EVALUATING THE FUNCTIONALITY OF SATELLITE TOWNS IN THE FEDERAL CAPITAL TERRITORY, ABUJA, NIGERIA

BY

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UNIVERSITY OF BENIN
BENIN CITY

OCTOBER, 2025

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A DOCTORAL THESIS WRITTEN IN THE DEPARTMENT OF GEOGRAPHY AND REGIONAL PLANNING AND SUBMITTED TO THE COLLEGE OF POSTGRADUATE STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF DOCTOR OF PHILOSOPHY (Ph.D.) IN GEOGRAPHY AND REGIONAL PLANNING (ENVIRONMENTAL MANAGEMENT AND ASSESSMENT) OF THE UNIVERSITY OF BENIN, BENIN CITY, NIGERIA

SUPERVISOR: PROF. MONDAY OHI ASIKHIA

OCTOBER, 2025

ATTESTATION

I, Kanu Kingsley Uchenna, hereby declare that this thesis titled "Evaluating the functionality of satellite towns in the Federal Capital Territory, Abuja, Nigeria" is my original work and has not been submitted in whole or in part for any other degree or qualification. I have cited all sources of information and used in-text citations and references according to the prescribed style. Any assistance received in the preparation of this thesis has been acknowledged.

I affirm that this thesis represents my own efforts, thoughts, and analysis, and all contributions from others have been appropriately recognized. I take full responsibility for any errors or shortcomings in the content of this project.

Kanu Kingsley Uchenna

CERTIFICATION

We the undersigned certify that Kanu Kingsley Uchenna conducted this research work in partial fulfillment of the requirements for the award of Doctor of Philosophy (PhD.) in Geography and Regional Planning (Environmental Management and Assessment), University of Benin, Benin City, Nigeria.

Prof. Monday Ohi Asikhia Supervisor	Date
Prof. T.F. Balogun Co-Supervisor	Date
Prof. J.E. Agheyisi Head of Department	Date

DEDICATION

This research is dedicated to my immediate family and to my parents; Mr. Benson Okorie and Mrs. Margret Elewachi Kanu.

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ABSTRACT

This study evaluates the functionality of satellite towns in the Federal Capital Territory (FCT), Abuja. Satellite towns are usually designed to ease pressure on major cities. The objectives of this study were to: examine the sociodemographic attributes of residents in the satellite towns; examine the functions of satellite towns in the FCT; evaluate their effectiveness in reducing population pressure in the Federal Capital City (FCC); assess the availability of infrastructural facilities; and examine residents' perceptions of the quality of life (livability) in these towns.

A mixed-methods approach was adopted to achieve these objectives, incorporating both quantitative and qualitative analyses of socio-demographic characteristics, infrastructure facilities, housing conditions, healthcare access, environmental quality, and governance. Data was collected with the aid of a structured questionnaire and an interview guide from a total of 1,110 respondents across selected satellite towns including the more developed satellite towns such as Kubwa and Bwari and the less-developed satellite towns like Kusaki-Yanga and Anagada. Interview was conducted with 5 purposively selected key informants. The study employed a multi-stage and systematic sampling technique with data analysis encompassing cross-tabulations and inferential statistical methods of Principal Component Analysis (PCA), ANOVA, and Multiple Regression. Qualitative data from interviews were analyzed thematically.

The findings revealed that satellite towns play a critical role in reducing urban congestion, decentralizing economic activities, and fostering urban growth. However, disparities in infrastructure and service delivery emerged as significant challenges, with underdeveloped satellite towns experiencing acute infrastructural deficits.

Key infrastructural gaps identified in these satellite towns include unreliable electricity, inadequate water supply, poorly developed road networks within some satellite towns, and ineffective waste management system. Healthcare and educational facilities were found to be moderately available, although disparities persist between towns. Additionally, environmental quality concerns, including poor air quality, inadequate drainage systems, and limited access to recreational and open spaces, further constrain the livability of these towns. Residents expressed moderate satisfaction with governance, citing deficiencies in civic engagement, enforcement of urban planning regulations as critical governance challenges.

Despite these constraints, the potential of satellite towns to significantly enhance urban functionality and livability in the FCT is evident. To address the identified challenges, the study recommends prioritizing investments in critical infrastructure, such as electricity, water supply, road connectivity, and waste management system, particularly in the less-developed satellite towns. Improving access to affordable housing, healthcare, and educational services are also essential to enhancing the quality of life of residents. Furthermore, targeted environmental interventions, including urban greening and air quality improvement, are necessary to promote sustainable urban life. Strengthening governance mechanisms and enhancing community participation in urban planning are also advocated.

By so doing, the satellite towns would be fulfilling their functions of easing population pressure on the Federal Capital Territory, Abuja.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

From the latter half of the last century to today, metropolitan areas around the world have grown rapidly. This growth, especially in developing nations, has led to challenges such as housing shortages, unplanned expansion, poor traffic management, unemployment, environmental degradation, and resource scarcity (Turok & McGranahan, 2020; World Bank, 2016). Despite these issues, metropolitan areas remain crucial to development. Modern urban planning seeks to address localized problems through region-specific strategies. Globally, regions in Africa, Europe, Latin America, Asia, and the Middle East are developing satellite towns to decentralize industry, employment, and population from congested metropolitan cores (Van Leynseele & Bontje, 2019). These satellite towns reduce the strain on major cities by creating new areas for development and function as smaller, self-contained urban areas that ease pressure on parent cities.

The functionality of urban areas is central to urban planning and development, determining how well these areas meet residents' needs. Functionality includes the availability and quality of infrastructure, efficiency of service delivery, economic vitality, environmental sustainability, and quality of life. It measures how effectively an urban area supports its population and promotes economic growth. According to UN-Habitat (2022), functionality in satellite towns refers to their capacity to provide essential services, amenities, and infrastructure to support residents' daily needs while complementing the nearby urban center. Satellite towns are designed to enhance urban living by alleviating pressure on main cities and promoting balanced regional development.

A satellite town or new town in urban planning refers to a smaller urbanized area located near, but largely independent of, a larger metropolitan region. It operates as a self-contained entity and may emerge along the natural growth path of a larger city, designed to control urban sprawl. Economically, satellite towns maintain partial independence from their parent cities (Ade & Afolabi, 2013; Keil & Wu, 2022). The International New Town Institute (as cited in Van Leynseele & Bontje, 2019) defines a satellite town as a planned and constructed settlement established where none existed before, based on a large-scale and integrated master plan. These towns aim to provide cost-effective residential options for diverse populations, addressing housing shortages in larger urban centers and ensuring access to affordable living without compromising quality of life. Satellite towns were primarily developed to help resolve the environmental, economic, and social challenges of large cities (UN-Habitat, 2020; Cohen & Crane, 2024). The pattern of satellite towns was accepted as a model for spatial enhancement, regional balance, and spatial order (Ade & Afolabi, 2013; Nan & Song, 2020). A core objective of spatial planning is the equitable distribution of population across available space to reduce environmental harm (Qin et al., 2023).

Additionally, satellite towns include various community facilities such as schools, healthcare centers, and shopping areas. These facilities foster self-sufficient communities where residents can meet daily needs without traveling to the main city. The proximity of such amenities enhances convenience and overall well-being (UN-Habitat, 2022; Pavithran & Jothilakshmy, 2023). Satellite towns are designed to accommodate population overflow from major cities, operating independently while depending on their parent cities for specialized services. They promote sustainable development by responding to demographic and environmental changes (Van Leynseele & Bontje, 2019; UN-Habitat, 2020). These towns offer improved infrastructure, affordable housing, less pollution, and more green spaces, thereby enhancing metropolitan livability (Qin et al., 2023). Economic development is another essential function of satellite towns. They often feature industrial parks and business districts that stimulate local economies by providing operational spaces for industries and businesses (Nan & Song, 2020). Efficient transportation systems are also vital to ensure connectivity and accessibility. Ujoh & Ifatimehin. (2010) highlight that well-planned transportation networks, including roads, public transit, and pedestrian pathways, are critical in linking satellite towns to the main urban center. Such connectivity facilitates the movement of people and goods, enhancing functional integration between the satellite town and the larger city.

In Nigeria, rapid population growth and urban sprawl have made unplanned expansion inevitable, particularly around city outskirts and satellite towns. Many Nigerian cities face environmental, spatial, and economic crises, and rejuvenating these areas poses a significant challenge. Urbanization trends indicate intense expansion in city outskirts driven by population growth. This growth in urban centers is expected to persist and escalate (World Bank, 2016). Cities like Abuja experience rapid growth as people migrate from rural areas for better opportunities. However, due to generally low skill levels, most migrants join the informal sector, limiting their income and access to formal housing. Consequently, unplanned peri-urban settlements have developed, with high annual growth rates and over 200 km^2 of new settlements built between 2001 and 2015, and some areas recording 20–30% growth per annum (Satellite Town Development Department, STDD, 2025).

Satellite towns in Abuja were initially planned to develop independently of the Federal Capital City (FCC). However, uncontrolled urban sprawl has gradually merged the FCC with surrounding satellite towns. These towns now provide housing for city workers who cannot afford to live within the city limits. The development of these towns has also involved the resettlement of indigenous populations to ensure orderly city growth (STDD, 2025). Despite existing literature on satellite towns in Nigeria, there is limited research on their functionality. This is significant, given the importance of satellite towns in reducing population pressure in the Federal Capital Territory. Therefore, it is necessary to evaluate the functionality of satellite towns within the Federal Capital Territory.

1.2 Statement of the Research Problem

The number of megacities worldwide has increased from 10 in 1990 to 33 in 2018, with their combined population reaching approximately 529 million, projected to grow to 43 megacities by 2030 with over 730 million residents (United Nations, 2018). This rapid urban expansion is particularly concerning in developing countries, where it exacerbates issues such as inadequate housing, infrastructure deficits, environmental degradation, and strained public services (World Bank, 2023; UN-Habitat, 2020). In the past four decades, over 90% of global urban population growth has occurred in developing nations, outpacing their capacity to provide essential amenities (UN-Habitat, 2022). To address these urbanization challenges, satellite towns have been established as a strategy to decentralize populations and activities from overcrowded cores.

The Greater London Plan of 1944 influenced global urban strategies by redistributing London's population and industries to satellite towns, effectively reducing congestion through decentralization and greenbelt policies (Van Leynseele & Bontje, 2019). This model inspired planners in Beijing, where satellite towns have accommodated not only the city's growth but also that of surrounding provinces, promoting balanced regional development (Nan & Song, 2020). In India, rapid urban expansion prompted the development of satellite towns around Delhi, supported by efficient rail networks that aided decongestion (Qin et al., 2023).

In Lagos, Nigeria, the population exceeds 20 million, with an annual urban growth rate of approximately 3.75%, making it one of Africa's fastest-growing megacities (Demehin, 2022; UN-Habitat, 2022). Compounded by a land area of about 2,200 km², including 18.9% wetlands, Lagos faces extreme density of over 6,000 people per km², rising to 20,000 in slums, and occupancy ratios of 8–10 persons per room (Demehin, 2022). Unregulated migration has intensified congestion, leading to environmental degradation, traffic gridlock, poor sanitation, substandard living conditions, and slum proliferation (Fayehun et al., 2022; World Bank, 2023). To mitigate these issues, the Lagos State government established the New Towns Development Authority (NTDA) in 1981 to plan and develop satellite towns, aiming to decongest the core and promote even state-wide growth. While some sites are developed and inhabited, others have been abandoned or informally occupied.

Abuja, the Federal Capital Territory (FCT), is undergoing rapid population influx from rural areas and across Nigeria, driven by opportunities for economic prosperity. However, low skill levels among migrants result in absorption into the informal sector, limiting housing affordability and fueling unplanned peri-urban settlements beyond the Federal Capital City (FCC) limits (STDD, 2025). High density and demands for infrastructure have caused housing shortages, land scarcity, inadequate transportation, and challenges in managing electricity, waste, water, drainage, and sewage (Nigerian Institute of Town Planners, NITP, 2025). Service delivery in the FCC is strained by population and economic concentration, necessitating decentralization to alleviate burdens. The net gain in built-up areas has been high, with over 200 km² of new settlements between 2001 and 2015, and some areas growing at 20–30% annually (STDD, 2025). Originally planned in the 1983 FCT regional plan to develop independently, satellite towns have merged with the FCC due to uncontrolled sprawl, including informal settlements outside designated areas. These towns now house workers unable to afford FCC living, and development includes resettling indigenous populations for orderly growth (STDD, 2023; NITP, 2025). Abuja's urbanization rate surpasses post-independence Nigeria and even Lagos in some aspects.

While satellite towns have proven effective in decongesting cores and improving livability in cities like London, Beijing, and Delhi, their performance in Nigeria's FCT is debated. Insights from global cases highlight successes and failures, but they do not fully apply to the FCT's unique issues, including boundary-merging sprawl, growth exceeding capacity, and persistent slums (Cohen & Crane, 2024; UN-Habitat, 2022). This gap in targeted research underscores concerns about functionality, infrastructure, and livability in FCT satellite towns. A thorough evaluation is essential to assess if they meet intended goals and address unplanned urbanization challenges in developing megacities, informing urban planning and contributing to broader discourse.

1.3 Research Questions

This research attempts to answer the following questions.

1. What are the sociodemographic attributes of satellite town residents?
2. What are the functions of satellite towns in the FCT?
3. Are the satellite towns effective in reducing the population pressure in the FCC?
4. What is the level of availability of infrastructures in the satellite towns of the FCT?
5. How do the residents perceive the quality (livability) of life in the satellite towns?

1.4 Aim and Objectives

The research aims to evaluate the functionality of satellite towns in the Federal Capital Territory, Abuja. The objectives of the study are to, therefore:

1. examine the socio-demographic attributes of satellite towns residents.
2. appriase the functions of satellite towns in the FCT.
3. evaluate the effectiveness of satellite towns in reducing the population pressure in the FCC.
4. examine the availability of infrastructural facilities in the satellite towns of the FCT.

5. evaluate residents’ perception of the quality of life (livability) in the satellite towns of the FCT.

1.5 Research Hypotheses

1. The satellite towns in the FCT have not significantly reduced population pressure in the Federal Capital City.
2. The availability of infrastructural facilities in satellite towns does not significantly influence the quality of life of residents.
3. There is no significant difference in the quality of life (livability) between residents of different satellite towns in the FCT.

1.6 Significance of the Study

The rapid population increase and physical expansion of Nigerian cities have placed enormous pressure on urban services and infrastructure such as housing, water supply, electricity, transportation, and employment. As a response, the concept of developing satellite towns has emerged as a practical strategy to decongest major cities like Abuja. These towns are designed to decentralize urban populations, redistribute economic activities, and promote balanced regional growth. Satellite towns play a vital role in reducing population pressure on parent cities and ensuring sustainable urban development. When properly developed and functional, they help ease congestion, reduce infrastructural strain, and improve living conditions by providing affordable housing and essential amenities. They also create new economic opportunities, improve accessibility, and enhance environmental sustainability by promoting more organized spatial development.

In the FCT, the establishment of satellite towns was intended to prevent the challenges that affected Lagos as Nigeria’s former capital. Despite these intentions, many of these towns have not functioned optimally, leading to persistent urban challenges such as overcrowding, inadequate amenities, and poor service delivery. This study is significant as it evaluates the functionality of satellite towns in the FCT, assessing how effectively they fulfill their intended roles in urban management and development. The findings will provide valuable insights for urban planners, policymakers, and development agencies to enhance the livability, sustainability, and economic viability of satellite towns. The study will also highlight the challenges limiting their performance and suggest strategies for improving infrastructure, governance, and overall functionality. Ultimately, the research contributes to the understanding of how satellite towns can serve as effective tools for achieving sustainable urban growth and balanced regional development in Nigeria.

1.7 Scope of the Study

This research is focused on evaluating the functionalities of satellite towns in the Federal Capital Territory, Abuja. However, this study will be limited to the seven satellite towns including; Anagada, Dobi, Bwari, Karshi, Kubwa, Kuje, and Kusaki-Yanga. The functionality and effectiveness of these satellite towns, will be examined. The housing quality, infrastructural quality, availability, and accessibility of urban facilities will also be assessed.

1.8 Study Area

The FCT (Figure 1.1 and 1.2) lies between latitudes 8°15′ N and 9°12′ N, and longitudes 6°45′ E and 7°39′ E, placing it near the geographic center of Nigeria. Abuja became the administrative headquarters of Nigeria as a result of visible shreds of evidence that Lagos was constrained and overloaded with responsibilities beyond its physical capacity. There were constraints on the availability of land for development and expansion as well as imminent environmental insolvency. The military administration under General Murtala Mohammed took a decision to set up the Aguda Panel to seek out possible areas for the relocation of the seat of government to relieve Lagos of the pressure. This Panel recommended Abuja which had the advantages of sparse population, vast virgin land, and being geographically central within the nation. This recommendation was accepted by the government and physical planning consultants were constituted to prepare the regional and masterplan for the Territory and the City respectively. In the concept of the plan, the city was designed to be aesthetically pleasant, legible, and clean.

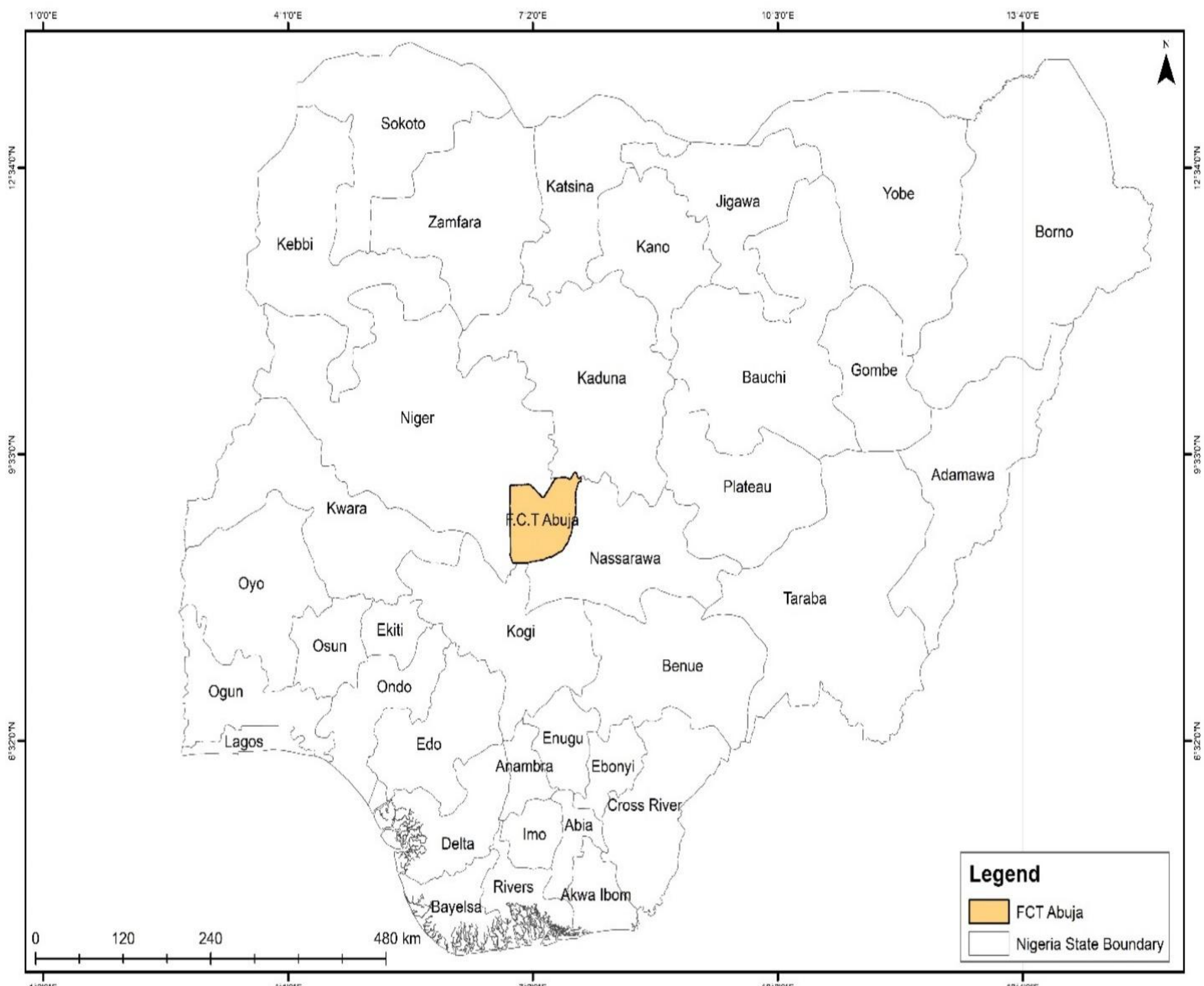

Figure 1.1: Federal Capital Territory, Abuja, Nigeria.
Source: Federal Capital Development Authority, FCDA, (2023**)**

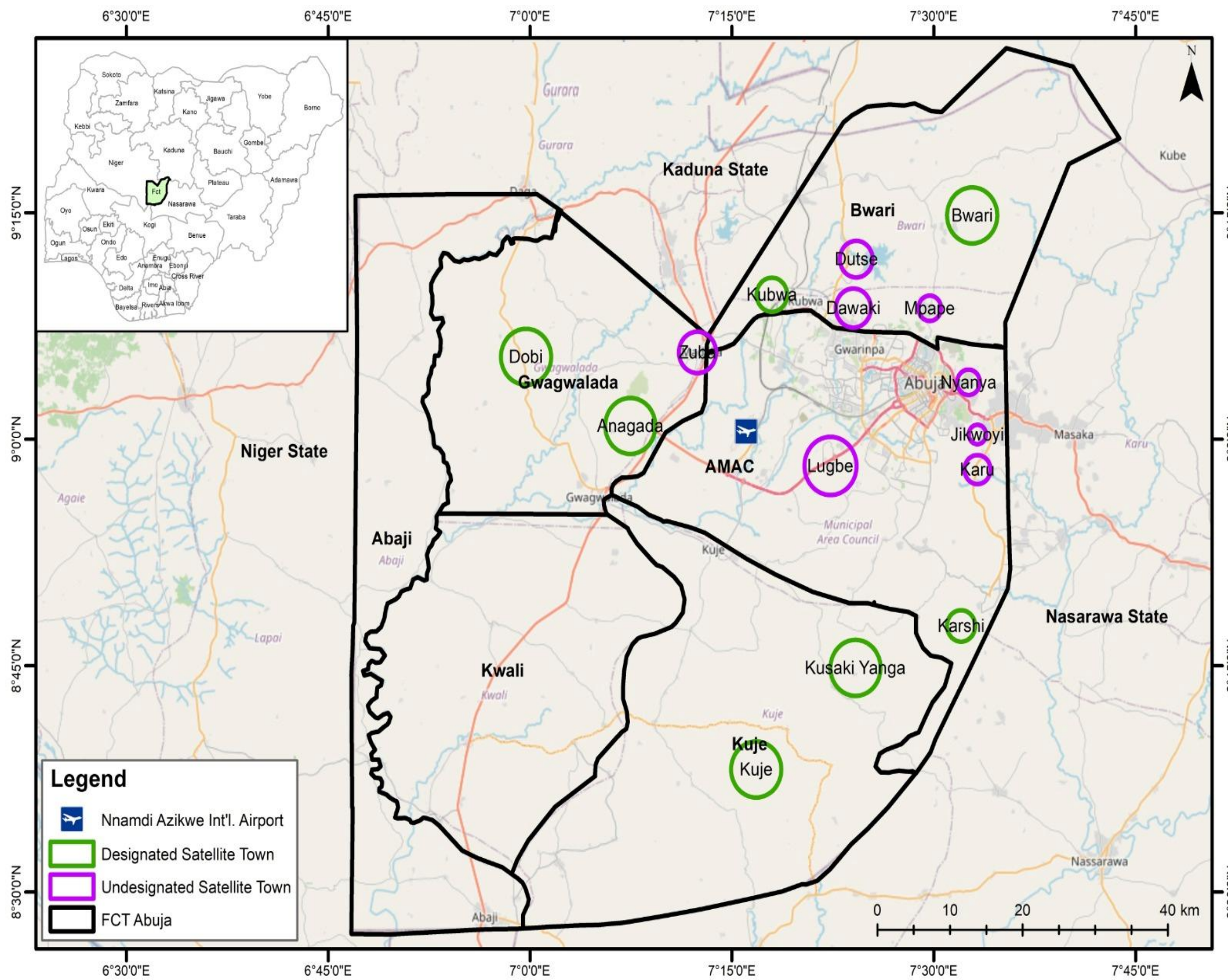

Figure 1.2: Satellite towns in the Federal Capital Territory.
Source: Federal Capital Development Authority, FCDA, (2023)

1.8.1 Population

As stated by the National Population Commission, (NPC) (2006), Abuja's population was 776,298 as of 2006, making it one of Nigeria's most populated cities. The United Nations (UN), (2012) further asserted that Abuja had a growth rate of 139.7% between 2000 and 2010, thus putting it the world's fastest-growing city. By 2015, the city had an annual growth rate of 35% and comfortably retained its position as Africa's fastest-growing city and one of the fastest in the world. The population of Abuja metropolis as of 2024, was estimated at 4,026,000 persons, putting it behind Lagos Nigeria's most populous metropolitan area (Macrotrends, 2025b).

The FCT covers a total land area of about 7,315 km^2. In terms of elevation, the FCT moves gradually from the low land area of the Guara River towards the northeast, while the elevation to the east and outside of the FCC is over 500 m. The elevation in the western parts ranges from roughly 200m to 500m with hilly mounds. The land slopes gently in the lower area and is considered suitable for development. The FCC was planned in 1991 to establish a new Capital City for the resettlement of central government functions from Lagos.

1.8.2 Economy

Real estate is one of the most important drivers of the economy in Abuja. This resonates with the considerable investment and growth the city has experienced as it has grown with investments from both local and foreign investors. This sector continues to have a purposeful impact on the city given it is one of the major employers of human capital within the city. The civil service and private businesses are also major employers of human capital within the city. The constant migration from other parts of the country to the FCT has gradually led to considerable growth in the population of the city. To combat this growth and to limit the pressure on urban facilities in the city, the satellite towns became a necessity.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this research, concepts and theory including concept of new urbanism, the garden city concept, concept of sustainable development, the concept of livability and urban systems theory which are relevant to the evaluation of the functionality of satellite towns in the Federal Capital Territory, Nigeria are examined.

2.1.1 The Garden City Concept

The garden city concept (Figure 2.1), pioneered by Ebenezer Howard, emerged as a response to the overcrowded and unsanitary conditions of 19th-century industrial cities. Howard's vision, outlined *in* Garden Cities of To-Morrow (1898, republished 1902), proposed self-sufficient, medium-sized settlements that combine the benefits of urban and rural environments while avoiding their drawbacks (Fishman, 2021). A garden city is characterized as a planned town designed for industry, healthy living, and social vitality, surrounded by a greenbelt, with land held in public ownership or trust for the community (UN-Habitat, 2022). This concept integrates housing, industry, agriculture, and municipal services within a compact settlement, ideally capped at 32,000 residents, linked to other garden cities to form a networked "Social City" (Fishman, 2021; Ward, 2020).

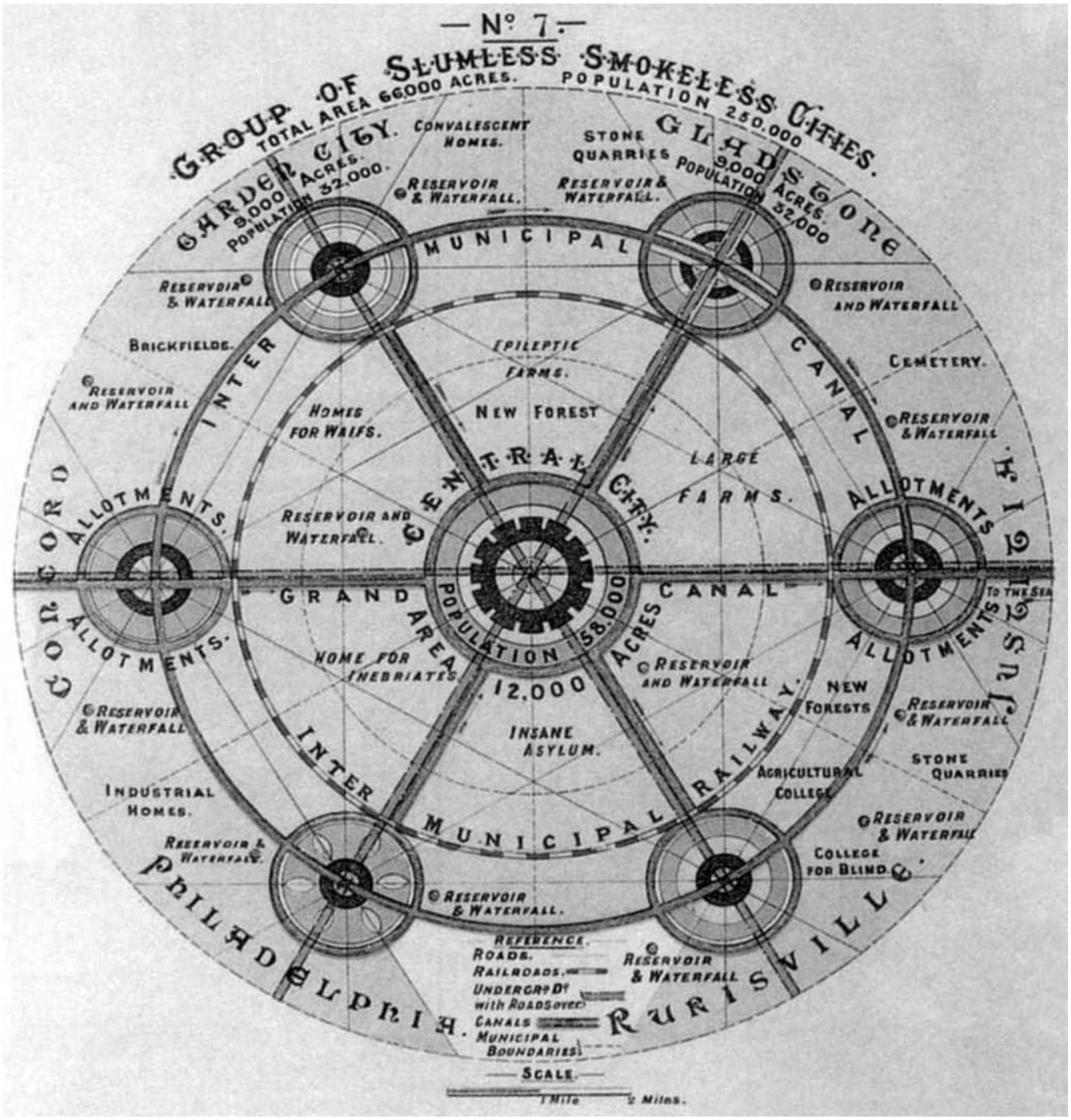

Figure 2.1: Ebenezer Howard's Garden City
Source: Arch Daily, (2021)

The garden city concept is fundamentally an environmental urban planning approach, aiming to harmonize urban and rural spaces. It emphasizes low-density settlements, greenbelts, and self-containment to foster balanced development and mitigate urban sprawl (Ward, 2020). While Howard's principles remain influential, modern urban challenges, such as rapid population growth, land scarcity, and climate change, have prompted adaptations like smart cities and compact cities, which prioritize sustainability and efficiency (UN-Habitat, 2022; Qin et al., 2023). Nevertheless, the garden city's focus on self-sufficiency, green spaces, and community well-being offers valuable insights for contemporary urban planning.

Key features of the garden city include self-sufficient communities that provide housing, employment, and services locally, reducing reliance on long commutes. Extensive greenbelts and open spaces serve as recreational areas, preserve natural landscapes, and control urban expansion. Howard advocated for balanced development, integrating residential, industrial, and agricultural zones to ensure economic diversity and access to local produce (Fishman, 2021). Affordable housing and diverse amenities promote social integration, fostering cohesive communities. Sustainability is central, with efficient land use, green infrastructure, and public transportation prioritized over private vehicles (UN-Habitat, 2022).

Applying the garden city concept to satellite towns in the Federal Capital Territory (FCT) of Abuja offers a framework to address rapid urbanization challenges, including congestion, pollution, and infrastructure deficits (STDD, 2023). By designing self-contained satellite towns with greenbelts, Abuja can alleviate pressure on the FCC while enhancing livability. Green spaces mitigate environmental degradation, improve air quality, and provide recreational opportunities, bolstering resilience to climate change (Qin et al., 2023). Sustainable infrastructure, such as efficient public transport and waste management, can reduce environmental impacts and improve functionality (UN-Habitat, 2020). Economically, the garden city model supports local industries, agriculture, and services, fostering self-sufficiency in satellite towns and reducing dependency on the FCC (Nan & Song, 2020). This approach creates jobs, stimulates local economies, and enhances town functionality. Socially, affordable housing and inclusive amenities promote community cohesion and equitable access to services, addressing the needs of diverse populations, including low-income migrants absorbed into the informal sector (STDD, 2023; Fayehun et al., 2022). These elements are critical for sustainable and vibrant communities in the FCT.

The garden city concept provides a robust framework for evaluating the functionality of Abuja's satellite towns. Researchers can assess self-sufficiency, green space availability, economic diversity, social integration, and sustainable infrastructure. This approach helps identify gaps in current planning and offers solutions to improve livability and address uncontrolled sprawl, which has merged satellite towns with the FCC (STDD, 2023). By adapting Howard's principles, policymakers can tackle Abuja's urbanization challenges, ensuring satellite towns function as intended and contribute to a sustainable urban future for the FCT.

2.1.2 New Urbanism Concept

New Urbanism, an urban design movement that gained prominence in the late 20th century, counters the sprawling, car-centric urban development patterns prevalent since World War II. It advocates for walkable, mixed-use, sustainable, and community-oriented urban environments to foster social interaction and reduce automobile dependency (Congress for the New Urbanism, 2020; Talen, 2021). In the context of satellite towns in the Federal Capital Territory (FCT) of Abuja, New Urbanism offers a robust framework to enhance functionality and livability, addressing challenges like congestion, infrastructure deficits, and environmental degradation (STDD, 2023).

A core principle of New Urbanism is walkability, which prioritizes pedestrian-friendly environments where daily necessities, such as shops, schools, and workplaces, are within a short walk. For Abuja's satellite towns, walkable neighborhoods can alleviate traffic congestion, reduce carbon emissions, and promote healthier lifestyles (Talen, 2021). Safe, attractive streetscapes with sidewalks, crosswalks, and greenery can enhance accessibility and vibrancy, making these towns more appealing for residents (UN-Habitat, 2022). Mixed-use development is another key tenet, integrating residential, commercial, and recreational spaces within close proximity (Congress for the New Urbanism, 2020). In Abuja's satellite towns, this approach can drive economic vitality by fostering dynamic, multi-functional urban areas. Residents can live, work, and access services locally, reducing long commutes and improving quality of life (Nan & Song, 2020). Mixed-use zones also support local businesses and encourage community engagement, addressing the economic needs of diverse populations, including informal sector workers (Fayehun et al., 2022).

New Urbanism emphasizes community-oriented public spaces, such as parks, plazas, and community centers, to foster social cohesion. In satellite towns, well-designed public spaces can serve as hubs for social activities, cultural events, and recreation, strengthening community ties (UN-Habitat, 2022). These spaces are vital for building a sense of belonging, particularly in rapidly growing areas like Abuja, where social fragmentation is a risk due to diverse migrant populations (STDD, 2023). Sustainability is central to New Urbanism, advocating for energy-efficient buildings, green infrastructure, and sustainable transportation options (Talen, 2021). For Abuja's satellite towns, adopting green building standards, rainwater harvesting, and renewable energy can mitigate environmental impacts and enhance climate resilience (Qin et al., 2023). Prioritizing public transportation, cycling, and walking over car use can reduce carbon footprints and address pollution concerns in the FCT (UN-Habitat, 2020).

Connectivity is another critical principle, emphasizing well-integrated street networks and transportation systems. In Abuja's satellite towns, efficient road networks and reliable public transit can improve access to the Federal Capital City (FCC) and neighboring towns, facilitating the flow of goods, services, and people (Nan & Song, 2020). Enhanced connectivity supports economic integration and reduces travel times, improving mobility for residents (STDD, 2023). New Urbanism also promotes a sense of place through architecture and design that reflect local culture and history. In Abuja's satellite towns, incorporating local architectural styles and materials can create unique identities, fostering community pride and potentially attracting tourism and investment (UN-Habitat, 2022). This approach ensures developments align with the FCT's cultural and historical context, enhancing their appeal and functionality.

2.1.3 The Concept of Satellite Town Development

The satellite town idea emerged as a response to the perceived problems and challenges of existing towns (Chatterjee & Chattopadhyay, 2020). From the late 18th century and predominantly in the 19th century, cities in Europe experienced periods of great urbanization that were hitherto unseen throughout history. The challenges brought about by urbanization and industrialization led to new ways of perceiving urban development and are indirectly responsible for modern satellite towns (Gu et al., 2023). By the 1900s, satellite towns' development was geared towards providing better housing and quality of life for people. Since then, the creation of satellite towns is visible in different planning movements (Niazi & Yari, 2022).

The population growth curve, which had seen constant evolution since medieval times with a stable but moderate value, began to rise upward in graphs, thus noting the beginning of urbanization in recent times (UN-Habitat, 2020). The unprecedented fast-paced urbanization created a new series of problems that invaded modern cities. Slums with poor populations, families with many children, industry workers, pollution, unemployment, etc., became visibly present on city maps (Albalawi, 2025). Overcrowding was acutely felt while traditional housing types and existing residential areas gradually became insufficient and of lower standards than required for life in the modern city (Gu et al., 2023).

Howard introduced the garden city concept, which influenced satellite towns where factories were planned to relocate to relieve high concentration in the metropolis (Deepthi et al., 2020). The concept was adapted from the garden city idea. The usage of satellite towns dates back to the eighteenth century. However, history has vividly shown that satellite towns were in existence way before the eighteenth century (Chatterjee & Chattopadhyay, 2020). Originally, satellite towns were residential areas that were reliant on the parent city and they were referred to as dormitory towns. The satellite town development concept, therefore, came about due to several deficiencies and problems in urban areas (Sonali, 2022). These deficiencies are primarily found in regions where infrastructure, water supply, housing, sewerage services, transport, electricity, and health facilities are lacking. Infrastructural consideration is seen as the creation, maintenance, and enhancement of public facilities and systems that are vital for a town or city to thrive economically. It can be inferred that creating satellite towns with adequate infrastructures is important given that they offer a more efficient, healthier, and pleasing environment (Pandey et al., 2025).

The concept of a satellite town was the need to effectively halt continuous metropolitan development by providing and reserving country land around and between them, while making provision for displaced and growing population and their working places in spatially discrete, smaller satellite towns. By satellite town, therefore, it means a town that is within the economic and social orbit of a metropolitan region (Geographic Book, 2024). This refers to a town within a commuting range of a metropolitan city such that its inhabitants can conveniently live or work in the metropolitan city. The concept of a satellite town was adopted by town planners as a method of relieving the concentration of economic activities and the population from the city center. Given that Sonali (2022) saw a satellite town as a small-sized metropolis located adjacent to a larger metropolis, but is predominantly independent in terms of infrastructures and services, Niazi and Yari (2022) thus submitted that the establishment of such towns at the borders of the city presents a solution in reducing population and traffic congestion at the city core, enhancing socio-economic activities, and the reduction of expansion and creation of unplanned settlements.

2.1.4 The Concept of Sustainable Development

Environmental concerns have gained significant prominence since the twentieth century, particularly following World War II, when rapid technological advancements and intense exploitation of natural resources led to resource depletion and environmental degradation (Mensah, 2021). This depletion disrupted urban growth and negatively impacted quality of life, prompting a reevaluation of development practices (United Nations Environment Programme [UNEP], 2022). The term "sustainable development" was first introduced in the context of forestry, emphasizing afforestation and resource use that supports natural renewal processes (FAO, 2020). The concept gained global attention through the International Union for Conservation of Nature's (IUCN) World Conservation Strategy (IUCN, 2020), which highlighted the need for balanced resource management.

The environment emerged as a global issue during the 1972 United Nations Conference on the Human Environment in Stockholm, where principles for environmental preservation were established (UNEP, 2022). This conference introduced the term "eco-development" as a precursor to sustainable development, advocating for environmentally conscious growth (Mensah, 2021). However, it did not fully address the need to transform existing production models, focusing instead on ecological preservation without disrupting economic systems (UNEP, 2022). The conference set expectations for a shift in environmental frameworks, but actionable changes in production and consumption patterns remained limited.

The tensions between technological progress, urban expansion, economic growth, and environmental preservation became increasingly evident. The World Commission on Environment and Development's (WCED) 1987 report, *Our Common Future* (commonly known as the Brundtland Report), marked a pivotal moment by defining sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (United Nations, 2020). This report emphasized social dimensions, including land use, housing, water supply, education, health, and urban growth management, integrating them with environmental and economic considerations (Mensah, 2021). Initially viewed through an ecological lens, sustainable development soon expanded to encompass economic and social dimensions. By the 1970s, it became clear that unchecked economic growth and consumerism exerted significant pressure on the environment, leading to pollution, poverty, inadequate housing, and health challenges (Purvis et al., 2020). The overexploitation of natural resources raised concerns about the needs of future generations, necessitating a redefined approach to resource use that balances ecological limits with human development (UNEP, 2022). This imbalance has driven environmental challenges, including climate change, natural disasters, and socio-economic instability, underscoring the need for sustainable practices (IPCC, 2023).

Human activities have significantly impacted the environment, threatening planetary survival (Mensah, 2021). These challenges have prompted a shift toward more responsible and efficient resource management to reduce environmental pressure and ensure long-term resource availability (UNEP, 2022). The United Nations' Sustainable Development Goals (SDGs), adopted in 2015, reflect this shift, with SDG 11 specifically aiming to make cities and human settlements inclusive, safe, resilient, and sustainable (United Nations, 2020). Key targets of SDG 11 include providing safe and affordable housing, sustainable transport systems, inclusive urbanization, protecting natural and cultural heritage, reducing disaster risks, mitigating environmental impacts, ensuring access to public spaces, and promoting sustainable construction (United Nations, 2020).

The concept of sustainable development rests on three core pillars: environmental sustainability, which focuses on maintaining environmental quality to support economic activities and quality of life; social sustainability, which emphasizes equality, human rights, and cultural diversity; and economic sustainability, which ensures the maintenance of natural, social, and human capital for enhanced living standards (Purvis et al., 2020). These pillars align with the Triple Bottom Line framework, which seeks a balance between environmental, social, and economic goals (Mensah, 2021). Achieving this balance is complex, as each pillar must consider the interests of the others to avoid creating imbalances. Sustainable development thus requires integrated strategies that prioritize resource redistribution, socio-economic development within ecological limits, and long-term resource utilization to improve quality of life for present and future generations (UNEP, 2022).

2.1.5 Concept of Livability

Cities play a crucial role in promoting the social and economic well-being of their residents (UN-Habitat, 2022). However, this central role comes with significant environmental challenges. Cities have become hubs for energy and material consumption, greenhouse gas emissions, waste generation, and pollution of water and air. These activities have led to ecological footprints that extend far beyond the physical boundaries of cities, impacting rural, regional, and global ecosystems negatively. Schindler and Dionisio (2024) note that cities are also associated with issues such as uncontrolled and unplanned development, challenges in waste management, traffic congestion, crime rates, and difficulties in accessing resources.

Livability is a multifaceted concept that encompasses various elements contributing to the overall quality of life in a given area (Saeed et al., 2022). In the context of satellite towns in the Federal Capital Territory (FCT), Abuja, livability plays a crucial role in determining the functionality and success of these urban developments. A livable satellite town is one that provides its residents with a high quality of life through a combination of amenities, infrastructure, social cohesion, and environmental sustainability. A key tool for assessing livability is the livability index, which quantifies and ranks urban areas based on a set of standardized indicators. For example, the Global Liveability Index ranks 173 cities worldwide using more than 30 qualitative and quantitative indicators across five weighted categories: stability (25%), healthcare (20%), culture and environment (25%), education (10%), and infrastructure (20%) (Economist Intelligence Unit, 2025). Each indicator is rated on a scale from acceptable to intolerable, contributing to an overall score out of 100. Similarly, the AARP Livability Index measures livability across all U.S. communities using 61 indicators (40 metrics and 21 policies) grouped into seven categories: housing (affordability and access), neighborhood (proximity to destinations and compact design), transportation (safe and convenient options), environment (clean air and water), health (prevention, access, and quality), engagement (civic and social involvement), and opportunity (inclusion and possibilities) (AARP Public Policy Institute, n.d.).

These indices help benchmark satellite towns against global standards, highlighting areas for improvement to enhance resident well-being and reduce reliance on central cities. Indicators of livability are typically multidimensional, covering social, economic, environmental, and spatial aspects. Key indicators include:

1. **Access to essential services and amenities:** This encompasses availability of quality healthcare facilities, educational institutions, retail outlets, and recreational spaces. Proximity to these reduces commuting needs, fosters community interaction, and improves daily convenience (AARP Public Policy Institute, n.d.; Saeed et al., 2022).
2. **Infrastructure quality:** Efficient public transportation systems, reliable utilities (water, electricity, waste management), and well-maintained roads and public spaces support economic activities and accessibility. Inadequate infrastructure can exacerbate congestion and pollution, lowering quality of life (Economist Intelligence Unit, 2025; Schindler & Dionisio, 2024).
3. **Environmental sustainability:** Indicators such as green space coverage, air and water quality, energy-efficient buildings, and waste reduction programs promote health, biodiversity, and resilience to climate impacts like urban heat islands (Saeed et al., 2022; UN-Habitat, 2022).
4. **Social cohesion and community engagement:** Measures include inclusive public spaces, community centers, and events that encourage interactions, building resilience and a sense of belonging (Schindler & Dionisio, 2024).
5. **Economic opportunities:** Local employment options, business attraction, and entrepreneurship support reduce dependency on parent cities and foster self-sufficiency (Saeed et al., 2022).
6. **Safety and security:** This involves effective law enforcement, well-lit streets, community policing, and emergency preparedness to ensure residents feel secure (Economist Intelligence Unit, 2025).

In satellite towns like those in Abuja's FCT, applying these indicators through livability indices can guide planning to address urban deficiencies, such as infrastructure gaps and environmental degradation, ultimately creating more efficient, healthier, and self-reliant communities.

2.1.6 Concept of Functionality

In urban planning, the concept of functionality refers to the efficiency and effectiveness with which a city or town fulfills its intended purposes, such as providing essential services, supporting economic activities, fostering social interactions, and ensuring environmental sustainability (Banzhaf et al., 2021). For satellite towns, particularly in rapidly urbanizing regions like the Federal Capital Territory (FCT) in Abuja, functionality is critical to their role as decongestants for the parent city. These towns are designed to operate semi-independently, reducing overcrowding in the metropolis by offering viable alternatives for housing, employment, and amenities while maintaining economic and social linkages (Gu et al., 2023). High functionality in satellite towns enhances overall urban resilience, promotes balanced regional development, and aligns with global goals like SDG 11 for inclusive and sustainable settlements (United Nations, 2020).

Functionality emerges as a response to urbanization challenges, where satellite towns address deficiencies in infrastructure, housing, and services that plague central cities (Sonali, 2022). It encompasses the operational capacity of urban systems to meet residents' needs without excessive reliance on the parent city, thereby improving quality of life and reducing commuter burdens. Poor functionality, such as inadequate transport links or service gaps, can lead to dormitory-like dependencies, undermining the towns' purpose and exacerbating issues like traffic congestion and pollution (Schindler & Dionisio, 2024). A key aspect of assessing functionality is through standardized indicators, which provide measurable benchmarks for urban performance. These indicators, often derived from satellite data and Earth observation (EO) technologies, enable planners to monitor progress, identify gaps, and inform policy (Banzhaf et al., 2021). In the context of satellite towns, indicators focus on spatial, environmental, socio-economic, and infrastructural dimensions to ensure self-sufficiency and integration. Indicators of functionality are multidimensional and can be categorized as follows:

1. **Infrastructure and Services:** Measures include street density (km of roads per unit area), access to essential services (e.g., proximity to healthcare, education, and utilities), and built-up density (proportion of impervious surfaces). High street density and service accessibility indicate efficient mobility and reduced dependency on the parent city (Banzhaf et al., 2021; Li et al., 2022).
2. **Environmental Sustainability:** Key indicators are percentage of open/green spaces, surface temperature (to assess urban heat islands), and air quality metrics like population-weighted PM2.5 concentrations. These reflect the town's ability to maintain ecological balance, with lower PM2.5 levels and higher green coverage signaling functional environmental management (Wang et al., 2025; UN-Habitat, 2022).
3. **Land Use and Territorial Planning:** Land Use Efficiency (LUE), calculated as the ratio of land consumption rate to population growth rate, and urban growth/form indicators (e.g., compactness) evaluate spatial functionality. Positive LUE values indicate controlled expansion, crucial for satellite towns to avoid sprawl (Wang et al., 2025; Gu et al., 2023).
4. **Socio-Economic Conditions:** Indicators such as multiple deprivation index, percentage of slums/informal settlements, and quality-of-life metrics (e.g., night lights as proxies for economic activity) assess social functionality. Lower deprivation and slum proportions

denote effective provision of housing and opportunities (Banzhaf et al., 2021; Economist Intelligence Unit, 2025).

5. **Hazard and Resilience:** Land susceptibility to hazards (e.g., flooding) and access to public transport proportion measure resilience. These ensure satellite towns can withstand environmental risks while providing safe, inclusive mobility (United Nations, 2020; Schindler & Dionisio, 2024).

These indicators, supported by EO data from sources like Landsat and WorldPop, allow for real-time monitoring and comparative analysis across towns (Wang et al., 2025). In Abuja's satellite towns, applying such indicators can highlight functionality gaps, such as infrastructure inequalities, and guide interventions for enhanced self-reliance and sustainability (Pandey et al., 2025).

2.1.7 Urban Systems Theory

Urban Systems Theory traces its origins to the broader field of systems theory, formalized in the mid-20th century to analyze complex, interdependent structures. Ludwig von Bertalanffy, a biologist, pioneered general systems theory in the 1940s and 1950s, highlighting the interconnectedness of system components and their interactions (Wang et al., 2023). In urban studies, the theory evolved through contributions from geographers and planners, notably Walter Christaller's Central Place Theory (1933), which conceptualized cities and towns as hierarchical nodes in a spatial network (Humer et al., 2022). Subsequent developments by Brian Berry and William Alonso in the 1960s and 1970s integrated economic and spatial dynamics, emphasizing location decisions and urban hierarchies (Omondi, 2023). Recent scholarship has renovated these foundations to address contemporary challenges like polycentric development and sustainability (Gu et al., 2023).

Urban systems are conceptualized as networks of interconnected nodes (cities, towns, and satellite settlements) linked by flows of people, goods, information, and capital via transportation and communication infrastructures (McPhearson et al., 2021). The functionality and expansion of each node depend on its relational ties to others, forming a hierarchical structure where primate cities serve as dominant hubs offering high-order services, while peripheral nodes like satellite towns provide complementary, lower-order functions (Humer et al., 2022). Specialization across nodes, such as administrative centers, industrial clusters, or residential suburbs, fosters a division of labor, promoting economic interdependence and efficiency within the system (Gu et al., 2023). Spatial patterns are shaped by geophysical constraints, resource availability, and connectivity, influencing accessibility, trade, and equitable regional growth (Wang et al., 2023).

These systems are inherently dynamic, subject to ongoing transformations driven by globalization, technological innovations, demographic shifts, and governance interventions (Omondi, 2023). Feedback mechanisms amplify or dampen changes: positive loops may accelerate growth in interconnected nodes, while negative loops stabilize or induce decline in isolated ones (McPhearson et al., 2021). Resilience emerges from adaptive interactions, where disruptions in one element propagate across the network, underscoring the need for holistic planning. Urban Systems Theory offers a robust lens for examining the functionality of satellite towns, which are strategically positioned to mitigate metropolitan overload by decentralizing population and activities (Gu et al., 2023). It illuminates the symbiotic links between satellite towns and core cities, evaluating how these relationships enhance or strain regional capacity (Humer et al., 2022). Within the hierarchy, satellite towns often occupy secondary tiers, absorbing overflow functions like housing or logistics, which can be assessed for alignment with system-wide goals (Wang et al., 2023). The theory elucidates specialization in satellite towns, e.g., as green tech hubs or commuter dormitories, and their contributions to systemic efficiency and environmental sustainability (McPhearson et al., 2021).

Spatial configurations relative to the metropolis determine commuting efficiency, resource flows, and sprawl risks, with the theory providing analytical tools like network modeling to optimize layouts (Omondi, 2023). Dynamics in satellite towns, fueled by in-migration or infrastructure upgrades, interact with broader trends, enabling predictive simulations of growth trajectories (Gu et al., 2023). Feedback loops capture reciprocal effects: urban pressures in the core spur satellite development, while underperforming satellites may exacerbate central congestion (Humer et al., 2022). By integrating hierarchy, specialization, spatiality, dynamism, and feedbacks, Urban Systems Theory equips researchers to dissect satellite town integration, informing policies for resilient, polycentric urbanism (Wang et al., 2023).

2.2 Literature Review

Mabogunje (1981) noted that urbanization can be described as the process where humans agglomerate in multifunctional settlements of reasonably large sizes. It is an ancient phenomenon that has grown from political, demographic, economic, and socio-cultural factors of human existence. Indisputably, urbanization infers civilization and, when adequately controlled, socio-economic advancement. Urbanization improves production and consumption activities due to the fact that it generates a wide market base, which in turn enhances development and economic growth. This was especially true in the Western World, where industrialization and urbanization occurred simultaneously. There is hardly a surprise, therefore, that the population benchmark of 5000 people set by Plato for towns and cities as the ideal size for an urban community has experienced a rapid increase all over the world (Ritchie et al., 2024).

According to reports by the United Nations (2024) on World Population Prospects, there was an increase in the population of the world from 3.3 billion to 6.9 billion from 1965 to 2010. The total population is projected to exceed 10.3 billion by the 2080s. Following this population growth, the proportion of migrants to urban areas is also on the rise. The world's urban population grew from 35.5% in 1965 to approximately 57% in 2024, with the figure estimated to reach 68% by 2050 (United Nations, 2024). The implication of this is that more than half of the earth's population will be residents in urban centers by 2050. The increasing urban population causes a proportionate demand for urban land use. Wang et al. (2023); Li et al. (2023); and Gu et al. (2023) premised that this leads to a tremendous conversion of rural-urban land.

Recent projections from the 2022 World Cities Report (UN-Habitat, 2022) indicate that regions like Africa, East Asia, and South Asia will account for a significant portion of urban development, which will be equal to a substantial share of the world's population growth in urban centers between 2018 and 2050. Especially in East and South Asia, Africa, and the Middle East, the population will continue to increase in relation to the scale and number of cities (UN-Habitat, 2022; Rahman & Fatemi, 2021). To effectively manage the resultant problems of rapid urbanization, UN-Habitat proposed five guided blueprints of urban expansion, including city-region planning; planned city expansion; connectivity, planned city infill, public spaces development, and finally, new town development (UN-Habitat, 2020). Of these blueprints, satellite town developments have mostly been embraced and utilized at the periphery of various large megacities in Africa, Asia, the Middle East, Europe, and South America to decentralize growth and development from the core city to adjacent regions.

2.2.1 The Role of Cities

Cities as institutions are a reflection of mankind's history whose analysis, description, and forecasting have been slowly commandeered and influenced by several empirical disciplines, technological advancements, and humanistic visualizations, that highlight cities' growth, the various land uses, and the diverse forms of spatial and social interactions that occur in them. Cities throughout history have been the cradle of human civilization and progress (World Bank, 2024). Purdom (1949) argues that there is no civilization without cities; and until order is brought to cities and they are made to satisfy residents' needs, organized as centers of wealth, made as comfortable homes, and built as works of art, the society will wholly disintegrate, and civilization will fail. Urban studies have long recognized the role of cities in national development. Essentially, they have been portrayed as the areas where labor for economic and industrial development is effectively mobilized (Duranton, 2024; UN-Habitat, 2022).

Duranton (2024) asserted that financial institutions, commerce, governmental bureaucracies, industrial establishments, and advanced intellectual and educational training facilities are all reliant on the urban climate to flourish effectively. He further noted that towns and cities are the only places where employers can find committed and reliable industrial workers with the required expertise and skills that are in league with the technological changes of modern times. Huge cities also have more advantages for the expansion and location of enterprises that are nonagricultural in nature with varying skills and expertise. The socio-cultural roles of cities were also emphasized by Duranton (2024). He observed the strong bond between people and their traditional values across several regions in the world and how this bond is mostly contrary to their desires for economic growth due to the fact that these values mostly serve as forces limiting economic development.

On the contrary, large urban centers and cities, even in developing regions are more receptive to innovative ideas and improved ways of achieving things that allow them to create, adapt, and utilize modern technologies, new production and consumption patterns, and the establishment of new social institutions. Being the seat of administrative, academic, cultural, and political institutions, cities inadvertently act as the centers of socialization and interaction between residents and their institutions. Class relationships of this nature drive intellectual interaction and engagement and prompt the development of new professional expertise. The supply of skilled labor for industrial jobs is increased when this happens and there is a commensurate increase in the level of economic activities. Economic organizations that allow and enable the establishment and exploration of new economic activities that eventually result in economic growth are also formed.

Innovation, and political and social transformation are regarded as the three basic development processes intertwined with the process of urbanization. The process of urbanization reinforces the changes in the developmental process through increasing interconnectedness, enhancing communication, and a change in social organization patterns (Liao et al., 2024). Due to them being able to yield economies of scale and to cluster through communication and other infrastructural services, effective transport systems, a big market for products, the presence of specialization and skilled labor, and social interaction, cities have recorded gains in competitiveness and productivity (UN-Habitat, 2022). The role a city plays in the development of a nation's economy was based on four fundamental assumptions by Liao et al. (2024), they include:

1. The invention frequency has a positive correlation with high interaction potential, thus implying that the possibility of exchanging communication or information is high. The

highest rate of the combination of new ideas and exchange of information is found in large metropolitan areas.

2. There is a high tendency for urbanization to vary with communication in any region as cities become systems, with the probability of exchanging information also increasing. Linkages between the systems and subsystems of cities act as a catalyst for growth and communication development.
3. The internal structure of social power in any region is responsible for the rate of invention. If a tightly monitored and rigid bureaucratic system is being operated, development and innovation will be slow or stagnant. However, innovation is fast and enhanced when an open non-bureaucratic system is in place with a power structure that covers a wide range so as to enable innovation and development.
4. An open system of social power translates to an improvement in the rate of innovation. This thus leads to an enhancement in the standard of living that is beneficial to society in general.

Consequently, the relationship between urban centers and economic growth is positive. Cities are important for economic growth and they serve as the sum total of what constitutes an economy that thrives (UN-Habitat, 2022). Although countries such as those in the developing regions of Africa and Asia undergo rapid urbanization, sometimes, without economic growth, empirical evidence shows that the largest economies in the world are found in the largest cities. UN-Habitat (2022) noted that the top hundred biggest cities in the globe are responsible for a significant share of the world's total GDP while per capita productivity is greater in cities compared to rural areas in developed nations. Therefore, the relevance of cities has made them the heralds of hope for development and opportunities.

2.2.2 New Cities and Capital City Development

Cities are places of economic strength for the growth of surrounding regions as well as places of power, development innovations, and modern culture (Gu et al., 2023). Based on their diversified economic base, a larger proportion of national economic activities, employment opportunities, and services are generated by cities. According to Egunjobi & Odufuwa (2014), the new town and satellite town concept and its application as an approach to regional development planning cannot be ignored. Ayeni (1997) emphasizes that the establishment of towns and capital cities is not a new phenomenon in Africa. It was further elaborated that the adoption of this approach for decentralizing urbanization from congested metropolitan areas is a commendable and tested approach whose results can be compared with similar occurrences all over the world. New towns or satellite towns are planned communities consciously created in response to stated goals or objectives, only in exceptional cases on virgin sites, more frequently located within metropolitan areas or contiguous to existing development, formalized by a master plan, based on a fixed target minimum population threshold, and coordinated by the overriding authority of a public or private developer and its relative freedom from local political control.

It could be rightly said that the creation of new cities and relocation of city capitals is synonymous with the creation of growth points or growth poles. Gu et al. (2023) posit that the success of the approach may be evaluated from the perspective of the effectiveness of growth poles in achieving decentralization and stimulation of development in the immediate hinterlands of the capital cities. The reasons for the creation of satellite cities go beyond enabling unity (Gu et al., 2023). Galantay (1985) notes the fact that satellite cities are built as an optimal location for developmental impetus and service centers of regional and rural development and growth. However, satellite towns are considered economic growth poles or propulsive growth points, defined as a spatial concentration of propulsive activities with strong backward and lateral linkages, exerting a positive impact on the increase of production and income of their region.

2.2.3 Alleviating the Challenges of Cities

Given the vital role cities play in the political and economic structure of countless countries, it becomes imperative that the challenges of these cities are never ignored. There have been campaigns in decades past by civil rights movements, professional organizations, and other stakeholders for a new and different approach to urban development that focuses on the challenges of cities and how to address them. UN-Habitat (2025) noted that the factors explaining the dominant environmental and social risks common to cities are the same factors that characterize metropolitan areas. The characteristics of a megacity as identified by UN-Habitat include dynamics, density, governance, vulnerability, and risks. It argued further that there is a need to balance the opportunities presented by these factors with the associated threats through effective policies that can enhance the livability of metropolitan regions. In recognizing the need for the reformation of urban planning to meet the demands of the modern urban population and to establish the practice of sustainable planning, UN-Habitat proposed several policy alternatives to serve as guides for policymakers in the development of sustainable cities.

The five principles of sustainable neighbourhood planning that were introduced as part of the New Urban Agenda framework were one of such recommendations. The aim of these principles, including the advancement of sustainable planning, integration of planning with a budget and pro-poor planning as well as the participation of relevant stakeholders in the planning process, was to assist the government and planners in developing nations to shift the focus of planning to one with sustainable development at its heart (UN-Habitat, 2020). In reacting to the challenges of urbanization, several governments have attempted varying approaches, and scholars have given recommendations on alternatives with mixed results. For example, the two urban development approaches recently adopted in China to mitigate urban sprawl are “development zones and semi-urbanized villages”.

Zhang et al. (2024) noted that the semi-urbanized villages where the expansion of population takes up an urban form while development follows a traditional village form, are defined by sprawling migrant settlements with the majority of them working in cities and enjoying urban life, illegal development into rural areas from the urban periphery that slowly grows into communities that are slum-like. This has undeniably created problems for the governments of these regions with an ever-increasing crime rate, illegal construction, and the potential health challenges they can impose on society. This has been termed as “leapfrog development at the macro level” (Zhang et al., 2024). It was recommended by UN-Habitat (2025) that a refocus on urban planning strategies and policies is required for the creation of modern metropolitan areas as they increase in both number and in their level of importance to the world’s economy as one of the ways through which a sustainable urban system can be actualized. Included in these strategies would be the enhancement and access to social services, improved mixed housing schemes and access to land, participation in public community development, and enrollment of informal or illegal settlements in megacities.

In Canada and the United States, the need for sustainable urban development has been severally emphasized in its socio-economic and environmental dimensions, thus requiring participatory planning, sustainable usage of energy and resources, solid fiscal base, and control of migration with basic human rights aptly emphasized (Chen et al., 2023). The relevance of a grounded policy focus that favors the growth of the city that is in line with adequate infrastructure and spatial development was further emphasized by Bertaud & Malpezzi (2003). They perceived that the absence of political unity or a clear idea of spatial development will lead to inconsistencies and contradictions in land use regulations and infrastructural investments in the evolving spatial structure of the city. They recommend therefore that cities should monitor the trends of spatial development and take measured and corrective actions in situations where the trends are against the objectives of the municipality.

2.2.4 History of Satellite Town Development

Chatterjee & Chattopadhyay (2020) stated that there is really nothing new about the satellite town. The satellite town concept as a method of alleviating economic, physical, and social difficulties of life in older cities can however be traced to the post-World War II in the United Kingdom. Gu et al. (2023) pointed out that other countries such as the United States, France, and China have embraced the concept as a tool for addressing over-urbanization. Traditionally, satellite towns began to emerge in Europe in the early 20th century primarily in France and in the United Kingdom and they spread into developing countries in Asia and other parts of the world. This trend is especially remarkable due to the fact that megacities that used to be a common theme in most cities in the United States and in European have now moved to developed nations, with overwhelming demands on infrastructures in urban centers and the requirement of a policy to decongest the large cities (Goyal & Chavan, 2023).

2.2.4.1 The British Satellite Towns

The satellite town's origin was traced to the publications of Ebenezer Howard in 1898 by Sajjad et al. (2025). Howard in his publication severally criticized the industrial towns of that era, arguing that they act as horror on the enchanting landscape. Sajjad et al. (2025) proposed the reform of cities which he believed could be achieved through the development of satellite towns. Howard was able to push the government into constituting acts for satellite towns' development.

The Barlow Report of 1940 and the 1945 Abercrombie's Greater London Report advised the development of satellite towns as a method of decongesting urban centers in the United Kingdom founded on the principle of urban containment and decentralization, regional balance, and redevelopment opportunity in large cities, especially in the megacity of London. In 1946, the United Kingdom passed an Act in reaction to these reports, that permitted the provision of sites for the development of satellite towns so as to control population growth in the main cities and effectively manage social balance. The Act enabled the setting up of the Development Corporation that would be responsible for the development and management of these satellite towns, which would inevitably spur the decongestion of urban areas. The creation of a balance between the working population and employment was one of the key purposes of this initiative (Town and Country Planning Association [TCPA], 2024).

The design of the satellite towns allowed them to conveniently accommodate a sizable population from the parent city, providing them with infrastructural facilities and full local employment. The towns were designed to be self-sustaining and independent of their parent cities. As such, the eight sets of initial satellite towns developed around London were positioned within 20 miles of the city. In their argument, TCPA (2024) noted that while the British satellite towns, in theory, served as a model for other nations, the success of satellite towns in Britain has not had any significant influence on the way of life and settlement pattern in urban centers. The criteria adopted for the siting of satellite towns in Britain are as follows;

1. They were to be developed on Greenfield sites.
2. They must be sited in close proximity to huge, densely built-up urban centers, (about forty kilometers from the city of London and about twenty kilometers from other cities).

3. They were to be developed by private builders with government loans which will be repaid with interest over a period of sixty years.
4. They must not be developed on arable lands.
5. They must have the ability to hold a population of 20,000 to 60,000 people.

Taking into consideration the level of construction and infrastructural demand of developing a satellite town, this was a big undertaking. This enterprise balanced the spread of satellite towns among industrial and private use. A number of the satellite towns were developed on the basis of the national income distribution to cater for the low and middle classes in accordance with their proportion in the regional and national population figures. Roughly thirty satellite towns were developed across Britain and by the late 1960s, they held over 700,000 people and generated for the government £600 million in profit. There have however been criticisms of them not being fashionable (Bennett Institute for Public Policy, 2024; Gu et al., 2023).

The British satellite towns initiative was heavily criticized in its latter stages primarily due to its inefficiency in particular areas such as proximity to work, absence of local control of land, ease of mobility, separation of uses (residential, commercial, and industrial) including the high inflation in the prices of land. Critics further argued that the British satellite towns had a minimal contribution to the housing project in the United Kingdom and in reducing the challenges of urban areas. in 1985, the satellite towns commission was disbanded and its corporate assets were sold to investors in the private sector who took up the initiative of completing the development of the satellite towns (The British Academy, 2024).

Although the British satellite towns were a significant project, it was not the only developers embarked on. The Town Development Act of 1952 ushered in other housing projects like the Expanded Towns Program. However, the satellite town was predominant and recorded more success as a result of the power and influence given to the satellite town Development Corporation to oversee the program. After the first 25 years, 15 towns were near completion with a further 12 being developed. When combined, these towns were to provide housing with the necessary facilities for an estimated 1.4 million and jobs for about 650,000 people (Bennett Institute for Public Policy, 2024; Gu et al., 2023). Bennett Institute for Public Policy (2024) in its comments on the British Satellite towns stated that “the post-war Satellite towns were the largest public house building program of its kind”.

2.2.4.2 The United States Satellite Towns

After the Second World War, there was a growing need in the United States for the creation of new settlements, and the older cities were crowded out and unable to attend to the demands of the increasing population. Satellite towns were thus seen as a viable solution to suburban sprawl in the United States with the potential of housing up to 100 million people estimated to be dwelling in the suburb (Pueyo, 2025). The development of Radburn, New Jersey, and Greenbelt, Maryland, a product of the “Greenbelt towns” of the “New Deal” can be referred to as the earliest Garden City in the United States was experienced. In America, these cities were acknowledged as the first private initiative toward satellite town development, and much like the subsequent satellite towns, they adopted the principle of the British Satellite town (Pueyo, 2025; Goyal & Chavan, 2023). However, these initial efforts toward satellite town development were short-lived due to factors such as the withdrawal of federal funding halted or the Great Depression. The relevance of factors such as government support and market situation in the development of satellite towns was thus reinforced. Following the example of the British, the United States commissioned the Department of Housing and Urban Development (HUD) in 1965 due to the recommendations of Robert Weaver.

The Housing and Urban Development (HUD) was responsible for providing the requirements for the development of satellite towns and reviewing applications to that effect to ensure strict compliance with and commitment to set goals. The Federal Housing Acts of 1968 and 1970 were also constituted by the Housing and Urban Development (HUD) to ensure that satellite town development was given the required financial backing (Pueyo, 2025; Goyal & Chavan, 2023). The initial communities approved by the Housing and Urban Development (HUD) (Flower Mound, Texas; San Antonio Ranch, Texas; Cedar-Riverside, Minnesota; Maumelle, Arkansas; Park Forest South, Illinois; Jonathan, Minnesota; St. Charles Communities, Maryland and Riverton, New York), were all located at most 10miles from a parent city with considerable access to transportation corridors like the highways, airports and rapid transit systems (Goyal & Chavan, 2023).

Another key facet of the satellite towns approved by the Housing and Urban Development (HUD) was their size. On average, the first eight towns covered approximately 6,600 acres with an estimated population of between 31,300 and 110,000 (Pueyo, 2025). Heterogeneity in the demographic distribution of the population and of the economic base was a key criterion set by the Housing and Urban Development (HUD) for satellite towns, and as noted by Pueyo (2025), all the satellite towns with the exception Cedar-Riverside of integrated plans for the commercial and industrial sectors as well as community facilities and infrastructures for increased employment opportunities for people. The towns followed three components in their development: neighborhood, village core, and town core. In other to ensure balance in land uses in these towns, efforts were made to allow for the creation of open spaces, improved mobility, riding trails, stream valleys, and walkways to not only serve recreation purposes but also act as buffer zones between land uses that are not compatible. Many of the developed satellite towns adopted this requirement with Flower Mound and Jonathan satellite towns having the most impressive implementation. Efforts were also made to ensure the enhancement of the cultural and educational facilities in these towns as well as the environmental quality (Goyal & Chavan, 2023).

Aside from the establishment of the requirements for satellite town development, the Housing and Urban Development (HUD) was also tasked with getting financial assistance from the federal government, through the Federal Housing Acts (Pueyo, 2025). To ensure the security of this assistance, it was a requirement for all the satellite towns to have a developer so as to enable and secure the support of the federal government. The developers involved in this scheme were those who had adequate experience in housing construction, rehabilitation, transportation, and satellite town development.

2.2.5 Development of Satellite Towns in Developing Countries

Many developing countries favored and adopted the satellite town policy to combat their problems of urbanization in a period when developed countries in Europe and America were abandoning the policy in favor of policies that focus on gentrification and re-concentration. Cities in countries such as Egypt (Cairo), Brazil (Rio de Janeiro), and Nigeria (Lagos) have had to contend with congestion and high population concentration and in a bid to combat this they have made policies in support of the development of satellite towns (Gu et al., 2023). Even though Egypt and China have a history of satellite town development that predates the experience in the United Kingdom and the United States, their involvement and focus on policies for satellite town development as a strategy for the decongestion of urban areas is fairly recent (Gu et al., 2023; Goyal & Chavan, 2023).

2.2.5.1 Satellite Towns in China

The Chinese satellite town development started in Beijing (1953) and in Shanghai (1956). As of then, it was done majorly as a strategy for national defense but by 1958, other regions had adopted and embraced the idea of developing satellite towns in close proximity to megacities such as Chengdu, Beijing, Tianjin, Shanghai, Chongqing, Shenyang, and Wuhan (Goyal & Chavan, 2023). Several policies were made to provide support and to improve the policy of satellite town development. Some of these policies include the public investment and land use policy and the public finance policy which was predominantly focused on strategies that will enhance satellite towns' development.

The prevention of the further development of the city centers, including enterprise outmigration in the downtown, limitation economic development in the downtown, downtown heavy industries redistribution, and the reconstruction of older inner cities are some other policies. It was hoped that when new urbanism is combined with satellite town policies, there would be population redistribution while the challenges of the decaying older cities would be addressed. Measures including a unified labor market, employment, and tax break were also put in place to encourage outmigration from the city centers to the satellite towns. Although there was immense population growth in the Beijing satellite towns in the 1990s, the proportion of people that came from the parent city to the satellite towns was small with a population increase of 17.1 percent as opposed to the 73.5 percent general growth recorded, from 991,000 to 1,719,000. Goyal & Chavan (2023) further noted that the population that migrated to the satellite towns of Beijing from other regions was more than those that came from the rural regions of Beijing. Also, the population growth rate in the satellite towns was faster than that of the parent city. They concluded therefore that the satellite towns in China were not effective in the redistribution of population and socio-economic activities. They were in effect just labels used in the description of regional policies that promote urbanization.

2.2.5.2 Satellite Towns in Egypt

In Egypt, the satellite town dates back to 3100 B.C when Memphis was constructed, to the era when the land was being reclaimed from the Nile, and to the more recent satellite town of Heliopolis which was created in 1905 in the northeastern desert of Cairo (Gharib, 2024). Presently, the Egyptian satellite towns policy was just like in other countries around the globe, a reaction to the deplorable living conditions in megacities like Alexandria and Cairo. The unanticipated population explosion of 1966, rising unemployment, failing infrastructure, traffic congestion, poor housing conditions, and inadequate urban service delivery city core necessitated the need for the government's immediate intervention (Gharib, 2024; African Business, 2025).

In his report, African Business (2025) noted that about six million people were residents in the Cairo official administrative boundary with over ten million living in the Greater Cairo Region while the population of the next largest city of Alexandria was a mere three million. The Cairo situation was so poor that millions of people lived in accommodations that were tagged "the city of the dead" as a result of the poor housing and hygiene conditions in those regions. The government was concerned about the level of urban decay and failing infrastructure, the environment was deteriorating at an abysmal rate and unemployment was on a steady increase, poor service delivery in densely populated inner-city centers lacking in basic infrastructures and urban services was also on the increase leading to a high level of hardship for residents in the city of Cairo. It was therefore imperative for the government to strategize a housing policy with the objective of effectively improving the living standards in the city of Cairo.

In response to the above, the President of Egypt initiated the Greater Cairo Region Master Plan and approved the development of four new satellite cities around the city of Cairo by 1990. It was hoped that the population of Cairo would be absorbed by the satellite towns and also act as an alternative for urban development (Gharib, 2024). The Minister of New Communities, Hassan Kafrawi, was vital in the successful creation of satellite towns in the 1970s. he was instrumental in the development of the 1970 master plan which was predominantly focused on the development of satellite towns in the desert lands surrounding Cairo. Law No. 59 was constituted in 1979 to provide a geographic and legal framework for the development of satellite towns and this acted as the required stimulus for their construction. It was stated in the law that the towns must be located away from the farmlands around the Nile River and the towns were to accommodate a population of five million by the year 2000. They were also required to be located at least 50km away from Cairo to ensure their independence and the capabilities of providing employment and other urban services to residents. Some of these satellite towns were also linked with the parent city of Cairo to improve connectivity.

The satellite towns of 15 May, Al Obour, and 6 October have located 40km from Cairo and were structured to contain a population of 250,000 to 500,000 people. In the same manner, the satellite towns of Al Badr, 10 Ramadan, Sadat City, and New Ameriya were created as stand-alone satellite towns that were located at a much farther distance from Alexandria and Cairo along the Cairo Desert Highway. The estimated population of these towns ranged from 500,000 to 1 million persons (Gharib, 2024; African Business, 2025). Though the implementation of the major housing projects was delayed till the 1960s, there was an immense improvement by the 1980s as about 50,000 housing units were developed in Cairo to accommodate about 310,000 persons. There were a number of housing projects that were in existence outside the satellite towns program to cater to the additional population. For example, the Master Plan of 1981 allowed for the development of "new settlements" to hold an additional two million residents from Cairo. These new settlements were quite different from the satellite towns given that they were located on the outskirts of the city along development corridors in the desert with transport links and development patterns of new urbanism. The social housing policy was substituted in the 1980s by building cooperatives that absorbed the satellite town projects in the desert and were majorly financed by loans from the public sector.

The argument for the inefficiency of the Cairo satellite towns is made evident from the 6 October satellite town which was divided into 12 districts that mostly targeted the middle and high-income classes. The districts with luxury villas and essential facilities such as religious and shopping centers, schools, and thoroughly maintained lawns were mostly reserved for wealthy families while the crowded districts that are of lower quality with degrading buildings with no basic services were left for those who could not afford the luxury districts. The 6 October town's design was blighted by contradictions that were irreconcilable and there was no provision for districts for the low-income class. Separation of this kind is encouraged by private developers who utilize public infrastructures to increase their quests for profit maximization (Gharib, 2024). In countless ways, the success or failure of a satellite town policy is based on its influence on population change and the source that makes up the majority of residents in the satellite towns. Goyal and Chavan (2023) advanced some critical questions that can provide answers as to the success or failure of the satellite town program in the achievement of its objectives. These questions are vital because the major aim is to redistribute the population of the city. Therefore, if the majority of the population in satellite towns are migrants from other regions instead of the parent city, it is, therefore, an indication that the satellite town policy merely acted as a catalyst for urbanization rather than as a resolution to the challenges of urbanization.

The analysis of the flow of population to satellite towns is the litmus test of the efficiency and success of the satellite town policy. Satellite towns are developed to create a balance in society through the provision of adequate housing, basic facilities, employment, ease of access to services, and most importantly, to decongest the larger surrounding cities. Designs of satellite towns also emphasize proximity to nature (Gu et al., 2023).

2.2.5.3 Nigeria's Satellite Towns

The Nigerian satellite town policy commenced in 1981 when the Lagos State Government formed the Lagos State New Town Development Authority (NTDA). The department was to be responsible for the effective implementation of the structured growth of Lagos State, decongestion of the city centers, and ensuring even development across Lagos state through the creation of satellite towns which entailed the development of new communities that are self-sufficient and independent of the parent city (Lagos State Government, 2025). The Lagos State Government's efforts on the development of satellite towns were consistent with the argument that the shifting of focus to the Satellite town policy is reasonable as it enables the growth and development of new communities outside existing cities that are commensurate with modern population demands (Lagos State Government, 2025). According to recent analyses, the focus of urban development should be on the creation of satellite towns in conjunction with the rejuvenation of older cities with the aim of exploring new development patterns (Ojo & Ojo, 2024).

As noted in the Lagos State Development Plan (Lagos State Government, 2025), the responsibilities that the NTDA in Lagos State was charged with include:

1. The establishment and creation of satellite town plans in Lagos State.

2. Identification, selection, and survey of sites for development projects.
3. The promotion of Physical development on a large scale.
4. The provision of infrastructures and services in all estates owned by the Government.
5. The control and monitoring of all government-owned estates so as to prevent the development of illegal structures in these estates.

In order to be effective in their responsibilities, the NTDA collaborated with other ministries and agencies like the Lagos State Physical Planning Authority (LASPA) which is responsible for the scheme's master plan, and the Land Bureau which was tasked with the allocation of land to developers. It was the responsibility of the Town Planning Services Department of the NTDA to generate designs for the development of new schemes, control development within the Government schemes, prepare technical reports on the schemes, select sites for the development of satellite towns, incorporate existing communities into the arrangement of village excision, monitoring and management of projects, site visitation and schemes monitoring as well as collaboration with other Government agencies and private organizations (Lagos State Government, 2025).

A developmental framework of five steps was set up to include:

1. **Site Identification survey:** this involves the collection of primary information on the suitability of potential sites. Topography and soil tests are carried out on these sites while the issue of accessibility is also taken into consideration to ascertain the linkages between major urban centers and the site. It is imperative to know the current occupation status of the area, whether residential or agricultural and to determine what the Lagos Master Plan outlined the site to be used for. This is very vital so as to prevent encroachment on agricultural lands.

2. **Acquisition:** after the determination of the site's suitability for the development of a satellite town, the land is acquired. There are two possibilities at this stage; if the site is located within a property owned by the government, it is ceded to the NTDA through the Lagos Global Acquisition process, however, if the site is a privately-owned village, the transfer is initiated through a scheme known as "excised village". This scheme involves the transfer of villages to the government for development that will meet standard requirements with the owners of these villages still retaining their land ownership titles.
3. **Physical Layout:** this involves the design of the scheme. The site is divided into plots, infrastructure placement, and roads, divisions are made between commercial, residential, and public spaces used to give a detailed guide for the allocation of plots for development. sometimes, the entire parcel is however allocated on a lump sum basis. Three basic patterns are central to this design:

   a. Site and Services scheme: this is designed to focus on the development of sites with all the basic services and infrastructures like parks, water facilities, schools, sewage facilities, and open spaces.

   b. **Affordable Housing scheme:** the objective here is the provision of adequate housing for middle-income families. Given that the majority of private housing construction in Lagos is not in tune with the demands of the Lagos master plan, the affordable housing schemes of the satellite town were to serve as a means of promoting building development that is affordable and consistent with the master plan.

   c. **Private Developer scheme:** This refers to sites allocated majorly to developers with the expertise, experience, and required funding to spur development. This enables the NTDA to concentrate on other areas of satellite town development while also allowing developers to invest and make a profit.

4. **Allocation:** this involves the allocation of lands for development either on a lump sum basis or on a plot-by-plot basis. Capital Development Levy is the first down payment which ranges between 70-80% of the total cost of the land. The levy is then used to commence the development of infrastructures including roads, electricity, water and sewage facilities, etc., within the scheme. This takes place side-by-side with individual housing construction.
5. **Monitoring and control:** due to the fact that developers and residents of satellite towns oftentimes engage in practices that are against the estate's basic principles and that stand as a threat to the achievement of the objectives of the initiative, NTDA engages in frequent monitoring to prevent the erection of illegal structures. The NTDA attempts to partner with LASPA (Lagos State Physical Planning Authority) due to its lack of legal authority to demolish illegal structures erected on public properties (Ojo & Ojo, 2024).

2.2.5.3.1 Ajoda Satellite Town

Ajoda Satellite New Town is located about 16 kilometers east of the City of Ibadan on the Ibadan-Ife Road on about six thousand hectares of land. Primarily the New Town was developed to relieve the city of Ibadan of its population pressure as the high migration of people to the city has resulted in high unemployment, housing scarcity, traffic congestion, and overpopulation of hospitals, schools, and other social facilities which aggravated the pressure on energy supply and other urban services (Ojo & Ojo, 2024). The population explosion has also led to uncontrolled development and misuse of available land, as areas of specific use were not allotted in Ibadan.

The satellite town idea was conceived in 1976, in rather spontaneous circumstances by the then Military Governor of Oyo State who, after discussing the need for a satellite town, instructed the State’s Housing Corporation and the Ministry of Lands and Housing respectively to prepare and submit to him, within one month, a Master Plan for a new settlement in the environs of Ibadan. This was done on schedule and the present Ajoda site was selected for the new town. The conception and launching of this development were so rapid that it has been said that the town was created by the Military Governor literally by the use of a magic wand, in a manner reminiscent of the order 'Let there be a new town, and there was a new town' (Ojo & Ojo, 2024). Ajoda is designed ultimately to accommodate 250,000 people. The stated objectives of the satellite town are the regulation of the growth of the city of Ibadan, either through decongestion or by discouraging in-migration; to enhance the physical environment of the region, and to develop a model town that would be the pride of Oyo State.

2.2.6 The Emergence of the Satellite Town Policy

Policies aimed at decentralizing cities through the creation of satellite towns to relocate populations from industrial urban centers were a primary strategy adopted by governments in developed nations to address urban growth challenges post-World War II. The objective was to establish enhanced living conditions in satellite towns, free from the congestion and hardships of inner cities, enabling the redevelopment of older urban areas to lower densities. This approach also facilitated the promotion of innovative urban planning and architecture focused on sustainable development. Older cities and slums were extensively demolished to make way for modern housing estates (Gu et al., 2023).

In conceptualizing satellite towns, Goyal and Chavan (2023) noted that they are smaller urban centers developed around larger parent cities with the primary aim of depopulating the latter. They highlighted various types of satellite towns developed globally, including:

1. New communities with fragmented functions.

2. Independent satellite towns disconnected from older cities.
3. New cities adjacent to megacities, mirroring their functions.
4. Satellite towns at the fringes of larger cities, easily accessible from urban centers, typically smaller and economically reliant on the parent city.

In this context, satellite towns are intentionally compact urban developments, built near larger cities, primarily as housing projects managed by experienced developers. They aim to balance cultural, educational, commercial, and social institutions to decongest megacities and enhance residents' quality of life. Since their inception, the primary goal of satellite town policies, as emphasized by Goyal and Chavan (2023), has been to alleviate overcrowding in city centers by redistributing populations to satellite towns, thereby improving living standards.

2.2.6.1 Satellite Cities and Decentralization

It is widely recognized that when a city's population and urban demands reach a critical threshold, halting further central growth becomes essential. Decentralizing to selected sites, supported by improved living standards and functional facilities, helps prevent congestion, reduce overcrowding, and promote healthy growth (UN-Habitat, 2022). The phased development flexibility of satellite towns is a key advantage. Developing a single satellite can enhance economic services, while multiple satellites enable efficient provision of public buildings, open spaces, shopping facilities, street layouts, and controlled net density (UN-Habitat, 2022).

The global population surge in urban centers has driven the adoption of city decongestion and population decentralization principles (Rahman & Fatemi, 2021). However, decentralization of responsibility and resource allocation to local levels often lags. As employment opportunities dwindle, inequality widens, increasing the urban poor population. In Africa, nearly three-quarters of urban residents live in underserved slums, often neglected by local governments (UN-Habitat, 2022). Regional and local development objectives include: (a) fostering economic growth; (b) promoting political and civic stability through community participation; and (c) addressing regional development inequities to ensure spatial equity. Effective policies are crucial for achieving these goals (Humer et al., 2022).

Regional development theories emphasize top-down approaches, focusing on decentralization to diffuse development across regions. Humer et al. (2022) noted that the growth center strategy prioritizes industrial expansion in small propulsive centers away from megacities, expecting these centers to stimulate rural development. Spatial decentralization strengthens small and medium urban centers, contributing to national development and spatial equity through:

1. Enhanced provision of shelter and infrastructure for improved mobility and market access.
2. Improved service accessibility for urban and nearby rural residents.
3. Incentivizing small-scale and labor-intensive industries.
4. Retaining rural populations that might otherwise migrate to urban centers.
5. Sustainable utilization of local resources.
6. Enhanced commitment to agricultural diversification and surplus production.

Modern urban planning, rooted in late 19th-century Britain, is linked to the 1946 UK Satellite Towns Act (Gu et al., 2023). The decentralization of population and services to satellite towns around megacities is central to this concept. Sir Patrick Abercrombie's designs for satellite towns around London were influenced by Howard's Garden city concept (Sajjad et al., 2025). According to Gu et al. (2023), satellite city development is comprehensively planned before construction, featuring:

1. Large-scale designs adhering to a master plan for economic, social, and environmental benefits.

2. Agglomeration of the best urban and rural features, avoiding social, economic, and environmental challenges.
3. Preplanned locations, infrastructure, social services (health, leisure, education), and economic activities (commerce, industry).
4. Infrastructure including museums, parks, hospitals, schools, libraries, water and sewage systems, fire and police stations, and resident participation in governance.

Rapid urbanization in African countries reflects high rural-urban migration and natural population growth. In some countries, natural increase dominates urban growth, while in others, migration plays a larger role (United Nations, 2024). Urban centers in developing countries often grow two to three times faster than national populations due to migration (United Nations, 2024). Ojo and Ojo (2024) observed that, unlike developed countries where urbanization unfolded over decades, allowing robust social, economic, and political systems to manage growth, developing countries face rapid urbanization amid high population growth and less developed systems. This phenomenon, described as “false urbanization,” is driven by demographic factors, particularly rural-urban migration, rather than industrial or economic forces (Ojo & Ojo, 2024).

In Nigeria, false urbanization characterizes the urban growth process, with deficiencies in electricity, water, housing, health services, waste management, and transportation systems. Urban centers have become chaotic rather than centers of civilization and comfort (Ojo & Ojo, 2024). Challenges include high unemployment, service deficiencies, environmental degradation, infrastructure deterioration, housing shortages, and rising crime (UN-Habitat, 2022). Uncontrolled urbanization negatively impacts sustainable development, exacerbating poverty, insecurity, and crime. Managing urbanization for sustainable development remains a critical global challenge (UN-Habitat, 2022).

2.2.7 Role of Satellite Towns in Urban Development

The satellite town concept is reemerging in developing nations to decongest megacities. Their roles in urban development are outlined below.

2.2.7.1 Adoption of Better Planning Principles

Modernist planning alone cannot ensure a high quality of life, as rapid urbanization, informality, and resource scarcity limit its applicability (UN-Habitat, 2022). Satellite town planning must shift from utopian ideals to practical policies aligned with decongestion objectives (Cobbinah, 2023). Strategic spatial plans integrated with infrastructure development are more effective, favoring compact urban forms centered on public transportation, supported by water and sanitation networks (UN-Habitat, 2022). Decentralized planning, incorporating local content and flexible objectives reflective of diverse societies, proves more efficient (Humer et al., 2022). Strengthening local institutions for urban management is preferable to centralized approaches relying on imported models, which are often costly and contextually inappropriate (UN-Habitat, 2022). Cobbinah (2023) advocates for "hybrid governance" that integrates diverse perspectives beyond modernist rationality.

2.2.7.2 Emphasize Local Values and Participation

Urban planning should prioritize context and local participation over rigid objectivity. Public involvement fosters cultural and social dynamism, encouraging creativity and practical solutions (Cobbinah, 2023). Planning should focus on human social phenomena rather than universal laws, as practical knowledge is critical for effective urban strategies in diverse African cities (Myers, 2024). Myers (2024) proposes an "Afropolitan" approach, embracing informality and diversity over Western models. Effective planning requires negotiations informed by local political and social knowledge, allowing communities to experiment with projects that suit their needs (Humer et al., 2022). Local knowledge resides not only in formal institutions but also in informal sectors and slums, where most urban dwellers live. Collaboration between civil society and political groups to address poverty, water, housing, and sanitation is essential for inclusive urban policymaking (UN-Habitat, 2022).

2.2.7.3 Promotion of Social Integration

Modernist planning, with strict zoning and high standards, has exacerbated spatial exclusion and inequality, limiting access to services and housing (Cobbinah, 2023). In East Africa, satellite towns have led to human capital and economic losses in parent cities due to skilled workforce migration, while marginalizing low-income groups (UN-Habitat, 2022). Privatized satellite towns, often gated, erode the public sphere and disconnect socio-economic systems, particularly between the poor and elites. For satellite towns to be equitable, they must prioritize diversity, sustainability, and equity, fostering social networks and reducing discrimination (UN-Habitat, 2022). Integrating informal sectors into satellite town planning is crucial to prevent slum development and ensure inclusive urbanization (Myers, 2024).

2.2.7.4 Combat Sprawl for Infrastructural Efficiency, Service Provision, and Sustainability

UN-Habitat (2022) emphasizes that compact cities with mixed land uses and high population densities combat urban sprawl and climate change, improving infrastructural efficiency and sustainability. Compact designs reduce maintenance costs, support social interaction, lower pollution, and enhance service access. A minimum density of 150 persons per hectare is recommended for sustainability (UN-Habitat, 2022). Single-use zoning should be avoided, as it causes traffic congestion, car dependency, and urban decline. Mixed-use development promotes local economies, job creation, and community vitality while reducing environmental fragmentation (UN-Habitat, 2022). Satellite towns should address environmental challenges like pollution and water stress through green development, solar energy, and waste recycling to reduce reliance on non-renewable resources (UN-Habitat, 2022).

2.2.7.5 Affordable Housing as a Precondition for State Support

Many African satellite towns rely on state support for land acquisition, infrastructure, and financing. For instance, Eko Atlantic City, costing US$6 billion, received land and infrastructural support from the Lagos State Government through partnerships with local and international banks (Lagos State Government, 2025). Similarly, Angola's Kilamba new city, costing US$3.5 billion, was supported by state-provided land and financing, with housing subsidies revitalizing the project (African Business, 2025). UN-Habitat (2022) recommends that 20-50% of residential floor space be allocated to affordable housing, with no single tenure type exceeding 50%. Governments should ensure diverse plot sizes and regulations to enhance housing options, partnering with private developers to prioritize public housing and multi-level employment. Building materials and designs must align with median incomes, supported by accessible mortgages (UN-Habitat, 2022). African Business (2025) questions the financial sustainability of private-led satellite town models without substantial state guarantees, such as free land or subsidies.

2.2.8 Livability of Cities

Rapid urbanization and economic growth have defined many metropolitan areas in recent years, yielding socioeconomic benefits such as improved urban infrastructure. However, these developments often lead to challenges like increased crime, air pollution, and traffic congestion (Wang et al., 2023; Li et al., 2023). As a result, residents may relocate to suburban areas, causing population declines in urban centers, which can reduce local tax revenues and heighten crime risks due to fewer community monitors (UN-Habitat, 2022). These issues threaten the long-term sustainability of cities. Research on livability has traditionally emphasized economic factors, suggesting that enhanced employment opportunities improve urban satisfaction (Duranton, 2024). However, non-economic factors, such as urban environments and neighborhood relations, significantly influence quality of life (Mouratidis, 2021). While some studies have explored these relationships (Mouratidis, 2021; Wang et al., 2023), comprehensive analyses remain limited. Urban environments and social cohesion are critical variables affecting local satisfaction and livability (Lowe et al., 2024; Zhang et al., 2024).

Livability is broadly understood as an indicator of quality of life and subjective well-being for urban residents (UN-Habitat, 2022). The term lacks a universal definition, varying by context and perspective (Ruth & Franklin, 2020). For instance, Lowe et al. (2024) describe livability as residents' perceived quality of life, while Duranton (2024) frames it as a criterion for choosing to reside in an area. Newman (2023) argues that livability reflects how well an area meets residents' needs, with local fulfillment of these needs encouraging long-term residency (Lowe et al., 2024). Livability impacts both individual and regional levels. Secure housing stability enhances personal quality of life (Mouratidis, 2021), while regionally, addressing population decline is critical to maintaining tax bases and reducing crime (UN-Habitat, 2022). Improvements in urban environments have boosted livability in many European and North American cities (Patterson, 2023). Studies confirm that urban design and neighborhood relations positively influence quality of life and satisfaction (Lowe et al., 2024; Zhang et al., 2024), though direct causal links to livability require further exploration.

The Centre for Liveable Cities Singapore (2021) defines livability as a city with excellent planning, fostering a vibrant, attractive, and secure environment for living, working, and recreation. It encompasses good governance, a competitive economy, high quality of life, and environmental sustainability. UN-Habitat (2022) emphasizes that high-quality living conditions influence residents' lifestyles and health, reflecting the stability of the built environment. Pacione (2020) notes that livability is relative, shaped by place, time, assessment purpose, and the assessor's values.

Empirical studies provide varied insights. Ali et al. (2023) assessed the livability of Dhaka, Bangladesh, focusing on consumer goods, utility services, housing affordability, social security, and environmental conditions. Dhaka's economic growth rendered it more livable than smaller cities like Khulna. In Malaysia, residents of Taman Melati, Kuala Lumpur, expressed overall satisfaction with their living environment despite issues like noise pollution, air pollution, and inadequate street lighting linked to nighttime insecurity (Mohamad et al., 2024). Similarly, Seremban, Malaysia, shows potential for improved livability if planning authorities leverage its strengths (Mohamad et al., 2024). In New Zealand, Haarhoff et al. (2022) investigated the relationship between urban density and livability in Fairfield and Newtown using a triangulation methodology (quantitative, qualitative, and literature review). Variables like connectivity, accessibility, mixed-use, and density revealed a need for more amenities, yet residents still found their neighborhoods livable.

In Nigeria, Ojo and Ojo (2024) assessed Benin City's environmental challenges, including employment, housing, amenities, and socio-economic factors, finding low quality of life across twenty-one neighborhoods. Asiyanbola et al. (2023) examined neighborhoods in Ago-Iwoye and Ijebu-Igbo, Ogun State, Nigeria, noting dilapidated facilities and amenities. Ekop (2023) used principal component analysis in Calabar, Nigeria, identifying socio-economic factors, housing characteristics, and neighborhood features as key livability determinants. Lastly, Ilesanmi (2024) found public housing in Lagos, Nigeria, to be of low quality, undermining livability.

2.3 Synthesis and Summary

This literature review synthesizes key concepts and theories underpinning urban growth, emphasizing the satellite town development as a response to urbanization challenges. Concepts such as livability, functionality, and sustainable development highlight the multifaceted nature of urban environments, where livability encompasses quality of life indicators like access to amenities, infrastructure quality, environmental sustainability, social cohesion, economic opportunities, and safety (Saeed et al., 2022; Schindler & Dionisio, 2024). Functionality, assessed through indicators including infrastructure efficiency, environmental metrics, land use planning, socio-economic conditions, and resilience, ensures satellite towns operate semi-independently to decongest parent cities (Banzhaf et al., 2021; Wang et al., 2025). Sustainable development integrates environmental, social, and economic pillars, aligned with SDG 11 for inclusive urban settlements (Mensah, 2021; UN-Habitat, 2022). Theoretically, Urban Systems Theory frames cities as interconnected networks with hierarchical nodes, specialization, spatial distribution, dynamic interactions, and feedback mechanisms, positioning satellite towns as secondary hubs for polycentric expansion (McPhearson et al., 2021; Gu et al., 2023). Historical patterns reveal that urbanization in developed nations was driven by industrialization and economic growth, while in developing countries, rural-urban migration predominates, leading to "false urbanization" characterized by demographic pressures without commensurate infrastructure (Ritchie et al., 2024; Ojo & Ojo, 2024).

Urban growth challenges, including overcrowding, pollution, unemployment, and inadequate services, have prompted diverse strategies over time, with satellite towns emerging as a key decentralization tool (UN-Habitat, 2022; Gu et al., 2023). In developed countries like the UK and US, post-WWII satellite towns aimed at containment and redevelopment but shifted toward sustainable renewal due to inefficiencies (Sajjad et al., 2025; Pueyo, 2025). In developing nations, such as China and Egypt, satellite towns seek to redistribute populations and activities, though often serving as urbanization catalysts rather than effective decongestants (Goyal & Chavan, 2023; Gharib, 2024). In Nigeria, satellite town policies, initiated in Lagos and extended to Abuja via the Federal Capital Development Authority (FCDA), focus on social objectives like housing provision and population balancing, yet face implementation flaws amid rapid migration and infrastructural gaps (Lagos State Government, 2025; Ojo & Ojo, 2024).

Despite extensive reviews, a gap persists in empirically evaluating satellite town functionality from residents' perspectives in Abuja's Federal Capital Territory (FCT), Nigeria. While literature establishes satellite towns' theoretical potential for decongestion and improved livability, limited studies assess their practical impact on housing affordability for low-income groups, population pressure reduction in the city center, and overall self-sufficiency (Gu et al., 2023; UN-Habitat, 2022). This thesis addresses this gap by examining residents' experiences in FCT satellite towns, clarifying their role in meeting housing needs, alleviating urban pressures, and achieving intended functionality.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Design

This study adopted a mixed-method research design to comprehensively evaluate the functionality of satellite towns in the Federal Capital Territory (FCT), Abuja, Nigeria. The mixed-method approach integrated quantitative and qualitative methodologies within a single study to provide a holistic understanding of complex urban and social dynamics (Johnson et al., 2021). Quantitative methods enabled the collection and analysis of numerical data, such as infrastructure metrics, population statistics, and service accessibility, offering objectivity and generalizability. Qualitative methods provided in-depth insights into residents' experiences, perceptions, and challenges through key informant interviews. By combining these approaches, the study leveraged the strengths of each method while mitigating their limitations, resulting in more robust and nuanced findings.

The specific form of mixed-method design employed was the dominant-less dominant design, also known as the embedded design. In this study, the quantitative approach took precedence, focusing on measurable indicators of functionality, such as access to basic amenities (water, electricity, transportation), housing quality, and economic activity in satellite towns. These were assessed through surveys, statistical analysis of demographic data, and infrastructure within the satellite towns. The qualitative component played a supporting role, exploring the functionality of satellite towns from the perspective of key informants through semi-structured interviews.

The rationale for adopting this mixed-method strategy was to facilitate data triangulation and ensure convergence of findings from multiple perspectives. As Creswell & Clark (2020) emphasized, triangulation enhanced the credibility and interpretive power of research by identifying areas of agreement or contradiction between methods. For instance, quantitative data revealed gaps in infrastructure provision, while qualitative insights uncovered how these gaps affected residents' quality of life or their coping strategies.

3.2 Sources of Data

Primary data was obtained using a structured questionnaire and an interview guide. Primary data from questionnaire was used in explaining issues related to the prospects of satellite towns for urban and socio-economic development while data from the interview guide was used in eliciting information on the functions of satellite towns in the study area. Secondary data were obtained from the Abuja master plan, textbooks, relevant government institutions, and agencies.

3.2.1 Questionnaire

Structured questionnaire (Appendix I and II) was used in examining the perception of residents in existing satellite towns on the effectiveness and success of the project in population redistribution and the resolution of the congestion problem in the FCT. The survey was divided into three sections: socio-demographic, infrastructure and functionality of the infrastructure, as well as the livability of the satellite towns. The demographic section will have questions on respondents' gender, employment, and income status. The infrastructure section will contain questions on respondents' rating of the effectiveness of transportation, water, electricity, security, road, and school in their places of residence on a scale of 1 to 5 with 1 representing very good and 5 as very poor. Questions specific to satellite towns would also be asked as respondents' awareness and knowledge of the satellite town initiative in the Federal Capital Territory, Abuja, and their perception of their effectiveness in solving congestion problems in Abuja FCT.

3.2.2 Key Informant Interview

The study also adopted a qualitative research instrument, utilizing unstructured interview guide (Appendix III) to gather in-depth insights from key stakeholders in the Satellite Town Development Authority (STDA). Five participants were selected using purposive sampling to ensure a diverse range of perspectives. This included the director of STDD, one urban planner, one community head, an environmental officer and one real estate developer. The interview guide focused on questions relating to the functions of satellite towns in the Federal Capital Territory.

3.3 Population and Sample Size

In this study, the population of the study comprised residents in the FCDA designated satellite towns. This comprised the population of the area councils in the FCT, including; Abaji, Abuja Municipal Area Council (AMAC), Bwari, Gwagwalada, Kwali, and Kuje which contains the satellite towns of Bwari, Kubwa, Dobi, Anagada, Kuje, Kusaki-Yanga, and Karshi (Figure 3.1). The total population of the Federal Capital Territory, Abuja from the 2006 census was given as 1,406,239 (NPC, 2006).

Using the current population growth rate of 4.85%, the 2024 population of the study area was projected to 4,026,000 people. The population of area councils with satellite towns is 3,161,200. To determine the sample size for questionnaire administration, the Yamane (1967) formula for sample size determination was employed. This is expressed as:

$$n = \frac{N}{[1+N(e)^2]} \quad \text{………………………………………………………………… (Equation 1)}$$

Where:

N = population;

n = sample size;

e = Level of precision

Using the equation, with a 95% confidence level and 0.03 error margin, for a total population of 3,161,200 people, the calculated sample size was 1,110 respondents. These were proportionately administered across the satellite towns in Abuja FCT. This total sample size was further disaggregated between the satellite towns using the proportion allocation formula by Stat Trek.com (2013). Using this formulation, the total sample size for each satellite town was determined. The formula is expressed as:

$$n_h = \left[\frac{N_h}{N}\right] n \quad \text{(Equation 2)}$$

Where:

n_h = stratum's sample size h;

N_h = stratum's population size;

n= total sample size;

N = total population.

The sample size for each Area Council was calculated and presented in Table 3.1 below. The sample for each Area Council was equally distributed among the satellite towns located in the respective Area Councils.

Table 3.1: Sample Size Allocation by Satellite Towns

S/N	FCC and Area Councils with Satellite Towns	Projected Population (2024)	Sample Size	Satellite Towns	Allocated Sample Size
1	AMAC	2,308,362	727	Karshi	727
2	Bwari	574,574	181	Kubwa	91
				Bwari	90
3	Gwagwalada	397,506	125	Dobi	63
				Anagada	62
4	Kuje	243,671	77	Kusaki-Yanga	39
				Kuje	38
Total		3,161,200	1,110		1,110

***Source*: Field Survey, 2024**

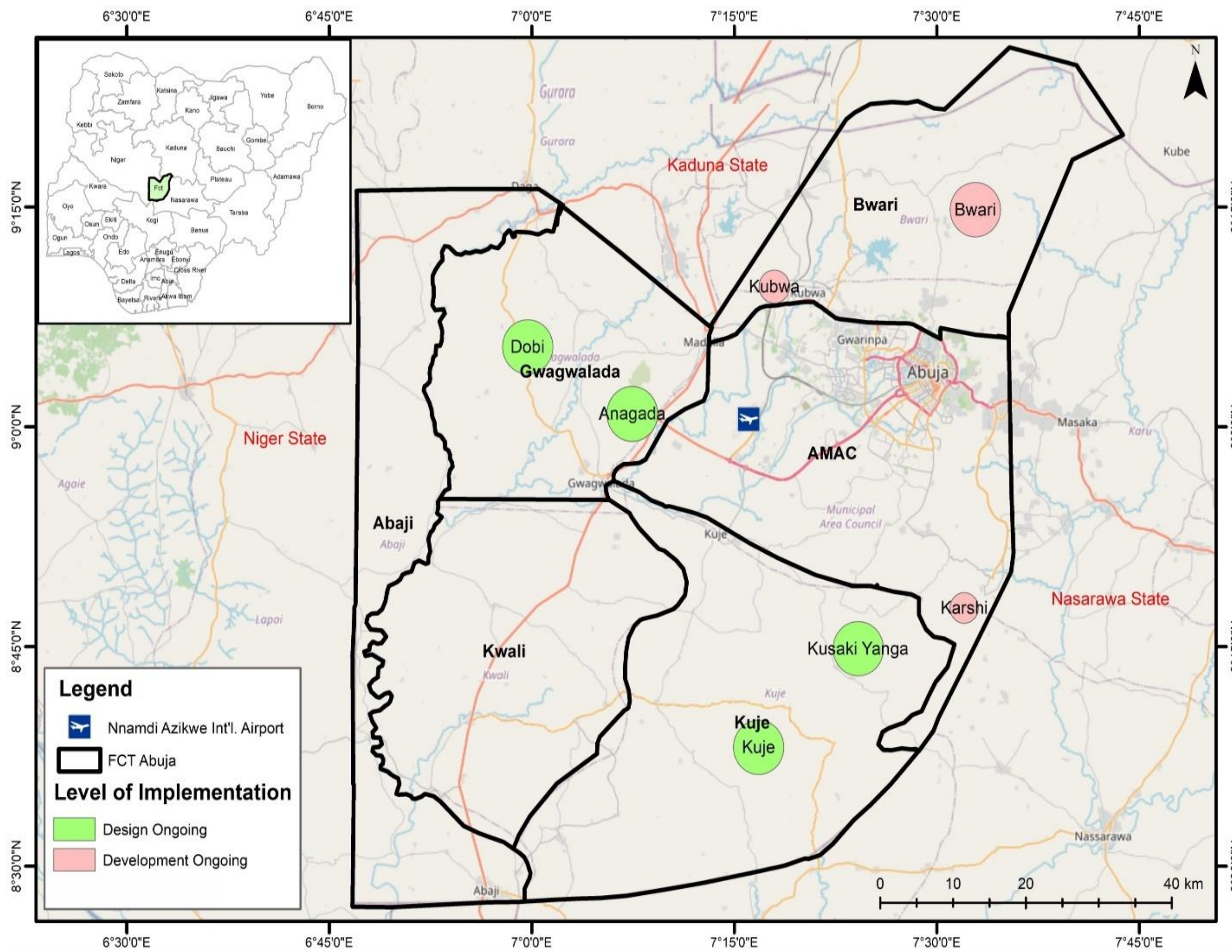

Figure 3.1: Satellite Towns selected for the study
Source: Federal Capital Development Authority, FCDA, (2023**)**

3.4 Sampling Procedure

The study employed a combination of multi-stage and systematic sampling techniques to ensure fair representation across the selected areas. In the first stage, seven designated satellite towns within Abuja, including; Anagada, Dobi, Bwari, Karshi, Kubwa, Kuje, and Kusaki-Yanga, were purposely selected to capture spatial and socio-economic diversity. Each town was then stratified into five functional zones: commercial/industrial, residential, public/recreational, institutional, and transportation/road infrastructure zones. From each zone, five streets were randomly selected to serve as the sampling clusters for data collection. Within each selected street, a random starting point was identified, after which the systematic sampling approach was applied by administering questionnaires to respondents in every fifth house. The number of questionnaires distributed in each satellite town was determined proportionately based on the population size and density of the respective zones, ensuring balanced and representative coverage across all study locations.

3.5 Data Analysis

Descriptive, thematic and inferential statistics were employed in the analysis of data. Responses generated from the field were analyzed using descriptive statistical methods such as frequency distributions, cross-tabulations, and inferential statistical methods of Principal Component Analysis (PCA), analysis of variance (ANOVA) and multiple regression. Information collected from the interviews were analyzed thematically using qualitative content analysis. Qualitative content analysis allows the grouping of information collected during interviews into relevant themes for qualitative interpretation, judgment, and generalization.

3.5.1 Multiple Regression

The first hypothesis which states that, "the satellite towns in the FCT have not significantly reduced population pressure in the Federal Capital City." was tested using multiple regression analysis. This was used to ascertain the effectiveness of the satellite towns in reducing urban congestion in the Federal Capital Territory, Abuja. The population density of the FCT constituted the dependent variable while rating of affordability of housing, quality of road infrastructure, sense of community, accessibility of healthcare from place of residence, availability of basic utilities (electricity), accessibility of public transport, safety of neighborhood and availability of water constituted the independent variables. The computation for multiple regression is presented below;

$Y = mx1 + mx2 + mx3 + b$…………………………………………………… (Equation 3)

Where;

Y = dependent variable (population density of FCT, Abuja)

$X1$ = first independent variable (affordability of housing)

$X2$ = second independent variable (quality of road infrastructure)

$X3$ = third independent variable (sense of community)

$X4$ = third independent variable (accessibility of healthcare from place of residence)

$X5$ = third independent variable (availability of basic utilities)

$X6$ = third independent variable (accessibility of public transport)

$X7$ = third independent variable (safety of neighborhood)

$X8$ = third independent variable (availability of water)

B = intercept

3.5.2 Multiple Regression

The second hypothesis which states that, "the availability of infrastructural facilities in satellite towns does not significantly influence the quality of life of residents" was tested using multiple regression analysis. This analysis was used to assess the impacts of infrastructural availability on the quality of life of residents across the satellite towns. Satisfaction with the quality of life constituted the dependent variable while accessibility of public transport, safety of neighborhood, sense of community, affordability of housing, air quality, housing quality, effectiveness of waste management, and accessibility of healthcare constituted the independent or predictor variables. The computation for multiple regression is presented below;

$Y = mx1 + mx2 + mx3 + b$………………………………………………………… (Equation 4)

Where;

Y = dependent variable (quality of life)

$X1$ = first independent variable (accessibility of public transport)

X2 = second independent variable (safety of neighborhood)

X3 = third independent variable (sense of community)

X4 = third independent variable (affordability of housing)

X5 = third independent variable (air quality)

X6 = third independent variable (housing quality)

X7 = third independent variable (effectiveness of waste management)

X8 = third independent variable (accessibility of healthcare)

B = intercept

3.5.3 Analysis of Variance (ANOVA)

The third hypothesis which states that, "there is no significant variation in the quality of life (livability) of residents in the satellite towns of the FCT," was tested with a one-way Analysis of Variance (ANOVA). A one-way ANOVA compares three or more categorical groups to establish whether there are any statistically significant differences between their means. The statistical computation is represented as follows;

$$F = \frac{\sum n_j(\overline{X}_j - \overline{X})^2 / (k-1)}{\sum\sum(X - \overline{X}_j)^2 / (N-K)} \quad \text{(Equation 5)}$$

Where:

n_j = sample size in the jth group

$\overline{X}_j$ = sample mean in the jth group

$\overline{X}$ = total mean;

K = number of the independent groups

N = total number of observations (i.e., the overall sample size);

X = individual observation in the analysis.

3.5.4 Thematic Analysis

Thematic analysis, a qualitative research method, was employed to systematically identify, analyze, and interpret patterns within the data collected from interviews and focus group discussions. In this study, it was used to explore residents' experiences, perceptions, and institutional perspectives on the functionality of satellite towns in the Federal Capital Territory (FCT), Abuja. The analysis was guided by two major themes: infrastructure and service accessibility in satellite towns and resident experiences and satisfaction with urban functionality. Interviews were also conducted with five purposively selected key stakeholders from the Satellite Town Development Department (STDD) and related sectors, including the Director of STDD, an urban planner, a community head, and a real estate developer, to provide deeper institutional insights. To maintain confidentiality, alphanumeric codes such as *NT-01* were assigned to participants. Direct quotations from respondents were italicized and incorporated into the analysis to give voice to participants and enhance the credibility of findings.

3.5.5 Principal Component Analysis (PCA)

Principal Component Analysis was also employed in this study to examine the key factors influencing the livability and quality of life of residents across the satellite towns in the FCT, Abuja. Components of livability such as the economy, environmental quality, infrastructure, and social cohesion were investigated. PCA was used to establish the most significant factors shaping livability and quality of life in the study area.

CHAPTER FOUR

DEMOGRAPHIC AND SOCIOECONOMIC CHARACTERISTICS OF THE POPULATION

4.0 Introduction

This chapter details the presentation and discussion of the population’s socio-demographic characteristics. The influence and relationship of the sociodemographic characteristics of respondents on the functionality of satellite towns in the Federal Capital Territory is evaluated.

4.1 Socio-Demographic Characteristics

The socio-demographic characteristics of respondents is presented in this section with the aid of tables and charts. These characteristics are discussed below.

4.1.1 Sex and Age of Respondents

The findings from Table 4.1 indicate a male-dominated respondent pool at 57.2%, with females comprising 42.8%, aligning with traditional patterns of male-headed households in Nigeria. The age distribution shows a concentration in the 36-50 years bracket (55.6%), followed by 21-35 years (27.8%), suggesting a predominantly working-age population that is young to middle-aged. This demographic structure is crucial for evaluating the functionality of satellite towns in the Federal Capital Territory (FCT), Abuja, as it implies a labor force capable of driving economic activities but also places demand on infrastructure like transportation and healthcare to support active, family-oriented residents. Previous studies have reported similar gender imbalances in Abuja's satellite towns, attributed to male migration for employment opportunities in the urban core, with Aluko & Bankole’s (2023) study on socio-economic characteristics in selected slums noting a male proportion of 51.2% in peripheral settlements due to economic pull factors. Additionally, in their analysis of population dynamics in Abuja, Ogochukwu et al., (2022) highlighted that working-age groups (25-54 years) dominate satellite areas at over 50%, enhancing functionality through productivity but straining unplanned urban expansion. These patterns underscore challenges in achieving balanced urban functionality, as uneven gender ratios can limit inclusive development in housing and social services.

Table 4.1: Cross-tabulation of Respondents' Age by Gender

Age of Respondents		Gender of Respondents: Male	Gender of Respondents: Female	Total
21-35 Years	Count	148	129	277
	% within Age of Respondents	53.4%	46.6%	100.0%
	% of Total	14.9%	13.0%	27.8%
36-50 Years	Count	312	242	554
	% within Age of Respondents	56.3%	43.7%	100.0%
	% of Total	31.3%	24.3%	55.6%
51-65 Years	Count	106	51	157
	% within Age of Respondents	67.5%	32.5%	100.0%
	% of Total	10.6%	5.1%	15.8%
Above 65 Years	Count	4	4	8
	% within Age of Respondents	50.0%	50.0%	100.0%
	% of Total	0.4%	0.4%	0.8%
Total	Count	570	426	996
	% within Age of Respondents	57.2%	42.8%	100.0%
	% of Total	57.2%	42.8%	100.0%

Source: Author's Survey, 2024

4.1.2 Marital Status of Respondents

Table 4.2 reveals that 85.5% of respondents are married, with only 11.6% single, indicating a family-centric population in the satellite towns. This high marriage rate suggests stable households that could contribute to community cohesion and demand for family-oriented amenities, directly impacting the functionality of these towns in terms of livability and social infrastructure. In the context of FCT Abuja's satellite towns, such demographics support urban planning for schools and parks but may exacerbate overcrowding if not matched with adequate services.

Comparable findings emerge Nigeria National Bureau of Statistics, NBS (2024) household survey in Nigeria, which reported marriage rates exceeding 80% in urban peripheries like Abuja's satellites, linking this to economic stability and cultural norms that promote family units as buffers against urban poverty. Iduseri et al. (2022) further noted that married residents in satellite areas often prioritize family needs, influencing town functionality by increasing reliance on local employment and reducing migration outflows. These insights highlight how marital status enhances social functionality but requires targeted policies to prevent strain on resources.

Table 4.2: Marital Status of Respondents

	Frequency	Percent
Single	116	11.6
Married	852	85.5
Widowed	26	2.6
Divorced/Separated	2	.2
Total	996	100.0

Source: Author's Survey, 2024

4.1.3 Education Status of Respondents

As per Table 4.3, 35.1% of respondents have secondary education, closely followed by 33.6% with tertiary education, while 12.9% have no formal education, indicating a fairly educated populace with 68.7% achieving at least secondary level. This educational profile is vital for assessing satellite town functionality in FCT Abuja, as higher literacy supports economic participation and innovation but reveals gaps that could hinder overall development if basic education access remains uneven. Prior research aligns with these results; Gabdo & Sule (2025) in their study on urban sustainable development in FCT Abuja found secondary and tertiary education rates at 30-40% in satellite towns, attributing this to proximity to the capital's institutions and its role in improving workforce skills for functional urban economies. Similarly, Magali et al. (2025) in their study on smart city initiation in suburban Abuja found secondary and tertiary education rates at similar levels in satellite towns, attributing this to proximity to the capital's institutions and its role in improving workforce skills for functional urban economies. Aluko & Bankole (2023) also reported comparable education distributions. This suggests education as a key lever for elevating functionality amid rapid urbanization.

Table 4.3: Education Status of Respondents

	Frequency	Percent
Non-formal	128	12.9
Primary	183	18.4
Secondary	350	35.1
Tertiary	335	33.6
Total	996	100.0

Source: Author's Survey, 2024

4.1.4 Employment Status of Respondents

Figure 4.1 shows 95.5% employment among respondents, with only 4.5% unemployed, pointing to a highly active workforce in the satellite towns. This high employment rate bolsters the functionality of FCT Abuja's satellites by fostering economic self-sufficiency and reducing dependency on the urban center, though it may mask underemployment issues. In evaluating town functionality, this indicates resilience but necessitates infrastructure like markets to sustain jobs. Recent studies corroborate these findings; Bariki et al.'s (2025) assessment of petroleum subsidy impacts in Gwagwalada (an FCT satellite) noted employment rates above 90%, linking it to informal sector dominance that supports local functionality despite national economic shocks. Iduseri et al. (2022) and Balogun et al. (2023) reported similar high overall employment in satellites, which aids urban functionality through reduced poverty but calls for skill-matching programs. These parallels emphasize employment's role in functional urban peripheries.

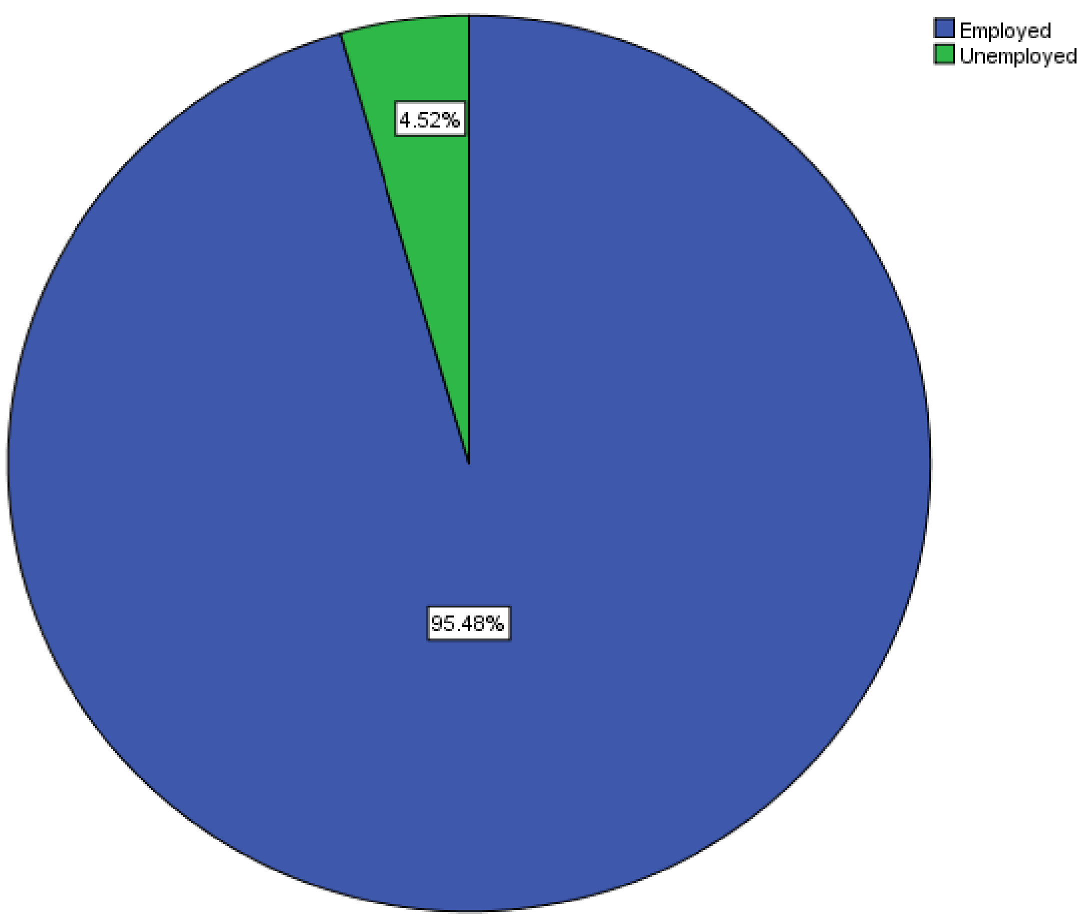

Figure 4.1: Employment Status of Respondents
Source: Author's Survey, 2024

4.1.5 Occupation of Respondents

Table 4.4 highlights that 74.6% of respondents are businesspersons, with only 8.8% civil servants, reflecting a private sector-heavy economy in the satellite towns. This occupation distribution affects FCT Abuja's functionality by promoting entrepreneurship and local trade, yet it may lead to informal economies vulnerable to instability. Functionality evaluation benefits from this as it drives grassroots development but requires regulation for sustainability. Badamosi et al., (2024) found over 70% in private businesses in satellites, enhancing functionality via economic diversification but highlighting gaps in formal jobs. Bashir et al.'s (2021) population dynamics study in Abuja noted similar occupation trends, with business dominance at 65-75%, supporting town functionality through self-employment amid urban growth. This underscores the need for supportive policies.

Table 4.4: Distribution of Respondents by Occupation

	Frequency	Percent
Civil Servant	88	8.8
Businessperson	743	74.6
Student	30	3.0
Industrial worker	35	3.5
Others	100	10.0
Total	996	100.0

Source: Author's Survey, 2024

4.1.6 Estimated Monthly Income of Respondents

Table 4.5 shows the estimated monthly income of respondents in the study area. 47.1% of the sampled population have a monthly income below ₦50,000, 38.1% have a monthly income of between ₦50,000 to ₦100,000 while 11.7% earns between ₦101,000 to ₦150,000. The proportion of respondents with a monthly income of ₦151,000 to ₦200,000 is 2.9%, while 0.2% of the sampled population affirmed to having a monthly income that is above ₦200,000. The high proportion of respondents with a monthly income below ₦50,000 is in line with the current harsh economic conditions of the country. It can therefore be deduced that a majority of the residents in the study area are low- and medium-income earners as affirmed by 85.2% of respondents with a maximum estimated monthly income of ₦100,000. This could also be explained by the fact that a majority of persons residing in the study area are petty traders and small-scale business owners and, in many cases, income made from these traders and small business firms are usually used for immediate family consumption.

Previous research mirrors this; a 2024 study by Ismail et al., on informal settlements in Abuja reported average incomes below ₦50,000 for 45-50% of residents, linking low earnings to reduced functionality in infrastructure access. A 2025 household income analysis in Nigeria by the Federal Ministry of Budget and Economic Planning (2025) noted similar distributions in FCT satellites, emphasizing how such levels hinder functional urban development without income-boosting interventions. These findings stress income's impact on equitable functionality.

Table 4.5: Average Monthly Income of Respondents

Neighborhood of Respondents		Monthly Income of Respondents: Less than #50,000	#50,000-#100,000	#101,000-#150,000	#151,000-#200,000	#201,000-#250,000	Total
Bwari	Count	35	33	16	5	1	90
	% within Neighborhood	38.9%	36.7%	17.8%	5.6%	1.1%	100.0%
Kubwa	Count	38	37	13	3	0	91
	% within Neighborhood	41.8%	40.7%	14.3%	3.3%	0.0%	100.0%
Kuje	Count	16	17	5	0	0	38
	% within Neighborhood	42.1%	44.7%	13.2%	0.0%	0.0%	100.0%
Karshi	Count	299	233	62	18	1	613
	% within Neighborhood	48.8%	38.0%	10.1%	2.9%	0.2%	100.0%
Dobi	Count	38	20	5	0	0	63
	% within Neighborhood	60.3%	31.7%	7.9%	0.0%	0.0%	100.0%
Anagada	Count	27	22	10	3	0	62
	% within Neighborhood	43.5%	35.5%	16.1%	4.8%	0.0%	100.0%
Kusaki-Yanga	Count	16	17	6	0	0	39
	% within Neighborhood	41.0%	43.6%	15.4%	0.0%	0.0%	100.0%
Total	Count	469	379	117	29	2	996
	% within Neighborhood	47.1%	38.1%	11.7%	2.9%	0.2%	100.0%

Source: Author's Survey, 2024

4.1.7 Years of Residency in Satellite Town

Table 4.6 shows the distribution of respondents by years of residency across the satellite towns of the study area, with the highest proportion of respondents accounting for 34.7% having lived in their neighborhoods for 11-15 years. 26.5% of the respondents stated that they have resided in their place of residence for 16-20 years with 23.3% noting that they have resided in neighborhood for 5-10 years. Those who have been residing in their satellite town for over 20 years account for 5.2% compared to 10.2% of the respondents who have been in their neighborhoods for less than 5years. By satellite towns, the highest proportion of respondents in Bwari (47.8%), Kubwa (42.9%) and Karshi (34.6%) have been resident in their respective neighborhoods for 11-15 years while the highest proportion of respondents in Kuje (36.8%), Dobi (42.9%) and Kusaki-Yanga (35.9%) opined to have been resident for 16-20years.

It can be inferred from the above that the majority of residents across the satellite towns of the Federal Capital Territory have been resident in their respective neighborhoods for an average of 13 years making them the ideal population for this study given that they have the prerequisite knowledge of the developmental and growth history of the satellite towns. Ogochukwu et al. (2022) found average residencies of 10-15 years in satellites, aiding functionality via social capital but challenging urban management. Ismail et al. (2024) reported similar long-term patterns, linking them to improved functionality in community-driven development. This highlights residency's role in sustainable functionality.

Table 4.6: Distribution of Respondents by Years of Residency in Satellite Towns

		Years of Residence in Satellite Town					
Neighborhood of Respondents		Less than 5 years	5-10 Years	11-15 Years	16-20 Years	Above 20 Years	Total
Bwari	Count	1	14	43	32	0	90
	% within Neighborhood	1.1%	15.6%	47.8%	35.6%	0.0%	100.0%
Kubwa	Count	1	17	39	34	0	91
	% within Neighborhood	1.1%	18.7%	42.9%	37.4%	0.0%	100.0%
Kuje	Count	3	9	11	14	1	38
	% within Neighborhood	7.9%	23.7%	28.9%	36.8%	2.6%	100.0%
Karshi	Count	84	164	212	119	34	613
	% within Neighborhood	13.7%	26.8%	34.6%	19.4%	5.5%	100.0%
Dobi	Count	7	10	9	27	10	63
	% within Neighborhood	11.1%	15.9%	14.3%	42.9%	15.9%	100.0%
Anagada	Count	3	8	21	24	6	62
	% within Neighborhood	4.8%	12.9%	33.9%	38.7%	9.7%	100.0%
Kusaki-Yanga	Count	3	10	11	14	1	39
	% within Neighborhood	7.7%	25.6%	28.2%	35.9%	2.6%	100.0%
Total	Count	102	232	346	264	52	996
	% within Neighborhood	10.2%	23.3%	34.7%	26.5%	5.2%	100.0%

Source: Author's Survey, 2024

4.1.8 Household Size

The household size as shown in Table 4.7 indicates that the highest proportion of respondents at 46.1% have a household size of 5-6 persons with a further 27.4% stating the number of persons in their household is 7-8 persons, while the proportion of respondent with the household size of 3-4 is given as 17.2%. This implies that the majority of household (90.7%) in the study area have four to eight (4-8) members which is in line with the household size data of 5.06 by the National Bureau of Statistics NBS, (2024) and furthered reinforced by Kenneth et al.'s (2019) housing study in FCT, finding averages of 5.06, which supports functional planning for family-sized amenities. This emphasizes household size in functionality evaluations.

Table 4.7: Distribution of Respondents by Household Size

	Frequency	Percent
1-2	13	1.3
3-4	171	17.2
5-6	459	46.1
7-8	273	27.4
Above 8	80	8.0
Total	996	100.0

Source: Author's Survey, 2024

4.1.9 Type of Housing

On respondents type of housing as presented in Table 4.8, the highest proportion of respondents at 56.0% affirmed their type of house to be bungalows making it the most predominant housing type across the satellite towns. The proportion of respondents living in duplexes across the study area is given as 5.2% with a significantly high proportion of respondents at 38.8% living in rooming houses across the satellite towns.

By satellite town, the highest proportion of respondents in all the satellite towns affirmed their type of house to be bungalow. Among respondents living in duplexes across the satellite towns, majority were found to be resident in Kubwa satellite town. This can be adjudged to be as a result of Kubwa satellite town being the most developed of all the satellite town. Studies echo this; Kenneth et al. (2019) found bungalows at 50-60%, enhancing functionality in low-cost areas but raising overcrowding concerns. Onigbogi et al. (2025) noted similar types in Abuja satellites, linking them to functional urban expansion through adaptable structures. These patterns inform better housing policies for functionality.

Table 4.8: Distribution of Respondents by Housing Type

Neighborhood of Respondents		Respondents' Type of House			
		Duplex	Bungalow	Rooming House	Total
Bwari	Count	7	57	26	90
	% within Neighborhood	7.8%	63.3%	28.9%	100.0%
Kubwa	Count	10	61	20	91
	% within Neighborhood	11.0%	67.0%	22.0%	100.0%
Kuje	Count	0	23	15	38
	% within Neighborhood	0.0%	60.5%	39.5%	100.0%
Karshi	Count	34	297	282	613
	% within Neighborhood	5.5%	48.5%	46.0%	100.0%
Dobi	Count	1	42	20	63
	% within Neighborhood	1.6%	66.7%	31.7%	100.0%
Anagada	Count	0	54	8	62
	% within Neighborhood	0.0%	87.1%	12.9%	100.0%
Kusaki-Yanga	Count	0	24	15	39
	% within Neighborhood	0.0%	61.5%	38.5%	100.0%
Total	Count	52	558	386	996
	% within Neighborhood	5.2%	56.0%	38.8%	100.0%

Source: Author's Survey, 2024

4.1.10 Housing Ownership

Table 4.9 presents the distribution of respondents by housing ownership across the satellite towns. An overwhelming majority of respondents at 77.9% affirmed their status as the owners of the houses where they live while the proportion of respondents who stated that their house is rented is given as 22.1%. This was found to be the predominant scenario across all satellite towns in the study area.

The implication of the above is that the majority of residents across the satellite towns in the Federal Capital Territory own their houses which infers that there is in an improved willingness of residents to own and live in the satellite towns rather than in the city center. Furthermore, following from the findings of Table 4.9, it can be affirmed that there is a preference for building bungalow houses as opposed to duplexes given the majority of respondents affirmed their type of house to be bungalows. The International Center for Investigative Reporting, ICIR (2021) reported ownership rates of 70-80% in satellites, boosting functionality through community ties. A 2025 real estate trends study by Igbaifua confirmed high ownership in peripheries, aiding long-term functional development. This supports ownership as a functionality enhancer.

Table 4.9: Distribution of Respondents by Housing Ownership

Neighborhood of Respondents		Ownership Status of House: Owner	Rented	Total
Bwari	Count	80	10	90
	% within Neighborhood	88.9%	11.1%	100.0%
Kubwa	Count	66	25	91
	% within Neighborhood	72.5%	27.5%	100.0%
Kuje	Count	35	3	38
	% within Neighborhood	92.1%	7.9%	100.0%
Karshi	Count	457	156	613
	% within Neighborhood	74.6%	25.4%	100.0%
Dobi	Count	51	12	63
	% within Neighborhood	81.0%	19.0%	100.0%
Anagada	Count	51	11	62
	% within Neighborhood	82.3%	17.7%	100.0%
Kusaki-Yanga	Count	36	3	39
	% within Neighborhood	92.3%	7.7%	100.0%
Total	Count	776	220	996
	% within Neighborhood	77.9%	22.1%	100.0%

Source: Author's Survey, 2024

4.1.11 Annual Rental Cost

In terms of the distribution of respondents by rental cost as presented in Table 4.10, the highest proportion of respondents at 11.0% who live in rented apartments pay an annual rent of ₦100,000 and below with a further 6.5% stating that their annual rent is ₦101,000-₦200,000. The proportion of respondents who pay an annual rent of above ₦200,000 is given as 3.8%. Furthermore, the data shows that the majority of respondents from the sampled population are home owners as affirmed by their proportion of 77.7%.

From the above, it can be inferred that while the majority of respondents in the study area are home owners, the highest proportion of respondents who pay rent have an annual rental cost of less than ₦200,000. It can thus be deducted that rent in majority of the satellite towns is moderate in terms of cost. However, when contextualized in line with the findings of Table 4.9, it can be concluded that a significant proportion of respondents who pay rent live in rooming houses which in turn explains the moderate rent across most satellite towns. Magali et al. (2025) linked moderate ratings to satellite affordability, improving functionality for lower incomes in Abuja. A.I Realant (2025) surge report noted higher costs in developed satellites, mirroring findings and impacting functional balance. These inform cost-sensitive planning.

Table 4.10: Distribution of Respondents by Rental Cost

	Frequency	Percent
₦100,000 and below	110	11.0
₦101,000-₦200,000	65	6.5
₦201,000-₦300,000	20	2.0
₦301,000-₦400,000	12	1.0
₦401,000-₦500,000	5	0.8
Above ₦500,000	10	1.0
Homeowners	774	77.7
Total	996	100.0

Source: Author's Survey, 2024

4.1.12 Rating of Housing Cost by Satellite Town

Table 4.11 presents respondents' rating of housing cost by satellite towns. The highest proportion of respondents at 67.7% rated the cost of housing in their neighborhood as moderate with 17.6% of respondents rating the cost of housing as high while the proportion of respondents who rated the cost of housing in their neighborhood as low is given as 14.8%. By satellite towns, the highest proportion of respondents in Bwari (61.1%) and Kubwa (53.8%) rated the cost of housing in their neighborhood as high while the highest proportion of respondents in Kuje (78.9%), Karshi (73.4%), Dobi (66.7%), Anagada (69.4%) and Kusaki-Yanga (86.1%) affirmed the cost of housing in their neighborhood to be moderate.

From the above, it can be inferred that while the majority of the sampled population are of the opinion that the cost of housing in the satellite towns in the Federal Capital Territory is moderate, the cost of housing in Bwari and Kubwa satellite towns were affirmed to be on the high side. Given that Bwari and Kubwa satellite towns are the most developed satellite towns in terms of urban facilities in the study area, it is therefore understandable that housing cost is these areas is more expensive than in the other satellite towns. Magali et al. (2025) linked moderate ratings to satellite affordability, improving functionality for lower incomes in Abuja. A.I Realant (2025) surge report noted higher costs in developed satellites, mirroring findings and impacting functional balance. These inform cost-sensitive planning.

Table 4.11: Rating of Housing Cost by Satellite Town

Neighborhood of Respondents		Cost of Housing in this Neighborhood: High	Moderate	Low	Total
Bwari	Count	55	35	0	90
	% within Neighborhood	61.1%	38.9%	0.0%	100.0%
Kubwa	Count	49	42	0	91
	% within Neighborhood	53.8%	46.2%	0.0%	100.0%
Kuje	Count	8	30	0	38
	% within Neighborhood	21.1%	78.9%	0.0%	100.0%
Karshi	Count	38	450	125	613
	% within Neighborhood	6.2%	73.4%	20.4%	100.0%
Dobi	Count	2	42	19	63
	% within Neighborhood	3.2%	66.7%	30.2%	100.0%
Anagada	Count	16	43	3	62
	% within Neighborhood	25.8%	69.4%	4.8%	100.0%
Kusaki-Yanga	Count	7	32	0	39
	% within Neighborhood	17.9%	82.1%	0.0%	100.0%
Total	Count	175	674	147	996
	% within Neighborhood	17.6%	67.7%	14.8%	100.0%

Source: Author's Survey, 2024

4.1.13 Perception of Cost of Housing by Income

In terms of the perception of cost of housing by income of respondents as presented in Table 4.12, 67.7% of respondents accounting for the majority affirmed the cost of housing in their neighborhood to be moderate. The proportion of respondents who are of the opinion that the cost of housing in their neighborhood is high compared to those who stated theirs is low is presented as 17.6 and 14.8% respectively.

By income, the majority of respondents with a monthly income of less than ₦50,000 (70.6%), ₦50,000- ₦100,000 (66.2%), ₦101,000- ₦150,000 (62.4%) and ₦151,000- ₦200,000 (62.1%) affirmed the cost of housing in their neighborhood to be moderate while respondents with a monthly income of ₦200,000 and above at 50.0% noted that the cost of housing in their neighborhood ranges between high and moderate.

From the above analysis, it can be inferred that the cost of housing is predominantly moderate for the majority of residents across satellite towns in the Federal Capital Territory. However, it can also be deducted that the residents with higher income are of the opinion that the cost of housing is high in their neighborhoods. This can be ascribed to their preference of living in high end neighborhoods such as Kubwa satellite town in the study area. Magali et al. (2025) found similar perceptions, linking them to socio-economic exclusion and reduced functionality. Ismail et al. (2024) reported moderate views among low earners, supporting functional affordability but highlighting disparities. This calls for income-aligned housing.

Table 4.12: Perception of Cost of Housing by Income of Respondents

Monthly Income of Respondents		Cost of Housing in this Neighborhood: High	Moderate	Low	Total
Less than ₦50,000	Count	58	331	80	469
	% within Monthly Income	12.4%	70.6%	17.1%	100.0%
₦50,000-₦100,000	Count	75	251	53	379
	% within Monthly Income	19.8%	66.2%	14.0%	100.0%
₦101,000-₦150,000	Count	32	73	12	117
	% within Monthly Income	27.4%	62.4%	10.3%	100.0%
₦151,000-₦200,000	Count	9	18	2	29
	% within Monthly Income	31.0%	62.1%	6.9%	100.0%
₦201,000-₦250,000	Count	1	1	0	2
	% within Monthly Income	50.0%	50.0%	0.0%	100.0%
Total	Count	175	674	147	996
	% within Monthly Income	17.6%	67.7%	14.8%	100.0%

Source: Author's Survey, 2024

4.1.14 Perception of Family's Economic Status

In terms of respondents' perception of their family's economic status as presented in Table 4.13, the highest proportion of respondents at 49.9% affirmed that they belong to the middle class.

The proportion of respondents who stated that they belong to the upper class is given as 3.5% with a further 46.6% affirming their economic status as lower class, implying that the overwhelming majority of sampled population belong to the lower and middle economic class in the study area.

By satellite towns, the majority of respondents in Kubwa, Kuje and Kusaki-Yanga affirmed their status as middle class while in Karshi and Anagada, the highest proportion of respondents affirmed their status as lower class. In Bwari and Dobi settlements, there is balanced distribution of respondents between the middle and lower economic class.

The implication of the above analysis is that while the Federal Capital Territory, Abuja is known for its affluence, the satellite towns surrounding the capital is mostly occupied by residents belonging to the lower and middle economic classes. This supports the findings in Table 4.6 where the majority of respondents are low- and moderate-income earners in the study area. Yekeen & Misnan (2024) noted lower-middle dominance in Nigerian urbans, including FCT, aiding functionality through diversity but risking inequality. Badamosi et al. (2024) confirmed similar statuses, linking to functional challenges in infrastructure. This emphasizes class-inclusive functionality.

Table 4.13: Perception of Family's Economic Status

Neighborhood of Respondents		Family's Economic Status Upper Class	Middle Class	Lower Class	Total
Bwari	Count	5	42	43	90
	% within Neighborhood	5.6%	46.7%	47.8%	100.0%
Kubwa	Count	5	70	16	91
	% within Neighborhood	5.5%	76.9%	17.6%	100.0%
Kuje	Count	0	29	9	38
	% within Neighborhood	0.0%	76.3%	23.7%	100.0%
Karshi	Count	16	269	328	613
	% within Neighborhood	2.6%	43.9%	53.5%	100.0%
Dobi	Count	2	31	30	63
	% within Neighborhood	3.2%	49.2%	47.6%	100.0%
Anagada	Count	7	26	29	62
	% within Neighborhood	11.3%	41.9%	46.8%	100.0%
Kusaki-Yanga	Count	0	30	9	39
	% within Neighborhood	0.0%	76.9%	23.1%	100.0%
Total	Count	35	497	464	996
	% within Neighborhood	3.5%	49.9%	46.6%	100.0%

Source: Author's Survey, 2024

4.1.15 Quality of Household Living Condition

Table 4.14 presents respondents' perception of the quality of household living conditions in their neighborhoods. The highest proportion of respondents at 51.5% are of the opinion that the quality of household living conditions in their neighborhood is average at best. The proportion of respondents who are of the opinion that the quality of household living conditions in their neighborhoods is either good or poor is presented as 34.2 and 7.2% respectively. By satellite town, the highest proportion of respondents in Bwari, Kuje, Karshi, Dobi, Anagada and Kusaki-Yanga affirmed the quality of household living conditions in their neighborhoods to be average at best. However, the highest proportion of respondents at Kubwa (57.2%) affirmed the quality of household living condition in their neighborhood to be good.

It can be inferred from the above that while the majority of respondents across the study area are of the opinion that the quality of household living conditions in their neighborhood is average at best, the case is quite different at Kubwa satellite town, with the majority of respondents stating that the quality of household living conditions in their neighborhood is good. This can be adjudged from the fact that Kubwa satellite town is the most developed satellite town in the Federal Capital Territory. Kenneth et al. (2019) found average ratings at 50%, tying to functionality via basic amenities. Gabdo & Sule (2025) reported similar views, linking average conditions to urban disparities affecting overall functionality. This guides enhancement strategies.

Table 4.14: Perception of Quality of Household Living Condition by Neighborhood

Neighborhood of Respondents		Quality of Household Living Condition: Very Good	Good	Average	Poor	Very Poor	Total
Bwari	Count	4	37	44	5	0	90
	% within Neighborhood	4.4%	41.1%	48.9%	5.6%	0.0%	100.0%
Kubwa	Count	8	44	39	0	0	91
	% within Neighborhood	8.8%	48.4%	42.9%	0.0%	0.0%	100.0%
Kuje	Count	0	10	20	6	2	38
	% within Neighborhood	0.0%	26.3%	52.6%	15.8%	5.3%	100.0%
Karshi	Count	45	203	330	33	2	613
	% within Neighborhood	7.3%	33.1%	53.8%	5.4%	0.3%	100.0%
Dobi	Count	2	17	32	10	2	63
	% within Neighborhood	3.2%	27.0%	50.8%	15.9%	3.2%	100.0%
Anagada	Count	1	22	26	12	1	62
	% within Neighborhood	1.6%	35.5%	41.9%	19.4%	1.6%	100.0%
Kusaki-Yanga	Count	0	9	22	6	2	39
	% within Neighborhood	0.0%	23.1%	56.4%	15.4%	5.1%	100.0%
Total	Count	60	342	513	72	9	996
	% within Neighborhood	6.0%	34.3%	51.5%	7.2%	0.9%	100.0%

Source: Author's Survey, 2024

CHAPTER FIVE

AVAILABILITY AND ACCESSIBILTY OF INFRASTRUCTURE IN SATELLITE TOWNS

5.0 Introduction

This chapter presented the results and discussion on functions of satellite towns, availability of infrastructures, residents' satisfaction, and the effectiveness of satellite towns in reducing the population pressure in the Federal Capital City (FCC).

5.1 Functions of satellite towns

Satellite towns play a pivotal role in the urban structure of the Federal Capital Territory (FCT), Abuja. Designed as a strategy to manage the pressures of rapid urbanization, these towns are intended to serve multiple functions, including housing, economic activity, and environmental sustainability. Interviews were with key stakeholders, including urban planners, community leaders, government officials, and residents. Their insights provide valuable perspectives on the functions of satellite towns and how they contribute to urban development, improve livability, and address the challenges associated with managing a growing city.

In terms of the primary function of the satellite towns in the Federal Capital Territory (FCT), Abuja, to decongest the capital city as discussed in Mshelia (2024) and Badamosi (2024), INT-01 noted that the satellite towns play a vital role in controlling the population density of the Federal Capital City. According to *INT-01*,

"The establishment of satellite towns is central to the city's growth strategy. With areas like Bwari and Kubwa absorbing a significant portion of the population, the pressure on central Abuja has reduced. For instance, the Central Business District can now focus on its planned administrative role without being overwhelmed by residential demands."

Similarly, *INT-02* further confirmed the important role satellite towns play in decongesting the city center, stating that,

"The creation of satellite towns was strategic in addressing the increasing urban sprawl as the towns absorb the overflow of residents and businesses, easing pressure on the Federal Capital City."

The proximity of these towns to Abuja allows them to serve as alternative residential and commercial hubs, helping the city center maintain its planned administrative and diplomatic functions. This sentiment was shared by *INT-03*, who remarked that,

"*The city's master plan envisioned satellite towns as a buffer to prevent overcrowding in Abuja. By distributing residential and commercial spaces, they ease infrastructural strain, allowing the main city to maintain its aesthetic and functional integrity*."

A second key function of satellite towns is the provision of affordable housing to residents. Several interviewees highlighted the role of satellite towns in offering relatively affordable housing options compared to Abuja's main city. This observation aligns with Enoguanbhor (2022), who noted that planned suburban settlements in the FCT were conceived to address affordability gaps and mitigate informal settlements. *INT-04* stated that,

"Satellite towns provide more affordable living spaces for middle- and low-income earners who cannot afford the high rents within the city center. This function has made them highly attractive for those seeking shelter close to Abuja's economic opportunities."

Housing developments in satellite towns cater to a wide range of demographics, including civil servants, traders, and artisans. *INT-05* explained that, "*Developers have capitalized on the demand for affordable housing in satellite towns. We design homes that cater to low- and middle-income earners, ensuring that the workforce serving Abuja can live close enough to their workplaces without financial strain*."

Satellite towns also play a major role in facilitating economic activities. Interview participants acknowledged the role of satellite towns in promoting local and regional economic growth. This finding resonates with Badamosi (2024), who found that satellite towns such as Gwagwalada have become centers of local commerce and employment, sustaining both urban and peri-urban livelihoods. *INT-06* observed that,

"The satellite towns are thriving hubs for trade and commerce. Markets, small-scale industries, and retail businesses are flourishing here because of the high population density and demand for goods and services."

These towns contribute significantly to Abuja's overall economy, with some residents commuting to the city center for work while conducting other economic activities within the towns. Trade thrives in satellite towns because of the population density. People go to satellite towns such as Anagada and Kuje not just to live but to do business. The demand for goods and services creates endless opportunities for commerce. *INT-07* reiterated this economic importance, stating that,

"*The cost of land and labor in satellite towns is much lower than in the city center, which is why many small industries operate here. The proximity to Abuja still gives us access to a large market."*

Another critical function of satellite towns is the reduction of urban sprawl and informal settlements. Enoguanbhor (2022) emphasized that the Abuja Master Plan envisioned satellite towns as planned buffers to manage expansion and discourage the growth of informal settlements. Similarly, Mshelia (2024) and the ISPRS (2020) study confirmed that spatial growth around

Abuja's fringes continues to expand rapidly, making the planned development of satellite towns vital for urban control. *INT-08* explained that,

"The satellite towns were designed to control informal settlement growth by providing planned and serviced communities. Although challenges remain, these towns are instrumental in managing the city's expansion and preventing haphazard developments."

INT-01 further emphasized this point, stating that,

"Satellite towns are a solution to unplanned urban sprawl. They provide planned communities that include roads, utilities, and public services, which informal settlements lack. However, though they are designed to curb informal settlements, weak enforcement of urban planning policies has allowed some areas such as Jikwoyi and Dawaki to grow haphazardly."

The functionality of satellite towns in this regard is dependent on strict adherence to urban planning policies, without which, illegal settlements will spring up across the Federal Capital Territory. Ensuring these towns remain organized and the growth of informal and illegal settlements is curbed requires consistent government intervention.

The functionality of satellite towns in this regard is dependent on strict adherence to urban planning policies, without which illegal settlements will spring up across the Federal Capital Territory. Ensuring these towns remain organized and that the growth of informal and illegal settlements is curbed requires consistent government intervention. Further investigation through the interviews revealed that the satellite towns are also meant to promote urban–rural linkages, provide employment opportunities to residents, and ensure environmental and social balance. The majority of participants view satellite towns as employment hubs. *INT-09* remarked that,

"These towns are not just residential areas; they also provide jobs through government offices, private businesses, and informal sector activities."

This observation supports Ali (2020), who demonstrated that commuter movement between Abuja and its satellite towns reflects a functional labor linkage that sustains both urban and peri-urban economies. Satellite towns attract businesses due to their relatively lower cost of land and labor compared to the city center, which stimulates job creation. The linkage between urban and rural areas has also been improved due to the development of satellite towns. According to *INT-10*,

"*Bwari serves as a link between Abuja and its surrounding rural areas. Farmers bring produce here to sell, and traders take goods to the villages, creating a flow of resources in both directions*."

Transportation services have improved because of the role satellite towns play in connecting urban and rural areas. Bus routes from these towns often extend to rural communities, benefiting everyone. *INT-11* also highlighted this role, commenting that,

"Satellite towns act as bridges between Abuja and surrounding rural communities. They facilitate the flow of people, goods, and services, creating economic and social integration within the territory."

This integration supports both rural development and urban growth, making satellite towns pivotal to the region's socioeconomic balance. Satellite towns help decentralize urban functions, reducing traffic and pollution in central Abuja. This makes the city more livable and the towns quieter and greener. In terms of environmental and social balance, the social diversity in satellite towns fosters unity. People from different backgrounds live and work together, creating a vibrant and inclusive community. *INT-12* acknowledged the role of satellite towns in fostering environmental sustainability, noting that, *"By decentralizing urban functions, satellite towns help reduce traffic congestion and pollution in Abuja city. They provide a quieter, greener alternative for residents seeking a less hectic lifestyle."*

Socially, these towns offer a sense of community and cultural diversity, as they attract people from various ethnic and socioeconomic backgrounds.

5.2 Availability of Infrastructure

The availability of critical infrastructures such as electricity, water supply, roads, waste management, public transport, public schools, open spaces and parks is key to the functionality of satellite towns in the study area. According to Van Leynseele & Bontje (2019), satellite cities in emerging economies must address contemporary challenges posed by rapid urbanization, environmental degradation, and climate change by ensuring adequate infrastructure deployment, sustainable service delivery such as clean water, reliable electricity, waste management, and green/open public spaces. More recently, Tonnarelli & Mora (2024) argued that new or expanding satellite towns should also incorporate resilient infrastructure design in order to remain livable and sustainable in the face of environmental stress and demographic pressure. The availability and accessibility of key infrastructures in the satellite towns are discussed as follows.

5.2.1 Daily Supply of Electricity

In terms of the hours of electricity supply across the study area, the highest proportion of respondents (41.3%) indicated that electricity supply in their neighborhoods is less than 5 hours per day. A further 26.6% reported that electricity availability is between 5-10 hours daily. About 11.7% of respondents described the situation as between 11-15 hours of electricity per day, while 18.1% and 2.1% of respondents, respectively, reported between 16-20 hours and above 20 hours of electricity supply per day.

When disaggregated by satellite towns, the majority of respondents in Bwari (74.4%), Kubwa (64.8%), and Kuje (44.7%) reported having between 16-20 hours of electricity supply daily. In contrast, in Anagada and Kusaki-Yangi, most respondents at 56.5% and 46.2%, respectively, indicated between 11-15 hours of electricity supply per day. However, in Dobi, the highest proportion of respondents (44.4%) reported between 5-10 hours of electricity daily, while in Karshi, the majority (63.9%) stated that electricity supply in their neighborhood is less than 5 hours per day.

As emphasized by Tennakoon & Kulatunga (2024), the consistent and adequate availability of critical infrastructure such as electricity is essential for the development and functionality of satellite towns, highlighting the uneven distribution of power supply across the study area. This is further corroborated by NBS, (2024) where households experience up to 6-7 weekly blackouts that often last 12 hours daily.

Table 5.1: Daily Supply of Electricity by Satellite Town

Satellite Town		Level of Electricity Availability					
		< 5 Hours	5-10 Hours	11-15 Hours	16-20 Hours	>20 Hours	Total
Bwari	Count	11	67	9	2	1	90
	% within Neighborhood	12.2%	74.4%	10.0%	2.2%	1.1%	100.0%
Kubwa	Count	7	59	20	3	2	91
	% within Neighborhood	7.7%	64.8%	22.0%	3.3%	2.2%	100.0%
Kuje	Count	0	17	16	4	1	38
	% within Neighborhood	0.0%	44.7%	42.1%	10.5%	2.6%	100.0%
Karshi	Count	2	2	0	217	392	613
	% within Neighborhood	0.3%	0.3%	0.0%	35.4%	63.9%	100.0%
Dobi	Count	0	4	19	28	12	63
	% within Neighborhood	0.0%	6.3%	30.2%	44.4%	19.0%	100.0%
Anagada	Count	1	15	35	9	2	62
	% within Neighborhood	1.6%	24.2%	56.5%	14.5%	3.2%	100.0%
Kusaki-Yanga	Count	0	16	18	4	1	39
	% within Neighborhood	0.0%	41.0%	46.2%	10.3%	2.6%	100.0%
Total	Count	21	180	117	267	411	996
	% within Neighborhood	2.1%	18.1%	11.7%	26.8%	41.3%	100.0%

Source: Author's Survey, 2024

5.2.2 Presence of Water Supply

In terms of the body that provides potable water for use across the satellite towns (Table 5.2), an overwhelming proportion of respondents (93.6%) affirmed that individuals are responsible for the provision of water in their neighborhoods. A small proportion (4.7%) affirmed the government's involvement in the provision of potable water for residents' use across the study area. Across the satellite towns, an overwhelming proportion of respondents confirmed the individuals' role in providing water for their households, while the towns with the highest proportions acknowledging government involvement include Kubwa (12.1%), Kuje (10.5%), and Kusaki-Yanga (10.3%).

Water availability and supply remain critical to the functionality of satellite towns. Omali et al. (2023) emphasized that residents in most satellite communities within the Federal Capital Territory (FCT) depend primarily on privately sourced water due to the limited reach of public water infrastructure. Similarly, Mobolaji & Akinwumiju (2025) reported that the uneven spatial distribution of potable water infrastructure across peri-urban settlements in Abuja perpetuates a pattern of individual responsibility for water access, highlighting persistent infrastructural gaps in these developing urban areas.

Table 5.2: Body responsible for the Provision of Potable Water

Satellite Towns		Body responsible for the Provision of Potable Water: Government	Individual	Private Companies	Others	Total
Bwari	Count	5	85	0	0	90
	% within Neighborhood	5.6%	94.4%	0.0%	0.0%	100.0%
Kubwa	Count	11	80	0	0	91
	% within Neighborhood	12.1%	87.9%	0.0%	0.0%	100.0%
Kuje	Count	4	33	1	0	38
	% within Neighborhood	10.5%	86.8%	2.6%	0.0%	100.0%
Karshi	Count	17	588	6	2	613
	% within Neighborhood	2.8%	95.9%	1.0%	0.3%	100.0%
Dobi	Count	3	56	4	0	63
	% within Neighborhood	4.8%	88.9%	6.3%	0.0%	100.0%
Anagada	Count	3	56	3	0	62
	% within Neighborhood	4.8%	90.3%	4.8%	0.0%	100.0%
Kusaki-Yanga	Count	4	34	1	0	39
	% within Neighborhood	10.3%	87.2%	2.6%	0.0%	100.0%
Total	Count	47	932	15	2	996
	% within Neighborhood	4.7%	93.6%	1.5%	0.2%	100.0%

Source: Author's Survey, 2024

5.2.3 Source of Water Supply

As presented in Table 5.3, the majority of respondents across the study area with a representation of 63.0% affirmed that their major source of water supply is pipe-borne water with the proportion of respondents who get their water supply from wells represented as 36.4%.

By satellite town, an overwhelming proportion of respondents in Bwari (77.8%), Kubwa (89.0%), Kuje (63.2%), Karshi (59.1%), Anagada (77.4%) and Kusaki-Yanga (64.1%) affirmed pipe-borne water to be their major source of water supply while in Dobi satellite town, the majority of respondents at 71.4% affirmed that they get majority of their water from wells.

Table 5.3: Major Source of Water Supply by Satellite Town

Neighborhood of Respondents		Major Source of Water Supply: Pipe-borne	Well	River	Spring	Others	Total
Bwari	Count	70	20	0	0	0	90
	% within Neighborhood	77.8%	22.2%	0.0%	0.0%	0.0%	100.0%
Kubwa	Count	81	10	0	0	0	91
	% within Neighborhood	89.0%	11.0%	0.0%	0.0%	0.0%	100.0%
Kuje	Count	24	13	0	1	0	38
	% within Neighborhood	63.2%	34.2%	0.0%	2.6%	0.0%	100.0%
Karshi	Count	362	250	1	0	0	613
	% within Neighborhood	59.1%	40.8%	0.2%	0.0%	0.0%	100.0%
Dobi	Count	17	45	0	0	1	63
	% within Neighborhood	27.0%	71.4%	0.0%	0.0%	1.6%	100.0%
Anagada	Count	48	12	1	0	1	62
	% within Neighborhood	77.4%	19.4%	1.6%	0.0%	1.6%	100.0%
Kusaki-Yanga	Count	25	13	0	1	0	39
	% within Neighborhood	64.1%	33.3%	0.0%	2.6%	0.0%	100.0%
Total	Count	627	363	2	2	2	996
	% within Neighborhood	63.0%	36.4%	0.2%	0.2%	0.2%	100.0%

Source: Author's Survey, 2024

5.2.4 Availability of Waste Management Facilities

In terms of the method of waste management across the study area, as presented in Table 5.4, an overwhelming proportion of the sampled population (80.3%) indicated that they utilize public dumpsites for waste disposal, while only 10.6% reported using services provided by the waste management board. This clearly demonstrates that open dumping remains the predominant waste management practice across most satellite towns in the Federal Capital Territory (FCT). According to Adeiza et al., (2024), Abuja currently maintains four major official dumpsites, located in Gosa, Wupa, Bwari, and Dutse-Makaranta, which serve as the principal public waste disposal facilities for the territory. However, the findings of Igwilo et al. (2024) revealed the existence of over 22 active dumpsites scattered across the FCT's satellite towns, including Bwari, Kubwa, Kuje, Karshi, Gwagwalada, and Anagada, most of which are unregulated or informal. Their spatial analysis indicated that the majority of these dumpsites are situated close to residential and market areas, posing significant environmental and public health risks due to poor waste segregation and open burning practices.

Similarly, Owolabi et al. (2024), in their mapping and characterization of dumpsites in the Federal Capital Territory, observed that both legal and illegal waste disposal points have proliferated rapidly as a result of population growth, inadequate waste collection systems, and the limited capacity of the formal waste management board to cover peripheral communities. This situation explains why the majority of respondents in this study rely heavily on nearby public dumpsites for their waste disposal. Across the individual satellite towns, the majority of respondents also affirmed reliance on public dumpsites for their waste disposal. Notably, in Bwari and Kubwa, a relatively higher proportion of residents, 30.0% and 44.0%, respectively, reported engaging the waste management board for their waste disposal needs. This finding aligns with Igwilo et al. (2024), who found that these towns, being closer to the Abuja Municipal Area Council (AMAC), benefit from more consistent waste collection and transport services than more distant settlements like Karshi, Anagada, or Dobi, where informal dumpsites are the dominant disposal points.

The findings highlight a clear infrastructural imbalance in waste service delivery across the satellite towns. As Peris-Ortiz et al. (2017) noted, the challenges of waste management in developing urban regions stem from inadequate investment in waste collection, transportation, and disposal infrastructure. In the same vein, Tennakoon & Kulatunga (2024) emphasize that for a satellite town to function effectively, it must have a reliable and accessible waste management system supported by adequate public facilities such as engineered dumpsites.

Table 5.4: Method of Waste Management by Satellite Town

Neighborhood of Respondents		Method of Waste Management: Waste Management Board	Sanitary Landfill	Public Dump Site	Incinerator	Others	Total
Bwari	Count	27	0	56	7	0	90
	% within Neighborhood	30.0%	0.0%	62.2%	7.8%	0.0%	100.0%
Kubwa	Count	40	2	41	8	0	91
	% within Neighborhood	44.0%	2.2%	45.1%	8.8%	0.0%	100.0%
Kuje	Count	0	1	34	3	0	38
	% within Neighborhood	0.0%	2.6%	89.5%	7.9%	0.0%	100.0%
Karshi	Count	37	16	538	22	0	613
	% within Neighborhood	6.0%	2.6%	87.8%	3.6%	0.0%	100.0%
Dobi	Count	2	10	42	2	7	63
	% within Neighborhood	3.2%	15.9%	66.7%	3.2%	11.1%	100.0%
Anagada	Count	0	8	54	0	0	62
	% within Neighborhood	0.0%	12.9%	87.1%	0.0%	0.0%	100.0%
Kusaki-Yanga	Count	0	1	35	3	0	39
	% within Neighborhood	0.0%	2.6%	89.7%	7.7%	0.0%	100.0%
Total	Count	106	38	800	45	7	996
	% within Neighborhood	10.6%	3.8%	80.3%	4.5%	0.7%	100.0%

Source: Author's Survey, 2024

5.2.5 Availability of Public Schools

In Table 5.5, the majority of respondents at 59.1% are of the opinion that the availability of public schools in the study area is good with a further 18.4% of respondents affirming it to be very good while the proportion of respondents who believe the availability of public schools is average at best is represented as 21.3%.

By satellite town, the majority of respondents in Bwari (73.3%), Kubwa (68.1%), Karshi and (64.8%) affirmed that the availability of public schools is good while the majority of respondents in Kuje (50.0%), Dobi (60.3%) Anagada (67.7%) and Kusaki-Yanga (53.8%) opined that the availability of public schools is average at best. According to the FCT Education

Management Information System (2022), there were 609 public primary and secondary schools as at 2017 compared to 2,364 private primary and secondary school corroborating the findings of the study.

Table 5.5: Availability of Public Schools by Satellite Towns

Neighborhood of Respondents		Availability of Public Schools: Very Good	Good	Average	Poor	Total
Bwari	Count	9	66	15	0	90
	% within Neighborhood	10.0%	73.3%	16.7%	0.0%	100.0%
Kubwa	Count	15	62	13	1	91
	% within Neighborhood	16.5%	68.1%	14.3%	1.1%	100.0%
Kuje	Count	4	14	19	1	38
	% within Neighborhood	10.5%	36.8%	50.0%	2.6%	100.0%
Karshi	Count	149	397	64	3	613
	% within Neighborhood	24.3%	64.8%	10.4%	0.5%	100.0%
Dobi	Count	2	17	38	6	63
	% within Neighborhood	3.2%	27.0%	60.3%	9.5%	100.0%
Anagada	Count	0	20	42	0	62
	% within Neighborhood	0.0%	32.3%	67.7%	0.0%	100.0%
Kusaki-Yanga	Count	4	13	21	1	39
	% within Neighborhood	10.3%	33.3%	53.8%	2.6%	100.0%
Total	Count	183	589	212	12	996
	% within Neighborhood	18.4%	59.1%	21.3%	1.2%	100.0%

Source: Author's Survey, 2024

5.2.6 Presence of Open Spaces and Parks

In terms of the presence of open spaces and parks across satellite towns as presented in Table 5.6, the majority of respondents with a representation of 68.0% affirmed the presence of open spaces and parks in their respective satellite towns while the proportion of respondents who are of the opinion that there are no open spaces and parks in their neighborhoods is given as 32.0%. This was found to be the case across all satellite towns.

By satellite town, the majority of respondents in Bwari (92.2%), Kubwa (78.0%), Kuje (60.5%), Karshi (63.1%), Dobi (66.7%), Anagada (74.2%) and Kusaki-Yanga (64.1%) affirmed that the availability of open space and parks. Open spaces are a key component of Howard's

Garden city concept as they are critical for promoting social cohesion and community engagement. Qi et al. (2024) emphasized that features like accessibility, safety, mixed land use, and visual quality of public spaces are strongly correlated with social cohesion and well-being.

Table 5.6: Presence of Open Spaces and Parks

		Presence of Open Spaces and Parks		
Neighborhood of Respondents		Yes	No	Total
Bwari	Count	83	7	90
	% within Neighborhood	92.2%	7.8%	100.0%
Kubwa	Count	71	20	91
	% within Neighborhood	78.0%	22.0%	100.0%
Kuje	Count	23	15	38
	% within Neighborhood	60.5%	39.5%	100.0%
Karshi	Count	387	226	613
	% within Neighborhood	63.1%	36.9%	100.0%
Dobi	Count	42	21	63
	% within Neighborhood	66.7%	33.3%	100.0%
Anagada	Count	46	16	62
	% within Neighborhood	74.2%	25.8%	100.0%
Kusaki-Yanga	Count	25	14	39
	% within Neighborhood	64.1%	35.9%	100.0%
Total	Count	677	319	996
	% within Neighborhood	68.0%	32.0%	100.0%

Source: Author's Survey, 2024

5.2.7 Availability of Road Infrastructure

From Table 5.7, the proportion of respondents across the study area who are of the opinion that the quality of road infrastructure is very good is given as 26.7%, with the proportion of respondents who affirmed the quality of transport to be good presented as 53.3%. A further 12.2% noted the quality of public transport to be average in the study area. While the proportion who stated that the quality of public transport to be poor or very poor is 7.4 and 0.3% respectively.

By satellite town, the majority of respondents in Bwari (67.8%), Kubwa (84.6%), and Karshi (62.6%) affirmed that they are very satisfied with the quality of road infrasturcture in their respective regions with the majority of respondents in Kuje (86.8%), Dobi (76.2%) and Kusaki-

Yanga (87.2%) also affirming their satisfaction, while in Anagada satellite town, an overwhelming proportion of the sampled population at 88.7% affirmed their dissatisfaction with the quality of roads in their region. Tennakoon & Kulatunga, (2024) posited that quality and well-maintained roads make significant contribution to the functionality of satellite towns.

Table 5.7: Quality of Road Infrastructure by Satellite Town

Neighborhood of Respondents		Quality of Road Infrastructure: Very Good	Good	Average	Poor	Very Poor	Total
Bwari	Count	38	49	2	1	0	90
	% within Neighborhood	42.2%	54.4%	2.2%	1.1%	0.0%	100.0%
Kubwa	Count	32	58	1	0	0	91
	% within Neighborhood	35.2%	63.7%	1.1%	0.0%	0.0%	100.0%
Kuje	Count	0	13	20	4	1	38
	% within Neighborhood	0.0%	34.2%	52.6%	10.5%	2.6%	100.0%
Karshi	Count	194	384	31	4	0	613
	% within Neighborhood	31.6%	62.6%	5.1%	0.7%	0.0%	100.0%
Dobi	Count	0	13	42	8	0	63
	% within Neighborhood	0.0%	20.6%	66.7%	12.7%	0.0%	100.0%
Anagada	Count	2	0	6	53	1	62
	% within Neighborhood	3.2%	0.0%	9.7%	85.5%	1.6%	100.0%
Kusaki-Yanga	Count	0	14	20	4	1	39
	% within Neighborhood	0.0%	35.9%	51.3%	10.3%	2.6%	100.0%
Total	Count	266	531	122	74	3	996
	% within Neighborhood	26.7%	53.3%	12.2%	7.4%	0.3%	100.0%

Source: Author's Survey, 2024

5.2.8 Public Transportation in the Satellite Towns

In terms of the quality of public transport across the study area (Table 5.8), respondents reported mixed perceptions. Overall, 8.3% rated the quality of public transport as very good, while 65.1% considered it good. A further 22.3% described it as average, and only 3.7% and 0.6% rated it poor and very poor, respectively. When disaggregated by satellite towns, the majority of respondents in Bwari (75.6%), Kubwa (72.5%), and Karshi (73.7%) perceived public transport services in their neighbourhoods as good. Similarly, in Kuje (47.4%) and Kusaki-Yanga (43.6%), most respondents also rated transport quality as good, although a considerable proportion, 36.8%

and 41.0%, respectively, classified it as average. Meanwhile, in Dobi (63.5%) and Anagada (51.6%), the majority reported that transport services are average at best.

Across Abuja's satellite towns, the most common modes of public transport include minibuses (danfo), shared taxis, tricycles (keke napep), and motorcycles (okada), which provide last-mile connectivity in areas with limited road infrastructure. Abdullah et al. (2022) observed that these modes remain the backbone of Abuja's urban and peri-urban mobility, especially for low- and middle-income residents, as formal bus services are often irregular and limited in coverage. Furthermore, Pillah (2024) emphasized that despite improvements in road connectivity and mass transit reforms, issues such as route inefficiencies, congestion, and inconsistent service reliability persist, particularly in peripheral satellite towns.

These findings align with the principles of new urbanism, which promote efficient, accessible, and sustainable transportation as a foundation for reducing urban carbon footprints and improving quality of life. The results suggest that while public transport quality in Abuja's satellite towns is generally perceived as satisfactory, gaps remain in service regularity, coverage, and affordability, which are essential to achieving equitable urban mobility.

Table 5.8: Quality of Public Transport

Neighborhood of Respondents		Quality of Public Transport: Very Good	Good	Average	Poor	Very Poor	Total
Bwari	Count	14	68	7	1	0	90
	% within Neighborhood	15.6%	75.6%	7.8%	1.1%	0.0%	100.0%
Kubwa	Count	12	66	13	0	0	91
	% within Neighborhood	13.2%	72.5%	14.3%	0.0%	0.0%	100.0%
Kuje	Count	0	18	14	5	1	38
	% within Neighborhood	0.0%	47.4%	36.8%	13.2%	2.6%	100.0%
Karshi	Count	54	452	100	6	1	613
	% within Neighborhood	8.8%	73.7%	16.3%	1.0%	0.2%	100.0%
Dobi	Count	2	5	40	14	2	63
	% within Neighborhood	3.2%	7.9%	63.5%	22.2%	3.2%	100.0%
Anagada	Count	1	22	32	6	1	62
	% within Neighborhood	1.6%	35.5%	51.6%	9.7%	1.6%	100.0%
Kusaki-Yanga	Count	0	17	16	5	1	39
	% within Neighborhood	0.0%	43.6%	41.0%	12.8%	2.6%	100.0%
Total	Count	83	648	222	37	6	996
	% within Neighborhood	8.3%	65.1%	22.3%	3.7%	0.6%	100.0%

Source: Author's Survey, 2024

5.2.9 Availability and Quality of Transport Systems

The availability and quality of transportation systems across the study area, as presented in Table 5.9, reveal that the majority of respondents (67.7%) rated transportation availability and quality as good, while 19.5% described it as average, and 1.9% viewed it as poor. When disaggregated by satellite towns, most respondents in Bwari (77.8%), Kubwa (65.9%), Kuje (63.2%), Karshi (79.6%), and Kusaki-Yangi (61.5%) affirmed that the availability and quality of transport systems in their neighbourhoods are good. In contrast, in Anagada (74.6%) and Dobi (85.5%), the majority considered transport systems to be average at best, reflecting persistent gaps in connectivity and infrastructure.

Across Abuja's satellite towns, the primary modes of public transport include minibuses (danfo), shared taxis, tricycles (keke napep), and motorcycles (okada), which dominate local mobility. Closer to the city, some residents also make use of ride-hailing services and the Abuja Light Rail, which provides limited inter-urban connectivity. Abdullah et al. (2022) found that tricycles and minibuses serve as the most accessible and affordable modes for residents in Abuja's suburban and satellite areas, although challenges such as overcrowding, poor road conditions, and limited route coverage persist. Similarly, Pillah (2024) highlighted that despite the government's investments in new bus fleets and improved road networks, the lack of a coordinated transport policy and weak maintenance culture have constrained efficiency and quality.

Overall, while transport availability in most satellite towns is generally perceived as satisfactory, issues of service reliability, affordability, and integration between modes continue to affect users' experiences. These findings reinforce the call for a sustainable and multimodal transport framework for the Federal Capital Territory, aligning with contemporary urban mobility goals that emphasize accessibility, equity, and reduced carbon emissions.

Table 5.9: Availability and Quality of Transportation Systems by Satellite Town

		Availability and Quality of Transportation Systems					
Neighborhood of Respondents		Very Good	Good	Average	Poor	Very Poor	Total
Bwari	Count	19	70	1	0	0	90
	% within Neighborhood	21.1%	77.8%	1.1%	0.0%	0.0%	100.0%
Kubwa	Count	29	60	2	0	0	91
	% within Neighborhood	31.9%	65.9%	2.2%	0.0%	0.0%	100.0%
Kuje	Count	0	24	13	1	0	38
	% within Neighborhood	0.0%	63.2%	34.2%	2.6%	0.0%	100.0%
Karshi	Count	58	488	64	2	1	613
	% within Neighborhood	9.5%	79.6%	10.4%	0.3%	0.2%	100.0%
Dobi	Count	2	2	47	12	0	63
	% within Neighborhood	3.2%	3.2%	74.6%	19.0%	0.0%	100.0%
Anagada	Count	0	6	53	3	0	62
	% within Neighborhood	0.0%	9.7%	85.5%	4.8%	0.0%	100.0%
Kusaki-Yanga	Count	0	24	14	1	0	39
	% within Neighborhood	0.0%	61.5%	35.9%	2.6%	0.0%	100.0%
Total	Count	108	674	194	19	1	996
	% within Neighborhood	10.8%	67.7%	19.5%	1.9%	0.1%	100.0%

Source: Author's Survey, 2024

5.2.10 Hypothesis One (Multiple Regression)

The first hypothesis which states that, "the availability of infrastructural facilities in satellite towns does not significantly influence the quality of life of residents" was tested using the multiple regression statistical method.

The Model Summary in Table 5.9.1 shows the strength of the relationship between the predictors and the dependent variable, which is the level of satisfaction with the quality of life. The R value of 0.712 indicates a strong positive correlation between the availability of infrastructural facilities and quality of life. The R^2 value of 0.507 suggests that 50.7% of the variance in quality of life is explained by the predictors, while the Adjusted R^2 value of 0.503 accounts for the number of predictors and confirms the robustness of the model. The standard error of the estimate (0.875) indicates the average deviation of observed values from the predicted values.

Table 5.9.1: Model Summary of availability of infrastructural facilities in STs

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.712[a]	.507	.503	.875

a. Predictors: (Constant), Accessibility of public transport, Safety of neighborhood, Rating of sense of community, Affordability of housing, Rating of air quality, Housing quality in terms of construction and amenities, Effectiveness of waste management, Accessibility of healthcare from place of residence

The ANOVA presented in Table 5.9.2 assesses the overall significance of the regression model. The total variance in population density in ST is 839.264, with 251.452 attributed to the regression model and 587.812 attributed to residuals. The F-statistic is 52.777 with a significance level of $p = 0.000$, indicating that the regression model significantly predicts population density in ST. This result implies that the predictors, taken together, significantly reduce population pressure in the city.

Table 5.9.2: F-statistics of availability of infrastructural facilities in STs

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	776.568	8	97.071	126.677	.000[b]
	Residual	756.324	987	.766		
	Total	1532.892	995			

a. Dependent Variable: Level of satisfaction with quality of life
b. Predictors: (Constant), Accessibility of public transport, Safety of neighborhood, Rating of sense of community, Affordability of housing, Rating of air quality, Housing quality in terms of construction and amenities, Effectiveness of waste management, Accessibility of healthcare from place of residence

The coefficients in Table 5.9.3 provides detailed insights into the contributions of various predictors to satisfaction with quality of life. Affordability of housing has a negative and significant coefficient (-0.216, p = 0.000), indicating that less affordable housing reduces satisfaction with quality of life. In contrast, housing quality in terms of construction and amenities shows a positive and highly significant coefficient (0.392, p = 0.000), suggesting that better housing quality enhances satisfaction. Accessibility of healthcare from the place of residence has a negative and significant coefficient (-0.123, p = 0.001), highlighting that poor healthcare accessibility diminishes satisfaction with quality of life.

Neighborhood safety plays a critical role, with a positive and highly significant coefficient (0.488, p = 0.000), demonstrating its substantial impact on improving quality of life. Similarly, air quality has a positive and significant coefficient (0.146, p = 0.001), indicating that better air quality contributes to greater satisfaction. Effective waste management also shows a positive and significant effect (0.208, p = 0.000), emphasizing its importance in enhancing quality of life. A stronger sense of community has a positive and significant influence as well, with a coefficient of 0.121 (p = 0.000).

The most substantial predictor is accessibility of public transport, with the largest positive and highly significant coefficient (0.592, p = 0.000), underscoring its critical role in strongly influencing satisfaction with quality of life. These findings collectively highlight the multifaceted factors that shape the perceived quality of life, ranging from housing and healthcare to environmental and social dimensions.

Table 5.9.3: Coefficients of availability of infrastructural facilities in STs

		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	-1.276	.172		-7.440	.000		
	Affordability of housing	-.216	.045	-.126	-4.794	.000	.723	1.383
	Housing quality in terms of construction and amenities	.392	.033	.317	11.719	.000	.681	1.468
	Accessibility of healthcare from place of residence	-.123	.037	-.094	-3.314	.001	.625	1.599
	Safety of neighborhood	.488	.039	.390	12.431	.000	.507	1.974
	Rating of air quality	.146	.043	.087	3.382	.001	.749	1.334
	Effectiveness of waste management	.208	.027	.210	7.822	.000	.696	1.436
	Rating of sense of community	.121	.031	.094	3.859	.000	.847	1.181
	Accessibility of public transport	.592	.037	.396	15.875	.000	.805	1.242

a. Dependent Variable: Level of satisfaction with quality of life

The Collinearity Diagnostics in Table 5.9.4 reveals that all Variance Inflation Factor (VIF) values are below 2, indicating no significant multicollinearity among predictors. This ensures that the predictors are independent and reliable for the regression model.

Table 5.9.4: Collinearity Diagnostics of availability of infrastructural facilities in STs

				Variance Proportions								
Model	Dimension	Eigenvalue	Condition Index	(Constant)	Affordability of housing	Housing quality in terms of construction and amenities	Accessibility of healthcare from place of residence	Safety of neighborhood	Rating of air quality	Effectiveness of waste management	Rating of sense of community	Accessibility of public transport
1	1	8.133	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00
	2	.283	5.360	.00	.00	.02	.07	.15	.00	.06	.00	.04
	3	.155	7.252	.00	.12	.22	.01	.03	.09	.07	.01	.02
	4	.143	7.546	.00	.00	.04	.19	.01	.00	.10	.28	.07
	5	.086	9.723	.01	.01	.01	.00	.04	.00	.08	.33	.64
	6	.071	10.671	.01	.61	.27	.13	.01	.01	.07	.08	.03
	7	.063	11.379	.00	.00	.36	.47	.16	.22	.01	.07	.19
	8	.044	13.530	.00	.11	.06	.10	.60	.60	.32	.01	.00
	9	.021	19.495	.97	.15	.02	.03	.00	.08	.30	.22	.00

a. Dependent Variable: Level of satisfaction with quality of life

In conclusion, the hypothesis which states that "the availability of infrastructural facilities in satellite towns does not significantly influence the quality of life of residents" is rejected. The analysis reveals that infrastructural components such as housing quality, neighborhood safety, public transport accessibility, waste management efficiency, and air quality significantly enhance the overall quality of life among residents of satellite towns. However, challenges such as housing affordability and limited access to healthcare services were found to negatively influence residents' satisfaction with their living conditions.

These findings align with those of Abubakar (2021), who emphasized that access to reliable infrastructure and public services remains a major determinant of urban livability and socio-economic well-being in Nigerian satellite towns. Similarly, Omali et al. (2023) found that inadequate infrastructure, particularly poor water supply and waste management, undermines both environmental quality and public health outcomes in the Federal Capital Territory. Pillah (2024) further established that efficient transport networks in peri-urban Abuja significantly improve residents' access to employment, education, and healthcare, which are critical dimensions of quality of life. Moreover, Mobolaji & Akinwumiju (2025) highlighted that infrastructure deficits and uneven government interventions continue to exacerbate inequality and environmental stress in emerging satellite communities. Overall, the findings reaffirm that the provision, accessibility, and quality of urban infrastructure play a pivotal role in determining residents' life satisfaction and well-being. Sustainable planning policies that prioritize affordable housing, improved healthcare access, and integrated infrastructure systems are therefore essential for ensuring functional, inclusive, and resilient satellite towns within the Abuja metropolis.

5.3 Accessibility to Infrastructure

This section discusses respondents' accessibility to critical infrastructures and facilities across satellite towns in the Federal Capital Territory.

5.3.1 Accessibility of Public Transport

As presented in Table 5.10, the analysis indicates that the majority of respondents (64.1%) believe that public transport is accessible across the study area, while an additional 23.5% affirmed that it is very accessible. Only 0.9% of respondents reported that public transportation is not accessible. Disaggregating by satellite towns, the majority of respondents in all locations, including Bwari, Kubwa, Kuje, Karshi, Dobi, Anagada, and Kusaki-Yanga, affirmed that public transport is readily available and accessible in their neighborhoods.

The findings reveal that residents rely primarily on shared taxis, minibuses, tricycles (Keke Napep), and motorcycles (Okada) as the main modes of transportation. In addition, the Abuja Urban Mass Transit Company buses provide limited coverage to some satellite towns, serving as an affordable and organized alternative to informal transport systems. These results are consistent with Pillah (2024), who observed that the integration of formal and informal transport systems in Abuja's peripheral areas has improved overall accessibility, though challenges of affordability and route coverage persist. Similarly, Abdullah et al. (2022) reported that the combination of low-cost shared transport and emerging digital ride-hailing services has enhanced intra-urban mobility and connectivity for low- and middle-income residents in the Federal Capital Territory.

Table 5.10: Accessibility of Public Transport Crosstabulation

Neighborhood of Respondents		Accessibility of Public Transport: Very Accessible	Accessible	Moderately Accessible	Not Accessible	Total
Bwari	Count	16	71	3	0	90
	% within Neighborhood	17.8%	78.9%	3.3%	0.0%	100.0%
Kubwa	Count	16	75	0	0	91
	% within Neighborhood	17.6%	82.4%	0.0%	0.0%	100.0%
Kuje	Count	6	21	11	0	38
	% within Neighborhood	15.8%	55.3%	28.9%	0.0%	100.0%
Karshi	Count	176	368	69	0	613
	% within Neighborhood	28.7%	60.0%	11.3%	0.0%	100.0%
Dobi	Count	6	35	14	8	63
	% within Neighborhood	9.5%	55.6%	22.2%	12.7%	100.0%
Anagada	Count	9	45	7	1	62
	% within Neighborhood	14.5%	72.6%	11.3%	1.6%	100.0%
Kusaki-Yanga	Count	5	23	11	0	39
	% within Neighborhood	12.8%	59.0%	28.2%	0.0%	100.0%
Total	Count	234	638	115	9	996
	% within Neighborhood	23.5%	64.1%	11.5%	0.9%	100.0%

Source: Author's Survey, 2024

5.3.2 Distance from Place of Residence to Place of Work

The average distance from respondents' residence to their place of work as presented in Table 5.11 shows that the highest proportion of respondents at 37.9% cover a distance of 500m-

1km to get to their places of work from their residences with a further 25.3% affirming they cover a distance of 1-2km while the proportion of respondents who cover a distance of more than 3km to get to their place of work is presented as 14.3%.

By satellite town, it was found that the average distance of less than 500m and 500m-1km covered by respondents before getting to their places of work is more prominent in the less urbanized satellite towns of Karshi, Anagada, and Dobi while the distances of more than 3km covered by respondents where more prominent in the more urbanized satellite towns of Kubwa and Bwari thus implying that their places of work are mostly outside the satellite town.

Table 5.11: Distance from Residence to Place of Work by Satellite Town

Neighborhood of Respondents		Distance from Residence to Place of Work: Less than 500m	500m-1km	1km-2km	2km-3km	Above 3km	Total
Bwari	Count	7	35	21	17	10	90
	% within Neighborhood	7.8%	38.9%	23.3%	18.9%	11.1%	100.0%
Kubwa	Count	9	26	20	11	25	91
	% within Neighborhood	9.9%	28.6%	22.0%	12.1%	27.5%	100.0%
Kuje	Count	2	16	14	3	3	38
	% within Neighborhood	5.3%	42.1%	36.8%	7.9%	7.9%	100.0%
Karshi	Count	68	228	156	82	79	613
	% within Neighborhood	11.1%	37.2%	25.4%	13.4%	12.9%	100.0%
Dobi	Count	15	32	7	0	9	63
	% within Neighborhood	23.8%	50.8%	11.1%	0.0%	14.3%	100.0%
Anagada	Count	4	24	20	2	12	62
	% within Neighborhood	6.5%	38.7%	32.3%	3.2%	19.4%	100.0%
Kusaki-Yanga	Count	2	16	14	3	4	39
	% within Neighborhood	5.1%	41.0%	35.9%	7.7%	10.3%	100.0%
Total	Count	107	377	252	118	142	996
	% within Neighborhood	10.7%	37.9%	25.3%	11.8%	14.3%	100.0%

Source: Author's Survey, 2024

5.3.3 Ease of Access to Urban Facilities

As presented in Table 5.12, the findings reveal that a majority of respondents (50.3%) believe that access to urban facilities in the Federal Capital City has become easy since the development of satellite towns, while an additional 40.3% described access as moderate. Only 1.9% of respondents reported that access to such facilities is not easy. By satellite town, the highest proportions of respondents in Bwari (65.6%), Kubwa (57.1%), Kuje (52.6%), Dobi (68.3%), and Kusaki-Yanga (51.3%) affirmed that access to facilities in the FCC is easy, while the majority in Anagada (58.1%) and a substantial proportion in Karshi (43.2%) described access as moderate.

These findings suggest that the establishment and growth of satellite towns have improved residents' connectivity to core urban facilities such as healthcare, education, administrative centers, and markets, primarily through the expansion of road networks and public transport corridors linking the towns to Abuja city center. Emmanuel et al. (2024) observed that infrastructural investments, particularly in rail transport within Abuja's periphery such as the Kubwa corridor, have significantly enhanced connectivity and stimulated socioeconomic development by improving accessibility and increasing residential property values. Similarly, Balogun et al. (2023) reported that the expansion of satellite towns and diversification of transport modes have improved mobility and access to essential services for low- and middle-income residents in the Federal Capital Territory. However, challenges such as inadequate road infrastructure, traffic congestion, and high commuting costs continue to undermine the overall efficiency of inter-urban mobility between the city core and its outlying settlements.

Overall, the analysis indicates that the development of satellite towns has positively influenced residents' ease of access to urban facilities, supporting the argument that decentralization and peripheral development can enhance metropolitan efficiency when adequately supported by infrastructure and transport linkages.

Table 5.12: Ease of Access to Facilities in the FCC since the Development of Satellite Towns

Neighborhood of Respondents		Very Easy	Easy	Moderate	Not Easy	Total
		Ease of Access to Facilities in the FCC since the Development of Satellite Towns				
Bwari	Count	12	59	19	0	90
	% within Neighborhood	13.3%	65.6%	21.1%	0.0%	100.0%
Kubwa	Count	10	52	29	0	91
	% within Neighborhood	11.0%	57.1%	31.9%	0.0%	100.0%
Kuje	Count	0	20	17	1	38
	% within Neighborhood	0.0%	52.6%	44.7%	2.6%	100.0%
Karshi	Count	52	283	265	13	613
	% within Neighborhood	8.5%	46.2%	43.2%	2.1%	100.0%
Dobi	Count	0	43	17	3	63
	% within Neighborhood	0.0%	68.3%	27.0%	4.8%	100.0%
Anagada	Count	1	24	36	1	62
	% within Neighborhood	1.6%	38.7%	58.1%	1.6%	100.0%
Kusaki-Yanga	Count	0	20	18	1	39
	% within Neighborhood	0.0%	51.3%	46.2%	2.6%	100.0%
Total	Count	75	501	401	19	996
	% within Neighborhood	7.5%	50.3%	40.3%	1.9%	100.0%

Source: Author's Survey, 2024

5.4 Satisfaction with Available Infrastructure

This section discusses respondents' satisfaction with the available infrastructures and facilities across satellite towns in the Federal Capital Territory.

5.4.1 Satisfaction with Housing in Satellite Towns

The level of satisfaction with housing as presented in Table 5.12 indicates that the proportion of respondents who are very satisfied is 11.5%, with the majority of the sampled population at 57.7% affirming their satisfaction with the housing in their satellite towns. A further 23.8% stated that they are moderately satisfied with housing while the proportion of the sampled population who severally affirmed their lack of satisfaction with housing in their satellite towns is presented as 6.9%. By satellite towns, it was found that the majority of respondents in Bwari (54.4%), Kubwa (73.6%), Kuje (63.2%), Anagada (62.9%) and Kusaki-Yanga (61.5%) are satisfied with the housing in their neighborhood. While 33.3% of respondents from Dobi are moderately satisfied with the level of housing in their neighborhood.

These findings suggest that while general satisfaction levels are high, only a small proportion of residents are highly satisfied, implying that housing in the satellite towns may meet basic standards but still lacks qualitative amenities and infrastructure that could elevate satisfaction levels. The town-specific variations highlight persistent spatial inequalities in housing quality and service provision. These results align with Iliyasu et al. (2024), who found significant spatial disparities in housing quality across Abuja's area councils, with Bwari and Kuje showing higher quality indicators than peripheral settlements such as Gwagwalada and Kwali. Similarly, Kenneth et al. (2019) reported that residents of Gwagwalada satellite town expressed dissatisfaction with housing quality and environmental conditions due to inadequate infrastructure and irregular utility supply.

Further supporting these findings, Adekunle et al. (2022) observed that housing satisfaction in Abuja largely depends on the condition of infrastructure, particularly road access, drainage, and waste management, which determines residents' perception of housing adequacy. Likewise, Sunday (2021), in his evaluation of housing and environmental quality in Kubwa, noted higher satisfaction levels among residents due to better facilities, accessibility, and planned housing layouts compared to other peripheral areas. The high satisfaction rate recorded in Kubwa within the present study corroborates these observations. Collectively, the results highlight the role of infrastructure, environmental quality, and service provision in shaping residents' housing satisfaction across Abuja's satellite towns.

Table 5.13: Level of Satisfaction with Housing in the Neighborhood

Neighborhood of Respondents		Level of Satisfaction with Housing in the Neighborhood: Very Satisfied	Satisfied	Moderately Satisfied	Not Satisfied	Total
Bwari	Count	15	49	19	7	90
	% within Neighborhood	16.7%	54.4%	21.1%	7.8%	100.0%
Kubwa	Count	15	67	7	2	91
	% within Neighborhood	16.5%	73.6%	7.7%	2.2%	100.0%
Kuje	Count	0	24	11	3	38
	% within Neighborhood	0.0%	63.2%	28.9%	7.9%	100.0%
Karshi	Count	76	352	154	31	613
	% within Neighborhood	12.4%	57.4%	25.1%	5.1%	100.0%
Dobi	Count	6	20	21	16	63
	% within Neighborhood	9.5%	31.7%	33.3%	25.4%	100.0%
Anagada	Count	3	39	13	7	62
	% within Neighborhood	4.8%	62.9%	21.0%	11.3%	100.0%
Kusaki-Yanga	Count	0	24	12	3	39
	% within Neighborhood	0.0%	61.5%	30.8%	7.7%	100.0%
Total	Count	115	575	237	69	996
	% within Neighborhood	11.5%	57.7%	23.8%	6.9%	100.0%

Source: Author's Survey, 2024

5.4.2 Satisfaction with Living Conditions in Satellite Towns

In terms of the quality of household living condition as presented in Table 5.14, the majority of respondents at 51.1% across all satellite towns are of the opinion that the quality of their household living condition is average with 34.3% stating that their household living condition is good while a further 7.2% affirmed their household living condition to be poor.

By satellite towns, the highest proportion of respondents in Bwari, Kuje, Karshi, Dobi, Anagada and Kusaki-Yangi at 48.9, 52.6, 53.8, 50.8, 41.9 and 56.4% respectively affirmed that the quality of their household living conditions is average. However, a significant proportion of respondents at 41.1% in Bwari satellite town noted that the quality of their household living condition is good. In Kubwa satellite town, the highest proportion of respondents at 48.4%

affirmed that the living conditions of their households is good, although a significant proportion of respondents at 42.9% are of the opinion that the living conditions of their households is average.

Table 5.14: Quality of Household Living Condition

Neighborhood of Respondents		Quality of Household Living Condition: Very Good	Good	Average	Poor	Very Poor	Total
Bwari	Count	4	37	44	5	0	90
	% within Neighborhood	4.4%	41.1%	48.9%	5.6%	0.0%	100.0%
Kubwa	Count	8	44	39	0	0	91
	% within Neighborhood	8.8%	48.4%	42.9%	0.0%	0.0%	100.0%
Kuje	Count	0	10	20	6	2	38
	% within Neighborhood	0.0%	26.3%	52.6%	15.8%	5.3%	100.0%
Karshi	Count	45	203	330	33	2	613
	% within Neighborhood	7.3%	33.1%	53.8%	5.4%	0.3%	100.0%
Dobi	Count	2	17	32	10	2	63
	% within Neighborhood	3.2%	27.0%	50.8%	15.9%	3.2%	100.0%
Anagada	Count	1	22	26	12	1	62
	% within Neighborhood	1.6%	35.5%	41.9%	19.4%	1.6%	100.0%
Kusaki-Yanga	Count	0	9	22	6	2	39
	% within Neighborhood	0.0%	23.1%	56.4%	15.4%	5.1%	100.0%
Total	Count	60	342	513	72	9	996
	% within Neighborhood	6.0%	34.3%	51.5%	7.2%	0.9%	100.0%

Source: Author's Survey, 2024

5.4.3 Satisfaction with Open Spaces and Parks

In terms of the level of satisfaction with the availability and quality of open spaces and parks in the study area (Table 5.15), the majority of respondents at 52.8% affirmed that they are satisfied while 43.3% of respondents presented their lack of satisfaction with the availability and quality of open spaces and parks in their neighborhoods.

By satellite towns, the majority of respondents in Bwari (56.7%), Kubwa (64.8%) and Karshi (56.6%) affirmed their satisfaction with the availability and quality of open spaces and parks while the majority of respondents in Kuje (73.7%), Dobi (57.1%), Anagada (64.5%) and Kusaki-Yanga (71.8%) stated that they were not satisfied with the availability and quality of open spaces and parks in their neighborhoods.

Table 5.15: Level of Satisfaction with the availability and quality of open spaces

Neighborhood of Respondents		Level of Satisfaction with the availability and quality of open spaces: Very Satisfied	Satisfied	Not Satisfied	Total
Bwari	Count	3	51	36	90
	% within Neighborhood	3.3%	56.7%	40.0%	100.0%
Kubwa	Count	12	59	20	91
	% within Neighborhood	13.2%	64.8%	22.0%	100.0%
Kuje	Count	0	10	28	38
	% within Neighborhood	0.0%	26.3%	73.7%	100.0%
Karshi	Count	23	347	243	613
	% within Neighborhood	3.8%	56.6%	39.6%	100.0%
Dobi	Count	0	27	36	63
	% within Neighborhood	0.0%	42.9%	57.1%	100.0%
Anagada	Count	1	21	40	62
	% within Neighborhood	1.6%	33.9%	64.5%	100.0%
Kusaki-Yanga	Count	0	11	28	39
	% within Neighborhood	0.0%	28.2%	71.8%	100.0%
Total	Count	39	526	431	996
	% within Neighborhood	3.9%	52.8%	43.3%	100.0%

Source: Author's Survey, 2024

5.4.4 Satisfaction with Urban Infrastructures

Table 5.16 presents respondents' level of satisfaction with urban infrastructures in the satellite towns. The infrastructure that respondents are most satisfied with is electricity with a mean of 3.75 and a standard deviation of 1.219, followed by sanitation facilities and water supply with respective means of 2.59 and 2.04 and standard deviations of 0.889 and 0.789. The infrastructure with the least level of satisfaction from respondents in the study area is road infrastructures with a mean of 1.63 and standard deviation of 0.871.

From the above, it can be inferred that while residents have a high level of satisfaction with electricity and water supply across satellite towns, satisfaction with the quality of roads in the satellite towns is low. This is evidenced by the lack of good roads in many parts of the satellite towns, especially in Kusaki-Yanga and Anagada where quality roads are non-existent.

Table 5.16: Level of Satisfaction with Urban Infrastructures

	N	Minimum	Maximum	Mean	Std. Deviation
Level of Satisfaction with Housing	996	1	4	1.72	.644
Level of Satisfaction with Roads	996	1	5	1.63	.871
Level of Satisfaction with Water	996	1	5	2.04	.789
Level of Satisfaction with sanitation facilities	996	1	5	2.59	.889
Level of Satisfaction with Electricity Supply	996	1	5	3.75	1.219
Valid N (listwise)	996				

Source: Author's Survey, 2024

5.5 Role of Satellite Towns in Urban Development

This section details respondents' perception of the role of satellite town in urban development. The effectiveness of satellite towns in reducing population pressure from the Federal Capital City, presence of incentives for relocation to satellite towns, contribution of satellite towns to urban and rural development and the importance of satellite towns to the development of the Federal Capital Territory are discussed.

5.5.1 Perception of Overpopulation in the FCC

As presented in Table 5.17, the majority of the sampled population across the study area at 67.9% are of the opinion that the federal capital city is overpopulated with the proportion of respondents who opined that the federal capital city is moderately populated presented as 31.5%. A further 0.6% stated that the population is low. By satellite town, the vast majority of respondents from Bwari (74.4%), Kubwa (54.9%), Kuje (84.2%), Karshi (66.4%), Dobi (57.1%), Anagada (82.3%) and Kusaki-Yanga (84.6%) affirmed that the federal capital city is overpopulated and that the city is presently experiencing the problems of overpopulation.

Originally, the Abuja Master Plan (1979) forecasted that the FCC would have about 3.1 million people in its core when fully developed, with the remaining parts of the Federal Capital Territory (outside the city center) expected to house about 2.6 million, making a projected total of roughly 5.7 million persons for the entire FCT. Recent population projections and LGA-level estimates indicate that Abuja's surrounding area councils and satellite towns have grown rapidly and now host substantial shares of the metropolis' population. For example, Gwagwalada's urban area population was estimated at roughly 537,000 in 2024, while LGA-level projections place Bwari and Kuje in the hundreds of thousands (Macrotrends 2025a). At the metropolitan scale, global city estimates place the Abuja metro at about 4.1 million persons in 2024 (Macrotrends, 2025b), substantially larger than the phased population targets originally envisaged in the 1979 Master Plan for the FCC core. Together, these data indicate that the satellite towns have expanded beyond the population distributions originally proposed in the Master Plan

Table 5.17: Population Volume in Federal Capital City

Neighborhood of Respondents		Population Volume in FCC			Total
		High	Medium	Low	
Bwari	Count	67	23	0	90
	% within Neighborhood	74.4%	25.6%	0.0%	100.0%
Kubwa	Count	50	41	0	91
	% within Neighborhood	54.9%	45.1%	0.0%	100.0%
Kuje	Count	32	6	0	38
	% within Neighborhood	84.2%	15.8%	0.0%	100.0%
Karshi	Count	407	203	3	613
	% within Neighborhood	66.4%	33.1%	0.5%	100.0%
Dobi	Count	36	24	3	63
	% within Neighborhood	57.1%	38.1%	4.8%	100.0%
Anagada	Count	51	11	0	62
	% within Neighborhood	82.3%	17.7%	0.0%	100.0%
Kusaki-Yanga	Count	33	6	0	39
	% within Neighborhood	84.6%	15.4%	0.0%	100.0%
Total	Count	676	314	6	996
	% within Neighborhood	67.9%	31.5%	0.6%	100.0%

Source: Author's Survey, 2024

5.5.2 Effectiveness of Satellite Towns in reducing Population Pressure on the FCC

The result presented in Table 5.18 shows that the majority of the sampled population at 53.1% affirmed that satellite towns in the Federal Capital Territory (FCT) have been effective in reducing population pressure on the Federal Capital City (FCC), while 38.2% stated that they have been only moderately effective. A smaller proportion of respondents, 8.7%, indicated that satellite towns have not been effective in this regard. By satellite town, it was found that the majority of respondents in Bwari (73.3%), Kubwa (64.8%), Kuje (65.8%), and Kusaki-Yanga (66.7%) affirmed that their respective settlements have contributed significantly to decongesting the FCC.

These findings suggest that the establishment of satellite towns has played a partial but measurable role in dispersing Abuja's population growth away from the city core. The high levels of perceived effectiveness in towns such as Bwari, Kubwa, and Kuje indicate that these areas have become attractive residential alternatives for low- and middle-income residents working in the city. This aligns with the objectives of the Abuja Master Plan, which projected a maximum population of 3.1 million by 2025, with satellite towns absorbing much of this growth (FCDA, 2021). However, as current estimates show the FCT's population exceeding 4.3 million (NPC, 2023), it is evident that satellite towns, though functional, have not fully mitigated the population pressure on the FCC.

Empirical studies corroborate these results. Zubair, Ojigi, & Mbih (2015) reported that although satellite towns have accommodated significant urban expansion, the lack of proportional infrastructure and services has led to unplanned growth and informal housing developments, which ultimately sustain population pressure on the city center. Similarly, Ogochukwu et al. (2022) found that while satellite settlements around Abuja have improved access to affordable housing, challenges such as inadequate transportation and limited economic opportunities continue to drive daily commuting into the city, reducing the towns' decongesting potential. Furthermore, FCTA (2022) acknowledged ongoing infrastructural projects in Kubwa, Bwari, and Karshi aimed at improving connectivity and social services, but noted that infrastructural gaps persist in peripheral settlements such as Kusaki-Yanga and Dobi.

Collectively, these findings suggest that Abuja's satellite towns are moderately effective in reducing population pressure on the FCC. Their success is evident in areas with better infrastructure and urban planning, while their limitations are most pronounced in towns facing poor service delivery, high commuting costs, and limited employment opportunities. Thus, while the policy objective of spatial decentralization is being partially achieved, sustained investment in infrastructure and service provision remains essential to enhance the long-term effectiveness of satellite towns in alleviating population pressure on the FCC.

Table 5.18: Effectiveness of Satellite Towns in reducing Population Pressure in the FCC

Neighborhood of Respondents		Effectiveness of Satellite Towns in reducing Population Pressure in the FCC: Very Effective	Effective	Moderately Effective	Barely Effective	Not Effective	Total
Bwari	Count	12	66	12	0	0	90
	% within Neighborhood	13.3%	73.3%	13.3%	0.0%	0.0%	100.0%
Kubwa	Count	6	59	25	1	0	91
	% within Neighborhood	6.6%	64.8%	27.5%	1.1%	0.0%	100.0%
Kuje	Count	2	25	11	0	0	38
	% within Neighborhood	5.3%	65.8%	28.9%	0.0%	0.0%	100.0%
Karshi	Count	41	293	269	8	2	613
	% within Neighborhood	6.7%	47.8%	43.9%	1.3%	0.3%	100.0%
Dobi	Count	1	30	24	4	4	63
	% within Neighborhood	1.6%	47.6%	38.1%	6.3%	6.3%	100.0%
Anagada	Count	1	30	27	0	4	62
	% within Neighborhood	1.6%	48.4%	43.5%	0.0%	6.5%	100.0%
Kusaki-Yanga	Count	1	26	12	0	0	39
	% within Neighborhood	2.6%	66.7%	30.8%	0.0%	0.0%	100.0%
Total	Count	64	529	380	13	10	996
	% within Neighborhood	6.4%	53.1%	38.2%	1.3%	1.0%	100.0%

Source: Author's Survey, 2024

5.5.2.1 Hypothesis Two (Multiple Regression)

The second hypothesis which states that, "the satellite towns in the FCT do not significantly reduce population pressure in the city," was tested using the multiple regression analysis.

The Model Summary in Table 5.18.1 provides insight into the strength and explanatory power of the regression model. The R value is 0.547, indicating a moderate positive correlation between the predictors and the dependent variable, population density in satellite towns (ST). The R Square value of 0.300 suggests that approximately 30% of the variance in population density is explained by the combined socio-economic factors included in the model. The Adjusted R Square of 0.294 accounts for the number of predictors and confirms the model's reliability in explaining the variance. The standard error of the estimate (0.772) indicates the average deviation of the observed values from the predicted values.

Table 5.18.1: Model Summary of effectiveness of STs in reducing population pressure in the FCC

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.547[a]	.300	.294	.772

a. Predictors: (Constant), Rating of sense of community, Accessibility of healthcare from place of residence, Quality of road infrastructure, Availability of basic utilities (electricity), Affordability of housing, Accessibility of public transport, Safety of neighborhood, Availability of water

The ANOVA analysis in Table 5.18.2 assesses the overall significance of the regression model. The Regression Sum of Squares is 251.452, while the Residual Sum of Squares is 587.812, indicating that a substantial proportion of the variance in population density is attributed to the predictors. The F-statistic of 52.777 with $p = 0.000$ indicates that the model is statistically significant. This confirms that the predictors, when combined, significantly influence population density in satellite towns, rejecting the null hypothesis that satellite towns do not reduce population pressure.

5.18.2: F-Statistics of effectiveness of STs in reducing population pressure in the FCC

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	251.452	8	31.431	52.777	.000[b]
	Residual	587.812	987	.596		
	Total	839.264	995			

a. Dependent Variable: Population density in ST
b. Predictors: (Constant), Rating of sense of community, Accessibility of healthcare from place of residence, Quality of road infrastructure, Availability of basic utilities (electricity), Affordability of housing, Accessibility of public transport, Safety of neighborhood, Availability of water

The analysis of predictors in Table 5.18.3, provides valuable insights into the factors influencing population density in satellite towns, which plays a role in reducing urban pressure. Affordability of housing has a positive and significant impact (coefficient = 0.141, p = 0.000), indicating that as housing affordability improves, population density in satellite towns increases, contributing to the mitigation of urban congestion. Similarly, availability of water shows a positive and significant relationship (coefficient = 0.115, p = 0.001), suggesting that better access to water services encourages more people to relocate to satellite towns. Quality of road infrastructure also contributes positively (coefficient = 0.071, p = 0.013), as improved roads enhance accessibility, increasing population density in satellite towns. Furthermore, accessibility of public transport is a strong positive predictor (coefficient = 0.154, p = 0.000), highlighting its role in facilitating relocation to satellite towns. Conversely, availability of basic utilities such as electricity has a significant negative relationship (coefficient = -0.464, p = 0.000), indicating that unreliable electricity supply deters people from moving to satellite towns.

Accessibility of healthcare also has a significant negative impact (coefficient = -0.359, p = 0.000), showing that poor healthcare access discourages relocation to satellite towns and subsequently reduces population density. However, safety of neighborhoods (coefficient = 0.020, p = 0.500) and rating of sense of community (coefficient = -0.026, p = 0.336) are not significant predictors, implying that these factors do not strongly influence population density in satellite towns or contribute substantially to reducing urban population pressure. Factors such as affordable housing, water availability, road infrastructure, public transport accessibility, and electricity supply play critical roles in determining the population density of satellite towns and their effectiveness in alleviating urban pressure.

5.18.3: Coefficients of effectiveness of STs in reducing population pressure in the FCC

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	3.777	.134		28.284	.000		
	Affordability of housing	.141	.037	.112	3.850	.000	.845	1.184
	Availability of basic utilities (electricity)	-.464	.031	-.452	-15.195	.000	.802	1.247
	Availability of water	.115	.033	.120	3.452	.001	.583	1.714
	Quality of road infrastructure	.071	.029	.086	2.486	.013	.599	1.670
	Accessibility of public transport	.154	.033	.139	4.617	.000	.780	1.282
	Accessibility of healthcare from place of residence	-.359	.032	-.369	-11.320	.000	.669	1.494
	Safety of neighborhood	.020	.030	.022	.674	.500	.672	1.487
	Rating of sense of community	-.026	.027	-.027	-.963	.336	.873	1.146

a. Dependent Variable: Population density in ST

The Collinearity Diagnostics in Table 5.17.4 shows that the Variance Inflation Factor (VIF) values for all predictors are below 2, indicating no significant multicollinearity. This confirms that the predictors are independent and reliable for the regression model.

5.18.4: Collinearity Diagnostics of effectiveness of STs in reducing population pressure in the FCC

				Variance Proportions								
Model	Dimension	Eigenvalue	Condition Index	(Constant)	Affordability of housing	Availability of basic utilities (electricity)	Availability of water	Quality of road infrastructure	Accessibility of public transport	Accessibility of healthcare from place of residence	Safety of neighborhood	Rating of sense of community
1	1	8.094	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00
	2	.288	5.305	.00	.01	.01	.03	.09	.03	.09	.12	.00
	3	.185	6.612	.00	.05	.04	.01	.27	.02	.04	.07	.08
	4	.114	8.431	.00	.18	.07	.11	.04	.21	.04	.10	.09
	5	.092	9.363	.01	.00	.14	.07	.04	.07	.23	.25	.28
	6	.080	10.049	.00	.19	.08	.01	.12	.46	.00	.22	.22
	7	.070	10.752	.00	.40	.05	.00	.02	.08	.44	.22	.26
	8	.048	12.931	.01	.04	.55	.65	.40	.06	.01	.01	.02
	9	.028	16.969	.98	.12	.06	.13	.02	.07	.13	.00	.06

a. Dependent Variable: Population density in ST

In conclusion, the hypothesis, "the satellite towns in the FCT do not significantly reduce population pressure in the city," is rejected. The regression analysis demonstrates that several factors, particularly Affordability of Housing**,** Availability of Basic Utilities**,** Accessibility of Public Transport, and Accessibility of Healthcare, significantly influence population density in ST, thereby playing a crucial role in reducing urban pressure.

5.5.3 Presence of Incentives for Relocation to Satellite Town

As presented in Table 5.19, the highest proportion of respondents with a representation of 47.8% are of the opinion that they do not have any idea if there are incentives from the government for people to relocate from the city to the satellite towns. The proportion of respondents who stated that there are incentives is presented as 35.6% with a further 16.6% affirming that there are no incentives for people to relocate to the satellite towns.

The highest proportion of respondents across the satellite towns uniformly affirmed that they do not have an idea on whether there are incentives for people to relocate to the satellite towns. The majority of respondents who opined that there are incentives are located in Dobi satellite town with a proportion of 42.9%.

Table 5.19: Presence of Incentives for people to relocate to Satellite Towns

Neighborhood of Respondents		Presence of Incentives for people to relocate to Satellite Towns: Yes	No	No Idea	Total
Bwari	Count	30	19	41	90
	% within Neighborhood	33.3%	21.1%	45.6%	100.0%
Kubwa	Count	23	22	46	91
	% within Neighborhood	25.3%	24.2%	50.5%	100.0%
Kuje	Count	8	6	24	38
	% within Neighborhood	21.1%	15.8%	63.2%	100.0%
Karshi	Count	241	99	273	613
	% within Neighborhood	39.3%	16.2%	44.5%	100.0%
Dobi	Count	27	6	30	63
	% within Neighborhood	42.9%	9.5%	47.6%	100.0%
Anagada	Count	19	7	36	62
	% within Neighborhood	30.6%	11.3%	58.1%	100.0%
Kusaki-Yanga	Count	7	6	26	39
	% within Neighborhood	17.9%	15.4%	66.7%	100.0%
Total	Count	355	165	476	996
	% within Neighborhood	35.6%	16.6%	47.8%	100.0%

Source: Author’s Survey, 2024

5.5.4 Incentives for Relocation to Satellite Town

Table 5.20 presents the available incentives according to respondents for the relocation of people from the city to the satellite towns. The most prominent incentive as affirmed by the majority of respondents at 27.4% is cheaper housing with 5.9% stated the presence of and easy access to urban infrastructures as the most prominent incentive for the relocation of people. A further 4.1% affirmed the improved quality of life as the reason for the relocation of people to the satellite towns. However, 62.6% of the respondents are of the opinion that there are no incentives for relocating to satellite towns.

By satellite town, cheaper housing is the most prominent incentive for the relocation of people from the federal capital city to the satellite towns across board with the exception of Bwari and Kubwa satellite towns where the majority of respondents at 22.2 and 18.7% respectively, affirmed the presence of and easy access to urban infrastructures as the most prominent incentive for the relocation of people.

Table 5.20: Incentives for Relocation to Satellite Town

Neighborhood of Respondents		Incentives: No Incentives	Incentives: Cheaper housing	Incentives: Improved quality of life	Incentives: Presence of and easy access to urban infrastructures	Total
Bwari	Count	60	8	2	20	90
	% within Neighborhood	66.7%	8.9%	2.2%	22.2%	100.0%
Kubwa	Count	67	4	3	17	91
	% within Neighborhood	73.6%	4.4%	3.3%	18.7%	100.0%
Kuje	Count	30	8	0	0	38
	% within Neighborhood	78.9%	21.1%	0.0%	0.0%	100.0%
Karshi	Count	359	215	23	16	613
	% within Neighborhood	58.6%	35.1%	3.8%	2.6%	100.0%
Dobi	Count	34	15	8	6	63
	% within Neighborhood	54.0%	23.8%	12.7%	9.5%	100.0%
Anagada	Count	41	16	5	0	62
	% within Neighborhood	66.1%	25.8%	8.1%	0.0%	100.0%
Kusaki-Yanga	Count	32	7	0	0	39
	% within Neighborhood	82.1%	17.9%	0.0%	0.0%	100.0%
Total	Count	623	273	41	59	996
	% within Neighborhood	62.6%	27.4%	4.1%	5.9%	100.0%

Source: Author's Survey, 2024

5.5.5 Contribution of Satellite Towns to Urban and Rural Development

As presented in Table 5.21, 73.4% of respondents indicated that satellite towns in the Federal Capital Territory (FCT) have contributed well to the development of urban and rural areas, while 16.9% stated that their contribution has been very good. By satellite town, the majority of respondents in Bwari (67.8%), Kubwa (69.2%), Kuje (68.4%), Dobi (73.0%), Anagada (79.0%), and Kusaki-Yanga (66.7%) affirmed that their towns have positively influenced development in both urban and rural parts of the territory.

These findings indicate that residents perceive satellite towns as important engines of local development, likely reflecting visible improvements in infrastructure, access and services in several peripheral localities. This interpretation is consistent with recent empirical studies that document the spatial diffusion of infrastructure and socio-economic activity from Abuja's core into surrounding settlements. Remote-sensing and land-use analyses show rapid built-up expansion along corridors feeding into satellite settlements (Jibrin, Junaid & Musa, 2024), while land-cover modelling demonstrates persistent conversion of peri-urban and rural land to urban uses in the Abuja metropolitan region, with implications for connectivity and service provision in satellite towns (Mshelia, Onywere & Letema, 2024). At the community scale, research on Gwagwalada and neighbouring localities highlights how investments (and recurring shocks such as flooding) shape livelihoods and local infrastructure needs, reinforcing the mixed but generally positive role of satellite towns in local development (Badamosi et al., 2023).

These studies support the view that satellite towns have contributed to regional development by expanding residential space, enabling local commerce and extending infrastructural networks beyond the FCC core. However, the literature also cautions that the benefits are uneven: spatial analyses and field studies reveal heterogenous infrastructure provisioning, environmental pressures such as flood risk, loss of vegetative cover and service gaps across different peripheral settlements.

Table 5.21: Contribution of Satellite towns to the Development of Urban and Rural Development

Neighborhood of Respondents		Contribution of Satellite towns to the Development of Urban and Rural Areas in Abuja: Very Good	Good	Average	Poor	Total
Bwari	Count	25	61	4	0	90
	% within Neighborhood	27.8%	67.8%	4.4%	0.0%	100.0%
Kubwa	Count	28	63	0	0	91
	% within Neighborhood	30.8%	69.2%	0.0%	0.0%	100.0%
Kuje	Count	10	26	2	0	38
	% within Neighborhood	26.3%	68.4%	5.3%	0.0%	100.0%
Karshi	Count	87	460	65	1	613
	% within Neighborhood	14.2%	75.0%	10.6%	0.2%	100.0%
Dobi	Count	7	46	6	4	63
	% within Neighborhood	11.1%	73.0%	9.5%	6.3%	100.0%
Anagada	Count	0	49	12	1	62
	% within Neighborhood	0.0%	79.0%	19.4%	1.6%	100.0%
Kusaki-Yanga	Count	11	26	2	0	39
	% within Neighborhood	28.2%	66.7%	5.1%	0.0%	100.0%
Total	Count	168	731	91	6	996
	% within Neighborhood	16.9%	73.4%	9.1%	0.6%	100.0%

Source: Author's Survey, 2024

5.5.6 Importance of Satellite Towns in Urban Development

As presented in Table 5.22, the overwhelming majority of respondents (85.4%) believe that satellite towns are key to the overall development of the Federal Capital Territory (FCT), while an additional 9.4% regard them as very important. This predominant perception holds across the sampled towns: residents of Kubwa, Bwari, Kuje, Karshi, Anagada, Kusaki-Yanga, and Dobi overwhelmingly affirmed the strategic role of satellite towns in FCT development.

These findings indicate that local populations view satellite towns as essential nodes for accommodating population growth, expanding housing supply, and extending infrastructure and services beyond the city core. Remote sensing and land-use studies confirm the expanding physical footprint of Abuja into its peripheries, showing that urban development has progressively diffused along corridors feeding satellite settlements, a process that creates new residential and commercial space and links rural hinterlands to urban markets (Gumel et al., 2020; Koko et al., 2021).

Empirical land-cover modelling also demonstrates ongoing land-use transitions around satellite towns, underscoring their emergent role in metropolitan expansion and peri-urban economic change (Mshelia, Onywere & Letema, 2024). At the local scale, research in Gwagwalada and other peripheries documents how infrastructure improvements and growing settlement concentrations influence livelihoods and local development outcomes (Badamosi et al., 2023; Idowu et al., 2023).

Table 5.22: Importance of Satellite towns for Urban Development of the FCT

Neighborhood of Respondents		Importance of Satellite towns for Urban Development of the FCT: Very Important	Important	Not Important	Total
Bwari	Count	12	76	2	90
	% within Neighborhood	13.3%	84.4%	2.2%	100.0%
Kubwa	Count	10	78	3	91
	% within Neighborhood	11.0%	85.7%	3.3%	100.0%
Kuje	Count	2	34	2	38
	% within Neighborhood	5.3%	89.5%	5.3%	100.0%
Karshi	Count	59	513	41	613
	% within Neighborhood	9.6%	83.7%	6.7%	100.0%
Dobi	Count	5	58	0	63
	% within Neighborhood	7.9%	92.1%	0.0%	100.0%
Anagada	Count	4	57	1	62
	% within Neighborhood	6.5%	91.9%	1.6%	100.0%
Kusaki-Yanga	Count	2	35	2	39
	% within Neighborhood	5.1%	89.7%	5.1%	100.0%
Total	Count	94	851	51	996
	% within Neighborhood	9.4%	85.4%	5.1%	100.0%

Source: Author's Survey, 2024

CHAPTER SIX

LIVABILITY OF SATELLITE TOWNS

6.0 Introduction

This chapter examines the livability and quality of life across the satellite towns in the Federal Capital Territory, Abuja. Indicators of livability such as housing, health, education, security, quality of transport, environmental quality, economic stability, social life, urban planning and governance are assessed and measured.

6.1 Housing and Shelter

The availability and affordability of housing as well as the quality of housing infrastructure is evaluated in this section.

6.1.1 Primary Purpose of Place of Residence

As presented in Table 6.1, the highest proportion of respondents (86.8%) affirmed that the primary purpose of their residence in the satellite towns is residential, while 13.2% indicated that their homes serve primarily commercial purposes. This pattern was consistent across all the satellite towns surveyed. However, the emergence of commercial activity within residential areas underscores the growing economic viability of Abuja’s satellite towns. The expansion of population, improved road connectivity, and proximity to the Federal Capital City have transformed many of these towns, particularly Kubwa, Bwari, and Kuje, into vibrant mixed-use environments where households integrate small-scale enterprises into their dwellings. This is aligned with studies which have shown that rising land values and the increasing demand for goods and services within peri-urban areas encourage residents to adapt residential spaces for commercial use (Eneogwe & Umanakwe, 2021; Lawal et al. 2025).

Recent urban morphology analyses reveal that towns such as Kubwa and Bwari have evolved into semi-autonomous economic centers, hosting thriving retail clusters, informal markets, and service enterprises that cater to both local and commuting populations (Abubakar & Doan, 2017; Omowole et al., 2024). Similarly, Kuje and Karshi have witnessed rapid land-use transition driven by accessibility and lower rental costs, making them attractive for micro-business operations and real estate investment (Gumel et al., 2020; Mshelia et al., 2024). These trends reflect the gradual spatial diffusion of Abuja's commercial economy into its peripheries, facilitated by urban sprawl, population inflow, and inadequate space for small-scale enterprise within the Federal Capital City.

It can therefore be concluded that, although the dominant function of housing in the satellite towns remains residential, their increasing commercial adaptation highlights a broader urban economic transformation that strengthens the role of these towns in Abuja's metropolitan system. This aligns with one of the key functions of satellite towns, to decongest the city center by expanding housing opportunities while simultaneously fostering local economic dynamism that sustains urban-rural linkages and employment growth.

Table 6.1: Primary purpose of building in Satellite Towns

Satellite Town		Primary purpose of building in ST: Residential	Commercial	Total
Karshi	Count	527	86	613
	% within Satellite Town	86.0%	14.0%	100.0%
Kubwa	Count	83	8	91
	% within Satellite Town	91.2%	8.8%	100.0%
Kuje	Count	29	9	38
	% within Satellite Town	76.3%	23.7%	100.0%
Bwari	Count	78	12	90
	% within Satellite Town	86.7%	13.3%	100.0%
Dobi	Count	55	8	63
	% within Satellite Town	87.3%	12.7%	100.0%
Kusaki-Yangi	Count	36	3	39
	% within Satellite Town	92.3%	7.7%	100.0%
Anagada	Count	57	5	62
	% within Satellite Town	91.9%	8.1%	100.0%
Total	Count	865	131	996
	% within Satellite Town	86.8%	13.2%	100.0%

Source: Author's Survey, 2024

6.1.2 Frequency of Commuting to work within Satellite Towns

Table 6.2 presents respondents' frequency of commuting to work within satellite towns in the study area. The highest proportion of respondents at 67.7% affirmed that they commute to work in their satellite town on a daily basis, implying that their business is located within their satellite town of residence. 14.8% of respondents stated they commute to work within their satellite town of residence on a weekly basis while the proportion of respondents who never commute to work within the satellite town is presented as 7.6%.

From the above, it can be inferred that the majority of respondents across the satellite towns in the study area reside and work within the satellite towns as opposed to residing in the city center.

The implication of this is that there is a reduction in the volume of activities in the Federal Capital City.

Table 6.2: Frequency of commuting to work within Satellite Town

Satellite Town		Frequency of commuting to work within ST					Total
		Daily	Weekly	Monthly	Rarely	Never	
Karshi	Count	374	122	43	0	74	613
	% within Satellite Town	61.0%	19.9%	7.0%	0.0%	12.1%	100.0%
Kubwa	Count	66	7	0	18	0	91
	% within Satellite Town	72.5%	7.7%	0.0%	19.8%	0.0%	100.0%
Kuje	Count	14	9	6	7	2	38
	% within Satellite Town	36.8%	23.7%	15.8%	18.4%	5.3%	100.0%
Bwari	Count	84	0	0	6	0	90
	% within Satellite Town	93.3%	0.0%	0.0%	6.7%	0.0%	100.0%
Dobi	Count	50	9	4	0	0	63
	% within Satellite Town	79.4%	14.3%	6.3%	0.0%	0.0%	100.0%
Kusaki-Yangi	Count	34	0	5	0	0	39
	% within Satellite Town	87.2%	0.0%	12.8%	0.0%	0.0%	100.0%
Anagada	Count	52	0	10	0	0	62
	% within Satellite Town	83.9%	0.0%	16.1%	0.0%	0.0%	100.0%
Total	Count	674	147	68	31	76	996
	% within Satellite Town	67.7%	14.8%	6.8%	3.1%	7.6%	100.0%

Source: Author's Survey, 2024

6.1.3 Frequency of Commuting to work from Satellite Towns to FCC

Table 6.3 presents respondents' frequency of commuting to work from the satellite towns to the Federal Capital City in the study area. The highest proportion of respondents at 37.2% affirmed that they commute to work from their satellite town to the FCC on a daily basis, implying that their business is located in the Federal Capital City. A further 24.7% of respondents stated they commute to work from their satellite town of residence to the FCC on a weekly basis while the proportion of respondents who never commute to work from satellite town to FCC is presented as 17.1%.

From the above, it can be inferred that while a high proportion of respondents commute to work from their satellite town of residence to the FCC for work, the majority of respondents across the satellite towns in the study area reside and work within the satellite towns as shown in Table 6.2.

Table 6.3: Frequency of commuting to work from ST to FCC

		Frequency of commuting to work from ST to FCT					
Satellite Town		Daily	Weekly	Monthly	Rarely	Never	Total
Karshi	Count	239	165	0	86	123	613
	% within Satellite Town	39.0%	26.9%	0.0%	14.0%	20.1%	100.0%
Kubwa	Count	42	23	8	18	0	91
	% within Satellite Town	46.2%	25.3%	8.8%	19.8%	0.0%	100.0%
Kuje	Count	13	8	6	9	2	38
	% within Satellite Town	34.2%	21.1%	15.8%	23.7%	5.3%	100.0%
Bwari	Count	30	12	12	30	6	90
	% within Satellite Town	33.3%	13.3%	13.3%	33.3%	6.7%	100.0%
Dobi	Count	26	8	0	16	13	63
	% within Satellite Town	41.3%	12.7%	0.0%	25.4%	20.6%	100.0%
Kusaki-Yangi	Count	6	12	5	5	11	39
	% within Satellite Town	15.4%	30.8%	12.8%	12.8%	28.2%	100.0%
Anagada	Count	15	18	8	6	15	62
	% within Satellite Town	24.2%	29.0%	12.9%	9.7%	24.2%	100.0%
Total	Count	371	246	39	170	170	996
	% within Satellite Town	37.2%	24.7%	3.9%	17.1%	17.1%	100.0%

Source: Author's Survey, 2024

Figure 6.1 shows the distance of the satellite towns from the FCC with the closest satellite town to the FCC being Kubwa at 10.78km while the farthest is Dobi at 57.88km. This difference in distance plays a role in their respective level of development as Kubwa is more developed in terms of economy and infrastructure compared to Dobi. It can also be inferred proximity to the parent city is a key factor in the organic development of the satellite town as is the case with Kubwa. Świątkiewicz et al., (2021) documents that adjacency and metropolitan linkages drive housing growth, land-use change and service provision in satellites.

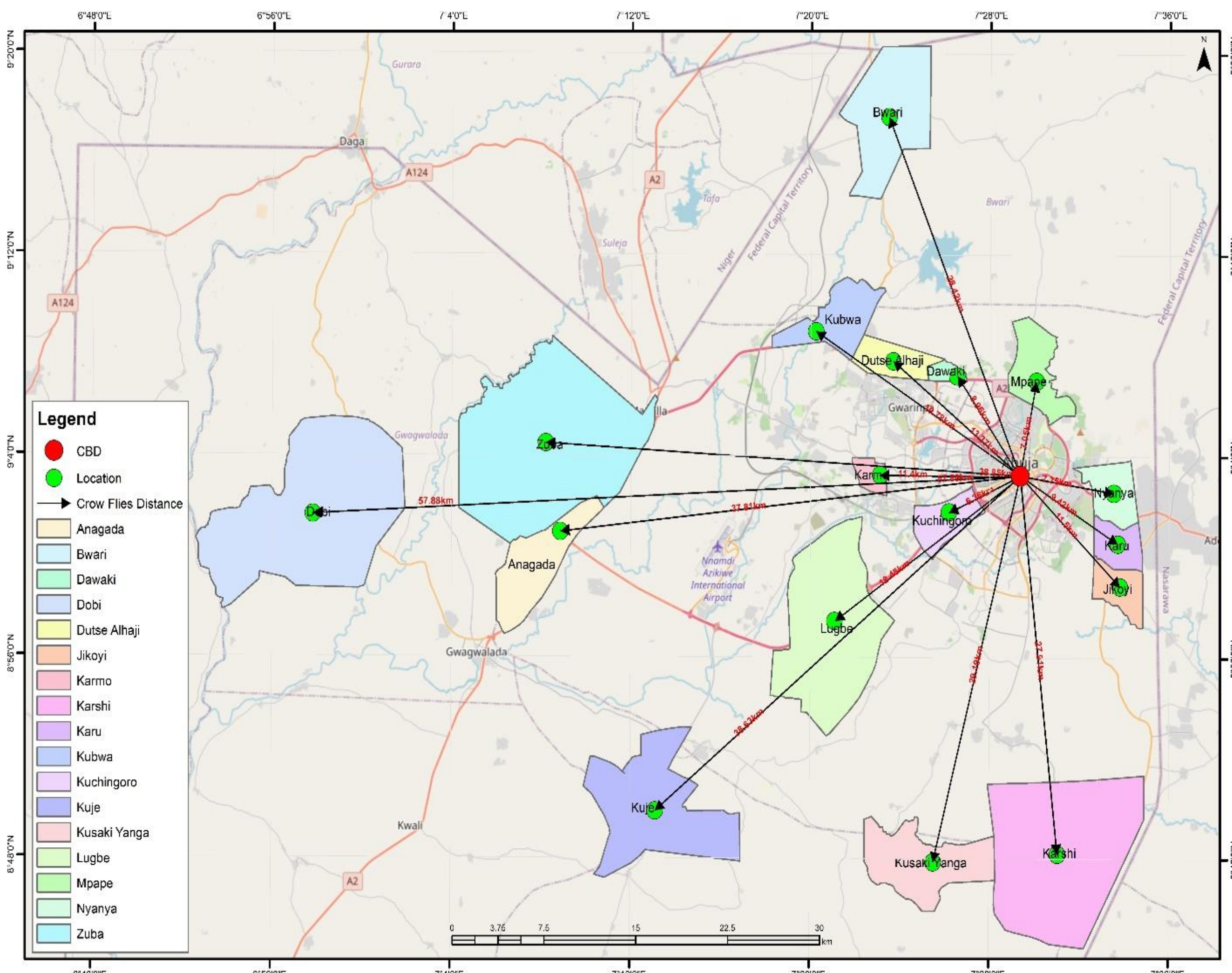

Figure 6.1: Distance of satellite towns from the FCC
Source: Federal Capital Development Authority, FCDA, (2023)

6.1.4 Affordability of Housing

In terms of affordability of housing across the satellite towns in the study area as presented in Table 6.4, the majority (67.0%) of respondents consider housing to be affordable. When combined with the 17.0% who find it very affordable, this indicates that an overwhelming 84.0% of the respondents have a positive perception of housing affordability in the study area. 9.4% of respondents are neutral, indicating they neither find housing particularly affordable nor expensive with only 6.6% of respondents considering housing to be expensive, suggesting that the perception of unaffordable housing is relatively low. By satellite towns, the majority of respondents perceive housing to be affordable across all satellite towns with the exception of Kubwa where the highest proportion of respondents at 44.0% affirmed housing to be expensive in their neighborhoods. The data indicates that the vast majority of respondents view housing as affordable, which suggests that housing in this area is generally within reach for most people.

For urban planners and policymakers, these findings suggest that current housing interventions in the satellite towns are relatively effective in maintaining affordability for a broad segment of residents. However, the small proportion of respondents who perceive housing as expensive still highlights the need for continuous policy attention to ensure inclusivity and affordability across all income levels. Recent research underscores that housing affordability remains a critical determinant of urban functionality, migration trends, and social stability in rapidly growing peri-urban settlements (Saidu & Yeom, 2020; Adegoke et al., 2020).

Moreover, studies reveal that affordability challenges in Abuja's periphery are increasingly influenced by rising land values, inadequate infrastructure, and speculative real estate practices that restrict access for low-income earners (Sunday et al., 2021; Pillah, 2023). Ensuring the sustainability of satellite towns, therefore, requires coordinated housing policies that balance market dynamics with equitable access to land and infrastructure. Strengthening affordability mechanisms is vital not only for managing urban growth but also for preventing displacement and reinforcing the social and economic integration that these satellite towns are meant to achieve.

Table 6.4: Affordability of housing

Satellite Town		Affordability of housing				Total
		Very affordable	Affordable	Neutral	Expensive	
Karshi	Count	122	448	43	0	613
	% within Satellite Town	19.9%	73.1%	7.0%	0.0%	100.0%
Kubwa	Count	4	32	15	40	91
	% within Satellite Town	4.4%	35.2%	16.5%	44.0%	100.0%
Kuje	Count	3	20	11	4	38
	% within Satellite Town	7.9%	52.6%	28.9%	10.5%	100.0%
Bwari	Count	0	60	12	18	90
	% within Satellite Town	0.0%	66.7%	13.3%	20.0%	100.0%
Dobi	Count	0	46	13	4	63
	% within Satellite Town	0.0%	73.0%	20.6%	6.3%	100.0%
Kusaki-Yangi	Count	14	25	0	0	39
	% within Satellite Town	35.9%	64.1%	0.0%	0.0%	100.0%
Anagada	Count	26	36	0	0	62
	% within Satellite Town	41.9%	58.1%	0.0%	0.0%	100.0%
Total	Count	169	667	94	66	996
	% within Satellite Town	17.0%	67.0%	9.4%	6.6%	100.0%

Source: Author's Survey, 2024

From Table 6.4.1, the highest score recorded for housing affordability is 1, which corresponds to very affordable with the highest score recorded being 4, which corresponds to expensive. The responses range from. The mean score of 2.06 suggests that, on average, respondents perceive housing to be slightly more than affordable (which corresponds to a score of 2). A standard deviation of 0.726 indicates that most responses are relatively close to the mean score of 2.06.

The relatively low standard deviation suggests that there is some variability in how respondents perceive housing affordability (as shown in Table 6.4), but most of the responses are clustered around the mean. This implies that while opinions differ slightly, there is general agreement that housing is affordable.

Table 6.4.1: Descriptive Statistics of Affordability of Housing

	N	Minimum	Maximum	Mean	Std. Deviation
Affordability of housing	996	1	4	2.06	.726
Valid N (listwise)	996				

Source: Author's Survey, 2024

The Spearman correlation value of 0.167 indicates a weak positive correlation between the ordinal variables related to housing affordability. The approximate significance (p-value) of 0.000 suggests that this correlation is statistically significant. In other words, the probability of observing this correlation due to random chance is extremely low, so we can confidently state that there is a weak but significant positive relationship between the variables. This suggests that as income increases, housing affordability also increases as well, though the strength of this relationship is modest.

Table 6.4.2: Symmetric Measures of Affordability of Housing

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	.038	.029	1.207	.228[c]
Ordinal by Ordinal	Spearman Correlation	.167	.033	5.329	.000[c]
N of Valid Cases		996			

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.
c. Based on normal approximation.

Source: Author's Survey, 2024

The analysis of housing affordability in the study area reveals several key findings. From the frequency distribution table, it is evident that a majority of respondents (84%) find housing in the satellite towns to be affordable, with only a small proportion of respondents (6.6%) considering housing to be expensive. This suggests that most residents perceive housing costs as manageable and within their financial reach. The descriptive statistics further support these observations, with a mean affordability rating of 2.06 on a scale where 1 indicates very affordable and 4 indicates expensive. The relatively low mean, coupled with a standard deviation of 0.726, indicates that perceptions of housing affordability are generally consistent across the population, with most responses clustered around the affordable category.

Inferential statistics provide additional insights. The Spearman correlation analysis shows a statistically significant, though weak, positive relationship (Spearman's $R = 0.167$, $p < 0.001$) between ordinal variables related to housing affordability. This suggests that as other related variables, such as income or satisfaction with housing quality, increase, there is a slight tendency for perceptions of affordability to improve. These findings align with recent empirical evidence suggesting that affordability perceptions are closely tied to income stability, housing quality, and access to basic infrastructure in Nigeria's peri-urban settlements (Saidu & Yeom, 2020; Pillah, 2023). The results further demonstrate that while affordability is broadly sustained across most satellite towns, spatial variations persist, particularly in Kubwa, where higher development levels and service availability correspond with slightly elevated housing costs (Sunday et al., 2021).

Overall, the consistency in affordability perceptions among residents reinforces the notion that housing provision in Abuja's satellite towns has achieved a relatively balanced distribution of livability and cost. This reflects the moderating role of ongoing housing and infrastructure interventions in maintaining access across different income categories (Adegoke et al., 2020). Nonetheless, sustaining affordability will require continuous policy adjustments to prevent speculative rent increases and ensure equitable access to decent housing as urbanization pressures intensify.

6.1.5 Quality of Housing in Terms of Construction and Amenities

Table 6.5 presents the housing quality in terms of construction and amenities. The highest proportion of respondents at 41.3% across all satellite towns are of the opinion that the housing quality in terms of construction and amenities is good with 28.6% stating that the housing quality is average while a further 18.4% affirmed the housing quality is excellent.

By satellite towns, the highest proportion of respondents in Karshi, Kubwa, Kuje, Bwari, at 46.0 %, 48.4%, 63.2%, 40.0%, respectively affirmed that the quality of their house is good. However, a significant proportion of respondents in Dobi (46.0%), Kusaki-Yangi (46.2%) and Anagada (46.8%) satellite town noted that the quality of their house is average. In satellite town, the highest proportion of respondents at 63.2% affirmed that the living conditions of their households is good, although a significant proportion of respondents at 46.8% are of the opinion that the living conditions of their households is average.

From the above, it can be concluded that household living conditions across the study area is predominantly good. However, the average standard of household living condition is mostly found in the less developed satellite towns of, Dobi, Kusaki-Yangi and Anagada while in the more developed satellite towns of Kuje, Kubwa and Bwari, household standard of living was found to be good.

Table 6.5: Housing quality in terms of construction and amenities

Satellite Town		Housing quality in terms of construction and amenities					Total
		Excellent	Good	Average	Poor	Very poor	
Karshi	Count	165	282	123	0	43	613
	% within Satellite Town	26.9%	46.0%	20.1%	0.0%	7.0%	100.0%
Kubwa	Count	8	44	39	0	0	91
	% within Satellite Town	8.8%	48.4%	42.9%	0.0%	0.0%	100.0%
Kuje	Count	3	24	11	0	0	38
	% within Satellite Town	7.9%	63.2%	28.9%	0.0%	0.0%	100.0%
Bwari	Count	0	36	36	18	0	90
	% within Satellite Town	0.0%	40.0%	40.0%	20.0%	0.0%	100.0%
Dobi	Count	0	17	29	17	0	63
	% within Satellite Town	0.0%	27.0%	46.0%	27.0%	0.0%	100.0%
Kusaki-Yangi	Count	2	3	18	16	0	39
	% within Satellite Town	5.1%	7.7%	46.2%	41.0%	0.0%	100.0%
Anagada	Count	5	5	29	23	0	62
	% within Satellite Town	8.1%	8.1%	46.8%	37.1%	0.0%	100.0%
Total	Count	183	411	285	74	43	996
	% within Satellite Town	18.4%	41.3%	28.6%	7.4%	4.3%	100.0%

Source: Author's Survey, 2024

Table 6.5.1 presents descriptive statistics of housing quality in terms of construction and amenities. The minimum score for housing quality is 1, and the maximum score is 5. The mean score of 2.38 indicates that, on average, the respondents rated their housing quality slightly below the midpoint of the scale, suggesting that most perceive their housing conditions as substandard. The standard deviation of 1.006 reflects a moderate spread around the mean, indicating that respondents' assessments of housing quality varied but not widely.

Table 6.5.1: Descriptive Statistics of housing quality

	N	Minimum	Maximum	Mean	Std. Deviation
Housing quality in terms of construction and amenities	996	1	5	2.38	1.006
Valid N (listwise)	996				

Source: Author's Survey, 2024

The symmetric analysis in Table 6.5.2 shows a moderate positive relationship for housing quality across the satellite towns. Pearson's R value of 0.362 and Spearman's correlation of 0.406 both indicate that housing quality tends to improve as the associated variable such as finance increases. The significance levels for both correlations are 0.000, meaning the results are statistically significant and not due to random chance. This suggests a meaningful, moderate association between housing quality and the other variable under study.

6.5.2: Symmetric Measures of Housing Quality

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	.362	.031	12.241	.000[c]
Ordinal by Ordinal	Spearman Correlation	.406	.028	13.998	.000[c]
N of Valid Cases		996			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Source: Author's Survey, 2024

The analysis of housing quality in the satellite towns of the FCT reveals that, on average, respondents rated their housing conditions as moderate to good. This moderate perception of housing quality reflects limitations in construction standards and amenities, which are critical indicators of livability. The moderate positive correlations found in the symmetric analysis suggest that housing quality is significantly related to other factors influencing livability. In terms of housing quality across the satellite towns, a significant proportion of respondents reported substandard living conditions that undermine the functionality of these towns. Poor construction, inadequate ventilation, and insufficient access to basic amenities were commonly noted. These deficiencies were particularly pronounced in towns such as Kubwa, Kuje, and Gwagwalada, where respondents highlighted overcrowding and deteriorating building structures as major concerns.

Housing quality is a critical determinant of the livability and sustainability of satellite towns. Studies have shown that inadequate housing negatively impacts residents’ health, social well-being, and overall quality of life. For instance, Yekeen & Misnan (2024) emphasized that poor housing in peri-urban settlements in Nigeria is closely linked to health risks, social exclusion, and limited community functionality, highlighting the need for improved infrastructure and regulatory enforcement. Addressing housing deficiencies requires a combination of improved urban planning, stronger enforcement of construction standards, and targeted interventions to upgrade existing structures. Such measures are essential to enhance the functionality of satellite towns, ensuring they can fulfill their role in providing decent living conditions while contributing to the broader objectives of sustainable urban development in the Federal Capital Territory.

Plate 6.1: Predominant housing type and quality at Anagada Satellite Town
Source: Data from field survey

6.2 Health and Safety

This section measures the availability and accessibility of healthcare facilities, level of safety in neighborhoods and the rate of response of emergency services across satellite towns in the study area.

6.2.1 Accessibility of Healthcare Facility

In terms of accessibility of healthcare facility from place of residence among the satellite towns as represented in Table 6.6, the majority of respondents at 58.1% affirmed access to healthcare facilities from their place of residence. A further 20.5% stating that access to healthcare facilities from their place of residence is very accessible while the proportion of respondents who are of the opinion that healthcare facilities are very inaccessible is given as 4.3%.

By satellite town, the majority of respondents in Karshi (60.2%), Kuje (73.7%), Bwari (60.0%), Dobi (54.0%) and Kusaki-Yanga (74.4%) and Anagada (66.1%) affirmed the ease of access to healthcare facilities from their place of residence in the satellite towns. While 39.9% of the respondents in Kubwa stated the access healthcare facilities is very accessible.

Table 6.6: Accessibility of healthcare from place of residence

		Accessibility of healthcare from place of residence					
Satellite Town		Very accessible	Accessible	Average	Inaccessible	Very inaccessible	Total
Karshi	Count	122	369	79	0	43	613
	% within Satellite Town	19.9%	60.2%	12.9%	0.0%	7.0%	100.0%
Kubwa	Count	36	24	7	24	0	91
	% within Satellite Town	39.6%	26.4%	7.7%	26.4%	0.0%	100.0%
Kuje	Count	4	28	6	0	0	38
	% within Satellite Town	10.5%	73.7%	15.8%	0.0%	0.0%	100.0%
Bwari	Count	24	54	12	0	0	90
	% within Satellite Town	26.7%	60.0%	13.3%	0.0%	0.0%	100.0%
Dobi	Count	4	34	8	17	0	63
	% within Satellite Town	6.3%	54.0%	12.7%	27.0%	0.0%	100.0%
Kusaki-Yangi	Count	4	29	4	2	0	39
	% within Satellite Town	10.3%	74.4%	10.3%	5.1%	0.0%	100.0%
Anagada	Count	10	41	6	5	0	62
	% within Satellite Town	16.1%	66.1%	9.7%	8.1%	0.0%	100.0%
Total	Count	204	579	122	48	43	996
	% within Satellite Town	20.5%	58.1%	12.2%	4.8%	4.3%	100.0%

Source: Author's Survey, 2024

Table 6.6.1 shows that the accessibility of healthcare from respondents' residences varies, with scores ranging from very accessible to difficult to access. On average, healthcare is relatively accessible, with a mean of 2.14. The standard deviation of 0.943 indicates some differences in accessibility experiences, but most responses are fairly close to the average. This suggests that while healthcare is generally accessible, there may still be challenges for some residents in satellite towns.

Table 6.6.1: Descriptive Statistics of Accessibility of healthcare

	N	Minimum	Maximum	Mean	Std. Deviation
Accessibility of healthcare from place of residence	996	1	5	2.14	.943
Valid N (listwise)	996				

Source: Author's Survey, 2024

The symmetric measures in Table 6.6.2 shows that both Pearson's R and Spearman Correlation values are very weak (0.008 and 0.030, respectively), indicating almost no correlation between the variables analyzed. Additionally, both p-values (0.798 and 0.341) are well above the significance threshold of 0.05, meaning the correlations are not statistically significant. Therefore, there is no meaningful relationship between the variables related to healthcare accessibility in this study.

Table 6.6.2: Symmetric Measures of accessibility of healthcare

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	.008	.028	.256	.798[c]
Ordinal by Ordinal	Spearman Correlation	.030	.030	.953	.341[c]
N of Valid Cases		996			

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.
c. Based on normal approximation.

Source: Author's Survey, 2024

The accessibility of healthcare in the satellite towns studied is generally moderate, but with notable variability among residents. Across these towns, there are 131 public healthcare facilities and 370 private healthcare facilities (Chukwu et al., 2016). This variability suggests that while healthcare services are available, they may not be equitably distributed across the satellite towns. Given that healthcare access is a key component of livability, the findings highlight a potential barrier to achieving higher livability standards in these areas.

In terms of functionality, the limited and inconsistent access to healthcare may hinder the satellite towns' ability to fully support their populations, which could affect their role in easing urban pressure on the Federal Capital Territory. Recent studies have emphasized the critical role of healthcare access in determining the overall quality of life in urban areas. For instance, research indicates that inadequate healthcare access is associated with poorer health outcomes, reduced life expectancy, and increased health disparities among urban populations (Mathur et al., 2024). Furthermore, disparities in healthcare access between urban and rural areas have been shown to contribute to inequities in health outcomes, underscoring the need for targeted interventions to improve healthcare accessibility in underserved areas

6.2.2 Safety and Security

In terms of the safety of neighborhood as presented in Table 6.7, the majority of the sampled respondents at 54.2% affirmed that their neighborhoods are safe with a further 29.3% stating that theirs is very safe. The proportion of the sampled population who are of the opinion that their neighborhoods are not safe is given as 6.1%.

By satellite towns, neighborhoods were generally presented to be safe, however, respondents who noted that their satellite towns are not safe were predominantly found in Kubwa and Kuje satellite towns with a respective representation of 34.1 and 31.6%.

Conclusively, it can be stated that satellite towns in the Federal Capital Territory are generally safe. However, the satellite towns of Kubwa and Kuje are in need of more security as affirmed by their respective residents.

Table 6.7: Safety of Neighborhood in Satellite Towns

Satellite Town		Safety of neighborhood: Very safe	Safe	Neutral	Unsafe	Very unsafe	Total
Karshi	Count	239	331	0	0	43	613
	% within Satellite Town	39.0%	54.0%	0.0%	0.0%	7.0%	100.0%
Kubwa	Count	14	38	8	31	0	91
	% within Satellite Town	15.4%	41.8%	8.8%	34.1%	0.0%	100.0%
Kuje	Count	2	15	9	12	0	38
	% within Satellite Town	5.3%	39.5%	23.7%	31.6%	0.0%	100.0%
Bwari	Count	24	54	6	6	0	90
	% within Satellite Town	26.7%	60.0%	6.7%	6.7%	0.0%	100.0%
Dobi	Count	0	29	22	12	0	63
	% within Satellite Town	0.0%	46.0%	34.9%	19.0%	0.0%	100.0%
Kusaki-Yangi	Count	5	29	5	0	0	39
	% within Satellite Town	12.8%	74.4%	12.8%	0.0%	0.0%	100.0%
Anagada	Count	8	44	10	0	0	62
	% within Satellite Town	12.9%	71.0%	16.1%	0.0%	0.0%	100.0%
Total	Count	292	540	60	61	43	996
	% within Satellite Town	29.3%	54.2%	6.0%	6.1%	4.3%	100.0%

Source: Author's Survey, 2024

Table 6.7.1 shows that the average perception of neighborhood safety in the satellite towns is moderately positive, with a mean score of 2.02. While most residents feel relatively safe, there is some variability in their responses, as reflected by the standard deviation of 0.994. This suggests that safety is not uniformly experienced, with some neighborhoods being perceived as safer than others.

Table 6.7.1: Descriptive Statistics of safety of neighborhood

	N	Minimum	Maximum	Mean	Std. Deviation
Safety of neighborhood	996	1	5	2.02	.994
Valid N (listwise)	996				

Source: Author's Survey, 2024

The symmetric measures in Table 6.7.2 shows weak but statistically significant positive correlations for both Pearson's R (0.143) and Spearman Correlation (0.310) regarding neighborhood safety. The low p-values (0.000) indicate that these relationships are statistically significant. This suggests that there is a meaningful, though modest, association between the variables analyzed and perceptions of neighborhood safety in the study area.

Table 6.7.2: Symmetric Measures of safety of neighborhood

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	.143	.027	4.555	.000[c]
Ordinal by Ordinal	Spearman Correlation	.310	.027	10.274	.000[c]
N of Valid Cases		996			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Source: Author's Survey, 2024

The rating of neighborhood safety in the satellite towns indicates a moderate level of safety, though significant variability exists across areas. While most residents report feeling relatively secure, weak but significant correlations reveal that safety is not evenly distributed. Neighborhood safety remains a fundamental determinant of urban livability, as disparities in both perceived and actual safety can directly affect residents' well-being and social stability (Abraham et al., 2025). Recent infrastructural interventions suggest growing attention to safety and security needs within the Federal Capital Territory (FCT). The Federal Capital Territory Administration has initiated the construction of 12 new divisional police stations across the six area councils, aimed at improving law enforcement presence in satellite towns and enhancing rapid response capacity (Independent Newspaper Nigeria, 2025a).

Likewise, the FCT currently operates nine fire service stations, though uneven distribution and limited equipment in some districts continue to hinder effective emergency response

(HumAngle, 2024; Independent Newspaper Nigeria, 2025b). Functionally, these efforts represent progress but remain insufficient to ensure equitable access to safety infrastructure. The uneven allocation of police and fire service stations, coupled with the varying quality of their operations, may undermine the ability of satellite towns to effectively support their populations and reduce urban pressure on the Federal Capital Territory. Ensuring comprehensive safety across neighborhoods is therefore crucial to improving livability and sustaining urban resilience (Abraham et al., 2025).

6.2.3 Emergency Services Response Time

As presented in Table 6.8 rating of emergency response time for police, fire and medical services in the study area, most of the sampled population at 39.6% are of the opinion that the response time of police, fire and medical service in the study area is good with 38.9% stating that the response time is average while the proportion of respondents who affirmed the response time of these personnel's to be poor is given as 16.8%.

By satellite town, the majority of respondents in Kubwa (68.1%) and a higher percentage of respondents from Bwari (46.7%), Kuje (34.2%), Karshi (39.8%) and Dobi (39.7%) affirmed that the response time of police, fire and medical services to be good while the highest proportion of respondents in Kusaki-Yanga (69.2%) and Anagada (62.9%) satellite towns acknowledged the response time for police, fire and medical services to be average. Studies of emergency response systems in Abuja report mean emergency response times between 20–35 minutes, depending on infrastructure, accessibility, and resource availability (HumAngle, 2024; Eze et al., 2025).

Table 6.8: Rating of emergency response time for police, fire and medical services

Satellite Town		Rating of emergency response time for police, fire and medical services					Total
		Excellent	Good	Average	Poor	Very poor	
Karshi	Count	0	244	240	129	0	613
	% within Satellite Town	0.0%	39.8%	39.2%	21.0%	0.0%	100.0%
Kubwa	Count	14	62	15	0	0	91
	% within Satellite Town	15.4%	68.1%	16.5%	0.0%	0.0%	100.0%
Kuje	Count	0	13	13	12	0	38
	% within Satellite Town	0.0%	34.2%	34.2%	31.6%	0.0%	100.0%
Bwari	Count	12	42	36	0	0	90
	% within Satellite Town	13.3%	46.7%	40.0%	0.0%	0.0%	100.0%
Dobi	Count	0	25	17	21	0	63
	% within Satellite Town	0.0%	39.7%	27.0%	33.3%	0.0%	100.0%
Kusaki-Yangi	Count	2	3	27	2	5	39
	% within Satellite Town	5.1%	7.7%	69.2%	5.1%	12.8%	100.0%
Anagada	Count	5	5	39	3	10	62
	% within Satellite Town	8.1%	8.1%	62.9%	4.8%	16.1%	100.0%
Total	Count	33	394	387	167	15	996
	% within Satellite Town	3.3%	39.6%	38.9%	16.8%	1.5%	100.0%

Source: Author's Survey, 2024

Table 6.8.1 shows that the average rating for emergency response time in the satellite towns is 2.74, suggesting a moderately adequate perception of service. The minimum and maximum values (1 and 5) indicate a range of opinions, with some respondents viewing response times positively and others negatively. The standard deviation of 0.829 reflects moderate variability in ratings, indicating that while most residents have similar views, there are notable differences in perceptions of emergency response times across the towns.

Table 6.8.1: Descriptive Statistics of Emergency Response Time

	N	Minimum	Maximum	Mean	Std. Deviation
Rating of emergency response time for police, fire and medical services	996	1	5	2.74	.829
Valid N (listwise)	996				

Source: Author's Survey, 2024

Table 6.8.2 presents the symmetric measures for emergency response time, utilizing both Pearson's R and Spearman Correlation to assess relationships. For Pearson's R, the value is 0.062, with an asymptotic standard error of 0.036. This indicates a weak positive correlation between the interval-level variables analyzed. The approximate significance (p-value) of 0.050 suggests that this correlation is statistically significant, albeit weak, indicating that there is a slight positive relationship. For Spearman Correlation, the value is -0.040, with an asymptotic standard error of 0.033. This indicates a very weak negative correlation between the ordinal variables. The p-value of 0.203 shows that this correlation is not statistically significant, implying no meaningful ordinal relationship between these variables.

Table 6.8.2: Symmetric Measures of Emergency Response Time

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	.062	.036	1.964	.050[c]
Ordinal by Ordinal	Spearman Correlation	-.040	.033	-1.274	.203[c]
N of Valid Cases		996			

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.
c. Based on normal approximation.
Source: Author's Survey, 2024

The rating of emergency response time in the satellite towns is moderately positive, with an average score of 2.74. While some residents perceive emergency services as adequately responsive, the weak correlations indicate that experiences vary significantly across different areas. Improving emergency response times is crucial for enhancing overall livability, as reliable emergency services contribute to residents' sense of safety and well-being. Furthermore, efficient emergency response is vital for the functionality of satellite towns, ensuring they can effectively support their populations and address emergencies promptly, thereby fostering a more resilient community. Studies of emergency response systems in Abuja report mean emergency response times between 20–35 minutes, depending on infrastructure, accessibility, and resource availability (HumAngle, 2024; Eze et al., 2025).

6.3 Economic Stability

This section measures the stability of the economy in the satellite towns. Residents' employment status as well as the cost of living across the satellite towns are measured as follows.

6.3.1 Employment Status

The employment status of respondents across the study area as presented in Table 6.9 shows that most of respondents in the study at 45.0% are self-employed, 38.9% of the respondents of the study affirmed that they are employed. 10.8% of the respondents are students and 4.6% are unemployed.

By satellite town, the vast majority of respondents in Bwari (60.0%), Dobi (73.0%), Kusaki-Yangi (53.8%) and Anagada (50.0%) affirmed that they are self-employed while in Karshi, Kubwa and Kuje satellite towns, most of the sampled population at 46%, 44.0% and 57.9% respectively are employed.

Table 6.9: Employment Status

Satellite Town		Employment Status: Employed	Self-employed	Unemployed	Student	Retired	Total
Karshi	Count	282	252	0	79	0	613
	% within Satellite Town	46.0%	41.1%	0.0%	12.9%	0.0%	100.0%
Kubwa	Count	40	28	15	8	0	91
	% within Satellite Town	44.0%	30.8%	16.5%	8.8%	0.0%	100.0%
Kuje	Count	22	16	0	0	0	38
	% within Satellite Town	57.9%	42.1%	0.0%	0.0%	0.0%	100.0%
Bwari	Count	24	54	6	6	0	90
	% within Satellite Town	26.7%	60.0%	6.7%	6.7%	0.0%	100.0%
Dobi	Count	0	46	17	0	0	63
	% within Satellite Town	0.0%	73.0%	27.0%	0.0%	0.0%	100.0%
Kusaki-Yangi	Count	8	21	3	5	2	39
	% within Satellite Town	20.5%	53.8%	7.7%	12.8%	5.1%	100.0%
Anagada	Count	11	31	5	10	5	62
	% within Satellite Town	17.7%	50.0%	8.1%	16.1%	8.1%	100.0%
Total	Count	387	448	46	108	7	996
	% within Satellite Town	38.9%	45.0%	4.6%	10.8%	0.7%	100.0%

Source: Author's Survey, 2024

Table 6.9.1 presents the symmetric measures for employment status, utilizing both Pearson's R and Spearman Correlation to assess the relationships between key socioeconomic factors. For Pearson's R, the value is 0.194, with an asymptotic standard error of 0.034, indicating a weak to moderate positive correlation between employment status and income level. The approximate significance (p-value) of 0.000 suggests that this relationship is statistically significant. For Spearman Correlation, the value is 0.215, with an asymptotic standard error of 0.030, showing a moderate positive correlation between employment status and perceived housing affordability. The p-value of 0.000 confirms that this correlation is statistically significant. This implies that as individuals' employment status improves, there tends to be a corresponding increase in income levels and better perceptions of housing affordability across the satellite towns in the study area.

Table 6.9.1: Symmetric Measures of employment status

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	.194	.034	6.245	.000[c]
Ordinal by Ordinal	Spearman Correlation	.215	.030	6.951	.000[c]
N of Valid Cases		996			

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.
c. Based on normal approximation.
Source: Author's Survey, 2024

The rating of employment status in the satellite towns indicates a moderate positive correlation with socioeconomic factors affecting residents' lives. A strong employment status is crucial for enhancing livability, as it directly influences individuals' economic stability and access to resources. Additionally, employment opportunities are essential for the functionality of satellite towns, since they help attract and retain residents, reduce urban migration pressures, and contribute to local economic development. Improving employment status in these towns is therefore vital for fostering vibrant, sustainable communities that support residents' well-being and the overall functionality of the area. For example, a recent study in Lagos State demonstrated that vocational skills training is strongly and significantly associated with increased employability and job creation among youth (Medun & Bello, 2024).

6.3.2 Cost of Living

Table 6.10 presents the distribution of residents' cost of living across the satellite towns, expressed in monetary terms. The findings reveal that the most common cost range among residents falls between ₦101,000 and ₦150,000 per month, accounting for 45.2% of the total respondents, while 39.8% spend between ₦151,000 and ₦200,000 monthly. Only 13.8% of respondents reported living on ₦50,000–₦100,000, and less than 1% survive on below ₦50,000 monthly. This pattern indicates that the average household cost of living across the satellite towns is approximately ₦150,000–₦200,000 per month, which can be categorized as moderate to high by Abuja's urban standards (National Bureau of Statistics, 2024).

By satellite town, the distribution shows distinct spatial variations. In Kubwa (50.5%), Karshi (48.0%), and Bwari (46.7%), a higher proportion of residents reported monthly living costs above ₦150,000, reflecting the influence of stronger urban integration, higher rent levels, and better infrastructure access. Conversely, respondents in Kuje (57.9%) and Dobi (39.7%) mostly fall within the ₦101,000–₦150,000 range, suggesting a moderate living cost that balances affordability with accessibility. Meanwhile, the majority of residents in Kusaki-Yangi (51.3%) and Anagada (53.2%) reported spending within ₦50,000–₦100,000 monthly, highlighting relatively low costs of living consistent with their limited infrastructure and semi-rural character.

Overall, the findings indicate that while the cost of living across Abuja's satellite towns remains lower than in the central city, the financial burden is still significant for many households given Nigeria's current inflationary pressures. The average monthly cost of ₦150,000–₦200,000 suggests that these areas are moderately affordable but increasingly strained by rising housing, food, and utility prices. This reinforces earlier findings that improvements in infrastructure, employment opportunities, and service delivery are essential for enhancing the livability and socioeconomic resilience of the satellite towns (NBS, 2024; Numbeo, 2025).

Table 6.10: Residents' Cost of Living by Satellite Town

Satellite Town		Cost of living					Total
		<₦50,000	₦50,000-₦100,000	₦101,000-₦150,000	₦151,000-₦200,000	>₦100,000	
Karshi	Count	0	36	283	294	0	613
	% within Satellite Town	0.0%	5.9%	46.2%	48.0%	0.0%	100.0%
Kubwa	Count	0	15	30	46	0	91
	% within Satellite Town	0.0%	16.5%	33.0%	50.5%	0.0%	100.0%
Kuje	Count	0	2	22	14	0	38
	% within Satellite Town	0.0%	5.3%	57.9%	36.8%	0.0%	100.0%
Bwari	Count	0	6	42	42	0	90
	% within Satellite Town	0.0%	6.7%	46.7%	46.7%	0.0%	100.0%
Dobi	Count	9	25	25	0	4	63
	% within Satellite Town	14.3%	39.7%	39.7%	0.0%	6.3%	100.0%
Kusaki-Yangi	Count	0	20	19	0	0	39
	% within Satellite Town	0.0%	51.3%	48.7%	0.0%	0.0%	100.0%
Anagada	Count	0	33	29	0	0	62
	% within Satellite Town	0.0%	53.2%	46.8%	0.0%	0.0%	100.0%
Total	Count	9	137	450	396	4	996
	% within Satellite Town	0.9%	13.8%	45.2%	39.8%	0.4%	100.0%

Source: Author's Survey, 2024

The descriptive statistics in Table 6.10.1 indicates that the average perception of the cost of living in the satellite towns is moderately high, with a mean score of 3.25. The minimum value of 1 suggests some residents find the cost very low, while the maximum of 5 indicates that others perceive it as very high. The standard deviation of 0.725 reflects moderate variability in responses, suggesting that while many residents share similar views, there are notable differences in opinions about the affordability of living in these areas.

Table 6.10.1: Descriptive Statistics of Cost of Living

	N	Minimum	Maximum	Mean	Std. Deviation
Cost of living	996	1	5	3.25	.725
Valid N (listwise)	996				

Source: Author's Survey, 2024

Table 6.10.2 reveals a moderate negative correlation between the cost of living and the variables analyzed, as indicated by Pearson's R value of -0.424 and Spearman Correlation value of -0.356. The p-values for both correlations are 0.000, confirming their statistical significance. This suggests that as the cost-of-living increases, there is a corresponding decrease in the other variables being assessed, highlighting a meaningful inverse relationship.

The negative correlations suggest that higher living costs may be associated with lower satisfaction or adverse conditions related to the factors considered in the study. This relationship underscores the importance of monitoring the cost of living in the satellite towns, as it can significantly impact residents' overall quality of life and their ability to access necessary resources and services.

Table 6.10.2: Symmetric Measures of Cost of Living

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	-.424	.027	-14.778	.000[c]
Ordinal by Ordinal	Spearman Correlation	-.356	.030	-11.992	.000[c]
N of Valid Cases		996			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Source: Author's Survey, 2024

The rating of the cost of living in the satellite towns is perceived as moderately high, with an average score of 3.25. The moderate negative correlations indicate that as living costs increase, residents may experience adverse effects on their overall satisfaction and well-being. A high cost of living can diminish livability by limiting access to essential services and reducing disposable income, impacting residents' quality of life. Furthermore, addressing the cost of living is crucial for the functionality of satellite towns, as it influences the attractiveness of these areas for potential residents and businesses. Ensuring affordable living conditions is vital for fostering sustainable communities that support economic growth and enhance residents' quality of life.

6.4 Education

This section measures residents' level of education across the satellite towns. The availability of schools, level of education and quality of schools in the study area is measured.

6.4.1 Highest Level of Education

As presented in Table 6.11, the majority of respondents with a proportion of 48.0% affirmed that they have tertiary educational attainment with a further 29.6% of respondents stating that they have secondary school education. The proportion of respondents with primary and non-formal education is 16.1% and 6.3% respectively.

By satellite town, the majority of respondents in Karshi (52.9%), Kubwa (50.5%), Kuje (60.5%) and Bwari (53.3%) affirmed to have attained tertiary education. 58.7% of the respondents in Dobi affirmed that they have secondary school education. However, the higher proportion of the respondents from Kusaki-Yanga (35.8%) and Anagada (35.5%) noted that they had just primary education. According to the FCT Education Management Information System (2022), there were 609 public primary and secondary schools as at 2017 compared to 2,364 private primary and secondary school corroborating the findings of the study.

Table 6.11: Educational attainment

Satellite Town		Educational attainment: Primary	Secondary	Tertiary	Non-formal	Total
Karshi	Count	86	166	324	37	613
	% within Satellite Town	14.0%	27.1%	52.9%	6.0%	100.0%
Kubwa	Count	8	29	46	8	91
	% within Satellite Town	8.8%	31.9%	50.5%	8.8%	100.0%
Kuje	Count	0	13	23	2	38
	% within Satellite Town	0.0%	34.2%	60.5%	5.3%	100.0%
Bwari	Count	12	18	48	12	90
	% within Satellite Town	13.3%	20.0%	53.3%	13.3%	100.0%
Dobi	Count	18	37	4	4	63
	% within Satellite Town	28.6%	58.7%	6.3%	6.3%	100.0%
Kusaki-Yangi	Count	14	11	14	0	39
	% within Satellite Town	35.9%	28.2%	35.9%	0.0%	100.0%
Anagada	Count	22	21	19	0	62
	% within Satellite Town	35.5%	33.9%	30.6%	0.0%	100.0%
Total	Count	160	295	478	63	996
	% within Satellite Town	16.1%	29.6%	48.0%	6.3%	100.0%

Source: Author's Survey, 2024

Table 6.11.1 presents the symmetric measures for educational attainment, showing weak to moderate negative correlations with key socioeconomic indicators among 996 valid cases. For Pearson's R, the correlation value of –0.197 indicates a weak to moderate inverse relationship between educational attainment and employment status (income stability), while the Spearman correlation coefficient (–0.154) reveals a similar trend between educational attainment and housing affordability. Both correlations are statistically significant ($p = 0.000$), suggesting that as residents' educational levels increase, there tends to be a slight decline in their likelihood of accessing stable employment or affordable housing within the satellite towns.

This inverse trend may reflect structural economic challenges where higher educational qualifications do not necessarily guarantee better employment opportunities or living conditions in these developing urban areas. Factors such as underemployment, limited formal job creation, and a mismatch between qualifications and available occupations could explain this outcome.

Consequently, the findings underscore the need for targeted policies that enhance job-market alignment, economic diversification, and housing support programs for educated residents, ensuring that educational advancement translates into improved socioeconomic well-being across the satellite towns.

Table 6.11.1: Symmetric Measures of educational attainment

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	-.197	.032	-6.321	.000[c]
Ordinal by Ordinal	Spearman Correlation	-.154	.032	-4.920	.000[c]
N of Valid Cases		996			

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.
c. Based on normal approximation.

Source: Author's Survey, 2024

The rating of educational attainment in the satellite towns reveals a statistically significant negative correlation with various analyzed factors, suggesting that higher educational levels may be associated with challenges in other areas of life. This relationship has important implications for livability, as higher education can enhance individuals' employment prospects and economic stability, ultimately contributing to improved quality of life. Furthermore, educational attainment is crucial for the functionality of satellite towns, as it fosters a skilled workforce that can drive local development and innovation. Enhancing educational opportunities and addressing the barriers to educational success are vital for promoting sustainable communities and improving overall livability in these areas.

6.4.2 Availability of Educational Facilities

As presented in Table 6.12, the majority of respondents with a proportion of 54.8% affirmed that they are satisfied with the availability of educational facilities in the study area with a further 10.2% of respondents stating that they are very satisfied while the proportion of respondents who are indifferent with the availability and quality of educational facilities is represented as 21.3% with a further 1.2% affirming their dissatisfaction.

By satellite town, the majority of respondents in Bwari (80.0%) and Karshi (60.2%) affirmed their satisfaction with the availability of education facilities in their region while the higher proportion of respondents in Kuje (47.4%), Kubwa (47.3%), Dobi (66.7%) Anagada (51.6%) and Kusaki-Yanga (48.7%) noted that they were indifferent to the availability education facilities.

It can be inferred from the above that while the majority of respondents are satisfied with the availability and quality of education facilities across the study area, respondents in the Kuje, Dobi, Anagada and Kusaki-Yanga satellite towns are of the opinion that there is need for improvement in their education facilities.

Table 6.12: Rating of the Availability of Educational Facilities

Satellite Town		Rate the availability of educational facilities: Excellent	Good	Average	Poor	Total
Karshi	Count	80	369	164	0	613
	% within Satellite Town	13.1%	60.2%	26.8%	0.0%	100.0%
Kubwa	Count	10	30	43	8	91
	% within Satellite Town	11.0%	33.0%	47.3%	8.8%	100.0%
Kuje	Count	5	15	18	0	38
	% within Satellite Town	13.2%	39.5%	47.4%	0.0%	100.0%
Bwari	Count	0	72	12	6	90
	% within Satellite Town	0.0%	80.0%	13.3%	6.7%	100.0%
Dobi	Count	0	17	42	4	63
	% within Satellite Town	0.0%	27.0%	66.7%	6.3%	100.0%
Kusaki-Yangi	Count	2	18	19	0	39
	% within Satellite Town	5.1%	46.2%	48.7%	0.0%	100.0%
Anagada	Count	5	25	32	0	62
	% within Satellite Town	8.1%	40.3%	51.6%	0.0%	100.0%
Total	Count	102	546	330	18	996
	% within Satellite Town	10.2%	54.8%	33.1%	1.8%	100.0%

Source: Author's Survey, 2024

Table 6.12.1 reveals that the average rating for the availability of educational facilities is 2.27, indicating a moderate perception among the 996 participants surveyed. With a minimum score of 1 and a maximum of 4, the responses show a range of views, with some residents perceiving availability as very low and others as relatively high. The standard deviation of 0.660 indicates moderate variability in perceptions, suggesting that while many respondents have similar views, there are significant differences in individual experiences. Overall, these findings suggest that while educational facilities exist, their availability may not adequately meet community needs, pointing to a potential area for improvement.

6.12.1: Descriptive Statistics of Availability of Educational Facilities

	N	Minimum	Maximum	Mean	Std. Deviation
Rate the availability of educational facilities	996	1	4	2.27	.660
Valid N (listwise)	996				

Source: Author's Survey, 2024

Table 6.12.2 illustrates the symmetric measures for the availability of educational facilities, revealing a weak to moderate positive correlation with the analyzed variables. Pearson's R is 0.206, and Spearman Correlation is 0.235, both statistically significant with p-values of 0.000. These findings indicate that improved availability of educational facilities is positively associated with the other factors examined. This underscores the critical role of educational resources in enhancing overall community conditions and suggests that better access to educational facilities can lead to positive outcomes in related areas.

6.12.2: Table Symmetric Measures of Availability of Educational Facilities

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	.206	.029	6.653	.000[c]
Ordinal by Ordinal	Spearman Correlation	.235	.030	7.610	.000[c]
N of Valid Cases		996			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Source: Author's Survey, 2024

The rating of the availability of educational facilities in the satellite towns indicates a moderate perception among residents, highlighting both existing resources and the need for improvement. The positive correlations with other variables suggest that enhanced access to educational facilities can significantly contribute to livability by improving residents' quality of life and opportunities for personal and professional development. Furthermore, the functionality of satellite towns is closely tied to the presence of educational resources, as they foster a skilled workforce and promote community engagement. Investing in educational facilities is essential for creating vibrant, sustainable communities that support residents' needs and aspirations, ultimately enhancing the overall livability and functionality of these towns.

6.4.3 Rating of Quality of Schools

Table 6.13 presents the rating of the quality of schools (public primary and secondary) in the study area. The majority of respondents at 68.0% are of the opinion that the quality of schools in the study area is good with a further 1.4% of respondents affirming it to be excellent while the proportion of respondents who believe the quality of schools is average at best is represented as 28.1%.

By satellite town, the majority of respondents in Karshi (73.2%), Bwari (73.3%), Kubwa (61.5%), Kuje (52.6%), Anagada (59.7%) and Kusaki-Yanga (59.0%) affirmed that the quality of schools is good while the majority of respondents in Dobi (58.7%) opined that the quality of schools is average at best.

It can be inferred from the above that while availability of public schools is rated good across the study area, respondents in Dobi satellite towns are of the opinion that there is need for improvement in the quality of schools in their regions.

Table 6.13: Rating of the Quality of Schools

Satellite Town		Rate the quality of schools: Excellent	Good	Average	Poor	Total
Karshi	Count	0	449	164	0	613
	% within Satellite Town	0.0%	73.2%	26.8%	0.0%	100.0%
Kubwa	Count	4	56	15	16	91
	% within Satellite Town	4.4%	61.5%	16.5%	17.6%	100.0%
Kuje	Count	3	20	6	9	38
	% within Satellite Town	7.9%	52.6%	15.8%	23.7%	100.0%
Bwari	Count	0	66	24	0	90
	% within Satellite Town	0.0%	73.3%	26.7%	0.0%	100.0%
Dobi	Count	0	26	37	0	63
	% within Satellite Town	0.0%	41.3%	58.7%	0.0%	100.0%
Kusaki-Yangi	Count	2	23	14	0	39
	% within Satellite Town	5.1%	59.0%	35.9%	0.0%	100.0%
Anagada	Count	5	37	20	0	62
	% within Satellite Town	8.1%	59.7%	32.3%	0.0%	100.0%
Total	Count	14	677	280	25	996
	% within Satellite Town	1.4%	68.0%	28.1%	2.5%	100.0%

Source: Author's Survey, 2024

Table 6.13.1 shows that the average rating for the quality of schools is 2.32, indicating a moderate perception among the 996 respondents. The minimum score of 1 suggests that some view school quality as very low, while the maximum score of 4 indicates that others perceive it to be relatively high. The standard deviation of 0.543 reflects low variability in responses, meaning most participants share similar views on school quality. Overall, while there are positive perceptions, the significant number of respondents who consider the quality inadequate points to a need for improvement in the educational system within the community.

Table 6.13.1: Descriptive Statistics of Quality of Schools

	N	Minimum	Maximum	Mean	Std. Deviation
Rate the quality of schools	996	1	4	2.32	.543
Valid N (listwise)	996				

Source: Author's Survey, 2024

Table 6.13.2 illustrates the symmetric measures for the quality of schools, revealing different correlations based on the analysis method. Pearson's R is 0.054, indicating a very weak positive correlation with the interval-level variables, but with a p-value of 0.087, this relationship is not statistically significant. In contrast, Spearman Correlation shows a value of 0.088 with a statistically significant p-value of 0.005, suggesting a weak positive correlation with the ordinal-level variables. Overall, while there are positive associations between the quality of schools and the analyzed variables, their strength and significance differ depending on the correlation method applied.

Table 6.13.2: Symmetric Measures of Quality of Schools

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	.054	.032	1.715	.087[c]
Ordinal by Ordinal	Spearman Correlation	.088	.033	2.788	.005[c]
N of Valid Cases		996			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Source: Author's Survey, 2024

The perceived quality of schools in satellite towns tends to be moderate, reflecting a balance between recognition of what works well and awareness of areas needing improvement. Although correlations between school quality and other community variables are weak to modest, ordinal correlation analyses suggest that how people rate their schools does have a meaningful impact on overall livability. High-quality schools are vital, not only for educating and empowering residents but also for enhancing community engagement and bolstering the functionality of satellite towns. As quality schools improve, they help reduce the enrollment burden on already stretched institutions (e.g., through overcrowding), contributing to more even distribution of educational resources. Enhancing school quality can thus significantly elevate livability and attract new residents, making these towns more vibrant and sustainable (Zhang et al., 2025).

6.5 Environment

This section details respondents' perception of the quality of the environment in terms air quality, availability of parks, accessibility of parks and recreational centers and the effectiveness of waste management across the study area.

6.5.1 Rating of Air Quality

Table 6.14 provides an overview of perceived air quality among 996 respondents across various satellite towns. The majority of respondents rated the air quality as good (45.3%) or average (39.5%), with only 8.9% considering it excellent and 6.3% rating it as poor. This indicates a generally moderate perception of air quality, with a significant portion of residents dissatisfied.

When examining variations across towns, Karshi stands out positively, with no poor ratings and a majority rating the air quality as good (45.2%) or average (40.8%). Kubwa presents a balanced view, with 51.6% rating it good and 48.4% average, but no extreme opinions. In contrast, Kuje shows a split perception: while 60.5% rated it good, 15.8% rated it poor, suggesting a mix of satisfaction and concern. Bwari and Dobi indicate significant dissatisfaction, with 20% and 28.6% of respondents rating the air quality as poor, respectively.

Kusaki-Yangi and Anagada also reflect a concerning trend, with no excellent ratings and high percentages of average and poor responses. Overall, the variations highlight differing environmental conditions and potential areas for improvement, particularly in towns with higher dissatisfaction levels, to enhance residents' well-being.

Table 6.14: Rating of Air Quality

		Rating of air quality				
Satellite Town		Excellent	Good	Average	Poor	Total
Karshi	Count	86	277	250	0	613
	% within Satellite Town	14.0%	45.2%	40.8%	0.0%	100.0%
Kubwa	Count	0	47	44	0	91
	% within Satellite Town	0.0%	51.6%	48.4%	0.0%	100.0%
Kuje	Count	3	23	6	6	38
	% within Satellite Town	7.9%	60.5%	15.8%	15.8%	100.0%
Bwari	Count	0	42	30	18	90
	% within Satellite Town	0.0%	46.7%	33.3%	20.0%	100.0%
Dobi	Count	0	21	24	18	63
	% within Satellite Town	0.0%	33.3%	38.1%	28.6%	100.0%
Kusaki-Yangi	Count	0	16	15	8	39
	% within Satellite Town	0.0%	41.0%	38.5%	20.5%	100.0%
Anagada	Count	0	25	24	13	62
	% within Satellite Town	0.0%	40.3%	38.7%	21.0%	100.0%
Total	Count	89	451	393	63	996
	% within Satellite Town	8.9%	45.3%	39.5%	6.3%	100.0%

Source: Author's Survey, 2024

Table 6.14.1 provides insights into the ratings of air quality from 996 respondents, with a mean score of 2.43 indicating a slightly below-average perception of air quality. The ratings range from 1 to 4, reflecting a spectrum of opinions, where some individuals rate the air quality as very poor while others perceive it as relatively good. The standard deviation of 0.742 shows moderate variability in responses, suggesting differing levels of satisfaction and concern about air quality among participants. Overall, while the average rating leans slightly positive, significant dissatisfaction exists among many respondents regarding air quality in their environment.

Table 6.14.1: Descriptive Statistics Ratings of Air Quality

	N	Minimum	Maximum	Mean	Std. Deviation
Rating of air quality	996	1	4	2.43	.742
Valid N (listwise)	996				

Source: Author's Survey, 2024

Table 6.14.2 analyzes the symmetric measures of air quality using both Pearson's R and Spearman Correlation based on 996 valid cases. Pearson's R value of 0.299 indicates a moderate positive correlation between the interval-level variables, suggesting that higher ratings of air quality are associated with increases in related variables. This relationship is statistically significant, as indicated by the p-value of 0.000.

Similarly, the Spearman Correlation value of 0.257 also reflects a moderate positive correlation among the ordinal variables, further confirmed by a p-value of 0.000. Overall, the table highlights that both correlation measures reveal statistically significant positive associations with air quality ratings, emphasizing the role of air quality in community assessments and its potential impact on related variables.

Table 6.14.2: Symmetric Measures of Air Quality

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	.299	.028	9.873	.000[c]
Ordinal by Ordinal	Spearman Correlation	.257	.030	8.372	.000[c]
N of Valid Cases		996			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Source: Author's Survey, 2024

The average air-quality rating of 2.43 in the satellite towns suggests a perception of slightly below-average air conditions, indicating growing resident concern about environmental health. The statistically significant positive correlations observed in the analysis imply that improved air quality is likely to enhance the overall livability and functionality of these areas. Recent studies have established similar relationships between air quality and urban well-being. For instance, Zamora et al. (2024) found that both objectively measured particulate matter ($PM_{2.5}$) and residents' perceptions of air quality significantly influenced physical health and life satisfaction among adults in California. Likewise, Bikis (2023) emphasized that urban greenness and cleaner air are directly linked to better respiratory outcomes and improved public health. Ioannis et al. (2020) further highlighted that prolonged exposure to pollutants contributes to cardiovascular and respiratory diseases, reducing community livability and productivity. Collectively, these findings underscore that addressing air quality challenges through effective pollution control, green urban planning, and sustainable policies is essential for creating healthier, more functional, and attractive satellite towns.

6.5.2 Availability of Open Spaces

In terms of availability parks in the study area as presented in Table 6.15, the majority of respondents at 44.0% affirmed that parks are very low in terms of availability while 34.6% of respondents are of the opinion that parks are low in terms of availability in their neighborhoods. 19.1% of the respondents share the opinion that parks are averagely available in their neighborhood.

By satellite towns, the majority of respondents in Bwari (53.3%), Kuje (57.9%) and Dobi (41.3%) affirmed the low availability of parks while the respondents in Karshi (55.0%), Kusaki-Yanga (41.0%) and Anagada (33.9%) stated that the availability parks in their neighborhoods is very low. 39.6% of respondents from Kubwa satellite town stated that the availability of parks in their neighborhood is average.

Table 6.15: Availability of Parks

Satellite Town		Availability of parks					Total
		Very low	Low	Average	High	Very high	
Karshi	Count	337	190	86	0	0	613
	% within Satellite Town	55.0%	31.0%	14.0%	0.0%	0.0%	100.0%
Kubwa	Count	8	31	36	16	0	91
	% within Satellite Town	8.8%	34.1%	39.6%	17.6%	0.0%	100.0%
Kuje	Count	0	22	16	0	0	38
	% within Satellite Town	0.0%	57.9%	42.1%	0.0%	0.0%	100.0%
Bwari	Count	36	48	6	0	0	90
	% within Satellite Town	40.0%	53.3%	6.7%	0.0%	0.0%	100.0%
Dobi	Count	20	26	17	0	0	63
	% within Satellite Town	31.7%	41.3%	27.0%	0.0%	0.0%	100.0%
Kusaki-Yangi	Count	16	12	9	0	2	39
	% within Satellite Town	41.0%	30.8%	23.1%	0.0%	5.1%	100.0%
Anagada	Count	21	16	20	0	5	62
	% within Satellite Town	33.9%	25.8%	32.3%	0.0%	8.1%	100.0%
Total	Count	438	345	190	16	7	996
	% within Satellite Town	44.0%	34.6%	19.1%	1.6%	0.7%	100.0%

Source: Author's Survey, 2024

Table 6.15.1 presents the descriptive statistics for the availability of parks based on a sample size of 996 respondents. The statistics indicate that the minimum rating for park availability is 1, while the maximum rating is 5. The mean rating of 1.80 suggests that, on average, respondents perceive the availability of parks to be quite low within the satellite towns. The standard deviation of 0.849 indicates some variation in the ratings, though the overall low mean score indicates a consensus among respondents about the limited availability of parks in their area. This implies that enhancing access to parks could be a significant focus for improving the quality of life in these satellite towns, as parks are essential for recreational activities and community well-being.

Table 6.15.1: Descriptive Statistics of Availability of Parks

	N	Minimum	Maximum	Mean	Std. Deviation
Availability of parks	996	1	5	1.80	.849
Valid N (listwise)	996				

Source: Author's Survey, 2024

Table 6.15.2 assesses the availability of parks among 996 respondents using symmetric measures. The Pearson's R value of 0.194 indicates a weak to moderate positive correlation between the availability of parks and other interval-level variables, suggesting that as park availability increases, other related positive attributes tend to rise as well. This correlation is statistically significant (p-value of 0.000), affirming its relevance.

Additionally, the Spearman Correlation coefficient of 0.258 indicates a moderate positive correlation among ordinal variables, further supporting the notion that greater perceived park availability is linked to higher ratings of other positive environmental factors. Together, these results underscore the importance of park availability in enhancing the livability and satisfaction of residents in satellite towns, emphasizing the need for increased access to green spaces in these areas.

Table 6.15.2: Symmetric Measures of Availability of Parks

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	.194	.034	6.227	.000[c]
Ordinal by Ordinal	Spearman Correlation	.258	.031	8.408	.000[c]
N of Valid Cases		996			

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.
c. Based on normal approximation.

Source: Author's Survey, 2024

The ratings of park availability in the study area reveal a concerning picture, with a mean score of 1.80 indicating limited access to green spaces. This scarcity of parks negatively impacts the livability of satellite towns, as parks contribute significantly to residents' quality of life by providing recreational opportunities, enhancing mental well-being, and fostering community interactions. Furthermore, the positive correlation found between park availability and other attributes suggests that improving access to parks can enhance overall satisfaction and functionality in these towns. Therefore, prioritizing the development and maintenance of parks is essential for promoting a more livable and functional environment in satellite towns, ultimately benefiting the well-being of their residents. Open spaces are a key component of Howard's Garden city concept as they are critical for promoting social cohesion and community engagement. Qi et al. (2024) emphasized that features like accessibility, safety, mixed land use, and visual quality of public spaces are strongly correlated with social cohesion and well-being

6.5.3 Accessibility of Parks and Recreational Centers

Table 6.16 provides the rating of the accessibility of parks and recreational centers across satellite towns in the study area. The highest proportion of respondents at 35.5% affirmed that parks and recreational centers in their satellite towns are accessible with a further 14.6% rating them as very accessible. The combined proportion of respondents who noted that parks and recreational centers in the study area are not accessible is presented as 25.7%.

By satellite town, the highest proportion of respondents across Karshi, Kuje, Anagada, Kusaki-Yanga, Bwari and Dobi affirmed that parks and recreational centers are accessible, although a significant proportion of respondents in the listed satellite towns perceived accessibility to parks and recreational centers are average at best, while at Kubwa satellite town, the majority of respondents stated that parks and recreational centers in their neighborhoods are very accessible.

Table 6.16: Accessibility of Parks and Recreational Centers

Satellite Town		Accessibility of parks and recreational centers Very accessible	Accessible	Average	Inaccessible	Very inaccessible	Total
Karshi	Count	86	160	160	79	128	613
	% within Satellite Town	14.0%	26.1%	26.1%	12.9%	20.9%	100.0%
Kubwa	Count	26	18	23	24	0	91
	% within Satellite Town	28.6%	19.8%	25.3%	26.4%	0.0%	100.0%
Kuje	Count	6	14	12	3	3	38
	% within Satellite Town	15.8%	36.8%	31.6%	7.9%	7.9%	100.0%
Bwari	Count	12	42	24	6	6	90
	% within Satellite Town	13.3%	46.7%	26.7%	6.7%	6.7%	100.0%
Dobi	Count	8	33	22	0	0	63
	% within Satellite Town	12.7%	52.4%	34.9%	0.0%	0.0%	100.0%
Kusaki-Yangi	Count	2	35	0	0	2	39
	% within Satellite Town	5.1%	89.7%	0.0%	0.0%	5.1%	100.0%
Anagada	Count	5	52	0	0	5	62
	% within Satellite Town	8.1%	83.9%	0.0%	0.0%	8.1%	100.0%
Total	Count	145	354	241	112	144	996
	% within Satellite Town	14.6%	35.5%	24.2%	11.2%	14.5%	100.0%

Source: Author's Survey, 2024

The descriptive statistics in Table 6.16.1 provide insight into the perceptions of accessibility of parks and recreational centers within the study area. The minimum value of 1 and the maximum value of 5 indicates that while some respondents report parks and recreational centers as not accessible at all (1), others find them highly accessible (5). The mean score of 2.76 suggests that, on average, respondents lean towards perceiving parks and recreational centers as moderately accessible. This average signal that many respondents do not have easy access to these facilities, especially in satellite towns like Anagada, Kusaki-Yanga, and Dobi that are not well developed.

A standard deviation of 1.253 indicates a moderate level of variability in responses. This means that perceptions of accessibility differ significantly among respondents. Some find it easier to access parks and recreational centers, while others face considerable challenges.

The above analysis therefore suggests that although parks and recreational centers are accessible to some, there is a general perception of moderate inaccessibility across the population, with substantial variation in individual experiences. This highlights the need for targeted improvements in infrastructure to enhance accessibility for a broader segment of the population.

Table 6.16.1: Descriptive Statistics of Accessibility of Parks and Recreational Centers

	N	Minimum	Maximum	Mean	Std. Deviation
Accessibility of parks and recreational centers	996	1	5	2.76	1.253
Valid N (listwise)	996				

Source: Author's Survey, 2024

The symmetric measures in Table 6.16.2 indicate a moderate negative correlation between the variables related to the accessibility of parks and recreational centers. Pearson's R (-0.250) and Spearman's correlation (-0.259) both suggest that as one variable increases (cost, distance, and time), another variable decreases (satisfaction). The T-values for both tests (-8.134 and -8.453, respectively) and the highly significant p-values (0.000) confirm that these negative relationships are statistically significant. This implies that there is a consistent inverse relationship, which could be due to geographic or socioeconomic factors affecting park accessibility. The findings highlight disparities in access, suggesting the need for interventions to address barriers, particularly for communities facing more limited access.

Table 6.16.2: Symmetric Measures of Accessibility of Parks and Recreational Centers

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	-.250	.025	-8.134	.000[c]
Ordinal by Ordinal	Spearman Correlation	-.259	.028	-8.453	.000[c]
N of Valid Cases		996			

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.
c. Based on normal approximation.

Source: Author's Survey, 2024

Based on the analysis above, the accessibility of parks and recreational centers across satellite towns in the Federal Capital Territory, Abuja, is generally perceived as moderate to limited. Respondents' rating of accessibility suggests that while some areas such as Kubwa and Bwari have relatively better access to recreational facilities, a large portion of the population faces challenges in reaching these centers, especially in Anagada, Dobi, and Kusaki-Yangi.

The negative correlations observed in the symmetric measures further highlight underlying issues, such as potential geographic or socioeconomic barriers, which inversely affect accessibility. The statistically significant negative relationships between variables suggest that as certain factors -such as distance or availability of infrastructure - worsen, access to parks decreases correspondingly.

In conclusion, the data reveal disparities in the accessibility of parks and recreational centers across satellite towns, indicating that targeted interventions are needed to address these gaps and promote more equitable access to recreational infrastructure across the region.

6.5.4 Waste Management Systems in the Satellite Towns

In terms of the effectiveness of the waste management systems in the study area, the highest proportion of respondents at 34.6% are of the opinion that waste management systems in the study area are effective with 20.6% of respondents stating that they are ineffective. Cumulatively, the proportion of respondents who believe that waste management systems are effective compared to those who are of the opinion that they are ineffective is given as 36.0 and 48.3% respectively.

By satellite town, the highest proportion of respondents at Kubwa, Kuje, and Bwari affirmed that waste management systems in their respective neighborhoods are effective with the highest proportion of respondents at Dobi stating that waste management systems are moderately effective while at Karshi, Kusaki-Yangi and Anagada, the highest proportion of respondents affirmed waste management systems to be ineffective.

From the above, it can be inferred that the overall perception of waste management systems in the study area is that they are not effective, although there is variation among the satellite towns with residents in Kubwa, Kuje and Bwari satellite towns stating that waste management systems in their neighborhoods are effective with the opposite being the case in Karshi, Kusaki-Yangi and Anagada. The observed variations in perceived effectiveness may therefore reflect differences in the Abuja Environmental Protection Board (AEPB)'s operational coverage, infrastructure, and community engagement across satellite towns.

Table 6.17: Effectiveness of Waste Management Systems

Satellite Town		Effectiveness of waste management: Very Effective	Effective	Moderately Effective	Ineffective	Very ineffective	Total
Karshi	Count	0	197	43	123	250	613
	% within Satellite Town	0.0%	32.1%	7.0%	20.1%	40.8%	100.0%
Kubwa	Count	0	52	35	4	0	91
	% within Satellite Town	0.0%	57.1%	38.5%	4.4%	0.0%	100.0%
Kuje	Count	0	22	5	5	6	38
	% within Satellite Town	0.0%	57.9%	13.2%	13.2%	15.8%	100.0%
Bwari	Count	0	42	36	12	0	90
	% within Satellite Town	0.0%	46.7%	40.0%	13.3%	0.0%	100.0%
Dobi	Count	0	17	29	17	0	63
	% within Satellite Town	0.0%	27.0%	46.0%	27.0%	0.0%	100.0%
Kusaki-Yangi	Count	4	5	3	19	8	39
	% within Satellite Town	10.3%	12.8%	7.7%	48.7%	20.5%	100.0%
Anagada	Count	10	10	5	25	12	62
	% within Satellite Town	16.1%	16.1%	8.1%	40.3%	19.4%	100.0%
Total	Count	14	345	156	205	276	996
	% within Satellite Town	1.4%	34.6%	15.7%	20.6%	27.7%	100.0%

Source: Author's Survey, 2024

The table 6.17.1 presents the descriptive statistics for the effectiveness of waste management systems in the study area. The effectiveness of the waste management system was rated on a scale ranging from 1 (very ineffective) to 5 (most effective). The mean score of 3.39 reflects a moderately positive perception of the waste management system's effectiveness across the sample. This indicates that, on average, respondents viewed the system as somewhat effective, leaning towards the middle of the scale but closer to a positive evaluation. The standard deviation of 1.253 shows a moderate variation in responses, implying that while many respondents had similar views, there were noticeable differences in how effective they perceived the waste management system to be.

6.17.1: Descriptive Statistics of Waste Management Systems

	N	Minimum	Maximum	Mean	Std. Deviation
Effectiveness of waste management	996	1	5	3.39	1.253
Valid N (listwise)	996				

Source: Author's Survey, 2024

Table 6.17.2 presents the symmetric measures for evaluating the effectiveness of the waste management systems using both Pearson's R and Spearman Correlation coefficients. Firstly, Pearson's R has a value of -0.170 indicating that as one variable increases, the effectiveness of the waste management system decreases slightly. Although the correlation is statistically significant ($p < 0.001$), as indicated by the approximate significance value of 0.000, the strength of the relationship is weak. Secondly, Spearman's rank correlation, which assesses the strength and direction of the association between two ordinal variables, is -0.251. This correlation is stronger than Pearson's R but remains negative, indicating that higher rankings on one variable correspond to lower rankings on the effectiveness of waste management systems. Like Pearson's R, this result is also statistically significant ($p < 0.001$), and the negative direction further supports the presence of an inverse association.

Both measures of correlation are statistically significant, implying that there is a meaningful relationship between the variables in the dataset. However, the negative correlation coefficients suggest that as the other variables such as population increase and lack of awareness increases, the effectiveness of waste management systems tends to decline, though the strength of these relationships is weak to moderate. According to Adeiza et al., (2024), Abuja currently maintains four major official dumpsites, located in Gosa, Wupa, Bwari, and Dutse-Makaranta, which serve as the principal public waste disposal facilities for the territory. However, the findings of Igwilo et al. (2024) revealed the existence of over 22 active dumpsites scattered across the FCT's satellite towns, including Bwari, Kubwa, Kuje, Karshi, Gwagwalada, and Anagada, most of which are unregulated or informal. Their spatial analysis indicated that the majority of these dumpsites are situated close to residential and market areas, posing significant environmental and public health risks due to poor waste segregation and open burning practices.

Similarly, Owolabi et al. (2024), in their mapping and characterization of dumpsites in the Federal Capital Territory, observed that both legal and illegal waste disposal points have proliferated rapidly as a result of population growth, inadequate waste collection systems, and the limited capacity of the formal waste management board to cover peripheral communities. This situation explains why the majority of respondents in this study rely heavily on nearby public dumpsites for their waste disposal. Across the individual satellite towns, the majority of respondents also affirmed reliance on public dumpsites for their waste disposal. Notably, in Bwari and Kubwa, a relatively higher proportion of residents, 30.0% and 44.0%, respectively, reported engaging the waste management board for their waste disposal needs. This finding aligns with Igwilo et al. (2024), who found that these towns, being closer to the Abuja Municipal Area Council (AMAC), benefit from more consistent waste collection and transport services than more distant settlements like Karshi, Anagada, or Dobi, where informal dumpsites are the dominant disposal points.

The findings highlight a clear infrastructural imbalance in waste service delivery across the satellite towns. As Peris-Ortiz et al. (2017) noted, the challenges of waste management in developing urban regions stem from inadequate investment in waste collection, transportation, and disposal infrastructure. In the same vein, Tennakoon & Kulatunga (2024) emphasize that for a satellite town to function effectively, it must have a reliable and accessible waste management system supported by adequate public facilities such as engineered dumpsites.

Table 6.17.2: Symmetric Measures of Waste Management Systems

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	-.170	.031	-5.445	.000[c]
Ordinal by Ordinal	Spearman Correlation	-.251	.030	-8.170	.000[c]
N of Valid Cases		996			

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.
c. Based on normal approximation.

Source: Author's Survey, 2024

The analysis of waste management systems across satellite towns in the Federal Capital Territory (FCT), Abuja, reveals moderate effectiveness overall, with some variability in perceptions. The mean score of 3.39 on a 5-point scale suggests that, on average, the waste management systems are perceived as somewhat effective, though not without room for improvement. The standard deviation of 1.253 indicates a moderate spread in responses, highlighting differences in how various towns view the system's effectiveness.

The correlation analysis, both through Pearson's R (-0.170) and Spearman's rank correlation (-0.251), points to a statistically significant but weak inverse relationship between the effectiveness of waste management and other related variables. This suggests that certain factors, such as infrastructure or accessibility, might negatively influence perceptions of waste management performance, even if the relationship is not strong.

In conclusion, while waste management systems in the satellite towns of Abuja show moderate effectiveness, there are significant variations in how they are perceived, and certain factors seem to be negatively impacting their effectiveness. This calls for targeted improvements in these systems to enhance efficiency and better address the specific challenges in each satellite town. Peris-Ortiz et al. (2017) noted that improper waste management can pose significant challenges to the development and functionality of cities.

Plate 6.2: Open dumpsite at Anagada Satellite Town
Source: Data from field survey


Plate 3: Open dumpsite at Bwari Satellite Town
Source: Data from field survey

6.6 Transportation and Infrastructure

This section assesses the transportation and infrastructure across satellite towns in the study area. Availability of electricity, water, quality roads, and public transport facilities are measured as follows. According to UN-Habitat, (2014), the availability of infrastructure such as water, electricity, quality roads and public transport facilities is of key importance to the functionality of satellite towns.

6.6.1 Availability of Electricity

The majority of respondents rated electricity availability as good (42.4%) or average (30.6%), suggesting that while the utility is generally functional, there are areas that are underserved. A smaller portion of respondents rated electricity availability as poor (21.1%) or very poor (1.5%), indicating dissatisfaction in specific areas such as the underserved ones.

By satellite towns, Karshi had the highest number of respondents (47.1%) rating electricity availability as good, although a sizable proportion at 21% rated it as poor. Kubwa and Kuje had similar patterns, with a majority rating it good at 39.6 and 55.3%, respectively. The highest proportion of respondents at Bwari had a strong rating with 53.3% rating electricity availability as good and 46.7% rating it as average. At Dobi satellite town, the highest proportion of respondents at 41.3% rated electricity availability as average with a significant proportion at 33.3% rating it as good, however, Kusaki-Yangi and Anagada showed the highest dissatisfaction, with notable percentages rating electricity availability as poor (41% for Kusaki-Yangi, 38.7% for Anagada) and even very poor (12.8% and 16.1%).

From the above, it can be concluded that while electricity availability is generally seen as adequate or good across the study area, certain satellite towns, especially Kusaki-Yangi and Anagada, experience significant dissatisfaction with the amount of electricity supply available to them. As emphasized by Tennakoon & Kulatunga (2024), the consistent and adequate availability of critical infrastructure such as electricity is essential for the development and functionality of satellite towns, highlighting the uneven distribution of power supply across the study area. This is further corroborated by NBS, (2024) where households experience up to 6-7 weekly blackouts that often last 12 hours daily.

Table 6.18: Availability of basic utilities (electricity)

Satellite Town		Availability of basic utilities (electricity) Excellent	Good	Average	Poor	Very poor	Total
Karshi	Count	37	289	158	129	0	613
	% within Satellite Town	6.0%	47.1%	25.8%	21.0%	0.0%	100.0%
Kubwa	Count	0	36	32	23	0	91
	% within Satellite Town	0.0%	39.6%	35.2%	25.3%	0.0%	100.0%
Kuje	Count	0	21	15	2	0	38
	% within Satellite Town	0.0%	55.3%	39.5%	5.3%	0.0%	100.0%
Bwari	Count	0	48	42	0	0	90
	% within Satellite Town	0.0%	53.3%	46.7%	0.0%	0.0%	100.0%
Dobi	Count	0	21	26	16	0	63
	% within Satellite Town	0.0%	33.3%	41.3%	25.4%	0.0%	100.0%
Kusaki-Yangi	Count	2	2	14	16	5	39
	% within Satellite Town	5.1%	5.1%	35.9%	41.0%	12.8%	100.0%
Anagada	Count	5	5	18	24	10	62
	% within Satellite Town	8.1%	8.1%	29.0%	38.7%	16.1%	100.0%
Total	Count	44	422	305	210	15	996
	% within Satellite Town	4.4%	42.4%	30.6%	21.1%	1.5%	100.0%

Source: Author's Survey, 2024

The descriptive statistics for the availability of basic utilities (electricity) in Table 6.18.1, provides a comprehensive overview of perceptions regarding electricity services in the studied areas. The ratings range from a minimum of 1, indicating very poor availability, to a maximum of 5, representing excellent availability. The average rating of 2.73 suggests that respondents generally perceive electricity availability to be slightly below the midpoint of the scale, indicating that while many individuals may consider electricity availability as average, there is also a significant proportion who view it as inadequate.

Furthermore, the standard deviation of 0.894 points to a moderate level of variability in the ratings, indicating that responses differ considerably among satellite towns. This variability suggests that experiences with electricity availability are not uniform, with some residents expressing satisfaction while others report significant challenges.

Table 6.18.1: Descriptive Statistics of Availability of basic utilities (electricity)

	N	Minimum	Maximum	Mean	Std. Deviation
Availability of basic utilities (electricity)	996	1	5	2.73	.894
Valid N (listwise)	996				

Source: Author's Survey, 2024

The symmetric measures of availability of basic utilities (electricity) in Table 6.18.2, reveal significant positive correlations between respondents' perceptions of electricity services and their ratings. The Pearson correlation coefficient of 0.233 indicates a weak to moderate positive relationship, suggesting that as perceptions of electricity availability improve, the corresponding ratings tend to rise. This correlation is statistically significant, with a p-value of 0.000. The relatively low standard error of 0.035 further supports the reliability of this correlation estimate.

In addition to the Pearson correlation, the Spearman rank correlation coefficient is 0.191, which also indicates a positive relationship, albeit slightly weaker than the Pearson correlation. This suggests that higher rankings in electricity availability correspond to better perceptions among respondents. The significance of this correlation is likewise confirmed by a p-value of 0.000, emphasizing the robustness of the relationship.

Table 6.18.2: Symmetric Measures of Availability of basic utilities (electricity)

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	.233	.035	7.569	.000[c]
Ordinal by Ordinal	Spearman Correlation	.191	.032	6.145	.000[c]
N of Valid Cases		996			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Source: Author's Survey, 2024

The availability of electricity is a critical determinant of livability across the satellite towns of FCT, Abuja, influencing not only the quality of life for residents but also the broader socio-economic landscape. As revealed by the data, perceptions of electricity availability vary significantly across different satellite towns within the FCT. The descriptive statistics and correlation imply that improvements in electricity access are likely to enhance overall satisfaction and livability for residents. Given that electricity is a fundamental utility especially in areas such as health care, education, and economic activities, the perceived inadequacy of electricity services poses a barrier to achieving a high standard of living in the FCT.

Moreover, the disparities in electricity availability among different satellite towns highlight the need for targeted interventions. For instance, towns like Kusaki-Yangi and Anagada, which report higher dissatisfaction rates, may require focused infrastructure investments to address the gaps in service provision. By improving electricity access in these areas, local authorities can directly contribute to enhancing livability, ensuring that all residents benefit from essential utilities and also reducing the population pressure on the FCC.

6.6.2 Availability of Water

Table 6.19 presents the availability of water across various satellite towns in Abuja. The general trend indicates that most respondents 48.1% reported a good availability of water, followed by 25.3% rating it as average. Fewer respondents rated the availability as poor (13.7%) or very poor (3.6%). These findings suggest that while water availability is generally acceptable, it is far from being consistently excellent across the towns, with notable disparities in water supply quality.

Analyzing variations between satellite towns reveals clear differences. Karshi reports the highest satisfaction with water availability, with 67.3% of respondents rating it as either excellent or good. Kubwa follows closely, with 73.6% rating it positively. Kuje presents a similar positive outlook, with 71.1% rating water availability as good. However, Bwari and Dobi show mixed results, with 46.7% and 14.3%, respectively, rating availability as good, but significant portions reporting poor or very poor access (26.7% and 12.7%). Kusaki-Yangi and Anagada exhibit the poorest performance, where most respondents report poor or very poor availability (74.3% and 67.7%, respectively). These disparities highlight significant infrastructural gaps that need to be addressed to ensure equitable water supply across all satellite towns.

Table 6.19: Availability of water

Satellite Town		Availability of water					Total
		Excellent	Good	Average	Poor	Very poor	
Karshi	Count	80	332	158	43	0	613
	% within Satellite Town	13.1%	54.2%	25.8%	7.0%	0.0%	100.0%
Kubwa	Count	6	61	16	8	0	91
	% within Satellite Town	6.6%	67.0%	17.6%	8.8%	0.0%	100.0%
Kuje	Count	0	27	9	2	0	38
	% within Satellite Town	0.0%	71.1%	23.7%	5.3%	0.0%	100.0%
Bwari	Count	0	42	24	18	6	90
	% within Satellite Town	0.0%	46.7%	26.7%	20.0%	6.7%	100.0%
Dobi	Count	0	9	30	16	8	63
	% within Satellite Town	0.0%	14.3%	47.6%	25.4%	12.7%	100.0%
Kusaki-Yangi	Count	2	3	5	22	7	39
	% within Satellite Town	5.1%	7.7%	12.8%	56.4%	17.9%	100.0%
Anagada	Count	5	5	10	27	15	62
	% within Satellite Town	8.1%	8.1%	16.1%	43.5%	24.2%	100.0%
Total	Count	93	479	252	136	36	996
	% within Satellite Town	9.3%	48.1%	25.3%	13.7%	3.6%	100.0%

Source: Author's Survey, 2024

Table 6.19.1 provides descriptive statistics on the availability of water across the satellite towns. The mean score of 2.54 on a scale of 1 to 5 suggests that, on average, respondents rated water availability slightly above average. This indicates that while some respondents experience better water availability, overall satisfaction levels remain moderate.

The standard deviation of 0.962 suggests a moderate level of variability in responses, indicating that perceptions of water availability differ considerably across the respondents. This variation could be attributed to the differing water supply conditions between satellite towns, as observed in Table 6.19.

Table 6.19.1: Descriptive Statistics of Availability of water

	N	Minimum	Maximum	Mean	Std. Deviation
Availability of water	996	1	5	2.54	.962
Valid N (listwise)	996				

Source: Author's Survey, 2024

Table 6.19.2 presents symmetric measures used to assess the relationship between the availability of water and other factors. The Pearson's R value of 0.496 indicates a moderate positive correlation between the variables, suggesting that as certain factors improve (such as infrastructure or other underlying determinants), the availability of water tends to increase. The approximate T-value of 18.022, with a significance level (p-value) of 0.000, confirms that this correlation is statistically significant, meaning the observed relationship is unlikely due to chance.

The Spearman Correlation coefficient of 0.402 also shows a moderate positive relationship but is slightly lower than Pearson's R, indicating a consistent but somewhat weaker association when considering the rank-order of the variables. This result implies that, on an ordinal scale, the perception of water availability generally increases with improvements in related conditions, though not as strongly as suggested by the Pearson's R. The T-value of 13.831 and the corresponding p-value of 0.000 similarly confirm the significance of this ordinal relationship.

On the whole, the significant correlations observed in both Pearson's and Spearman's measures highlight the presence of a meaningful relationship between water availability and certain factors, though the strength of this relationship is moderate rather than strong. This further supports the need for interventions that could positively influence water supply conditions in the satellite towns where water availability is a challenge.

Table 6.19.2: Symmetric Measures of Availability of water

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	.496	.030	18.022	.000[c]
Ordinal by Ordinal	Spearman Correlation	.402	.030	13.831	.000[c]
N of Valid Cases		996			

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.
c. Based on normal approximation.

Source: Author's Survey, 2024

From the above analysis, it can be concluded that while water availability is generally moderate, there are considerable disparities between satellite towns, and improving related infrastructure and conditions could enhance water access in the less-served areas like Kusaki-Yangi and Anagada. The moderate correlations observed support the idea that targeted interventions could have a meaningful impact on water availability. Water availability and supply remain critical to the functionality of satellite towns. Omali et al. (2023) emphasized that residents in most satellite communities within the Federal Capital Territory (FCT) depend primarily on privately sourced water due to the limited reach of public water infrastructure. Similarly, Mobolaji & Akinwumiju (2025) reported that the uneven spatial distribution of potable water infrastructure across peri-urban settlements in Abuja perpetuates a pattern of individual responsibility for water access, highlighting persistent infrastructural gaps in these developing urban areas.

6.6.3 Quality of Road Infrastructure

The table 6.20 presents the quality of road infrastructure across satellite towns within the study area. Generally, the highest of respondents (36.9%) rated the roads as excellent, followed by 28.7% who rated them as good. A notable proportion of respondents (23.2%) described the road infrastructure as average, while fewer respondents rated it as poor (7.2%) or very poor (3.9%). This distribution suggests that, while the road infrastructure in some satellite towns is of high quality, other towns are experiencing subpar road conditions.

Karshi stands out with the highest proportion of respondents (52.2%) rating the roads as excellent, followed by 21% who rated them as good, and 26.8% who found the roads average. Notably, no respondents rated the roads as poor or very poor, indicating generally high satisfaction with road infrastructure in this town. Kubwa, on the other hand, shows a more balanced distribution, with 35.2% rating the roads as excellent, 38.5% as good. A small proportion (8.8%) found the roads poor, but no one rated them as very poor. In Kuje, the majority (68.4%) rated the roads as good, with smaller proportions describing them as average (15.8%) and poor (7.9%). Bwari presents a similar pattern, with 60% rating the roads as good and 20% as average. However, 6.7% of respondents rated the roads as poor or very poor.

Dobi exhibits a unique pattern, with no respondents rating the roads as excellent, and the majority (44.4%) rating them as good. A significant proportion (42.9%) rated the roads as average, while 12.7% found them poor, reflecting varying road conditions. Kusaki-Yangi and Anagada show the poorest road conditions, with 48.7% and 45.2% respectively rating the roads as poor. In Kusaki-Yangi, 35.9% rated the roads very poor, the highest among all towns, while in Anagada, 30.6% shared this sentiment. It can be concluded from the above that while Karshi enjoys superior road infrastructure, towns like Kusaki-Yangi and Anagada struggle with substandard roads, highlighting the variation in infrastructure quality across the satellite towns.

Table 6.20: Quality of road infrastructure

		Quality of road infrastructure					
Satellite Town		Excellent	Good	Average	Poor	Very poor	Total
Karshi	Count	320	129	164	0	0	613
	% within Satellite Town	52.2%	21.0%	26.8%	0.0%	0.0%	100.0%
Kubwa	Count	32	35	16	8	0	91
	% within Satellite Town	35.2%	38.5%	17.6%	8.8%	0.0%	100.0%
Kuje	Count	3	26	6	3	0	38
	% within Satellite Town	7.9%	68.4%	15.8%	7.9%	0.0%	100.0%
Bwari	Count	6	54	18	6	6	90
	% within Satellite Town	6.7%	60.0%	20.0%	6.7%	6.7%	100.0%
Dobi	Count	0	28	27	8	0	63
	% within Satellite Town	0.0%	44.4%	42.9%	12.7%	0.0%	100.0%
Kusaki-Yangi	Count	2	4	0	19	14	39
	% within Satellite Town	5.1%	10.3%	0.0%	48.7%	35.9%	100.0%
Anagada	Count	5	10	0	28	19	62
	% within Satellite Town	8.1%	16.1%	0.0%	45.2%	30.6%	100.0%
Total	Count	368	286	231	72	39	996
	% within Satellite Town	36.9%	28.7%	23.2%	7.2%	3.9%	100.0%

Source: Author's Survey, 2024

The descriptive statistics for the quality of road infrastructure provide an overall summary of the responses from respondents. The minimum rating observed is 1 (excellent), while the maximum is 5 (very poor). The mean value of 2.12 suggests that, on average, the quality of road infrastructure is rated slightly above average but falls below good. This indicates a generally positive perception of road infrastructure across the satellite towns, though the variation in ratings demonstrates that some areas experience poorer conditions.

The standard deviation of 1.108 indicates a moderate level of variability in the responses, suggesting that while many participants may agree on the quality of the road infrastructure being good, a significant proportion rated it as average, poor, or very poor. This variability aligns with the results from individual satellite towns, which showed considerable differences in road infrastructure ratings across the different locations.

Table 6.20.1: Descriptive Statistics of Quality of road infrastructure

	N	Minimum	Maximum	Mean	Std. Deviation
Quality of road infrastructure	996	1	5	2.12	1.108
Valid N (listwise)	996				

Source: Author's Survey, 2024

The symmetric measures presented in Table 6.20.2 provide insight into the strength and direction of the association between the quality of road infrastructure by satellite towns. Pearson's R value is 0.564, indicating a moderately strong, positive linear association. The approximate significance value (p-value) is 0.000, which is below the alpha value of 0.05 implies that the association observed is statistically significant.

Furthermore, the Spearman's correlation yields a value of 0.469 which indicates a moderately strong positive correlation, also suggesting a significant association between the variables, reinforcing the idea that better road infrastructure is linked to more favorable outcomes or conditions. The significance value (0.000) also confirms that the correlation is statistically significant.

In conclusion, both correlations reveal a moderately strong and statistically significant positive association between the quality of road infrastructure and related factors. These findings suggest that better road infrastructure is linked to more positive outcomes.

Table 6.20.2: Symmetric Measures of Quality of road infrastructure

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	.564	.026	21.551	.000[c]
Ordinal by Ordinal	Spearman Correlation	.469	.027	16.761	.000[c]
N of Valid Cases		996			

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.
c. Based on normal approximation.

Source: Author's Survey, 2024

The findings from the above analysis of road infrastructure quality in the satellite towns reveal notable variations and associations across the study area. The cross-tabulation shows that while Karshi has excellent road infrastructures, Kusaki-Yangi and Anagada have the poorest conditions. The implication of this that more work is required in terms of optimizing the quality of roads across the satellite towns in other to enhance accessibility and livability.


Plate 6.4: Poor quality road at Anagada Satellite Town
Source: Data from field survey

6.6.4 Accessibility of Public Transportation

Table 6.21 presents the accessibility of public transport across the satellite towns in the study area. 48.1% of respondents rated public transport as accessible, and 22.2% as very accessible, indicating that a majority (70.3%) of the population finds public transport relatively easy to access. Only a small proportion of respondents rated public transport as inaccessible (4.0%) or very inaccessible (0.8%).

By satellite town, Karshi shows the highest proportion of accessibility, with 45% of respondents rating public transport as accessible, and an additional 27.1% finding it very accessible. None of the respondents in Karshi rated public transport as inaccessible, indicating highly favorable conditions for transport access. Similarly, Kuje and Bwari have high levels of accessibility, with 65.8% and 60% of respondents, respectively, rating public transport as accessible. Both towns also have a notable proportion of very accessible ratings, at 18.4 and 26.7% respectively. In Kusaki-Yangi (74.4%) and Anagada (67.7%), the majority of respondents rated public transport as accessible. Kubwa presents a more balanced distribution, with 22% rating public transport as very accessible, and 26.4% each rating it as accessible and average. However, a significant 25.3% of respondents find public transport inaccessible, highlighting issues with transport access in this town.

In conclusion, while most satellite towns report good accessibility to public transport, variations exist, with Karshi, Kuje, and Bwari enjoying the best access, while Kubwa, Kusaki-Yangi, and Anagada face more challenges in transport accessibility. Across Abuja's satellite towns, the most common modes of public transport include minibuses (danfo), shared taxis, tricycles (keke napep), and motorcycles (okada), which provide last-mile connectivity in areas with limited road infrastructure. Abdullah et al. (2022) observed that these modes remain the backbone of Abuja's urban and peri-urban mobility, especially for low- and middle-income residents, as formal bus services are often irregular and limited in coverage. Furthermore, Pillah (2024) emphasized that despite improvements in road connectivity and mass transit reforms, issues such as route inefficiencies, congestion, and inconsistent service reliability persist, particularly in peripheral satellite towns.

Table 6.21: Accessibility of public transport

Satellite Town		Accessibility of public transport: Very accessible	Accessible	Average	Inaccessible	Very inaccessible	Total
Karshi	Count	166	276	171	0	0	613
	% within Satellite Town	27.1%	45.0%	27.9%	0.0%	0.0%	100.0%
Kubwa	Count	20	24	24	23	0	91
	% within Satellite Town	22.0%	26.4%	26.4%	25.3%	0.0%	100.0%
Kuje	Count	7	25	6	0	0	38
	% within Satellite Town	18.4%	65.8%	15.8%	0.0%	0.0%	100.0%
Bwari	Count	24	54	6	6	0	90
	% within Satellite Town	26.7%	60.0%	6.7%	6.7%	0.0%	100.0%
Dobi	Count	4	29	26	4	0	63
	% within Satellite Town	6.3%	46.0%	41.3%	6.3%	0.0%	100.0%
Kusaki-Yangi	Count	0	29	5	2	3	39
	% within Satellite Town	0.0%	74.4%	12.8%	5.1%	7.7%	100.0%
Anagada	Count	0	42	10	5	5	62
	% within Satellite Town	0.0%	67.7%	16.1%	8.1%	8.1%	100.0%
Total	Count	221	479	248	40	8	996
	% within Satellite Town	22.2%	48.1%	24.9%	4.0%	0.8%	100.0%

Source: Author's Survey, 2024

Table 6.21.1 presents the descriptive statistics for the accessibility of public transport across satellite towns in the FCT. The minimum rating is 1 (very accessible), while the maximum rating is 5 (very inaccessible). The mean score of 2.13 suggests that, on average, respondents perceive public transport accessibility to be slightly above the midpoint of the scale, leaning toward a rating of accessible" This indicates a generally favorable perception of accessibility among the respondents, suggesting that many find public transport relatively easy to access, although it does not necessarily imply general satisfaction.

The standard deviation of 0.829 indicates a moderate level of variability in the responses. This suggests that while the mean is indicative of positive perceptions, there is a notable spread in the ratings, reflecting differing experiences among respondents. The relatively low standard deviation implies that most respondents' perceptions cluster around the mean, but there are still individuals who rated accessibility as either very accessible or very inaccessible. In summary, the descriptive statistics indicate that while the overall perception of public transport accessibility is positive, the variability in responses suggests that experiences differ significantly among respondents across the satellite towns.

Table 6.21.1: Descriptive Statistics of Accessibility of public transport

	N	Minimum	Maximum	Mean	Std. Deviation
Accessibility of public transport	996	1	5	2.13	.829
Valid N (listwise)	996				

Source: Author's Survey, 2024

Table 6.22.2 presents the symmetric measures of the accessibility of public transport, providing insights into the strength and direction of the relationship between accessibility and other relevant variables. The Pearson's R value of 0.179 indicates a weak positive linear association between the accessibility of public transport across satellite towns. The approximate significance value (p-value) of 0.000 indicates that this relationship is statistically significant. Similarly, the Spearman correlation coefficient is reported at 0.150, which also signifies a weak positive association. The significance level for Spearman's correlation (p = 0.000) further supports the finding that the correlation is statistically significant.

Conclusively, both correlations suggest a weak but significant positive relationship between the accessibility of public transport and factors income and distance of place of residence from roads across the satellite towns. While the correlations indicate a tendency for improved accessibility to be linked to more favorable conditions, the strength of the associations is relatively low, suggesting that other factors may play a more critical role in determining perceptions of public transport accessibility.

Table 6.21.2: Symmetric Measures of Accessibility of public transport

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	.179	.031	5.751	.000[c]
Ordinal by Ordinal	Spearman Correlation	.150	.029	4.792	.000[c]
N of Valid Cases		996			

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.
c. Based on normal approximation.

Source: Author's Survey, 2024

The findings from the above analysis of accessibility of public transport in the satellite towns reveal notable variations and associations across the study area. The cross-tabulation shows that there is an overall positive perception of public transport accessibility across satellite towns in the study area, however, there are variations in the level of accessibility to public transport across the satellite towns. UN-Habitat (2022) affirmed the importance of accessibility to public transportation on the growth and development of cities.

6.6.5 Quality of Road Linkage between Satellite Towns and FCC

Table 6.22 provides an analysis of the quality of road linkage between various satellite towns and the Federal Capital City. The road quality is mostly rated as good (45.8%) across all satellite towns, followed by excellent (27.4%), average (19.3%), and poor (7.5%). This indicates that the majority of respondents find the road connections between the satellite towns and the FCC to be satisfactory, with a significant portion rating them positively.

However, when examining the variations by satellite town, distinct differences emerge. In Karshi the highest proportion of respondents at 46.0% rated the quality of linkage as good with 33.1% rating it as excellent reflecting high satisfaction level in the settlement. Kubwa presents a more mixed view, with a substantial 42.9% rating the quality of linkage as average, 35.2 and 22.0% rated the quality of linkage as good and excellent respectively. Similarly, Kuje shows that almost half of the respondents (47.4%) view the road quality as average, suggesting lower satisfaction with road infrastructure. Bwari stands out, with 46.7% of respondents rating the roads as excellent while at Dobi, 46.0% of respondents rated the quality of linkage as good. Kusaki-Yangi and Anagada exhibit some of the highest percentages of respondents rating road quality as good, with 74.4% and 67.7%, respectively.

This variation in quality of road linkage between the satellite towns and the FCC quality perception across the satellite towns reflects differing levels of infrastructure development and may influence the overall functionality of these areas as satellite towns of the FCT.

Table 6.22: Quality of road linkage between STs and FCT

Satellite Town		Quality of road linkage between ST and FCT				Total
		Excellent	Good	Average	Poor	
Karshi	Count	203	282	85	43	613
	% within Satellite Town	33.1%	46.0%	13.9%	7.0%	100.0%
Kubwa	Count	20	32	39	0	91
	% within Satellite Town	22.0%	35.2%	42.9%	0.0%	100.0%
Kuje	Count	8	12	18	0	38
	% within Satellite Town	21.1%	31.6%	47.4%	0.0%	100.0%
Bwari	Count	42	30	18	0	90
	% within Satellite Town	46.7%	33.3%	20.0%	0.0%	100.0%
Dobi	Count	0	29	25	9	63
	% within Satellite Town	0.0%	46.0%	39.7%	14.3%	100.0%
Kusaki-Yangi	Count	0	29	2	8	39
	% within Satellite Town	0.0%	74.4%	5.1%	20.5%	100.0%
Anagada	Count	0	42	5	15	62
	% within Satellite Town	0.0%	67.7%	8.1%	24.2%	100.0%
Total	Count	273	456	192	75	996
	% within Satellite Town	27.4%	45.8%	19.3%	7.5%	100.0%

Source: Author's Survey, 2024

The descriptive statistics in Table 6.22.1 on the quality of road linkage between the satellite towns and the FCC provide valuable insights into the overall perception of quality of road linkage. The quality was rated on a scale of 1(excellent) to 4 (poor).

The mean score of 2.07 indicates that, on average, respondents view the road linkage as being mostly good although there are variations. This suggests that, generally, road quality is perceived to be somewhat satisfactory, though not overwhelmingly excellent. The relatively low standard deviation of 0.874 shows that there is moderate variability in responses, indicating that perceptions of quality of road linkage do differ across the satellite towns.

6.22.1: Descriptive Statistics of quality of linkage between STs and FCC

	N	Minimum	Maximum	Mean	Std. Deviation
Quality of road linkage between ST and FCT	996	1	4	2.07	.874
Valid N (listwise)	996				

Source: Author's Survey, 2024

The analysis of the symmetric measures in Table 6.22.2 shows a weak but statistically significant positive correlation between satellite towns and the perceived quality of road linkage to the FCC. Both Pearson's R and Spearman's correlation have values of 0.210, indicating that as characteristics of the satellite towns change, there is a slight improvement in road quality perceptions. Despite the weak association, the statistical significance ($p = 0.000$) suggests that the relationship is meaningful and not due to chance.

Table 6.22.2: Symmetric Measures of quality of linkage between STs and FCC

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	.210	.031	6.783	.000[c]
Ordinal by Ordinal	Spearman Correlation	.210	.029	6.759	.000[c]
N of Valid Cases		996			

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.
c. Based on normal approximation.

Source: Author's Survey, 2024

It can be seen from the above that the findings on the quality of road linkage between the satellite towns and the Federal Capital Territory (FCT) reveal a generally positive perception, with most respondents rating the roads as good or excellent. However, there are notable variations across different satellite towns, with some towns reporting lower satisfaction levels. The statistical analysis shows a weak but significant positive correlation between the towns and road quality, indicating that certain factors related to the satellite towns influence the perception of road linkage. Overall, it can be concluded that while road linkage is good in terms of improving the functionality of the satellite towns, improvements are needed on the quality of roads, especially in underserved satellite towns.

6.6.6 Level of Traffic Congestion

Table 6.23 presents the levels of traffic congestion across satellite towns. Generally, the majority of respondents (40.8%) rate traffic congestion as low, while 25.4% experience very low congestion. On the other hand, 19.4% rate congestion as average, with a smaller proportion experiencing high (11.0%) or very high (3.4%) congestion.

When examining the variation by satellite towns, Karshi exhibits relatively low congestion levels, with 34.1% rating it as very low and 38.0% as low. Kubwa shows a more concerning trend, with 24.2% of respondents reporting high congestion and 17.6% experiencing very high congestion, making it the satellite town with the highest traffic congestion levels. Kuje sees most of its respondents (44.7%) rating congestion as average. Bwari reports the lowest congestion, with 73.3% experiencing low congestion and no respondents reporting high levels of congestion. Dobi and Kusaki-Yangi have a notable percentage of respondents reporting low congestion (47.6% and 38.5%, respectively). At Anagada, a significant proportion (38.7%) experience low congestion.

It can be deducted that while most satellite towns experience low to very low traffic congestion, Kubwa stands out for having a larger share of respondents facing high congestion which can be due to it being the most developed and functional satellite town in the study area.

Idowu et al. (2022) pointed out the negative impact of traffic congestion and the accompanying difficulties in accessing resources and its influence on the development of cities.

Table 6.23: Traffic congestion in Satellite Towns

Satellite Town		Traffic congestion in ST: Very low	Low	Average	High	Very high	Total
Karshi	Count	209	233	85	86	0	613
	% within Satellite Town	34.1%	38.0%	13.9%	14.0%	0.0%	100.0%
Kubwa	Count	0	24	29	22	16	91
	% within Satellite Town	0.0%	26.4%	31.9%	24.2%	17.6%	100.0%
Kuje	Count	5	14	17	2	0	38
	% within Satellite Town	13.2%	36.8%	44.7%	5.3%	0.0%	100.0%
Bwari	Count	6	66	18	0	0	90
	% within Satellite Town	6.7%	73.3%	20.0%	0.0%	0.0%	100.0%
Dobi	Count	8	30	21	0	4	63
	% within Satellite Town	12.7%	47.6%	33.3%	0.0%	6.3%	100.0%
Kusaki-Yangi	Count	12	15	8	0	4	39
	% within Satellite Town	30.8%	38.5%	20.5%	0.0%	10.3%	100.0%
Anagada	Count	13	24	15	0	10	62
	% within Satellite Town	21.0%	38.7%	24.2%	0.0%	16.1%	100.0%
Total	Count	253	406	193	110	34	996
	% within Satellite Town	25.4%	40.8%	19.4%	11.0%	3.4%	100.0%

Source: Author's Survey, 2024

The descriptive statistics in Table 6.23.1 for the level of traffic congestion in the satellite towns reveal key insights into respondents' perceptions. The congestion levels are rated on a scale from 1 to 5, where 1 represents very low congestion and 5 signifies very high congestion. The mean score of 2.26 indicates that, on average, respondents perceive traffic congestion to be slightly above low congestion but below average congestion. This suggests a generally manageable level of traffic congestion in the satellite towns. The standard deviation of 1.062 indicates a moderate level of variability in the responses, implying that perceptions of congestion differ among respondents, though not excessively.

6.23.1: Descriptive Statistics of level of traffic congestion in ST

	N	Minimum	Maximum	Mean	Std. Deviation
Traffic congestion in ST	996	1	5	2.26	1.062
Valid N (listwise)	996				

Source: Author's Survey, 2024

The analysis of Table 6.23.2 reveals the correlation between satellite towns and perceived traffic congestion levels. Pearson's R indicates a weak positive correlation (0.094) with statistical significance ($p = 0.003$), suggesting a slight association between town characteristics and congestion levels. In contrast, Spearman's correlation shows a moderate positive correlation (0.176), also statistically significant ($p = 0.000$), indicating a stronger relationship between the towns and congestion perceptions. The results suggest that specific characteristics of the satellite towns are linked to varying congestion levels.

Table 6.23.2: Symmetric Measures of level of traffic congestion in STs

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	.094	.033	2.967	.003[c]
Ordinal by Ordinal	Spearman Correlation	.176	.031	5.623	.000[c]
N of Valid Cases		996			

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.
c. Based on normal approximation.

Source: Author's Survey, 2024

The findings on traffic congestion levels in the satellite towns highlight a generally manageable situation, with many respondents perceiving low congestion. However, significant variations exist, particularly in towns like Kubwa, which experience higher congestion levels primarily due to high population. This congestion can negatively impact livability and overall quality of life, as increased traffic often leads to longer travel times, reduced accessibility to essential services, and increased stress for residents.

Moreover, the functionality of satellite towns in the Federal Capital Territory is intricately linked to traffic conditions; effective transportation systems are essential for these towns to serve their intended roles as suburban extensions of the city. Ensuring that other satellite towns are as functional as Kubwa and addressing congestion issues will not only enhance the quality of life for residents but also improve the overall functionality of the satellite towns, fostering sustainable urban development and making them more attractive places to live and work. Mayunga, (2018), submitted that the establishment of satellite towns presents a solution in reducing population and traffic congestion at the city core, enhancing socio-economic activities, and the reduction of expansion and creation of unplanned settlements.

6.7 Social and Cultural Life

This section examines the social and cultural life in the satellite towns of the Federal Capital Territory (FCT). The level of accessibility to cultural facilities, the sense of community among residents, and overall satisfaction with the quality of life across these areas are assessed below. Recent studies have highlighted the evolving socio-cultural dynamics in these communities. Bello (2025) explored the development of the Abuja Centenary Economic City, emphasizing the importance of integrating cultural facilities to enhance community engagement and satisfaction. Additionally, Madu (2025) discussed the challenges faced by indigenous communities in Abuja, noting the erosion of traditional values due to rapid urbanization and the need for policies that preserve cultural heritage while promoting economic growth.

6.7.1 Level of Accessibility to Cultural Facilities

Table 6.24 presents the level of accessibility to cultural facilities across satellite towns. The majority of respondents (48.4%) reported that access to cultural facilities is average, followed by 18.2% who found them inaccessible and 17.2% who classified them as very inaccessible. Only a small percentage of respondents reported cultural facilities as accessible (15.0%). This suggests that access to cultural amenities is generally limited, with most respondents experiencing moderate to poor accessibility.

Examining the towns, Karshi, Kuje, Dobi, Kusaki-Yangi exhibits the highest proportion of respondents (52.2, 65.8, 66.7 and 56.4% respectively) rating access as average. Kubwa, in contrast, stands out as the town with the highest percentage of respondents (57.1%) reporting that cultural facilities are accessible. In Bwari, the perception is more evenly distributed, with 40.0% each rating access as either average or accessible, and a minority finding facilities inaccessible (13.3%). Anagada shows a mix, with 46.8% of respondents reporting average access, and 40.3% considering access accessible.

In conclusion, cultural facility accessibility across these satellite towns tends to be rated as average, with significant variation in perceptions of poor accessibility across towns like Karshi and better ratings in Kubwa and Anagada. However, the overall low level of positive responses indicates a general lack of high-quality cultural facility access across all towns.

Table 6.24: Level of accessibility to cultural facilities

Satellite Town		Level of accessibility to cultural facilities: Very accessible	Accessible	Average	Inaccessible	Very inaccessible	Total
Karshi	Count	0	0	320	129	164	613
	% within Satellite Town	0.0%	0.0%	52.2%	21.0%	26.8%	100.0%
Kubwa	Count	0	52	8	31	0	91
	% within Satellite Town	0.0%	57.1%	8.8%	34.1%	0.0%	100.0%
Kuje	Count	0	7	25	3	3	38
	% within Satellite Town	0.0%	18.4%	65.8%	7.9%	7.9%	100.0%
Bwari	Count	6	36	36	12	0	90
	% within Satellite Town	6.7%	40.0%	40.0%	13.3%	0.0%	100.0%
Dobi	Count	0	17	42	0	4	63
	% within Satellite Town	0.0%	27.0%	66.7%	0.0%	6.3%	100.0%
Kusaki-Yangi	Count	2	12	22	3	0	39
	% within Satellite Town	5.1%	30.8%	56.4%	7.7%	0.0%	100.0%
Anagada	Count	5	25	29	3	0	62
	% within Satellite Town	8.1%	40.3%	46.8%	4.8%	0.0%	100.0%
Total	Count	13	149	482	181	171	996
	% within Satellite Town	1.3%	15.0%	48.4%	18.2%	17.2%	100.0%

Source: Author's Survey, 2024

The descriptive statistics in Table 6.24.1 provide an overview of the level of accessibility to cultural facilities across the study area. The accessibility ratings range from 1 (very accessible) to 5 (very inaccessible), with the mean score being 3.35. This suggests that, on average, respondents rated the accessibility as closer to average but leaning slightly towards inaccessible. The standard deviation of 0.974 indicates moderate variability in responses, meaning that while most respondents clustered around the average rating, there were some notable differences in individual perceptions of accessibility across the sample.

To conclude, the analysis reflects that accessibility to cultural facilities is generally perceived as mediocre, with some respondents experiencing either better or worse levels of access. The relatively low mean and standard deviation underscore that while perceptions vary, significant improvements in access are likely needed across the satellite towns.

6.24.1: Descriptive Statistics of Level of accessibility to cultural facilities

	N	Minimum	Maximum	Mean	Std. Deviation
Level of accessibility to cultural facilities	996	1	5	3.35	.974
Valid N (listwise)	996				

Source: Author's Survey, 2024

The symmetric measures in Table 6.24.2 provides insights into the strength and direction of the relationships between the level of accessibility to cultural facilities across the satellite towns. Pearson's R value of -0.459 indicates a moderate negative correlation between the variables, suggesting that as accessibility decreases, respondents rate cultural facility access as poorer. The Spearman Correlation coefficient of -0.516 also confirms a moderate negative relationship, reinforcing the trend observed with Pearson's R.

Both correlation values are statistically significant, as indicated by their approximate significance values ($p = 0.000$). The significance of these negative correlations underscores that, respondents who experience lower levels of access to cultural facilities are likely to rate the accessibility more negatively.

Table 6.24.2: Symmetric Measures of Level of accessibility to cultural facilities

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	-.459	.020	-16.305	.000[c]
Ordinal by Ordinal	Spearman Correlation	-.516	.021	-19.006	.000[c]
N of Valid Cases		996			

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.
c. Based on normal approximation.

Source: Author's Survey, 2024

The findings reveal that access to cultural facilities in satellite towns is generally limited, with most respondents rating accessibility as average or worse. Towns like Kubwa and Anagada show better access, while Karshi and Dobi exhibit more dissatisfaction. The overall mean rating suggests mediocre access, with significant variability across towns. The analysis also shows a strong negative correlation between accessibility and satisfaction. This indicates that the limited access to cultural facilities undermines the functionality of satellite towns, which should ideally support a well-rounded urban lifestyle. Improving access is essential to enhancing their livability and effectiveness.

6.7.2 Sense of Community Life

The analysis of Table 6.25 reveals the general perception of the sense of community across the satellite towns. Overall, the majority of respondents at 58.2% rated the sense of community as strong. A notable proportion of the population rated the sense of community as moderate (19.0%), while fewer respondents rated it as weak (15.7%).

When examining the satellite towns individually, significant variation in the rating of the sense of community is evident. At Karshi and Kuje satellite towns, an overwhelming 72.9 and

71.1% of respondents respectively rated the sense of community as strong with 54.0% of respondents in Dobi also rating it as strong, signifying a predominantly positive communal environment. In contrast, Kubwa presents a markedly different scenario, with 57.1% of respondents rating the sense of community as weak, and 25.3% describing it as very weak, showcasing the weakest communal sentiment among all the towns.

Bwari also shows a divided sense of community, with 40.0% rating it as strong and a notable 26.7% and 20.0% perceiving it as weak or very weak, respectively. This distribution suggests moderate communal ties with substantial room for improvement. Kusaki-Yangi and Anagada also exhibit a more mixed community sentiment. In Kusaki-Yangi, 35.9% rated the sense of community as strong, while 25.6% rated it as weak. Similarly, in Anagada, 29.0% of respondents rated the sense of community as strong, but 29.0% also rated it as weak, indicating a split in community perception.

Summarily, the table highlights notable differences in the sense of community across satellite towns, with Karshi and Kuje exhibiting strong communal ties, while Kubwa, Bwari, and Kusaki-Yangi face more challenges in fostering a cohesive community.

Table 6.25: Rating of sense of community

Satellite Town		Rating of sense of community: Very strong	Strong	Moderate	Weak	Very weak	Total
Karshi	Count	0	447	123	43	0	613
	% within Satellite Town	0.0%	72.9%	20.1%	7.0%	0.0%	100.0%
Kubwa	Count	0	4	12	52	23	91
	% within Satellite Town	0.0%	4.4%	13.2%	57.1%	25.3%	100.0%
Kuje	Count	0	27	6	5	0	38
	% within Satellite Town	0.0%	71.1%	15.8%	13.2%	0.0%	100.0%
Bwari	Count	0	36	12	24	18	90
	% within Satellite Town	0.0%	40.0%	13.3%	26.7%	20.0%	100.0%
Dobi	Count	0	34	16	4	9	63
	% within Satellite Town	0.0%	54.0%	25.4%	6.3%	14.3%	100.0%
Kusaki-Yangi	Count	2	14	9	10	4	39
	% within Satellite Town	5.1%	35.9%	23.1%	25.6%	10.3%	100.0%
Anagada	Count	5	18	11	18	10	62
	% within Satellite Town	8.1%	29.0%	17.7%	29.0%	16.1%	100.0%
Total	Count	7	580	189	156	64	996
	% within Satellite Town	0.7%	58.2%	19.0%	15.7%	6.4%	100.0%

Source: Author's Survey, 2024

The analysis of the descriptive statistics in Table 6.25.1, reveals that the average rating of the sense of community among respondents is 2.69, indicating a perception that tends to be between moderate and weak. The minimum rating of 1 suggests some respondents feel a very weak sense of community, while the maximum rating of 5 reflects that a few perceive a very strong sense of community. The standard deviation of 0.963 indicates moderate variability in the responses, suggesting that perceptions of community differ somewhat among the respondents. The results reflect a mixed sense of community, with a slight tendency toward moderate cohesion.

Table 6.26.1: Descriptive Statistics of Respondents' rating of sense of community

	N	Minimum	Maximum	Mean	Std. Deviation
Rating of sense of community	996	1	5	2.69	.963
Valid N (listwise)	996				

Source: Author's Survey, 2024

The analysis of the symmetric measures in Table 6.25.2 shows a positive, statistically significant correlation between variables related to the sense of community. Pearson's R value of 0.285 indicates a weak positive correlation, while the Spearman Correlation, at 0.359, shows a moderate positive relationship. Both correlations are statistically significant, with p-values of 0.000, indicating that the relationships observed are unlikely to be due to chance. This suggests that while there is a positive association between factors influencing the sense of community, the strength of the correlation is not particularly strong.

Table 6.25.2: Symmetric Measures of rating of sense of community

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	.285	.033	9.359	.000[c]
Ordinal by Ordinal	Spearman Correlation	.359	.032	12.123	.000[c]
N of Valid Cases		996			

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.
c. Based on normal approximation.

Source: Author's Survey, 2024

The rating of the sense of community across the satellite towns reveals a diverse range of perceptions. Overall, the majority of respondents rated the sense of community as strong, with an average rating leaning toward moderate. However, there are significant variations between different towns. Some towns, such as Karshi and Kuje, report a predominantly strong sense of community, while others, like Kubwa, show weaker communal ties. The variability in responses highlights differing experiences of community cohesion, with the general tendency reflecting moderate to strong communal relationships, though some towns face challenges in fostering a strong sense of community. It is vital for residents to have a strong sense of community as this is necessary to enhance livability in the study area.

6.7.3 Satisfaction with Quality of Life in Satellite Town

The analysis of Table 6.26 reflects the overall satisfaction with the quality of life across the satellite towns. In general, the majority of respondents (40.2%) reported being satisfied with their quality of life, while 19.5% were very satisfied. A smaller proportion of respondents felt neutral (11.7%) and 20.3% expressed dissatisfaction, with 8.3% being very dissatisfied.

By satellite town, Karshi, Kuje and Bwari stands out with the highest levels of satisfaction, where 48.1, 55.3 and 66.7% of respondents were satisfied, suggesting a generally positive outlook on the quality of life. In contrast, Kubwa shows a more divided sentiment, with only 4.4% of respondents being very satisfied and 26.4% satisfied. A significant portion, 35.2%, felt neutral about their quality of life, while 34.1% expressed dissatisfaction. Dobi stands out with an alarming result, as all respondents (100%) reported dissatisfaction with their quality of life. Kusaki-Yangi and Anagada also reflect high levels of dissatisfaction, with more than half of the respondents in both towns (53.8 and 51.6% respectively) being dissatisfied.

In conclusion, while towns like Karshi, Kuje, and Bwari report relatively high satisfaction with the quality of life, towns such as Dobi, Kusaki-Yangi, and Anagada face significant challenges, with the majority of respondents in these towns expressing dissatisfaction with their quality of life. Several studies including, Anton and Lawrence (2014); and Özkan and Yilmaz

(2019) showed that satisfaction with urban environments and neighborhood relations can have a positive impact on the quality of life and livability of a city.

Table 6.26: Level of satisfaction with quality of life

Satellite Town		Level of satisfaction with quality of life					Total
		Very satisfied	Satisfied	Neutral	Dissatisfied	Very dissatisfied	
Karshi	Count	190	295	43	43	42	613
	% within Satellite Town	31.0%	48.1%	7.0%	7.0%	6.9%	100.0%
Kubwa	Count	4	24	32	31	0	91
	% within Satellite Town	4.4%	26.4%	35.2%	34.1%	0.0%	100.0%
Kuje	Count	0	21	11	6	0	38
	% within Satellite Town	0.0%	55.3%	28.9%	15.8%	0.0%	100.0%
Bwari	Count	0	60	24	6	0	90
	% within Satellite Town	0.0%	66.7%	26.7%	6.7%	0.0%	100.0%
Dobi	Count	0	0	0	63	0	63
	% within Satellite Town	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Kusaki-Yangi	Count	0	0	2	21	16	39
	% within Satellite Town	0.0%	0.0%	5.1%	53.8%	41.0%	100.0%
Anagada	Count	0	0	5	32	25	62
	% within Satellite Town	0.0%	0.0%	8.1%	51.6%	40.3%	100.0%
Total	Count	194	400	117	202	83	996
	% within Satellite Town	19.5%	40.2%	11.7%	20.3%	8.3%	100.0%

Source: Author's Survey, 2024

The analysis of the descriptive statistics in Table 6.26.1 reveals that the average satisfaction with the quality of life is 2.58, indicating that respondents generally lean toward dissatisfaction. The ratings range from 1 (very dissatisfied) to 5 (very satisfied), showing a broad spectrum of experiences. The standard deviation of 1.241 suggests significant variation in responses, with some individuals feeling very dissatisfied while others report high satisfaction. The results point to relatively low satisfaction levels, though opinions differ widely among respondents.

Table 6.26.1: Descriptive Statistics of satisfaction with quality of life

	N	Minimum	Maximum	Mean	Std. Deviation
Level of satisfaction with quality of life	996	1	5	2.58	1.241
Valid N (listwise)	996				

Source: Author's Survey, 2024

The analysis of the symmetric measures in Table 6.26.2 shows a moderate, positive, and statistically significant correlation between variables related to satisfaction with the quality of life. Pearson's R value of 0.566 and Spearman's Correlation value of 0.555 both indicate that as factors influencing the quality of life improve, satisfaction levels tend to increase. The significance levels (p-values of 0.000) confirm that these correlations are unlikely to occur by chance. While the relationship is moderate, it highlights a clear association between influencing factors and satisfaction with the quality of life.

Table 6.26.2: Symmetric Measures of satisfaction with quality of life

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	.566	.025	21.659	.000[c]
Ordinal by Ordinal	Spearman Correlation	.555	.024	21.049	.000[c]
N of Valid Cases		996			

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.
c. Based on normal approximation.

Source: Author's Survey, 2024

The analysis of satisfaction with the quality of life across the satellite towns reveals that while a significant portion of respondents are satisfied, there is a notable presence of dissatisfaction, particularly in some towns. The average satisfaction level is moderate, though there are clear variations in the perceptions across different towns. Some towns show higher levels of satisfaction, while others report widespread dissatisfaction. The correlation analysis suggests that improvements in factors influencing quality of life are moderately linked to higher satisfaction levels, underscoring the importance of addressing these factors to enhance overall quality of life in the satellite towns.

6.8 Urban Planning and Governance

This section examines urban planning and governance in the study area. The rating of population density across the satellite towns, the effectiveness of the local authorities in managing urban growth and development, residents' level of participation in communal affairs in the study area are assessed as follows.

6.8.1 Rating of Population Density of Satellite Town

Table 6.27 presents data on the distribution of population density in several satellite towns. Across all the satellite towns, the majority of the population (44.4%) resides in low density areas. The next most prominent category is high density, with 28.6% of the total population falling into this category. 22.9% of the total population is in average density areas, while 3.8% of the total population lives in very low-density areas, and an even smaller portion (0.3%) lives in very high-density areas.

By satellite town majority of the respondents in Karshi, Dobi, Kusaki-Yangi and Anagada falls into the low-density category, comprising 52.0%, 46.0%, 69.2% and 62.9% respectively of the total population. Kubwa exhibits a more concentrated population, with 50.5% of the respondents affirming they live in high density areas. In Kuje and Bwari the population distribution shows that 52.6% and 73.3% of the respondents are in areas of average density.

Table 6.27: Population density in Satellite Towns

Satellite Town		Population density in ST: Very low	Low	Average	High	Very high	Total
Karshi	Count	0	319	86	208	0	613
	% within Satellite Town	0.0%	52.0%	14.0%	33.9%	0.0%	100.0%
Kubwa	Count	0	16	29	46	0	91
	% within Satellite Town	0.0%	17.6%	31.9%	50.5%	0.0%	100.0%
Kuje	Count	0	0	20	15	3	38
	% within Satellite Town	0.0%	0.0%	52.6%	39.5%	7.9%	100.0%
Bwari	Count	0	12	66	12	0	90
	% within Satellite Town	0.0%	13.3%	73.3%	13.3%	0.0%	100.0%
Dobi	Count	18	29	12	4	0	63
	% within Satellite Town	28.6%	46.0%	19.0%	6.3%	0.0%	100.0%
Kusaki-Yangi	Count	7	27	5	0	0	39
	% within Satellite Town	17.9%	69.2%	12.8%	0.0%	0.0%	100.0%
Anagada	Count	13	39	10	0	0	62
	% within Satellite Town	21.0%	62.9%	16.1%	0.0%	0.0%	100.0%
Total	Count	38	442	228	285	3	996
	% within Satellite Town	3.8%	44.4%	22.9%	28.6%	0.3%	100.0%

Source: Author's Survey, 2024

Table 6.27.1, presents descriptive statistics for population density across the study area. The mean score of 2.77 indicates that the towns, on average, have moderate population density. Population density values range from 1 (lowest) to 5 (highest), representing a mix of sparsely and densely populated areas. The standard deviation of 0.918 suggests moderate variation in population density across the towns, indicating that many towns have similar density levels, while some show significant differences.

Table 6.27.1: Descriptive Statistics of Population density in Satellite Towns

	N	Minimum	Maximum	Mean	Std. Deviation
Population density in ST	996	1	5	2.77	.918
Valid N (listwise)	996				

Source: Author's Survey, 2024

Table 6.27.2, shows a moderate negative correlation between population density in satellite towns. Pearson's R -0.273, indicating a moderate inverse relationship. As population density increases, the related variable decreases. Spearman correlation -0.146, indicates a weaker negative relationship based on rank order. Both correlations are highly significant (p = 0.000), meaning the relationship is unlikely to be due to chance.

Table 6.28.2: Symmetric Measures of Population density in Satellite Towns

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	-.273	.027	-8.961	.000[c]
Ordinal by Ordinal	Spearman Correlation	-.146	.032	-4.655	.000[c]
N of Valid Cases		996			

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.
c. Based on normal approximation.

Source: Author's Survey, 2024

The analysis of population density in satellite towns reveals that 44.4% of residents live in low-density areas, while the average population density score is 2.77, indicating moderate density overall. Towns like Karshi and Kusaki-Yangi have higher low-density populations, whereas Kubwa has a significant number of high-density residents.

The negative correlations found (Pearson's R at -0.273 and Spearman's correlation at -0.146) suggest that as population density rises, related factors tend to decline, pointing to potential challenges in livability and functionality. High-density areas may struggle with overcrowding and strained infrastructure, impacting residents' quality of life. Conversely, low-density regions can provide a more peaceful living environment. Balancing population density is essential for improving livability and functionality in these satellite towns, ensuring that residents have access to necessary amenities and a high quality of life.

6.8.2 Participation in Community Decision-making

Table 6.28 shows the frequency of participation in community decision making. Across the satellite towns participation in community decision-making processes is low. The highest percentage falls under the never participation category (35.8%), followed by rarely (27.8%) and neutral (24.7%). Only a small portion 9.6% responded that they often participate, and an even smaller percentage (2.0%) report always being involved.

By satellite town, respondents from Karshi (33.8%), Bwari (53.3%) and Kusaki-Yangi (43.6%) indicated they never participate in decision-making. While respondents from Kubwa (53.8%), Kuje (31.6%), Dobi (66.7%) and Anagada (38.7%) of respondents stating they rarely participate in community decision making.

Table 6.28: Frequency of participation in community decision making

		Frequency of participation in community decision making					
Satellite Town		Always	Often	Neutral	Rarely	Never	Total
Karshi	Count	0	86	197	123	207	613
	% within Satellite Town	0.0%	14.0%	32.1%	20.1%	33.8%	100.0%
Kubwa	Count	0	0	4	49	38	91
	% within Satellite Town	0.0%	0.0%	4.4%	53.8%	41.8%	100.0%
Kuje	Count	3	3	9	12	11	38
	% within Satellite Town	7.9%	7.9%	23.7%	31.6%	28.9%	100.0%
Bwari	Count	6	0	24	12	48	90
	% within Satellite Town	6.7%	0.0%	26.7%	13.3%	53.3%	100.0%
Dobi	Count	4	0	4	42	13	63
	% within Satellite Town	6.3%	0.0%	6.3%	66.7%	20.6%	100.0%
Kusaki-Yangi	Count	2	2	3	15	17	39
	% within Satellite Town	5.1%	5.1%	7.7%	38.5%	43.6%	100.0%
Anagada	Count	5	5	5	24	23	62
	% within Satellite Town	8.1%	8.1%	8.1%	38.7%	37.1%	100.0%
Total	Count	20	96	246	277	357	996
	% within Satellite Town	2.0%	9.6%	24.7%	27.8%	35.8%	100.0%

Source: Author's Survey, 2024

Table 6.28.1 provides descriptive statistics for the frequency of participation in community decision-making among 996 respondents. The data shows that the minimum rating of participation is 1, while the maximum is 5, indicating a range of responses regarding involvement in community matters. The mean score of 3.86 suggests that, on average, respondents participate in community decision-making at a relatively high level, leaning towards more frequent engagement. The standard deviation of 1.074 indicates moderate variability in responses; some respondents may participate very often, while others do so less frequently. Overall, these statistics imply a generally positive attitude towards community involvement among the population surveyed.

Table 6.28.1: Descriptive Statistics of participation in community decision making

	N	Minimum	Maximum	Mean	Std. Deviation
Frequency of participation in community decision making	996	1	5	3.86	1.074
Valid N (listwise)	996				

Source: Author's Survey, 2024

Table 6.28.2 presents the symmetric measures of participation in community decision-making based on a dataset of 996 valid cases. The Pearson's R value of 0.083 indicates a weak positive correlation between the interval-level variables, suggesting a slight tendency for increased participation in community decision-making as one variable rises. Although this relationship is not strong, the p-value of 0.009 confirms its statistical significance, indicating that the correlation is unlikely to be a result of chance.

On the other hand, the Spearman correlation coefficient of 0.141 reflects a moderate positive correlation based on the rank order of the ordinal variables. This suggests a more meaningful relationship, indicating that as the rank of one variable increases, participation in community decision-making also tends to rise. The highly significant p-value of 0.000 further reinforces the importance of this correlation, emphasizing that greater engagement in community decision-making is associated with higher values of the analyzed variables.

Table 6.28.2: Symmetric Measures of participation in community decision making

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	.083	.034	2.613	.009[c]
Ordinal by Ordinal	Spearman Correlation	.141	.031	4.504	.000[c]
N of Valid Cases		996			

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.
c. Based on normal approximation.

Source: Author's Survey, 2024

The rating of participation in community decision-making indicates a moderate level of engagement among residents in satellite towns, with a mean score of 3.86 on a scale from 1 to 5. This active participation is essential for fostering a sense of community ownership and collaboration, which directly impacts the livability and functionality of these areas. When residents are involved in decision-making processes, they are more likely to advocate for improvements in local services and infrastructure, thereby enhancing their overall quality of life.

Moreover, the positive correlations found between participation in decision-making and various livability factors suggest that communities with higher engagement levels tend to benefit from better resource allocation and responsive governance. This active involvement not only strengthens social cohesion but also ensures that the specific needs and preferences of residents are considered in urban planning, contributing to the effective functionality of satellite towns as viable and sustainable living environments. According to Cities Alliance (2006), the promotion of political and civil stability through the local community's participation in development is a key component of the functionality and livability of cities.

6.8.3 Effectiveness of Local Authorities

As presented in Table 6.29, half of the respondents (50.0%) consider the local authority effective, which reflects a generally favorable view of governance in terms of managing urban growth and development. However, a significant minority view the local authority as ineffective (15.8%) or very ineffective (17.2%), signaling substantial dissatisfaction in some areas. The relatively low proportion of respondents (1.9%) considers the local authority very effective.

Across the satellite towns, the majority of the sampled population are in agreement on the development of satellite towns as an effective method of reducing the population pressure in the federal capital city. It can be inferred therefore that the development of satellite towns is an effective method of reducing the population pressure in a city with rising population.

Table 6.29: Effectiveness of local authority in managing urban growth and development

Satellite Town		Effectiveness of local authority in managing urban growth and development: Very effective	Effective	Neutral	Ineffective	Very ineffective	Total
Karshi	Count	0	363	43	43	164	613
	% within Satellite Town	0.0%	59.2%	7.0%	7.0%	26.8%	100.0%
Kubwa	Count	6	38	39	8	0	91
	% within Satellite Town	6.6%	41.8%	42.9%	8.8%	0.0%	100.0%
Kuje	Count	0	17	3	15	3	38
	% within Satellite Town	0.0%	44.7%	7.9%	39.5%	7.9%	100.0%
Bwari	Count	6	72	12	0	0	90
	% within Satellite Town	6.7%	80.0%	13.3%	0.0%	0.0%	100.0%
Dobi	Count	0	8	34	17	4	63
	% within Satellite Town	0.0%	12.7%	54.0%	27.0%	6.3%	100.0%
Kusaki-Yangi	Count	2	0	7	30	0	39
	% within Satellite Town	5.1%	0.0%	17.9%	76.9%	0.0%	100.0%
Anagada	Count	5	0	13	44	0	62
	% within Satellite Town	8.1%	0.0%	21.0%	71.0%	0.0%	100.0%
Total	Count	19	498	151	157	171	996
	% within Satellite Town	1.9%	50.0%	15.2%	15.8%	17.2%	100.0%

Source: Author's Survey, 2024

Table 6.29.1 indicates the effectiveness of local authorities based on 996 valid cases, revealing a weak positive correlation with the analyzed variables. The Pearson's R value of 0.071, accompanied by a significant p-value of 0.024, suggests that as the effectiveness of local authorities increases, the related variable also tends to increase, although the correlation is relatively weak.

Similarly, the Spearman correlation coefficient of 0.066 also shows a weak positive relationship between the ordinal variables, supported by a significant p-value of 0.038. This implies that there is a statistically significant correlation between the effectiveness of local authorities and the assessed variables, indicating that improvements in local authority effectiveness may be associated with positive outcomes in the related areas.

Table 6.29.1: Symmetric Measures of the effectiveness of local authorities

		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	.071	.029	2.253	.024[c]
Ordinal by Ordinal	Spearman Correlation	.066	.033	2.081	.038[c]
N of Valid Cases		996			

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.
c. Based on normal approximation.

Source: Author's Survey, 2024

The rating of the effectiveness of local authorities' decision-making demonstrates a weak positive correlation with various aspects affecting livability and functionality in satellite towns. This suggests that while there is a connection between the perceived effectiveness of local governance and community outcomes, the relationship is not particularly strong. Recent studies have highlighted the evolving role of urban governance in shaping livability. For instance, Lounkaew et al. (2025) explored how different urban governance models contribute to livability improvements across multiple global contexts, emphasizing the importance of governance configurations and procedural mechanisms in influencing implementation effectiveness. Similarly, Essien & Jesse (2025) discussed the challenges faced by urban governance in Nigeria, noting the limited local government autonomy and dependence on state governments for funding and decision-making, which can impact the effectiveness of local authorities. Therefore, enhancing the effectiveness of local authorities could positively influence the overall livability and functionality of these areas. Improved decision-making processes can lead to better infrastructure, more accessible services, and increased community engagement, all of which are essential for fostering vibrant and sustainable satellite towns. Strengthening local governance is crucial to optimizing community development and ensuring that residents' needs are adequately met.

6.8.4 Hypothesis Three (Analysis of Variance)

The third hypothesis which states that, "there is no significant variation in the quality of life (livability) of residents in the satellite towns of the FCT" was tested using the analysis of variance (ANOVA) statistical technique.

The descriptive statistics in Table 6.30 provide an overview of the level of satisfaction with the quality of life across seven satellite towns. The mean satisfaction scores vary significantly among the towns: Karshi (2.11), Kubwa (2.99), Kuje (2.61), Bwari (2.40), Dobi (4.00), Kusaki-Yangi (4.36), and Anagada (4.32). Standard deviations indicate variability within responses, with Karshi showing the highest variability (1.126), and Dobi displaying no variability (0.000). This suggests that residents in Dobi uniformly rated their quality of life highly, while Karshi exhibits more diverse perceptions. The overall mean satisfaction score is 2.58, suggesting a moderate level of satisfaction on average.

Table 6.30: Descriptive Statistics of resident's satisfaction with quality of life in STs

Level of satisfaction with quality of life

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	Upper Bound	Minimum	Maximum
Karshi	613	2.11	1.126	.045	2.02	2.20	1	5
Kubwa	91	2.99	.888	.093	2.80	3.17	1	4
Kuje	38	2.61	.755	.122	2.36	2.85	2	4
Bwari	90	2.40	.614	.065	2.27	2.53	2	4
Dobi	63	4.00	.000	.000	4.00	4.00	4	4
Kusaki-Yangi	39	4.36	.584	.094	4.17	4.55	3	5
Anagada	62	4.32	.621	.079	4.16	4.48	3	5
Total	996	2.58	1.241	.039	2.50	2.66	1	5

The Levene's Test in Table 6.31 indicates that the variances in the level of satisfaction with the quality of life among the satellite towns are not equal ($p < 0.001$). The significant result means that the assumption of homogeneity of variances, which is required for a standard ANOVA, is violated. Despite this, the ANOVA can still proceed as it is relatively robust to this violation when sample sizes are large.

Table 6.31: Test of Homogeneity of Variances of resident's satisfaction with quality of life in STs

		Levene Statistic	df1	df2	Sig.
Level of satisfaction with quality of life	Based on Mean	15.005	6	989	.000
	Based on Median	11.060	6	989	.000
	Based on Median and with adjusted df	11.060	6	835.365	.000
	Based on trimmed mean	10.992	6	989	.000

The ANOVA statistics in Table 6.32 examines whether there are statistically significant differences in satisfaction levels among the satellite towns. The results indicate a highly significant difference between the towns ($F = 104.454$, $p < 0.001$). The between-groups sum of squares (594.593) is substantially larger than the within-groups sum of squares (938.298), highlighting that much of the variance in satisfaction levels is attributable to differences between towns rather than variability within towns.

Table 6.32: F-Statistics of resident's satisfaction with quality of life in STs

Level of satisfaction with quality of life

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	594.593	6	99.099	104.454	.000
Within Groups	938.298	989	.949		
Total	1532.892	995			

The Tukey HSD test in Table 6.33 and Table 6.34 identifies significant differences in mean satisfaction scores among the satellite towns. Karshi shows significantly lower satisfaction compared to all other towns except Bwari. Dobi, Kusaki-Yangi, and Anagada display significantly higher satisfaction levels than Karshi, Kubwa, Kuje, and Bwari. Kubwa falls into a moderately satisfied category, showing significantly better satisfaction than Karshi but not reaching the high levels observed in Dobi, Kusaki-Yangi, and Anagada. Dobi, Kusaki-Yangi, and Anagada form a distinct group of towns characterized by uniformly high satisfaction scores. These results are reinforced by the Tukey HSD subsets in Table 6.35, which cluster the towns into three satisfaction levels: low satisfaction (Karshi and Bwari), moderate satisfaction (Kuje and Kubwa), and high satisfaction (Dobi, Kusaki-Yangi, and Anagada).

Table 6.33: Multiple Comparisons of resident's satisfaction with quality of life in STs

Dependent Variable: Level of satisfaction with quality of life

Tukey HSD

(I) Satellite Town	(J) Satellite Town	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Karshi	Kubwa	-.883*	.109	.000	-1.21	-.56
	Kuje	-.499*	.163	.036	-.98	-.02
	Bwari	-.294	.110	.106	-.62	.03
	Dobi	-1.894*	.129	.000	-2.27	-1.51
	Kusaki-Yangi	-2.253*	.161	.000	-2.73	-1.78
	Anagada	-2.217*	.130	.000	-2.60	-1.83
Kubwa	Karshi	.883*	.109	.000	.56	1.21
	Kuje	.384	.188	.390	-.17	.94
	Bwari	.589*	.145	.001	.16	1.02
	Dobi	-1.011*	.160	.000	-1.48	-.54
	Kusaki-Yangi	-1.370*	.186	.000	-1.92	-.82
	Anagada	-1.334*	.160	.000	-1.81	-.86
Kuje	Karshi	.499*	.163	.036	.02	.98
	Kubwa	-.384	.188	.390	-.94	.17
	Bwari	.205	.188	.931	-.35	.76
	Dobi	-1.395*	.200	.000	-1.99	-.80
	Kusaki-Yangi	-1.754*	.222	.000	-2.41	-1.10
	Anagada	-1.717*	.201	.000	-2.31	-1.12
Bwari	Karshi	.294	.110	.106	-.03	.62
	Kubwa	-.589*	.145	.001	-1.02	-.16
	Kuje	-.205	.188	.931	-.76	.35
	Dobi	-1.600*	.160	.000	-2.07	-1.13
	Kusaki-Yangi	-1.959*	.187	.000	-2.51	-1.41
	Anagada	-1.923*	.161	.000	-2.40	-1.45
Dobi	Karshi	1.894*	.129	.000	1.51	2.27
	Kubwa	1.011*	.160	.000	.54	1.48
	Kuje	1.395*	.200	.000	.80	1.99
	Bwari	1.600*	.160	.000	1.13	2.07
	Kusaki-Yangi	-.359	.198	.542	-.95	.23
	Anagada	-.323	.174	.514	-.84	.19
Kusaki-Yangi	Karshi	2.253*	.161	.000	1.78	2.73
	Kubwa	1.370*	.186	.000	.82	1.92
	Kuje	1.754*	.222	.000	1.10	2.41
	Bwari	1.959*	.187	.000	1.41	2.51
	Dobi	.359	.198	.542	-.23	.95
	Anagada	.036	.199	1.000	-.55	.62
Anagada	Karshi	2.217*	.130	.000	1.83	2.60
	Kubwa	1.334*	.160	.000	.86	1.81
	Kuje	1.717*	.201	.000	1.12	2.31
	Bwari	1.923*	.161	.000	1.45	2.40
	Dobi	.323	.174	.514	-.19	.84
	Kusaki-Yangi	-.036	.199	1.000	-.62	.55

*. The mean difference is significant at the 0.05 level.

Table 6.34: Level of satisfaction with quality of life

Tukey HSD[a,b]

		Subset for alpha = 0.05		
Satellite Town	N	1	2	3
Karshi	613	2.11		
Bwari	90	2.40		
Kuje	38	2.61	2.61	
Kubwa	91		2.99	
Dobi	63			4.00
Anagada	62			4.32
Kusaki-Yangi	39			4.36
Sig.		.055	.272	.353

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 65.001.
b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

The results from the ANOVA and post-hoc tests strongly reject the null hypothesis, indicating that there is a significant difference in the quality of life (livability) among residents of the satellite towns in the FCT. Specifically, towns like Dobi, Kusaki-Yangi, and Anagada exhibit significantly higher satisfaction levels compared to towns like Karshi and Bwari with Kubwa exhibiting the most balance in terms of quality of life of residents in the study area. This suggests that livability in satellite towns is uneven, influenced by factors unique to each town.

6.9 Key Dimensions Influencing Livability and Quality of Life in Satellite Towns

A Principal Component Analysis (PCA) was conducted to examine the most important factors influencing livability and quality of life of residents across the satellite towns in the FCT. The results from the Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity (Table 6.35) confirm that the dataset is suitable for factor analysis. The KMO value of 0.656 exceeds the minimum acceptable threshold of 0.60, indicating a mediocre to satisfactory level of sampling adequacy for identifying underlying constructs among the variables. Similarly, Bartlett's Test of Sphericity produced a chi-square value of 13,477.240 with 231 degrees of freedom and a significance level of $p < 0.001$, rejecting the null hypothesis that the correlation matrix is an identity matrix. This suggests that the variables are sufficiently correlated to justify the use of Principal Axis Factoring. Therefore, the data are appropriate for uncovering latent dimensions underlying the livability and quality of life indicators in the studied satellite towns.

Table 6.35: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.656
Bartlett's Test of Sphericity	Approx. Chi-Square	13477.240
	df	231
	Sig.	.000

As shown in Table 6.36 (Total Variance Explained), seven factors were extracted based on the Kaiser criterion (eigenvalues > 1). Together, these seven factors accounted for approximately 74.62% of the total variance, indicating that they collectively capture a substantial proportion of the variability in the observed livability indicators. The first factor explained 24.5% of the total variance, while subsequent factors contributed 13.8%, 10.8%, 8.6%, 6.4%, 5.9%, and 4.6%, respectively. This pattern suggests that livability and quality of life in the satellite towns are multi-dimensional, comprising several interrelated domains rather than a single construct. The relatively high cumulative variance explained demonstrates that the extracted factors provide a robust representation of the residents' experiences regarding housing, infrastructure, environment, safety, governance, and community life.

Table 6.36: Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	5.390	24.500	24.500	5.079	23.086	23.086	3.173
2	3.038	13.809	38.309	2.725	12.384	35.470	3.181
3	2.374	10.790	49.099	2.041	9.276	44.746	2.317
4	1.884	8.564	57.663	1.596	7.252	51.999	2.754
5	1.411	6.413	64.076	.983	4.467	56.466	1.990
6	1.300	5.910	69.986	.884	4.019	60.484	1.878
7	1.020	4.635	74.620	.709	3.225	63.709	1.703
8	.951	4.322	78.942				
9	.846	3.845	82.787				
10	.662	3.008	85.795				
11	.551	2.504	88.299				
12	.424	1.925	90.224				
13	.382	1.736	91.960				
14	.368	1.674	93.634				
15	.253	1.150	94.784				
16	.240	1.089	95.872				
17	.225	1.021	96.893				
18	.199	.903	97.796				
19	.174	.790	98.586				
20	.128	.582	99.168				
21	.107	.486	99.653				
22	.076	.347	100.000				

Extraction Method: Principal Axis Factoring.
a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.

The rotated Pattern Matrix (Table 6.37) reveals seven underlying dimensions that collectively define the livability and quality of life in the satellite towns. The first factor, Environmental and Infrastructure Quality, is characterized by high loadings on variables such as air quality, quality of schools, and road infrastructure. This dimension reflects the physical and environmental conditions that shape daily life, underscoring the role of clean air, sound educational infrastructure, and efficient road networks in enhancing residents' well-being and satisfaction. The second factor, Environmental Management and Social Cohesion, comprises strong loadings on waste management, accessibility of parks and recreational centers, and sense of community. It highlights how effective environmental maintenance and communal engagement contribute to higher perceived livability, as cleaner environments and active social interactions foster a sense of belonging and collective responsibility.

The third factor, Economic Well-being and Affordability, is defined mainly by cost of living and housing affordability, representing the economic dimension of livability. It indicates that residents' perceptions of quality of life are significantly influenced by the cost of essential goods and access to affordable housing, both of which determine economic stability and comfort. The fourth factor, Urban Mobility and Congestion, is represented by variables such as traffic congestion and population density. This dimension points to the challenges of movement and urban crowding that limit accessibility to the Federal Capital City (FCT) and hinder the functionality of satellite towns. High levels of congestion reduce ease of commuting and diminish the overall experience of urban living.

The fifth factor, Basic Services and Quality of Life, loads strongly on the availability of water, electricity, and satisfaction with life. This factor emphasizes the centrality of essential services to residents' well-being and reflects how inadequate or irregular service delivery can constrain the functional efficiency of satellite towns. The sixth factor, Governance and Participation, combines a negative loading on participation in community decision-making with a positive loading on the effectiveness of local authorities. This inverse relationship suggests that weak civic engagement is often accompanied by governance inefficiencies, reinforcing the need for more participatory and transparent management of urban growth. Finally, the seventh factor, Cultural Accessibility and Livability, is dominated by the accessibility of cultural facilities such as libraries, museums, and theaters. This dimension highlights the social and cultural enrichment that arises from access to such amenities, which promote recreation, social interaction, and a deeper sense of community belonging. Together, these seven factors capture the multidimensional nature of livability and illustrate the interplay between environmental quality, economic stability, infrastructure, governance, and cultural opportunities in shaping the overall quality of life in the satellite towns.

Table 6.37: Pattern Matrix[a]

	Factor						
	1	2	3	4	5	6	7
Affordability of housing						.511	
Accessibility of healthcare from place of residence					-.407		
Safety of neighborhood						.545	.427
Rating of emergency response time for police, fire and medical services							
Cost of living					.870		
Rate the availability of educational facilities				.418			
Rate the quality of schools	.712						
Rating of air quality	.747						
Accessibility of parks and recreational centers		.637					
Effectiveness of waste management		.714					
Availability of basic utilities (electricity)				.615			
Availability of water				.866			
Quality of road infrastructure	.468			.466			
Accessibility of public transport							
Traffic congestion in ST			.895				
Rating of sense of community		-.505					
Level of satisfaction with quality of life				.483			
Quality of road linkage between ST and FCT							
Level of accessibility to cultural facilities		.916					
Population density in ST			.461		.528		
Frequency of participation in community decision making							-.862
Effectiveness of local authority in managing urban growth and development		.612					

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.
a. Rotation converged in 48 iterations.

The PCA demonstrates that livability in FCT satellite towns is underpinned by seven interlinked dimensions: environmental and infrastructural quality; social cohesion and environmental management; economic well-being and affordability; mobility/congestion; access to basic services; governance and participation; and cultural accessibility. These findings align with recent studies in Nigeria. Yekeen & Misnan (2024) found that access to green spaces, waste management, transportation networks, quality educational opportunities, and affordable housing are principal components of perceived livability in Ilorin. Similarly, Haruna, Zubairu, & Olagunju (2023) in Niger State report that sustainability in public housing requires not just shelter but also reliable utilities, environmental quality, and resident satisfaction with services. Thus, the quality of life is not defined solely by availability of infrastructure but by how accessible it is, how affordable and responsive services are, and how governance and social-cultural factors interplay.

CHAPTER SEVEN

SUMMARY, CONCLUSION AND RECOMMENDATIONS

7.1 Summary of Findings

This study examined satellite towns satellite towns in the Federal Capital Territory, Abuja, Nigeria with the aim of evaluating their functionality. From the data analysis carried out, the following findings were made:

The socio-demographic analysis of respondents in the study area reveals a predominantly young population aged 21-50 years, indicating a young and vibrant population. The high proportion of married individuals and those with secondary and tertiary education suggests a moderately educated populace, while the prevalence of private businesses as primary occupations, coupled with low-income levels, highlights the predominance of small scall businesses across the satellite towns in the Federal Capital Territory. Household characteristics such as an average size of 3-6 persons align with national standards, and the long-term residency of most respondents implies deep community ties and potential in-depth knowledge of the satellite towns. These findings can have a significant impact on the knowledge of the satellite towns, especially in terms of infrastructural availability and overall functionality.

Further findings on the socio-demographic characteristics of respondents revealed that bungalows are the predominant type of housing across the satellite towns with rooming houses also having a significant representation, especially in the less developed satellite towns of Kusaki-Yangi and Dobi. On the ownership of houses, majority of respodents affirmed to being the owners of their places of residence while for respondents who are resident in rental housing, the rental cost paid by them was given as ₦101,000-₦200,000, indicating the affordability of housing in the satellite towns. However, when contrasted with the average monthly income of residents in the study area, the cost of rental for housing can be deduced to be moderate as affirmed by the majority of respondents who rated the cost of housing across the satellite towns to be moderate.

Respondents' perceptions of their family's economic status reveal the predominance of the lower and middle economic classes among residents in the satellite towns of the Federal Capital Territory, Abuja. Notably, the majority of respondents in Kubwa, Kuje, and Kusaki-Yanga identified as middle class, while those in Karshi and Anagada predominantly identified as lower class. In Bwari and Dobi, there was a balanced distribution between the middle and lower classes. These findings indicate that the economic landscape of satellite town residents contrasts sharply with the affluence often associated with Abuja, underscoring the modest socioeconomic realities of its surrounding areas.

In terms of household living conditions, the majority of respondents rated the quality of living conditions in their neighborhoods as average. Disaggregated by location, most respondents in Bwari, Kuje, Karshi, Dobi, Anagada, and Kusaki-Yanga affirmed average living conditions, whereas the majority in Kubwa rated the quality of living conditions as good. This distinction highlights the relative infrastructural development of Kubwa compared to other satellite towns.

On the availability of infrastructures, the findings reveal significant disparities in the availability of critical infrastructure across satellite towns in the Federal Capital Territory (FCT), Abuja, with implications for their functionality and livability. Electricity supply was identified as particularly inadequate, with the majority of respondents (67.9%) rating it as either very poor or poor. This trend was most pronounced in Karshi, where 63.9% of respondents reported very poor electricity supply, while towns such as Bwari, Kubwa, and Kuje recorded relatively higher ratings for electricity availability. These discrepancies highlight a critical infrastructure gap, which hinders the overall functionality of some satellite towns.

Access to potable water remains a significant challenge, as 93.6% of respondents across the satellite towns rely on individual efforts for water provision. Government involvement was minimal, with only a small proportion of respondents in Kubwa, Kuje, and Kusaki-Yanga acknowledging government contributions. Although pipe-borne water was the predominant source for most towns, reliance on wells remained substantial in Dobi, where 71.4% of respondents depended on this source. This indicates that water infrastructure is underdeveloped, particularly in less prominent towns, affecting their capacity to meet residents' needs.

Waste management infrastructure is heavily reliant on public dumpsites, utilized by 80.3% of respondents, while only 10.6% used waste management boards. Notably, satellite towns such as Bwari and Kubwa reported higher engagement with waste management boards, reflecting a degree of institutional involvement in these areas. However, in other towns, reliance on public dumpsites underscores the limited availability of structured waste management systems, which may negatively impact environmental health and overall town functionality.

In terms of educational infrastructure, public schools were widely available, with the majority of respondents (59.1%) rating their availability as good. Towns like Bwari, Kubwa, and Karshi demonstrated particularly positive feedback, while Kuje, Dobi, Anagada, and Kusaki-Yanga had higher proportions of respondents rating public school availability as average. This reflects disparities in access to quality educational facilities, which may affect the equitable development of human capital in the satellite towns.

Open spaces and parks were noted to be present in most satellite towns, with 68.0% of respondents affirming their availability. Bwari, Kubwa, and Anagada recorded the highest levels of satisfaction in this regard, indicating that these towns may offer better recreational and social opportunities compared to others. However, some towns still face challenges in providing adequate open spaces, which are critical for enhancing livability.

Road infrastructure was rated positively, with 80% of respondents affirming that the quality of roads was good or very good. Towns such as Bwari, Kubwa, and Karshi reported high satisfaction levels, reflecting effective connectivity and accessibility. However, in Anagada, 88.7% of respondents expressed dissatisfaction, suggesting localized challenges in road infrastructure that require targeted intervention. Similarly, public transportation was generally considered adequate, with 65.1% rating its quality as good, though average ratings were common in towns like Dobi and Anagada, highlighting areas where transport systems need improvement.

The analysis of accessibility to infrastructure in satellite towns across the Federal Capital Territory (FCT) reveals several insights into the functionality of these settlements. A majority of respondents affirmed that public transport is largely accessible across the satellite towns, with 64.1% stating that it is accessible and 23.5% describing it as very accessible. This accessibility reflects the adequacy of transportation options within these communities, enhancing mobility and connectivity. Notably, the findings indicate that public transportation accessibility is consistent across all satellite towns, which is a positive indicator of their functionality.

Further findings revealed that the average distance covered by respondents from their residences to their workplaces underscores differences in urbanization levels among the satellite towns. A significant proportion of respondents (37.9%) reported traveling 500 meters to 1 kilometer, while 25.3% travel 1 to 2 kilometers. Interestingly, shorter commuting distances were more prominent in less urbanized towns like Karshi, Anagada, and Dobi, where workplaces are likely closer to residences. Conversely, longer commuting distances of more than 3 kilometers were more prevalent in urbanized towns like Kubwa and Bwari, suggesting that many residents of these towns work outside their communities. This trend highlights variations in local economic opportunities and the extent to which satellite towns serve as residential hubs for workers in Abuja.

Regarding ease of access to urban facilities in the Federal Capital City, a majority of respondents (50.3%) described access as easy, with another 40.3% rating it as moderate. This suggests that satellite towns are achieving their objective of facilitating access to the city's facilities for their residents. The ease of access is particularly notable in towns like Bwari, Kubwa, and Kuje, where most respondents affirmed accessibility to be easy. However, in Anagada and Karshi, a significant proportion of respondents rated access as moderate, reflecting some challenges that may impede seamless connectivity to urban facilities.

The analysis of respondents' satisfaction with available infrastructure in satellite towns across the Federal Capital Territory (FCT) provides important insights into their functionality. Housing satisfaction is generally positive, with a majority (57.7%) of respondents affirming satisfaction and 11.5% expressing a high level of satisfaction. However, 6.9% reported dissatisfaction with housing in their satellite towns. Notably, Kubwa, Kuje, and Anagada recorded the highest levels of satisfaction, reflecting the adequacy of housing options in these areas. In contrast, Dobi showed a significant proportion of respondents expressing only moderate satisfaction, suggesting room for improvement in housing quality and availability in this town. In terms of household living conditions, most respondents (51.1%) rated their conditions as average, while 34.3% considered them good. Poor living conditions were reported by 7.2% of respondents. The findings show that while average living conditions dominate across all satellite towns, the urbanized town of Kubwa recorded the highest proportion of respondents who rated their conditions as good (48.4%). This suggests that urbanization plays a role in improving household living standards, though disparities remain among the towns.

Satisfaction with open spaces and parks was mixed, with 52.8% of respondents expressing satisfaction and 43.3% reporting dissatisfaction. Satisfaction levels were highest in towns like Kubwa, Bwari, and Karshi, where residents appreciated the availability and quality of parks and open spaces. Conversely, dissatisfaction was prevalent in Kuje, Dobi, Anagada, and Kusaki-Yanga, indicating a lack of well-developed recreational spaces in these towns. This shortfall impacts the overall livability and recreational appeal of these satellite towns. Satisfaction with urban infrastructure varied across different facilities. Electricity emerged as the infrastructure with the highest satisfaction level, with a mean score of 3.75, highlighting its relative reliability in most satellite towns. Sanitation facilities and water supply also received moderate satisfaction ratings, reflecting some level of adequacy. However, road infrastructure scored the lowest (mean of 1.63), with respondents particularly dissatisfied in towns like Kusaki-Yanga and Anagada, where road quality is poor or non-existent. This significantly hampers mobility and connectivity, undermining the functionality of these towns.

The analysis of respondents' perceptions of the role of satellite towns in urban development highlights their critical functionality in supporting the Federal Capital Territory (FCT). Overpopulation in the Federal Capital City (FCC) emerged as a significant concern, with 67.9% of respondents affirming that the city is overpopulated. This sentiment was especially pronounced in satellite towns such as Kuje, Kusaki-Yanga, and Anagada, where over 80% of respondents noted the strain caused by the FCC's population density. This underscores the urgency of developing satellite towns to alleviate pressure on the FCC.

Regarding the effectiveness of satellite towns in reducing population pressure, 53.1% of respondents affirmed that these towns have been effective, while 38.2% found them moderately effective. Towns like Bwari, Kubwa, and Kuje were highlighted as being particularly successful in this regard, with over 65% of respondents in these areas emphasizing their role in decongesting the FCC. This finding demonstrates that satellite towns are partially fulfilling their intended function of redistributing the population within the FCT.

Despite their role in managing population pressure, there appears to be limited awareness about incentives to encourage relocation to satellite towns. Nearly half (47.8%) of respondents indicated they were unaware of such incentives, while 35.6% believed incentives exist, and 16.6% stated there are none. Where incentives were acknowledged, cheaper housing emerged as the most prominent (27.4%), followed by improved access to urban infrastructure and better quality of life. This indicates that while housing affordability is a significant pull factor, greater awareness and provision of incentives could further enhance the appeal of these towns.

The contribution of satellite towns to urban and rural development was rated positively, with 73.4% of respondents affirming that their impact has been good and 16.9% describing it as very good. Across towns like Anagada, Dobi, and Kuje, residents widely recognized the role of satellite towns in fostering regional development. This reflects the importance of these towns in bridging the gap between urban and rural areas, enhancing connectivity, and fostering balanced growth within the FCT.

Furthermore, the majority of respondents (85.4%) emphasized the importance of satellite towns for the overall urban development of the FCT. This perception was uniformly strong across all towns, reinforcing the view that satellite towns play a pivotal role in ensuring sustainable urbanization. By decongesting the FCC and providing alternative residential and economic hubs, these towns are key to the long-term functionality and development of the FCT.

The findings on the functionality of satellite towns in the Federal Capital Territory (FCT), Abuja, reveal critical insights into their livability and contribution to urban development. The primary purpose of residences in the satellite towns is overwhelmingly residential, with 86.8% of respondents affirming this use. This aligns with the primary role of satellite towns in decongesting the Federal Capital City (FCC) by providing adequate housing. Furthermore, most respondents (67.7%) commute daily within their satellite towns for work, indicating that these towns are increasingly self-sufficient in supporting residents' livelihoods, thereby reducing pressure on the FCC. The frequency of commuting from satellite towns to the FCC for work reflects a mixed pattern. While 37.2% of respondents commute daily to the FCC, a significant portion resides and works within the satellite towns. This suggests a gradual decentralization of economic activities, reducing the volume of activities concentrated in the city center and enhancing the functionality of satellite towns in supporting urban planning goals.

Housing affordability emerges as a significant strength of satellite towns, with 84.0% of respondents perceiving housing as affordable or very affordable. However, challenges persist in areas like Kubwa, where housing affordability is an issue for a notable proportion of respondents. The quality of housing in terms of construction and amenities is generally rated as good by 41.3% of respondents, with higher standards observed in more developed satellite towns such as Kuje, Kubwa, and Bwari. Conversely, less developed towns like Dobi, Kusaki-Yanga, and Anagada exhibit average housing quality, highlighting areas for targeted improvement. The availability of housing since relocation to satellite towns presents a mixed outcome. While 45.1% of respondents reported no change in housing availability, 31.9% indicated an improvement, particularly in towns like Kubwa, Dobi, and Kusaki-Yanga. However, respondents in Kuje and Bwari noted a decline in housing availability, emphasizing the need for continued efforts to ensure equitable housing distribution across all satellite towns.

In terms of the primary purposes of respondents' places of residences, it was found that the primary purpose of residences in the satellite towns is overwhelmingly residential, with 86.8% of respondents affirming this use. This aligns with the primary role of satellite towns in decongesting the Federal Capital City (FCC) by providing adequate housing. Furthermore, most respondents (67.7%) commute daily within their satellite towns for work, indicating that these towns are increasingly self-sufficient in supporting residents' livelihoods, thereby reducing pressure on the FCC. The frequency of commuting from satellite towns to the FCC for work reflects a mixed pattern. While 37.2% of respondents commute daily to the FCC, a significant portion resides and works within the satellite towns. This suggests a gradual decentralization of economic activities, reducing the volume of activities concentrated in the city center and enhancing the functionality of satellite towns in supporting urban planning goals.

The study reveals a moderate level of healthcare accessibility across the satellite towns in the Federal Capital Territory (FCT), with significant variability in ease of access. While most residents affirmed accessibility to healthcare services, disparities exist, particularly in Kubwa and other areas where healthcare facilities were deemed less accessible. This inequitable distribution of healthcare facilities presents a challenge to the livability and functionality of these satellite towns, as access to healthcare is a fundamental aspect of urban development and population well-being. Neighborhood safety across the satellite towns was generally rated as moderate, with most residents affirming their areas as safe. However, security concerns were pronounced in Kubwa and Kuje, where a higher proportion of respondents indicated unsafe conditions. These safety concerns highlight an urgent need for enhanced security measures to ensure uniform safety across all satellite towns, a critical factor for supporting sustainable urban functionality and fostering residents' well-being.

Emergency service response times, encompassing police, fire, and medical services, were generally rated as moderate to good by respondents. While some areas, such as Kubwa and Bwari, reported satisfactory response times, variability was noted, particularly in Kusaki-Yanga and Anagada, where residents perceived response times as average. Efficient emergency services are vital for fostering a resilient and functional urban environment, and the inconsistencies identified suggest the need for improved service delivery mechanisms. In terms of economic stability, employment opportunities varied among satellite towns, with a significant proportion of respondents identifying as self-employed. Notably, residents in Bwari, Dobi, and Kusaki-Yanga reported higher self-employment rates, while formal employment was prevalent in Karshi, Kubwa, and Kuje. Additionally, most respondents affirmed that their workplaces were within their satellite towns, indicating a degree of economic independence. However, the cost of living emerged as a pressing concern, with high living costs reported in some towns, such as Kubwa and Karshi, impacting residents' quality of life and undermining economic stability.

Educational attainment among residents was relatively high, with tertiary education being the most common level achieved. However, disparities were evident, as Kusaki-Yanga and Anagada had a higher proportion of residents with only primary education. While most respondents expressed satisfaction with the availability of educational facilities, indifference and dissatisfaction were noted in towns like Kuje and Dobi, where improvements in both availability and quality are necessary. The quality of schools was generally rated as good, though areas such as Dobi highlighted the need for further enhancements to align with residents' expectations.

The assessment of environmental quality across the satellite towns revealed varying levels of livability. Air quality was generally perceived as moderate to good, with Karshi and Kubwa demonstrating better ratings, while towns such as Dobi, Kusaki-Yangi, and Anagada showed higher dissatisfaction. The availability of parks was a significant concern, as most respondents affirmed their scarcity, particularly in Karshi, Kusaki-Yangi, and Anagada. Accessibility to parks and recreational centers was deemed average by many respondents, though Karshi and Kubwa reported higher levels of accessibility. These findings underscore the uneven distribution of environmental amenities across the towns.

In terms of waste management systems, perceptions were divided, with a majority of respondents across the towns indicating ineffectiveness. However, towns like Kubwa, Kuje, and Bwari showed better performance in waste management, contrasting with Karshi, Kusaki-Yangi, and Anagada, where waste systems were largely ineffective. This suggests the need for improved waste management infrastructure and strategies in the latter towns to enhance livability. Regarding infrastructure, electricity availability was rated as good or average in most satellite towns, with Karshi, Kubwa, and Bwari reporting better access. However, dissatisfaction was prevalent in Kusaki-Yangi and Anagada, where many respondents rated electricity availability as poor or very poor. Water availability followed a similar trend, with Karshi, Kubwa, and Kuje enjoying better water supply, while Kusaki-Yangi and Anagada recorded significant deficits, highlighting inequitable access to essential utilities.

The quality of road infrastructure varied significantly, with Karshi standing out for its excellent roads and no negative ratings. Conversely, Kusaki-Yangi and Anagada reported the poorest road conditions, characterized by a majority of respondents rating roads as poor or very poor. Accessibility to public transportation was generally favorable across the towns, with Karshi, Kuje, and Bwari enjoying the highest levels of access. However, issues persisted in Kubwa, Kusaki-Yangi, and Anagada, where a notable proportion of respondents found public transport less accessible, indicating disparities in transport infrastructure.

The analysis of the quality of road linkage between satellite towns and the Federal Capital City (FCC) reveals a generally positive perception, with a majority of respondents rating the road quality as good or excellent. However, variations exist across different satellite towns, reflecting disparities in infrastructure development. Karshi and Dobi reported higher levels of satisfaction, with significant proportions of respondents rating the roads as good or excellent. Bwari stood out for having the highest percentage of respondents rating road quality as excellent, indicating a strong road network in the area. Conversely, Kuje and Kubwa had lower ratings, with a substantial proportion of respondents perceiving the road linkage as average. These differences highlight the uneven quality of road infrastructure, which impacts the functionality and connectivity of the satellite towns to the FCC.

Regarding traffic congestion, the findings indicate that most satellite towns experience low to very low levels of congestion, with 40.8% of respondents reporting low congestion and 25.4% reporting very low congestion. This suggests that traffic conditions are generally manageable in these areas, contributing positively to their livability. However, Kubwa emerges as an exception, with higher levels of traffic congestion reported by a significant portion of respondents. This could be attributed to its advanced development and functionality, attracting more vehicular traffic. Bwari, on the other hand, reported the lowest congestion levels, reinforcing its status as a less congested and potentially more livable town.

The assessment of the social and cultural life across the satellite towns in the Federal Capital Territory (FCT) reveals a mixed picture of their functionality. Accessibility to cultural facilities is generally limited, with nearly half of the respondents (48.4%) rating it as average and a significant proportion (35.4%) finding cultural amenities either inaccessible or very inaccessible. However, variations exist among the towns. Kubwa emerges as the most favorable in this regard, with 57.1% of respondents reporting cultural facilities as accessible. Similarly, Anagada shows better access perceptions, with 40.3% of respondents rating facilities as accessible. In contrast, towns like Karshi, Kuje, Dobi, and Kusaki-Yangi predominantly report average accessibility, highlighting a need for improved cultural infrastructure to enhance the livability of these areas.

The sense of community among residents further underscores the variability in functionality across the satellite towns. Overall, a strong sense of community is prevalent, with 58.2% of respondents affirming it. Towns like Karshi and Kuje stand out for their overwhelmingly strong communal ties, with 72.9% and 71.1% of respondents, respectively, rating the sense of community as strong. Similarly, Dobi reflects a predominantly positive communal environment, with more than half of the respondents reporting strong community ties. Conversely, Kubwa reports the weakest communal sentiment, with a majority of respondents perceiving the sense of community as weak or very weak. Bwari and Kusaki-Yangi exhibit more divided perceptions, with a considerable proportion of respondents reporting both strong and weak community ties, suggesting moderate social cohesion with room for improvement.

The evaluation of the functionality of satellite towns in the Federal Capital Territory (FCT) highlights a diverse range of outcomes in terms of livability, urban planning, and governance. Satisfaction with the quality of life varies significantly across the towns. Towns like Karshi, Kuje, and Bwari report relatively high levels of satisfaction, with 48.1%, 55.3%, and 66.7% of respondents, respectively, expressing satisfaction. In contrast, Dobi stands out negatively, with all respondents reporting dissatisfaction with their quality of life. Similarly, Kusaki-Yangi and Anagada face significant challenges, as over half of the respondents in these towns express dissatisfaction. These findings underscore stark disparities in the livability of satellite towns, with some towns providing a better quality of life than others.

Population density also plays a critical role in shaping the functionality of these towns. A majority of respondents (44.4%) across the satellite towns reside in low-density areas, particularly in Karshi, Dobi, Kusaki-Yangi, and Anagada, where over 50% of the population falls into this category. Conversely, Kubwa exhibits a high-density settlement pattern, with 50.5% of respondents living in densely populated areas. Kuje and Bwari present a more balanced distribution, with over half of the population residing in average-density areas. These variations in population density reveal the differing spatial and infrastructural dynamics that influence the functionality of these towns.

Community participation in decision-making processes is generally low across the satellite towns, with 35.8% of respondents indicating they never participate and 27.8% stating they rarely do so. Karshi, Bwari, and Kusaki-Yangi report the highest percentages of non-participation, while Kubwa, Kuje, Dobi, and Anagada show relatively higher levels of rare participation. This low engagement in communal decision-making processes indicates a gap in fostering active civic involvement, which is essential for sustainable urban governance. The assessment of local authority effectiveness reveals a moderately positive perception among residents, with half of the respondents considering local authorities effective in managing urban growth and development. However, dissatisfaction remains significant, with 15.8% viewing local authorities as ineffective and 17.2% as very ineffective. Despite these challenges, there is a consensus that the development of satellite towns serves as an effective strategy to reduce population pressure in the federal capital city, reinforcing their strategic importance in urban planning.

7.2 Conclusion

This study investigated the functionality of satellite towns in the Federal Capital Territory, Abuja. Based on the findings, the following conclusions are made:

1. The findings of this study demonstrate the critical role satellite towns play in relieving population pressure and enhancing the functionality and livability of the Federal Capital Territory (FCT), Abuja. These towns serve as vital alternatives to the overpopulated Federal Capital City (FCC), alleviating pressure on urban infrastructure while fostering regional growth. The socio-demographic composition of predominantly young and moderately educated populations highlights the economic vibrancy and potential for self-sufficiency within these towns. However, significant disparities in infrastructure, housing, healthcare, and environmental quality hinder their overall effectiveness in meeting the needs of residents.
2. Infrastructural gaps, particularly in electricity, water supply, and waste management, emerge as the most pressing challenges, with less-developed towns like Kusaki-Yanga and Anagada experiencing the most severe deficits. Access to quality road infrastructure and public transportation remains uneven, with some towns demonstrating greater connectivity while others lag behind. Educational disparities and moderate healthcare accessibility further underscore the uneven development across these towns. Despite these challenges, satellite towns are effectively decentralizing economic activities, reducing dependency on the FCC for employment, and contributing to balanced urban development.
3. Environmental quality and governance remain areas of concern. Variations in air quality, waste management, and access to open spaces affect residents' quality of life, particularly in less-developed towns. Governance effectiveness is perceived as moderate, with notable

gaps in civic engagement. Despite these constraints, the overall potential of satellite towns to enhance urban functionality and livability is evident, provided targeted interventions are implemented to address existing shortcomings.

7.3 Recommendations

From the findings, the following recommendations are made:

1. The government should prioritize investments in critical infrastructure, particularly in less-developed satellite towns. Enhancing electricity and water supply systems, as well as implementing structured waste management solutions, will improve residents' quality of life and foster economic growth.
2. Upgrading road networks and expanding public transportation options are essential for ensuring seamless connectivity within satellite towns and between these towns and the FCC. Targeted investments in towns with poor connectivity, such as Kusaki-Yanga and Anagada, should be prioritized.
3. Policies aimed at addressing housing affordability disparities and improving housing quality in less-developed satellite towns are critical. Equitable distribution of housing projects and targeted subsidies for low-income residents can reduce pressure on more urbanized towns.
4. Strategic interventions are needed to enhance healthcare accessibility and improve the quality of education in underserved satellite towns. Establishing more health facilities and upgrading existing schools will bridge service delivery gaps and improve residents' satisfaction.

5. Initiatives to improve air quality, access to parks, and effective waste management are essential for fostering a healthier living environment. Towns with environmental deficits, such as Kusaki-Yanga and Anagada, should be targeted for specific interventions.
6. Programs aimed at strengthening communal ties and improving neighborhood safety should be implemented, particularly in towns with weaker social cohesion and higher security concerns, such as Kubwa and Kuje.
7. The Satellite Town Development Agency should enhance civic engagement and governance effectiveness by involving residents in planning processes.
8. The government should encourage economic self-sufficiency by supporting small scale businesses in the satellite towns. Supporting local businesses through targeted incentives and providing micro-financing options will further decentralize economic activities and reduce dependence on the FCC for employment.

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APPENDIX I

QUESTIONNAIRE FOR RESIDENTS

DEPARTMENT OF GEOGRAPHY AND REGIONAL PLANNING,

FACULTY OF SOCIAL SCIENCES,

UNIVERSITY OF BENIN, BENIN CITY.

I am a student of the above-named department carrying out academic research on the subject matter: **EVALUATING THE FUNCTIONALITIES OF SATELITE TOWNS IN THE FEDERAL CAPITAL TERRITORY, ABUJA.** Please, kindly respond sincerely to the questions below by ticking (√) as appropriate. I pledge that the answers solicited by this questionnaire will be used strictly for the research purpose for which it is intended. Thank you.

Researcher: Kanu Kingsley Uchenna

SECTION A: Socio-demographic Profile

1. Neighborhood of Respondent: (1) Bwari [ ]; (2) Kubwa [ ]; (3) Kuje [ ]; (4) Karshi [ ]; (5) Dobi [ ]; (6) Anagada [ ]; (7) Kusaki-Yanga [ ].
2. Sex of Respondent: (1) Male [ ]; (2) Female [ ].
3. Age of Respondent: (1) Less than 20 years [ ]; (2) 21-35 years [ ]; (3) 36-50 years [ ]; (4) 51-65 years [ ]; (5) Above 65 years [ ].
4. Marital Status of Respondents: (1) Single [ ]; (2) Married [ ]; (3) Widowed [ ]; (4) Divorced/Separated [ ].
5. Educational Status of Respondent: (1) Non Formal Education [ ]; (2) Primary [ ]; (3) Secondary [ ]; (4) Tertiary [ ].
6. Employment Status of Respondent: (1) Employed [ ]; (2) Unemployed [ ].
7. Occupation of Respondent: (1) Civil Servant [ ]; (2) Businessperson [ ]; (3) Student [ ]; (4) Industrial Worker [ ]; (5) Others (Specify)………………….

8. Income Bracket of Respondent: (1) Less than ₦50,000 [ ]; (2) ₦50,000-₦100,000 [ ]; (3) ₦101,000-₦150,000 [ ]; (4) ₦151,000-₦200,000 [ ]; (5) ₦201,000-₦250,000 [ ]; (6) ₦251,000 and above [ ].

SECTION B: Functionality of Facilities and Livability of Satellite Towns in FCT Abuja

1. How long have you been resident in this neighborhood? (1) Less than 5 years [ ]; (2) 5-10 years [ ]; (3) 11-15 years [ ]; (4) 16-20 years [ ]; (5) Above 20 years [ ].
2. What is your household size? ……………………….
3. What kind of house do you live in? (1) Duplex [ ]; (2) Bungalow [ ]; (3) Rooming House [ ]; (4) Others (Specify)………………….
4. How many rooms does your household occupy? (1) 1-2 [ ]; (2) 3-4 [ ]; (3) 4-5 [ ]; (4) Above 5 [ ]
5. What is the ownership status of your house? (1) Owner [ ]; (2) Rented [ ].
6. If "rented", what is your annual rental? …………………………….
7. How would you rate the cost of housing in this neighborhood? (1) High [ ]; (2) Moderate [ ]; (3) Low [ ]
8. How would you rate your family's economic status? (1) Upper Class [ ]; (2) Middle Class [ ]; (3) Low Class [ ]
9. Do you like living here? (1) Yes [ ]; (2) No [ ]; (3) Indifferent [ ]
10. Rate your level of satisfaction with housing in this neighborhood: (1) Very Satisfied [ ]; (2) Satisfied [ ]; (3) Moderately Satisfied [ ]; (4) Not Satisfied [ ]
11. Rate the quality of your household's living conditions: (1) Very Good [ ]; (2) Good [ ]; (3) Average [ ]; (4) Poor [ ], (5) Very Poor [ ]

12. What is the distance from your place of residence to your place of work? (1) Less than 500m [ ]; (2) 500m – 1km [ ]; (3) 1km – 2km [ ], (4) 2km – 3km [ ], (5) Above 3km [ ]

13. What transportation means do you use when going to work? (1) Private car [ ]; (2) Public transit [ ]; (3) walking [ ], (4) Others (specify)…………………………..

14. How accessible is public transport in your neighborhood? (1) Very Accessible [ ]; (2) Accessible [ ]; (3) Moderately Accessible [ ]; (4) Not Accessible [ ]

15. Rate the quality of public transport in this neighborhood: (1) Very Good [ ]; (2) Good [ ]; (3) Average [ ]; (4) Poor [ ], (5) Very Poor [ ]

16. Rate the quality of road infrastructure in this neighborhood: (1) Very Good [ ]; (2) Good [ ]; (3) Average [ ], (4) Poor [ ], (5) Very Poor [ ]

17. Rate the availability and quality of transport systems in this neighborhood: (1) Very Good [ ]; (2) Good [ ]; (3) Average [ ], (4) Poor [ ], (5) Very Poor [ ]

18. Are you satisfied with your job? (1) Yes [ ]; (2) No [ ]; (3) Indifferent [ ]

19. Would you still keep the same job if you have to live farther away? (1) Yes [ ]; (2) No [ ]; (3) Not sure [ ]

20. Is there electricity supply in this neighborhood? (1) Yes [ ]; (2) No [ ]

21. Rate the level of electricity availability in this neighborhood: (1) Very Good [ ]; (2) Good [ ]; (3) Average [ ], (4) Poor [ ], (5) Very Poor [ ]

22. What is the major source of water supply in this neighborhood? (1) Pipe-borne [ ]; (2) Well [ ]; (3) River [ ], (4) Spring [ ], (5) Others (please specify) ……………………..

23. Who is responsible for the provision of potable water in this neighborhood? (1) Government [ ]; (2) Individual [ ]; (3) Private Companies [ ], (4) Others (specify) ……….

24. Rate the level of water supply in this neighborhood: (1) Very Good [ ]; (2) Good [ ]; (3) Average [ ], (4) Poor [ ], (5) Very Poor [ ]

25. How do you manage waste in this neighborhood? (1) Waste management board [ ]; (2) sanitary landfill [ ]; (3) public dump site [ ], (4) Incinerator [ ], (5) Others (specify) ………..

26. How safe is this neighborhood? (1) Very Safe [ ]; (2) Safe [ ]; (3) Not Safe [ ]

27. Rate the level of security of lives and properties in this neighborhood: (1) Very Good [ ]; (2) Good [ ]; (3) Average [ ], (4) Poor [ ], (5) Very Poor [ ]

28. Rate the availability of public schools in this neighborhood: (1) Very Good [ ]; (2) Good [ ]; (3) Average [ ], (4) Poor [ ], (5) Very Poor [ ]

29. Are there open spaces and parks in this neighborhood? (1) Yes [ ]; (2) No [ ]

30. Who is in charge of managing open spaces and parks? (1) Government [ ]; (2) Individuals [ ]; (3) Public-Private [ ], (4) Others (specify) ………………….

31. How satisfied are you with the availability and quality of open spaces? (1) Very Satisfied [ ]; (2) Satisfied [ ]; (3) Not Satisfied [ ],

32. Rate your level of satisfaction with the following services provided by satellite town development department: (Tick the appropriate response)

Services	Very Satisfied	Satisfied	Indifferent	Dissatisfied	Very Dissatisfied
Housing					
Roads					
Water					
Sanitation Facilities					
Electricity					
Relocation of Indigenes					
Resettlement Scheme					
Community Rehabilitation Scheme					

33. On the whole, rate the level of accessibility to services and infrastructures in this neighborhood: (1) Very good [ ], (2) Good [ ], (3) Moderate [ ], (4) Poor [ ], (5) Very Poor [ ]

34. Rate the conditions for acquiring or renting a house here: (1) Very Stringent [ ], (2) Stringent [ ], (3) Less stringent [ ], (4) Not stringent [ ].

35. Describe the cost of acquiring or renting this house: (1) Highly Unaffordable [ ], (2) Unaffordable [ ], (3) Affordable [ ], (4) Highly affordable [ ]

36. What is the predominant source of water supply in your apartment? (1) Water vendors [ ], (2) Wells outside the building [ ], (3) Borehole within the estate [ ], (4) Others________

37. On the whole, how would you rate the functionality of facilities in this neighborhood? (1) Very good [ ], (2) Good [ ], (3) Moderate [ ], (4) Poor [ ], (5) Very Poor [ ]

SECTION C: Role of Satellite Towns in Urban Development and Reduction of Population Pressure

1. Do you think overpopulation is a problem in the FCT, Abuja? (1) Yes [ ]; (2) No [ ]; (3) No Idea [ ]

2. Rate the population volume in FCT, Abuja: (1) High [ ]; (2) Average [ ]; (3) Low [ ]

3. Is the development of satellite towns an effective way of reducing the population pressure in FCT, Abuja? (1) Yes [ ]; (2) No [ ]; (3) No Idea [ ].

4. Rate the effectiveness of satellite towns in reducing population pressure in Abuja FCT: (1) Very Effective [ ]; (2) Effective [ ]; (3) Moderate [ ], (4) Barely Effective [ ], (5) Not Effective [ ].

5. Are there incentives for people to relocate to satellite towns in FCT, Abuja? (1) Yes [ ]; (2) No [ ]; (3) No Idea [ ].

6. If yes, what are these incentives? (1) Cheaper Housing [ ]; (2) Improved quality of life [ ]; (3) Presence of and easy access to urban infrastructure [ ], (4) Others (specify) …………….

7. How would you rate the current population of Abuja since the development of satellite towns? (1) Increasing [ ]; (2) Normal [ ]; (3) Decreasing [ ]

8. How would you rate the contribution of satellite towns to the development of urban and rural areas in Abuja? (1) Very Good [ ]; (2) Good [ ]; (3) Average [ ], (4) Poor [ ], (5) Very Poor [ ].

9. How important are satellite towns for the urban development of FCT, Abuja? (1) Very Important [ ]; (2) Important [ ]; (3) Not Important [ ].

10. Rate the ease of access to facilities in FCT, Abuja since the development of satellite towns: (1) Very Easy [ ]; (2) Easy [ ]; (3) Moderate [ ], (4) Not Easy [ ].

11. In your opinion, what is your level of satisfaction on the neighbourhood quality in the satellite town? (1) satisfied [ ]; (2) not satisfied [ ]; (3) very dissatisfied [ ]

SECTION D: Functionality of Satellite Towns and the proliferation of illegal settlements in Abuja

1. Rate the functionality and effectiveness of satellite towns in the study area: (1) Highly Functional [ ], (2) Moderately Functional [ ], (3) Not Functional [ ]
2. Are there slums and illegal settlements in this neighborhood? (1) Yes [ ]; (2) No [ ]; (3) No Idea [ ]
3. In your opinion, what is responsible for the proliferation of illegal settlements in Abuja? (1) Inadequate Housing [ ]; (2) Expensive Housing [ ]; (3) Underdevelopment of satellite towns [ ], (4) Others (Specify) ………………………
4. Have you ever been involved in any Town planning Scheme or Master Planning in your Neighbourhood? (1) Yes [ ]; (2) No [ ]
5. How do you foresee your Satellite Town in the coming Future (1) A Suburb of the FCT [ ]; (2) Self Contained City with a growing Economy [ ], (3) Others (Specify)_______________

APPENDIX II

INTERVIEW GUIDE FOR MANAGEMENT STAFF OF SATELLITE TOWN AGENCY

DEPARTMENT OF GEOGRAPHY AND REGIONAL PLANNING,

FACULTY OF SOCIAL SCIENCES,

UNIVERSITY OF BENIN, BENIN CITY.

I am a PhD student of the above-named department carrying out academic research on the subject matter: **EVALUATING THE FUNCTIONALITIES OF SATELITE TOWNS IN THE FEDERAL CAPITAL TERRITORY, ABUJA.** Please, kindly respond sincerely to the questions below by ticking (√) as appropriate. I pledge that the answers solicited by this questionnaire will be used strictly for the research purpose for which it is intended.

Thank you.

Researcher: **Kanu Kingsley**

SECTION A: Demographic Profile of Respondent

1. Name of Respondent………………………………….
2. Respondents' Department of work ……………………….
3. Designation of Respondent ………………………….
4. Number of Satellite towns in the Federal Capital Territory, Abuja………………………….
5. What are the functions of satellite towns in Abuja?
6. To what extent have they achieved their functions?
7. What is the level of infrastructural provision in the satellite towns?
8. Why are there illegal settlements in the FCT, Abuja?
9. What are the challenges facing satellite towns in Abuja?
10. How can these challenges be addressed?

APPENDIX III

Principal Component Analysis (PCA) for Livability and Quality of Life in Satellite Towns

Communalities

	Initial	Extraction
Affordability of housing	.286	.256
Accessibility of healthcare from place of residence	.690	.657
Safety of neighborhood	.757	.765
Rating of emergency response time for police, fire and medical services	.431	.138
Cost of living	.580	.728
Rate the availability of educational facilities	.758	.676
Rate the quality of schools	.692	.679
Rating of air quality	.582	.658
Accessibility of parks and recreational centers	.723	.643
Effectiveness of waste management	.735	.739
Availability of basic utilities (electricity)	.592	.669
Availability of water	.597	.754
Quality of road infrastructure	.673	.685
Accessibility of public transport	.604	.402
Traffic congestion in ST	.722	.842
Rating of sense of community	.579	.441
Level of satisfaction with quality of life	.685	.633
Quality of road linkage between ST and FCT	.768	.651
Level of accessibility to cultural facilities	.838	.894
Population density in ST	.609	.624
Frequency of participation in community decision making	.628	.720
Effectiveness of local authority in managing urban growth and development	.814	.761

Extraction Method: Principal Axis Factoring.

Factor Matrix[a]

	Factor						
	1	2	3	4	5	6	7
Affordability of housing							
Accessibility of healthcare from place of residence		-.580	-.411				
Safety of neighborhood		-.685					
Rating of emergency response time for police, fire and medical services							
Cost of living					.598		
Rate the availability of educational facilities	.767						
Rate the quality of schools	.620						
Rating of air quality	.592						
Accessibility of parks and recreational centers	.504	.568					
Effectiveness of waste management	.506	.635					
Availability of basic utilities (electricity)			.574	.479			
Availability of water			.564				
Quality of road infrastructure	.705						
Accessibility of public transport	.456						
Traffic congestion in ST	.445			-.643			
Rating of sense of community			.465				
Level of satisfaction with quality of life	.674						
Quality of road linkage between ST and FCT	.713						
Level of accessibility to cultural facilities	.556	.461	-.516				
Population density in ST		.555		-.409			
Frequency of participation in community decision making			.402	.547			
Effectiveness of local authority in managing urban growth and development	.744						

Extraction Method: Principal Axis Factoring.
a. 7 factors extracted. 24 iterations required.

Structure Matrix

	Factor						
	1	2	3	4	5	6	7
Affordability of housing						.492	
Accessibility of healthcare from place of residence					-.554	.467	.440
Safety of neighborhood	.482					.595	.480
Rating of emergency response time for police, fire and medical services							
Cost of living					.833		
Rate the availability of educational facilities	.616			.547			
Rate the quality of schools	.734						
Rating of air quality	.758						
Accessibility of parks and recreational centers		.704	.486				
Effectiveness of waste management		.759					
Availability of basic utilities (electricity)				.565			-.436
Availability of water				.800			
Quality of road infrastructure	.583			.627			
Accessibility of public transport				.467			
Traffic congestion in ST			.898				
Rating of sense of community		-.428					
Level of satisfaction with quality of life			.427	.641			
Quality of road linkage between ST and FCT	.526				-.408	.490	
Level of accessibility to cultural facilities		.913					
Population density in ST			.535		.525		
Frequency of participation in community decision making							-.817
Effectiveness of local authority in managing urban growth and development	.505	.672			-.409		

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.

Factor Correlation Matrix

Factor	1	2	3	4	5	6	7
1	1.000	.164	.125	.227	-.163	.163	.200
2	.164	1.000	.181	.062	-.049	.019	-.047
3	.125	.181	1.000	.181	.052	-.009	-.041
4	.227	.062	.181	1.000	-.170	.134	-.180
5	-.163	-.049	.052	-.170	1.000	-.227	-.107
6	.163	.019	-.009	.134	-.227	1.000	-.026
7	.200	-.047	-.041	-.180	-.107	-.026	1.000

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.