

**URBAN RESIDENTS' PERCEPTION AND WILLINGNESS TO PAY
FOR PUBLIC GREEN SPACES IN LIRA CITY.**

BY

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DECLARATION

I, **Eper Ceasor**, hereby declare that this research dissertation, titled “Urban Residents’ Perception and Willingness to Pay for Green Open Spaces in Lira City”, is my original work and has not been submitted for an award of a degree or any other academic award at any other institution. Any information from other scholars has been acknowledged through appropriate citations and references.

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APPROVAL

This is to certify that Eper Ceasor has conducted research on Urban Residents' Perception and Willingness to Pay for Green Open Spaces in Lira City under our supervision. This research has been submitted with our approval.

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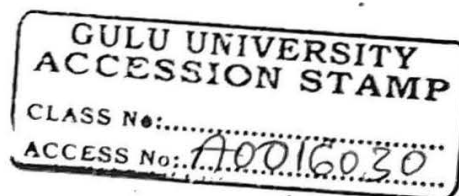
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DEDICATION

This work is dedicated to my beloved parents, Mr. and Mrs. Robert Agnes Oyuru Eper, whose unwavering support and encouragement have been the cornerstone of my academic journey. I also dedicate it to the residents of Lira City, whose experiences and insights inspired the foundation of this research. May this work contribute to the sustainable development and preservation of green spaces in our urban communities.

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LIST OF ACRONYMS

Acronym	Full Meaning
CVM	Contingent Valuation Method
KII	Key Informant Interview
SDG	Sustainable Development Goal
SSA	Sub-Saharan Africa
UBOS	Uganda Bureau of Statistics
WTA	Willingness to Accept
WTP	Willingness to Pay

ABSTRACT

Urban public green spaces play an essential role in enhancing environmental sustainability, social well-being, and economic vibrancy within cities. However, rapid urbanization across Sub-Saharan Africa, including Uganda, has placed increasing pressure on these spaces, leading to their degradation and conversion for other uses. This study examined urban residents' perceptions and willingness to pay (WTP) for public green spaces in Lira City, and further analyzed how proximity to these spaces influences surrounding land values.

A cross-sectional mixed-methods design was employed. Data were collected from 397 households, 60 property owners, and key informants, including city officials, planners, and green space managers. Structured questionnaires and contingent valuation methods were applied to capture quantitative insights, while interviews provided qualitative depth. Quantitative data were analyzed using descriptive statistics, as well as binary and multinomial logistic regression in SPSS and STATA. Qualitative data were thematically analyzed.

Findings revealed that awareness of public green spaces was high (97.5%), though frequent usage was limited. Residents valued green spaces highly, especially for environmental ($M=4.32$) and recreational ($M=4.11$) benefits, with a composite perception index mean of 4.01. Socio-demographic factors had a limited influence on perceptions, with education showing a modest effect. Willingness-to-pay analysis indicated that 67.5% of respondents were prepared to contribute financially, with income being a strong predictor of WTP. Reasons for unwillingness included mistrust in fund management and economic constraints. Regarding property dynamics, respondents living closer to Mayor's Garden and Akii-Bua Stadium reported positive impacts on land values, a finding confirmed through multinomial logistic regression, which showed that proximity significantly increased the likelihood of perceived property value appreciation.

The study concludes that public green spaces are highly valued by residents, both socially and economically, but their sustainability depends on adequate financing, inclusive planning, and effective governance. It recommends strengthening institutional commitment, promoting community participation, and adopting innovative financing mechanisms such as public-private partnerships to support maintenance and enhancement. These insights contribute to evidence-based urban planning and policy, reinforcing the role of green spaces in achieving sustainable city development in Uganda and other rapidly urbanizing contexts in Sub-Saharan Africa.

1 CHAPTER ONE: INTRODUCTION

1.1 Background

Once a city achieves its status, the physical land use changes, resulting in expansion into wider, vacant geographical areas. Such sprawl compromises land, natural resources, and the environment, resulting in undesirable outcomes through increased demand for resources and services to maintain and improve sustainability. This puts public green spaces at risk.

According to statistics from the World Bank, over half (56%) of the population in the world (about 4.4 billion inhabitants) are residents of urban areas (World Bank, 2023). Urban residents are individuals who reside in urban areas and constitute over half of the global total population. In Sub-Saharan Africa (SSA), urbanization has been accelerating at an unprecedented rate, often leading to informal settlements and unplanned expansions that overlap with available public spaces. Their region's urban centres face significant challenges in preserving green areas due to inadequate urban planning frameworks, economic constraints, and population pressures (Jia et al., 2017).

In this study, public green spaces refer to publicly accessible open areas that are primarily vegetated, such as urban parks, recreational fields, and community gardens. These areas provide environmental, recreational, and social benefits to urban populations and are often maintained under the control of city authorities, except when leased solely for management purposes (Kabisch et al., 2015; Subadyo et al., 2019; Wolch et al., 2014a). These spaces significantly influence socioeconomic dynamics, like the enhancement of property worth, improving both physical and psychological well-being, while enhancing social connectedness, and mitigating urban heat effects (Turna & Bhandari, 2022). Urban areas throughout sub-Saharan Africa have often seen their green spaces diminish or deteriorate, adversely affecting residents' quality of life and exacerbating environmental concerns, including flooding, heat-related stresses, and air pollution. Despite limited financial resources and competing priorities, there is growing awareness regarding the merit of funding urban public green spaces. Understanding local perceptions, willingness to support initiatives, and the influence of these spaces on land value can inform policies that ensure equitable and sustainable progression of urbanization in the region.

In the context of Lira City, public green spaces are categorised as designated public parks, ceremonial grounds, and undeveloped city-owned plots intended for community use. They include, but not limited to, mayor's garden loosely referred to as "*the living room of Lira City*",

coronation park which is a new ceremonial ground in the city, Adyel children's Park, also one of the children's park for recreational purposes, Noma ground, Akii-Bua stadium, a national stadium named after the first Ugandan Gold medallist, currently being renovated, managed partly by the city council and the ministry of education and sports, and Golf course. In Lira City, these spaces serve multiple functions, including environmental regulation, aesthetic enhancement, and providing venues for social and cultural activities. However, their sustainability is increasingly tied to how they are valued, maintained, and financed. Rapid urbanization and population growth in Lira City have heightened the necessity of aligning green space provision with urban planning efforts.

This research investigates these dynamics, with particular focus on the urban residents' perception, willingness to pay, and the financial effect caused by the green spaces of the neighborhoods. By situating green spaces within the broader urban land management system, the study explores how public perceptions, institutional arrangements, and financial flows influence their condition and accessibility.

The perception of residents on these spaces often relies on factors such as accessibility, maintenance, and perceived benefits. For instance, residents value public green spaces for their recreational potential and the ability to enhance property values (Song et al., 2015; Cheung et al., 2022). Research conducted in various urban contexts has demonstrated that residents often demonstrate a willingness to financially back the preservation and enhancement of green spaces, reflecting their perceived benefits (Lo & Jim, 2010; Cheung et al., 2022b; Song et al., 2015b). In Lira City, assessing the WTP among urban residents can provide insights into their valuation of green spaces and inform local government policies regarding funding and resource allocation for urban greening initiatives. Previous studies have employed contingent valuation methods to gauge WTP, revealing that residents' motivations for paying often stem from a desire for improved environmental quality and enhanced community well-being.

Moreover, the proximity of public green spaces to adjacent areas has been shown to influence land value significantly (Hızlı & Aktuğlu Aktan, 2023). In Lira City, where land use is under constant pressure from urban expansion, understanding the relationship between green spaces and land value can guide urban planning and development strategies. This relationship underscores the merits of integrating public green spaces into urban plans to improve environmental quality and economic viability.

By understanding these dynamics, policymakers can better advocate for the upkeep and betterment of green spaces, ultimately contributing to improved urban livability and community well-being. The findings from this research will not only inform local governance but also contribute to the larger dialogue on sustainable cities amid rapid urbanization.

1.2 Statement of the Problem

Lira City, as with many other urban areas across sub-Saharan Africa (SSA), is witnessing fast-paced urbanization. This growth, characterized by the increase in population concentration and outward city expansion, has driven significant land use changes. These public spaces, which play essential functions in boosting the quality of cities while supporting environmental sustainability and fostering social cohesion, are particularly affected by this expansion. These spaces, which include parks, gardens, and recreational areas, are increasingly being converted into commercial and residential developments. As a result, the recreational and ecosystem services benefited by urban residents are diminished (Dahlan et al., 2022a).

Despite the importance of these green spaces, there is limited research on how urban residents perceive their value, particularly regarding their willingness to financially support their maintenance and enhancement. However, there is limited understanding of how residents perceive, value, and relate to public green spaces, especially in terms of their attitudes and awareness of the multiple benefits these spaces provide. The scarcity and degradation of public green spaces have created challenges for sustainable urban development. As urbanization intensifies, understanding residents' perceptions of these spaces is crucial for planning and policymaking, making sure that urban development is in line with the community's standards.

Moreover, the spatial relationship of green spaces relative to residential and commercial properties is usually linked to the determination of property value, highlighting the economic influence of maintaining these areas. However, the relationship between green spaces and land value in Lira City has not been fully explored, and empirical data on residents' willingness to contribute financially for their upkeep is lacking. Without such data, policymakers may struggle to allocate resources effectively and justify investments in green space preservation.

Lira City risks continued loss and degradation of its public green spaces, leading to declining urban livability, reduced environmental quality, and loss of economic opportunities associated with enhanced property values. The absence of community support mechanisms may also weaken urban governance, increase social inequalities in access to recreational amenities, and ultimately compromise the city's progress toward sustainable development goals. Addressing

these gaps is therefore essential to ensure that green spaces are preserved, valued, and integrated into Lira City's long-term urban development agenda.

1.3 Objectives of the Study

1.3.1 General Objective

The general objective of the study is to explore the urban residents' perception and willingness to pay for public green spaces in Lira City.

1.3.2 Specific objectives

- i. To determine the perception of urban residents towards public green spaces in Lira City.
- ii. To evaluate urban residents' willingness to pay for public green spaces in Lira City.
- iii. To analyze the influence of public green spaces on the land values within Lira City.

1.4 Research Questions

- i. What is the perception of urban residents towards public green spaces in Lira City?
- ii. What are the determinants of willingness to pay for public green spaces in Lira city?
- iii. How do public green spaces influence land value within Lira City?

1.5 Conceptual Framework

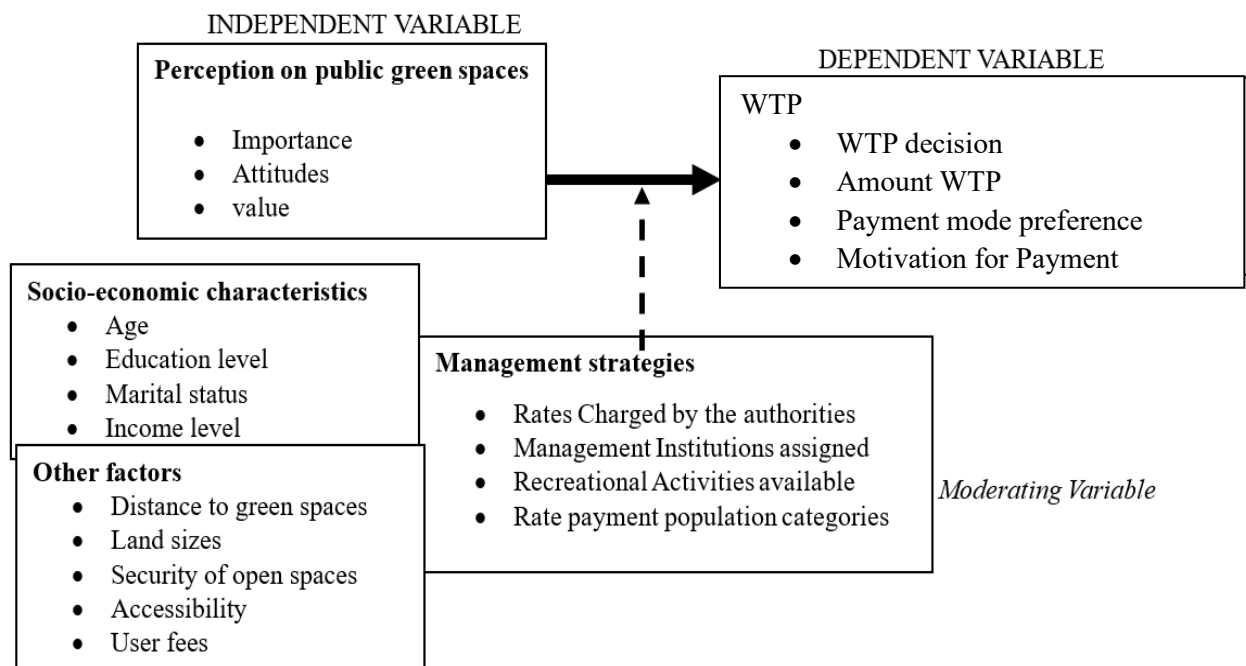


Figure 1.5.1 Conceptual Framework

Source: Modified according to Kitchel & Ball, (2014)

The conceptual framework illustrates the hypothesized relationship between urban residents' perception of public green spaces and their willingness to pay for their maintenance and enhancement. In this model, perception of public green spaces, reflected through their perceived importance, attitudes, and value, is the independent variable, while willingness to pay (WTP), captured through willingness decision, amount to pay, preferred payment mode, and motivation for payment, is the dependent variable. The relationship between perception and WTP is influenced by moderating variables, including socio-economic characteristics (such as income, education, and age), existing management strategies for green spaces, and other contextual factors like awareness and accessibility. The framework, therefore assumes that positive perceptions of public green spaces, reinforced by favorable socio-economic and institutional conditions, are likely to enhance residents' willingness to financially support their preservation and improvement.

1.6 Justification and Significance

The study of urban residents' perception and willingness to invest in maintaining public green spaces in Lira City, as well as the influence of these spaces on land value, is both timely and relevant. Rapid urbanization globally, particularly in SSA, has placed immense pressure on land resources, often resulting in the conversion of city greenery into built areas. This trend is evident in Uganda, where cities like Lira are experiencing significant land use changes. Understanding the value residents place on green spaces and their willingness to support conservation efforts is important for contributing to sustainable planning, policymaking, and community development. The study reveals key insights regarding the role played by green spaces in urban settings, addressing gaps in existing knowledge regarding local perceptions and the economic impact of proximity to green amenities.

Target 11.7, according to the United Nations Sustainable Development Goal 11, by the year 2030 all people should have equitable access to safe, inclusive, and easily accessible green and public spaces, especially for special categories of people. This is evidence of how important these green spaces are in achieving development and sustainability in every community.

The study holds significance due to its capacity to shape policies and real-world practices at multiple levels. First, by assessing residents' perceptions, this research underscores the significance of public green spaces in social and cultural contexts, influencing their integration into urban development plans. It enables local authorities to understand how the community values these spaces, which is essential for mobilizing public support and designing policies that

resonate with local needs. Second, assessing willingness to pay (WTP) for green space provides practical information for developing funding mechanisms, such as community contributions or public-private partnerships, to ensure the sustainability of these areas. Given that financial constraints often limit the ability of cities in Sub-Saharan Africa to maintain green spaces, understanding WTP can help bridge the funding gap and enhance resource allocation.

Additionally, the study addresses the economic dimension by analysing the green space influence on land value. This analysis helps urban planners and real estate developers by providing empirical evidence on the added value that green spaces bring to properties, thereby guiding land-use planning, zoning, and investment decisions. The findings can also be used to advocate for policies that prioritize the development of green infrastructure, as increased property values near green spaces may generate additional revenue through property taxes, which can be reinvested in urban development.

This study is also aligned with ongoing national and local policy frameworks. At the local level, the Lira District Development Plan (2020/21–2024/25) emphasizes sustainable urbanization, improved environmental management, and the creation of inclusive public spaces as part of its strategic priorities. The results of this research provide evidence that can guide the implementation of these goals by highlighting residents' perceptions, their willingness to financially support urban greening, and the significant role of such spaces in shaping property values.

At the national level, the research contributes directly to the National Development Plan IV (2025/26–2030/31), which underscores urban resilience, sustainable land use, and improved environmental quality as key drivers of socio-economic transformation. By examining how green spaces influence urban residents' welfare and land values, the study offers practical insights that can support policy measures aimed at integrating environmental sustainability into Uganda's urban development agenda.

In this way, the study not only advances academic knowledge but also provides actionable evidence for policymakers and planners working to achieve sustainable urban growth in Uganda.

1.7 Scope of the Study

1.7.1 Geographical Scope

This research was geographically confined to the Northern Region of Uganda. Specifically, the research focused on selected neighborhoods within the administrative divisions of Lira City

East and City West divisions, which host most of the City's public green spaces. These include Akii-Bua Stadium (2°14'22"N 32°54'54"E), Coronation Park (2°14'37"N 32°53'54"E), Lira Golf Course (2°14'49"N 32°54'14"E), Adyel Children's Park (2°15'26"N 32°53'50" E), Mayor's Graden (2°14'54"N 32°53'56"E), and Noma grounds (2°14'08"N 32°53'33"E).

These green spaces represent a mix of long-established and newly developed areas, offering an ideal setting to examine both the historical and current perceptions of green space use, their relationships with land value, and residents' willingness to contribute to their maintenance.

The City's rapid urbanization rate and changing land use patterns make it a relevant and timely case for this research.

1.7.2 Content Scope

This study focuses on three interrelated dimensions of public green spaces (PGS) in Lira City:

Perception of PGS: Residents' awareness, attitudes, and perceived importance of public green spaces, measured using a composite perception index derived from five Likert-scale items (environmental, recreational, social, aesthetic, and property-value importance). Data sources: structured household questionnaires (N = 397) and key informant interviews.

Willingness to Pay (WTP) for PGS: Residents' readiness to contribute financially toward the maintenance and improvement of public green spaces. WTP is measured as: (a) binary decision (Yes = 1 / No = 0), (b) stated amount (monthly ranges in UGX), (c) preferred payment mode (donation, recurrent levy/tax, public-private partnership, etc.), and (d) motivation/reasons (qualitative). Analysis methods: descriptive statistics and binary logistic regression for determinants; thematic analysis for open-ended responses.

Influence of PGS on Land/Property Values; Perceived and reported effects of proximity and quality of selected green spaces (Akii-Bua Stadium and Mayor's Garden) on surrounding property values. Data sources: targeted survey of property owners (N = 60) and key informant interviews with valuers and planners. Analysis methods: descriptive summaries, cross-tabulations, and multinomial logistic regression to assess associations by distance bands.

Population and sample coverage

Primary respondent groups: household residents (N = 397) sampled proportionally across Lira City wards; property owners near two purposively selected green spaces (N = 60); and

purposively selected key informants (city planners, green-space managers, and property valuers).

Geographic coverage: Lira City East and West divisions (city administrative limits). Two green spaces were selected purposively for Objective 3: Akii-Bua Stadium and Mayor's Garden.

Data types and analytic approach

Quantitative data: structured questionnaire responses (socio-demographics, perception, WTP, property characteristics) analysed using SPSS (descriptive and bivariate tests) and Stata (binary and multinomial logistic regression).

Qualitative data: semi-structured key informant interviews and open-ended questionnaire responses were analysed thematically to explain quantitative findings and explore institutional/managerial factors.

1.7.3 Time Scope

The research lasted for ten (10) months from November 2024 to August 2025. This duration included proposal revision and approval, pilot testing of tools, gathering of data, analysis of information, and report writing.

The period was expected to provide sufficient time for comprehensive fieldwork, considering seasonal patterns that may affect the use or condition of the public green spaces. Data collected reflects residents' experiences and attitudes at the time of the study, but also captured retrospective insights regarding changes in green space availability or quality over recent years.

2 CHAPTER TWO: LITERATURE REVIEW

2.1 Theoretical Framework

This research is grounded in Non-Market Valuation theory, which quantifies the economic value of products and services that are not exchanged through traditional market mechanisms, such as public green spaces. Since these resources lack explicit market prices, traditional market-based methods cannot capture their value. Economic theory provides frameworks for estimating individuals' preferences and the benefits they derive from these non-market goods, including how these amenities can influence surrounding property values. (Adamus, 2023)

Central to this research is the Contingent Valuation Method (CVM), which relies on the principle that individuals can express their willingness to pay (WTP) for improvements or maintenance of non-market goods, or their willingness to accept (WTA) compensation for their loss (Fehr et al., 2015; O'Garra & Mourato, 2016). CVM is a survey-based approach that elicits these values directly from users, capturing both use and non-use values associated with public green spaces.

The framework also incorporates WTP/WTA theory, which posits that individuals' valuation of non-market goods is influenced by socio-economic characteristics, proximity to the resource, and perceived importance of the resource. Additionally, it incorporates principles from hedonic pricing theory, which suggests that the presence, quality, and proximity of green spaces can positively affect property and land values (Spash, 2008). This theoretical perspective directly informs the study's methodology and data analysis procedures, which include: Survey Design - Structured questionnaires guided by CVM to elicit WTP from urban residents and perceptions of green spaces' influence on land values, Analytical Approach - Binary logistic regression to identify socio-economic and perceptual predictors of WTP, and descriptive plus multivariate analyses (e.g., regression) to assess the influence of green space proximity on property values and, Qualitative Analysis - Thematic analysis of reasons for unwillingness to pay and perceived impact on property, capturing subjective and contextual factors.

By integrating these theories, the framework provides a structured lens for understanding how urban residents perceive, economically value, and experience the influence of public green spaces on land values, guiding both the literature review and empirical analysis.

2.2 Urbanization and Land Use Changes

2.2.1 Patterns focused on urban growth and land use transformations

Urbanization in Uganda, particularly in cities like Lira, has accelerated significantly over recent decades. This growth is brought about by increased population density and expanded urban boundaries, resulting in profound alterations in land use. The swift pace of urbanization is not exclusive to Lira; it is a phenomenon seen in numerous urban areas in East Africa, where urban populations are projected to double by 2050 (Ngome & Yeom, 2024). This demographic shift necessitates a re-evaluation of urban planning strategies to accommodate the growing population while maintaining essential services and infrastructure. The dynamics of urban growth in Lira reflect broader trends in developing regions, where Urban expansion frequently exceeds the growth of essential infrastructure, resulting in various challenges in urban governance and sustainability (Rios-Ocampo & Gary, 2024).

The shift from public green spaces to urban commercial and residential infrastructures is a significant consequence of urbanization in Lira City. As urban areas expand, public green spaces are increasingly viewed as prime real estate for development, leading to their degradation and loss (Wang et al., 2023). This is evident in many cities where the need for housing and commercial facilities often overshadows the need for recreational areas. The loss of green spaces affects both the beauty and recreational functions of urban areas, as well as the health of ecosystems and wildlife. Studies indicate that strategic urban planning is essential to reduce these effects and preserve vital green areas, which are affecting the overall quality of life in cities (Zou & Wang, 2021).

2.2.2 Environmental Consequences of Urbanization.

Urbanization has profound environmental consequences, particularly the decline of ecological and recreational areas. The increase in impervious surfaces due to urban expansion leads to habitat fragmentation and loss of biodiversity (Ranagalage et al., 2017). In Lira, as in other rapidly urbanizing regions, the degradation of green spaces contributes to various environmental issues, including increased resource pollution, urban heat, and reduced carbon sequestration capabilities. The ecological functions provided by green spaces, such as stormwater management and air purification, are compromised, leading to a decline in overall urban environmental quality. The need for integrated urban greening strategies is critical to address these challenges and enhance urban resilience (Nshimiyimana et al., 2023).

A major challenge in urban planning is balancing the pressures of city growth with the provision of accessible green spaces. Policymakers face the dilemma of accommodating growth while ensuring that urban residents have access to recreational areas that promote social cohesion and environmental sustainability (Vindigni et al., 2021). The lack of empirical data on residents' perceptions and their willingness to support green space initiatives complicates this balance, as effective urban planning requires community engagement and support (Whitten, 2022). Studies suggest that incorporating community feedback into urban planning processes can produce environmentally sound outcomes that resonate with the expectations of urban communities (Nascimento et al., 2024).

2.2.3 Comparative Studies on Urban Public Green Space Management

Comparative studies of urban green space management in other rapidly urbanizing regions provide valuable insights for Lira City. For instance, cities that have successfully integrated green spaces into their urban fabric often employ innovative planning strategies that prioritize sustainability and community involvement (Fox & Wolf, 2022). Lessons learned from these case studies highlight the need to embrace an integrated urban planning strategy that accounts for environmental, social, and economic factors. Efficient administration of urban green areas, on top of residents' life enhancement, also contributes to the overall sustainability of urban environments (Viguié & Hallegatte, 2012). By learning from successful models in other cities, Lira can develop measures that promote the preservation and enhancement of its greenery amidst ongoing urbanization.

2.3 The Function and Significance of PGS in Promoting Urban Sustainability

2.3.1 Environmental, social, and health benefits.

Public green spaces are essential for regulating the environmental services of urban areas. They enhance air quality, promote biodiversity, and strengthen climate resilience. Urban greenery, including parks and gardens, functions as a natural filtration system by absorbing airborne pollutants and releasing oxygen, which is critical for the health and well-being of city dwellers (Larson et al., 2016). Furthermore, these green spaces provide essential habitats for various species, promoting urban biodiversity, which is critical for maintaining ecological balance and resilience against climate change. Biodiversity within urban environments contributes significantly to essential ecosystem services, including pollination and natural pest regulation, both of which are crucial for maintaining sustainable urban ecosystems (Kondo et al., 2018).

Benefits of green spaces are well-documented, with significant positive contributions to mental health, physical activity, and community cohesion. Access to green spaces positively contributes to mental well-being, as these areas provide opportunities for relaxation and leisure (Zhang et al., 2011). Studies show that individuals living near parks are likely to engage more in physical activities, such as walking and jogging, resulting in better physical health outcomes. (Lin et al., 2014). Additionally, green spaces serve as community areas that aid social interactions and strengthen social ties, enhancing social cohesion among residents.

2.3.2 Economic Benefits Beyond Property Values.

Public green spaces also boost the economic vibrancy of urban areas beyond merely influencing property values. Well-maintained parks and recreational areas draw both tourists and residents, stimulating the local economy by increasing demand for services and amenities. Moreover, the availability of attractive green areas can enhance neighbourhood aesthetics, making them more valuable for businesses and residents alike (Cilliers & Timmermans, 2015). This economic activity can result in the creation of jobs and higher tax revenues for local governments, further supporting urban sustainability initiatives. Incorporating public green spaces into urban planning is, therefore, more than just an environmental or social concern. It is also a strategic economic decision that can yield long-term benefits for cities (Wolch et al., 2014b).

2.3.3 Challenges to Green Space Preservation.

Public green spaces, while highly beneficial, still face considerable challenges that threaten their preservation. Rapid urbanization and development pressures often lead to the invasion of green spaces for housing and commercial development, diminishing the availability of these vital spaces (Mears & Brindley, 2019). Institutional and policy barriers can further complicate efforts aimed at protecting and maintaining urban green spaces, as competing interests in urban development may overshadow environmental considerations (Dushkova & Ignatieva, 2020). Additionally, inadequate funding and funding for the upkeep of current green spaces can result in their degradation, reducing their usability and appeal to residents. Tackling these issues necessitates coordinated action by policymakers, urban planners, and community leaders to prioritize greenery preservation to cover the context of urban development (Soga et al., 2017).

2.4 Perception of Public Green Spaces

2.4.1 Public Awareness and Attitudes.

Understanding the value of green spaces is essential for building public support toward their conservation and development. Studies indicate that residents who are informed about the ecological, social, and health benefits of these spaces are more likely to advocate for them (Bele & Chakradeo, 2021). Awareness campaigns can significantly influence public attitudes, leading to increased appreciation for the positives of public green spaces in urban areas. For example, research has shown that when residents understand how public green spaces add to biodiversity and improve air quality, their support for urban greening initiatives tends to increase (Liu et al., 2021). Also, the visibility of greening in urban settings is linked to perceptions of safety, which can further enhance residents' positive attitudes towards these spaces.

Residents perceive a multitude of benefits associated with public green spaces, including recreational, aesthetic, and environmental contributions. These perceived benefits underscore the critical role of including green spaces in urban planning to improve residents' well-being (Amano et al., 2018).

2.4.2 Factors Influencing Perception.

Various demographic, cultural, and socioeconomic factors influence residents' perspectives on urban green spaces. Studies indicate that age, gender, and socioeconomic status can significantly affect how individuals view and utilize green spaces (Rehling et al., 2021). For example, older adults may prioritize tranquility and aesthetic beauty, while younger residents might focus on recreational opportunities. Cultural backgrounds also play a role in shaping perceptions. Additionally, socioeconomic factors can influence equitable access and standards of green spaces, often lacking in under-resourced neighborhoods related to maintenance and safety, thereby affecting residents' perceptions and usage patterns (Richardson & Mitchell, 2010).

2.4.3 Comparative Studies on Perceptions.

Research conducted in various cities has shown that residents' views on green space specifications vary widely, suggesting that a uniform approach to urban greening may not achieve the desired effectiveness (Li et al., 2020). Studies in cities like Guangzhou and various European urban centres highlight the importance of local assessments to understand community needs and preferences regarding green spaces. Furthermore, gender differences in

perceptions have been documented, indicating that women may prioritize safety and social quality in their evaluation of green spaces, while men may focus more on recreational opportunities (Gunnarsson et al., 2017). These findings emphasize a requirement for tailored solutions to green space planning that acknowledge the specific demographic and cultural settings of cities like Lira.

2.5 Willingness to Pay

2.5.1 Economic Value of Public Green Spaces:

Economic valuation of green spaces is crucial for understanding residents' willingness to financially support their management and enhancement. Two commonly used methods for this purpose are the Contingent Valuation Method (CVM) and choice modelling (CM). CVM consists of asking respondents to state the value they would assign to specific improvements in the environment, thereby providing a monetary estimate of the value of green spaces (Lo & Jim, 2010). This method has been popularly applied in various research to assess the monetary benefits of urban green spaces, revealing that residents often express a significant willingness to pay for their preservation (Lo & Jim, 2010). On the other hand, choice modelling allows researchers to evaluate preferences by providing respondents with simulated scenarios that involve making choices between different properties of green spaces, for example, size, accessibility, and ecological benefits (Wei et al., 2024).

2.5.2 Attitudes Influencing Willingness to Pay.

Several socioeconomic factors significantly influence residents' willingness to pay for green spaces. Research indicates that greater earnings are often positively correlated with WTP, as wealthier individuals are often more capable of contributing financially to environmental initiatives (Nelson et al., 2021). Education also serves an important function; people with higher levels of education tend to have greater environmental awareness and are more likely to support conservation efforts financially. Age is another demographic factor that influences WTP, with studies showing that younger individuals may exhibit different preferences compared to older adults regarding green space attributes (Thomas, 2022). Additionally, residents' conservation values and attitudes towards environmental sustainability can significantly impact their willingness to invest in green spaces, as those who prioritize ecological health are often more inclined to support funding initiatives (Kalfas et al., 2022).

2.5.3 Barriers to Financial Support (WTP limitations).

Despite the recognized benefits of green spaces, several barriers can limit residents' willingness to pay. Economic constraints, such as low income or financial instability, can significantly hinder individuals' ability to contribute financially (Zhao & Chen, 2021). Furthermore, insufficient understanding of green space benefits could result in apathy or indifference towards funding initiatives (Balasha et al., 2022). Research has also identified psychological barriers, such as perceived inefficacy, where residents feel that their individual contributions will not make a meaningful difference in the overall preservation of green spaces. Additionally, institutional factors, such as inadequate communication from local authorities regarding the importance and benefits of green spaces, can further diminish public support for financial contributions (Kang et al., 2012).

2.5.4 Comparative Willingness to Pay Studies.

Comparative studies across different urban areas provide valuable insights into the community's WTP for green spaces. Research conducted within cities like Hong Kong has shown that the public is generally willing to contribute a premium for the conservation of these urban spaces, reflecting a strong public recognition of their value (Lo & Jim, 2010). Similarly, studies in various European cities have demonstrated that residents' WTP is influenced by local environmental conditions and cultural attitudes towards nature. In contrast, findings from other regions indicate that socioeconomic disparities can lead to significant variations in WTP, highlighting the need for tailored approaches to funding green space initiatives. These comparative analyses underscore the importance of understanding local contexts and demographic factors when assessing public support for green spaces, providing a framework for effective policy development and community engagement (Kirmani & Khan, 2018).

Understanding the WTP for public spaces is crucial in effective city planning and resource allocations. By employing economic valuation methods and considering the socioeconomic and environmental attitudes of residents, policymakers can better gauge public support for green space initiatives. Addressing barriers to financial contributions and learning from comparative studies can further enhance community engagement and guarantee the long-term sustainability of urban green areas.

2.6 Green Spaces Impact on Land Value

The economic value of nearness to green spaces is well-documented, with numerous studies indicating that residential Properties adjacent to green areas and parks typically experience

increased market values. This phenomenon is often attributed to the visual appeal, leisure opportunities, and ecological advantages offered by green spaces, which enhance the desirability of nearby properties (Choumert, 2010). Studies have shown that an increase in green spaces within a specific radius of a property leads to significant increases in property values. For instance, a study in Jinan, China, found that a 1% increase in green space within a 300-meter radius around a house could increase its value by approximately 2.1% per square meter (Choumert, 2010). Such findings underscore the importance of integrating green spaces into urban planning to enhance property values and elevate overall city living standards.

Proximity to green spaces generally enhances property values, but several factors can modify this relationship. The condition of these spaces plays a critical role; well-maintained parks are more likely to positively influence property values than neglected or poorly designed (Huang et al., 2019).

The influence of green spaces on land value is multifaceted, influenced by proximity, property specifications, and the condition of the green spaces themselves. Understanding these dynamics through economic valuation methods can provide valuable insights for urban planning and policymaking.

2.7 Community Engagement and Policy Implications for Conservation

2.7.1 Community Involvement in Green Space Planning.

Involving the community in the planning and maintenance of green spaces is vital for building public support and ensuring residents' satisfaction. When community members take part in decision-making, their sense of ownership is strengthened, which encourages active participation in the maintenance and preservation of green spaces. Research indicates that when residents are involved in planning efforts, they are more likely to respect and utilize these spaces, leading to improved community well-being (Likongwe et al., 2021). For example, participatory planning approaches have been shown to increase community awareness of the positive roles of green spaces, thereby enhancing community support for conservation initiatives (Luo et al., 2022).

Effective engagement strategies are crucial for promoting sustainable conservation of green spaces. Various tools and methods can be employed to involve residents actively in conservation efforts. For example, community training sessions and educational initiatives can increase understanding of the environmental and social benefits provided by green spaces,

fostering a culture of stewardship among residents (Jayaweera et al., 2018). Additionally, social media and other platforms can facilitate communication & collaboration between society members and local authorities, enabling real-time feedback and participation in green space initiatives. Moreover, the establishment of volunteer programs for park clean-ups and maintenance enhances community cohesion and environmental responsibility.

2.7.2 Policies and Regulatory Frameworks.

Efficient policies and regulatory structures are crucial for supporting the preservation of green spaces and ensuring equal access for all residents. Policy frameworks ought to emphasize incorporating green spaces within urban planning and development, acknowledging their importance as vital public assets. Furthermore, policies that facilitate community engagement in green space management can enhance transparency and accountability, guaranteeing that different communities' needs and preferences are reflected in planning (Constantino et al., 2012). For instance, in Uganda, several laws and policies necessitate the establishment, protection, conservation and, development of green spaces e.g. the National Environment Act, 2019 (Section 50(1), 91(1)), physical planning Act, 2010 (section 25,48), National urban Policy, 2017(policy objective 5.4, strategic Action 5.4.1, policy strategy 3.4) and, among many others, the National Land Use Policy, 2007(Section4.3.3, 5.2.2, 7.4.1). Such frameworks should also address issues promoting social equity by guaranteeing equal access to green spaces for underserved communities and the benefits they provide (Wamsler et al., 2020).

2.7.3 Land-Use Planning and Zoning for Green Space Preservation.

Incorporating green areas within land-use policies and zoning frameworks is critical for achieving balanced urban development. Effective urban planning should prioritize the preservation of current green spaces while exploring opportunities to establish new ones, particularly in densely populated areas (Cui et al., 2022). Zoning regulations can play a pivotal role in this integration by designating specific areas for green space development and ensuring that new developments include adequate green infrastructure (Boissière et al., 2014).

Community engagement and effective policy frameworks are vital for the conservation of green spaces by actively involving residents in planning processes, employing innovative engagement strategies, and establishing supportive policies. Ensuring that green spaces are systematically planned within land-use and zoning guidelines further ensures that these vital resources are preserved for future generations, promoting the holistic well-being of residents in cities.

3 CHAPTER THREE: METHODOLOGY

3.1 Area of Study

The study was conducted in Lira City, which is in northern Uganda, the Lango Sub-region. Lira City is primarily made up of two administrative divisions: Lira City East and Lira City West. Geographically, it is located at a latitude of 2°17' north of the equator and a longitude of 32°56' east of the prime meridian.

Lira City sits at an altitude of 1,084.11 meters above sea level and experiences a tropical wet and dry savannah climate. It is an emerging city that integrates economy, politics, society, culture, and ecology.

According to Uganda Bureau of Statistics [UBOS], (2014) Between 2002 and the 2014 census, Lira City's population increased from 80,879 to 99,059, reflecting a growth rate of 1.7% in the stated period, while, according to (UBOS, 2024) Lira City currently has 55,711 households. The total land area of Lira city is approximately 1326 square kilometers, consisting of an uneven population distribution, with the city center more densely populated. As a rapidly urbanizing area, the city integrates economic, political, social, cultural, and ecological systems.

Lira City was purposefully selected as the study area due to the presence of various Public green spaces, its rapid urbanization, increasing pressure on public infrastructure, and the growing demand for sustainable urban planning interventions, including green space development. As one of Uganda's newly elevated cities, Lira represents a unique context where urban planning is still evolving, and public green spaces face both threats and opportunities. The city is experiencing increased land-use competition and informal development patterns, which often encroach on existing public spaces. This makes Lira City an ideal case for investigating urban residents' perceptions, their willingness to support green infrastructure, and the influence of green spaces on property values.

Additionally, Lira City has several notable green spaces (e.g., Mayor's Garden, Akii-Bua Stadium, etc), which vary in visibility, accessibility, and usage. These offer a useful natural setting for examining differences in value perception and planning priorities across different neighbourhoods. Moreover, the city had limited empirical research done on urban green spaces, making this study both timely and relevant for local planning, policy engagement, and academic contribution.

3.2 Research design

The study utilized a cross-sectional design, adopting a mixed-methods approach that combined both qualitative and quantitative research techniques.

A cross-sectional study design was adopted for this research because it enabled the collection of data from urban residents at a single point in time, providing a snapshot of their perceptions, willingness to pay, and the perceived influence of public green spaces on land values. This design is particularly appropriate for examining relationships between variables across different demographic groups (e.g., age, income, property location) without requiring prolonged follow-up. Additionally, it is time-efficient and cost-effective, making it suitable for the objectives of this study, which focus on descriptive and analytical insights rather than causal inference (Setia, 2016).

The study targeted diverse respondent groups to provide information that could be used to draw inferences, including the community, urban planners, business owners, and local entrepreneurs, NGOs focused on urban development and environmental considerations, community leaders, environmental experts, and local government officials. This variety provided a broad range of insights into the interactions between perceptions and WTP for public green spaces.

3.3 Inclusion and Exclusion Criteria

This study included respondents who were permanent residents of Lira City, specifically within the administrative boundaries of Lira City East and Lira City West Divisions. Eligible participants had lived in the city for at least 6 months before the study, be 18 years or older, and be involved in household decision-making, particularly concerning property or community-related matters. This ensured that participants had adequate exposure to and understanding of the city's public green spaces, as well as a stake in decisions related to their maintenance and financing.

The study excluded non-residents such as commuters, visitors, and other transient individuals who, despite using the city's green spaces, do not reside within Lira City's municipal jurisdiction. Their exclusion was based on the focus of the research, which is to understand how long-term city residents, who are directly affected by urban planning decisions and local taxation policies, perceive and value public green spaces.

Including only residents ensured the findings are directly relevant to the city's policymaking and revenue strategies regarding green space development and sustainability.

3.4 Sample selection and Sample size determination

The population for objectives one (1) and two (2) included urban residents of Lira City, considering the nature of the variables of the objectives. This provided a broader perspective of the urban residents' perception and willingness to pay for public green spaces. For objective three (3), the population consisted of property owners who live around the selected green spaces in Lira City, along with professional land valuers. The property owners were included due to their proximity to the selected green spaces and their potential to provide insights into how such spaces affect the desirability, utility, and perceived value of nearby land and property. Meanwhile, land valuers provided expert insights into how the presence of green spaces translates into real market-based changes in land value, offering a technical and economic interpretation of green space impacts.

The study, in objective 3, purposively identified two (2) of the six (6) public green spaces within Lira City, Akii-Bua Stadium and the Mayor's Garden. Akii-Bua Stadium represents a newly established green space, allowing the study to assess the early-stage influence of green space development on land value in an emerging neighborhood. In contrast, the Mayor's Garden has existed for decades, offering an opportunity to evaluate the long-term impact of established green spaces in central urban zones. The inclusion of both sites ensured a comparative analysis based on differing durations of green space integration in the urban fabric. The two spaces will offer a diverse sense of their respective impacts due to their heterogeneous existence times.

A purposive sampling method was employed to select respondents based on their proximity to the two identified green spaces. According to Lorenzo et al. (2007) Respondents were categorised into three distance bands: (1) within 300 ft, (2) between 301 to 600 ft, and (3) 601 to 1000 ft from the green spaces. This stratification allowed for a comparative analysis of how proximity to green spaces influences perceived land value among different groups. In addition, a small number of professional land valuers based in or serving Lira City were included as key informants, selected purposively based on their experience and knowledge of urban land valuation practices.

The research only considered respondents above 18 years of age to provide an informed opinion, since they are more likely to have developed perceptions and attitudes towards public green spaces. This research target population aligns with the works done by Wolch et al. (2014), who are both based on adults (18 years and above) for their arguments on green urban spaces.

3.4.1 Sample size determination

Table 3.4.1 Key Informants

Institution	Role of Key Informant	No.	Sampling method	Tool to be used
Lira City Council	City Mayor	1	Purposive sampling	Semi-structured Interview guide.
	City physical planner	1	Purposive sampling	
Public green spaces management	Staff (2) from each of the two green spaces	4	Purposive sampling	
Property Valuation	Property valuers	3	Purposive sampling	

For objectives one (1) and two (2), the sample size was determined using (Yamane, 1967) The formula is appropriate for studies with known and finite populations. This formula balances precision with feasibility, ensuring statistically valid results while remaining cost-effective. The margin of error (5%) and confidence level (95%) standard for social research provided a reliable generalization of findings to the entire city population. Udoinyang (2024) In his paper employs this formula to determine a sample size, making it relevant to be used in this research as well.

Considering the population of 55,711 households, a population of 245,132 residents, and a national average household size of 4.4 persons, according to UBOS (2024) Yamane's formula was used to determine a statistically significant sample that represents the overall population.

$$n = \frac{N}{1 + N(e^2)}$$

Where n = sample size, N = population size, and e = margin of error (5% margin of error, i.e., 95% confidence level)

$$\begin{aligned}
 &= \frac{55,711}{1 + 55,711(0.05^2)} \\
 &= 397.531359 \text{ equivalent to } 397 \text{ households}
 \end{aligned}$$

Therefore, the study considered a sample size of 397 households for objectives 1 & 2

For objective three (3), the sample size was determined based on the need for statistical significance and the ability to detect differences in land value across the distance bands. In reference to households, approximately 60 respondents (30 per public green space) were targeted, with 20 respondents from each distance band (10 respondents per distance band for each public green space). This approach ensured adequate representation of perspectives from varying proximities to the green spaces, facilitating a comprehensive analysis of the influence of public green spaces on land value (Kruizse et al., 2019).

3.5 Data collection tools and methods

The study employed semi-structured interview guides for key informant interviews. These guides were developed to explore expert insights on the planning, management, financing, and policy environment of public green spaces in Lira City. The interviews were conducted face-to-face, guided by open-ended questions that allowed respondents to elaborate on institutional priorities, policy gaps, challenges, and local planning perspectives. Notes were taken during interviews, and where permitted, audio recordings were made to enhance accuracy during transcription and analysis.

For Objectives One and Two, data were collected using a structured questionnaire designed to capture both quantitative and qualitative information. The tool was a closed-ended question (e.g., Likert-scale items) assessing awareness, frequency of use, perceived benefits, accessibility, and condition of green spaces. In addition, contingent valuation method (CVM) questions were incorporated to determine respondents' willingness to pay (WTP) for the maintenance and enhancement of public green spaces. These questions included binary (yes/no) options and graduated payment ranges, supported by follow-up open-ended questions to explore motivations or barriers to WTP. The questionnaire also included sections on demographic characteristics and was pre-tested for clarity and reliability before full deployment.

The 397 households were proportionally allocated per ward in Lira City based on the household population shares. Each ward's share of the total population will determine the number of participants sampled from that area, as represented in the table below.

Table 3.5.1 Allocation of Respondents per Ward

Administrative unit	households	% of households	sample allocation (395 respondents)
Adekokwok Sub-County	1,941	3%	14
Ngetta Subcounty	10,046	18%	72
Iwal Subcounty	2,583	5%	18
Lira Central Division	6,996	13%	50
Railways division	1,735	3%	12
Ojwina division	11,778	21%	84
Adeyl division	9,820	18%	70
Lira Subcounty	10,812	19%	78
TOTAL	55,711	100%	397

Source: Modified according to (Uganda Bureau of Statistics (UBOS), 2024)

For Objective Three, a separate structured questionnaire was administered to 60 property owners residing or operating near Akii-Bua Stadium and Mayor's Garden. The tool gathered data on property characteristics (e.g., type, ownership status, duration of ownership), proximity to green spaces, perceptions of value change, and observed market dynamics. It also included Likert-scale items to measure perceived significance of green spaces to property value, as well as multiple-response questions exploring mechanisms of influence (e.g., aesthetics, demand, safety).

3.6 Data analysis methods

Quantitative data were analyzed using IBM SPSS Statistics Version 27 and Stata/SE Version 19. SPSS was applied to generate descriptive statistics, including means, medians, frequencies, and distributions, which provided a clear summary of residents' perceptions, willingness to pay (WTP), and reported property value changes. Stata, a software widely used for econometric and multivariate analysis, was employed for advanced inferential techniques such as binary and multinomial logistic regression. These methods enabled the study to assess predictors of WTP and the influence of green space proximity on land values.

Logistic regression was further employed to understand the factors influencing the different variables, with the variables as the dependent variable and demographics as the independent variables

On analysis of objective one (1), a Likert scale (ordinal scale) within a structured questionnaire was used, which allowed respondents to rate their agreement with statements regarding public green spaces, providing quantifiable data on perception. A 5-point Likert scale (e.g., 1 = strongly disagree, to 5 = strongly agree) was used to measure respondents' perception across various dimensions.

For Objective Two (2), the Contingent Valuation Method (CVM) was used to determine residents' willingness to pay (WTP) for maintaining and improving public green spaces in Lira City. A brief scenario in the questionnaire described proposed improvements, such as better maintenance, security, landscaping, and community facilities. Respondents were offered realistic payment options, including voluntary contributions, a small additional tax, or private sector sponsorship.

The process began with a yes/no/not sure question on whether they were willing to contribute financially. Those willing selected their maximum monthly contribution from four ranges (less than UGX 5,000; UGX 5,001–10,000; UGX 10,001–20,000; above UGX 20,000). Those unwilling were tasked to provide reasons, while the willing respondents indicated possible motivators.

Quantitative WTP data were coded as a binary variable and analysed using binary logistic regression to identify socio-economic predictors, while contribution amounts were summarized using frequencies and averages. Qualitative responses on reasons and suggestions were thematically analysed to provide context to the quantitative findings.

In the third (3) objective, multinomial logistic regression analysis was conducted to examine the relationship between proximity to green spaces and land value categories. This analysis allowed the estimation of odds ratios, providing insights into how proximity influences land value while controlling for other socioeconomic factors (Xu et al., 2015). Additionally, the analysis included model diagnostics to ensure the validity of multinomial regression results. It examined property value differences across multiple distance bands and identified factors such as green space proximity, property type, and other neighbourhood characteristics that significantly impact value.

To assess the influence of public green spaces on property values in Lira City, the study adopted both a theoretical and an empirical modelling approach. The theoretical model posits that the perceived property value of a residence or commercial property is a function of its proximity to green spaces and other socio-economic and property-related characteristics. In functional form, this relationship can be expressed as:

$$PV = f(DIST, PTYPE, OWNSTAT, INCOME, AGE, EDU, \epsilon) \dots \dots \dots (i)$$

Where PV represents the perceived property value category (e.g., increased, unchanged, decreased), $DIST$ is the distance from the green space, $PTYPE$ denotes property type, $OWNSTAT$ represents ownership status, $INCOME$ is monthly household income, AGE is the age group of the respondent, EDU represents education level, and ϵ Is the error term capturing unobserved factors? This model reflects the expectation that proximity to green spaces positively affects property values, while socio-economic and property characteristics may moderate this relationship.

Given the categorical nature of PV , the study implemented a multinomial logistic regression model as the empirical specification:

$$\begin{aligned} \ln \left(\frac{P(PV_j)}{P(PV_{base})} \right) \\ = \beta_{0j} + \beta_{1j}DIST + \beta_{2j}PTYPE + \beta_{3j}OWNSTAT + \beta_{4j}INCOME + \beta_{5j}AGE \\ + \beta_{6j}EDU + \epsilon_j \dots \dots \dots (ii) \end{aligned}$$

Here, PV_{base} represents the reference category (e.g., “No change in value”), and PV_j Represents each outcome category (e.g., “Increase in value” or “Decrease in value”). The β coefficients indicate the change in the log-odds of being in category j relative to the base category for a one-unit change in the predictor variable.

This approach allowed the study to quantify the effect of proximity to green spaces and other factors on perceived property values, while controlling for key socio-economic variables.

3.7 Ethical considerations

This study aimed to seek informed consent or assent from all participants. All respondents voluntarily agreed to participate in the survey, and their responses were treated with strict confidentiality to protect their privacy

To acknowledge participants' time and contribution, each household respondent received a modest compensation of UGX 5,000 and refreshments during the interview. This was intended to appreciate their time and offset minor inconveniences. For key informant interviews, compensation of UGX 20,000, including transport reimbursement where necessary, was provided in recognition of their expertise and participation

The study also sought for the approval of the Gulu University Research Ethical Committee (GUREC) for the use of relevant data collection tools which was subjected to pre-tests for content (how well a test or measurement tool covers the entire range of meanings within the concept being studied), internal (design and conduct of a study allow for confident conclusions about relationships) and external validity (the findings of a study can be generalized to other populations, settings, or times).

3.8 Data Quality Control

Multiple sources and methods were used for data collection, enabling triangulation and comparison to validate findings. Key informant interviews were conducted, recorded, and transcribed to ensure that the responses are presented as obtained from the interviews. To obtain the relevance of the formulated questionnaires and interview guides, they were translated into the local language (Lango) to reduce the bias brought about by the language barrier. Also, before obtaining the information needed for the research, a tool pre-test was conducted with selected respondents within Lira City to ensure that the tools would collect data relevant to the objectives of the study.

3.9 Challenges

The research was confined to Lira City, which may not have fully represented the dynamics of public green spaces in other urban areas across Uganda. However, this was an intentional delimitation, as Lira City had been selected as a rapidly urbanizing city with visible green space pressure, making it a relevant and manageable case study for the research scope and timeframe.

The study also relied predominantly on primary data, as access to up-to-date and comprehensive urban planning or land valuation records was limited. To mitigate this, the study

incorporated multiple key informant interviews, including land valuers, city officials, and green space managers, to supplement any gaps in secondary data.

Financial and time constraints limited the use of advanced survey technologies or extended follow-up. To manage this, the methodology was structured to use cost-effective yet rigorous tools, and the data collection timeline was carefully planned to align with academic deadlines.

The exclusion of non-residents was also a limitation, as they could have used green spaces frequently. However, this was a delimitation based on the study's focus on Lira City residents as the primary stakeholders in the city governance, taxation, and urban planning. The sample also excluded respondents below 18 years to ensure participation by individuals with mature perceptions and legal capacity to consent.

Lastly, the study was limited to two public green spaces, i.e., Akii-Bua Stadium and the Mayor's Garden, selected to reflect differing durations of establishment. This was a delimitation aimed at facilitating comparison between a newly introduced and a long-standing green space, offering insight into both emerging and mature urban environmental assets.

Other challenges, such as potential response bias and minor language barriers, were mitigated by translating tools into the local language (Lango) and pre-testing instruments for clarity and reliability.

4 CHAPTER FOUR: PRESENTATION OF RESULTS AND DISCUSSION

4.1 Socio-Demographic Characteristics of Respondents

This section presents a summary of the background characteristics of the respondents who participated in the study.

4.1.1 Demographic Characteristics of Household Respondents (N=397)

A total of 397 household respondents participated in the study. The gender distribution was skewed toward male respondents (75.3%), while females constituted 24.7%. The age distribution was dominated by the 25–34 age group (40.3%), followed by 35–44 years (32.2%), 18–24 (6.80%), 45–54 (13.6%, and 55 and above (7.05%). In terms of education, 88.9% had attained tertiary-level education, while a small proportion had secondary (7.1%), primary (2.0%), or no formal education (2.0%). Employment-wise, 80.6% were employed, with the rest being unemployed (9.8%), self-employed (7.6%), or retired (2.0%).

The highest proportion of respondents (45.3%) reported earning between UGX 300,001 and 500,000, followed by 25.4% earning above UGX 500,000, UGX 100,001–300,000 had 21.9%, and those less than UGX 100,000 had 7.3%. Regarding residence, the majority (58.4%) had lived in Lira City for more than 10 years.

These demographic characteristics provide context for interpreting the residents' perceptions, attitudes, and willingness to support green space initiatives.

Correlation of Socio-Demographic Characteristics with Perception Index

To explore whether perception of public green spaces varied across key socio-demographic characteristics, the perception index (computed as the mean of five Likert-scale items: environmental, recreational, social, aesthetic, and property value importance) was analyzed against gender, education level, and employment status. An independent samples t-test was used for gender, while one-way ANOVA was applied for education level and employment status, with post-hoc Tukey tests to examine pairwise differences where appropriate. Effect sizes were also computed to assess the magnitude of observed differences.

The results show that gender and employment status did not significantly influence perception. Education level showed a statistically significant overall difference ($F = 2.804$, $p = 0.040$), but no pairwise comparisons were significant, indicating that perceptions were broadly similar across educational groups. Overall, these findings suggest a relatively uniform perception of public green spaces across socio-demographic groups in Lira City.

Table 4.1.1 Summary Table: Socio-Demographic Correlates of Perception Index (N=397)

Characteristic	Mean (Perception Index)	Test Statistic	df	p-value	Effect Size / Notes	Interpretation
Gender	4.019 (M)3.974 (F)	t = -0.699	395	0.485	Cohen's d = 0.56	NS; perception is similar between males and females
Education Level	3.575 – 4.028	F = 2.804	3, 393	0.040	Tukey post-hoc: NS	Small trend for higher perception among tertiary-educated; pairwise differences not significant
Employment Status	3.68 – 4.03	F = 1.959	3, 393	0.120	Tukey post-hoc: NS	Differences not significant; perception similar across employment categories

Notes:

- **Perception index** = mean of 5 Likert-scale items (Importance_Environmental, Importance_Recreational, Importance_Social, Importance_Aesthetic, Importance_PropertyValue).
- **NS = Not significant.**

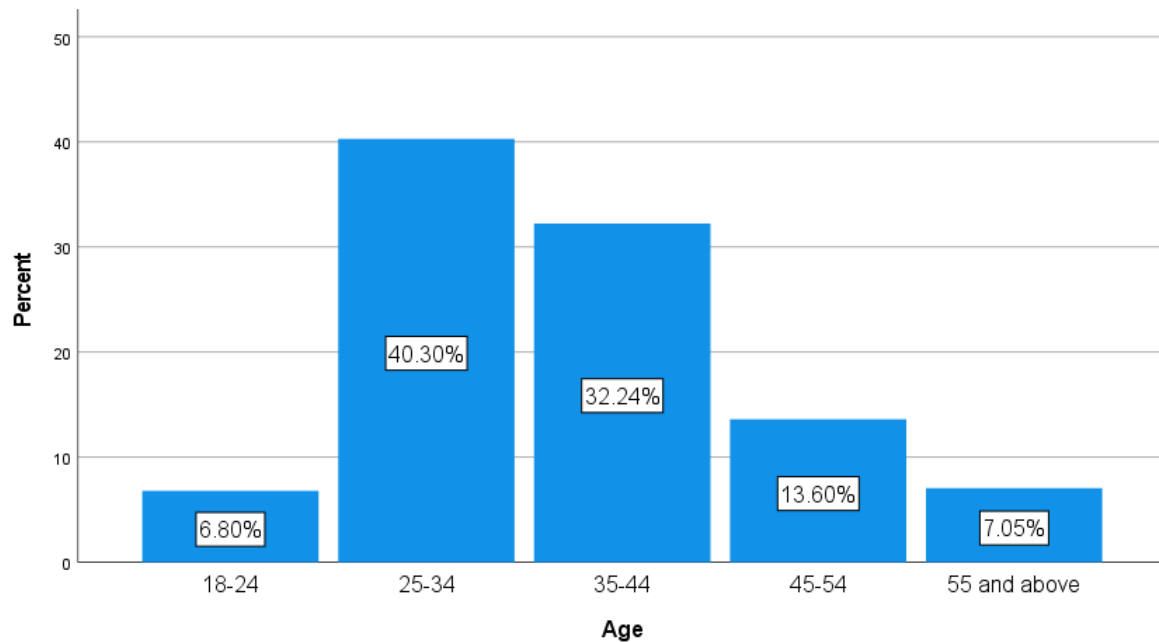


Figure 4.1.1 Bar chart showing age distribution of respondents (N=397)

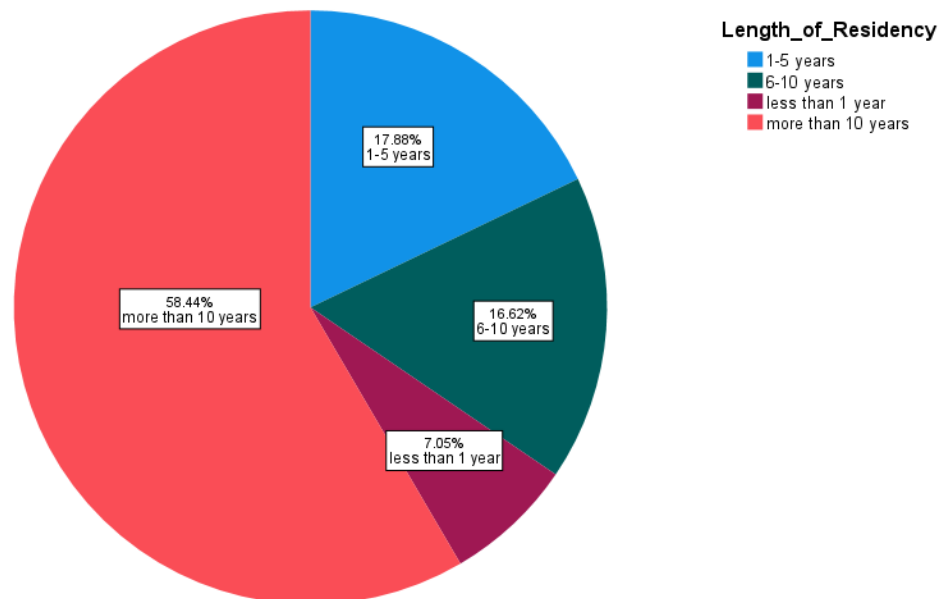


Figure 4.1.2 Pie chart showing the length of residency (N=397)

4.1.2 Demographic and Property Characteristics of Property Owners (N=60)

A total of 60 property owners residing near Akii-Bua Stadium and Mayor's Garden participated in the survey. The majority were male (71.7%), with females constituting 28.3%. Most respondents were aged 35 years and above, with the largest age group being 55 and above (26.7%), followed closely by the 35–44 age group (23.3%). Regarding education, 51.7% had attained tertiary-level qualifications, making up the majority. In terms of employment, over

half (51.7%) were self-employed.

In terms of residency, 30.0% had lived in Lira City for more than 10 years, while others had resided for shorter durations. Most properties were commercial (53.3%), and 56.7% of respondents were property owners, while 43.3% were renters (refer to **Table 4.2.2**).

Table 4.1.2 Summary of Property Owners' Demographic and Property Characteristics (N = 60)

Characteristic	Category	Frequency	Percentage (%)
Gender	Male	43	71.7
	Female	17	28.3
Age Group	18–24	11	18.3
	25–34	9	15.0
	35–44	14	23.3
	45–54	10	16.7
	55 and above	16	26.7
Education Level	None	10	16.7
	Primary	8	13.3
	Secondary	11	18.3
	Tertiary	31	51.7
Employment	Employed	17	28.3
	Self-employed	31	51.7
	Unemployed	12	20.0
Length of Residency	< 1 year	11	18.3
	1–5 years	18	30.0
	6–10 years	13	21.7
	>10 years	18	30.0
Property Type	Commercial	32	53.3
	Residential	28	46.7
Ownership Duration	< 1 year	8	13.3
	1–5 years	18	30.0
	6–10 years	18	30.0
	>10 years	16	26.7
Ownership Status	Owner	34	56.7
	Rented	26	43.3

4.2 Perception of Urban Residents towards Public Green Spaces in Lira City

This section presents the main empirical findings of the study, organized according to the three specific objectives outlined in the research. The analysis integrates both quantitative and qualitative data to provide a comprehensive understanding of urban residents' perceptions, willingness to pay, and the influence of public green spaces on land value in Lira City.

4.2.1 Awareness and Use of Public Green Spaces

The majority of respondents (97.5%) reported being aware of public green spaces within Lira City, while only a small fraction (2.5%) indicated otherwise. This indicates a high level of general awareness among urban residents.

As in **Figure 4.2.1**, the most commonly known green space was the Mayor's Garden (28%), followed by Akii-Bua Stadium (20%) and the Golf Course (17%). Other spaces. These findings suggest that while awareness is high overall, familiarity varies significantly across different locations.

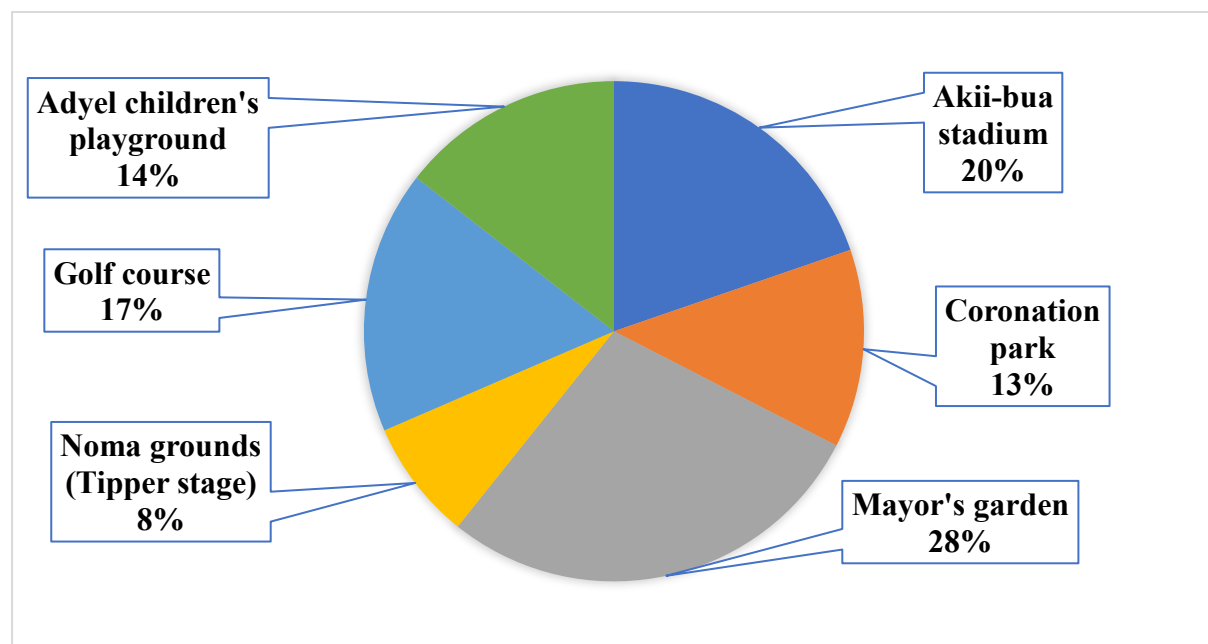


Figure 4.2.1 Awareness about Specific Green Spaces in Lira City ($n = 397$)

Regarding the frequency of visits to public green spaces, the most common pattern was rarely (53.7%), followed by weekly visits (25.2%). Only 9.1% of respondents reported visiting green spaces daily, while 12.1% did so monthly. This indicates that although awareness is high, active and consistent use of green spaces remains limited for most residents.

In terms of the activities residents engaged in during visits, the most frequently reported was relaxation or leisure (47.6%), followed by exercise (38.3%) and socialization (32.2%). Children's play activities were reported by 24.7% of respondents, while other activities (e.g., photography, quiet study) accounted for only 4.5%. These results suggest that public green spaces in Lira City primarily serve recreational and restorative functions.

4.2.2 Condition and Accessibility of Green Spaces

More than half (53.1%) rated the condition as "Good", while 34.0% described it as "Fair." Only a small proportion rated the condition as "Excellent" (9.3%) or "Poor" (3.5%). These findings suggest that although green spaces are generally seen as usable, there is room for improvement in terms of their maintenance and amenities.

In terms of accessibility, a combined 81.3% of respondents described public green spaces as either "Accessible" (57.4%) or "Very Accessible" (23.9%). Meanwhile, 14.9% felt neutral, and a marginal 2.5% and 1.3% reported "Very Inaccessible" and "Inaccessible", respectively. These results suggest that physical access to green spaces is largely satisfactory for most residents.

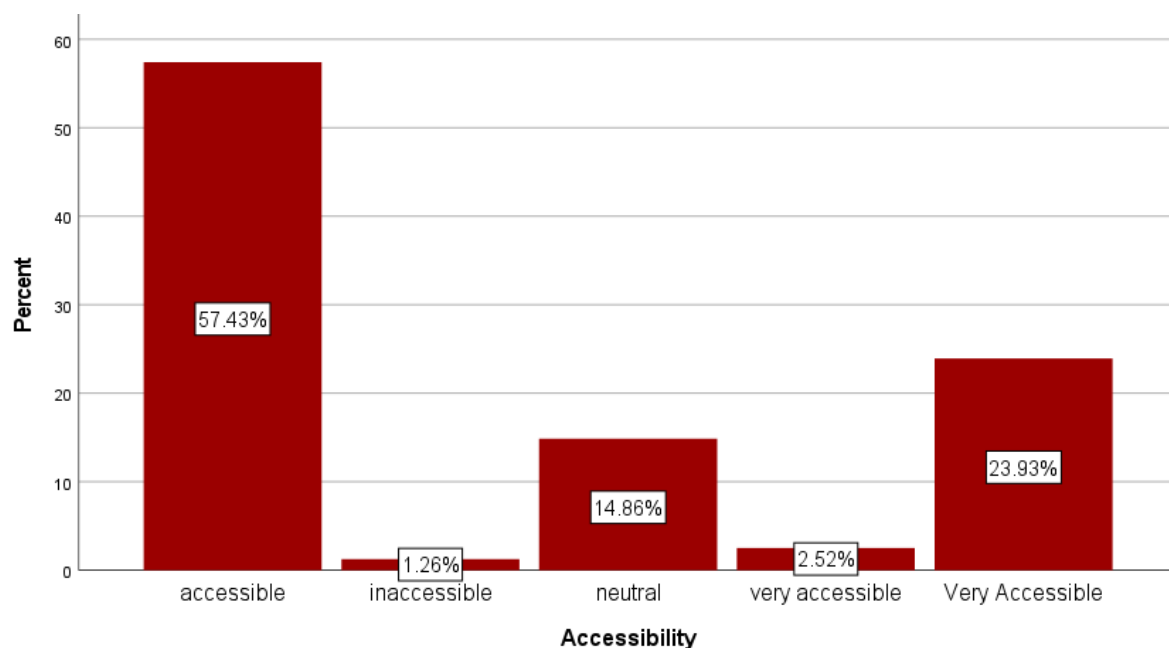


Figure 4.2.2 Bar graph showing the accessibility of green spaces (N=397)

However, when asked about the challenges faced by public green spaces, several issues were identified (**Figure 4.2.3**). The most frequently mentioned challenge was poor maintenance (28%), followed by lack of funding (19%), inadequate public awareness (18%), security issues (17%), and encroachment by developers (16%). These findings highlight that while accessibility may not be a major concern, the sustainability and effective management of these spaces face serious constraints.

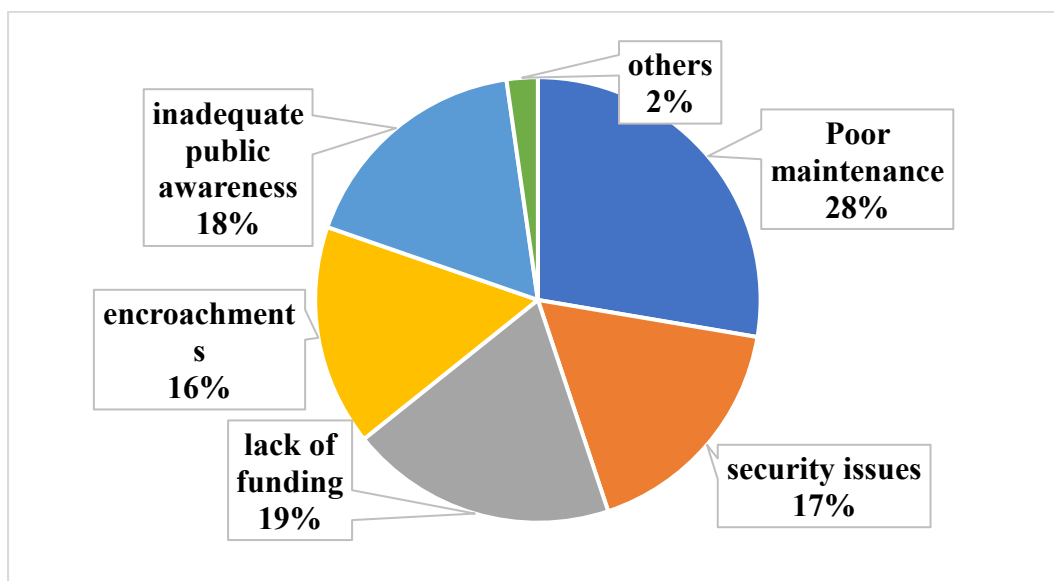


Figure 4.2.3 Pie chart showing the Major challenges faced by green spaces

4.2.3 Perceived Importance of Public Green Spaces

Respondents rated the importance of public green spaces in Lira City across five dimensions: environmental, recreational, social, aesthetic, and economic (impact on property value), using a five-point Likert scale (1 = Not Important, 5 = Very Important). As shown in **Table 4.2.1**, all five dimensions were rated relatively highly, indicating strong perceived value across multiple aspects.

Environmental benefits received the highest average rating ($M = 4.32$, $SD = 0.89$), reflecting public recognition of the ecological value of green spaces, such as clean air, shade, and biodiversity. This was followed by recreational value ($M = 4.11$, $SD = 1.16$) and social interaction opportunities ($M = 4.07$, $SD = 1.14$). Aesthetic value also scored favourably ($M =$

3.88, SD = 1.26), while impact on property value was rated lowest but still moderately high (M = 3.66, SD = 1.32).

To summarise the overall perception, a composite index was created by averaging the five Likert items. The resulting perception index had a mean of M = 4.01 (SD = 0.56), suggesting that residents generally consider green spaces to be *important to very important* in urban life. The distribution of index scores further shows that most respondents clustered around scores between 3.60 and 4.40, indicating a consistently high valuation of public green spaces.

These findings demonstrate that residents of Lira City highly value public green spaces, especially for their environmental and recreational benefits, and somewhat less so for their potential to enhance property values.

Table 4.2.1 Mean Ratings of the Importance of Public Green Spaces by Purpose (n = 397)

Purpose	Mean	Std. Deviation
Environmental benefits	4.32	0.89
Recreational activities	4.11	1.16
Social interaction	4.07	1.14
Aesthetic value	3.88	1.26
Improving property values	3.66	1.32

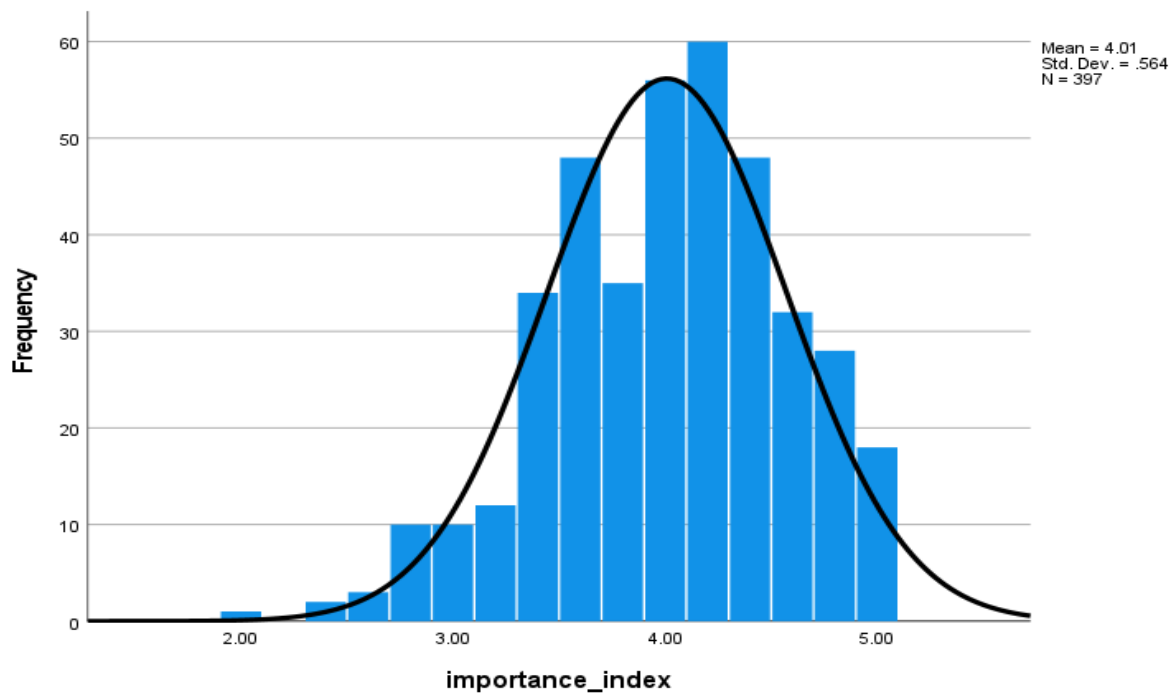


Figure 4.2.4 Distribution of Composite Perception Index Scores (n = 397)

A histogram showing the frequency distribution of average perception ratings across all five importance areas (1 = Not Important, 5 = Very Important).

The distribution of the composite perception index scores (**Figure 4.2.4**) shows a strong concentration between scores of 3.60 and 4.40, with the most common score being 4.20, followed by 4.00 and 3.60. This indicates that most respondents consider public green spaces important to very important, with a slight left skew (skewness = -0.408), suggesting higher agreement with the importance of green spaces across dimensions.

4.2.4 Relationship between Perception and Socio-economic characteristics (Linear regression).

A multiple linear regression was estimated to test the association between socio-demographic characteristics and residents' perception index. The model was not statistically significant overall ($F(17,379) = 1.34$, $p = 0.165$) and explained only 5.5% of the variance ($R^2 = 0.055$). Among individual predictors, education level emerged as the only consistent and significant factor. Respondents with moderate ($\beta = 0.68$, $p = 0.014$) and higher levels of education ($\beta = 0.50$, $p = 0.027$) reported significantly higher perception scores than the reference group. Gender, age, employment status, and income did not significantly influence perception (all $p > 0.10$). Length of residency showed a weak negative trend ($p = 0.075$), suggesting that long-term residents may be slightly less positive, though the effect was not conclusive.

Linear regression

Number of obs = 397

F(17, 379) = 1.34

Prob > F = 0.1645

R-squared = 0.0553

Root MSE = .56017

Table 4.2.2 association between socio-demographic characteristics and residents' perception index

		Robust				
perception_index	Coefficient	std. err.	t	P>t	95% conf.	interval
GenderC (Female)						
(male)2	0.028991	0.064335	0.45	0.653	-0.09751	0.155488
AgeC (18-24)						
(25-34)2	-0.05992	0.121132	-0.49	0.621	-0.29809	0.17826
(35-44)3	0.000754	0.120162	0.01	0.995	-0.23551	0.237022
(45-54)4	-0.01722	0.134541	-0.13	0.898	-0.28176	0.247321
(55 and above)5	0.008729	0.153158	0.06	0.955	-0.29242	0.309874
EducationlevelC (no formal education)						
(primary)2	0.684505	0.278564	2.46	0.014	0.13678	1.232229
(secondary)3	0.332548	0.253695	1.31	0.191	-0.16628	0.831374
(Tertiary)4	0.497925	0.223776	2.23	0.027	0.057928	0.937922
EmploymentstatusC (unemployed)						
(Self-employed)2	-0.16376	0.155644	-1.05	0.293	-0.46979	0.142278
(employed)3	0.042851	0.100951	0.42	0.671	-0.15564	0.241344
(retired)4	-0.31265	0.233802	-1.34	0.182	-0.77236	0.147064
MonthlyincomeUGXC (< 100,000)						

(100,001-300,000)2	-0.0954	0.13545	-0.7	0.482	-0.36172	0.170931
(300,001-500,000)3	-0.02634	0.127886	-0.21	0.837	-0.2778	0.225112
(above 500,000)4	-0.10732	0.134336	-0.8	0.425	-0.37146	0.156816
LengthofResidencyC (<1 year)						
(1-5years)2	-0.21444	0.130634	-1.64	0.102	-0.4713	0.042415
(6-10years)3	-0.23808	0.133121	-1.79	0.075	-0.49982	0.023673
(morethan 10 years)4	-0.14898	0.117711	-1.27	0.206	-0.38043	0.082472
_cons	3.740627	0.317919	11.77	0	3.115521	4.365732

Model Fit: $F(17, 379) = 1.34$, $p = 0.1645$: The full set of predictors does not significantly explain variation in perception_index at the 5% level.

R-squared = 0.0553: Only about 5.5% of the variance in perceptions is explained by gender, age, education, employment status, income, and length of residency.

Individual Predictors

Gender; Coefficient = 0.029, $p = 0.653$; No significant difference in perceptions between male and female respondents.

Age (reference group = youngest age band); None of the age categories (2–5) are significant (all $p > 0.60$).

Education Level (reference = *No formal Education*); Category 2 (*primary*) - $p = 0.014$, Significant and positive. Respondents with this level of education had higher perception scores compared to the reference. Category 4 (*tertiary*) - $p = 0.027$; Also significant and positive. Category 3 (*secondary*) is positive but not significant ($p = 0.191$). Hence, Education is the strongest predictor. People with more education value green spaces more.

Employment Status; None are significant (all $p > 0.18$). Monthly Income (reference = $<100,000/=\)$

Length of Residency; Category 3 (*6-10 years*) is marginally significant ($p = 0.075$) and negative. Category 2 (*1-5 years*) is close ($p = 0.102$).

Constant; _cons = 3.74 (p < 0.001), On average, respondents rate green space perceptions quite positively, around **3.7 out of 5**, even before accounting for characteristics.

4.2.4.1 Residents' Perception of Government Support and Management

Respondents were asked whether they believe the local government values and prioritises public green spaces. Responses were mixed. While 41.8% agreed that the government values green spaces, a notable 33.8% were unsure, and 24.4% disagreed. This indicates a moderate level of confidence in local leadership regarding green space support, but also highlights considerable public doubt or lack of clarity about official commitment.

To add depth, several open-ended responses provided insights into why respondents were uncertain. Sample responses include:

“The spaces are there, but they look abandoned. Grass is overgrown, and no one seems to maintain it.” — *Male, 35–44, Ojwina Ward*

“I only see the green spaces being maintained when events are happening. After that, nothing happens for months.” — *Female, 25–34, Adekokwok*

“They built the park, but I don’t think there’s any plan for maintaining or improving it. So how can we say they value it?” — *Male, 45–54, Junior Quarters*

These perceptions are consistent with responses from key informant interviews, which provide a broader view of institutional commitment and challenges:

City Planner (Urban Development Office): *“Green spaces are part of the city’s strategic development plan, but the challenge has always been resource allocation. Budget priorities tend to shift toward other priorities like health.”*

Maintenance manager (Akii-Bua Stadium): *“As leaders at the grassroots, we advocate for more attention to these areas, but sometimes our voices don’t go beyond our jurisdiction. Residents are concerned about safety, lighting, and encroachment.”*

Together, these findings suggest a perceived gap between green space development and long-term support or follow-up by authorities. While there is awareness and some policy-level inclusion, the execution and community engagement appear to be inconsistent.

4.3 Willingness of to Pay for Public Green Spaces in Lira City

4.3.1 WTP Overview

This section presents findings on the willingness of urban residents to financially support the upkeep and enhancement of public green spaces within Lira City. Using a Contingent Valuation Method (CVM), participants were inquired about their willingness to contribute a monthly amount, and if so, how much they would be willing to pay.

Out of 397 respondents, 268 (67.5%) expressed a willingness to pay, while 129 (32.5%) were unwilling. Among those willing to pay, the vast majority preferred lower amounts:

Most respondents were willing to contribute less than UGX 5,000 (64.2%), followed by UGX 5,001–10,000 (18.6%). Only 10.8% were willing to pay between UGX 10,001–20,000, and less than 1% opted for contributions above UGX 20,000. These results suggest that while many residents are willing to pay, affordability is a significant factor, with preferences strongly leaning toward minimal contributions.

4.3.2 Examination of Determinants Affecting Willingness to Pay

Demographic Trends in WTP. Cross-tabulations were conducted to examine how WTP varied by education level and monthly income. The analysis revealed that respondents with tertiary education and those earning UGX 300,000 or more per month had a higher likelihood of expressing willingness to pay.

Table 4.3.1 WTP Distribution by Monthly Income

Income Level	Willing (Yes)	Not Willing (No)	Total
< UGX 100,000	14	15	29
UGX 100,001–300,000	62	25	87
UGX 300,001–500,000	116	64	180
Above UGX 500,000	76	25	101
Total	268	129	397

This trend was further analysed using logistic regression.

A binary logistic regression analysis was performed to assess the influence of socio-demographic and economic factors on respondents' WTP for these spaces. The model included sex, age category, level of education, occupational status, monthly earnings, and length of residency as predictors. The outcome variable was coded as (one) 1 for respondents willing to pay and (zero) 0 otherwise.

The model was statistically significant overall, with a likelihood ratio chi-square of $\chi^2 (17) = 29.97$, $p = 0.0266$, indicating that the predictors jointly contributed to the explanation of WTP. The pseudo- R^2 was 0.0599, indicating that the model accounted for roughly 6% of the variation in willingness to pay.

In terms of individual predictors, monthly income emerged as the most significant determinant of WTP. Respondents in income group 2 (UGX 100,001–300,000) were on average 25.6 percentage points more likely to be WTP compared to those in the lowest income group ($p = 0.043$). Similarly, those in the highest income category (group 4) were 29.0 percentage points more likely to contribute financially ($p = 0.022$), confirming a strong positive association between income and willingness to pay.

Age showed a marginal influence. Respondents aged 35–44 years were 16.6 percentage points less likely ($p = 0.055$) to be willing to pay compared to the youngest age group, suggesting a weaker inclination among middle-aged residents. Employment status group 2 (self-employed individuals) were also less likely by 14.2 percentage points ($p = 0.072$), although this association was only borderline significant.

Gender, education level, and length of residency did not significantly predict WTP. All first-level categories in each variable were used as the reference (base) categories in the model.

. margins, dydx(*)

Average marginal effects

Number of obs = 397

Expression: Pr(WTPC), predict()

Table 4.3.2 Influence of socio-demographic and economic factors on respondents' willingness to pay (WTP)

	dy/dx	std. err.	std.err.	z	P>z	[95% conf. interval]
2.GenderC	.0399611	.0527521	-0.76	0.449	-.1433534	.0634312
AgeC						
2	.1779908	.083225	-2.14	0.032	-.3411087	-.0148728
3	.1983124	.0849443	-2.33	0.020	-.3648002	-.0318246
4	-.131502	.0963007	-1.37	0.172	-.3202479	.0572439
5	.0719001	.0928045	0.77	0.438	-.1099934	.2537936
EducationlevelC						
2	.0748034	.215238	-0.35	0.728	-.4966621	.3470552
3	.0162396	.171156	-0.09	0.924	-.3516992	.3192201
4	.0800736	.1505858	-0.53	0.595	-.3752162	.2150691
EmploymentstatusC						
2	.2166663	.1184306	-1.83	0.067	-.4487861	.0154534
3	.0664091	.0767811	-0.86	0.387	-.2168974	.0840791
4	.0328892	.179195	-0.18	0.854	-.384105	.3183265
MonthlyincomeUGXC						
2	.2049277	.1034157	1.98	0.048	.0022365	.4076188
3	.1150334	.1007719	1.14	0.254	-.0824759	.3125426
4	.2279658	.1028872	2.22	0.027	.0263105	.429621
LengthofResidencyC						
2	.1412551	.09678	-1.46	0.144	-.3309405	.0484303
3	.1700951	.0978793	-1.74	0.082	-.361935	.0217449
4	.0633656	.0836252	-0.76	0.449	-.227268	.1005367

Note: dy/dx for factor levels is the discrete change from the base level.

Notes:

- dy/dx = Average marginal effect (probability change in WTP).
- Significance levels: $p < 0.05$, $p < 0.10$ (marginal), ns = not significant.
- Reference categories: Male, Age 18–24, No education, Unemployed, Income $\leq 100,000$ UGX, Residency < 1 year

4.3.3 Thematic Insights: Reasons for Unwillingness to Pay

Open-ended responses from individuals who were unwilling to financially contribute to green space maintenance were analysed thematically. Four key themes emerged:

1. Financial Constraints. Many participants cited low income, financial hardship, and wage-based employment as limiting factors. For example: “*Shortage of money.*” “*I earn wages.*” “*Low income.*” This reinforces earlier quantitative findings that lower income levels are significantly associated with reduced willingness to pay.

2. Expectation of Government Responsibility. There was a widely held belief that green spaces should be publicly funded by the government or city council, as they are public goods: “*Green spaces belong to the government.*”, “*We already pay taxes.*”, “*City council should allocate funds.*”. This reflects a strong citizen expectation of state responsibility in urban service delivery.

3. Mistrust in Fund Management. Respondents frequently mentioned corruption, misuse of funds, and lack of transparency: “*Unclear usage of the collected funds.*”, “*High rate of corruption.*”, “*Those in charge mismanage funds.*” These responses point to institutional mistrust, which discourages voluntary financial contributions.

4. Issues of Access and Inclusion. Some participants felt excluded from green spaces due to fencing or limited public access, making them less willing to contribute: “*Most green spaces are fenced and inaccessible.*” This suggests that physical and social accessibility is crucial in building public support for green space investment.

Table 4.3.3 Summary of Themes Among Unwilling Respondents

Theme	Description	Common Phrases
Financial constraints	Economic hardship limits the ability to pay	“Low income”, “Shortage of money”
Government responsibility	Belief that public funding should cover costs	“City council should pay”, “We pay taxes”
Mistrust in fund management	Concerns over corruption and misuse	“Corruption”, “Funds misused”
Inaccessibility and exclusion	Perceived restricted access to green spaces	“Fenced”, “Not for public use”

4.4 Influence of Public Green Spaces on Land Value Within Lira City

4.4.1 Perceived Effects of Green Spaces on Property Values

This section explores how proximity to green spaces is perceived to affect the market value of nearby properties.

All respondents (100%) agreed that proximity to the green space was an advantage. This suggests that local property stakeholders see green spaces as positive locational features. Similarly, all respondents (100%) reported that their property value had increased since the development or improvement of the adjacent green space.

When asked directly whether the green space affects property market value, 58.3% believed it increases value, 41.7% were not sure, and None reported that it decreases value

This reflects positive perceptions overall, though some respondents may lack market information to assess the exact impact.

Using a 5-point Likert scale (1 = Not Significant, 5 = Very Significant), participants assessed the impact of green spaces on property values:

- Mean = 3.18, SD = 1.54

This reflects a moderately positive perception overall, although the high standard deviation suggests variability in opinion likely due to differences in property type, green space quality, and visibility/access.

All 60 respondents (100%) indicated they would consider selling or renting their property at a higher price due to the property's proximity to a well-maintained green space.

Table 4.4.1 Market Perceptions and Reported Changes among Property Owners (N=60)

Variable	Response	Percentage
Proximity seen as an advantage	Yes	100%
The property value increased	Yes	100%
Perception of value influence	Yes (increases value)	58.3%
	Not sure	41.7%
Would rent/sell at a higher price	Yes	100%
Mean significance score (1–5 scale)	3.18 (SD = 1.54)	–

4.4.1.1 Perceived Mechanisms Through Which Green Spaces Influence Property Value

This section explores the specific ways property owners believe nearby green spaces impact the value of their properties. Respondents were asked to identify multiple perceived mechanisms of influence, such as improvements to aesthetics, safety, and neighbourhood demand.

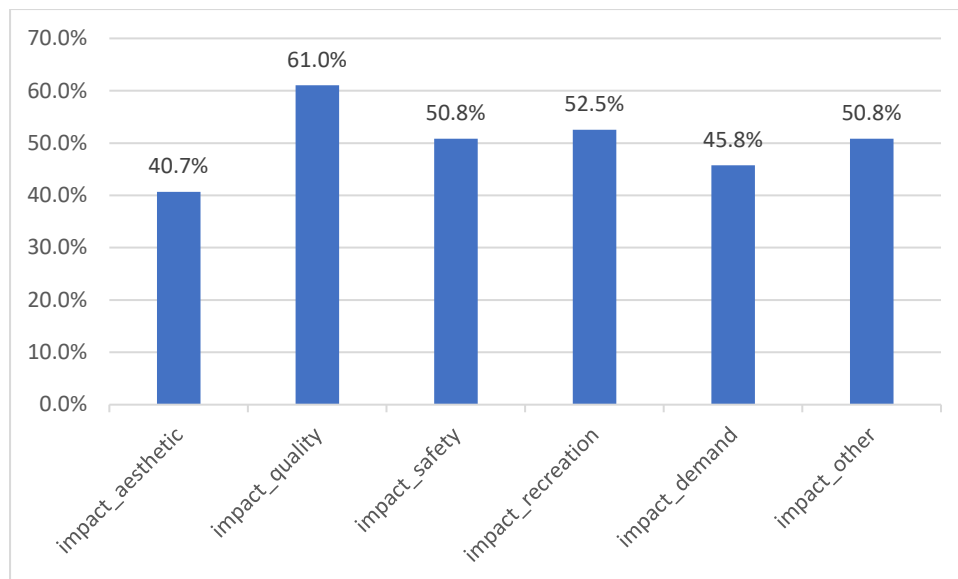


Figure 4.4.1 Perceived Mechanisms of Influence of Green Spaces on Property Values (n = 60)

(Note: Total % of cases exceed 100% because multiple responses were allowed.)

Interpretation:

The most cited mechanism was the improvement in quality of life and liveability (reported by 61.0% of respondents), reflecting the belief that green spaces create more pleasant, breathable, and socially engaging environments. This was followed by recreational opportunities (52.5%) and enhanced neighbourhood safety (50.8%).

Interestingly, more than half of the respondents also selected “other” factors, which may include civic pride, event hosting, or beautification efforts, suggesting that green spaces offer both tangible and symbolic value in these neighbourhoods.

Only 13.5% cited aesthetic value alone as a mechanism, implying that property owners view green spaces less for their passive appearance and more for their functional community roles.

4.4.2 Thematic Insights from Open Feedback

Property owners around Akii-Bua Stadium and Mayor’s Garden shared insights into the benefits, challenges, and planning needs related to public green spaces. Their responses were categorised into three key themes, i.e., Perceived Benefits, Perceived Challenges, and Planning Priorities.

Table 4.4.2 Summary of Key Themes

Theme	Positive Mentions	Negative Mentions	Planning Implications
Environmental & Aesthetic Value	Fresh air, shade, cooling, and visual appeal	Vandalism, overuse, and poor maintenance	Require sustainable design and upkeep
Social & Health Benefits	Relaxation, exercise, mental health, play for children, and elderly comfort.	Loitering, lack of sanitation, and youth misconduct	Invest in inclusive infrastructure
Economic & Property Impact	Increased demand, investment appeal, and support for local businesses	Congestion, crowding, noise	Integrate green spaces into real estate planning
Security & Governance	Community pride, surveillance	Theft, darkness, drunken behavior, and illegal vending	Enhance safety through policing and lighting
Urban Planning and Governance	Space for civic events, education, and biodiversity	Some doubts about cost and government priorities	Embed green spaces in policy and budgets

4.4.3 Multinomial Logistic Regression on Value Perception

To examine the effect of selected household and property characteristics on respondents' perception of property value changes associated with nearby green spaces, a multinomial logistic regression model was estimated. The dependent variable, value perception, was measured from the question: *"Have you noticed any change in property value since the green space was developed or improved?"* with three response categories:

1. No change (reference category),
2. Yes, there has been a decrease in value, and
3. Yes, there has been an increase in value.

Independent variables entered into the model included: years of residency, property type, years of ownership, ownership status, and distance from the green space.

The overall model was statistically significant ($\text{LR } \chi^2(22) = 35.57$, $\text{Prob} > \chi^2 = 0.0337$), suggesting that the set of predictors jointly improves the fit compared to a null model with no predictors. The pseudo R^2 value of 0.3089 indicates that the predictors explained about 31% of the variation in value perception.

The regression coefficients are presented in two forms:

Log-odds coefficients (Table 4.2.9) which indicate the direction and magnitude of association between each predictor and the likelihood of reporting a property value decrease or increase relative to “no change”.

Relative Risk Ratios (RRR) (Table 4.2.10rr), which are the exponentiated coefficients and are easier to interpret. An RRR greater than 1 implies a higher relative risk of the outcome compared to the reference, while an RRR less than 1 implies a lower relative risk.

In this analysis, results showed that:

For the outcome “increase in value” (Category 3), years of residency had a statistically significant negative effect ($\beta = -2.77$, $p = 0.029$), implying that longer-term residents were less likely to perceive property value increases associated with green spaces. The corresponding RRR of 0.062 suggests that for each additional year of residency, the relative risk of perceiving an increase (vs. no change) decreases by about 94%.

The constant term for Category 3 was also significant ($\beta = 3.38$, $p = 0.036$; $\text{RRR} = 29.26$), suggesting that, at baseline levels of the predictors, respondents were substantially more likely to report increases rather than no change.

For the outcome “decrease in value” (Category 2), none of the predictors reached conventional levels of statistical significance, although distance to the green space approached significance ($\beta = 6.69$, $p = 0.075$), indicating a potential but inconclusive positive association.

Overall, the model indicates that residency duration is the strongest predictor of value perception, with longer residency associated with reduced likelihood of perceiving green spaces as increasing property values.

Multinomial Logistic Regression

Number of obs = 60
 LR chi2(22) = 35.57
 Prob > chi2 = 0.0337
 Log likelihood = -39.79675
 Pseudo R2 = 0.3089

Table 4.4.3 Multinomial Logistic Regression Coefficients

Outcome	Variable	Coefficient	Std. Err.	z	P> z	[95% Conf. Interval]
1 (Base)	-	-	-	-	-	-
2	residencyyears	-0.1948	2.3362	-0.08	0.934	-4.7737, 4.3841
2	propertytypec	-1.2246	1.9436	-0.63	0.529	-5.0340, 2.5848
2	ownershipyears	-4.6851	3.0645	-1.53	0.126	-10.6914, 1.3212
2	ownershipstatus	-0.9387	1.6408	-0.57	0.567	-4.1545, 2.2771
2	distance	6.6878	3.7585	1.78	0.075	-0.6786, 14.0543
2	_cons	0.9324	2.6559	0.35	0.726	-4.2729, 6.1378
3	residencyyears	-2.7736	1.2689	-2.19	0.029	-5.2605, -0.2867
3	propertytypec	-0.3073	0.6876	-0.45	0.655	-1.6550, 1.0404
3	ownershipyears	-1.0104	1.2534	-0.81	0.420	-3.4669, 1.4462
3	ownershipstatus	0.2217	0.6733	0.33	0.742	-1.0978, 1.5413
3	distance	0.7458	1.2014	0.62	0.535	-1.6089, 3.1004
3	_cons	3.3761	1.6104	2.10	0.036	0.2197, 6.5324

Table 4.4.4 Relative Risk Ratios (RRR)

Outcome	Variable	RRR	Std. Err.	z	P> z	[95% Conf. Interval]
1 (Base)	-	-	-	-	-	-
2	residencyyears	0.8230	1.9228	-0.08	0.934	0.0084, 80.1694
2	propertytypepec	0.2939	0.5712	-0.63	0.529	0.0065, 13.2610
2	ownershipyears	0.0092	0.0283	-1.53	0.126	0.00002, 3.7479
2	ownershipstatus	0.3911	0.6418	-0.57	0.567	0.0157, 9.7488
2	distance	802.5854	3016.494	1.78	0.075	0.5073, 1,269,719
2	_cons	2.5407	6.7477	0.35	0.726	0.0139, 463.0428
3	residencyyears	0.0624	0.0792	-2.19	0.029	0.0052, 0.7507
3	propertytypepec	0.7354	0.5057	-0.45	0.655	0.1911, 2.8303
3	ownershipyears	0.3641	0.4563	-0.81	0.420	0.0312, 4.2470
3	ownershipstatus	1.2482	0.8404	0.33	0.742	0.3336, 4.6706
3	distance	2.1080	2.5325	0.62	0.535	0.2001, 22.2063
3	_cons	29.2555	47.1134	2.10	0.036	1.2457, 687.0567

Note: _cons estimates baseline relative risk for each outcome.

Key informant interviews reinforced the statistical results:

"Property values near Mayor's Garden have appreciated significantly over the past five years. The greenery gives both aesthetic and commercial leverage." — *Land Valuer, Private Practice*.

"From a planning standpoint, we now encourage developers to consider the adjacency of open spaces. It improves land desirability and tax value." — *City Physical Planner, Lira City*.

These insights reveal that not only do residents perceive increased value, but professionals actively account for green space proximity in urban planning and real estate valuations.

5 CHAPTER FIVE: DISCUSSIONS, SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Discussion of Objective One Findings

The findings for Objective One reveal a generally positive perception of public green spaces among residents in Lira City, characterized by widespread awareness, moderate but uneven patterns of use, strong recognition of multiple benefits, and mixed confidence in institutional support.

Nearly all respondents (97.5%) reported awareness of public green spaces, with Mayor's Garden being the most recognized, followed by Akii-Bua Stadium and the Golf Course. This high awareness resonates with studies by Kabisch et al., (2015) and Bele & Chakradeo, (2021), who emphasize that public recognition is an essential prerequisite for the appreciation and stewardship of urban green infrastructure. Nevertheless, actual utilization was limited, as over half (53.7%) reported visiting green spaces "rarely." This mirrors findings by Lin et al., (2014), who argue that awareness does not necessarily translate into frequent use, with visitation being mediated by accessibility, proximity, perceived safety, and functionality.

The most common activities engaged in: relaxation (47.6%), exercise (38.3%), and socialization (32.2%); reflect the restorative and recreational purposes of green spaces. These align with Wolch et al., (2014b) and Kondo et al., (2018), who emphasize that urban green spaces deliver vital ecosystem services that support recreation, physical well-being, and social connectedness. Children's play, though less reported (24.7%), further supports the multifunctional role of these spaces, consistent with Fox & Wolf, (2022).

In terms of quality, more than half of residents rated green spaces as "good" (53.1%). Likewise, accessibility was widely perceived as satisfactory, with 81.3% reporting "accessible" or "very accessible." These findings suggest that physical barriers are less of a concern in Lira compared to maintenance and sustainability. They echo Jayaweera et al., (2018), who found that accessibility alone does not guarantee quality, and that weak institutional maintenance regimes often undermine urban green benefits in Sub-Saharan contexts.

The major challenges identified, poor maintenance (28%), lack of funding (19%), inadequate awareness (18%), and security concerns (17%), indicate systemic governance gaps. These issues are consistent with Mears & Brindley (2019), who emphasize that underfunding and

weak enforcement of planning controls contribute to the decline of green spaces in rapidly urbanizing cities. Encroachment by developers, noted by 16% of respondents, further reflects the contested nature of urban land use in growing cities such as Lira.

The perception index ($M = 4.01$) underscores strong overall valuation of green spaces, with environmental benefits scoring highest ($M = 4.32$), followed by recreational and social values. This pattern supports Turna & Bhandari, (2022), who report that ecological benefits are the most universally acknowledged across urban contexts. In contrast, the relatively lower rating of property value enhancement ($M = 3.66$) is consistent with Choumert, (2010), who note that economic benefits are often less visible to residents compared to more direct functions such as recreation and shade provision.

The regression results indicated that education level was the sole significant factor influencing perception, with respondents holding primary and tertiary education reporting higher perception scores in contrast to individuals without formal education. This finding reinforces arguments by Nelson et al., (2021), who suggest that education enhances environmental literacy and awareness of urban ecosystem services. Other socio-demographic variables, including gender, age, income, and occupation status, did not significantly influence perception, suggesting that appreciation of green spaces in Lira is broadly shared across social groups. This inclusiveness is a positive indicator for city-wide support of green space initiatives.

Institutional commitment, however, remains contested. While 41.8% of respondents believed local authorities valued green spaces, a significant share was either uncertain (33.8%) or disagreed (24.4%). Open-ended responses and key informant interviews highlighted inconsistent maintenance, inadequate budget prioritization, and reactive rather than proactive management. These concerns echo Likongwe et al., (2021), who argue that weak governance, limited transparency, and low citizen engagement undermine urban green space sustainability in SSA. They also reaffirm the conceptual framework of this study, which emphasizes the moderating role of institutional structures in shaping resident perceptions and outcomes.

In summary, the findings suggest that urban residents in Lira City hold favourable perceptions of green spaces, particularly regarding their environmental and recreational value, yet challenges around maintenance, funding, and institutional responsiveness persist. These results highlight the need for participatory planning, increased budgetary commitment, and targeted

environmental education to leverage widespread awareness into consistent use and long-term stewardship

5.2 Discussion of Objective Two Findings

The findings reveal a moderate but significant willingness among Lira City residents to provide financial support for the upkeep and enhancement of public green spaces, with 67.5% expressing readiness to pay. However, the amounts proposed were overwhelmingly modest, with nearly two-thirds preferring less than UGX 5,000 per month. This pattern reflects the strong influence of affordability constraints, a trend commonly observed in developing country contexts where disposable income is limited. (Whittington, 2010; Whittington & Pagiola, 2012). The results suggest that while residents value green spaces, their capacity to pay remains low, underscoring the importance of designing context-sensitive financing mechanisms.

Income and education levels strongly influenced WTP, with respondents in higher income brackets (UGX 300,000 and above), with individuals holding a tertiary education showing a higher likelihood of paying. The logistic regression confirmed income as the most significant predictor, with higher-income groups 20–29 percentage points more likely to contribute relative to the lowest-income group. These findings align with empirical studies across African and Asian cities that demonstrate income as the primary determinant of WTP for environmental goods and services (Alpizar et al., 2005). Age also showed some influence, with middle-aged respondents (35–44) less likely to contribute, possibly reflecting competing financial obligations such as family responsibilities. Education, gender, and length of residency, though often highlighted in environmental valuation literature, did not show significant effects in this study, suggesting a relatively uniform valuation of green spaces across these demographics in Lira City.

The relatively low explanatory power of the regression model ($\text{pseudo-}R^2 = 0.06$) indicates that while socio-demographics matter, other non-economic factors may be equally important in shaping WTP. The thematic analysis of unwilling respondents provides critical insights here. Financial constraints were the most cited reason, reaffirming the quantitative finding that income is a central barrier. Equally important was the widespread expectation that the government should shoulder responsibility for green spaces, consistent with literature on public goods, where citizens often regard urban green spaces as collective assets requiring state funding (Toxopeus & Polzin, 2021).

Mistrust in fund management emerged as another strong deterrent. Respondents frequently raised concerns about corruption and lack of transparency, issues that are well-documented in Ugandan and wider Sub-Saharan governance literature (Goodfellow, 2017). This institutional mistrust significantly weakens prospects for voluntary financial contributions, as citizens are reluctant to commit funds without assurance of accountability. Similarly, the perception of exclusion due to fencing and restricted access reduced residents' willingness to contribute, supporting findings by Rigolon, (2016) That inclusivity and equitable access are key preconditions for public support in urban green investment.

Collectively, these results underscore the combined significance of financial capability and confidence in institutions in shaping WTP for public goods. While a majority of residents in Lira City are willing to make small financial contributions, affordability ceilings, expectations of state responsibility, and governance deficits limit the potential for large-scale community-based financing. This highlights the need for hybrid models that combine modest community contributions with stronger municipal investment, transparent fund management, and participatory budgeting mechanisms. Furthermore, ensuring equal access to all residents is essential to foster legitimacy and shared responsibility for green space sustainability

5.3 Discussion of Objective Three Findings

The findings demonstrate a clear perception among Lira City residents and property stakeholders that being close to green spaces has a positive effect on land and property values. All respondents (100%) considered proximity to green spaces an advantage, and all reported that their property values had increased following the establishment or improvement of adjacent spaces. This strong consensus resonates with established literature showing that urban green spaces generally enhance property desirability and economic value. (Crompton, 2005; Sander & Polasky, 2009; Saphores & Li, 2012). However, the variability reflected in the mean rating ($M = 3.18$, $SD = 1.54$) suggests that the magnitude of perceived benefits may differ by property type, green space quality, and accessibility, a pattern similarly reported in studies from South Africa and Asia (Jim & Chen, 2009).

The mechanisms identified, particularly improved quality of life (61%), recreational opportunities (52.5%), and enhanced neighbourhood safety (50.8%), highlight the multi-functional role of green spaces in shaping real estate value. Previous studies have emphasized these pathways, noting that green amenities foster environmental quality, social interaction,

and perceived security, which collectively elevate property markets (Gopal & Nagendra, 2014). Interestingly, only 13.5% of respondents cited aesthetics alone, underscoring that in the Lira context, functional and social benefits are viewed as stronger drivers of property value than passive visual appeal. Ordinarily, the practical benefits of green infrastructure are often prioritized over purely aesthetic considerations

Regression analysis further revealed that years of residency significantly reduced the likelihood of perceiving green spaces as increasing property value ($\beta = -2.77$, $p = 0.029$; $RRR = 0.062$). Long-term residents may have baseline valuations shaped by earlier urban conditions, making them less likely to attribute recent appreciation directly to green space improvements. Conversely, newer property owners may be more attuned to market dynamics and green space premiums. Similar patterns have been noted in China and India, where more recent buyers placed higher premiums on park adjacency than longer-term residents (Gopal & Nagendra, 2014; Jim & Chen, 2009). Although distance approached significance in predicting negative perceptions ($p = 0.075$), it was not conclusive, suggesting that green space benefits in Lira may extend beyond immediate adjacency, consistent with evidence from other compact urban settings (Sander & Polasky, 2009).

Qualitative insights reinforced these statistical findings, with land valuers and planners confirming that proximity to spaces like Mayor's Garden and Akii-Bua Stadium increasingly informs both property appraisals and planning decisions. This mirrors wider recognition in urban planning that green infrastructure can contribute to municipal revenue through higher property tax bases and stimulate local investment (Saphores & Li, 2012). At the same time, concerns around vandalism, noise, and poor maintenance highlight that the property premium of green spaces is contingent on sustained quality and effective governance; echoing global findings that neglected or unsafe green spaces can depress, rather than elevate, property values.

In summary, the results provide strong evidence that green spaces in Lira City are perceived to enhance property values through improvements in liveability, recreation, safety, and investment appeal. However, the persistence of challenges such as vandalism, congestion, and governance gaps underscores the need for integrated planning that maintains green space quality. For Lira City, embedding green infrastructure into real estate policy and municipal taxation frameworks could harness these value gains to support sustainable urban growth

5.4 Key Findings Summary

The perception of urban residents towards public green spaces in Lira City

The study investigated the perceptions of urban residents of public green spaces in Lira City. Overall, perception was highly positive, with a mean perception index of 4.02 on a 5-point scale, showing that most respondents strongly valued the role of green spaces.

Descriptive statistics revealed that 88.3% of respondents associated green spaces with environmental conservation, 83.3% linked them with improved health and recreation, and 78.3% emphasized their role in city beautification. Nonetheless, 61.7% cited challenges such as noise, overcrowding, and insecurity in some locations.

A one-way ANOVA test confirmed that perceptions were not uniform across socio-economic groups. Employment status was found to significantly influence perception scores ($F = 4.32$, $p < 0.05$). Post-hoc Tukey tests showed that civil servants ($M = 4.26$) and business owners ($M = 4.18$) reported significantly higher perception indices compared to casual laborers ($M = 3.74$) and unemployed respondents ($M = 3.68$). This indicates that residents with stable or higher incomes tend to hold more favorable perceptions of green spaces, while vulnerable groups expressed more mixed views. Conversely, there were no statistically significant differences between gender or age groups ($p > 0.05$).

Qualitative findings complemented these results: residents highlighted the importance of green spaces for social interactions, children's play, and relaxation. However, recurring concerns included poor maintenance, limited facilities, and exposure to crime, especially in the evening.

To assess urban residents' WTP for public green spaces in Lira City

The study assessed the willingness of property owners to pay (WTP) for public green spaces in Lira City using the Contingent Valuation Method (CVM). Findings revealed that 58.3% of respondents were willing to pay, while 41.7% were unwilling. The average monthly contribution stated by willing respondents was UGX 8,750, with responses ranging between UGX 2,000 and UGX 25,000.

A binary logistic regression model was fitted to identify predictors of willingness to pay. The results showed that income and age were statistically significant ($p < 0.05$). Specifically:

Respondents in higher income categories were significantly more likely to be willing to pay, with an odds ratio of 2.34 ($\text{Exp}(B)$), meaning that for each upward shift in income category, the likelihood of willingness more than doubled.

Age also mattered: middle-aged respondents (35–54 years) were 1.87 times more likely to express willingness compared to younger respondents (18–34 years).

Other variables such as gender, education, and length of residency showed no statistically significant effect ($p > 0.05$).

Qualitative responses provided context for unwillingness to pay. Among those unwilling, 41.7% felt that maintaining green spaces should be the government's sole responsibility, 33.3% cited financial constraints, 15.0% expressed distrust in the management of funds, and 10.0% felt they derived little or no direct benefit due to distance from green spaces.

To analyse the influence of green spaces on land value in Lira City, considering proximity

The study examined how proximity to public green spaces influences property values in Lira City. Results revealed that 100% of the 60 property owners surveyed agreed that being close to green spaces was advantageous for property values, highlighting a unanimous perception among stakeholders. Descriptive statistics showed that 53.3% of properties were commercial and 46.7% residential, with commercial property owners particularly noting higher demand and better rental yields near green spaces.

When asked about mechanisms of influence, 78.3% of respondents cited aesthetics and beautification, 65.0% mentioned safety and improved neighbourhood security, while 61.7% highlighted increased commercial attractiveness. Other mechanisms included enhanced recreational opportunities (55.0%) and social prestige (46.7%).

The multinomial logistic regression confirmed these descriptive trends. Properties located within 300 feet of green spaces were considerably more likely to be perceived as having increased value compared to those in the 601–1000 feet band ($p < 0.05$). Property type was also significant, with commercial properties more likely to report increased value than residential ones. Furthermore, the length of ownership showed a positive association, where respondents who had owned property for longer periods were more likely to recognize value increases. Other socio-demographic variables, including gender and age, did not show statistical significance.

Key informant interviews reinforced these quantitative findings, with planners and valuers emphasizing that proximity to the Mayor's Garden and Akii-Bua Stadium has led to measurable increases in property transactions, higher rental turnover, and increased land market activity.

5.5 Conclusions

The study concludes that urban residents in Lira City generally hold positive perceptions of public green spaces, recognizing them as critical for environmental, social, and recreational purposes. However, perceptions are not uniform across socio-economic groups, with employed and higher-income residents expressing stronger appreciation than their lower-income counterparts. While green spaces are widely valued, concerns regarding maintenance, crowding, and safety highlight the need for better management.

The study concludes that WTP for public green spaces in Lira City is moderate, with just over half of property owners expressing willingness. Age and income were the strongest predictors, underscoring the influence of socio-economic status on environmental contributions. The findings further show that unwillingness is shaped less by outright rejection of green space benefits and more by concerns over affordability, governance, and perceptions of responsibility.

The study concludes that being near public green spaces has a significant impact on property values in Lira City. Both statistical evidence and qualitative perspectives demonstrate that green spaces provide a locational advantage, particularly for commercial properties, by enhancing demand, rental income, and prestige. While all property owners recognized proximity as valuable, the extent of influence varied with distance, property type, and ownership characteristics. These results emphasize the dual function of green spaces as social amenities and economic resources in the urban environment.

Overall, the findings of this study emphasize the urgent need for policy reforms and community engagement to sustain green spaces in urban settings like Lira City. Importantly, these efforts directly support the achievement of Target 11.7 of Sustainable Development Goal 11, which promotes universal access to safe, inclusive, and easily accessible green and public spaces by 2030. Grounded in local evidence, this study contributes to Uganda's broader urban sustainability agenda under the SDGs.

5.6 Recommendations

These are directed toward city authorities, urban planners, policy-makers, community stakeholders, and researchers to direct the sustainable planning, financing, and administration of public green spaces in Lira City.

5.6.1 Recommendations for Objective 1.

Enhanced maintenance and infrastructure investment: The city authority should prioritize landscaping, sanitation, and provision of basic amenities (seating, lighting, and playgrounds) to address residents' concerns and sustain positive perceptions.

Strengthening security and accessibility: Measures such as improved lighting, deployment of community policing, and better access roads should be adopted to reduce insecurity and make green spaces more inclusive.

Awareness and sensitization programs: Campaigns highlighting the ecological and health advantages of green spaces should be implemented to deepen appreciation, especially among lower-income groups who showed relatively weaker perceptions.

Inclusive planning and design: Urban planners should engage residents in participatory design processes to ensure green spaces reflect the recreational, cultural, and social needs of diverse communities.

5.6.2 Recommendations for Objective 2.

Adopt differentiated contribution schemes: The city authority should design flexible contribution models, where higher-income property owners contribute more while lower-income groups contribute minimal or in-kind support.

Improve transparency and accountability: Establish clear mechanisms for managing funds (e.g., community trust funds or periodic financial reports) to build confidence among residents that contributions are used effectively.

Promote awareness on shared responsibility: Sensitization programs should emphasize that maintaining green spaces is a shared responsibility and not exclusively the obligation of the government.

Explore alternative funding approaches: public–private partnerships and corporate social responsibility schemes could supplement community contributions, ensuring the financial sustainability of green space maintenance.

5.6.3 Recommendations for Objective 3.

Integration of green spaces in land-use planning: City planners and policymakers ought to recognize the economic role of public green spaces by systematically incorporating them into zoning regulations and master plans for Lira City.

Enhanced maintenance and security of green spaces: Since property value benefits are tied to the state of green spaces, routine upkeep, landscaping, and security enforcement should be prioritized to sustain their attractiveness and economic impact.

Leveraging green spaces for revenue generation: The city authority could introduce mechanisms such as location-based property tax adjustments or public–private partnerships, ensuring that value appreciation associated with green spaces contributes to their upkeep.

Encouragement of community stewardship: Property owners and local businesses should be engaged in participatory maintenance initiatives to safeguard the long-term benefits of green spaces and promote shared responsibility in their management.

5.7 Areas for Further Research

While this study provides valuable insights into residents' perceptions, readiness to pay, and the impact of public green spaces on property values in Lira City, further research is recommended in the following areas:

Longitudinal studies on willingness to pay (WTP): This study employed a cross-sectional design, capturing perceptions at one specific point in time. Future research could track changes in WTP and attitudes over several years to assess how urban development and economic conditions shape long-term valuation of green spaces.

Comparative studies across Ugandan cities: Extending similar research to other secondary cities such as Gulu, Mbale, or Mbarara would allow for comparison and provide a broader national picture of urban residents' valuation of green spaces, which could strengthen policy formulation at the national level.

Economic valuation using alternative methods: While this study applied the Contingent Valuation Method (CVM), future studies could use complementary approaches such as Choice Modelling or Hedonic Pricing to provide more robust assessments of the economic worth of urban green spaces

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Appendices**Appendix 1: Budget**

Item	Unit Cost (UGX)	Quantity	Total Cost
Research Assistant's Allowances	40,000	20 days	800,000
Protective gears	30,000	3	90,000
Airtime	1	50,000	50,000
Printing of Data collection tools	500	500 copies	250,000
Printing consent forms	100	500 copies	50,000
Pre-testing tools	500	20	10,000
Data collection materials	30,000	1 set	30,000
Transportation	50,000	20 days	1,000,000
Internet	100,000	1	100,000
Compensation for respondents	5,000	457 participants	2,285,000
	20,000	11 key informants	220,000
Printing and Binding the report	15,000	5 copies	75,000
Results Dissemination	2,000,000		2,000,000
Ethical Clearance	100,000	1	100,000
Contingency			706,000
Total Budget			7,766,000

Appendix 2: Activity Time Frame

	2024		2025								
	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep
Proposal Writing											
Schedule pre-test											
Training and Field Orientations											
Data Collection											
Data Analysis											
Draft Report											
Final Report											
Dissemination											

Appendix 3: Dissemination Plan

Activity	Timeline	Responsible party
Thesis Defense Presentation	After finalization of research (October 2025)	Researcher (Eper Ceasor)
Publication Submission	Within 4-5 months post- defense	Researcher and Supervisors
Community Workshop	September 2025	Researcher and Assistants
Policy Brief Development	October 2025	Researcher
Stakeholder meeting	December 2025	Researcher and Local Authorities
Online Dissemination	Concurrent with other activities	Researcher

Appendix 4: Data Collection Tools

QUESTIONNAIRE FOR A RESEARCH SURVEY

TITLE: URBAN RESIDENTS' PERCEPTION AND WILLINGNESS TO PAY FOR PUBLIC GREEN SPACES IN LIRA CITY.

Introduction

Dear Respondent,

You are invited to participate in a research study titled "**Urban Residents' Perception and Willingness to Pay for Public Green Spaces in Lira City.**" This research is being conducted as a partial requirement for an award of a **Master of Science in Environmental Science and Natural Resources Management** at **Gulu University**. The purpose of this study is to understand how residents perceive public green spaces, their importance, and the extent to which they are willing to support their maintenance and improvement.

Your responses will provide valuable insights to inform urban planning and sustainable development strategies for Lira City. Participation in this study is voluntary, and all your responses will be treated with strict confidentiality. The information collected will be used solely for research purposes.

Please answer all questions honestly and to the best of your knowledge. Should you have any concerns or wish to withdraw from the study at any point, you are free to do so.

EPER CEASOR, Gulu University

Section 1: Demographics

Gender:

- ☐ Male
- ☐ Female
- ☐ Prefer not to say

Age:

- ☐ 18–24
- ☐ 25–34
- ☐ 35–44
- ☐ 45–54
- ☐ 55 and above

Education Level:

- ☐ No formal education
 - ☐ Primary
-

- ☐ Secondary
- ☐ Tertiary (University/College)

Employment Status:

- ☐ Employed
- ☐ Self-employed
- ☐ Unemployed
- ☐ Retired

Monthly Income (UGX):

- ☐ Less than 100,000
- ☐ 100,000–300,000
- ☐ 300,001–500,000
- ☐ Above 500,000

Length of Residency in Lira City:

- ☐ Less than 1 year
- ☐ 1–5 years
- ☐ 6–10 years
- ☐ More than 10 years

Neighbourhood/Ward: (*Specify*):

Section 2: Awareness and Usage of Public Green Spaces

Are you aware of public green spaces in Lira City?

- ☐ Yes
- ☐ No

Which public green spaces in Lira City are you familiar with?
(*Tick all that apply*)

- ☐ Akii-Bua Stadium
- ☐ Coronation Park
- ☐ Mayor's Garden
- ☐ Noma Grounds (Tipper stage)
- ☐ Adyel Children's Playground
- ☐ Golf Course

How often do you visit public green spaces?

- ☐ Daily
 - ☐ Weekly
 - ☐ Monthly
 - ☐ Rarely
 - ☐ Never
-

What activities do you engage in when visiting green spaces?

(Tick all that apply)

- ☐ Exercise (e.g., jogging, walking)
- ☐ Socializing
- ☐ Relaxation/Leisure
- ☐ Children's play activities
- ☐ Other (*Specify*):

How would you rate the condition of public green spaces in Lira City?

- | | |
|--------------------------------------|---------------------------------|
| • ☐ Excellent | • ☐ Fair |
| • ☐ Good | • ☐ Poor |

Section 3: Perception of Public Green Spaces

Rate the importance of public green spaces for the following purposes:

(1 = Not Important, 5 = Very Important)

- Environmental benefits (e.g., clean air, shade): ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
- Recreational activities: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
- Social interaction: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
- Aesthetic value: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
- Improving property values: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

How accessible are public green spaces in your area?

- ☐ Very Accessible
 - ☐ Accessible
 - ☐ Neutral
 - ☐ Inaccessible
 - ☐ Very Inaccessible
-

What challenges do you think public green spaces face in Lira City?

(Tick all that apply)

- ☐ Poor maintenance
- ☐ Security issues
- ☐ Lack of funding
- ☐ Encroachment by developers
- ☐ Inadequate public awareness
- ☐ Other (*Specify*):
.....

Do you think the local government values and prioritises public green spaces?

- ☐ Yes
- ☐ No
- ☐ Not Sure

Section 4: Willingness to Pay for Public Green Spaces

Are you willing to pay to maintain and improve public green spaces?

- ☐ Yes
- ☐ No

If **yes**, how much would you be willing to contribute monthly?

- ☐ Less than UGX 5,000
- ☐ UGX 5,001–10,000
- ☐ UGX 10,001–20,000
- ☐ Above UGX 20,000

If **No**, Why?

What payment method would you prefer?

- ☐ Taxes
- ☐ Direct community contributions
- ☐ Other (*Specify*):

What factors would motivate you to contribute financially?

(Tick all that apply)

- ☐ Improved maintenance of green spaces
- ☐ Regular updates on fund usage
- ☐ Community recognition of contributions
- ☐ Other (*Specify*):

Do you think other residents are likely to contribute to green space maintenance?

- ☐ Very Likely
- ☐ Likely
- ☐ Neutral
- ☐ Unlikely
- ☐ Very Unlikely

Section 5: Open-Ended Questions

In your opinion, how can public green spaces be improved in Lira City?

.....
.....

Do you have any concerns or suggestions about funding public green spaces?

.....
.....

Any additional comments or feedback:

.....
.....
.....

Closing Statement:

Thank you for participating in this survey. Your responses will provide valuable insights to improve urban planning and green space management in Lira City.

END

QUESTIONNAIRE FOR A RESEARCH SURVEY

TITLE: URBAN RESIDENTS' PERCEPTION AND WILLINGNESS TO PAY FOR PUBLIC GREEN SPACES IN LIRA CITY.

Introduction

Dear Respondent,

You are invited to participate in a research study titled "**Urban Residents' Perception and Willingness to Pay for Public Green Spaces in Lira City.**" This research is being conducted as a partial requirement for an award of a **Master of Science in Environmental Science and Natural Resources Management** at **Gulu University**. The purpose of this study is to understand how residents perceive public green spaces, their importance, and the extent to which they are willing to support their maintenance and improvement.

Your responses will provide valuable insights to inform urban planning and sustainable development strategies for Lira City. Participation in this study is voluntary, and all your responses will be treated with strict confidentiality. The information collected will be used solely for research purposes.

Please answer all questions honestly and to the best of your knowledge. Should you have any concerns or wish to withdraw from the study at any point, you are free to do so.

EPER CEASOR, Gulu University

Section 1: Demographics and Property Details

Gender:

- ☐ Male
- ☐ Female
- ☐ Prefer not to say

Age:

- ☐ 18–24
- ☐ 25–34
- ☐ 35–44
- ☐ 45–54
- ☐ 55 and above

Education Level:

- ☐ No formal education
 - ☐ Primary
 - ☐ Secondary
 - ☐ Tertiary (University/College)
-

Employment Status:

- ☐ Employed
- ☐ Self-employed
- ☐ Unemployed
- ☐ Retired

Length of Residency in Lira City:

- ☐ Less than 1 year
- ☐ 1–5 years
- ☐ 6–10 years
- ☐ More than 10 years

Neighbourhood/Ward (*Specify*):

Type of Property:

- ☐ Residential
- ☐ Commercial
- ☐ Mixed-use (both residential and commercial)

Property Ownership Duration:

- ☐ Less than 1 year
- ☐ 1–5 years
- ☐ 6–10 years
- ☐ More than 10 years

Do you own the property you live in, or is it rented?

- ☐ Owner
 - ☐ Rented
-

Section 2: Proximity to Public Green Spaces

Which public green spaces are closest to your property?

- ☐ Akii-Bua Stadium
- ☐ Mayor's Garden

What is the approximate distance of your property from the nearest green space?

- ☐ Less than 300 feet
- ☐ 301–600 feet
- ☐ 601–1,000 feet
- ☐ More than 1,000 feet

Do you consider the proximity of the green space to your property an advantage?

- ☐ Yes
-

- ☐ No
- ☐ Not Sure

Have you noticed any change in property value since the green space was developed or improved?

- ☐ Yes, property value has increased
- ☐ No change in property value
- ☐ Yes, property value has decreased
- ☐ Not Sure

Section 3: Perceptions of the Impact of Green Spaces on Land Values

In your opinion, does the presence of the green space affect the market value of your property?

- ☐ Yes, it increases property value
- ☐ No impact on property value
- ☐ Yes, it decreases property value
- ☐ Not Sure

How significant do you think the green space is in affecting the value of properties nearby?
(1 = Not Significant, 5 = Very Significant)

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

In what way(s) does the green space impact the value of your property?
(Tick all that apply)

- ☐ Increases aesthetic value
- ☐ Enhances quality of life and liveability
- ☐ Improves neighbourhood safety
- ☐ Provides recreational opportunities
- ☐ Increases demand for nearby properties
- ☐ Other (*Specify*):

Has the development or maintenance of the green space made your property more desirable to potential buyers or renters?

- ☐ Yes
- ☐ No
- ☐ Not Sure

Would you consider selling or renting your property at a higher price due to its proximity to a well-maintained green space?

- ☐ Yes
-

- ☐ No
- ☐ Not Sure

Section 4: Open-Ended Feedback on Green Space and Property Value

In your opinion, what are the key benefits of having green spaces near your property?

.....

.....

What are the potential negative impacts of having public green spaces near your property?

.....

.....

Do you think that green spaces should be a priority in urban planning for Lira City? Why or why not?

.....

.....

Any additional comments or suggestions on improving green spaces in Lira City and their impact on property values?

.....

.....

Closing Statement

Thank you for your time and participation in this questionnaire. Your feedback is valuable for understanding the role of public green spaces in shaping property values and improving urban planning in Lira City.

END

KEY INFORMANT INTERVIEW GUIDE

City Officials, Green Space Managers, and Local Authorities

Section 1: Introduction

Dear Sir/Madam,

Thank you for agreeing to participate in this research study **titled "Urban Residents' Perception and Willingness to Pay for Public Green Spaces in Lira City"**. This study is being conducted as a partial requirement for an award of a **Master of Science in Environmental Science and Natural Resources Management** at **Gulu University**. This research aims to explore the role and management of public green spaces, understand their impact on urban development, and assess residents' willingness to support their maintenance and improvement.

As a key informant, your insights are invaluable in helping us understand the challenges, policies, and opportunities associated with public green spaces in Lira City. The information you provide will contribute to shaping sustainable urban planning and development strategies.

Participation in this interview is entirely voluntary, and your responses will remain confidential. You may decline to answer any question or withdraw at any time without any consequences.

Sincerely,

EPER CEASOR, Gulu University

Section 2: Key Questions

1. Can you describe your role and responsibilities in managing public green spaces in Lira City?
 2. How would you describe the significance of public green spaces in urban development, and what challenges do you face in managing or advocating for them?
 3. What policies or strategies currently govern the development and preservation of green spaces in Lira City, and how effective are they in achieving their objectives?
 4. How does urbanization in Lira City affect the allocation and preservation of green spaces, and how do you balance this with urban growth?
 5. What role do public green spaces play in improving the quality of life for residents of Lira City, and how do they impact local property values?
-

6. What efforts have been made to involve the community in the planning and development of public green spaces in Lira City?
7. What is your view on residents' willingness to contribute financially to the maintenance and development of green spaces, and what mechanisms could be used to mobilize resources?
8. What key challenges do you foresee for the future development and preservation of green spaces in Lira City, and what long-term plans or projects are in place to address them?
9. What role should urban green spaces play in achieving sustainable urban development goals for Lira City?
10. Do you have any additional comments, suggestions, or ideas for improving public green spaces in Lira City?

END

Thank you for your participation

KEY INFORMANT INTERVIEW GUIDE.*Professional Land Valuers***Section 1: Introduction**

Dear Sir/Madam,

Thank you for agreeing to participate in this research study **titled "Urban Residents' Perception and Willingness to Pay for Public Green Spaces in Lira City"**. This study is being conducted as a partial requirement for an award of a **Master of Science in Environmental Science and Natural Resources Management** at **Gulu University**. This research aims to explore the role and management of public green spaces, understand their impact on urban development, and assess residents' willingness to support their maintenance and improvement.

As a key informant, your insights are invaluable in helping us understand the challenges, policies, and opportunities associated with public green spaces in Lira City. The information you provide will contribute to shaping sustainable urban planning and development strategies.

Participation in this interview is entirely voluntary, and your responses will remain confidential. You may decline to answer any question or withdraw at any time without any consequences.

Sincerely,

EPER CEASOR, Gulu University

Section 2: Key Questions

1. Have you conducted property valuations in Lira City?
 - ☐ Yes
 - ☐ No
 - If yes, for how long?

Section A: Land Valuation Practice in Lira City

1. What are the key factors you consider when valuing urban property in Lira City?
 2. How often do you come across valuation assignments involving properties near public green spaces?
 3. In your experience, does proximity to a green space (e.g., a public park, garden, or stadium) affect the value of surrounding land or property?
-

- a. If yes, how?
 - b. Can you quantify or estimate this influence (e.g., % increase or decrease)?
4. Are there specific types of green spaces that influence land value more than others? (e.g., larger vs. smaller spaces, old vs. newly developed)

Section B: Perceptions of Green Spaces and Market Trends

1. How do clients (buyers, sellers, investors) perceive the presence of green spaces when making property-related decisions?
2. Have you noticed any trends in land value fluctuations in areas near Akii-Bua Stadium or Mayor's Garden?
3. From your perspective, is there sufficient public awareness of the value green spaces add to urban life and real estate?
4. What challenges or misconceptions do you face when explaining the influence of green spaces on land value to stakeholders?

Section C: Policy and Planning Considerations

1. Are green spaces factored into official land valuation guidelines or policy frameworks in Uganda?
2. Do you collaborate with urban planners or local authorities in matters related to land valuation near public amenities such as green spaces?
3. In your opinion, how can land valuation practices better support the planning and preservation of public green spaces?
4. What policy or regulatory improvements would you recommend to ensure that the economic value of green spaces is recognized in property assessments?

Section D: Final Reflections

1. What other insights would you like to share regarding the relationship between green spaces and land value in urban settings like Lira City?
2. Would you be willing to participate in a follow-up session if clarification or additional insights are needed?

END

Thank you for your participation

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RESEARCH ETHICS COMMITTEE

02/06/2025

To: EPER Ceasor

0779951643

Review Type: Initial Review



Re:GUREC-2024-1083: Urban Residents' Perception and Willingness to Pay for Public Green Spaces in Lira City.

I am pleased to inform you that at the **123rd** convened meeting on **20/02/2025**, the Gulu University REC meeting voted to approve the above referenced application.

Approval of the research is for the period of **02/06/2025** to **02/06/2026**.

As Principal Investigator of the research, you are responsible for fulfilling the following requirements of approval:

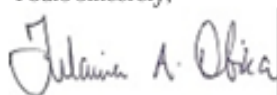
1. All co-investigators must be kept informed of the status of the research.
2. Changes, amendments, and addenda to the protocol or the consent form must be submitted to the REC for re-review and approval **prior** to the activation of the changes.
3. Reports of unanticipated problems involving risks to participants or any new information which could change the risk benefit: ratio must be submitted to the REC.
4. Only approved consent forms are to be used in the enrollment of participants. All consent forms signed by participants and/or witnesses should be retained on file. The REC may conduct audits of all study records, and consent documentation may be part of such audits.
5. Continuing review application must be submitted to the REC **eight weeks** prior to the expiration date of **02/06/2026** in order to continue the study beyond the approved period. Failure to submit a continuing review application in a timely fashion may result in suspension or termination of the study.
6. The REC application number assigned to the research should be cited in any correspondence with the REC of record.
7. You are required to register the research protocol with the Uganda National Council for Science and Technology (UNCST) for final clearance to undertake the study in Uganda.

The following is the list of all documents approved in this application by Gulu University REC:

No.	Document Title	Language	Version Number	Version Date
1	Informed Consent forms	Lango	3.0	2025-05-19
2	Informed Consent forms	English	3.0	2025-05-19

3	Data collection tools	English	2.0	2025-05-12
4	Protocol	English	2.0	2025-05-12
5	Data collection tools	Lango	1.0	2025-01-30
6	Community Engagement plan	English	1.0	2025-01-30
7	COVID-19 & EBOLA risk management plan	English	1.0	2025-01-30

Yours sincerely,



Julaina A. Obika (PhD)
For: Gulu University REC