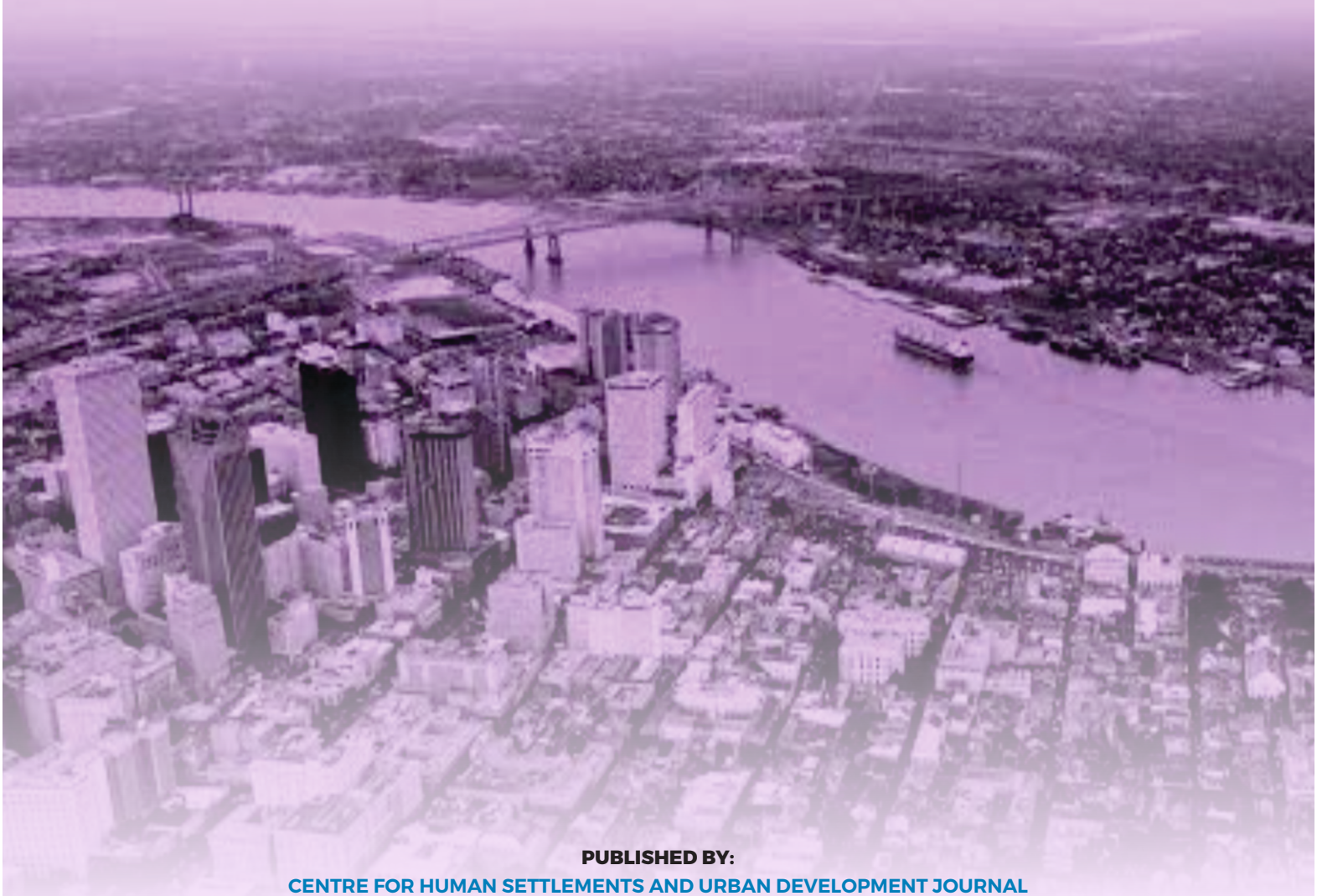
CENTRE FOR HUMAN SETTLEMENTS AND URBAN DEVELOPMENT JOURNAL

FEDERAL UNIVERSITY OF TECHNOLOGY MINNA

CHSUDJ

VOL. 9, NO. 1 APRIL 2023 ISSN NO: 2141 - 7601



PUBLISHED BY:
CENTRE FOR HUMAN SETTLEMENTS AND URBAN DEVELOPMENT JOURNAL
FEDERAL UNIVERSITY OF TECHNOLOGY, P.M.B. 65, MINNA, NIGER STATE, NIGERIA
chsud.journal@futminna.edu.ng, chsud@futminna.edu.ng

EDITORIAL REMARKS

Dear Reader,

This year the Centre for Human Settlements & Urban Development (CHSUD) will mark her 20th anniversary. This edition of her journal is intended as a prelude to launching of the Anniversary Edition tagged "Managing Human Settlements in the Urban Century". This will highlight the requisites of having and keeping cities, towns and all forms of human settlements as humanity finally moved into the age where urbanization and urban activities, for the first time in history, dominates the planet. The special call for a focus on urbanization is further hinged on the fact that besides dominating human settlement types, urban related human activities have had the greatest impact on earth and its environment. This has resulted into a phenomenon now referred to as "The Anthropocene" – an interconnected, complex global systems in which humanity's impact has become clear.

This volume nine and particular edition (number one) feature works that explored elements and scenarios that increasingly dominates African cities today. Many of them exhibiting lack lustre state of bourgeoning cities and towns in sub-Saharan Africa. But shown here exhibiting the different efforts being made towards having sustainable living and livelihood. This is evident from widespread poverty and deprivations highlighted by "*Implications of Spatial Variation of Household Poverty Incidence in Neighbourhoods of Minna, Nigeria"*, to the explorations of the limitations of interventions shown by *"Climate Change Mitigation Paradox: Poverty and Greenhouse Gas Reduction in A Global South City"*. The different negative effects of increasing human activities on the natural and social environment enumerated by "*Spatio-Temporal Analysis of Land Use and Land Cover Change of Birnin Kebbi for Sustainable Development"*, and, "*Reduction in the Effects of Climate Change: Efforts Towards Safeguarding the Built Environment in Kaduna, Nigeria";* have drawn attention to the dimensions and consequences, at local, national and regional levels, the increasing effects of human activities dominated earth and arguably the planetary system.

Dr Aliyu M. Kawu MNITP, RTP, MeRSA
Editor-in-Chief
CHSUD Journal

Papers for Journal

The journal accepts well researched papers, including case studies, from all disciplines in Environmental Sciences and other disciplines or subject areas related to the built environment. However, papers to be considered for a specific volume of the journal should fall within the theme and sub-themes specified. The theme for each volume of the journal will be specified.

Submission of Papers

All manuscripts should be submitted to the editor, CHSUD Journal. Three hard copies of papers should be forwarded to the editor with a letter of undertaking that the work is not under consideration elsewhere and it will not be sent to another journal until final decision has been made on it.

Electronic Version: In addition to three hard copies, an electronic version of the article should be forwarded to CHSUD e-mail.

Address for Correspondence

The Editor,
CHSUD Journal,
Centre for Human Settlements and Urban Development,
Federal University of Technology,
P.M.B. 65, Minna,
Niger State, Nigeria.

For detailed information on our programmes,

Please contact:
Centre for Human Settlements and Urban Development,
Federal University of Technology
P.M.B. 65, Minna, Niger State, Nigeria
Email: chsud.journal@futminna.edu.ng
0802859797919; 08053131254

TABLE OF CONTENTS

EFFECT OF URBAN GREEN SPACES ON RESIDENTS' WELL-BEING IN ABUJA MUNICIPAL AREA COUNCIL, NIGERIA

UGBOH, RICHARD; MUSA, HARUNA D., AND MARTINS, VALDA I.
Department of Urban and Regional Planning, School of Environmental Technology,
Federal University of Technology Minna, Niger State Nigeria
Email: oge_ugboh@yahoo.com; musaharunad@futminna.edu.ng; valda.martins@futminna.edu.ng

Abstract
Participation in activities in urban green areas and parks has a substantial impact on the physical, social, and mental health of the residents. The aim of the research is to assess how green spaces in cities affect the well-being of residents in the Abuja Municipal Area Council. This research was done using a cross-sectional method with a focus on the urban green spaces and parks in AMAC. A total of 430 residents from estimated population of 1,775,432 in 2021 were randomly sampled using structured questionnaires. The collected data were analysed using descriptive statistics (frequency, percentage, and mean), and the relationship between accessibility and utilization of urban green spaces on the well-being of residents (Physical, social and mental well-being) were tested using Bi-variate analysis (Spearman rank correlation (r_s) and logistic regression in Statistical Package for Social Sciences (SPSS). The findings reveals that the distance to the nearest urban green space and parks positively affect well-being ($\beta = .111$, $p < .05$), whereas the length of stay at the urban green spaces and parks has significant negative effect on the resident's well-being ($\beta = -.342$, $p < .001$) in AMAC. In overall, the result of the study reveals that the amount of public participation in urban green spaces has a significant positive impact on the well-being of residents. Participants who often visit urban green areas and parks report increased satisfaction with their physical, social and mental well-being.

Keywords: Park accessibility, Residents' Well-Being, Urban Green Spaces, Abuja Municipal Area Council

Introduction

Urban greening is considered to be a crucial part of solving the environmental problems that cities are now experiencing. According to Beatley (2011), as nature has a way of accomplishing that, even little natural spaces may help bring out the best in us. More than half of all individuals live and work in urban areas. The desire for suitable living conditions and a feeling of belonging in an urban environment for work, play, and leisure is a growing problem. A busy and overpopulated city lacks a lot of open space because different uses, such as new residences and green initiatives, fight for urban space. Nature is more than simply a thing or place that we sometimes visit; rather, it is an environment, ideally a ubiquitous background, that delights, soothes, calms, replenishes, inspires, and uplifts us in our daily urban lives (Beatley. 2011). A city that actively searches out opportunities to fix, replenish, and creatively integrate nature is said to be biophilic.

Additionally, as a consequence of climate change, there are also growing difficulties related to the dynamic evolution of cities. There is also a rising awareness of how dependent people are on urban environments. Urban green spaces are more crucial than ever since they influence our quality of life and are also becoming increasingly significant as location criteria for hiring and business choices. Urban greenspaces are often neglected while making choices on land use in municipalities (McKinney, Kowarik, & Kendal, 2018). More and more land is being taken up by roads, structures, and infrastructural facilities. Urban nature enhances health and promotes social cohesion, so it is important to preserve it on both public and private property with its many diverse near-natural and cultural features.

Compared to rural populations, city dwellers are often more exposed to extreme heat, fine dust (particulate matter), and noise. For instance, morbidity and mortality rates significantly rise when there are summer heat waves. Urban vegetation can significantly lower peak summer temperatures; records show that on hot, windless days, a green space 50 to 100 meters wide is 3 to 4 °C cooler than the nearby built-up area (Zhu, Ji, & Li, 2017; Gallay *et al.*, 2023). Nature's health benefits are more visible in residential settings. We are encouraged to be active, engage in sports, and spend time outside in green places. Studies

have shown that exposure to nature lowers stress, fosters the reduction of hostility and anxiety, and improves performance and focus (*Qiu et al*., 2023). Numerous ecosystem services provided by urban nature improve the quality of life and safeguard the health of city dwellers.

Green spaces, which are linked to a variety of advantages like health and relaxation and are an important indicator of how liveable an urban area is (Honey-Rosés, & Zapata, 2023), have been the subject of research on access to nature for more than 20 years. Most research focuses on the value of green spaces for human health and well-being (Wood, *et al.*,2022), but in recent years, research has turned its attention to figuring out what motivates city dwellers to interact with and use green spaces (Ali *et al*.,2022). Residents derive different benefits from urban green spaces, including improved air quality, noise reduction, health benefits, improved aesthetics, and buffer zones, depending on how intensely they interact with the green spaces. Positive opinions of green areas are significant indicators of neighborhood satisfaction (Jiang, & Huang, 2022; Mouratidis & Yiannakou, 2022).

The wellbeing of urban residents are significantly influenced by green areas utilization. Vick (2007) emphasized the need for the parks and recreation department to have site-specific plans for each of their facilities in addition to a system-wide master plan for parks and recreation. All plans ought to be created with input from engaged citizens and updated every five to ten years. The sad reality of today is that the majority of urban activities are vying for limited space. As a result, areas once reserved for agriculture, recreation, and green space are now being converted to other land uses, primarily of a commercial and residential nature. This study therefore, looks at how parks and other green spaces affect the health and happiness of people living in the Abuja Municipal Area Council (AMAC) FCT.

Urban Green Spaces and Well-being

Mawson's Theory, developed by Thomas Hayton Mawson (1861–1933), is renowned for identifying five essential components of urban green systems. These components are: quadrangles and circuses for magnificence and grandeur (town squares), small recreation parks and playgrounds, public parks, reservations, connecting parkways, drives, and boulevards. He suggested that there should be a natural and intentional construction of open green spaces in densely populated regions close to the city centre. The preservation of natural scenery on recreational grounds is connected to the formal landscape. The term "informal landscape" refers to a landscape that develops in response to traditional and environmental circumstances (Cseply-Knorr, 2011). Urban ecology will enable better urban designs for both humans and wildlife (Paris, 2018). Landscape ecology, on the other hand, is based on the idea that landscape supports intricate networks of ecological processes that have an impact on biodiversity and the human environment. According to the Attention Restoration Theory (ART) proposed by Stephen and Rachel Kaplan in 1989, exposure to natural settings may help people regain their capacity to focus. Thus, exposure to urban green space may have a positive psychological, emotional, and cognitive impact that lessens stress and attention fatigue. As a result, the natural world has a calming impact on physiological reactions, including reducing heart rate and cortisol levels. Natural and manmade elements were seen by Wang *et al*. (2019) as two interrelated factors that influence how open green space is used. However, urban green areas may differ and not always have the same qualities (Brace *et al*., 2021). Open green areas are given poor attention and ineffective implementation in Africa (Eshetu *et al*., 2021). For instance, in Nigeria, wide green areas with vegetation are fairly abundant and serve as a part of the country's architectural identity (Sati *et al*., 2016). This implies that distinguishing and recognizing urban green space and parks depends on natural characteristics, particularly vegetation. Some could include cutting-edge infrastructure and landscape features, while others might be built to showcase the locals' diverse cultures.

Urban green spaces provide a variety of advantages, but despite this, there is ongoing rivalry for available space in urban centers, with the majority of these areas being converted to other purposes at the expense of the urban population. According to the World Health Organization, urbanization reduces space per person, which also results in a reduction in urban green areas (World Health Organization, 2017). As a result of ignoring society's competing demands, the government frequently prioritizes necessities such as housing, education, and health (Mensah, 2014). On the one hand, society is not adequately informed about concerns connected to

urban green space. The legal and regulatory framework policies are not successfully executed (Eshetu *et al*., 2021). This might be the cause of the general lack of interest in, demand for, or inclination to engage in open-space activities.

In Nigeria, Olumuyiwa *et al.* (2021) bemoaned the lack of urban parks and planned open green areas. Therefore, a major difficulty is the delayed uptake and availability of green areas, as well as people's misunderstanding of their advantages (Emechebe, 2020). Alabi (2020) acknowledges that a number of variables affect how urban green spaces are used, including resident's perception, family income, ineffective urban development regulation, management costs, and driving distances. The high percentage of illiteracy among people has an impact on how they see urban green open space, and this perspective is represented in how they use and care for urban green open space. In addition, most Nigerian towns' physical development plans are haphazard and vague, making it difficult to provide green space while taking the urban population into account. According to Zakka *et al*. (2017), the majority of city master plans were outdated, and the local authorities lacked the motivation to follow them, particularly with regard to green spaces, which led to their distortion, encroachment, and conversion to other uses. In light of concerns about climate change, this situation presents an important challenge to metropolitan environments. They emphasized that whereas other cities had relatively low percentages of green space allocation, only Abuja City had 32.87% of the entire area set aside for urban green spaces.

This study is therefore being conducted to evaluate the influence of the accessibility and usage of urban green spaces on the well-being of inhabitants in AMAC Abuja in light of the well-being of the citizens.

Methodology

The Study Area

The Federal Capital City (FCC) is situated in the centre of the nation, with coordinates between the latitudes of 8°25`N and 9°25`N and longitudes of 6°45`E and 7°45'E, respectively. It covers an area of about 250 km2 and was designed by the International Planning Associates (IPA) in the early 1980s. The Master Plan of Abuja provided green spaces that were either developable or undevelopable. The developable, such as open spaces, recreational facilities, parks and gardens, children's playgrounds, outdoor games, sport centres, golf courses, polo grounds, race courses, national, district, and neighbourhood parks, and some incidental open spaces (Jibril, 2010). Undevelopable areas, on the other hand, are green stretches along fragile hillsides, valleys, streams or rivers, flood plains, and open lands that are kept to protect the top soil from erosion and landslides (Olukoya & Olukoya, 2018). The area designated for various functional spaces and for the entire greenery was twenty-five percent (25%) and seven percent (7%) was for parks (IPA, 1979). The master plan for Abuja was designed to be built in 4 phases, with phase I covering 7076 hectares, of which 18% was set aside for "green" development. The Abuja Master Plan provided for the development of adequate green areas and other recreational facilities within the Federal Capital City (FCC), especially those within each neighbourhood (FCDA, 1979), to promote outdoor recreation and improve residents' health. One major activity that reduces stress arising from daily hassles and struggles for existence and also enhances the liveability of cities is recreation. Research has established that being around green elements in the landscape affects health and well-being. (Payne *et al*., 2010).

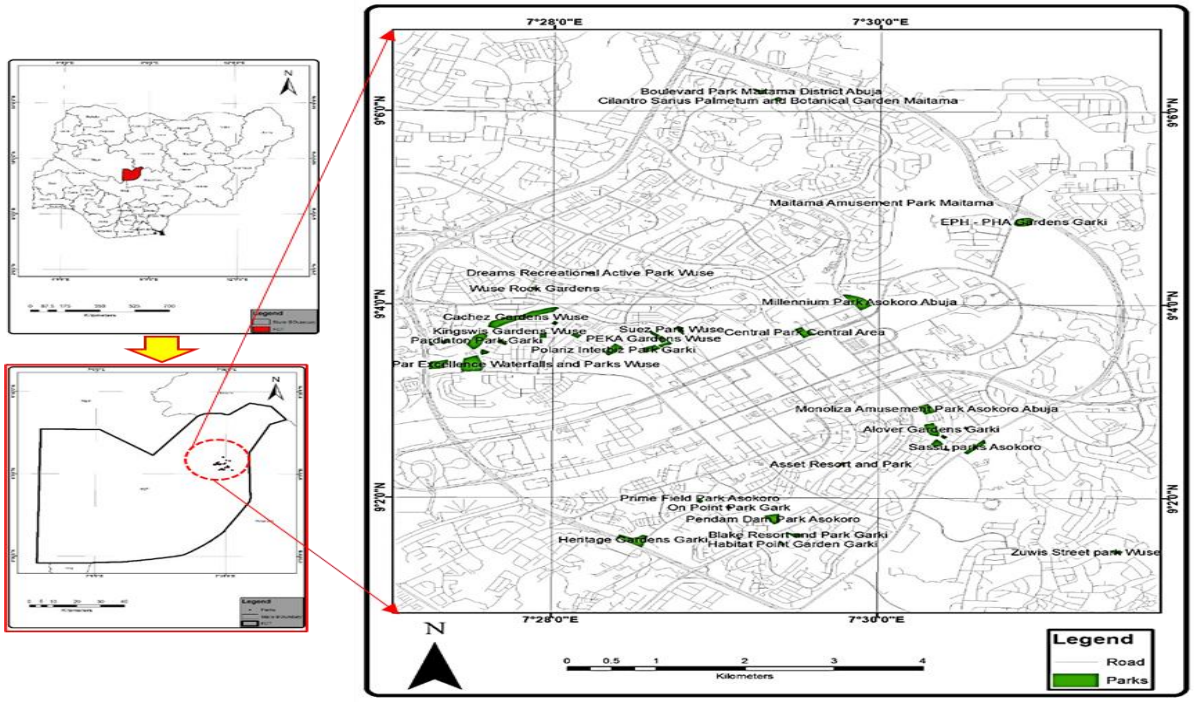


Figure 1: AMAC within the context of Abuja.

Data and Analysis

The design of this research was cross-sectional. Data are gathered from residents using a formal survey. AMAC (under which FCC is classified) had 776,298 people living there as of the 2006 Census, according to the National Population Commission. The exponential model was used to predict that the population to 1,775,432 in 2021 at a 4% growth rate. 430 residents were sampled using Dilman's (2011) sample size, and a stratified random sample technique was used to distribute the questionnaire to the inhabitants. The strata were residents within a 500-meter radius for small parks and an 800-meter radius for larger parks (Hassen, 2016). Three indicators were selected to assess residents' well-being: physical, social, and mental (Krekel *et al*., 2016; Ma *et al.*, 2019; Jabbar & Mohd Yusoff, 2022). The indicators were determined using a 5-point Likert scale (1 = Very dissatisfied to 5 = Very Satisfied). We hypothesised that indicators of the frequency of visitation, length of stay, and distance to urban green spaces and park would emerge as significant explanatory variables in predicting residents' well-being (physical, social, and mental well-being) in AMAC using logistic regression in the Statistical Package for Social Sciences.

Results and Discussion

Accessibility and Utilization of the Urban Green Spaces in AMAC

The results of residents' park visits to the urban green spaces and parks are shown in Table 1. We evaluated how often residents used parks and urban green areas. According to the study findings, 19.3% of respondents visit an urban green space every day, 19.5% visit green spaces once to three times per week, 2.3% visit urban green spaces roughly four to six times per week, 20% visit parks just once per week, and 38.4% visit parks only once per month. This suggests that the majority of the residents frequents parks at least once a month. Additionally, the average amount of time spent in the park during each visit was evaluated. It was found that 68.8% of residents spent between 1 and 2 hours in the park, compared to 7.7% who spent between 30 minutes and an hour there. This suggests that AMAC people use parks at a high rate. Furthermore, the distance to the next park or other open space has a significant impact on usage. The results show that 47 percent of the population lives within 0.5 to 1 kilometre of a park or other open space, 24.9% live within 1 to 1.5 kilometres of the closest park, 15.6% live within 0.5 to 1 kilometre, 11.9% live from 1.5 to 2 kilometres, and 0.7% live beyond 2 kilometres. The frequency of visits and the use of amenities like green areas and services might be affected by distance.

Table 1: Level of Urban Green Spaces and park Accessibility and Utilization

Variables	Duration	Frequency	Percent
Level of visitation	Daily	83	19.3
	1 – 3 times per week	84	19.5
	4 – 6 times per week	10	2.3
	Once per Week	88	20.5
	Once per Month	165	38.4
Length of stay at the park	Less than 30 minutes	101	23.5
	30 – 60 minutes	33	7.7
	60 -120minutes	296	68.8
Distance to Nearest Park	< 500metres	67	15.6
	500m -1000metres	202	47
	1000m -1500metres	107	24.9
	1500 – 2000metres	51	11.9
	> 2000 metres	3	0.7

Impact of Urban Green Spaces and Parks on Residents' Well-being in AMAC

Researchers looked into how parks and green spaces in cities affect the quality of life of the people who live there. This research shows that individual participation in and use of urban green spaces have unique benefits for people's wellbeing. A multiple regression model was used to analyse the effect of urban green spaces and parks based on independent factors (degree of visiting, duration of stay, and distance to the closest urban green spaces and parks) and a dependent variable (i.e., inhabitants' physical, social, and mental well-being) as shown in Table 2. As a consequence, the outcome variable's variance was explained by 23.3% with an R^2 value of 0.233 and a F (3, 426) = 43.253 (p.001). The results showed that the length of stay at urban green spaces and parks has a significant negative effect on the residents' well-being (β = -.342, p.001), while the distance to the nearest urban green space and park positively predicted physical well-being (β =.16, p.05), and the length of visitation positively predicted physical well-being (β =.111, p.05) among residents in AMAC.

Table 2 Regression coefficient of Distance to park, Level of visitation and Length of stay at UGS and Parks on Residents physical Well-being in AMAC

Variables	Unstandardized Coefficients		Standardized Coefficients	t	*p*	95.0% Confidence Interval for B	
	B	Std. Error	β			Lower Bound	Upper Bound
1 (Constant)	2.444	.244		10.025	.000	1.965	2.923
Distance to parks	.132	.048	.160	2.743	.006	.038	.227
Level of visitation	.052	.020	.111	2.586	.010	.012	.092
Length of stay	-.302	.052	-.342	-5.855	.000	-.404	-.201

Table 3 shows the effect on residents' social well-being in AMAC of the frequency of visits, the distance to the closest urban green areas and parks, and the length of time spent there. The independent variables were able to account for 5.5% (R^2 = .055) of the variation in the outcome variable, with F (3, 426) = 8.2 (p < .001). The results showed that duration of stay (β =.26, p.001), distance to the closest urban green space and park (β =.30, p.001), and duration of visits to the urban green spaces and parks (β =.11, p >.001) all positively predicted social well-being.

Table 3 Regression coefficient of Distance to park, Level of visitation and Length of stay at UGS and Parks on Residents Social Well-being in AMAC

Variables		Unstandardized Coefficients		Standardized Coefficients	t	*p*	95.0% Confidence Interval for B	
		B	Std. Error	β			Lower Bound	Upper Bound
1	(Constant)	.954	.287		3.325	.001	.390	1.517
	Distance to parks	.224	.057	.256	3.950	.000	.113	.336
	Level of visitation	.053	.024	.107	2.243	.025	.007	.100
	Length of stay	.280	.061	.300	4.617	.000	.161	.400

Table 4 displays the effect on residents' mental health in AMAC of the frequency of visits, the distance to the closest urban green areas and parks, and the length of time spent there. The predictors explained 29.1% of the variation in the outcome variable, as indicated by the R2 value of 0.291 and F (3, 426) = 58.185, p.001. The results showed that the distance to the closest urban green space and parks positively predicted mental well-being (β =.026, p.001), the length of stay negatively predicted mental well-being (β =.05, p.001), and the length of visitation to urban green spaces and parks had no significant impact on residents' mental well-being in AMAC (β =.006, p >.05).

Table 4 Regression coefficient of Distance to park, Level of visitation and Length of stay at UGS and Parks on Residents Mental Well-being in AMAC

Variables		Unstandardized Coefficients		Standardized Coefficients	t	*p*	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	2.432	.237		10.265	.000	1.966	2.898
	Distance to parks	.217	.047	.260	4.623	.000	.125	.309
	Level of visitation	.003	.020	.006	.156	.876	-.035	.042
	Length of stay	-.292	.050	-.328	-5.829	.000	-.391	-.194

Overall, the study's findings indicate that citizens' well-being is significantly improved by the level of visiting, duration of stay, and distance to the closest urban green spaces and parks. Participants who often visit urban green spaces and parks express greater satisfaction with their physical, social, and mental well-being (Oh *et al.*, 2022). (Wood, Wicks, and Barton, 2023). This is because using parks and other public green spaces for leisure makes individuals happier and more at ease and gives them a place to engage in physical exercise (Krols *et al*., 2022). As a result, having access to parks and other green spaces in cities improves well-being significantly. Studies by Bentley *et al*., (2023); Pouso *et al*., (2021); Kabisch, Qureshi, and Haase, (2015); Kothencz *et al*., (2017); and White *et al*., (2013), support this conclusion.

Conclusion

Participation in activities in urban green areas and parks has a substantial impact on the physical, social, and mental health of the residents. This research aims to assess the effect of urban green space and parks on the well-being of AMAC residents. Findings indicate that AMAC residents' participation in activities in urban green areas and parks has a substantial impact on the physical, social, and mental health of the residents. The results of this study will assist planners and decision-makers in using quantitative standards instead of qualitative analysis in making decisions about urban spaces and park provision. Also, to promote the health benefits, it is important to make sure that everyone has access to green spaces in cities and that the choice of urban green spaces and parks in AMAC takes into account not just the number of green spaces but also how easy they are to get to and how they are used.

References

Alabi. M. O. (2020) Sustainable Urban Form and Challenges Of Open Space Utilization, Akure, Nigeria As A Case Study. *International Journal of Urban*

Sustainable Development, 12:3, 328-339.

Ali, M. J., Rahaman, M., & Hossain, S. I. (2022). Urban green spaces for elderly human health: A planning model for healthy city living. *Land Use Policy*, *114*, 105970.

Astell-Burt, T., Navakatikyan, M., Eckermann, S., Hackett, M., & Feng, X. (2022). Is urban green space associated with lower mental healthcare expenditure?. *Social Science & Medicine*, *292*, 114503.

Bentley, P. R., Fisher, J. C., Dallimer, M., Fish, R. D., Austen, G. E., Irvine, K. N., & Davies, Z. G. (2023). Nature, smells, and human wellbeing. *Ambio*, *52*(1), 1-14.

Brace, O., Marco, G., & José C. (2021). Gender Differences in the Perceptions of Greenspaces Characteristics. Social Science Quarterly. 102(6): 2640-2648.

Csepely-Knorr, L. (2011). The birth of the theory of urban green systems in Britain and Hungary. Correspondence between Thomas H. Mawson and Béla Rerrich concerning Urban Design Principles. *Agriculture and Environment*, *41*, 53.

Dillman, D. A. (2011). *Mail and Internet surveys: The tailored design method--2007 Update with new Internet, visual, and mixed-mode guide*. John Wiley & Sons.

Emechebe L.C. (2020). Challenges of Achieving Sustainable Green Space in Urban Built Environment in Nigeria. Environmental Technology & Science Journal. 11(2): 35-43

Eshetu, S. B., Yeshitela, K. & Sieber, S. (2021). Urban Green Space Planning, Policy Implementation & Challenges: The Case of Addis Ababa. MDPI Sustainability. 13(11344)

Ezeamaka, C. K., & Oluwole, O. A. (2016). Assessment of recreational facilities in federal capital city, Abuja, Nigeria. *The Indonesian Journal of Geography*, *48*(1), 21.

Federal Capital Development Authority (FCDA). (1979). The Master Plan For Abuja The New Federal Capital of Nigeria. FCDA, Abuja.

Gallay, I., Olah, B., Murtinová, V., & Gallayová, Z. (2023). Quantification of the Cooling Effect and Cooling Distance of Urban Green Spaces Based on Their Vegetation Structure and Size as a Basis for Management Tools for Mitigating Urban Climate. *Sustainability*, *15*(4), 3705.

Hassen, N. (2016). The Influence of Green Space on Mental Health & Well-Being. *Wellesley Junior Fellowship Report, A Scoping Review of Reviews*, 1-26.

Honey-Rosés, J., & Zapata, O. (2023). Green Spaces with Fewer People Improve Self-Reported Affective Experience and Mood. *International Journal of Environmental Research and Public Health*, *20*(2), 1219.

IPA (International Planning Associates) (1979). The Master Plan for Abuja, the New Federal Capital of Nigeria. FCDA, Abuja: Nigeria.

Jabbar, M., & Mohd Yusoff, M. (2022). Assessing and Modelling the role of urban green spaces for human well-being in Lahore (Pakistan). *Geocarto International*, 1-20.

Jiang, Y., & Huang, G. (2022). Urban residential quarter green space and life satisfaction. *Urban Forestry & Urban Greening*, *69*, 127510.

Jibril, I.U. (2010). The Return of the Greens in Abuja, Nigeria's new Capital City: Facing the Challenges – Building the Capacity. Sydney,Australia, 11-16.

Kaplan, R., & Kaplan, S. (1989). *The experience of nature: A psychological perspective*. Cambridge university press.

Kothencz, G., Kolcsár, R., Cabrera-Barona, P., & Szilassi, P. (2017). Urban green space perception and its contribution to well-being. International journal of environmental research and public health, 14(7), 766

Krekel, C., Kolbe, J., & Wüstemann, H. (2016). The greener, the happier? The effect of urban land use on residential well-being. *Ecological economics*, *121*, 117-127.

Krols, J., Aerts, R., Vanlessen, N., Dewaelheyns, V., Dujardin, S., & Somers, B. (2022). Residential green space, gardening, and subjective well-being: A cross-sectional study of garden owners in northern Belgium. *Landscape and Urban Planning*, *223*, 104414.

Lu, S., Oh, W., Ooka, R., & Wang, L. (2022). Effects of environmental features in small public urban green spaces on older adults' mental restoration: Evidence

from Tokyo. *International Journal of Environmental Research and Public Health*, *19*(9), 5477.

Ma, B., Zhou, T., Lei, S., Wen, Y., & Htun, T. T. (2019). Effects of urban green spaces on residents' well-being. *Environment, Development and Sustainability*, *21*, 2793-2809.

Mawson, Thomas H (1927): The Life and Work of an English Landscape Architect

McKinney, M. L., Kowarik, I., & Kendal, D. (2018). The contribution of wild urban ecosystems to liveable cities. *Urban Forestry & Urban Greening*, *29*, 334-335.

Mensah, C. A. (2014). Urban Greenspaces in Africa: Nature & Challenges. *International Journal of Ecosystem*. 4(1): 1-11

Mouratidis, K., & Yiannakou, A. (2022). What makes cities livable? Determinants of neighbourhood satisfaction and neighbourhood happiness in different contexts. *Land Use Policy*, *112*, 105855.

Olukoya, O. M., & Olukoya, O. (2018). Green Spaces in the Context of Spatial Urban Development: Interrogating the Case of Federal Capital City of Nigeria.

Olumuyiwa, B. A., Ayodele, E. I., Tobi, E. M. & Olawale, O. O. (2021). Urban Green Infrastructure in Nigeria: A Review. *Scientific African*. 14: e01044

Paris, M. K. (2018). Existing Ecological Theory Applies to Urban Environments. *Landscape and Ecological Engineering*. 14: 201-208

Payne, L., Ainsworth, B., & Godbey, G. (Eds.). (2010). *Leisure, health, and wellness: Making the connections*. State College: Venture Publishing.

Pouso, S., Borja, Á., Fleming, L. E., Gómez-Baggethun, E., White, M. P., & Uyarra, M. C. (2021). Contact with blue-green spaces during the COVID-19 pandemic lockdown beneficial for mental health. *Science of The Total Environment*, *756*, 143984.

Pouso, S., Borja, Á., Fleming, L. E., Gómez-Baggethun, E., White, M. P., & Uyarra, M. C. (2021). Contact with blue-green spaces during the COVID-19 pandemic lockdown beneficial for mental health. *Science of The Total Environment*, *756*, 143984.

Qiu, X., Kil, S. H., Jo, H. K., Park, C., Song, W., & Choi, Y. E. (2023). Cooling Effect of Urban Blue and Green Spaces: A Case Study of Changsha, China. *International Journal of Environmental Research and Public Health*, *20*(3), 2613.

Sati, Y. C., Uji, Z. A. & Popoola, O. J., (2016). Perceptible Attributes of Urban Greenspaces in the Architectural Characterization of Metropolitan Areas in Jos, Nigeria. *Research on Humanities and social sciences*. 6(4): 71- 77

Vick, C. G. (2007). Public Parks and Recreation. *Managing Local Government Services: A Practical Guide*, 235.

Wang, H., Dai, X., Wu, J., Wu, X & Nie, X., (2019). Influence of Urban Green Open Space on Residents' Physical Activity in China. *BMC Public Health*. 19(1093): 1-12

White, M. P., Alcock, I., Wheeler, B. W., & Depledge, M. H. (2013). Would you be happier living in a greener urban area? A fixed-effects analysis of panel data. *Psychological science*, *24*(6), 920-928.

Wood, C., Wicks, C., & Barton, J. (2023). Green spaces for mental disorders. *Current Opinion in Psychiatry*, *36*(1), 41-46.

Wood, C., Wicks, C., & Barton, J. (2023). Green spaces for mental disorders. *Current Opinion in Psychiatry*, *36*(1), 41-46.

World Health Organization. (2017). Urban green space interventions and health: A review of impacts and effectiveness.

Zakka, S. D., Permana, A. S., Majid, M. R., Danladi, A., & Bako, P. E. (2017). Urban greenery a pathway to environmental sustainability in sub–Saharan Africa: A case of Northern Nigeria Cities. *International Journal of Built Environment and Sustainability*, *4*(3).

Zhu, C., Ji, P., & Li, S. (2017). Effects of urban green belts on the air temperature, humidity and air quality. *Journal of Environmental Engineering and Landscape Management*, *25*(1), 39-55.