62.4)	27 (50.9)
21*	20 (19.0)	58 (69.0)	54 (63.5)	30 (56.6)
22*	6 (5.7)	25 (29.8)	23 (27.1)	16 (30.2)
23*	6 (5.7)	30 (35.7)	32 (37.6)	25 (47.2)
24*	61 (58.1)	65 (77.4)	46 (54.1)	25 (47.2)
25*	48 (45.7)	62 (73.8)	64 (75.3)	34 (64.2)
26*	9 (8.6)	32 (38.1)	27 (31.8)	19 (35.8)
27*	12 (11.4)	43 (51.2)	33 (38.8)	19 (35.8)
28*	59 (56.2)	78 (92.9)	48 (56.5)	21 (39.6)
29*	15 (14.3)	63 (75.0)	63 (74.1)	31 (58.5)
30*	9 (8.6)	40 (47.6)	42 (49.4)	22 (41.5)
31*	59 (56.2)	72 (85.7)	61 (71.8)	34 (64.2)

*Note: E. Elements of urban legibility

1. House number only; 2. Street name only; 3. House number and street name; 4. Compound name; 5. Quarters names; 6. Family name; 7. Area name; 8. Governmental building; 9. House of a popular person; 10. A bus stop; 11. Motor park; 12. A school; 13. A hospital; 14. A church; 15. A mosque; 16. A gate; 17. A shrine; 18. A filling station; 19. A bank; 20. A market place; 21. The police station; 22. A palace; 23. River; 24. A storey building; 25. Tarred road; 26. A big tree; 27. An industrial plant; 28. A junction; 29. A complex; 30. A telecom mast; 31. A transformer

4.3 Importance attached to urban legibility elements

In continuation of the research on the availability of urban legibility elements, findings were made on the importance the residents attach to the urban legibility elements in giving and receiving description from people in the study area (see Table 5). The mean Importance Attached Indexes ($\overline{\text{IAI}}$) and the standard deviations about the ($\overline{\text{IAI}}s$) for the four identified residential areas in the metropolis were computed. The computed ($\overline{\text{IAI}}s$) for the core, transition, the older suburban and the newer suburban residential areas, respectively, were 3.10, 3.69, 3.54 and 3.44. That indicated the importance the residents attached to urban legibility elements in giving and receiving descriptions from people in the study area was more in the transition zone compared to the older suburban compared to the newer suburban compared with the core. The seven highest rated urban legibility elements in terms of importance were reported in the study.

From the $\overline{\text{IAI}}$ computed in the core residential area, the seven highest rated items of importance that the residents attach to urban legibility elements in describing their homes to people in this area are the house number only (3.92), street name only (3.68), a tarred road (3.59), the area name (3.53), a church (3.49), a motor park (3.47) and a junction (3.32). In the transition zone, there was a contrast as the seven highest rated urban legibility elements were a junction (4.86), a church (4.75), a school (4.75), a mosque (4.61), a hospital (4.57), the area name (4.54) and a transformer (4.43). Information obtained from the respondents living in the older suburban area revealed that urban legibility elements that the respondents attached high importance to in describing their buildings to people were the following: a hospital (4.41), a school (4.29), the house number and street name (4.21), the street name only (4.13), a transformer (4.11), a market (3.96) and a tarred road (3.95). The findings from the newer suburban area revealed that the street name only (4.26), the house number and street name (4.21), a school (4.15), a hospital (4.15), the house of a popular person (4.04), a market place (3.98) and a tarred road (3.87) were the seven urban legibility elements that the residents in the study area attached high importance to.

Table 5. Importance attached to urban legibility elements in giving/receiving descriptions from people in the study area

E*	Residential zone

	Core			Transition			Old suburb			New suburb		
	IAI	IAI - $\overline{IAI}$	Rank	IAI	IAI - $\overline{IAI}$	Rank	IAI	IAI - $\overline{IAI}$	Rank	IAI	IAI - $\overline{IAI}$	Rank
1*	3.92	0.82	1	4.17	0.48	9	3.82	0.28	10	3.81	0.37	7
2*	3.68	0.58	2	4.25	0.56	7	4.13	0.59	4	4.26	0.82	1
3*	3.21	0.11	10	4.25	0.56	7	4.21	0.67	3	4.21	0.77	2
4*	2.87	-0.23	18	2.68	-1.01	24	2.79	-0.75	25	2.68	-0.76	21
5*	2.44	-0.66	27	1.81	-1.88	28	3.05	-0.49	22	3.38	-0.06	13
6*	3.02	-0.08	17	2.96	-0.73	23	2.36	-1.18	26	2.19	-1.25	23
7*	3.53	0.43	4	4.54	0.85	5	3.20	-0.34	19	2.74	-0.70	20
8*	3.30	0.20	8	3.13	-0.56	19	3.48	-0.06	14	3.70	0.26	9
9*	2.66	-0.44	23	3.70	0.01	17	3.93	0.39	8	4.04	0.60	4
10*	3.30	0.20	8	4.19	0.50	8	3.29	-0.25	18	3.19	-0.25	17
11*	3.47	0.37	6	3.95	0.26	11	2.99	-0.55	23	2.74	-0.70	20
12*	3.13	0.03	13	4.75	1.06	2	4.29	0.75	2	4.15	0.71	3
13*	2.86	-0.24	19	4.57	0.88	4	4.41	0.87	1	4.15	0.71	3
14*	3.49	0.39	5	4.75	1.06	2	3.11	-0.43	21	2.42	-1.02	22
15*	3.23	0.13	9	4.61	0.92	3	3.78	0.24	12	3.36	-0.08	14
16*	2.65	-0.45	24	2.99	-0.70	22	3.19	-0.35	20	3.08	-0.36	18
17*	2.55	-0.55	26	2.46	-1.23	26	3.35	-0.19	16	3.47	0.03	12
18*	3.10	0.00	16	3.52	-0.17	18	2.99	-0.55	23	2.79	-0.65	19
19*	3.11	0.01	15	3.88	0.19	12	3.80	0.26	11	3.75	0.31	8
20*	3.23	0.13	9	3.85	0.16	14	3.96	0.42	6	3.98	0.54	5
21*	3.17	0.07	12	3.87	0.18	13	3.44	-0.10	15	3.25	-0.19	16
22*	2.70	-0.40	22	2.11	-1.58	27	2.86	-0.68	24	3.25	-0.19	16
23*	2.64	-0.46	25	2.57	-1.12	25	3.19	-0.35	20	3.30	-0.14	15
24*	3.19	0.09	11	4.02	0.33	10	3.84	0.30	9	3.53	0.09	11
25*	3.59	0.49	3	3.81	0.12	15	3.95	0.41	7	3.87	0.43	6
26*	2.76	-0.34	20	3.01	-0.68	21	3.32	-0.22	17	3.30	-0.14	15
27*	2.93	-0.17	17	3.76	0.07	16	3.82	0.28	10	3.64	0.20	10
28*	3.32	0.22	7	4.86	1.17	1	3.29	-0.25	18	3.25	-0.19	16
29*	3.12	0.02	14	3.95	0.26	11	3.93	0.39	8	3.70	0.26	9
30*	2.72	-0.38	21	3.05	-0.64	20	3.74	0.20	13	3.70	0.26	9

31*	3.09	-0.01	16	4.43	0.74	6	4.11	0.57	5	3.75	0.31	8
$\overline{IAI}$	3.10			3.69			3.54			3.44		
SD	0.36			0.82			0.50			0.54		

*Note: E. Elements of urban legibility

1. House number only; 2. Street name only; 3. House number and street name; 4. Compound name; 5. Quarters names; 6. Family name; 7. Area name; 8. Governmental building; 9. House of a popular person; 10. A bus stop; 11. Motor park; 12. A school; 13. A hospital; 14. A church; 15. A mosque; 16. A gate; 17. A shrine; 18. A filling station; 19. A bank; 20. A market place; 21. The police station; 22. A palace; 23. River; 24. A storey building; 25. Tarred road; 26. A big tree; 27. An industrial plant; 28. A junction; 29. A complex; 30. A telecom mast; 31. A transformer

From the computed $\overline{IAI}$, urban legibility elements which the respondents attached the least importance to while giving and receiving descriptions across the identified residential zones were identified. In the core, the five elements that respondents attached the least importance to in giving and receiving descriptions were the quarters name, the nearby shrine, the nearby river, the nearby house of a popular person as they weighted 2.44, 2.55, 2.64, 2.65 and 2.66, respectively. In the transition zone, urban legibility elements with the least importance attached to were the quarters name (1.81), the nearby palace (2.11), the nearby shrine (2.46), the nearby river (2.57), and the compound name (2.68). The information obtained from the older suburban residential area revealed that urban legibility elements that the respondents attached the least importance to were the family name (2.36), the compound name (2.79), the nearby palace (2.86), the nearby motor park (2.99) and the nearby filling station which also weighed (2.99), while in the newer suburban residential area findings revealed that the family name, the nearby church, the compound name, a motor park and the name of the area were the urban legibility elements that respondents attached the least importance to as they weighted 2.19, 2.42, 2.68, 2.74 and 2.74, respectively.

4.4 Effectiveness of urban legibility elements

This section focuses on the effectiveness of urban legibility elements in receiving description from people in different residential zones of Ibadan Metropolis. Presented in Table 6 are the

findings on the effectiveness of urban legibility elements in receiving and giving descriptions across the identified residential areas of Ibadan.

The findings revealed that the computed mean Effective Legibility Indexes ($\overline{EFLI}$) and standard deviation about the mean for the identified residential zones (core, transition, older suburban and newer suburban residential areas) was 2.44, 2.58, 3.10 and 3.20, respectively. This implied that urban legibility elements were more effective in giving/receiving descriptions in the older residential area compared with the newer residential one, compared with the transition and compared with the core residential area. From the computed $\overline{EFLI}$, the five most effective urban legibility elements in the core were the quarters name (2.83), the nearby police station (2.81), the nearby palace (2.80), the nearby telecommunication mast (2.78) and a nearby tree (2.70). In the transition zone, the compound name (3.92), the nearby palace (3.89), the nearby river (3.89), the family name (3.82) and a nearby big tree (3.82) were the five most effective urban legibility elements in the zone. Regarding the most effective urban legibility elements in the older suburban residential areas, the residents indicated that a nearby gate (4.03), the nearby tarred roads (3.96), the family name (3.51), a telecommunication mast (3.51) and a filling station (3.49). The information from the newer suburban area revealed that the five most effective urban legibility elements were the nearby shrine (4.03), the nearby filling station (4.03), a nearby big tree (3.92), the nearby motor park (3.81) and the nearby police station (3.81).

The information on the least effective urban legibility elements as rated by the residents revealed that in the core, the house number only (1.76), the street name only (1.86), the house number and street name only (1.95), the nearby motor park (2.10) and the nearby bus stop (2.19) were the least effective in giving/receiving description in the study area. In the transition zone, the house number only (1.50), the street name only (1.50), the house number and street name (1.82), the nearby school (1.85) and the nearby church (1.92) were the least effective urban legibility elements as rated by the residents. From the older suburban area, the house number only, the nearby junction, the nearby shopping complex, the nearby mosque, the nearby shopping complex, the nearby hospital/health centre and a nearby bus-stop were the least rated effective urban legibility elements as they weighted 1.85, 2.34, 2.43, 2.45, 2.82 and 2.82, respectively. Also from the newer suburban residential area, the house number only, the nearby unction, the nearby storey building, the nearby shopping complex, the nearby mosque and the nearby palace

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were the least rated urban legibility elements in receiving/giving descriptions and they rated 1.84, 2.22, 2.30, 2.33, 2.50 and 2.79, respectively.

Table 6. Effectiveness of urban legibility elements in giving/receiving descriptions by people in the study area

E*	Residential zone											
	Core			Transition			Old suburb			New suburb		
	EFLI	EFLI-$\overline{EFLI}$	Rank	EFLI	EFLI-$\overline{EFLI}$	Rank	EFLI	EFLI-$\overline{EFLI}$	Rank	EFLI	EFLI-$\overline{EFLI}$	Rank
1*	1.76	-0.68	27	1.50	-1.08	24	1.85	-1.25	28	1.84	-1.23	20
2*	1.86	-0.58	26	1.50	-1.08	24	2.89	-0.21	20	3.24	0.17	9
3*	1.95	-0.49	25	1.64	-0.94	23	2.88	-0.22	21	3.13	-0.07	12
4*	2.52	0.08	12	3.50	0.92	5	3.52	0.42	3	3.18	-0.02	10
5*	2.83	0.39	1	3.92	1.34	1	3.28	0.18	12	2.73	-0.47	14
6*	2.40	-0.04	15	3.82	1.24	3	3.51	0.41	4	3.24	0.04	9
7*	2.06	-0.38	24	2.30	-0.28	13	3.07	-0.03	17	3.30	0.10	8
8*	2.36	-0.08	17	2.23	-0.35	15	3.08	-0.02	16	3.41	0.21	7
9*	2.30	-0.14	20	2.98	0.40	6	3.44	0.34	7	3.30	0.10	8
10*	2.19	-0.25	22	1.82	-0.76	22	2.82	-0.28	22	3.13	-0.07	12
11*	2.10	-0.34	23	2.05	-0.53	18	3.30	0.20	11	3.81	0.61	3
12*	2.33	-0.11	18	1.85	-0.73	21	2.92	-0.18	19	3.30	0.10	8
13*	2.41	-0.03	14	2.00	-0.58	19	2.82	-0.28	22	3.13	-0.07	12
14*	2.32	-0.12	19	1.92	-0.66	20	3.00	-0.10	18	3.41	0.21	7
15*	2.23	-0.21	21	2.21	-0.37	16	2.43	-0.67	26	2.50	-0.70	16
16*	2.74	0.30	5	2.61	0.03	9	3.34	0.24	10	3.58	0.38	5
17*	2.68	0.24	8	3.60	1.02	4	4.03	0.93	1	4.03	0.83	1
18*	2.56	0.12	11	2.25	-0.33	14	3.49	0.39	5	4.03	0.83	1
19*	2.56	0.12	11	2.25	-0.33	14	3.25	0.15	14	3.64	0.44	4
20*	2.67	0.23	9	2.32	-0.26	12	3.25	0.15	14	3.52	0.32	6
21*	2.81	0.37	2	2.53	-0.05	10	3.48	0.38	6	3.81	0.61	3
22*	2.80	0.36	3	3.89	1.31	2	3.18	0.08	15	2.79	-0.41	13

E											
23*	2.67	0.23	9	3.89	1.31	2	3.40	0.30	9	3.15	-0.05	11
24*	2.32	-0.12	19	2.48	-0.10	11	2.51	-0.59	23	2.30	-0.90	18
25*	2.38	-0.06	16	2.05	-0.53	18	2.49	-0.61	24	2.56	-0.64	15
26*	2.70	0.26	7	3.82	1.24	3	3.96	0.86	2	3.92	0.72	2
27*	2.67	0.23	9	2.94	0.36	7	3.41	0.31	8	3.64	0.44	4
28*	2.44	0.00	13	2.07	-0.51	17	2.34	-0.76	27	2.22	-0.98	19
29*	2.61	0.17	10	2.90	0.32	8	2.45	-0.65	25	2.33	-0.87	17
30*	2.78	0.34	4	2.94	0.36	7	3.51	0.41	4	3.64	0.44	4
31*	2.72	0.28	6	2.25	-0.33	14	3.27	0.17	13	3.52	0.32	6
EFLI	2.44			2.58			3.10			3.20		
SD	0.29			0.76			0.48			0.56		

*Note: E. Elements of urban legibility

1. House number only; 2. Street name only; 3. House number and street name; 4. Compound name; 5. Quarters names; 6. Family name; 7. Area name; 8. Governmental building; 9. House of a popular person; 10. A bus stop; 11. Motor park; 12. A school; 13. A hospital; 14. A church; 15. A mosque; 16. A gate; 17. A shrine; 18. A filling station; 19. A bank; 20. A market place; 21. The police station; 22. A palace; 23. River; 24. A storey building; 25. Tarred road; 26. A big tree; 27. An industrial plant; 28. A junction; 29. A complex; 30. A telecom mast; 31. A transformer

Ease of locating places in Ibadan Metropolis

Sequel to the findings on availability and effectiveness of urban legibility elements in the metropolis, findings were made into the ease of locating places in the metropolis. As presented in Table 7, the highest proportions (28.6%, 45.2%, 41.2%, and 35.8%) of the respondents in the core, transition, the old suburb and the new suburb, respectively, stated that locating places in Ibadan metropolis was not at all easy. On the aggregate 37.3% of the respondents in the metropolis indicated that locating places in Ibadan was far from easy, 24.8% opined that locating places was just easy, while 21.7% and 10.7% reported that locating places was not easy and easy, respectively. Of all the sampled respondents only 5.5% indicated that locating places in Ibadan Metropolis was very easy. Based on the finding, it can be inferred that locating places in Ibadan in terms of describing and taking description could be a challenging task.

Table 7. Ease of locating places in Ibadan

Ease of locating places	Core (%)	Transition (%)	Old Suburb (%)	New Suburb (%)	Ibadan Metropolis (%)
Very easy	9 (8.5)	0 (0)	6 (7.1)	3 (5.7)	18 (5.5)
Easy	26 (24.8)	0 (0)	3 (3.5)	6 (11.3)	35 (10.7)
Just easy	27 (25.7)	24 (28.6)	22 (25.9)	8(15.1)	81 (24.8)
Not easy	13(12.4)	22 (26.2)	19 (22.4)	17(32.1)	71 (21.7)
Not at all easy	30(28.6)	38 (45.2)	35 (41.2)	19(35.8)	122 (37.3)
Total	**105 (100)**	**84 (100)**	**85 (100)**	**53 (100)**	**327 (100)**

5. Conclusions and recommendations

The study examined residents' experience with urban legibility elements in different residential zones of Ibadan metropolis, Nigeria. It found out that the urban legibility elements that were mostly available and mostly used by the respondents were churches, area names, mosques, house numbers, bus stops and schools. It also found out that people face a daunting task in locating places within the metropolis. Furthermore, the findings revealed that the level of importance which the residents attached to urban legibility elements varied across the identified residential areas in the metropolis. Impliedly, the residents attach more importance to different urban legibility elements in giving and receiving descriptions of places by people across the metropolis. These variations can be attributed to a disparity in socioeconomic attributes of residents occupying the different zones within an urban centre The study also found out that urban legibility elements were more effective in giving and receiving descriptions in the newer residential area compared with the older residential one, compared with the core and compared with the transition residential area.

Based on these, the following are recommended to enhance the legibility of Ibadan Metropolis:

- The government should work out the modalities to locate every single legibility element of the metropolis in a particular area. This will assist the government to increase municipal revenues, improve urban management tools and enhance local tax collection.

- The government and all concerned agencies should embark on enlightenment programmes for urban legibility elements in the metropolis in order to improve the system of street coordinates. This will enable people to get around the city more easily and also improve the delivery and location of urban facilities and services.

- The government should ensure the implementation of existing development plans as well as preparation of a new development plan for the metropolis with the goal of integrating the urban legibility elements in order to link urban users to their destinations in a complete movement and information system.

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Oluwaseun OLOWOPOROKU, Oluwole DARAMOLA, Kamilu OLANIYI, Gbenga ODEYEMI and David MOBOLAJI

Warunki miejskiej czytelności w Nigerii: narracja doświadczeń mieszkańców w obszarze metropolitalnym Ibadan

Streszczenie

Opinie ludzi są akceptowanym narzędziem oferowania rozwiązań różnych problemów miejskich. Dzięki nim pozyskiwane są informacje, które mają pomóc decydentom i innym zainteresowanym stronom w zakresie ochrony środowiska w podejmowaniu świadomych decyzji dotyczących przyszłego rozwoju miast. Biorąc to pod uwagę, w badaniu podjęto próbę zbadania czytelności miasta w różnych strefach mieszkalnych metropolii Ibadan w celu dostarczenia informacji, które mogłyby poprawić warunki życia miasta i innych o podobnym pochodzeniu. Do badania wybrano w sumie 327 mieszkańców, stosując systematyczną technikę próbkowania. Badanie ujawniło, że najbardziej dominującymi elementami czytelności miejskiej stosowanymi w nawigacji w strefach podstawowych i przejściowych były nazwy obszarów, podczas gdy dostępność pobliskich kościołów była widocznym elementem czytelności miejskiej w udzielaniu / przyjmowaniu wskazówek na przedmieściach.

Badanie ujawniło, że istnieje różnica w znaczeniu różnych elementów dla mieszkańców względem czytelności miejskiej, a także skuteczności tych elementów w poszczególnych obszarach mieszkalnych metropolii. Ponadto badanie wykazało, że lokalizowanie miejsc na Ibadanie pod względem opisywania i robienia opisów jest trudnym zadaniem. Zaleca się, aby rząd opracował sposoby zlokalizowania wszystkich elementów czytelności miejskiej, uświadomił społeczeństwu potrzebę włączenia tych elementów w celu ulepszenia układu współrzędnych ulic na badanym obszarze, a także opracował i wdrożył istniejący plan rozwoju z uwzględnieniem elementów czytelności w mieście.

Słowa kluczowe: czytelność miast, ośrodki miejskie, obszary mieszkalne, opisy, metropolia, Ibadan.