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User Perceptions of Green Spaces in Public Parks: A Case Study of Ndubuisi Kanu Park, Ikeja, Lagos

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Abstract

Urban parks and green spaces provide crucial physical, psychological, and social benefits to city dwellers, particularly in densely populated areas like Ikeja, Lagos. This study explores user perceptions of green spaces in Ndubuisi Kanu Park, Ikeja, focusing on the impact of landscape elements on park visitors. Data were collected through structured questionnaires and interviews with 50 park users, with 60% of respondents aged between 20-30 years. The findings show that 67% of users rated the park's green spaces as "good" or "very effective," with 45% rating the park's maintenance as "good" and 36% of users primarily visiting for recreational activities such as picnics. Psychological benefits were significant, with many users reporting reduced stress and improved mood. However, 25% of users recommended additional seating, while 17% suggested increasing the green areas. Inadequate security and poor maintenance were also noted as challenges. The study concludes that, with improved management, urban parks like Ndubuisi Kanu Park can significantly enhance the well-being of Lagos residents. Further research should explore long-term health outcomes and the economic impact of urban green spaces.

Keywords: Green Spaces, Lagos, Landscape Elements, Psychological Well-Being, Urban Parks, User Perceptions.

Introduction

Urban parks and green spaces play a crucial role in enhancing the quality of life in cities. These spaces provide citizens with opportunities for recreation, physical activity, social interaction, and environmental engagement. According to Vargas-Hernández, Pallagst & Zdunek-Wielgołaska (2023), urban green spaces contribute significantly to improving the quality of life by offering essential environmental services such as air purification, noise reduction, and climate regulation. These parks not only serve as areas for recreation but also promote mental well-being, offering a sense of tranquility, reducing stress, and enhancing the overall urban experience (Jaszczak, Pochodyła, Kristianova, Małkowska & Kazak, 2021).

In densely populated urban areas like Ikeja, Lagos, where concrete and busy streets dominate the landscape, green spaces offer an escape from the hustle and bustle of city life. However, the extent to which these green spaces are perceived and appreciated by the public can vary greatly depending on factors such as park design, accessibility, maintenance, and the presence of natural elements like trees, water bodies, and

landscaping features (Dipeolu, Ibem, Fadamiro & Fadairo, 2021; Reyes-Riveros, Altamirano, De La Barrera, Rozas-Vásquez, Vieli & Meli, 2021).

As the capital of Lagos State and one of Nigeria's major urban hubs, Ikeja faces unique challenges common to highly urbanized areas (Dano, Balogun, Abubakar & Aina, 2020). Rapid population growth, coupled with ongoing commercial and infrastructural development, has significantly increased land demand, often at the expense of green spaces (Ajaero, 2024). In Ikeja, the urban landscape is primarily characterized by concrete structures, busy roads, and commercial zones, leading to a scarcity of accessible green areas that could offer respite from urban stressors (Ajayi, 2021).

Despite the establishment of parks like Ndubuisi Kanu Park, one of the prominent public green spaces in the area, limited studies have explored how these parks serve the public and whether they meet the expectations and needs of urban dwellers. Understanding how residents and visitors perceive these parks helps inform future park designs and management strategies to maximize their benefits to the public.

Problem Statement

Urban parks are meant to provide various benefits, including promoting physical activity, social interactions, and psychological well-being. Despite these potential benefits, many public parks in urban areas like Ikeja face several challenges that limit their effectiveness. Issues such as poor location, inadequate maintenance, lack of facilities, security concerns, and insufficient green spaces can deter public use and diminish the perceived value of these parks (Palliwoda & Priess, 2021). These challenges often lead to underutilization and negatively impact the physical, social, and mental health benefits that urban parks are supposed to offer.

This study seeks to address these issues by exploring how users perceive the green spaces in public parks in Ikeja, Lagos. It aims to understand the factors influencing user satisfaction and the potential improvements needed to enhance the overall park experience.

Objectives

The objectives of this study are to:

i. identify and assess the green and landscape elements in public parks in Ikeja.
ii. evaluate users' perceptions of green spaces in these parks, focusing on their aesthetic, environmental, and recreational value.
iii. investigate the psychological, social, and physical benefits that users derive from green spaces in Ikeja parks.
iv. recommend potential improvements to enhance user satisfaction and optimize the benefits of urban parks for residents and visitors.

Literature Review

Green spaces in urban environments have been recognized for their multifaceted contributions to the health and well-being of individuals, communities, and ecosystems. The benefits associated with urban parks and green spaces range from psychological restoration and physical activity to social cohesion and environmental sustainability.

Physical Benefits of Urban Green Spaces

The availability of green spaces in urban areas encourages physical activity, which is crucial for maintaining good health. Numerous studies, including research by Grigoletto, Mauro, Maietta Latessa, Iannuzzi, Gori, Campa & Toselli (2021), have shown that green spaces promote outdoor activities such as walking, jogging, and cycling, all of which contribute to improved cardiovascular health, muscle strength, and overall fitness. World Health Organization (2022) found that well-designed parks support regular exercise, which is linked to lower rates of obesity, diabetes, and cardiovascular diseases. The presence of recreational facilities, walking paths, and sports areas enhances the usability of parks and increases the likelihood of their regular use by the public (Omindi, 2021).

In Ikeja, public parks such as Ndubuisi Kanu Park provide opportunities for physical activity for residents and visitors, although challenges such as poor maintenance and inadequate facilities may reduce their effectiveness (Akindejoye, Ezedinma & Ike, 2021). Research suggests that the layout and design of parks, including the presence of well-maintained green areas, play equipment, and walking paths, are critical in encouraging more frequent use for physical activities (Veitch, Ball, Flowers, Deforche & Timperio, 2021; Veitch, Ball, Rivera, Loh, Deforche, Best & Timperio, 2022).

Psychological Benefits of Urban Green Spaces

The psychological benefits of urban green spaces are well-documented in the literature. Exposure to natural environments has been shown to reduce stress, anxiety, and mental fatigue while enhancing mood and cognitive functioning (Yao, Zhang & Gong, 2021; Zhang, X., Zhang, Y., Yun & Yao, 2023). Attention Restoration Theory (ART) posits that natural environments help restore cognitive capacities that are depleted by the demands of urban life, providing a restorative experience that contributes to mental well-being (Liu, Zhang, Liu & Yang, 2024). Additionally, green spaces have been associated with improved mental health outcomes, including lower levels of depression and anxiety (Callaghan, McCombe, Harrold, McMeel, Mills, Moore-Cherry & Cullen, 2021).

In Lagos, where residents are exposed to high levels of urban stress due to congestion, noise, and pollution, access to green spaces can provide essential mental health relief (Ekhaese, Adejuwon & Evbuoma, 2021). However, the effectiveness of these spaces is contingent upon their design, accessibility, and the maintenance of green elements such as

trees, lawns, and water features, which contribute to the tranquility and aesthetic value of parks (Luo, Deng, Song, Jiang, Huang, Wang & Li, 2023).

Social Benefits of Urban Green Spaces

Urban green spaces also foster social interaction and community cohesion by providing spaces where people can gather, socialize, and participate in communal activities. Yang, Shi & Runeson, 2022) noted that parks serve as informal meeting places that encourage social integration, especially in urban areas where residents may otherwise lack opportunities for interaction. Lee, Kim & Koo (2024) emphasized that well-maintained parks promote stronger social ties, reduce crime rates, and enhance neighborhood safety.

In densely populated areas like Ikeja, green spaces can serve as critical venues for community events, social gatherings, and recreational activities (Dipeolu, Ibem & Fadamiro, 2020). Public perceptions of safety, cleanliness, and accessibility greatly influence the use of these spaces for social engagement. When parks are well-designed and maintained, they can significantly improve the social fabric of urban communities by fostering inclusivity and interaction across diverse demographic groups (Dizdaroglu, 2022).

Environmental Benefits of Urban Green Spaces

Green spaces in cities contribute to environmental sustainability by providing ecosystem services such as air purification, temperature regulation, and biodiversity conservation. Trees and vegetation in parks help mitigate the urban heat island effect, reduce pollution, and improve air quality (Yang, Xu, Duan, Zhang, Zhang & Xie, 2023). Studies by Addas (2023) highlight the role of green spaces in controlling stormwater runoff and improving urban microclimates, thus enhancing the livability of cities.

In the context of Ikeja, green spaces like Ndubuisi Kanu Park not only offer environmental benefits but also serve as important habitats for local biodiversity. However, urban expansion and infrastructural development often threaten these green spaces, leading to fragmentation and degradation of natural ecosystems (Puplampu & Boafo, 2021). Effective park management and urban planning are essential to preserving the ecological value of urban green spaces in Lagos (Adegun, Ikudayisi, Morakinyo & Olusoga, 2021).

Perceptions of Green Spaces

Public perceptions of green spaces are shaped by various factors, including the aesthetic quality, safety, accessibility, and amenities available in these areas. Research by Kimic & Polko, (2022) shows that parks that are perceived as clean, well-maintained, and safe are more likely to be used and valued by the public. Conversely, parks that suffer from neglect, inadequate facilities, or security concerns tend to be underutilized and viewed negatively by urban dwellers (Kebede & Besim, 2024).

In Ikeja, the perception of parks is influenced by the state of maintenance, security, and the availability of recreational facilities. While parks like Ndubuisi Kanu Park are designed to provide aesthetic and recreational benefits, challenges such as poor maintenance and security concerns can negatively impact user perceptions and reduce park attendance. Understanding these perceptions is crucial for improving the design and management of urban parks in Lagos.

Research Gap

Despite the extensive literature on the benefits of green spaces, there is limited research that focuses specifically on the user perceptions of public parks in Ikeja, Lagos. While many studies emphasize the physical, psychological, and social benefits of green spaces, fewer explore how users in developing urban environments perceive these spaces and the specific challenges they face in accessing and utilizing them. This study aims to fill this gap by providing insights into the perceptions of park users in Ikeja, with a focus on how green spaces contribute to their well-being and how these spaces can be improved to meet public needs.

Methodology

The study employs a descriptive and correlational research design to assess the effects of green spaces on park users. The descriptive method allows for the documentation of user perceptions, while the correlational approach helps establish relationships between green space features and user satisfaction. This mixed-method approach provides a comprehensive understanding of the impacts of green and landscape elements on park visitors. The research focuses on Ndubuisi Kanu Park, a public park in Ikeja, Lagos, known for its green spaces and recreational facilities. This park serves as the case study for understanding how urban parks in Ikeja contribute to user experiences.

Figure 1: Ndubuisi Kanu Park
Source: https://lasparkportal.lagosstate.gov.ng/parks/ndubuisi-kanu-park/ (Retrieved October, 2024)

Sampling Technique

The population for this study includes all visitors to Ndubuisi Kanu Park, ranging from frequent visitors to occasional users. The choice of this population is based on their direct interaction with the park's green spaces and landscape elements, making them well-positioned to provide relevant insights into the park's impact on their well-being and satisfaction.

A stratified random sampling technique was used to ensure diverse representation across different visitor groups, including regular park-goers, family groups, young adults, and senior citizens. To select the sample, the population of park visitors was divided into strata based on frequency of visits (regular vs. occasional) and visitor type (individual, family, or group). From each stratum, a random sample of participants was chosen, allowing for balanced data across various user demographics. A total of 50 questionnaires were distributed to ensure a diverse sample, and 30 respondents returned completed responses, yielding a response rate of 60%. This sample size is deemed adequate given the estimated daily visitor average of 100-120 individuals, allowing for meaningful statistical analysis.

Figure 2: Ndubuisi Kanu Park
Source: https://media.timbu.com/poi/3260/ndu5-3260-589de350b2a7f.png?w=300?w=300 (Retrieved November, 20224)

Data Collection and Analysis

The primary data for this research was collected using a structured questionnaire. The questionnaire was designed to capture information about park users' demographics, their perceptions of green and landscape elements, and the impact these elements have on their physical, psychological, and social experiences in the park. Additionally, interviews with park management were conducted to gather supplementary information regarding the park's usage, maintenance, and key landscape features. Quantitative data from the questionnaires were analyzed using descriptive statistics, including frequencies and percentages. The data is presented in tables and charts to illustrate trends in user perceptions and satisfaction with the park's green spaces. Qualitative data from interviews were analyzed thematically to provide context for the quantitative findings.

This study ensured that participants were fully informed of their rights and the purpose of the research before participation. Ethical principles of anonymity, confidentiality, and voluntary participation were strictly adhered to. Participants were assured that their responses would be used solely for academic purposes. The instruments used for data collection were adapted from validated tools used in previous studies on urban parks. This

ensures both the validity and reliability of the data collected, allowing for consistent and accurate measurement of user perceptions and the impact of green spaces.

Results and Discussion

Demographic Profile of Park Users

Table 1 displays the demographic data of the respondents, including variables such as age, gender, income level and residency.

Table 1: User demographics data

Participant ID	Gender	Age	Occupation	A resident of the case study (Ikeja)	Income level	Duration of Park Usage (years)
P001	Female	31 – 40	Entrepreneur	Yes	Middle income	6 - 10 Years
P002	Female	31 – 40	Pharmacy Sales Manager	Yes	Middle income	6 - 10 Years
P003	Female	41-50		No	Weekly	1 – 5 years
P004	Female	31 – 40	Teacher	Yes	Middle income	6 - 10 Years
P005	Male	41-50	ICT Consultant	No	High income	1 – 5 years
P006	Male	41-50	IT Engineer	Yes	Middle income	Under 1 year
P007	Female	21- 30	Engineer	Yes	Middle income	6 - 10 Years
P008	Female	31 – 40	Medical Doctor	Yes	Occasionally	Under 1 year
P009	Male	20-under	Self Employed	No	High income	1 – 5 years
P010	Male	20-under	Self-employed	No	High income	Under 1 year
P011	Male	20-under	Student	No		Under 1 year
P012	Female	20-under	Fashion Designer	No	Middle income	Under 1 year
P013	Female	20-under	Student	No	Low income	Under 1 year
P014	Female	21- 30	Entrepreneur	No	Middle income	Under 1 year
P015	Male	21- 30	Social Worker	No	Middle income	1 – 5 years
P016	Female	20-under	Student	No	Middle income	Under 1 year
P017	Female	20-under	Student	No	Low income	Under 1 year
P018	Male	20-under	Student	No	Low income	1 – 5 years
P019	Male	31 – 40	IT Specialist	Yes	Middle income	Under 1 year
P020	Male	31 – 40	Transport & Logistics	No	Middle income	Under 1 year
P021	Female	41-50	Teacher	No	Low income	1 – 5 years
P022	Female	41-50	Teacher	Yes	Middle income	Under 1 year
P023	Female	41-50	Trader	No	Middle income	1 – 5 years
P024	Male	20-under	Student	No	High income	Under 1 year
P025	Female	61- above	Retiree	No	Middle income	6 – 10 years
P026	Female	31-40	Sales	Yes	Middle income	1 – 5 years
P027	Female	41-50		Yes	High income	Under 1 year
P028	Female	31-40	Broadcasting	No	Middle income	1 – 5 years

P029	Female	31-40	Entrepreneur	Yes	Middle income	6 – 10 years
P030	Female	20-under	student	Yes	Low income	Under 1 year

Source: Authors fieldwork (2023)

Age distribution indicates that the majority of park users (60%) are aged 20-30 years, with a smaller proportion (40%) falling into older age groups. Gender composition shows a higher percentage of female users (70%) compared to males (30%). Income distribution reveals that most park users are middle-income earners (56.6%), while low-income earners make up 26.7%.

Analysis of the park user's demography indicates that younger age groups (20-30 years) and middle-income users are the most frequent visitors, highlighting a potential trend where socioeconomic and age factors influence how green spaces are utilized. Additionally, this age-related trend indicates that targeted park designs could improve engagement across diverse demographic segments.

Perception of Green Spaces and Landscape Elements

Respondents' perceptions of the park's green spaces and landscape elements were generally positive. The majority (67%) rated the green spaces as "good" or "very effective," while others rated them "satisfactory" (23%) and only a few found them "not effective" (10%).

Figure 3 highlights how users perceived the aesthetic quality and maintenance of the park's green spaces. A significant proportion (45%) rated maintenance as "good," while 30% found it "very good".

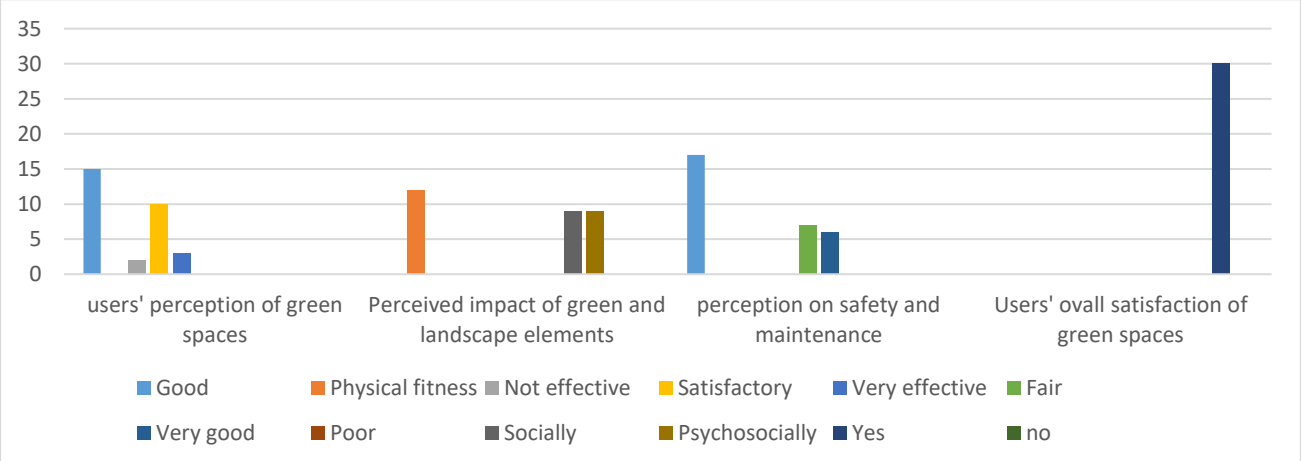

Figure 3: Users' perception distribution on green and landscape elements

Source: Authors fieldwork (2023)

The positive perception of green spaces and landscape elements, with 67% of respondents rating them as "good" or "very effective," underscores a statistically significant relationship between the quality of green space maintenance and user satisfaction. Moreover, the high ratings of maintenance as "good" (45%) and "very good" (30%) support the importance of aesthetic quality and regular upkeep in shaping user experiences. These findings align with the broader literature on urban green spaces, where positive perceptions of maintenance often correlate with increased user satisfaction and psychological benefits (Wan, Shen & Choi, 2020).

Usage Patterns and Preferences

Users were asked about the activities that prompted their visits to the park. Figure 4 shows that 36% of respondents visit the park for picnics with family and friends, while 28% attend for events such as weddings or birthdays. A smaller proportion (19%) bring their children for recreational activities.

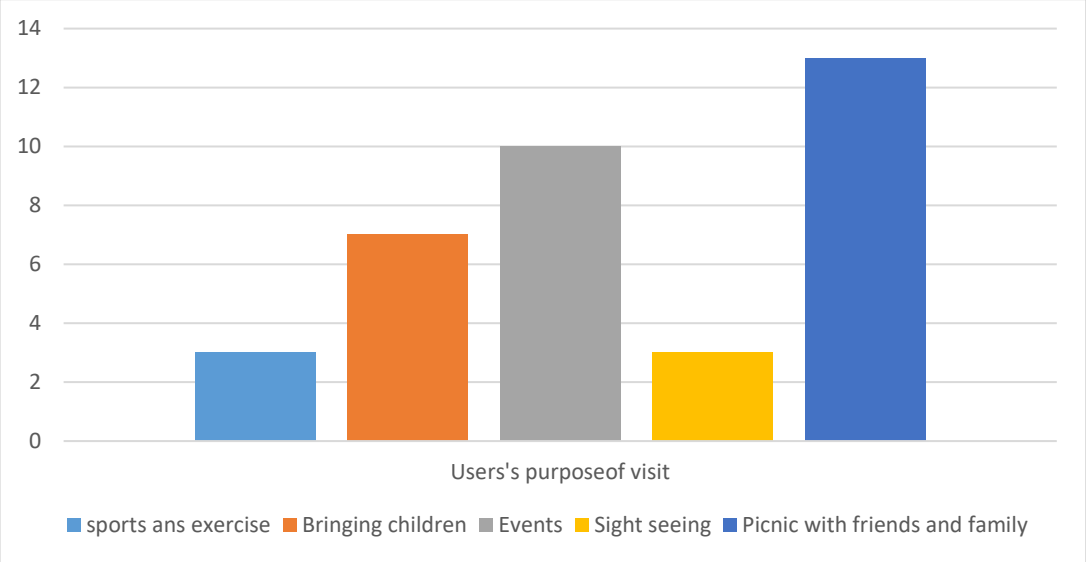

Figure 4: Users' purpose of visit distribution
Source: Authors fieldwork (2023)

The distribution of users' purposes for visiting the park, as shown in Figure 4, reveals notable patterns in park usage, with the majority (36%) attending for social gatherings like picnics with family and friends. Additionally, the finding that only 19% of users visit primarily for children's recreational activities suggests an opportunity for enhancing child-friendly amenities to encourage more family-oriented visits. These patterns underscore the value of designing diverse amenities that cater to varied user interests, as meeting these needs is likely to boost park attendance and satisfaction. The significance of these associations highlights the need for tailored park features that support different age groups and visit

motivations, ultimately enhancing the park's relevance and appeal to a broad user base (Veitch, Ball, Rivera, Loh, Deforche, Best & Timperio, 2022).

Frequently Used Park Elements

Figure 5 indicates that green spaces are the most frequently used elements, with 43% of respondents citing this as their preferred feature. Shaded areas and relaxation spots were the second most popular, used by 30% of respondents.

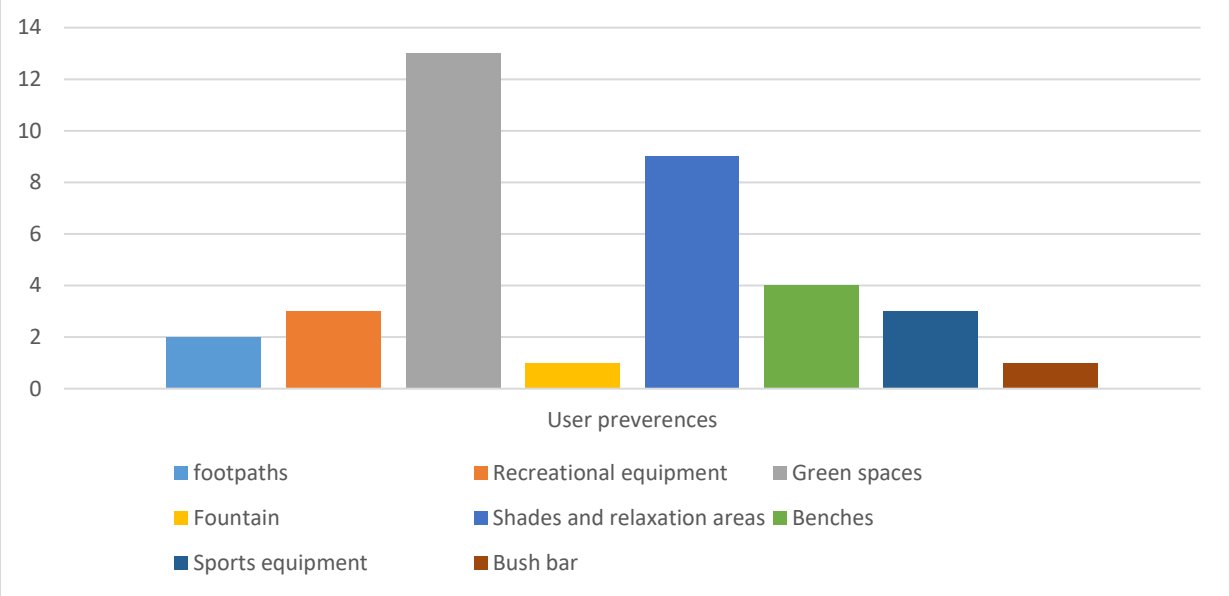

Figure 5: distribution frequently used elements
Source: Authors fieldwork (2023)

Psychological and Physical Impact of Green Spaces

Respondents reported significant psychological benefits from interacting with the park's green spaces. This aligns with studies by Choe, Jorgensen & Sheffield (2020) and Frost, Kannis-Dymand, Schaffer, Millear, Allen, Stallman & Atkinson-Nolte (2022), who found that exposure to natural environments reduces stress and enhances mental well-being. The results also show that users experience improvements in mood and cognitive restoration from spending time in green spaces.

Physical activity was another prominent benefit, as 22% of respondents reported using the park's facilities for exercises like jogging and walking. This finding supports research by Jabbar, Yusoff & Shafie (2022) that green spaces promote physical activity and overall fitness.

User Feedback and Suggestions for Improvement

The study gathered feedback from park users on how the park could be improved. Figure 6 reveals that the most common suggestions included adding more seating/benches (25%) and increasing green space (17%). Other recommendations included the installation of swimming pools, additional play equipment and functional fountains.

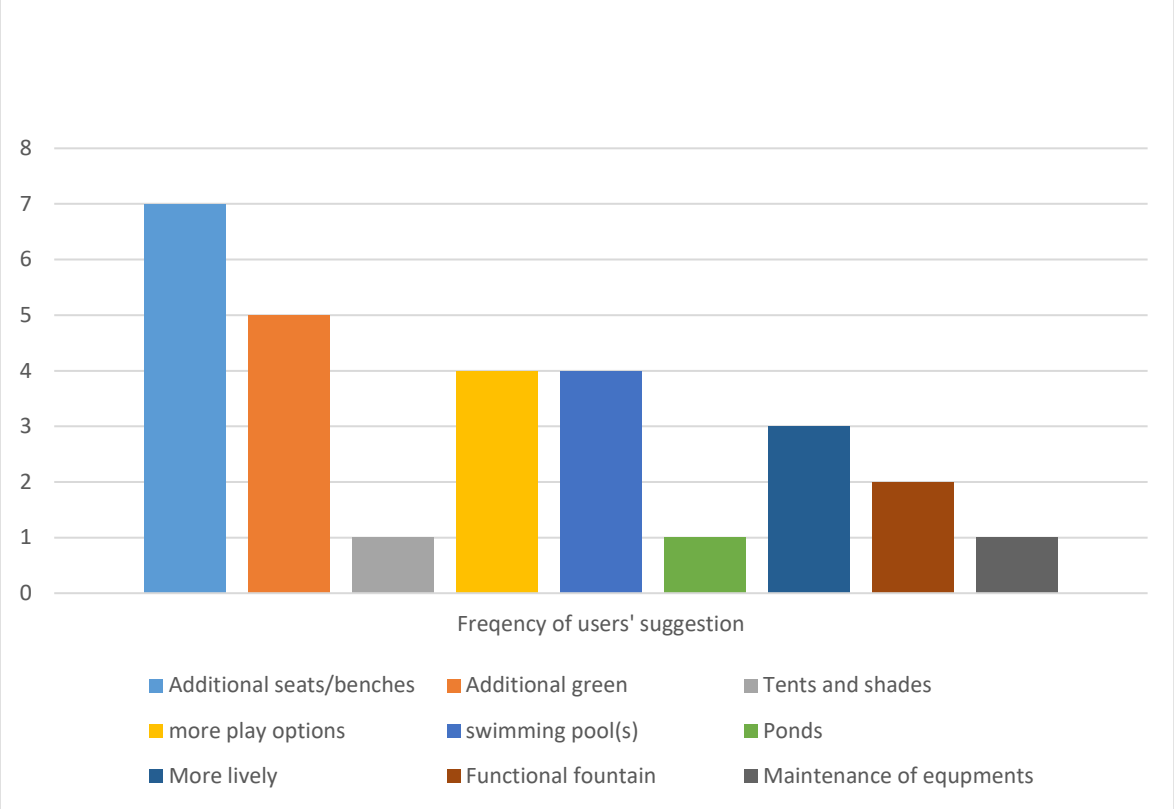

Figure 6: distribution users' suggestions

Source: Authors fieldwork (2023)

Discussion of Trends

The findings reveal key trends that align with the broader literature on green spaces in urban parks. Similar to studies by Reyes-Riveros, Altamirano, De La Barrera, Rozas-Vásquez, Vieli & Meli (2021), the research confirms that users derive both physical and psychosocial benefits from green spaces. Users frequently cited the tranquility and aesthetic appeal of green spaces as enhancing their park experience, which echoes the Attention Restoration Theory by Palliwoda & Priess (2021), suggesting that exposure to natural environments restores cognitive functions and reduces stress.

However, the study also identified challenges, such as the need for better maintenance of recreational equipment and improved security, which negatively affect user satisfaction.

These findings suggest that, while green spaces offer significant benefits, their potential is limited by inadequate infrastructure and management.

The results underscore the importance of green spaces in promoting well-being and enhancing the user experience in urban parks. The suggestions from respondents point to specific improvements, such as increasing seating and enhancing play areas, which could boost park attendance and satisfaction. This aligns with global research that emphasizes the role of well-maintained parks in fostering community health and social engagement.

This study's findings underscore the critical role that well-maintained and accessible green spaces play in enhancing urban quality of life. In densely populated areas like Lagos, where access to nature can be limited, urban parks are invaluable in offering residents' opportunities for recreation, mental relaxation, and physical activity. These results highlight a need for Lagos policymakers to prioritize the development and maintenance of green spaces within urban planning frameworks. Furthermore, incorporating user feedback, such as requests for more seating and expanded play areas, could make parks more inclusive and better suited to the needs of a diverse user base, enhancing overall engagement.

These insights point to the value of policies that mandate regular assessments and maintenance of public parks, as well as initiatives that encourage the development of multi-functional green spaces. Integrating these elements into urban planning strategies could amplify the socio-ecological benefits of parks, from improving air quality to fostering social interaction. As Lagos continues to urbanize rapidly, such proactive policy measures could play a pivotal role in shaping sustainable, health-promoting urban environments that support both individual well-being and community resilience.

Conclusion and Recommendations

Conclusion

This study has provided valuable insights into how users perceive the green spaces in Ndubuisi Kanu Park, Ikeja, Lagos, and has highlighted the broader significance of urban parks in enhancing physical, psychological, and social well-being. The research revealed that a majority of park users had positive experiences with the park's green spaces, citing improved mood, reduced stress, and enhanced social interactions as key benefits. Despite these benefits, the study also identified several challenges that limit the potential of the park, including inadequate seating, maintenance issues, and safety concerns. Addressing these challenges will further enhance the user experience and maximize the benefits that green spaces can offer. In conclusion, urban parks like Ndubuisi Kanu Park are crucial to promoting a healthier, more sustainable urban lifestyle, especially in densely populated areas like Ikeja.

Recommendations

Based on the findings of this study, several recommendations are made to improve the effectiveness and usability of green spaces in public parks in Ikeja.

i. ***Enhanced Maintenance and Security Protocols:*** Park management should implement a routine maintenance schedule, ensuring weekly inspections and monthly upkeep of green areas, play equipment, and pathways. In terms of security, the installation of solar-powered lighting along main pathways and seating areas can improve safety and extend park usability into the evenings.

ii. ***Expansion of Recreational Facilities:*** Based on user feedback, increasing seating options can be achieved by adding benches and shaded seating areas at key spots throughout the park, such as near playgrounds, walking paths, and scenic views. Adding a variety of play equipment, including swings, slides, and climbing frames suitable for children of different age groups, would address the needs of families. To cater to fitness-focused visitors, a designated jogging path with distance markers could be installed, along with an open, grassy area for group fitness activities like yoga or aerobics classes. Additionally, implementing picnic tables and group seating could attract more family and social gatherings.

iii. ***Diversification of Landscape Elements:*** The park's green spaces can be enhanced by introducing more diverse plant species, such as flowering plants, shrubs, and trees that provide seasonal color and shade. Installing a small pond or decorative fountain near the park's central area would provide a focal point for relaxation, improve air quality, and attract wildlife, thus creating a more dynamic environment.

Recommendations for Future Research

While this study has provided a solid foundation for understanding user perceptions of green spaces in Ikeja, there are several areas where future research could expand on these findings. One important area for further exploration is the impact of seasonal variations on park usage. Future studies could investigate how changes in weather and climate throughout the year influence park attendance and user satisfaction, providing park managers with data to better cater to user needs year-round.

Another area of interest would be conducting longitudinal studies on the health outcomes of regular park users. While this study highlighted the immediate benefits of park usage, a long-term investigation into the physical and psychological health effects of consistent interaction with green spaces could offer more comprehensive insights into the lasting benefits of urban parks.

A comparative analysis of different parks in Lagos would also be beneficial. By examining how factors such as accessibility, design, and maintenance vary across parks, researchers could gain a broader understanding of what makes some parks more successful than others

in terms of user satisfaction and health benefits. Such comparative studies could provide useful data for urban planners and policymakers.

Finally, future research could explore the economic impact of parks on local communities. Urban green spaces not only offer health and social benefits but can also contribute to local economic development. Studies investigating how parks influence property values, local business growth, and tourism could further justify investments in park development and maintenance.

References

Addas, A. (2023). The importance of urban green spaces in the development of smart cities. *Frontiers in environmental Science*, *11*, 1206372.

Adegun, O. B., Ikudayisi, A. E., Morakinyo, T. E., & Olusoga, O. O. (2021). Urban green infrastructure in Nigeria: A review. *Scientific African*, *14*, e01044.

Ajaero, U. (2024). *Eko Resilience (Re) Designing Residential Communities that Are Resilient for the Urban Poor in Lagos, The Coastal City* (Master's thesis, University of Maryland, College Park).

Ajayi, O. P. (2021). *The Impact Of Covid-19 On Open Space Use In Residential Neighbourhoods. Case Study Of Ikeja, Lagos State, Nigeria* (Master's thesis, Eesti Maaülikool).

Akindejoye, F., Ezedinma, U., & Ike, N. (2021). A case study of urban design for wellbeing and mental health in Lagos, Nigeria. *Journal of Urban Design and Mental Health, 7*, *10*.

Callaghan, A., McCombe, G., Harrold, A., McMeel, C., Mills, G., Moore-Cherry, N., & Cullen, W. (2021). The impact of green spaces on mental health in urban settings: A scoping review. *Journal of mental health*, *30*(2), 179-193.

Choe, E. Y., Jorgensen, A., & Sheffield, D. (2020). Does a natural environment enhance the effectiveness of Mindfulness-Based Stress Reduction (MBSR)? Examining the mental health and wellbeing, and nature connectedness benefits. *Landscape and Urban Planning*, *202*, 103886.

Dano, U. L., Balogun, A. L., Abubakar, I. R., & Aina, Y. A. (2020). Transformative urban governance: Confronting urbanization challenges with geospatial technologies in Lagos, Nigeria. *GeoJournal*, *85*, 1039-1056.

Dipeolu, A. A., Ibem, E. O., & Fadamiro, J. A. (2020). Influence of green infrastructure on sense of community in residents of Lagos Metropolis, Nigeria. *Journal of Human Behavior in the Social Environment*, *30*(6), 743-759.

Dipeolu, A. A., Ibem, E. O., Fadamiro, J. A., & Fadairo, G. (2021). Factors influencing residents' attitude towards urban green infrastructure in Lagos Metropolis, Nigeria. *Environment, Development and Sustainability*, *23*, 6192-6214.

Dizdaroglu, D. (2022). Developing design criteria for sustainable urban parks. *Journal of contemporary urban affairs*, *6*(1), 69-81.

Ekhaese, E. N., Adejuwon, G. A., & Evbuoma, I. K. (2021, March). Promoting Green Urbanism in Nigerian Purlieus as Therapy for Psychological Wellbeing/Health. In *IOP Conference Series: Earth and Environmental Science* (Vol. 665, No. 1, p. 012015). IOP Publishing.

Frost, S., Kannis-Dymand, L., Schaffer, V., Millear, P., Allen, A., Stallman, H., ... & Atkinson-Nolte, J. (2022). Virtual immersion in nature and psychological well-being: A systematic literature review. *Journal of Environmental Psychology*, *80*, 101765.

Grigoletto, A., Mauro, M., Maietta Latessa, P., Iannuzzi, V., Gori, D., Campa, F., ... & Toselli, S. (2021). Impact of different types of physical activity in green urban space on adult health and behaviors: A

systematic review. *European journal of investigation in health, psychology and education*, *11*(1), 263-275.

Jabbar, M., Yusoff, M. M., & Shafie, A. (2022). Assessing the role of urban green spaces for human well-being: A systematic review. *GeoJournal*, 1-19.

Jaszczak, A., Pochodyła, E., Kristianova, K., Małkowska, N., & Kazak, J. K. (2021). Redefinition of park design criteria as a result of analysis of well-being and soundscape: The case study of the Kortowo Park (Poland). *International Journal of Environmental Research and Public Health*, *18*(6), 2972.

Kebede, B. G., & Besim, D. Y. (2024). Urban parks in developing countries: Challenges and opportunities in Addis Ababa, Ethiopia. *Journal of Design for Resilience in Architecture and Planning*, *5*(2), 269-286.

Kimic, K., & Polko, P. (2022). The use of urban parks by older adults in the context of perceived security. *International journal of environmental research and public health*, *19*(7), 4184.

Lee, S., Kim, Y., & Koo, B. W. (2024). Urban Trees and Perceived Neighborhood Safety: Neighborhood Upkeep Matters. *Environment and Behavior*, 00139165241286820.

Liu, Y., Zhang, J., Liu, C., & Yang, Y. (2024). A Review of Attention Restoration Theory: Implications for Designing Restorative Environments. *Sustainability*, *16*(9), 3639.

Luo, H., Deng, L., Song, C., Jiang, S., Huang, Y., Wang, W., ... & Li, X. (2023). Which characteristics and integrations between characteristics in blue–green spaces influence the nature experience?. *Journal of Environmental Planning and Management*, *66*(6), 1253-1279.

Omindi, S. O. (2021). *Role of Design on User Experience in Public Parks* (Doctoral dissertation, University of Nairobi).

Palliwoda, J., & Priess, J. A. (2021). What do people value in urban green? Linking characteristics of urban green spaces to users' perceptions of nature benefits, disturbances, and disservices. *Ecology and Society*, *26*(1), 28.

Puplampu, D. A., & Boafo, Y. A. (2021). Exploring the impacts of urban expansion on green spaces availability and delivery of ecosystem services in the Accra metropolis. *Environmental Challenges*, *5*, 100283.

Reyes-Riveros, R., Altamirano, A., De La Barrera, F., Rozas-Vásquez, D., Vieli, L., & Meli, P. (2021). Linking public urban green spaces and human well-being: A systematic review. *Urban forestry & urban greening*, *61*, 127105.

Vargas-Hernández, J. G., Pallagst, K., & Zdunek-Wielgołaska, J. (2023). Urban green spaces as a component of an ecosystem. In *Sustainable development and environmental stewardship: Global initiatives towards engaged sustainability* (pp. 165-198). Cham: Springer International Publishing.

Veitch, J., Ball, K., Flowers, E., Deforche, B., & Timperio, A. (2021). Children's ratings of park features that encourage park visitation, physical activity and social interaction. *Urban Forestry & Urban Greening*, *58*, 126963.

Veitch, J., Ball, K., Rivera, E., Loh, V., Deforche, B., Best, K., & Timperio, A. (2022). What entices older adults to parks? Identification of park features that encourage park visitation, physical activity, and social interaction. *Landscape and Urban Planning*, *217*, 104254.

Wan, C., Shen, G. Q., & Choi, S. (2020). Effects of physical and psychological factors on users' attitudes, use patterns, and perceived benefits toward urban parks. *Urban forestry & urban greening*, *51*, 126691.

World Health Organization. (2022). *Urban design for health: inspiration for the use of urban design to promote physical activity and healthy diets in the WHO European Region* (No. WHO/EURO: 2022-5961-45726-65769). World Health Organization. Regional Office for Europe.

Yang, C., Shi, S., & Runeson, G. (2022). Associations between community parks and social interactions in master-planned estates in Sydney, Australia. *Sustainability*, *14*(6), 3496.

Yang, Y., Xu, Y., Duan, Y., Zhang, S., Zhang, Y., & Xie, Y. (2023). How can trees protect us from air pollution and urban heat? Associations and pathways at the neighborhood scale. *Landscape and Urban Planning*, *236*, 104779.

Yao, W., Zhang, X., & Gong, Q. (2021). The effect of exposure to the natural environment on stress reduction: A meta-analysis. *Urban forestry & urban greening*, *57*, 126932.

Zhang, X., Zhang, Y., Yun, J., & Yao, W. (2023). A systematic review of the anxiety-alleviation benefits of exposure to the natural environment. *Reviews on Environmental Health*, *38*(2), 281-293.