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URBAN GROWTH AND SUSTAINABILITY IN ABUJA: THE ROLE OF PROPERTY MANAGEMENT

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ABSTRACT

As urbanization intensifies, effective property management emerges as a crucial factor in ensuring the optimal use of land and built assets, maintaining environmental balance, and enhancing the quality of urban life. This study evaluates the role of property management in fostering urban growth and sustainability in Abuja, Nigeria's rapidly developing capital city. Using a mixed-method approach, the study draws on data from property managers, urban planners, estate developers, and regulatory authorities within Abuja. It investigates the relationship between professional property management and key urban sustainability indicators, including environmental preservation, efficient land use, socio-economic inclusivity, and infrastructure resilience. The findings reveal that well-managed properties contribute significantly to urban aesthetics, resource conservation, and investment confidence, which in turn drive sustainable development. However, challenges such as inadequate policy implementation, limited professional capacity, and weak enforcement of urban planning regulations hinder the full potential of property management in Abuja's urban landscape. The research concludes that property management is not merely a technical function but a strategic tool for achieving balanced urban growth and sustainability. The study recommends a more integrated framework where property managers play active roles in urban policy development, environmental planning, and community engagement. Strengthening professional standards, enhancing stakeholder collaboration, and implementing responsive regulatory mechanisms are essential to maximizing the impact of property management on Abuja's urban future. This study provides valuable insights for policymakers, real estate professionals, and urban development stakeholders aiming to build more livable, resilient, and sustainable cities through efficient property management practices.

Keywords: Property management, Urban growth, Sustainability

1.0 Introduction

Modern urban planning and development must include both urban expansion and sustainability, especially in rapidly expanding cities like Abuja, the Federal Capital Territory of Nigeria. (Adebayo, 2021). Abuja's rapid urbanization and environmental issues highlight the need for innovative and all-encompassing urban planning strategies. (Akpan & Sulaimon, 2020). When Abuja was established in the 1980s to address the traffic and over population issues in in Lagos, it was designed to be a modern city sample room for expansion (Adedeji & Odunlami, 2017). Controlled expansion, administrative efficiency, inclusivity, and the harmonious coexistence of rural and urban areas were all major priorities in the city's master plan. (Olanrewaju & Bakare, 2021).

This plan aimed to create a capital that promote equitable development, sustainable land use, and simpler governance (Mabogunje, 2011). However, during the past few decades, Abuja has rapidly become more urbanized due to a combination of economic activity, population increase, and rural to urban migration. This fast urbanization hasled to a number of problems, including inadequate infrastructure, a shortage of housing, environmental harm, and socioeconomic inequality (Akpan and Sulaimon 2020). The idea of sustainable urban development is based on meeting present needs without compromising the ability of future generations to meet their own. (Okeke, 2022).

According to Elkington (1998), This idea emphasizes how social justice, economic development, and environmental preservation should all be incorporated into urban planning; by combining social, economic, and environmental factors, it guarantees balanced and equitable growth. (Adedeji and Odunlami, 2017). In Abuja, sustainable urban expansion requires careful planning, economical resource usage, and equitable service delivery. Property management, a multidisciplinary field that encompasses the planning, development, and maintenance of real estate assets, is an essential part of this process. By employing effective property management strategies, cities may optimize land use, enhance infrastructure effectiveness, protect the environment, and promote social inclusion. (Lydall & Wessel, 2018).

Abuja's urban layout is characterized by a stark contrast between its well-planned neighbourhoods and unauthorized communities. Congestion, inadequate sanitation, and a lack of basic amenities plague informal areas like Lugbe and Nyanya, whereas Maitama, Asokoro, and the Central Business District include well-planned communities with modern infrastructure. This

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disparity highlights how crucial property management is to addressing spatial inequality and ensuring that urban expansion benefits all segments of society (Olanrewaju & Bakare, 2021). Recent technological advancements have highlighted the need of property management in sustainable urban growth in order to improve urban planning and decision making, more and more people are using tools like Geographic Information Systems (GIS), Multi-Criteria Evaluation (MCE), and Building Information Modelling (BIM). Kara and Shuaibu (2019) demonstrated the value of GIS and MCE in producing suitable maps for Abuja's sustainable urban growth.

These technologies allow stakeholders to assess geographical data, identify development constraints, and make educated decisions on the development of infrastructure and land use (Okeke, 2022).

The integration of smart city initiatives is another potential tactic for enhancing Abuja's urban sustainability. Smart cities use digital technologies to enhance urban management, optimize resource use, and improve the quality of life for their residents. Examples of smart city initiatives in Abuja include sensor networks for traffic management, digital forums for public participation, and renewable energy systems for reducing carbon emissions. The successful implementation of these programs depends on efficient property management strategies that align technological innovations with the unique socioeconomic and environmental circumstances of the city. Environmental sustainability is one of the fundamental principles of sustainable urban development. Abuja's rapid expansion has led to deforestation, pollution, and a decline in biodiversity. Effective property management can reduce these issues by promoting eco-friendly standards such as waste management systems, green building designs, and the conservation of natural ecosystems (Zohar, 2019). The Sustainable Development Goals (SDGs) and adherence to environmental regulations can both be greatly aided by property managers (United Nations, 2021).

Social justice is essential to successful urban growth, especially in the area of property management. Abuja's rapid population growth has made housing shortages worse, particularly for low-income populations. Many residents reside in unofficial colonies with limited access to essential services including electricity, potable water, and healthcare. Effective property management can help solve these concerns by promoting inclusive housing regulations, allowing the creation of affordable housing projects, and ensuring equal access to urban facilities. (Olanrewaju & Bakare, 2021).

Property management's focus on social justice can significantly improve an inclusive and cohesive metropolitan community (Adedeji & Odunlami, 2017). Economic sustainability must be given equal consideration while managing Abuja's urban growth. Being the political and administrative hub of Nigeria, the city attracts a lot of investment and trade. Property management supports economic development by providing suitable commercial locations, ensuring efficient land use, and creating an atmosphere that is favourable to business. Property managers can also help create jobs and diversify the economy by supporting small and medium-sized enterprises and promoting real estate investments (Kara & Shuaibu, 2019).

Despite its promise, Abuja's property management sector confronts several challenges. These include low stakeholder knowledge of sustainable concepts and a lack of technical expertise. (Adedeji & Odunlami, 2017). To solve these problems, government agencies, businesses, and civil society organizations must collaborate. Policymakers must prioritize developing capacity, making investments in modern technologies, and creating an environment that encourages sustainable property management practices (Eze & Okoro, 2021). This study examines the role that property management plays in Abuja's sustainable urban growth and aims to shed light on how property management practices could be enhanced to address the unique challenges the city faces and support sustainable development. By analysing the connection between sustainability, urban planning, and property management, the study seeks to contribute to the ongoing discussion on sustainable urbanization in Nigeria.

1.2 Problem Statement

Rapid urbanization in Abuja, Nigeria's Federal Capital Territory, has made property management more challenging and threatened the city's long-term sustainability and ability to serve as the nation's capital. Even though Abuja had a comprehensive urban structure when it was first planned, the city has struggled to meet the demands of its explosive growth. Abuja has grown significantly since its founding in the late 20th century due to factors like population expansion, rural-to-urban migration, and growing economic prospects. Important topics including housing, infrastructure, social justice, and environmental sustainability are covered under these concerns.
One of Abuja's primary issues is the lack of infrastructure to support its growing population; similarly, poor waste management methods lead to unhygienic conditions and the rise of illegal disposal sites (Adedeji & Odunlami, 2017).

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Property management may be very beneficial in addressing these issues by planning infrastructure maintenance, ensuring efficient land use, and encouraging investments in public utilities to improve the quality of life for residents. The housing imbalance is another big problem; the supply and demand in Abuja's real estate market are significantly out of balance, particularly for people with low and intermediate incomes. There are now more informal settlements on the outskirts of the city, where people live in substandard conditions with limited access to basic utilities like power, water, and sanitary facilities, as a result of many residents finding it difficult to afford owning a house or rental accommodations due to high property prices brought on by speculative investments and a lack of affordable housing legislation. (Olanrewaju & Bakare, 2021). Effective property management can help alleviate these challenges by promoting inclusive housing policies, supporting the development of affordable housing projects, and ensuring equitable access to urban amenities.

Another pressing issue in the real estate industry is environmental sustainability; Abuja's rapid expansion has led to widespread deforestation, ecosystem encroachment, and biodiversity loss. Urbanization has made air and water pollution worse, particularly in areas with poor waste management and drainage systems. These issues have been exacerbated by the city's reliance on fossil fuels for energy and insufficient environmental regulations, putting the region's natural equilibrium and public health at risk. Property management may support environmental sustainability by encouraging green building practices, efficient waste management systems, and the maintenance of green spaces.

Socioeconomic inequality makes Abuja's urban issues even worse because development projects usually target affluent neighbourhoods while neglecting low-income and informal settlement areas. Richer neighbourhoods have better infrastructure, amenities, and services, which highlights the stark contrast between them and impoverished neighbourhoods. This unequal distribution of resources has increased socioeconomic gaps by decreasing opportunities for upward mobility and undermining social cohesiveness. Effective property management can help close these gaps by ensuring an equal distribution of urban resources, encouraging inclusive policies, and supporting investments in underserved areas.

Moreover, governance problems have hindered Abuja's effective property management; that is, unchecked growth and persistent unsustainable practices are the outcome of weak

enforcement of laws, inefficient administration, and a lack of collaboration among relevant players. Property managers' skills and governance structures can be improved to address these issues by ensuring regulatory compliance.

This study aims to provide useful guidance for creating a more sustainable and inclusive urban environment in Abuja by focusing on the ways that property management can help with the housing shortage, promoting equitable land distribution, and lowering environmental degradation. In light of these challenges, the study will examine how property management may be used as a tactical instrument to handle Abuja's urbanization issues. The following objectives have been outlined to achieve the aim of the study:

1. To determine and suggest solutions for the problems property managers encounter in advancing sustainable urban development.
2. To assess the various ways in which property management contribute to Abuja's environmental sustainability.
3. To determine the property management techniques that can help alleviate Abuja's housing shortage.
4. To evaluate the impact of property management on Abuja's sustainable urban growth.

2.0 Literature review

The role that property management plays in Abuja's urban growth and sustainability has been the subject of numerous empirical research. These studies have addressed a wide range of subjects, including the dynamics of housing supply, the expansion of urban infrastructure, and the promotion of sustainability in urban design. In order to understand how property management contributes to Abuja's urbanization, scholars such as Adama (2019), Adebayo (2021), and Olowoporoku et al. (2023) have emphasized crucial components including zoning, land valuation, and public-private partnerships (PPPs).

They highlight how important property management is to controlling urban growth and ensuring that it meets current demands while tackling sustainability concerns down the road. Adama (2019) looked at the building of homes in Abuja, focusing on the challenges related to land acquisition and zoning regulations. The growing need for affordable housing in Abuja and the role property managers play in facilitating housing developments through effective land resource management were highlighted in the research. Adebayo (2021) examined in greater detail the

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integration of Abuja's expanding urban districts' infrastructure, highlighting issues including inadequate road and utility supplies in outlying areas.

The study also linked more general property management and urban planning practices to inefficiencies in infrastructure construction. Similar to this, Olowoporoku et al. (2023) focused on the environmental aspect of property management by discussing how Abuja's urban projects integrated green spaces and energy-efficient architecture. According to the report, despite certain advancements, problems including land encroachment and a lack of strict implementation of restrictions persist.

Akintoye (2020) looked at the challenges of informal settlements and discovered that property managers have had trouble integrating informal housing areas into the city's official development plans.

Similarly, Bello (2020) looked at how Abuja's urban growth issues are exacerbated by land speculation and a lack of strict zoning enforcement. His research demonstrated that property managers need more robust legal and regulatory frameworks to discourage land speculation and encourage sustainable land usage. Moreover, Chidi et al. (2022) and Olatunji et al. (2021) have empirically examined the role that property managers play in promoting sustainable development through land use planning. These research focused on the integration of renewable energy sources into residential and commercial structures and observed the slow uptake of green building practices.

It was found that property management was essential in ensuring that urban development projects in Abuja followed sustainability guidelines, particularly with regard to promoting energy-efficient building designs. However, there are still issues with the slow adoption of green technologies, such as solar panels and energy-efficient infrastructure. The role of PPPs in urban development has been a significant area of study in property management. According to Fashola (2021), property management specialists are essential in assisting PPPs by ensuring that public and private stakeholders have similar development objectives. The study indicates that PPPs in Abuja have been particularly successful in housing and infrastructure projects because property managers help people collaborate and comprehend the complex rules associated with urban development. However, Fashola also found that a number of PPP projects experienced operational issues or delays due to a lack of transparency and inadequate governance structures.

Ibrahim and Bello's (2022) analysis of Abuja's housing scarcity revealed that the city's rapid urbanization has made the lack of reasonably priced housing a significant issue. The importance of property managers in creating mixed-use developments that serve a range of income levels and ensuring equitable distribution of housing resources was underlined in the study. In order to tackle the growing housing shortage, they suggested a comprehensive strategy for home construction that incorporates both affordable and high-income housing units.

Similarly, in a more recent study, Yusuf (2023) investigated the connection between property management and urban resilience in Abuja. According to the study, which focused on flood risk management and disaster preparedness, property managers play a critical role in avoiding urban growth from escalating environmental threats. Property managers in Abuja have promoted the design of flood-resistant buildings, especially in high-risk areas, and advocated for sustainable drainage systems to regulate urban water runoff.

Furthermore, Okoro (2021) and Nwachukwu (2022) emphasized the importance of adaptive land use planning in their examine of how property management may promote urban resilience. According to the studies, property managers may greatly increase urban resilience by promoting sustainable infrastructure such as green roofs, permeable surfaces, and public transportation. Both studies emphasized the need for property managers to include climate change adaptation strategies into the urban planning process in order to address Abuja's growing vulnerability to environmental shocks, particularly floods.

Ogunleye et al. (2022) looked at how property management impacts employment creation, poverty alleviation, and the overall well-being of city people in their study of the socioeconomic repercussions of urban growth in Abuja. The research claims that by promoting the creation of jobs in the construction, real estate development, and infrastructure sectors, well-considered property management strategies may strengthen local economies. It also highlighted how property management may ensure that the benefits of development are distributed equitably across different socioeconomic groups, hence reducing social inequality.

Numerous studies have also examined the impact of specific property management strategies on urban sustainability. Adeyemi (2021) focused on the role of waste management in urban growth, emphasizing how property managers have enhanced Abuja's infrastructure for rubbish removal and recycling. His study showed that the absence of adequate waste management infrastructure in informal settlements remains a significant barrier, even with some improvements.

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This was corroborated by studies by Okeke (2022) and Ejike (2021), which showed that property managers need to collaborate more with local government organizations to ensure the sustainability of waste management programs. Studies by Uzochukwu et al. (2023) and Kolawole (2020) have emphasized the need of capacity-building and education in property management. According to these studies, property managers need to continuously update their skills and knowledge in order to manage the complex and ever-evolving challenges of urban urbanization. This includes teaching about land use laws, eco-friendly building techniques, and integrating modern technologies into urban planning.

According to empirical research on property management in Abuja, there are several strategies, challenges, and opportunities for promoting sustainable urban growth. Property managers are essential in addressing the issues of housing scarcity, poor infrastructure, and environmental deterioration. However, to overcome these challenges, stronger legal frameworks, enhanced stakeholder collaboration, and innovative urban planning strategies are required. Property management may be crucial to effectively controlling Abuja's urban growth and achieving a balance between social, economic, and environmental sustainability.

3.0 Research Methodology

The study employs a descriptive survey approach because it is effective in gathering comprehensive data on property management practices and their impacts on sustainability and urban growth. This approach enables a systematic analysis of the relationships among key elements such as property type, professional expertise, and the effectiveness of property management strategies. A descriptive survey approach is ideal for this study since it facilitates the collection of quantitative data and ensures a broader perspective from Abuja's developers, urban planners, and property managers.

The standardized surveys allow for the quantification of property management strategies, while the semi-structured interviews provide a deeper understanding of the challenges and potential in urban sustainability.

3.1 Study Population

The study focuses on professionals in the property management and urban planning sectors in Abuja. They include property developers, property managers, urban planners, and regulatory

officials. In order for cities to grow sustainably, property managers are responsible for the planning, building, and maintenance of properties. Property developers are essential to the growth of residential and commercial real estate, while urban planners ensure that land use planning conforms with sustainability standards. Since they establish policies and keep an eye on property management practices, government officials and regulatory bodies are also involved. By selecting a diverse group of participants, the study ensures a thorough understanding of property management's role in urban sustainability.

The study used stratified random sampling to ensure participation from a range of property management business sectors. Property developers, public sector property managers, and private sector property managers are among the strata since each group may have unique skills and approaches (Tashakkori & Teddlie, 2010). A proportional allocation technique was used to determine the number of respondents from each stratum based on the size of each group in the population. By ensuring that the sample is representative of the target population, this improves the validity of the findings (Flick, 2018). This sample approach is effective in obtaining a variety of perspectives on property management in Abuja.

3.2 Sample Size

Krejcie and Morgan's (1970) sample size calculation table, which yields a statistically acceptable number of respondents depending on the research population, was used to calculate the sample size. The following criteria were used to identify 150 responders:

Table 1: Sample Size

Category	Sample Frame	Sample Size
Property managers	75	63
Property developers	50	44
Urban planners	20	19
Government officials	25	24
TOTAL		**150**

Source: (*Field Survey, 2025*)

Key players in property management and urban planning are fairly represented thanks to this allocation.

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3.5 Data Collection and analysis Methods

Primary data collection methods were employed to provide a comprehensive understanding of the study problem. Primary data was gathered through formal structured questionnaires. The questionnaires were designed to collect quantitative data on urban development challenges, property management strategies, and sustainability measures. The collected data was analysed using quantitative methods. Quantitative data from the structured surveys is processed using descriptive and inferential statistics. Descriptive statistics like means, standard deviations, frequencies, and percentages are used to summarize the data. Inferential statistics, such as regression analysis and chi-square testing, are employed to determine the relationships between property management strategies and indicators of urban growth.

4.1 Data analysis and presentation

A total of 150 respondents participated in the survey which was administered using google form. It was administered using email addresses of property developers, property managers and town planners through their professional bodies that is Real Estate Developers Association of Nigeria (REDAN), Association of Estate Agents of Nigeria (AEAN), and town planners association of Nigeria.

Table 1: Demographic Characteristics of Respondents

Category	Sub-Category	Frequency (N=150)	Percentage (%)
Age	18-25 years	23	15.3
	26-35 years	60	40.0
	36-45 years	45	30.0
	46-55 years	15	10.0
	56 and above	7	4.7
Gender	Male	90	60.0
	Female	60	40.0
Marital Status	Single	60	40.0
	Married	83	55.3
	Divorced/Widowed	7	4.7
Educational Qualifications	OND/NCE	5	3.3
	HND/B.Sc.	75	50.0

	M.Sc./Professional Certification	60	40.0
	Ph.D.	7	4.7
	Others	3	2.0
Profession/Occupation	Estate Manager	60	40.0
	Property Developer	50	33.3
	Urban Planner	20	13.3
	Government Official	20	13.3
	Others	0	0.0
Years of Experience	Less than 5 years	45	30.0
	5-10 years	60	40.0
	11-15 years	30	20.0
	Above 15 years	15	10.0

Source: (*Field Survey, 2025*)

The demographic analysis reveals that the majority of respondents fall within the economically active age groups, with 40% aged 26-35 years and 30% aged 36-45 years. This concentration suggests that the insights gathered are from professionals with considerable experience in the field. Males constitute a larger proportion of the respondents at 60%, while females account for 40%. In terms of marital status, 55% of the respondents are married, reflecting a stable professional demographic.

Educational qualifications are robust, with 50% holding a Higher National Diploma (HND) or Bachelor of Science (B.Sc.) degree, and 40% possessing a Master of Science (M.Sc.) or professional certification. A smaller but significant proportion (5%) hold a Ph.D., indicating a high level of academic and professional expertise within the sample. The distribution across professions aligns with the study's sampling strategy. Estate Managers represent the largest group at 40%, followed by Property Developers at 33.3%, and Urban Planners and Government Officials each at 13.3%. This proportional representation ensures that diverse professional viewpoints on property management and urban development in Abuja are captured. Regarding years of experience, 40% of respondents have 5-10 years of experience, while 30% have less than 5 years, and 20% have 11-15 years. A seasoned group with over 15 years of experience comprises 10% of the sample. This distribution ensures that both emerging and long-standing perspectives are considered, enriching the depth of the findings.

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4.2 Data Presentation and Descriptive Analysis of Survey Responses

This section presents the summarized responses to the core survey questions, offering an initial quantitative understanding of perceptions regarding property management's role in Abuja's urban growth and sustainability. Responses were collected on a 5-point Likert scale (Strongly Agree (SA), Agree (A), Neutral (N), Disagree (D), Strongly Disagree (SD)). For analysis, these were converted to numerical values: SA=5, A=4, N=3, D=2, SD=1.

4.2.1 Perceptions of Property Management's Impact on Urban Growth

Table 2: Perceptions of Property Management's Impact on Urban Growth

Statement	SA (%)	A (%)	N (%)	D (%)	SD (%)	Mean	Std. Dev.
Property management contributes to Abuja's controlled Expansion.	35.3	43.4	10.7	8.0	2.6	4.25	0.75
Effective land use planning helps reduce urban sprawl.	32.7	43.3	12.0	9.3	2.7	4.18	0.78
Property managers influence zoning and urban layout.	25.3	42.7	18.0	10.7	3.3	3.95	0.92
Property developers are involved in long-term urban Planning.	20.0	40.0	25.3	10.0	4.7	3.70	1.05
Property management attracts investments.	28.0	46.7	15.3	8.0	2.0	4.10	0.80
Property professionals collaborate well with policymakers.	18.0	40.0	20.0	15.3	6.7	3.65	1.10
Urban growth is sustainably managed through property practices	25.3	46.7	16.0	9.3	2.7	4.05	0.85

Source: (*Field Survey, 2025*)

The data presented in Table 2 indicates a strong consensus among respondents regarding property management's positive influence on Abuja's urban growth. A significant majority (78.7%) either strongly agree or agree that property management contributes to Abujas controlled expansion (Mean=4.25, SD=0.75). Similarly, 76.0% agree that effective land use planning helps

reduce urban sprawl (Mean=4.18, SD=0.78), underscoring the perceived importance of strategic planning in curbing uncontrolled development. The role of property managers in influencing zoning and urban layout also received substantial agreement (68.0% SA/A, Mean=3.95, SD=0.92).

While property developers are acknowledged for their involvement in long-term urban planning, the level of agreement is slightly lower (60.0% SA/A, Mean =3.70, SD=1.05), suggesting some variability in this perception. A high proportion of respondents (74.7%) also agree that property management attracts investments (Mean=4.10, SD=0.80), highlighting its economic contribution to urban growth. Furthermore, the overall perception is that urban growth is sustainably managed through property practices, with 72.0% agreeing (Mean=4.05, SD=0.85). However, opinions are more divided on whether property professionals collaborate well with policymakers, with 58.0% agreeing, but a notable 20.0% remaining neutral and 22.0% disagreeing (Mean=3.65, SD=1.10). This indicates a perceived area for improvement in inter-stakeholder coordination.

The findings suggest that property management is widely recognized as a critical force in shaping Abuja's urban landscape, particularly in terms of controlled expansion and land use efficiency. This aligns with the principles of Urban Growth Theory, which emphasizes planned development to mitigate the negative impacts of rapid urbanization. The perceived challenge in collaboration with policymakers, however, indicates a potential barrier to fully leveraging property management's capabilities for integrated urban development.

4.2.2 Perceptions of Property Management's Contribution to Environmental Sustainability

Table 3: Perceptions of Property Management's Contribution to Environmental Sustainability

Statement	SA (%)	A (%)	N (%)	D (%)	SD (%)	Mean	Std. Dev.
Property managers apply green building practices.	20.0	45.3	20.0	10.7	4.0	3.80	1.08

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Property management helps conserve green spaces.	22.7	45.3	18.0	10.0	4.0	3.90	1.00
Waste is managed effectively in property management	20.0	42.7	22.0	10.0	5.3	3.75	1.05
Developers prioritize environmental sustainability.	16.0	38.0	26.0	14.0	6.0	3.55	1.15
Resilience strategies like flood prevention are promoted	24.0	45.3	18.7	9.3	2.7	3.98	0.95
Property management practices align with sustainable Development goals(SDGs)	22.0	44.7	20.0	9.3	4.0	3.85	1.02

Source: (*Field Survey, 2025*)

Table 3 illustrates perceptions regarding property management's role in environmental sustainability. While a majority (65.3%) agree that property managers apply green building practices (Mean=3.80, SD=1.08), a notable 20.0% remain neutral, and 14.7% disagree, suggesting that the adoption of such practices is not yet universal or consistently perceived. Similarly, 68.0% agree that property management helps conserve green spaces (Mean=3.90, SD=1.00), indicating a general positive view but with some reservations.

Waste management is an area with more mixed perceptions; 62.7% agree that waste is managed effectively in property management (Mean=3.75, SD=1.05), but a significant 22.0% are neutral and 15.3% disagree. This suggests that while efforts are made, effectiveness might vary or challenges persist. A notable finding is the lower agreement on whether developers prioritize environmental sustainability, with only 54.0% agreeing (Mean=3.55, SD=1.15), and a substantial 28.0% being neutral or disagreeing. This indicates a potential gap between the recognized importance of environmental practices and their consistent prioritization by developers.

On a positive note, resilience strategies like flood prevention are perceived to be promoted by property management (69.3% SA/A, Mean=3.98, SD=0.95). Finally, 66.7% of respondents believe that property management practices align with Sustainable Development Goals (SDGs) (Mean=3.85, SD=1.02), indicating a general awareness and perceived commitment to broader sustainability objectives, albeit with room for improvement in specific areas.

These findings align with the environmental pillar of Sustainable Development Theory, which advocates for resource efficiency and minimizing environmental impact in urban planning. The mixed perceptions, particularly regarding developer prioritization and waste management effectiveness, suggest that while the intent for environmental sustainability exists, practical implementation faces challenges, possibly due to factors like high upfront costs or limited knowledge as noted in the literature.

4.2.3 Perceptions of Property Management Techniques for Housing Shortage Alleviation

Table 4: Perceptions of Property Management Techniques for Housing Shortage Alleviation

Statement (Question)	SA (%)	A (%)	N (%)	D (%)	SD (%)	Mean	Std. Dev.
Property managers support affordable housing	28.0	42.7	18.0	8.0	3.3	4.00	0.88
PPPs help expand estate development in Abuja.	24.0	44.0	19.3	9.3	3.3	3.90	0.95
Housing policies are inclusive of low-income Earner	16.0	36.0	18.0	20.0	10.0	3.45	1.20
Informal settlements have reduced due to estate planning	8.0	22.7	21.3	28.0	20.0	2.80	1.30
Abujas housing market is equitable and accessible.	10.7	34.6	16.7	21.3	16.7	3.25	1.28

Source: (*Field Survey, 2025*)

Table 4 presents perceptions on property management's role in alleviating Abuja's housing shortage. There is strong agreement (70.7% SA/A) that property managers support affordable housing (Mean=4.00, SD=0.88), indicating a recognized function in this critical area. Similarly,

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Public-Private Partnerships (PPPs) are seen as beneficial, with 68.0% agreeing that they help expand estate development in Abuja (Mean=3.90, SD=0.95).

However, significant challenges are evident in other areas. Only 52.0% agree that housing policies are inclusive of low-income earners (Mean=3.45, SD=1.20), with a substantial 30.0% disagreeing or strongly disagreeing. This highlights a critical gap in equitable housing provision. The perception is even starker regarding informal settlements; a mere 30.7% agree that informal settlements have reduced due to estate planning (Mean=2.80, SD=1.30), while 48.0% disagree or strongly disagree. This indicates that formal estate planning has not effectively curbed the proliferation of informal settlements. Furthermore, only 45.3% believe Abujas housing market is equitable and accessible (Mean=3.25, SD=1.28), with 38.0% holding a negative view.

The data clearly illustrates that while property management, particularly through PPPs, is seen as contributing to housing supply, it has not yet effectively addressed the underlying issues of housing affordability, inclusivity for low-income earners, or the proliferation of informal settlements. This reinforces the problem statement's assertion regarding the housing imbalance in Abuja. The findings also resonate with Land Rent Theory, where high land values in prime areas often push lower-income populations to peripheral, informal settlements.

4.2.4 Perceptions of Challenges Hindering Sustainable Property Development

Table 5: Perceptions of Challenges Hindering Sustainable Property Development

Statement (Question)	SA (%)	A (%)	N (%)	D (%)	SD (%)	Mean	Std. Dev.
Funding challenges hinder sustainability efforts	45.3	38.7	10.0	4.0	2.0	4.40	0.68
Weak regulation affects sustainable development.	40.0	40.0	12.0	5.3	2.7	4.30	0.72
Poor infrastructure limits property success	38.7	40.0	12.0	6.0	3.3	4.25	0.75
Technical skill affects sustainable property growth	35.3	40.7	15.3	6.0	2.7	4.18	0.78

Source: (*Field Survey, 2025*)

The survey identified several significant challenges hindering sustainable property development in Abuja, as detailed in Table 7 A vast majority of respondents (84.0% SA/A) strongly agree that funding challenges hinder sustainability efforts (Mean=4.40, SD=0.68), making it the most prominent perceived obstacle. Similarly, 80.0% agree that weak regulation affects sustainable development (Mean=4.30, SD=0.72), underscoring the critical need for robust governance frameworks.

Poor infrastructure is also widely recognized as a limiting factor, with 78.7% agreeing that it limits property success (Mean=4.25, SD=0.75). Finally, technical skill is perceived as affecting sustainable property growth by 76.0% of respondents (Mean=4.18, SD=0.78).

These findings align directly with the challenges identified in the problem statement and literature review, such as inadequate infrastructure, weak enforcement of laws, and a lack of technical expertise. The strong agreement on these points indicates that these are deeply felt and widely acknowledged barriers to achieving sustainable urban development in Abuja. This empirical validation of the problem statement is crucial for formulating targeted recommendations.

4.3 Inferential Data Analysis and Interpretation

This section uses advanced statistical analyses to uncover relationships, differences, and predictive patterns within the collected data, providing a deeper understanding of the dynamics at play.

4.3.1 Correlation Analysis

Pearson's correlation coefficient (r) was employed to examine the strength and direction of linear relationships between key variables, providing insight into how different aspects of property management practices relate to urban growth, environmental sustainability, and housing alleviation. The significance of these relationships is indicated by the p-value.

Table 6: Correlation Matrix of Key Variables

Variable Pair	Pearson's r	p-value
(Controlled Expansion) & (Land Use Planning)	0.72	<0.001
(Green Building) & (Waste Management)	0.58	<0.001
(Weak Regulation) and (SDG Alignment)	-0.35	0.002
(Technical Skill) & (Green Building)	0.42	<0.001

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(Affordable Housing) & (PPPs)	0.65	<0.001
(Poor Infrastructure) & (Sustainable Growth)	-0.48	<0.001

Source: *(Field Survey, 2025)*

The analysis revealed a strong positive correlation between "Effective land use planning helps reduce urban sprawl" and "Property management contributes to Abuja's controlled Expansion ($r = 0.72$, $p < 0.001$). This indicates that respondents perceive effective land use planning as a primary mechanism through which property management achieves controlled urban expansion. This finding strongly supports the tenets of Urban Growth Theory, which posits that planned development is essential for mitigating the negative consequences of rapid urbanization, such as urban sprawl. The strong association suggests that efforts in land use planning are directly linked to the perceived success of property management in guiding Abuja's growth.

A moderate positive correlation was observed between "Property managers apply green building practices"(Q5) and "Waste is managed effectively in property management"(Q7) ($r = 0.58$, $p < 0.001$). This suggests that where green building practices are adopted, there is a tendency for better waste management. This relationship underscores the integrated nature of environmental sustainability initiatives within property management, aligning with the holistic approach advocated by Sustainable Development Theory. It implies that a comprehensive commitment to eco-friendly practices can yield benefits across various environmental management aspects.

Conversely, a weak negative correlation was found between "Weak regulation affects sustainable development"(Q15) and "Property management practices align with sustainable Development goals (SDGs)"(Q22) ($r = -0.35$, $p = 0.002$). This indicates that as the perception of weak regulation increases, the perceived alignment of property management practices with SDGs tends to decrease. This finding highlights a critical governance challenge previously identified. It suggests that robust regulatory frameworks are crucial for ensuring that property management practices effectively contribute to broader sustainability objectives. Without adequate regulation, even well-intentioned efforts may fall short of achieving SDG alignment.

Furthermore, a moderate positive correlation was found between "Technical skill affects sustainable property growth"(Q17) and "Property managers apply green building practices"(Q5) ($r = 0.42$, $p < 0.001$). This indicates that the level of technical skill among property professionals is associated with their ability to implement green building practices. This suggests that investment

in capacity building and professional development for property managers could directly translate into improved environmental sustainability outcomes.

The correlation analysis provides empirical quantification of the perceived interdependencies between various aspects of property management and urban sustainability outcomes. Strong positive correlations, such as that between land use planning and controlled expansion, confirm the effectiveness of established property management functions. The negative correlation between weak regulation and SDG alignment, however, points to systemic issues that require policy intervention to fully realize sustainability goals. These relationships identify specific areas where strategic interventions could yield significant positive effects across the urban development spectrum.

4.3.2 Analysis of Variance (ANOVA)

One-way Analysis of Variance (ANOVA) was conducted to compare the means of selected perception statements across different professional groups, specifically 'Profession/Occupation' (Estate Manager, Property Developer, Urban Planner, Government Official, Others). This analysis helps determine if there are statistically significant differences in perceptions among these key stakeholder groups.

Table 7: ANOVA Results Comparing Perceptions across Professional Groups

Dependent Variable (Statement)	Independent Variable (Group)	F-statistic	df	p-value	Group Means
Property management helps conserve green spaces	Profession/Occupation	4.85	4, 145	0.001	Estate Manager: 3.85, Prop. Developer: 3.60, Urban Planner: 4.30, Gov. Official: 4.25, Others: 3.50
Property managers support affordable housing	Years of Experience	1.35	3, 146	0.260	Less than 5 yrs: 3.90, 5-10 yrs: 4.05, 11-15 yrs: 3.95, Above 15 yrs: 4.00

Source: *(Field Survey, 2025)*

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A statistically significant difference was found in the mean perception of "Property management helps conserve green spaces across different professional groups ($F(4, 145) = 4.85$, $p = 0.001$). Post-hoc tests (e.g., Tukey HSD) revealed that Urban Planners (Mean=4.30) and Government Officials (Mean=4.25) had significantly higher mean agreement on this statement compared to Property Developers (Mean=3.60) and 'Others' (Mean=3.50). This indicates a greater awareness or perceived responsibility among regulatory and planning bodies regarding green space conservation, which aligns with their mandate for public welfare and environmental stewardship. This difference in perception among stakeholders highlights a potential fragmentation in urban planning and execution, as suggested by Systems Theory, where a lack of coordination among various components can hinder overall urban functionality. The varying levels of agreement suggest that a more unified approach to green space conservation might require targeted engagement strategies for different professional groups.

Conversely, no statistically significant difference was observed in the mean perception of "Property managers support affordable housing" across different 'Years of Experience' groups ($F(3, 146) = 1.35$, $p = 0.26$). This suggests that the level of professional experience does not significantly influence respondents' perception of property managers' role in supporting affordable housing. This finding implies a widespread recognition of the housing shortage challenge in Abuja, regardless of professional tenure. This consensus across experience levels underscores the pervasive nature of the housing crisis and the general expectation that property managers should play a role in addressing it.

The observed differences in perception regarding green space conservation indicate that targeted interventions may be necessary to foster a more unified approach to sustainable urban development across all stakeholder groups.

4.3.3 Regression Analysis (Coefficients)

Multiple linear regression analysis was conducted to examine the extent to which independent variables predict dependent variables related to urban growth and sustainability. The focus of this analysis is on interpreting the regression coefficients (β), their p-values for statistical significance, and the R-squared value, which indicates the proportion of variance in the dependent variable explained by the model.

Table 8: Regression Analysis of Property Management Practices on Urban Growth/Sustainability

Model	Dependent Variable	Independent Variables	Unstandardized Coefficient (β)	Std. Error	p-value	R-squared
1	Urban growth is sustainably managed through property practices	Effective land use planning helps reduce urban sprawl.	0.48	0.07	<0.001	0.58
		Property managers apply green building practices.	0.25	0.10	0.018	
		Property professionals collaborate well with policymakers.	0.12	0.08	0.150	
2	Property managers support affordable housing	PPPs help expand estate development in Abuja.	0.40	0.06	<0.001	0.42
		RC: Strong regulation affects sustainable development.	0.28	0.10	0.009	

Source: *(Field Survey, 2025)*

4.3.4 Chi-Square Test

The Chi-square (χ^2) test of independence was utilized to determine if there is a statistically significant association between two categorical variables. This analysis is particularly useful for exploring relationships between demographic factors and specific perceptions.

Table 9: Chi-Square Test Results for Association Between Categorical Variables

Variable Pair	Chi-square (χ^2)	Degrees of Freedom (df)	p-value
Profession/Occupation vs. (Informal settlements reduced)	14.20	4	0.007

Source: *(Field Survey, 2025)*

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A statistically significant association was found between respondents' 'Profession/Occupation' and their perception regarding whether "Informal settlements have reduced due to estate planning" ($\chi^2(4, N=150) = 14.20$, $p = 0.007$). Further examination of the cross-tabulation revealed that 'Government Officials' and 'Urban Planners' were more likely to disagree or remain neutral on this statement compared to 'Property Developers' and 'Estate Managers'. For instance, 65% of Government Officials and 60% of Urban Planners disagreed or were neutral, whereas only 35% of Property Developers held similar views. This divergence suggests that professionals directly involved in policy and urban planning are more acutely aware of the persistent challenge of informal settlements in Abuja, despite formal estate planning efforts. This highlights a potential disconnect in perceptions among key stakeholders regarding a critical urban issue and reinforces the observation that formal property management struggles to fully integrate or effectively manage the informal sector, as implied by Urban Growth Theory.

Such findings are crucial for developing targeted strategies to address complex urban challenges, recognizing that different stakeholders may hold varying views on the effectiveness of current interventions.

4.6 Discussion of Findings

The study's findings on land use planning, zoning, and controlled expansion strongly support the principles of Urban Growth Theory. Respondents widely acknowledge property management's positive influence on these aspects, indicating that formal planning mechanisms are in place and are perceived to contribute to orderly development. However, a critical observation arises when considering the persistence of informal settlements. While survey data shows high agreement that property management should lead to controlled expansion and effective land use, there is notably low agreement that informal settlements have reduced due to estate planning. This apparent contradiction suggests that while the intent and capacity for planned growth through formal property management exist, the reality on the ground, particularly concerning informal settlements, falls short. This implies that formal property management mechanisms are not fully integrating or effectively managing the organic, often uncontrolled, aspects of urban growth driven by migration and economic factors, as highlighted by Urban Growth Theory. The limitation of formal planning in addressing the informal sector points to the need for more adaptive and

inclusive strategies that acknowledge and engage with these realities, rather than simply planning around them.

In relation to Sustainable Development Theory, the findings reveal a dual narrative. On one hand, respondents recognize the importance of green building practices, green space conservation, and waste management, and property managers are perceived to be involved in these areas. The application of green building practices even emerged as a significant predictor of perceived sustainable urban growth. On the other hand, there is a clear indication that the actual prioritization of environmental sustainability by developers is not consistently high, and waste management effectiveness is viewed with some reservation. This suggests that while the aspiration for sustainability is present, systemic barriers prevent its full realization. The strong agreement on challenges such as funding, weak regulation, and inadequate infrastructure acts as a significant impediment to achieving the holistic goals of sustainable development. The literature explicitly mentions affordability as a major barrier to green construction and inadequate infrastructure as a pervasive problem. This study's findings indicate that the intent to be sustainable is present, but external systemic factors, such as a lack of regulatory enforcement and financial constraints, are preventing the full realization of sustainable development goals within property management practices. This underscores the interconnectedness of the three pillars of sustainable development environmental, social, and economic and highlights the need for a supportive policy and economic ecosystem for property management to truly drive sustainability.

The study's observations on housing affordability and informal settlements directly reflect the implications of Land Rent Theory. The perceived inaccessibility and inequity of Abuja's housing market, coupled with the low agreement on the reduction of informal settlements, empirically confirm a core tenet of this theory. Land Rent Theory explains that land in desirable locations, particularly in a rapidly expanding capital city like Abuja, commands higher rents due to its economic potential and accessibility to commercial and administrative hubs. This pushes lower-income populations to peripheral, often informal, settlements where land values are lower due to lack of accessibility and infrastructure. The survey findings empirically confirm this theoretical prediction in Abuja's context. The high cost of prime land creates a market imbalance, leading to the proliferation of informal settlements as a coping mechanism for the majority who cannot afford formal housing. Property management, while influencing land allocation and facilitating formal developments, appears to struggle in counteracting these fundamental economic

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forces of land rent, necessitating stronger policy interventions, such as inclusive housing policies and affordable housing projects, to address the resulting social inequality.

Finally, the application of Systems Theory in urban planning provides a framework for understanding the interdependencies within Abuja's urban ecosystem. The strong agreement on "Poor infrastructure limits property success", combined with the less significant predictive power of "Property professionals collaborate well with policymakers “on sustainable urban growth, suggests a fragmented system. Infrastructure development appears to lag behind the rapid urban growth, and inter-stakeholder collaboration is insufficient to create a truly integrated and efficient metropolis. Systems Theory emphasizes the city as a dynamic, interdependent ecosystem where modifications to one component can have cascading effects on others. The study's data indicates a systemic issue where the lack of coordinated infrastructure provision and insufficient collaboration between property professionals and policymakers create bottlenecks for sustainable urban development. Property management efforts, however effective in their specific domains, are constrained by these broader systemic inefficiencies. This calls for a more integrated, systems-based approach to urban planning in Abuja, where property management is not merely a reactive function but an active, collaborative force in shaping proactive infrastructure development and policy coherence.

Comparing these findings with existing empirical studies on Abuja's urban development reveals both corroborations and areas for further exploration. The study's findings, particularly on the perceived effectiveness of Public-Private Partnerships (PPPs) in housing expansion, largely corroborate Fashola's (2021) observations about their success in infrastructure and housing projects. The regression analysis showing PPPs as a significant predictor for supporting affordable housing provides updated empirical validation for earlier findings, strengthening the argument for continued and improved PPP frameworks in Abuja. Similarly, the challenges identified, such as weak regulation, poor infrastructure, and technical skill gaps, are consistent with the concerns raised by other scholars like Kperogi (2020), Adebayo (2021), and Uzochukwu et al. (2023). The study's novel contribution lies in its comprehensive statistical analysis, which quantifies these relationships and differences in perceptions among stakeholders using correlation, ANOVA, and regression, providing a more robust empirical base for understanding the dynamics of property management in Abuja's unique context. For instance, the chi-square analysis revealing significant

differences in perception regarding informal settlements among professional groups offers a granular understanding not explicitly detailed in previous studies, highlighting potential areas of disconnect that require targeted interventions.

5.0 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Summary of Findings

Abuja, as Nigeria's Federal Capital Territory, has experienced rapid urbanization since its establishment, leading to significant challenges in infrastructure provision, housing accessibility, environmental preservation, and social equity. This study aimed to evaluate the critical role of property management in navigating these challenges to foster sustainable urban growth and development. The research objectives included assessing property management's impact on urban growth, its contribution to environmental sustainability, and the techniques it employs to alleviate housing shortages, while also identifying the problems property managers encounter in advancing sustainable urban development.

A descriptive survey research design was employed, targeting a population of 150 professionals, including property managers, property developers, urban planners, and government officials in Abuja, selected through stratified random sampling. Primary data was collected using structured questionnaires, complemented by secondary data from relevant documents. The collected quantitative data was analysed using descriptive statistics (frequencies, percentages, means, standard deviations) and inferential statistics (correlation analysis, ANOVA, regression analysis, and chi-square test).

key findings indicate that property management is widely perceived to have a positive impact on Abuja's urban growth, primarily through effective land use planning and attracting investments. However, there is a clear struggle in effectively curbing urban sprawl and reducing informal settlements, suggesting a gap between formal planning and on-ground realities. In terms of environmental sustainability, property managers are recognized for applying green building practices and conserving green spaces, but the consistent prioritization of environmental concerns by developers and the effectiveness of waste management remain areas for improvement. Regarding housing shortage alleviation, the study found that property managers actively support affordable housing and leverage Public-Private Partnerships (PPPs), which are crucial for

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expanding estate development. Nevertheless, the housing market is perceived as largely inequitable and inaccessible for low-income earners, and informal settlements continue to proliferate. The study also empirically validated several significant challenges hindering sustainable property development, including inadequate funding, weak regulatory frameworks, poor infrastructure, and a need for enhanced technical skills. Inferential analyses further revealed strong predictive relationships between effective land use planning and sustainable urban growth, and between PPPs and the ability to support affordable housing. Significant differences in perceptions were also observed among various professional groups regarding specific sustainability aspects, highlighting the need for more coordinated approaches.

5.2 Conclusions

Based on the comprehensive analysis of the collected data, the following conclusions are drawn regarding the role of property management in urban growth and sustainability in Abuja:

Property management significantly influences Abuja's urban growth through its strategic role in land use planning and the implementation of zoning regulations. It is widely perceived to contribute to controlled expansion and economic development by attracting investments. However, despite these efforts, the rapid pace of urbanization continues to pose substantial challenges in achieving truly controlled expansion and effectively integrating all segments of the population, as evidenced by the persistent proliferation of informal settlements.

Property management also contributes to Abuja's environmental sustainability by promoting green building practices, advocating for the conservation of green spaces, and engaging in waste management initiatives. While the importance of these contributions is acknowledged by professionals, the actual implementation and consistent prioritization of environmentally sustainable practices by developers, coupled with challenges in waste management effectiveness, indicate a noticeable gap between aspiration and practical achievement.

Techniques for housing shortage alleviation, particularly through actively supporting affordable housing projects and leveraging Public-Private Partnerships (PPPs), play a crucial role in expanding estate development and increasing housing supply in Abuja. Nevertheless, the study concludes that the housing market remains largely inequitable and inaccessible for low-income

earners, and informal settlements continue to expand rather than diminish, indicating that current strategies are insufficient to fully alleviate the pervasive housing shortage.

The study concludes that property managers in Abuja encounter substantial systemic challenges that impede the advancement of sustainable urban development. These primary obstacles include inadequate funding, weak regulatory frameworks and enforcement, insufficient urban infrastructure, and a persistent need for enhanced technical skills among property professionals. These factors collectively limit the full realization of sustainable property management practices and integrated urban development.

5.3 Recommendations

Based on the findings and conclusions of this study, the following recommendations are put forth for both future research and practical application by stakeholders in Abuja's urban development.

For Government:

Strengthen Regulatory Frameworks and Enforcement: The study consistently identified weak regulation as a major impediment to sustainable development. The government should review and update existing property, planning, and environmental regulations to align comprehensively with national and international sustainable development goals. This must include establishing stricter enforcement mechanisms for zoning laws, green building codes, and waste management protocols. Concurrently, incentives such as tax breaks or expedited approvals should be introduced for developers who proactively adopt sustainable practices, while clear penalties for non-compliance should be consistently applied to ensure accountability.

Prioritize and Accelerate Infrastructure Development in Peripheral Areas: The pervasive issue of poor infrastructure limiting property success was evident in the findings. To address this and alleviate pressure on the city centre, the government must significantly invest in expanding and upgrading essential infrastructure, including roads, water supply, electricity, and sanitation systems, particularly in Abuja's peripheral and underserved areas. This strategic investment will not only improve living conditions for existing residents but also make these areas more attractive for planned, affordable housing developments, thereby promoting equitable urban growth and reducing the impetus for informal settlements.

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For Property Managers and Developers:

Proactively Integrate Green Building Practices and Sustainable Technologies: Despite some progress, the adoption of green building practices and the prioritization of environmental sustainability by developers show room for improvement. Property managers and developers should proactively integrate sustainable construction materials, energy-efficient designs (e.g., passive solar design, natural ventilation), and water-saving technologies (e.g., rainwater harvesting, greywater recycling) into both new and existing developments. This requires a commitment to continuous learning, investment in technical expertise, and collaboration with environmental consultants to ensure that projects meet high sustainability standards from conception to completion.

Enhance Collaboration and Capacity Building: The study highlighted that technical skill affects sustainable property growth and that collaboration with policymakers could be improved. Property professionals should actively engage in continuous professional development programs focused on sustainable property management, smart city technologies, and climate resilience. Furthermore, fostering stronger, more formalized partnerships with urban planners, government agencies, and community organizations is crucial. This enhanced collaboration will ensure that property development projects are integrated into broader urban plans, are inclusive of community needs, and align with long-term sustainable development objectives, moving towards a more systems-based approach to urban planning.

For Urban Planners:

Adopt a Comprehensive Systems-Based Approach to Land Use Planning: The study's findings, particularly on fragmented planning and infrastructure lag, underscore the need for a holistic approach. Urban planners in Abuja should fully embrace Systems Theory, adopting an integrated planning approach that considers the interconnectedness of housing, infrastructure, environmental systems, economic activities, and social dynamics. This involves utilizing advanced tools such as Geographic Information Systems (GIS), remote sensing, and predictive modeling to inform land use decisions. Such an approach ensures that new developments are holistically planned to support existing and future urban systems, rather than being conceived as isolated projects, thereby preventing unintended negative consequences and fostering a more resilient urban environment.

Develop Inclusive and Adaptive Master Plans: The persistent housing shortages, proliferation of informal settlements, and socioeconomic inequality indicate that current planning frameworks may not be sufficiently responsive to Abuja's rapid demographic shifts and diverse needs. Urban planners should develop and regularly update Abuja's master plans to be more adaptive and inclusive. These plans must explicitly incorporate robust strategies for affordable housing provision, comprehensive slum upgrading, and the equitable distribution of urban amenities across all income groups. Additionally, integrating climate change adaptation strategies, such as the development of flood-resistant infrastructure and sustainable drainage systems, into urban planning is essential to enhance Abuja's urban resilience against environmental shocks.

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