Content list available at BioEnv

Bioresources and Environment

Journal homepage: www.bioenvuitm.com

Assessing The Impacts of Urban Planning on Livability in Ilorin, Nigeria

Adewale Yemi Yekeen[1,2*], Siti Hajar Misnan[1]

[1]*Department of Urban and Regional Planning, Faculty of Built Environment and Surveying, 81310 Universiti Teknologi Malaysia, Johor, Malaysia.*
[2]*Department of Urban and Regional Planning, School of Environmental Technology, Federal Polytechnic Offa, 240001, Kwara State, Nigeria.*

Received: September 11, 2024, Accepted in revised form: October 15, 2024
Available online: October 21, 2024

ABSTRACT. Urban planning is crucial in enhancing liveable environment for the well-being of humans. This article examines the effects of urban planning on liveability of the traditional Nigerian city of Ilorin. Adopting a cross-sectional survey design, the research relied essentially on primary data. A structured questionnaire was used to obtain data from 158 randomly selected urban residents. Data collected were analysed using descriptive (frequency and percentages) and inferential statistical techniques (relative importance index). The Relative Importance Index was used to analyse the residents' awareness of the activities of urban planners. The Respondents' Agreement Index (RAI) was used to measure the effects of urban planning on liveability. Findings revealed a high level of awareness of urban planning activities by the city's residents. Also, effective transportation networks, access to green spaces, waste management, street cleaning, affordable housing, quality healthcare and educational opportunities were identified as the major effects of urban planning activities. This study will aid policy makers in strengthening the physical planning system to build the city's liveability.

Key words: Urban planning, infrastructure, liveability, awareness.

INTRODUCTION

Urbanization rapidly transforms cities worldwide, creating complex interactions between human activities, the built environment, and urban services. These dynamic underscores the critical role of urban planning in shaping cities' spatial configurations and operational effectiveness. The United Nations highlighted the increasing importance of smart urban planning in 2018, emphasizing its potential to create livable areas that meet diverse residents' needs while fostering social cohesion and inclusivity (Smith et al., 2021; Jackson, 2022).

Urban planning significantly influences the quality of life within cities, affecting social exclusion and livability. Ricotta (2023) stressed the need to incorporate specific urban planning elements to address social isolation and spatial equity, thereby improving urban living standards. This approach aims to cultivate communities that promote well-being, equitable outcomes, and enhanced living conditions.

For years, there has been a growing focus on evaluating urban environments concerning their livability. Livability encompasses green spaces, efficient transportation systems, affordable housing, healthcare facilities, and educational

*Corresponding author: Tel.: +60 355444619; fax: +60 355444562.
E-mail address: *yekeen@graduate.utm.my* (Adewale Yemi Yekeen)

opportunities (Gehl, 2013). Urban planning decisions, including zoning regulations and public space design, directly and indirectly impact these factors, enhancing residents' overall quality of life through well-considered strategies.

Conversely, studies reveal a strong link between inadequate urban planning and social exclusion. Marcuse (1997) identified how poorly designed urban layouts contribute to spatial disparities, restricting vulnerable communities' access to essential resources and economic opportunities. This exclusion perpetuates poverty cycles, erodes social cohesion, and exacerbates economic hardships. Understanding the interplay between urban planning, quality of life, and social exclusion is crucial in the context of increasing urbanization and the need for social inclusion.

This study aims to assess the impacts of urban planning on livability in Ilorin, Nigeria. By examining the achievements, shortcomings, and ongoing discussions within urban planning, the research provides valuable insights for future policy decisions, fostering equitable and livable urban environments. The primary focus is to address current challenges while considering future outcomes and objectives, aiming to improve livability and reduce social exclusion in urban settings.

METHODOLOGY

Description of the Study Area

The study was conducted in Ilorin, the capital city of Kwara State, Nigeria. Located at 8°30'N, 4°35'E, Ilorin is the seventh-largest city in Nigeria, with a population of 904,763 in 2024 (National Bureau of Statistics, 2024). Ilorin experiences a rainy season from March to November, with annual precipitation ranging from 1000 mm to 1500 mm (Ifabiyi & Ashaolu, 2015). The average daily temperature varies from 25°C in January to 27.5°C in May. The city features riparian woodland and Guinea savannah flora along the Asa River, which flows from the northern end of the city southward. Specific tree and grass species, such as *Afzelia Africana*, Terminalia spp., Parkia spp., and *Vitellaria paradoxa* (shea butter), thrive in Ilorin's fertile sandy-loam soil (Olaoye & Oloruntoyin, 2014).

Ilorin's strategic location at the geographic and cultural intersection of the North and South, bordered by Oyo, Niger, Kogi states, and the Benin Republic, has made it a regional hub. It is 300 kilometers from Lagos and Abuja and 160 kilometers from Ibadan. Initially developed as Kwara State's administrative center, Ilorin has seen significant economic and social changes influencing its growth. A well-connected road system links Ilorin to other major cities, and its central location has attracted immigrants from various ethnic backgrounds. Ilorin is now home to nine tribes and numerous sub-ethnic groups. However, efforts by the dominant ethnic group to favor its members have exacerbated social exclusion. A mixed-method approach was adopted in this study. This involved collecting, analysing, and merging quantitative and qualitative data. Quantitative data were obtained from the city's sampled residents, while qualitative data were the outcomes of interviews with the Physical Planners in the city.

Sampling Method

Three Local Government Areas (LGAs), namely Ilorin South, Ilorin East, and Ilorin West, make up the city of Ilorin. Two LGAs each have twelve (12) wards, however Ilorin West LGA has thirteen (13) political wards (INEC, 2015). Each ward contained a concentration of high, medium, and low-density neighborhoods, according to the city's residential density trends. As a result, in each LGA, the high-density wards that were ostensibly home to the urban

poor were chosen.

The largest ward in each LGA was chosen from the high-density wards due to the fact that each ward has a different population size (National Bureau of Statistics, 2024). They are Balogun Gambari (Ilorin East), Ubandawaki, and Zango (Ilorin South) (Ilorin West LGA). In each ward, two underprivileged neighbourhoods with obvious indicators of exclusion and liveability issues, such as poverty, unemployment, low income, subpar (below average) housing, and deprivation, were chosen for the survey. Accordingly, the following neighbourhoods (and their adult populations) were chosen for the survey: Zango (31,700) and Oke-Oyi (27,635) in the Zango Ward; Oke-Odo (20,600) and Gaa Akanbi (18,892) in the Balogun Gambari Ward; and Ubandawaki (28,389) and Ipata-Oloje (23,540) in the Ubandawaki Ward (National Bureau of Statistics, 2024).

Sample Size and Sampling Procedure

The choice of sample size was based on Neuman's (1994) argument that the larger the sampling ratio must be for an accurate sample, the smaller the population. According to Neuman (1994), larger populations allow for lesser sampling ratios for similarly good samples. He contends that this occurs because the accuracy returns for a given sample size decrease as the size of the population increases. Consequently, high sampling ratio is needed for small populations (under 1,000). (about 30 percent). Similarly, for fairly large populations (10,000), a reduced sampling ratio (about 10%), or sample size of around 1,000, is required to be equally accurate.

For large populations (above 150,000), sampling ratios as low as 1% are feasible, and samples as tiny as 1,500 can provide highly reliable results. Sampling accuracy can be obtained from large populations (over 10 million) with a modest sampling ratio (1%). (Neuman, 1994). Therefore, in this study, samples were obtained from Zango (33), Oke-Oyi (29), Oke-Odo (24) and Gaa Akanbi (19), Ubandawaki (28), and Ipata-Oloje (25) (Table 1). Consequently, 158 respondents were chosen randomly from all the sampled neighbourhoods (Bernard, 2000). Specifically, adult residents of the communities who have lived there for at least five years were the focus of the survey. This is to ensure that the survey participants have appropriate liveability experience.

Table 1. Sample Size

LGA	Ward No.	Sampled community		No. of questionnaire
Ilorin South	Zango	i.	Zango,	33
		ii.	Oke-Oyi	29
Ilorin East	Balogun Gambari	i.	Oke-Odo	24
		ii.	Gaa Akanbi	19
Ilorin West	Ubandawaki	i.	Ubandawaki	28
		ii.	Ipata-Oloje	25
Total				158

Data collection

A cross-sectional survey design was used for this study, which involved the administration of a set of structured questionnaires and interview guide. A set of pre-tested structured questionnaires were administered to the sampled 158 residents in the study area between December 11 and 21, 2023. The questionnaire included 22 tick-box, 5 open-ended questions, and 2 questions framed on a Likert scale in three parts. The first section which is the socio-economic characteristics of the respondents' included questions on gender, age, marital status, education, income, and household sizes. Section two had questions on the awareness of the urban planners' activities among the respondents including questions on development control, plot subdivision, plan preparation, environmental impact assessment, and urban renewal. Also, part three highlights the effects of urban planning on the liveability of the city comprising questions relating to effects on infrastructure development, urban service provision, and housing. All the questionnaires were returned by the respondents for analysis.

Data Analysis

The data collected were analysed using the Statistical Package for Social Sciences (SPSS) version 25 software where two analytical methods were employed to summarize data and make inferences. First, univariate descriptive statistics involving frequency and percentages were used to report the socio-economic profile of the respondents. While the residents' awareness of the activities of urban planners was examined through the Relative Importance Index. Five (5) variables that could influence liveability of the city were identified. It is believed that the level of agreement of the sampled residents of the city to these variables would indicate the level of influence these variables have on people's decision to live and continue to live in the city. These variables were measured by asking the sampled residents to rank the variables in order of significance on a scale of 1 to 5 with 5 representing very significant and 1 not significant. The Relative Importance Index (RII) technique was adopted to achieve a quantitative measurement of the variables. It is a technique that rates factors against a scale to assess the significance of each factor (Tholibon et al., 2021). The scale was transformed into RII for each factor to determine the ranking of the different factors (Tholibon et al., 2021). RII was computed using the following formula:

$$RII = \sum W/AN$$

Where: $\sum W$ = sum of weighting (value) given to each factor by the respondents ranging from 1 to 5 in this study (Table 1).

A = the highest weight (i.e. 5 in this study).

N = total number of respondents (i.e. 158)

Furthermore, the Respondents' Agreement Index (RAI) which is used to rate variables against a scale in order to assess the significance of each variable was used to measure the effects of urban planning on liveability. The scale was transformed into RAI for each variable to determine the ranking of the different variables. Seven (7) effects of urban planning on liveability were identified. This includes effective transportation networks, access to green spaces, waste management, street cleaning, affordable housing, quality healthcare, and educational opportunities.

In this study, it was assumed that the level of agreement of the respondents would indicate the magnitude of the effects of urban planning on liveability in the city as shown by the strengths of these variables. To calculate the RAI, the respondents were instructed to rate each variable using one of the five ratings: Strongly Agree (SA) (5), Agree (A) (4), Moderately Agree (MA) (3), Disagree (DA) (2) and Strongly Disagree (SD) (1). The summation of weight value (SWV) for each variable was obtained through the addition of the products of responses for each rating of the variable and their respective weight values. Mathematically, this is expressed as:

$$SWV = \sum^{5}_{i=1} X_i Y_i \quad (1)$$

Where: SWV is the summation of weight value;
Xi is the respondents' rating of a particular effects of urban planning on liveability;
Yi is the weight value assigned to each effect.

The respondents' agreement index (RAI) for each effect was determined by dividing the summation of weight value by the addition of the number of respondents to each of the five ratings (Equation 2).

$$RAI = \frac{SWV}{\sum^{5}_{i=1} P_i} \quad (2)$$

RESULTS AND DISCUSSION

Socio-demographic Characteristics of the Respondents

The major socio-demographic characteristics were age, gender, marital status, educational attainment, household size, and income. Analysis of the respondents' age structure revealed that most were within the economically active segment of the population as 94.8% were aged between 21 and 70 years (Table 2). Males constituted the dominant gender group (55.1%) which is inconsistent with the study by Lawanson and Oduwaye (2014) in Lagos, Nigeria where females were dominant. Furthermore, 87.5% were married, while unmarried respondents (because of widowhood, divorce or never married) made up 12.5%.

According to UNESCO standards, there was a low literacy level among the respondents, as 33.7 % possessed a minimum of secondary school education. Also, attempts were made to determine the income categories of the respondents. The general categorization of income into low, medium, and high was adopted for ease of analysis. Monthly income below ₦100,000 was categorized as low, medium for monthly income between ₦ 100,000 and ₦ 300,000, while monthly income above ₦300,000 was categorised as high. It is important to note that though, the current national minimum wage in Nigeria is ₦30,000 (Adebanjo et al., 20), however, the persistent inflation and poor economic performance being experienced in Nigeria informed the decision to choose ₦100,000 as the benchmark. Following the above categorization, the low-income group constituted more than half (55.3%) of the respondents (Table 2).

Table 2. Socio-demographic characteristics of the respondents

Socio-demographic variable	Category	Frequency (N=158)	%
Age	21-30yrs	42	26.4
	31-40yrs	37	23.3
	41-50yrs	32	20.0
	51-60yrs	21	13.3
	61-70yrs	19	11.9
	Above 70yrs	8	5.2
Gender	Male	87	55.1
	Female	71	44.9
Marital status	Married	138	87.5
	Single	20	12.5
Education	Tertiary	20	12.5
	Secondary	52	33.1
	Basic	44	27.9
	Vocational	30	18.9
	Informal	12	7.6
Income	Low [<₦100,000 (68$)]	87	55.3
	Medium [₦100,000-₦300,000 ($204)]	62	39.1
	High [Above ₦300,000 ($204)]	9	5.6

Note: The official rate is ₦ 1,463 to $1 as of 10 June 2024.

Awareness of the Activities of Urban Planners

All the respondents (100%) indicated awareness of the activities of Urban Planners. The perceived indicators of the activities of Urban Planners as revealed by the respondents and analysed with the Relative Importance Index (RII) are presented in Table 3. Results of the analysis as shown in Table 3 indicate that in rank order, development control with RII of 0.988 is the most significant activity known to the inhabitants of Ilorin. This is followed by plot subdivision with RII of 0.774. Plan preparation takes third in the ranking of the activities known to the inhabitants with RII of 0.635 while Environmental Impact Assessment (RII 0.596) and urban renewal (RII 0.387) ranked fourth and fifth respectively. The high level of awareness of the activities of urban planners among the residents of Ilorin as revealed by this study did not align with previous studies.

For instance, Odjugo (2013) reported that more than half of his respondents were unaware of urban planning. Statistia (2022) also reported that over 60% of Nigerians were not aware of the activities of urban planners. The awareness in Ilorin may be attributed to the role of mass media in disseminating information on the activities of urban planners,

particularly in encouraging support for the just-concluded preparation of the Ilorin city master plan.

Table 3. Relative Importance Index of the Awareness of the Activities of Urban Planners

S/N	Activities	N (Total number of Respondents	∑W (Sum of weighting given to each factor by respondents)	RII	Ranking
1	Development control	158	781	0.988	1st
2	Plot subdivision	158	612	0.774	2nd
3	Plan preparation	158	502	0.635	3rd
4	Environmental Impact Assessment	158	471	0.596	4th
5	Urban renewal	158	306	0.387	5th

Effects of Urban Planning on Liveability of Ilorin

As shown in Table 4, the highest RAI was 13.42 while the lowest was 5.76. Therefore, the deviations around the mean of the highest and lowest RAI were 5.35 and -2.31 respectively. The variables with positive deviations around the mean (i.e. RAI) were the variables considered by the respondents as the dominant effects of urban planning on liveability. These effects were: effective transportation networks (5.35), access to green spaces (4.11), waste management (3.54), street cleaning (2.93) and affordable housing (2.08). The variables with negative deviations around the mean were those considered not to be the principal challenges of social exclusion and liveability in the study area. The respondents showed a lower level of agreement on them. Such variables include quality healthcare (-2.24) and educational opportunities (-2.31). The average RAI of 8.07 indicates that all respondents, on average 'agree' that all the seven (7) variables indicate the effects of urban planning on liveability in the study area.

Table 4. Respondents' Agreement Index of the Effects of Urban Planning on Liveability of Ilorin

S/N	Effects	(5) - Strongly agree – (1) Strongly disagree (N = 158)					SWV	RAI(MS)	MD(RAI)
		5	4	3	2	1			
1	Effective Transportation Networks	167	183	156	38	10	2121	13.42	5.35
2	Access to Green Spaces	155	162	121	60	18	1924	12.18	4.11
3	Waste Management	111	135	195	74	7	1835	11.61	3.54
4	Street Cleaning	189	136	69	17	8	1738	11.00	2.93
5	Affordable Housing	71	104	199	113	9	1603	10.15	2.08
6	Quality Healthcare	25	33	79	157	114	922	5.83	-2.24
7	Educational Opportunities	21	61	40	119	204	911	5.76	-2.31
	Average RAI(MS) (composite score)							8.07	

CONCLUSION

The study assesses the impact of urban planning on liveability in Ilorin, Nigeria. This is to ensure urban planning continues to address the liveability challenges of Nigerian cities to achieve more inclusive and equitable cities. Although, political constraints, financial constraints, and data gaps are among the challenges that urban planners encounter, proactive efforts by urban planners can result in considerable changes. Planners may provide the groundwork for more liveable societies by making social justice a central component of policy creation. Prioritizing cheap housing, environmentally friendly transportation, and equal access to public services opens doors for all citizens, encouraging liveability and social cohesion. Collaboration between stakeholders, including the public and private sectors and the government, is necessary for effective urban planning. Also, collaborations between the public and commercial sectors can pool resources and generate original ideas, while interdisciplinary research collaborations can yield illuminating outcomes. Technology advancements in big data, AI, and smart cities can enable planners to adopt data-driven plans. These tools facilitate change by making identifying problematic areas easier and tracking progress. The concept of "just sustainability" emphasizes the alignment of environmental and social aims for equitable and sustainable urban futures. This study will aid in building physical planning systems to promote liveability in cities.

ACKNOWLEDGMENTS

This research is fully supported by Tertiary Education Trust Fund (TETFUND).

AUTHOR CONTRIBUTIONS

Adewale Yemi Yekeen – Conceptualization, design, data collection, analysis, draft preparation

Siti Hajar Misnan- Supervision

COMPETING INTEREST

The authors declare that there are no competing interests.

DATA AVAILABILITY

Not applicable.

COMPETING INTEREST

The authors declare that there are no competing interests.

COMPLIANCE OF ETHICAL STANDARDS

Not applicable.

SUPPLEMENTARY MATERIAL

Not applicable.

REFERENCES

Adebanjo, S., Banchani, E., Mishiwo, S.H., & Sanusi, I. (2024). Determinants of workers' new minimum wage in Nigeria: Incorporating Nigeria's current economic situation. *Sri Lankan Journal of Applied Statistics*, *25*, 76-100.

Gehl, J. (2013). Cities for people. Island press: Washington

Ifabiyi, I. P., & Ashaolu, E. D. (2015). Spatio-temporal pattern of rainfall distribution over Ilorin metropolis, Nigeria. *Scientia Africana*, *14*(2), 229-247.

Jackson, J.T. (2022). Local planning cultures? What Glasgow, Melbourne and Toronto planners say. *International Planning Studies*, *27*(3), 284-301.

Lawanson, T., & Oduwaye, L. (2014). Socio-economic adaptation strategies of the urban poor in the Lagos metropolis, Nigeria. *African Review of Economics and Finance*, 6(1), 139-160.

Marcuse, P. (1997). The enclave, the citadel, and the ghetto: What has changed in the post-Fordist US city. *Urban Affairs Review*, *33*(2), 228-264.

National Bureau of Statistics (2024). Available from https://www.nigerianstat.gov.ng/. Accessed on 16 August 2024.

Neuman, S. P. (1994). Generalized scaling of permeabilities: Validation and effect of support scale. *Geophysical Research Letters*, *21*(5), 349-352.

Odjugo, P.A.O. (2013). Analysis of climate change awareness in Nigeria. *Scientific Research and Essays*, *8*(26), 1203-1211.

Olaoye, J. O., & Oloruntoyin, Z. T. (2014). Vegetation characteristic of ecological zones of Kwara State, Nigeria and

responses to different land clearing options. *Journal of Research Information in Civil Engineering*, *11*(1), 427-455.

Ricotta, G. (2023). Security, Health and Social Exclusion in Urban Contexts. A Sociological Perspective. In Equity in Health and Health Promotion in Urban Areas: Multidisciplinary Interventions at International and National Level (pp. 43-57). Cham: Springer International Publishing.

Statista (2022). Knowledge of climate change topic in Nigeria 2020, Byarea. Statista Research Department. Available from: Https://Www.Statista.Com/Statistics/1269701/Knowledge-Of-Climate-Change-Topic-In-Nigeria-By-Area/. Accessed on 16 August 2024.

Smith, J.P., Meerow, S., & Turner II, B.L. (2021). Planning urban community gardens strategically through multicriteria decision analysis. *Urban Forestry & Urban Greening*, *58*, 126897.