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Unveiling the Impact of Urban Green Landscape on Quality of Life in Kaduna, Nigeria: Residents' Perceptions and Sustainable Strategies
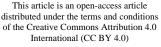
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ABSTRACT

This study investigates the influence of urban green landscapes on the Quality of Life (QoL) in Kaduna Metropolis, Nigeria, focusing on residents' perceptions and sustainable urban development strategies. Conducted from May to July 2023, the quantitative research surveyed 377 residents using a questionnaire. Statistical analysis, including correlation and t-tests, was performed using SPSS version 23. Findings reveal a positive perception of urban green spaces, significantly contributing to residents' QoL. Key results include high satisfaction with green areas enhancing environmental beauty (Mean=4.88, SD=0.90) and providing recreational appeal (Mean=4.45, SD=0.95). Additionally, these areas significantly impact perceived value (Mean=4.78, SD=0.93), prestige (Mean=4.92, SD=8.18), and attachment to the environment (Mean=4.71, SD=0.831). Residents with accessible and functional green spaces express higher satisfaction levels (Cronbach's Alpha > 0.9). The study underscores the importance of urban greenery in improving urban living conditions and offers strategic recommendations for sustainable urban planning. Addressing a gap in literature, this research provides empirical insights into residents' perspectives within Kaduna Metropolis, contributing to academic discourse and practical urban development approaches.

Highlights:	**Contribution to the field statement:**
- Residents' positive perceptions of urban green spaces are significantly associated with higher levels of overall quality of life - Enhanced quality of life is notably influenced by users' satisfaction and community ownership fostered by these urban green spaces. - Urban green spaces have the potential to contribute to the socio-economic development of urban areas. - Researchers, urban planners, and policymakers play pivotal roles in enhancing urban quality of life. - The study introduces data-driven perspectives to the wider discussion on the social and economic dimensions of urban spaces.	The study contributes to strategies for utilizing urban green spaces to improve residents' quality of life for sustainable urban development. By unveiling the impact of urban green landscapes, the manuscript contributes to the discovery of innovative methods and techniques for enhancing the quality of life in urban areas. The study's outcome provides insights into sustainable strategies that could be adopted by stakeholders to address challenges associated with green spaces.

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1. Introduction

Quality of Life (QoL) stands as a multifaceted concept that encapsulates the diverse dimensions of individual well-being, encompassing socio-economic, environmentally pleasing, and emotional wellness. In the contemporary discourse on QoL, urban environments have become central arenas for its exploration and enhancement. Urban quality of life is not just about its impact on individual residents but also extends to the overall health and vitality of cities. With global urbanization accelerating, the imperative to create livable, sustainable, and enjoyable urban spaces becomes more pronounced. The combination of physical, mental, economic, and external factors that shape human and social development is intricately characterized as quality of life. This definition establishes a conceptual framework aligned with sustainable human development, within communities (Barreira *et al.*, 2021). Examining the development of social well-being, the effectiveness of current policies in addressing people's needs, and the impact of investments.

Quality of life is particularly pertinent in settings like parks and outdoor environments (Sallis et al., 2006). Irrespective of the location of the landscapes, parks and greenspaces provide outdoor venues for relaxation and interactions. When individuals visit landscaped areas such as parks, they partake in a multi-sensory experience, considering it a vital space where individuals or social groups directly perceive a place (Shaw & Williams, 2004; Agboola; 2023b). Research on landscaped areas ranges from individual place and activity analyses (Chang & Gibson, 2011) to community-level investigations (Gomez *et al.,* 2015; Vogt *et al.,* 2020) to extensive studies on park accessibility (Larson et al., 2016). Chang & Gibson (2011) explored recreation activities encompassing both leisure (at home) and tourism (involving travel), revealing varying levels of mental, social, and physical health among participants during the engagement. Quality of life is influenced by various factors, with key considerations including access to employment opportunities, educational resources, safety, and the availability of recreational and cultural amenities. Recognizing these priorities offers valuable insights for policymakers and urban planners aiming to improve residents' well-being. Promoting affordable housing initiatives and policies is essential for creating inclusive communities that allow residents to thrive without the burden of excessive housing costs (Yap *et al.,* 2019). Additionally, environmental concerns, as highlighted by Dyachia *et al.* (2017) and Agboola & Rasidi (2018), pose challenges impacting quality of life. Issues such as pollution, inadequate waste management, and the depletion of green spaces can profoundly affect residents' health and well-being.

Urban green spaces contribute to better physical health outcomes by promoting regular physical activity, leading to improved cardiovascular health and reduced lifestyle-related diseases. Recreational spaces in urban green areas encourage outdoor activities, fostering a healthier lifestyle. Parks enhance positive social interactions, safety, and community ownership. Vogt et al. (2020) explored retrofitted design features, focusing on trail hubs that increase access between neighbourhoods and parks, correlating with higher levels of vigorous physical activity. Larson *et al.* (2016) established links between health, quality of life (QOL), and happiness, finding positive associations in cities with substantial parkland. Addressing urbanization challenges goes beyond improving specific aspects of urban life; it is central to enhancing overall resident satisfaction and well-being. A comprehensive approach, encompassing traffic management, public transportation expansion, affordable housing initiatives, and environmental sustainability, is crucial (Jeon *et al.,* 2016; Mohsin *et al.,* 2020). Proactively tackling these challenges enables communities to pave the way for a higher quality of life, creating environments where residents can lead fulfilling and contented lives.

This research endeavours to delve into the intricate relationship between urban green spaces and the quality of life within the context of the Kaduna Metropolis. As urbanization accelerates globally, the significance of creating livable, sustainable, and enjoyable urban spaces becomes increasingly pronounced. Quality of Life (QoL) is a multifaceted concept encompassing socio-economic, environmental, and emotional well-being, playing a pivotal role not only in the individual lives of residents but also in the overall health and vitality of cities. The study is grounded in a conceptual framework aligned with sustainable human development, emphasizing the interconnectedness of physical, mental, economic, and external factors that shape human and social development within communities (Barreira et al., 2021). With a particular focus on parks and outdoor environments, the research recognizes these spaces as essential components of urban landscapes, providing venues for relaxation, social interactions, and multi-sensory experiences. Parks, whether expansive or community-level, contribute significantly to residents' well-being, fostering positive social interactions, promoting safety, and encouraging a sense of community ownership.

The research acknowledges the influence of various factors on quality of life, ranging from access to employment opportunities and educational resources to safety, recreational amenities, and cultural offerings. The study emphasizes the importance of affordable housing initiatives in creating inclusive communities that allow residents to thrive without the burden of excessive housing costs. Additionally, environmental concerns, such as pollution, waste management, and the depletion of green spaces, are recognized as challenges that can profoundly impact residents' health and well-being. Specifically, the research aims to address the following objectives:

1. Assess Residents' Perceptions: Explore the perceptions of residents in Kaduna Metropolis regarding the impact of urban green spaces on their quality of life. Understand how individuals perceive the role of green areas in fostering well-being and satisfaction.

2. Evaluate Health and Well-being Outcomes: Examine the relationship between urban green spaces and residents' physical health, considering factors such as regular physical activity, cardiovascular health, and lifestyle-related diseases. Investigate how recreational spaces within green areas contribute to a healthier lifestyle.

3. Analyze Social and Community Factors: Investigate the social dynamics and community aspects influenced by urban green spaces. Explore how parks and outdoor environments enhance positive social interactions, safety, and community ownership, contributing to an improved quality of life.

4. Identify Challenges and Opportunities: Identify challenges related to urban green spaces in Kaduna Metropolis, such as accessibility, environmental sustainability, and potential threats to residents' well-being. Propose strategies and opportunities for sustainable urban development that leverage the positive aspects of green areas.

By addressing these specific research objectives, the study aims to provide actionable insights for policymakers and urban planners in the Kaduna Metropolis. The goal is to contribute to the development of tailored strategies that leverage the potential of urban green spaces to enhance the overall quality of life for residents, thereby fostering sustainable urban development in the face of ongoing urbanization challenges. Kaduna Metropolis stands out as a relevant and unique study setting due to its diverse urban challenges, cultural and socioeconomic diversity, specific regional context, ongoing urban growth, and potential implications for urban policies. By focusing on this distinctive setting, the research aims to provide insights that extend beyond the local context, contributing to the broader discourse on sustainable urban development and the role of green spaces in enhancing the quality of life in diverse urban environments.

Our findings highlight the role of urban green spaces in fostering social cohesion and community interaction. Parks and green recreational areas serve as focal points for social gatherings, events, and activities. Despite the growing body of evidence supporting the positive correlation between green areas and enhanced QoL, a notable gap exists in comprehending residents' perceptions, particularly within their immediate residential environments. The study's findings present a comprehensive examination of the relationship between urban quality of life and green areas. By delving into the nuanced interplay of these factors, this study seeks to provide valuable insights into how the strategic integration of green spaces can contribute to the improvement of urban living conditions. This study identifies and addresses a gap in the existing literature by focusing on residents' perceptions of the impact of urban green spaces on their quality of life within the specific context of Kaduna Metropolis, Nigeria. The findings highlight the crucial role of urban green spaces in influencing various dimensions of QoL, encompassing social, economic, cultural, ecological, physical, and psychological well-being. The originality of the study covers key aspects collectively shaping individuals' well-being and satisfaction in the urban environment. Recognizing the interconnectedness of these dimensions is crucial for a thorough understanding and enhancement of urban living, emphasizing the importance of a holistic approach to urban quality of life. The study delves into the impact of urban green landscapes on the quality of life in Kaduna. By exploring residents' perceptions and proposing sustainable strategies, it contributes valuable insights for urban planners, designers, and architects, showcasing the role they can play in enhancing the social and economic aspects of the built environment. Similarly, the study examines the impact of green spaces in the context of Kaduna, Nigeria, addressing a specific social and economic aspect of the built environment. This contributes to the broader discussion of emerging challenges facing global cities, providing a nuanced perspective from the field of environmental and urban studies.

2. Literature Review
2.1 Landscape Spaces and Urban Quality of Life

Landscape areas within residential environments go beyond aesthetics, significantly influencing well-being and quality of life. Landscaped green areas contribute crucially to overall neighborhood satisfaction (Crow *et al.,* 2006). Adverse effects of retail land use on satisfaction can be mitigated by higher tree or shrub coverage (Sullivan & Lovell, 2006; Ellis *et al.,* 2006). Water features and trees in neighborhoods encourage health-focused walking (Naderi & Raman, 2005), highlighting the multifunctional role of landscaped areas in enhancing residential livability and sustainability. Understanding and optimizing these roles are vital for urban planners, architects, and community developers prioritizing resident well-being.

Quality of life (QoL) encompasses various facets of urban existence, including wealth, employment, built environment, health, education, recreation, and social belonging. It is multidimensional, covering various urban life domains (Kısar & Türkoğlu, 2017). Urban green areas, as determinants of QoL, are integral components of the urban spatial system, crucial as public services (Kısar & Türkoğlu, 2017). This study focuses on the spatial dimension of QoL, categorizing parameters into eight key areas: residential, transport, security-safety, environment, socio-cultural, recreational, educational, and health. Transportation, residential, and environmental dimensions exhibit the highest number of parameters, reflecting their integral roles in urban life (Ab Rahman *et al.,* 2019).In recent decades, evidence, exemplified by Zhang *et al.* (2017), underscores urban green areas' substantial contribution to residents' overall quality of life. Cities prioritize values like security, peace, health, spatial quality, and ecological features, with open-green spaces crucial to achieving these goals. Despite urbanization's environmental challenges, such as air pollution and reduced green spaces, well-structured living environments and open green spaces are vital for maintaining urban life quality. Urban green spaces, despite environmental adversities, enrich the urban experience, serving as essential elements that foster nature interaction and community bonds. Mitigating negative impacts, these spaces significantly contribute to sustaining urban life quality, recognizing the fundamental human need for nature interaction (Jansson, 2013; Mshelia, *et.al.,* 2020). The significance of parks plays a crucial role in enhancing the quality of life, particularly in urban areas.

Urban green areas are essential for elevating citizens' quality of life, playing a pivotal role in ensuring overall well-being. These spaces contribute significantly to sustainable urban development, positively impacting various aspects of urban life. Recognized for their positive correlation with quality of life, urban green initiatives demand comprehensive information for effective decision-making by public and private stakeholders (van Vliet *et al.,* 2021). Whether public, semi-public, or private, urban green areas are integral elements shaping urban life positively. They operate on multiple levels, including environmental, and ecological, actively influencing the image and character of urban areas. With their versatility, these spaces serve as crucial facilitators, promoting interaction between human activities and the environment, thereby enhancing the overall quality of life. As local champions, urban green areas contribute significantly to community satisfaction and a sense of place. Moreover, the cultural services provided by these green spaces have tangible impacts on neighborhoods and the built environment, fostering a sense of community and place satisfaction (Jennings *et al.*, 2016). Urban green areas are key indicators of quality of life (QoL), influencing residents' perceptions and well-being. Integrated into the urban spatial system, these spaces are crucial public services (Kısar & Türkoğlu, 2017). Research confirms their positive impact on urban QoL, enhancing social, ecological, and psychological well-being (Zhang *et al.,* 2017; Yılmaz *et al.,* 2017). In today's urban landscape, factors like security, peace, health, space quality, and open-green areas are essential for life quality.

The multifunctionality of urban green spaces extends to environmental, and socio-cultural, aspects, shaping the character and image of urban areas. These areas act as local promoters of QoL, fostering a sense of place, community satisfaction, and tangible impacts on neighborhoods and the built environment (Sirgy, *et.al.* (2004; Jennings *et al.,* 2016). As various research prioritizes QoL, environmental variables, particularly green spaces, play a crucial role in improving citizens' well-being (Mostafa, 2012). Amid the focus on socio-economic measures, this study underscores the significance of urban green areas as essential tools to measure progress and enhance overall QoL. Improved information on the quantity and quality of urban green spaces for effective strategic urban planning becomes imperative (van Dinter et al., 2022). This study contributes to understanding the intricate relationship between these spaces and quality of life (QoL). As concerns about QoL grow, the use of community indicators has become prevalent for assessing current quality of life and tracking progress

(Mostafa, 2012). Despite numerous local governments prioritizing enhancing citizens' quality of life, efforts often focus on neglecting environmental variables like green spaces. To enhance QoL through urban green areas, and comprehensive information about the landscaped spaces in the cities (van Dinter *et al.,* 2022).

2.3. Conceptual Framework for Urban Quality of Life

The conceptual framework for urban quality of life serves as a comprehensive structure that systematically organizes and explores the multifaceted elements influencing the well-being and satisfaction of individuals within urban environments. This framework (Figure 1) integrates diverse dimensions, recognizing the intricate interplay between social, economic, and environmental factors. Mohit (2013) emphasized the correlation between the landscape environment and the concept of quality of life through two primary indicators: (i) objective indicators, encompassing the measurement of tangible conditions, and (ii) subjective indicators, reflecting people's feelings about various living factors (Nasution & Zahrah, 2014). The conceptual framework in Figure 1; acknowledges the dynamic nature of urban environments and quality of life, considering the evolving socio-economic, environmental, and cultural dynamics. The framework emphasizes the interdependence of objective and subjective indicators, recognizing that both tangible conditions and individual perceptions contribute to the overall assessment of urban quality of life. This conceptual framework provides a holistic perspective for researchers, urban planners, and policymakers, guiding the comprehensive assessment and improvement of urban quality of life. It encourages an inclusive approach that considers both quantifiable factors and the subjective experiences of individuals within the urban landscape.

Figure 1. Study's Framework.

Based on the theoretical framework and the stated objectives, the study formulates the following hypotheses to guide the investigation into the relationship between urban green spaces and the quality of life in Kaduna Metropolis:

1. **Hypothesis related to Residents' Perceptions:**
- Null Hypothesis (H0): There is no significant association between residents' perceptions of urban green spaces and their overall quality of life in Kaduna Metropolis.

- Alternative Hypothesis (H1): Residents' positive perceptions of urban green spaces are significantly associated with higher levels of overall quality of life in Kaduna Metropolis.

2. **Hypothesis related to Health and Well-being Outcomes:**
- Null Hypothesis (H0): There is no significant correlation between the presence of urban green spaces and residents' physical health outcomes, including regular physical activity, cardiovascular health, and reduced lifestyle-related diseases.
- Alternative Hypothesis (H1): The presence of urban green spaces is significantly correlated with improved physical health outcomes among residents, including increased levels of regular physical activity, better cardiovascular health, and reduced prevalence of lifestyle-related diseases.

3. **Hypothesis related to Social and Community Factors:**
- Null Hypothesis (H0): Social and community factors influenced by urban green spaces do not significantly contribute to an enhanced quality of life for residents in Kaduna Metropolis.
- Alternative Hypothesis (H1): Positive social interactions, safety, and community ownership fostered by urban green spaces significantly contribute to an improved quality of life for residents in Kaduna Metropolis.

4. **Hypothesis related to Challenges and Opportunities:**
- Null Hypothesis (H0): Challenges associated with urban green spaces, such as accessibility, environmental sustainability, and potential threats to residents' well-being, do not significantly impact overall quality of life in Kaduna Metropolis.
- Alternative Hypothesis (H1): Addressing challenges and leveraging opportunities related to urban green spaces significantly contributes to sustainable urban development, positively impacting the overall quality of life for residents in Kaduna Metropolis.

3. Material and Method
3.1 Measurement of the quality of life

The concept of quality of life encompasses various dimensions, each marked by numerous environmental attributes, emphasizing the influential role of places in overall well-being. Many planning and design approaches assume intentional design can enhance well-being. Given most individuals' predominant urban residence, exploring connections between urban area characteristics and residents' perceived quality of life is crucial (Marans, 2015). A literature review identifies seven primary dimensions crucial for urban quality of life: i) Environmental urban, ii) Political urban, iii) Physical urban, iv) Mobility urban, v) Economic urban, vi) Social urban, and vii) Psychological urban. These dimensions are intricately interconnected, shaping the overall urban experience (Firouzbakht, *et. al,* 2020; Serag, *et al.,* 2013). Notably, the environmental quality of dwellings and the local household conditions are important predictors of community quality of life. This study adopts a survey technique that integrates quantitative and qualitative data to better understand inhabitants' quality of life perspectives regarding green space usage in Kaduna District. The study compensates for the existence of green places using a satisfaction-based measuring' approach, which is informed by Marans' model, which defines the link between satisfaction with green areas in the local residential surroundings and overall quality of life. The poll captures persons' opinions about socio-environmental conditions and behaviours while assessing the quality of urban living on both objective and subjective aspects (Marans, 2015). The satisfaction model is used to guide the measurement approach, which takes into account both objective and subjective characteristics.

The study model elucidates the complicated link between green spaces and the near-home environment in determining the quality of life. Quality of life, as seen as the interaction of wants, requests, and satisfaction, is dependent on levels of satisfaction from addressing these needs and requests within the residential environment. Green spaces improve people's quality of life, especially in cities. The quality of life indicators in this study primarily focuses on the role of green areas in the immediate residential context, specifically picking measures that are directly related to the presence of these areas. The study develops theoretical foundations by investigating residents' perceptions and proposing sustainable strategies. Methodologically, it provides insights into how the quality of life in urban areas can be assessed and improved, contributing to the theoretical and methodological foundations in the study of social and economic problems associated with contemporary urbanization. Through the empirical study on the impact of urban green landscapes, the manuscript brings a
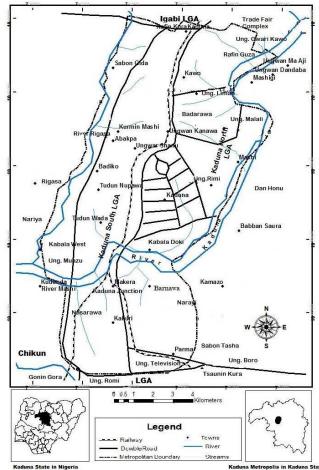
scientific view to the emerging challenges faced by urban environments. It adds data-driven perspectives to the broader discourse on the social and economic aspects of urban spaces.

3.2 Description of the Study Area: Kaduna Metropolis

Kaduna Metropolis (Figure 2), located in north-central Nigeria, serves as the capital of Kaduna State, blending traditional and modern elements with cultural richness. Positioned at approximately 10.5264° N latitude and 7.4388° E longitude, the city features diverse topography, including plains, hills, and water bodies, contributing to its visual and ecological diversity. With a population of 1,187,000 as of 2023, Kaduna Metropolis reflects Nigeria's cultural diversity, with the harmonious coexistence of various ethnic groups due to historical migrations and urbanization trends. The Kaduna city boasts a diverse architectural heritage, encompassing colonial-era structures to contemporary designs, and its infrastructure includes roads, educational institutions, healthcare facilities, and ongoing development projects aimed at improving residents' quality of life. Kaduna Metropolis offers a multifaceted blend of historical roots and modern dynamism, making it a significant focus for studies exploring and enhancing the quality of life in this culturally rich urban landscape, supported by proactive urban development initiatives and policies implemented by the government. In terms of the justification for choosing the Kaduna metropolis; the city serves as a uniquely relevant study setting for the exploration of the nexus between urban green spaces and quality of life due to several distinctive characteristics, making it a noteworthy focus of investigation.

- Diversity of Urban Challenges: Kaduna Metropolis encapsulates a diverse range of urban challenges commonly faced by rapidly urbanizing regions. The city grapples with issues such as traffic management, public transportation expansion, affordable housing, and environmental sustainability. The prevalence of these challenges provides a rich context for understanding how the integration of urban green spaces can serve as a multifaceted solution to enhance overall resident satisfaction and well-being.
- Cultural and Socioeconomic Diversity: The city's population is characterized by cultural and socioeconomic diversity, reflecting a microcosm of broader urban demographics. Investigating the impact of green spaces on quality of life in such a varied setting allows for nuanced insights into how different demographic groups perceive and benefit from these areas. This diversity is crucial for designing inclusive strategies that cater to the needs and preferences of a heterogeneous urban population.
- Regional Context: Kaduna Metropolis is situated within a specific regional context, influenced by local environmental conditions, cultural practices, and economic dynamics. Examining the relationship between urban green spaces and quality of life in this context allows for the identification of region-specific challenges and opportunities. The findings can potentially contribute to the development of targeted interventions that align with the unique characteristics of the region, setting a precedent for other urban areas facing similar contextual factors.
- Urban Growth and Development: The city's ongoing urbanization presents an opportunity to study the impact of green spaces amidst rapid development. As urban areas expand, the preservation and integration of green areas become increasingly critical. Understanding how urban green spaces can be strategically incorporated into the evolving urban landscape of Kaduna Metropolis offers valuable insights for sustainable urban development practices, with potential applications in other burgeoning cities.
- Policy Implications: Kaduna Metropolis, like many urban centers, is likely subject to various urban policies and interventions. Investigating the relationship between green spaces and quality of life in this setting provides an opportunity to assess the effectiveness of existing policies and propose evidence-based recommendations for future urban planning initiatives. The study's outcomes can inform policymakers on strategies to optimize the contributions of green spaces to residents' well-being.

Figure 2: Map of Kaduna Metropolis **Source**: Geographical Information Survey Unit, KASU (2023).
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3.3. Sampling, Measurement Tools and Data Collection

This study examines Kaduna residents' perceptions of the impact of urban green spaces on quality of life. Data were collected through a questionnaire in Kaduna District, with a sample size of 377 determined using the Raosoft Sample size calculator based on the population of Kaduna District (1,133,000; in 2021). The margin of error was set at 5%, with a confidence level of 95% and a response distribution of 50%. The questionnaire, conducted from May to July 2023, employed a face-to-face method, involving 402 participants randomly sampled from various neighbourhoods of Kaduna District, focusing on adults over 18 years old. The questionnaire, divided into three sections with 24 questions, explored Quality of Life (QoL) in Kaduna District, focusing on green areas and the immediate residential environment. Demographic information was gathered in the first section, overall quality of life in the second, and satisfaction with landscape features and green areas in the third (both subjective perceptions and objective indicators). Quality of life in this study is defined based on preference satisfaction. The obtained data underwent analysis using Statistical Package for the Social Sciences (SPSS version 23), a widely used software package for statistical analysis in various fields. Green area users responded, generating variables for regression analysis. Statistical methods, including frequency, percentage, correlation analysis, and t-tests, were applied to independent variables to determine differences and significance levels. Reliability analysis, measured by Cronbach Alpha, found the data reliable, with gender, income level, and the number of children included as independent variables in the evaluation.

4. Data Analysis and Results

Table 1 presents the analysis and results, detailing demographic characteristics and overall quality of life satisfaction in the immediate residential environment. The sample size of 377 respondents has a balanced representation of females (52.50%) and males (47.48%). Across age groups, 62 (16.44%) are in the 18-25 range, 66 (17.50%) in 26-35, 118 (31.29%) in 36-45, 66 (17.50%) in 46-55, 35 (9.28%) in 56-65, and 30 (7.95%) in 66 years and above. In terms of marital status, 125 (33.15%) are single, 196 (51.98%) are married, and 56

(14.85%) are widowed or divorced. Regarding education, 23 (6.10%) have no schooling, 127 (33.68%) are high school graduates, 82 (21.75%) and 65 (17.24%) have Associate and Undergraduate degrees, and 27 (7.16%) are Postgraduates. Participants rated overall life quality on a 5-point Likert scale, with Cronbach's alpha (α) at 0.899, and the general life quality score for the entire sample is 3.98 (Table 2). A Cronbach's alpha exceeding 0.9 is excellent, and above 0.8 is considered good, indicating respondents' high satisfaction with the quality of life.

Table 1. Demographic characteristics of the respondents.

Independent variables		Frequency (f)	Percentage (%)
Gender	Female	179	52,50
	Male	198	47,48
Age status	18-25	62	16,44
	26-35	66	17,50
	36-45	118	31,29
	46-55	66	17,50
	56-65	35	9,28
	66 years and above	30	7,95
Education level	Not attended	23	6,1
	Primary school	53	14,05
	Secondary/High school	127	33,68
	Associate degree	82	21,75
	Undergraduate	65	17,24
	Postgraduate	27	7,16
Marital status	Single	125	33,15
	Married	196	51,98
	Widow/divorced	56	14,85
Household capacity	1-2 numbers	43	11,40
	3-4 numbers	138	36,60
	5-6 numbers	149	39,52
	6 and above	47	12,46
Employment	Employed	286	75,86
	Unemployed	42	11,14
	Retired	27	7,16
	Decided not to work	23	6,10
	Total	**377**	**100,0**

Table 2: The respondents' overall satisfaction level on the quality of life.

Variables of the Quality of Life	Number (N)	Mean Values (M)	Std. Deviation (SD)
Residential buildings	377	3,96	0,81
Kaduna Metropolis	377	3,98	0,83
Education	377	4,83	0,88
Work-Life Balance	377	3,92	0,87
Economic Well-being	377	4,84	0,82
Standards of living	377	3,81	0,90
Health status	377	3,86	0,81
Infrastructural facilities	377	3,82	0,88
Social and Cultural Factors	377	3,87	0,88
Personal Happiness and Satisfaction	377	4,85	0,80
Social relations with family, friends, and neighbor	377	3,89	0,85
Community Life	377	4,80	0,86

1,00-1,79: Respondents not satisfied at all; **1,80-2,59**: Respondents not satisfied; **2,60-3,39**: Respondents not-decided; **3,40-4,19**: Respondents satisfied; **4,20-5,00**. Respondents are very satisfied.

Participants were surveyed to identify factors influencing the presence of landscaped elements in their Kaduna metropolis homes (Table 3). Out of 377 respondents, 1281 responses were collected, allowing participants to select multiple factors. Analysis revealed that the most prevalent consideration for choosing residence in the Kaduna metropolis was a "secured neighborhood," cited by 303 (23.65%) respondents. Other significant factors included "having a playground and relaxation facility in the neighborhood" (18.26%), "neighborhood with a private landscaped garden" (16.15%), and "a greater proportion of landscaped green areas compared to other neighborhoods" (14.59%). The top consideration for choosing residence in the Kaduna metropolis is a "secured neighborhood," cited by 303 respondents (23.65%). This underscores residents' priority for safety in their housing decisions. The second most common factor is the preference for a "neighborhood with a playground and relaxation facility," with 234 responses (18.26%), emphasizing the significance of recreational amenities in residential areas for residents seeking leisure and relaxation near their homes.

Residents in the Kaduna metropolis show a notable preference for a "neighborhood with a private landscaped garden," as indicated by 207 responses (16.15%). This suggests a substantial value placed on having personal green spaces, potentially for leisure, gardening, or creating a tranquil home environment. Additionally, the consideration of a "greater proportion of landscaped green areas compared to other neighborhoods" is significant, with 187 responses (14.59%). Residents not only prioritize the presence of green spaces but also compare their quantity and quality across different neighborhoods when making housing decisions. The possession of "landscaped green areas around the immediate residential neighborhood" is valued by 148 respondents (11.55%), emphasizing the importance of well-maintained greenery near homes. Other contributing factors, though less prevalent, include the significance of a "children's playground," mentioned by 103 participants (8.04%), and the desire for a "serene residential immediate environment," indicated by 99 responses (7.75%). These findings underscore the importance of family-friendly amenities and a peaceful atmosphere in residents' decision-making processes. Overall, safety, recreational amenities, and green spaces play significant roles in residents' housing choices in the Kaduna metropolis. In the context of Kaduna metropolis, residents' housing choices are notably influenced by three key factors: safety, recreational amenities, and green spaces. The emphasis on "safety" suggests that individuals prioritize living in neighborhoods perceived as secure, underlining the importance of a secure environment in their decision-making process. The prominence of "recreational amenities" indicates a desire for facilities like playgrounds and relaxation areas, suggesting that residents value access to spaces for leisure and relaxation within their immediate vicinity. Additionally, the consideration of "green spaces" underscores the significance of natural environments, with residents preferring areas with private landscaped gardens and a higher proportion of landscaped green areas compared to other neighborhoods. In summary, residents in Kaduna prioritize safety, access to recreational facilities, and the presence of green spaces when selecting their homes, reflecting a broader focus on well-being and quality of life in their housing decisions.

Regarding residents' satisfaction with the landscaped environment in the Kaduna metropolis, the results are summarized in Table 4. A significant 89.92% (339 individuals) expressed complete satisfaction with the scenic green landscaped areas, while only 3.18% (12 individuals) reported dissatisfaction, and 1.59% (26 individuals) were partly satisfied. Evaluating the effects of these green spaces on citizens, 86.73% (327 respondents) indicated a positive impact, 3.97% (15 individuals) reported harm, and 9.28% (35 individuals) noted no effect at all. This assessment provides valuable insights into residents' satisfaction levels and perceived effects of the green landscaped areas, showcasing a predominantly positive sentiment. The high satisfaction rate indicates that the majority find these areas visually appealing, enjoyable, or fulfilling in some way. While the majority (86.73%) reported positive effects of green landscaped areas, a minority (3.18%) expressed dissatisfaction. Understanding these concerns can reveal specific areas for improvement. A moderate 1.59% found partial satisfaction, indicating room for enhancements. Additionally, 3.97% noted negative effects, emphasizing the need to explore challenges associated with green spaces. Interestingly, 9.28% perceived no effect, reflecting diverse preferences or the necessity for more nuanced inquiries to capture subtler impacts. Summarily, this assessment offers valuable insights for enhancing the quality and effectiveness of green landscaped areas in the Kaduna metropolis. The assessment serves as a guide for urban planners and policymakers in Kaduna to enhance the overall quality and effectiveness of green landscaped areas, ensuring they align with residents' expectations and preferences.

Table 3: Respondents' appraisals of the availability of landscaped elements in their homes' environment.

Variables of the building possession	Frequency (f)	Percentage (%)
1. Secured neighborhood	303	23,65
2. Having a playground and relaxation facility in the neighborhood	234	18,26
3. Neighborhood with private landscaped garden	207	16,15
4. Greater proportion of landscaped green areas when compared to other neighborhood	187	14,59
5. Possession of landscaped green areas around the immediate residential neighborhood.	148	11,55
6. Possession of children's playground	103	8,04
7. Possession of serene residence immediate environment	99	7,72
Total	**1281**	**100**

Table 4: Residents' Satisfaction with Kaduna Metropolis about the Landscaped Environment.

Satisfaction with green landscaped area	Frequency (f)	Percentages (%)
The scenery green landscaped area makes me satisfied	339	89,92
The scenery green landscaped area makes me dissatisfied	12	3,18
The scenery green landscaped area makes me partly satisfied	26	1,59
Total	**377**	**100**
Effect of the scenery green landscaped areas on the citizens		
The scenery of green landscaped areas has a positive effect	327	86,73
The scenery of green landscaped areas has a negative effect	15	3,97
The scenery of green landscaped areas has no effect at all	35	9,28
Total	**377**	**100**

From Table 5, 5.30% of respondents never visited landscaped green areas in the Kaduna metropolis, and 12.46% did not venture outside the metropolis. A majority, 78.24%, visited the metropolis 1-2 times weekly, reflecting a positive engagement with local green spaces for leisure or recreation. Frequencies of 3-4 times (12.99%) and 4-5 times or more (3.44%) within the metropolis indicated varying degrees of commitment to utilizing green areas. The study highlights respondents' regular interaction with local green spaces, suggesting an integration of nature-related activities into their weekly routines. Notably, 53.84% of respondents visited green areas outside the Kaduna metropolis 1-2 times a week, indicating a dual preference for both local and external green spaces. This trend suggests diverse preferences or a curiosity to explore different environments. Additionally, 12.99% reported visiting within Kaduna metropolis 3-4 times a week, highlighting a smaller yet dedicated group with a strong affinity for local green areas, possibly influenced by factors like proximity, convenience, or unique amenities offered. The limited visits (3.44% within the Kaduna metropolis and 2.12% outside) among those who frequent green areas 4-5 times a week or more suggest a smaller but committed group valuing frequent nature engagement. Investigating this group's characteristics and motivations can offer insights for urban planning. The discovery that 12.46% never visited green areas beyond the Kaduna metropolis prompts inquiries into accessibility, awareness, or appeal of such spaces. Exploring the reasons behind this trend informs strategies to promote visits to external green areas. This exploration provides insights for urban planning, suggesting a need to understand characteristics and motivations to enhance overall green space utilization and promote external visits. The data underscores the importance of understanding the characteristics and motivations that influence residents' interactions with green areas. Identifying the factors that contribute to residents' preferences and patterns of engagement can inform urban planners about the specific needs and desires of the community. This understanding is crucial for enhancing the overall utilization of local green spaces within the metropolis. Additionally, the discovery of a dual preference for both local and external green spaces highlights the need to create appealing and accessible environments in both contexts. By addressing factors such as proximity, unique amenities, and overall appeal, urban planners can develop

strategies to encourage more frequent and diverse visits to green areas, contributing to the well-being and satisfaction of the residents.

Table 6 illustrates residents' perspectives on the accessibility and limitations of landscaped green areas, with 68.16% expressing satisfaction, and 12.46% feeling dissatisfied. Additionally, 7.69% find access difficult, 5.03% feel insecure, and 6.63% mention overcrowding. These varied opinions provide a nuanced understanding of residents' experiences. Notably, the majority, 68.16%, are content with access, reflecting the perceived alignment of green areas with their intended purposes. This positive sentiment indicates effective utilization for recreation or relaxation, portraying the green spaces as well-received and valuable resources in the community. Recognizing the 12.46% of respondents dissatisfied with accessing landscaped green areas is crucial, signifying potential discrepancies between design and residents' needs. Exploring their reasons offers insights for improvements. The 7.69% facing difficulty accessing these areas may highlight physical or logistical barriers, necessitating attention to enhanced inclusivity and broader accessibility. Addressing these concerns ensures that green spaces cater to diverse resident needs. The 5.03% expressing feeling unsecured when accessing landscaped green areas raises safety concerns, emphasizing the need for robust security measures. Addressing safety issues is pivotal for creating an inviting environment that encourages community engagement in these areas. Safety significantly influences residents' quality of life perceptions, with well-lit streets and effective policing strategies enhancing overall satisfaction. Additionally, 6.63% of respondents noted overcrowding concerns, emphasizing the importance of thoughtful management to prevent negative impacts on the user experience despite high popularity. Addressing these nuanced perspectives is crucial for ensuring green spaces effectively cater to diverse resident needs, promoting satisfaction and community engagement. By addressing these, urban planners and policymakers can ensure that green areas become integral components of the community, promoting satisfaction, well-being, and a strong sense of belonging among residents.

Table 7 illustrates the impact of green landscaped areas on Kaduna metropolis residents' quality of life, with an average satisfaction score of 4.99 and a reliable Cronbach's Alpha of 0.880. The results highlight positive perceptions, with respondents indicating that these areas enhance the beauty of their environment (Mean=4.88, SD=0.90) and make it more visually appealing for visits (Mean=4.45, SD=0.95). The findings also show that green landscaped areas contribute to the perceived value (Mean=4.78, SD=0.93), prestige (Mean=4.92, SD=8.18), and attachment to the environment (Mean=4.71, SD=0.831). Overall, residents express satisfaction, affirming the positive impact of these areas on their well-being and living experience. The focus on the visual appeal of green areas underscores their significant role in enhancing the environment's beauty, contributing to a visually pleasing urban landscape. The mean score of 4.45 (with a standard deviation of 0.95) for making the environment more visible to visit highlights the attractiveness and accessibility of these spaces, encouraging resident engagement. The perceived increase in the environment's value, with a mean score of 4.78 and a standard deviation of 0.93, suggests residents attribute economic and cultural significance to green areas, enhancing overall desirability. A high mean score of 4.92 (with a low standard deviation of 0.818) for making the environment more prestigious indicates residents' associate prestige with well-landscaped areas, positively impacting community image. Lastly, the mean score of 4.71 (with a standard deviation of 0.831) for making the environment more attached indicates residents feel emotionally connected to their surroundings, fostering community well-being. Overall, the findings affirm residents' satisfaction with green landscaped areas and underscore their positive influence on various aspects of residents' lives and the overall urban landscape. Resident feels emotionally connected to their surroundings, contributing to a sense of attachment and community. well-being. These positive outcomes underscore the importance of well-designed green spaces in enhancing residents' satisfaction and the overall quality of urban living.

The results in Table 8 reveal the relationship between green landscaped areas in residential environments and gender. With a Cronbach's Alpha value of 0.899 and a mean satisfaction level of 4.58, the internal consistency and satisfaction measurement reliability are high. The examination of the relationship between green landscaped areas and gender shows a significant level ($p < 0.05$) for all variables, indicating a noteworthy association. Notably, females exhibit higher significance levels compared to males. This statistical analysis, indicative of residents' satisfaction, establishes a baseline for understanding the impact of gender on perceptions. The identified significant relationship underscores that gender differences influence how residents perceive and value the contributions of green areas, suggesting varied experiences and preferences between

men and women. The findings suggest that men and women have distinct experiences and preferences when it comes to assessing the contributions of green areas, emphasizing the importance of considering gender dynamics in the planning and management of residential landscapes.

Table 5: Frequency of respondents' visiting the landscaped green areas.

Frequency of going to landscaped green areas	Around Kaduna metropolis		Outside of the Kaduna metropolis	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Never	20	5,30	138	12,46
1-2 times a week	295	78,24	203	53,84
3-4 times a week	49	12,99	28	7,42
4-5 times a week or more	13	3,44	08	2.12
Total	**377**	**100**	**377**	**100**

Table 6. Residents' opinions on the levels of accessibility and limitations of the landscaped green areas.

Accessibility to the landscaped green areas	Frequency (f)	Percentage (%)
1. Accessing the landscaped green areas satisfies my intentions	257	68,16
2. Accessing the landscaped green areas does not satisfy my intentions	47	12,46
3. Accessing the landscaped green areas is difficult	29	7,69
4. Accessing the landscaped green areas makes me unsecured	19	5,03
5. Accessing the landscaped green areas is always crowded	25	6,63
Total	**377**	**100**

Table 7. The effects of the green landscaped areas on quality of life.

Landscaped Green areas in Kaduna metropolis	N	Mean	Std. Deviation
1. Landscaped green areas make my environment more beautiful	377	4,88	0,907
2. Landscaped green areas make my environment more visible to me to visit	377	4,45	0,951
3. Landscaped green areas make my environment more valuable	377	4,78	0,930
4. Landscaped green areas make my environment more prestigious	377	4,92	0,818
5. Landscaped green areas make my environment more attached	377	4,71	0,831
Total	**377**	**4,99**	**100**

1,00-1,79 I strongly disagree, 1,80-2,59 I do not agree, 2,60-3,39 no idea, 3,40-4,19 I agree, 4,20-5,00 agree

Table 8. Relations between Contributions of Green Landscaped Areas in Residence Immediate Environment and Gender (T-Test)

Variables of the contributions	N	Mean	Std. deviation	Gender	Mean	Std. deviation	Std. Error Mean	Sig. (2-tailed)
1. My family and I can get closer to nature in green, landscaped areas.	377	3,98	0,896	Female	4,91	0,820	0,069	0,003
				Male	4,02	0,810	0,057	0,001
2. I get drawn away from the bustle of the city by green, landscaped areas.	377	3,87	0,834	Female	4,21	0,934	0,058	0,003
				Male	4,08	0,800	0,045	0,002
3. My atmosphere is made beautiful by a green and well-landscaped environment.	377	3,83	0,928	Female	3,26	0,815	0,078	0,002
				Male	3,10	0,822	0,082	0,001
4. My physical and mental well-being are positively impacted by a landscaped green environment.	377	3,09	0,913	Female	4,28	0,966	0,045	0,002
				Male	3,11	0,899	0,081	0,002
5. I feel calmer and more at ease in green, landscaped areas.	377	4,92	0,951	Female	3,99	0,933	0,064	0,002
				Male	3,12	0,888	0,093	0,003
6. Green landscaped Areas increase the overall quality of space	377	4,77	0,900	Female	4,22	0,944	0,053	0,012
				Male	4,01	0,701	0,054	0,012
7. Cleanliness and health are enhanced by a landscaped green environment.	377	4,48	0,916	Female	3,77	0,955	0,027	0,011
				Male	3,00	0,818	0,082	0,013

1,00-1,79: I strongly disagree; 1,80-2,59: I do not agree; 2,60-3,39: No idea; 3,40-4,19: I agree; 4,20-5,00: I agree.

5. Discussion

These results offer a comprehensive overview of residents' quality of life perceptions, emphasizing safety, community engagement, green spaces, addressing challenges, and accounting for demographic variations, aligning with Lahoti *et al*. (2023) and El Din *et al*. (2013). Understanding these factors is vital for informed decision-making and policy development to enhance overall well-being. The diverse factors influencing the availability of landscaped elements in homes in the Kaduna metropolis reflect resident priorities. The strong emphasis on security, recreational amenities, and well-maintained green spaces indicates varied preferences contributing to the overall livability of residential areas. Urban planners and developers can leverage these insights to create neighborhoods aligned with the diverse needs of the community, fostering sustainable and attractive living environments in the Kaduna metropolis.

The findings present a nuanced picture of the utilization of landscaped green areas in and around the Kaduna metropolis, in line with Adegun *et al*. (2021). Varying visit frequencies within and outside the metropolis highlight the dynamic nature of residents' interactions with green spaces. Access to green spaces and recreational amenities significantly shaped residents' perceptions of their living environment. Proximity to parks, playgrounds, and other recreational facilities correlated with a higher quality of life, supported by Adegun *et al*. (2021) and Kaczynski *et al*. (2014). Consistent with Shores and West (2008), the availability of green spaces was linked to improved mental well-being and a greater sense of connection to nature.

These insights are crucial for optimizing green area design and management to align with local preferences and needs, benefiting urban planners, policymakers, and community stakeholders. They align with

previous work by Nielsen *et al.* (2019) and Sharifi *et al.* (2017). Future research could explore the qualitative aspects of residents' experiences for a comprehensive understanding of the relationship with green spaces in the Kaduna metropolis (Sharifi *et al.,* 2017; Kowaltowski, *et.al.* (2006). The majority of surveyed citizens derive satisfaction and positive well-being effects from green landscaped areas, consistent with Agboola's study (2023a) emphasizing their role in creating a sustainable and healthy environment. However, a minority expresses dissatisfaction or perceives negative effects, emphasizing the importance of understanding individual preferences and concerns. These findings guide urban planners and policymakers in tailoring green space initiatives to meet diverse community needs, aligning with Armitage *et al.* (2012), and Agboola (2023b); where qualitative research offers deeper insights into specific aspects contributing to satisfaction or dissatisfaction for more targeted interventions.

This finding indicates satisfaction with green areas in the immediate residential environment, highlighting their significant contributions to life quality. This aligns with previous observations by Kondo *et al.* (2018), emphasizing the positive links between exposure to green areas and quality of life. Policymakers need to understand public needs and requests for green areas to enhance overall life quality. Varied responses on accessibility and limitations underscore the importance of considering diverse community needs. While the positive majority opinion is promising, concerns raised by the minority, especially regarding difficulties, security, and overcrowding, must be addressed for inclusive and sustainable green spaces. This information can guide urban planners and policymakers in refining design and management strategies to optimize the overall user experience and effectively serve residents' well-being in the Kaduna metropolis.

Our research consistently shows a significant positive correlation between access to urban green spaces and improved mental well-being, aligning with Kondo *et al.* (2018). Proximity to green areas is associated with lower levels of stress, anxiety, and depression, as reported by respondents living nearby compared to those without such access. This aligns with previous studies by Moore *et al.* (2018) and Velarde *et al.* (2007), indicating that green spaces act as a buffer against the negative impacts of urban living on mental health. Understanding the impact of green landscaped areas on quality of life is crucial for urban planning and community well-being, with this study providing insights into residents' perceptions of these areas' effects on various aspects of their lives.

This study aligns with Romice *et al.* (2017), emphasizing green areas as a crucial urban element positively contributing to quality of life. Green landscaped environments demonstrate how thoughtfully designed spaces enhance well-being across generations, making them essential for urban development. Meeting the needs and functions of green areas is vital for improving the quality of life, particularly in urban settings. Overall, the results highlight that satisfaction positively influences quality of life, specifically in the Kaduna metropolis. Residents perceive the aesthetic, economic, and cultural contributions of green landscaped areas, emphasizing their significance in urban planning and community development. The high satisfaction levels and positive associations suggest that continued investment and maintenance of green spaces can be a valuable strategy for enhancing overall community well-being.

The relationships between gender and the impact of green landscapes in immediate residential areas unveil nuanced differences in satisfaction, perceived effects, and preferences. Recognizing these distinctions is vital for creating residential environments tailored to the diverse needs and perceptions of both genders, contributing to more inclusive and sustainable urban spaces. Interestingly, higher significant levels in females compared to males suggest that women generally exhibit a stronger positive connection between green landscapes and perceived quality of life. Influenced by factors such as preferences and interactions with their environment, these findings align with Kruize *et al*. (2020) and Kondo *et al.* (2018). Possible explanations for these gender-related variations include differences in how men and women use and experience green spaces, with women possibly placing more emphasis on aesthetic and social aspects and deriving greater psychological and emotional well-being benefits from greenery in their immediate surroundings.

These findings highlight statistical associations, suggesting the need for additional qualitative research or surveys to uncover reasons behind observed gender differences. Understanding these nuances is crucial for urban planners, policymakers, and community developers to tailor strategies addressing the diverse needs of both male and female residents. Consistent with research by Jim & Chen (2006) and Ma *et al.* (2019), which emphasizes the role of gender in shaping residents' satisfaction and perceptions of green landscapes, the study calls for acknowledging and addressing gender-related variations. This can contribute to more inclusive urban

planning strategies. The findings align with existing literature, reinforcing the connection between gender and the contributions of green landscapes in residential environments. This comparison validates observed gender-based differences, emphasizing the need to incorporate these insights into urban planning and development practices.

6. Conclusion and Recommendation and Future Study

This study originally emphasizes the socio-economic impact of contemporary urbanization and underscores the crucial role of urban green spaces in shaping the Kaduna metropolis' quality of life. The study, focusing on Kaduna, Nigeria, offers a specific context for understanding challenges related to green spaces. While it may not directly compare with other global cities, it contributes by providing a detailed analysis of challenges and proposing sustainable strategies, which could serve as a reference for comparative studies in the future. By unveiling the impact of urban green landscapes, the study contributes to the discovery of innovative methods and techniques for enhancing the quality of life in urban areas. It provides insights into sustainable strategies that could be adopted by urban planners and policymakers to address challenges associated with green spaces.

The findings offer insights valuable for theoretical discussions in academia and practical applications for global urban planners and policymakers, extending beyond Kaduna. Beyond identifying the positive correlation between green spaces and quality of life, the paper proposes Kaduna-specific strategies, contributing to sustainable urban planning that prioritizes green infrastructure. Crafted with diverse indicators, In the correlation between residential green spaces and quality of life, the study finds consistent results in terms of user opinions, satisfaction, and subjective in addition to objective measures. In line with Marans' paradigm, the study focuses on the interaction of subjective and objective measures, revealing the level of green space utilization and happiness in Kaduna. Notably, inhabitants in the projected developing neighborhood are quite satisfied with their immediate green spaces, which contributes greatly to our understanding of the relationship between green spaces and residents' well-being.

Elevating satisfaction with residences and their surroundings is crucial, especially in the Kaduna metropolis. The study emphasizes the importance of integrating green areas into residential neighborhoods to enhance utilization and satisfaction, providing guidance for future strategies. Supported by both quantitative and qualitative data, the survey informs city-scale urban green planning and evaluates inputs specific to the Kaduna metropolis, highlighting the positive impact of current green environments on the city's quality of life. The immediate residential environment is pivotal in meeting human needs and desires, with the study emphasizing the role of technology, such as information access and online platforms, in influencing quality of life. Integrating technology for improved communication and accessibility emerges as a promising approach to boost overall satisfaction. The study's outcomes have significant implications for quality of life and green area policies in the Kaduna metropolis, suggesting periodic case study repetition to inform ongoing strategic plans. It serves as a valuable resource for planners and designers, offering insights for coordinated interventions to enhance services and overall quality. Notably, amidst the initial impacts of the COVID-19 pandemic, the study underscores the crucial role of urban green spaces, especially in immediate residential surroundings, emphasizing the need to enhance such spaces for a better quality of life and a healthier living environment. Addressing the multifaceted challenge of enhancing urban quality of life requires a holistic approach that considers various facets of city living. Strategies to achieve the goal of the urban quality of life are explained in Table 9.

Table 9: Strategies to Enhancing Urban Quality of Life.

S/No	Strategies	Explanations
(i)	Sustainable Urban Design	Embrace sustainable urban planning principles, including mixed-use zoning, pedestrian-friendly infrastructure, and public transportation, promoting environmental sustainability and overall well-being.
(ii)	Green and Open Spaces:	Develop and maintain accessible parks, green belts, and recreational areas within urban spaces to foster physical and mental well-being, exercise, relaxation, and community interaction.
(iii)	Cultural and Recreational Facilities:	Invest in cultural institutions and recreational facilities to provide opportunities for leisure, cultural enrichment, and a vibrant urban life.
(iv)	Affordable Housing Solutions:	Implement policies promoting affordable housing options to ensure diverse residents can access suitable and affordable living spaces in the urban environment.
(v)	Quality Education and Healthcare:	Improve access to quality education and healthcare services, contributing significantly to residents' well-being and enhancing urban attractiveness.
(vi)	Community Engagement:	Foster community engagement through participatory urban planning, empowering residents in decision-making processes to align development with their needs.
(vii)	Social Inclusion and Diversity:	Promote social inclusion and celebrate diversity by creating inclusive public spaces, events, and facilities that cater to a diverse population.
(viii)	Safety and Security Measures:	Implement effective safety measures, including well-lit public spaces, visible policing, and community policing initiatives, to create a secure urban environment.
(ix)	Smart Technology Integration:	Utilize smart technologies for transportation, waste management, and energy use to improve urban efficiency, sustainability, and residents' convenience.
(x)	Public Transportation:	Invest in and improve public transportation systems to reduce traffic congestion, air pollution, and commute times, fostering a more sustainable and livable urban environment.
(xi)	Health and Wellness Initiatives	Implement initiatives prioritizing health and wellness, such as promoting cycling infrastructure, pedestrian-friendly spaces, and access to fresh and healthy food options.
(xii)	Environmental Sustainability:	Prioritize environmental sustainability through green building practices, waste reduction, and conservation efforts, enhancing the overall quality of the urban environment.

Embracing a comprehensive strategy to address these diverse aspects, urban planners and policymakers can strive to establish cities that provide a high quality of life for all residents. The amalgamation of these strategies fosters the creation of vibrant, sustainable, and inclusive urban environments. The results have significant implications for urban planning and development, especially concerning the connections between contributions of green landscaped areas in immediate residential environments and gender. The findings provide valuable insights to inform strategies aimed at developing more inclusive, sustainable, and aesthetically pleasing urban environments. The implications for urban planning and development are included in the Table 10. This study proposes a future assessment of specific design elements. In other words, necessary studies focusing on specific design elements of green landscaped areas that contribute to residents' satisfaction could be explored. Hence, analysing aspects such as layout, amenities, and ecological features could provide actionable insights for optimizing the design of landscaped spaces.

Table 10: The implications for urban planning and development.

S/No	Implications	Actions
(i) Inclusive Design:	The observed gender-based differences in satisfaction levels and preferences for green spaces highlight the need for inclusive design. Urban planners should consider a diverse range of preferences and needs, ensuring that green spaces cater to both male and female residents.	Develop design guidelines that integrate features appealing to different genders, such as private landscaped gardens, recreational spaces, and elements that contribute to a serene environment.
(ii) Safety Measures:	Safety concerns, especially for women, have been identified as influencing factors. Urban planning should prioritize safety measures within and around green spaces to encourage	Implement well-lit pathways, visible security measures, and community policing strategies to create a secure environment within and around green spaces.

	broader usage and enhance the overall well-being of residents.	
(iii)Community Engagement:	Recognizing the diverse perspectives revealed by gender-based differences, community engagement becomes crucial. Involving residents in the planning and decision-making process ensures that their voices are heard and that green spaces align with their expectations.	Conduct community workshops, surveys, and participatory planning sessions to gather input from residents, with a focus on understanding gender-specific preferences and needs.
(iv) Aesthetic Enhancement:	Women tend to express higher satisfaction with aesthetically pleasing green spaces. Urban planners should consider aesthetic enhancements that contribute to the visual appeal of green areas, making them more enjoyable for all residents.	Incorporate landscaping features, public art installations, and seasonal plantings to enhance the aesthetic appeal of green spaces, creating visually pleasing environments.
(v) Recreation and Social Spaces:	The desire for playgrounds, relaxation facilities, and spaces for social interaction is prominent. Urban planning should prioritize the creation of versatile green areas that offer recreational opportunities and foster community connections.	Design multifunctional green spaces with areas for play, exercise, and socializing, promoting a sense of community and well-being.
(vi) Public and Private Green Spaces:	The preference for private landscaped gardens indicates a desire for more personal and intimate green spaces. Urban planners should balance public and private green areas to accommodate both communal and individual needs.	Incorporate private garden spaces within residential complexes, along with well-designed public parks, to provide a variety of green experiences for residents.

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