

The Influence of Social Infrastructure on the well-being of Residents in Federal Capital Territory (FCT), Nigeria

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Abstract

Social infrastructure are essential physical facilities, social systems and services crucial for sustaining healthy communities. This study examines the influence of social infrastructure on the well-being of residents in the Federal Capital Territory (FCT), Nigeria, against the backdrop of rapid urbanisation, population growth, and increasing infrastructural deficits. The study adopts a quantitative research approach, using household-level data collected through structured questionnaires administered to a sample of 425 respondents. A multi-stage sampling technique was employed, while descriptive statistics, correlation analysis, and chi-square tests were used to analyze the data. Findings reveal a highly skewed spatial distribution of social infrastructure, with a concentration in Phase I districts such as Maitama, Wuse, Asokoro, and Garki, while areas like Guzape and other developing districts remain underserved. Additionally, the physical condition of existing facilities is largely rated fair, and poor in some cases, reflecting significant levels of infrastructural decay. Despite these challenges, residents reported moderate levels of well-being, partly due to reliance on alternative service providers. Importantly, the study establishes a strong and statistically significant positive relationship between social infrastructure and residents' well-being ($r = 0.95$, $p < 0.05$). The study concludes that adequate provision, equitable distribution, and proper maintenance of social infrastructure are essential for improving residents' well-being and achieving sustainable urban development in the FCT. It recommends increased investment, public-private partnerships, proactive planning, and community participation in infrastructure development to bridge existing gaps and enhance livability.

Keywords: Social infrastructure; Well-being; Urban development; Federal Capital Territory (FCT)

1. Introduction

Provision and maintenance of adequate social infrastructure have attracted significant global attention over the last two decades, largely driven by the collective commitment of nations to achieve the Sustainable Development Goals (SDGs) (Jorgensen & Siegel, 2019). Improved infrastructural development is a catalyst for attaining the SDGs. It prepares settlements to be more inclusive, safe, resilient, and sustainable. While sufficient physical infrastructure such as road network, communication, and power lines enhances urban form and functions; social infrastructure are essential to ensure social well-being of people and improve livability of human settlements (Adeshina, *et al.*, 2025). Historically, the development of cities depends on critical physical and social infrastructure. Urban areas with efficient system of infrastructure attract more investments and enjoy high competitiveness in the globalized world. Conversely, settlement with poor infrastructure are ravaged by retarded growth and weak economic base.

Growing social infrastructural deficit in cities of developing countries greatly influence the social well-being of residents (Calderon and Serven, 2010). In the Nigerian Federal Capital Territory (FCT), the poor state of social infrastructure is further exacerbated by unprecedented population growth and unplanned urbanisation. The trend has resulted in slummy communities with poor infrastructural services, increased fragility, and culminating in poor residents lived experiences. The burgeoning urban population in FCT and Abuja (the core city) has become a great source of threat to the existing physical and social infrastructure, and it affects the livability of many residents, particularly in satellite towns and villages (Seto *et al.*, 2014).

Abuja is the fourth most populous city in Nigeria after Lagos, Kano and Ibadan with over 4 million people

(Abubakar and Doan, 2010). Human population within the satellite towns is rapidly increasing at estimated rate of 20% annually, with increased pressure on the existing infrastructure (Satterthwaite, 2017). As a planned capital city, Abuja was conceived to have supporting infrastructure for each phase with a proposed population of 20,000, 585,000, 640,000 and 1.7 million for phases I, II III and IV respectively (AGIS, 2013). However, the city's population has increased steadily and spilled over to satellite towns; which were ill prepared for the sudden growth. This further deteriorates the available social infrastructure in the entire FCT. Also, the dearth of critical social amenities in some neighbourhoods of FCT influence health and well-being of the residents (Davern *et al.*, 2018). The manifestation of this is predominant in slummy nature of many settlements in FCT (Muggah, 2016).

The inadequate provision of and deteriorating social infrastructure in FCT is a major concern that hinders the overall development and well-being of residents. The trend of social infrastructure challenges in FCT has been characterized by insufficient provision, poor maintenance, and a growing gap between population growth and infrastructure development (Balogun and Onokerhoraye, 2017). Challenges are caused by a combination of factors, including inadequate funding and investment in social infrastructure, corruption and mismanagement of resources, rapid population growth, and inadequate policy frameworks for infrastructure development (Jiboye, 2011). As a consequence, the residents' quality of life is negatively impacted. They face difficulties in accessing essential services, such as education and healthcare facilities, resulting in low literacy and poor healthcare status, as well as inadequate opportunities for social and economic advancements (Gatti *et al.*, 2021). Furthermore, the inadequate social infrastructure also contributes to worsening poverty levels, inequality, and social unrest (Simon *et al.*, 2013). Addressing these challenges and improving social infrastructure in FCT is crucial for sustainable development and the well-being of the population.

At inception, Abuja infrastructure master plan was designed with underground armoured cable for electricity distribution and a central system with a communal cesspit tank for sewage disposal. This provision benefited the developed areas under phase I, such as Garki Areas 1 and 3, Garki II, Wuse Zones 1 to 6, Wuse II, Asokoro, and Maitama. However, neighbourhoods in phase II and III, such as Jabi, Lugbe, Galadima, Gwarimpa, Katampe, Life Camp, Apo, Karu, Kado, Galadimawa and the new

estates, are not connected to the sewerage system or the national grid via underground armoured cable. Furthermore, facilities earmarked for health and educational services have become insufficient in most areas. For instance, there is no public elementary or secondary school in Wuse Zones 5 and 7. The spatial inequality in location of social infrastructure affects the inclusiveness of Abuja as a city for all Nigerians. It manifested in the dualistic nature of the city, as many drivers, gardeners, and house-helpers who serve the executives in the city centre, live in adjoining slums to the city.

Despite the rapid growth of settlements in FCT and the essential role of social infrastructure in the region, there is a dearth of empirical evidence in evaluating the influence of it on the residents' well-being and communities' livability. Over the years, there have been a few attempts to investigate the contributions of urban infrastructure to urban livability from urban residents' perspective, particularly in Abuja. Though many authors have discussed issues hinged on social infrastructure provisions in other Nigerian cities (Calderon and Serven, 2010; Abubakar, 2014; Ojeje and Ododo, 2018) but the issue has not been given empirical attention in FCT. Therefore, it is against this backdrop that the study aims to examine the influence of social infrastructure (health and education) on residents' well-being in the FCT. The objective is two-fold: first it studies the spatial distribution pattern of the social infrastructure, and secondly, it examines their influence on the well-being of the residents of FCT. This is with a view to recommend improved infrastructural management and governance strategies in the study area, in line with global best practices.

2. Literature Review: Conceptual Underpinning and Theoretical Framework

2.1 Concept of Social Infrastructure

Conventional understandings of infrastructure tend to focus predominantly on "hard" engineering structures, such as transportation networks (for example, highways and railways), communication systems (including telephone and internet services), as well as water supply and sewage systems (Orire *et al.*, 2025). Recently, social infrastructure is a concept that has gained increasing attention; it encompasses the physical and organisational structures that support the well-being and functioning of a community. It includes a wide

range of facilities, spaces, and services that promote social interaction, community engagement, and provision of essential services to the public. (Manggat, Zain and Jamaluddin, 2018). According to Latham and Layton (2022), social infrastructure is often defined as "the physical places and organisations that shape the way people interact". These may include public spaces such as health centre, parks, libraries, community centers, and public transportation systems, as well as education, and social service facilities. Social infrastructure plays a crucial role in shaping social capital, maintaining high quality of urban life, and improving community resilience. Similarly, Saeid *et al.* (2015), view social infrastructure as both tangible and intangible, "hard" or "soft" public assets, that deliver critical services to society. Beeferman and Wain (2016) conceptualize social infrastructure as the collection of equipment, facilities, structures, and related assets that are essential for individuals to flourish and actively engage in societal roles associated with well-being. This encompasses the range of services that constitute the vital foundation of any functional and habitable society.

Social infrastructure is broadly understood as a set of systems that facilitate the effective functioning of society while enhancing the social well-being of individuals. It is commonly conceptualized as human-made structures designed to support and sustain the delivery of goods and services within communities (Fekete, 2011). Its role in fostering healthy, livable environments suitable for both residence and work is widely acknowledged. In the urban context, social infrastructure encompasses key elements that generate meaningful and positive outcomes for residents' well-being (Teriman *et al.*, 2010). Consequently, many countries in the Global North have achieved significant development by prioritizing the provision of essential social infrastructure as a driver of economic growth (Omoruyi, 2015).

2.2 Concept of Well-being

The concept of well-being is a multifaceted and complex construct that entails various aspects of an individual's life. Well-being goes beyond the absence of illness or disease and entails the overall state of an individual's mental, physical, emotional, and social health (Babalola, *et al.*, 2022). It focuses on a holistic sense of thriving in life; a sense of purpose, autonomy, personal development, and the quality of relationships with others. From a psychological perspective, social well

-being encompasses both hedonic and eudemonic aspects. Hedonic well-being refers to the presence of positive emotions, life satisfaction, and the absence of negative emotions (Balaguer *et al.*, 2017). While eudemonic well-being roughly translates to human flourishing resulting from virtuous activities (such as bravery and generosity).

Diener (2006), posited a comprehensive definition of hedonic well-being as: "all of various types of evaluations, both positive and negative, that people make of lives. It includes reflective cognitive evaluations, such as life satisfaction and work satisfaction, interest and engagement, and affective reactions to life events, such as joy and sadness. Thus, subjective (hedonic) well-being is an umbrella term for the different valuations people make regarding their lives, the events happening to them, their bodies and minds, and their circumstances." On the other hand, eudemonic well-being proponents argued that well-being transcends mere subjective feelings of life or work satisfactions, as not all fulfilled human desires result in well-being, even if they produce positive feelings (Holte *et al.*, 2014). As noted by Serie *et al.* (2021) to attain well-being, it is crucial to fulfill three basic psychological needs: relatedness (belonging/attachment to others, and intimacy), autonomy (self-direction), and competence (a sense of mastery). Therefore, any social infrastructure service that cannot guarantee the three core psychological needs will not improve human well-being.

2.3 Resource dependency theory

Resource Dependency Theory posits that access to and control of resources are essential for the long-term survival of organizations (Ojeje & Adodo, 2018). From this perspective, it can be hypothesized that the perception of government officials, policymakers, and administrators regarding this theory significantly influence their decisions and regulatory responses, particularly in the allocation of funds for targeted societal interventions aimed at enhancing residents' well-being (Osuji, 2016). In line with the theory's assumptions, the provision of social infrastructure within an environment is expected to improve residents' well-being, while the availability of adequate infrastructure, even under conditions of resource scarcity, contributes to the development of a livable and sustainable society.

Furthermore, as highlighted by Ojeje and Adodo (2018), Resource Dependency Theory is grounded in economic sociology, which emphasizes that organizations are embedded within networks of economic interdependence and social relationships (Granovetter, 1985). Within this framework, the theory is applied to elucidate the relationship between social infrastructure provision and residents' well-being. Society can be conceptualized as an organization that depends on a range of resources—both environmental and social—for its continued functioning and development. In the absence of sufficient provision of these resources, particularly social infrastructure inputs, the livability and habitability of society may be compromised. This underscores the notion that the effectiveness and efficiency of any system are largely contingent upon the quality, quantity, and strategic deployment of its resource base to generate positive societal outcomes.

2.4 Theory of competitiveness

The theory of competitiveness has long been a central focus in the literature of economists and policymakers (Markatou, 2015). Its underlying assumptions are closely linked to the role of social infrastructure in shaping residents' well-being, as the provision of high-quality infrastructure constitutes a foundational element that fosters development through networks of interconnected systems. Countries seek to enhance their comparative advantage through strategic investments, particularly in social infrastructure such as education and healthcare. These investments contribute to the development of human capital, thereby improving efficiency and productivity, and enabling nations to compete effectively with emerging economies in meeting global standards. Furthermore, such investments strengthen societal resilience and overall national capacity. Competitiveness, in this context, reflects a country's ability to sustain consistently high levels of growth in GDP per capita (UNDP, 2016).

3. The Study Area

The study was carried out in the Federal Capital City (FCC), which comprises four distinct phases—

Phases I, II, III, and IV—arranged concentrically, with Phase I forming the central core. The FCC represents the nucleus of the Federal Capital Territory (FCT), situated at the geographical center of the country, and covering an area of approximately 8,000 square kilometers. It lies between latitudes 7.0251°N and 9.0201°N of the Equator, and longitudes 5.0251°E and 7.0391°E. As illustrated in Figure 1, Abuja is bordered by Kaduna State to the north, Kogi State to the southwest, Niger State to the west, and Nasarawa State to the east (Ojiako et al., 2015).

The implementation of the master plan initially focused on Phase I, which has since been completed and encompasses key residential districts such as Maitama, Wuse, Garki, Asokoro, and Guzape. These areas predominantly accommodate the city's elite population, alongside numerous foreign embassies, international organizations, and multinational corporations. Phase II was originally designed to house approximately 500,000 residents across fifteen residential districts; however, only five—Kado, Jabi, Utako, Wuye, and Gudu/Apo—have reached near-full development (IPA, 1979). See Figure 2.

Abuja, the Federal Capital City, was formally established on 3 February 1976 following its recommendation to the military government as the most suitable location for the nation's seat of power, largely due to the severe congestion in Lagos at the time. In addition, Lagos functioned as both the commercial and industrial hub of the country, with primary access to the sea since 1914, thereby performing the dual role of state and federal capital (Abubakar, 2014). The Federal Capital Territory (FCT) is bordered by Niger, Nasarawa, Kaduna, and Kogi States, from which it was created. Of these, Niger State contributed the largest land area, 6,738 square kilometers (84.2%), followed by Nasarawa with 903.8 square kilometers (11.3%) and Kogi with 358.2 square kilometers (4.5%) (Akingbade, 2012).

According to the 2006 national census, Abuja had a population of 776,298, ranking it among the ten most populous cities in Nigeria. The United Nations (2012) reported that the city experienced a population increase of 139.7% between 2000 and 2010, making it the fastest-growing city globally during that period. By 2015, Abuja was estimated to have maintained an annual growth rate of at least 35%, thereby sustaining its status as Africa's fastest-growing city and one of the most

rapidly expanding urban centers worldwide. Furthermore, Obiadi, Ezezue, and Uduak (2019) estimated that by 2016, the Abuja metropolitan area had reached a population of approximately six million,

ranking it as the fourth most populous metropolitan area in Nigeria after Lagos, Kano, and Ibadan.

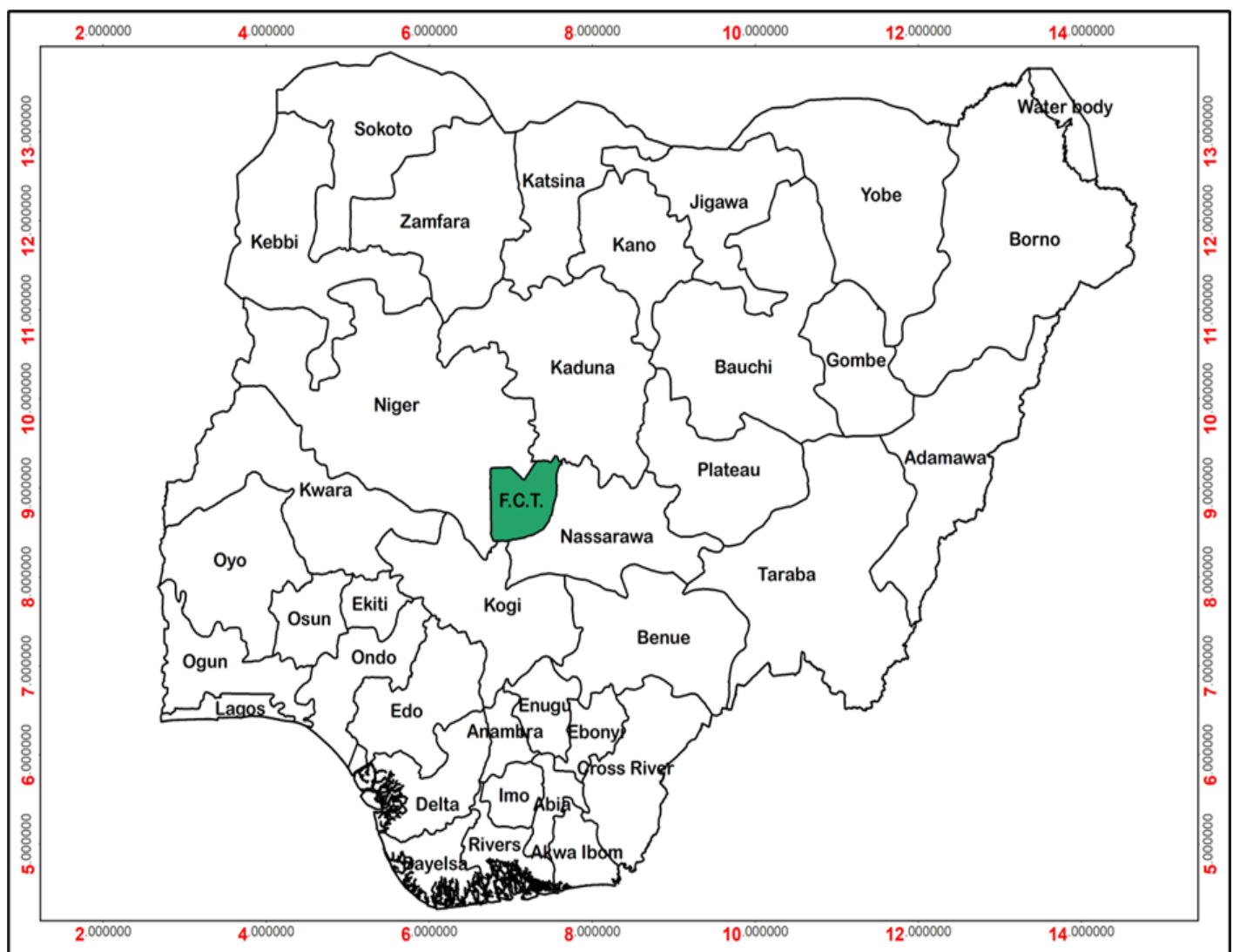


Figure 1: Federal Capital Territory in the context of Nigeria

4. Methodology

Household served as the unit of analysis. It is imperative to note that the population of the study area was unknown, since 2006 National population census conducted in Nigeria were not disaggregated into neighbourhoods. Thus, to collect data scientifically from the research locale, a building demographic survey was carried out using Google Earth and ArcGIS to arrive at 1910 buildings. The average household size in Abuja and the Nigeria National average household size, which stipulated six persons per family (6ppf) and five households per building (5hhpb), National Bureau of statistics survey (NBS, 2016). Therefore, the estimated population of the study area was com-

puted at 11,460 persons.

Meanwhile, Taro Yamane (1967) sample size formula was adopted, with additional 10% which filled and covered the shortfalls that arouse from wrong filling or missed results, hence 425 of the estimated research population was taken for questionnaire administration using Likert scale measurement and descriptive statistics tools to unravel the influence of social infrastructure on the well-being of residents in the Federal Capital Territory.

The study area was grouped into five neighborhoods for data gathering on a household basis using multi-stage sampling technique. Simple random sampling technique was used to extrapolate data from selected district while chi square was used to detect the relationship that

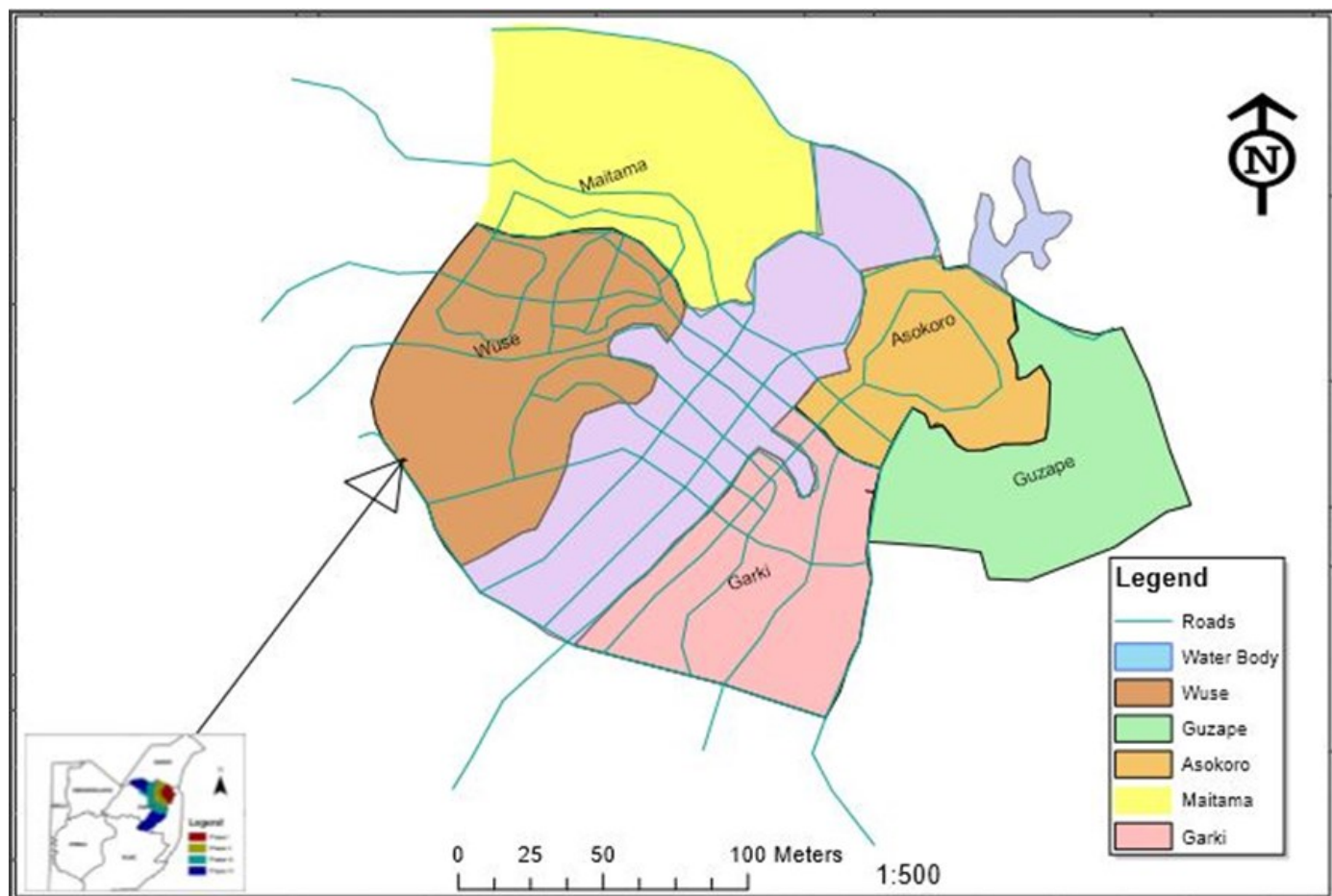


Figure 2: Phase I in context of Federal Capital Territory

exist between social infrastructure and residents’ well-being. Also, correlation analysis was conducted to examine the strength of the relationship between social infrastructure and well-being in FCT.

5. Results and Discussions

5.1 Spatial distribution and condition of social infrastructure in FCT

A reconnaissance survey and detailed cluster analysis conducted on the existing social infrastructure in the study area indicate a skewed distribution. Social infrastructure is clustered in phase one of Abuja, and widely dispersed in other parts of the FCT. It was observed that in all the study neighbourhoods, there is one primary school each except that of Guzape district. Also at the district level, there are general hospitals servicing each neighbourhood within the districts. However, in Guzape district, there is no general hospital in place. Hence, it is necessary to provide education and health facilities in neighbourhoods within Guzape district. Fur-

thermore, primary health care centers should be provided at all neighbourhood levels within the FCT as the study noted that the Primary Healthcare Centres (PHCs) are missing in most of the neighbourhoods. Plate 1 and Figure 3 show the satellite imagery of the study areas demarcated within phase one of the Federal Capital Territory. The studied settlements include: Wuse area, demarcated in blue, Maitama in red, Asokoro in Green, Garki in Brown and Guzape in Purple.

On the adequacy and physical condition of the available social infrastructure, the findings reveal adequate education facilities at the neighbourhood level; while the health facilities were only available at the district level which shows the inadequate distribution of health care centers, at the lowest level of development. The checklist result used to ascertain the physical states of social infrastructure revealed that 2 (1.9%), 5 (4.9%), 10 (9.8%), 70 (68.6%) and 15 (14.7%) of the infrastructure, were in excellent, good, fair, poor, very poor conditions as presented in Chart 1. This assertion is supported

by the evidence presented in Plate II, which illustrates the condition of a classroom within the Wuse neighbourhood. The observed state is attributable to a high degree of physical obsolescence affecting both the

building components and associated facilities of the existing infrastructure. This condition stands in clear contrast to the standards prescribed for neighbourhood design in the Abuja Master Plan.



Plate I: Satellite image of FCC in Phase I

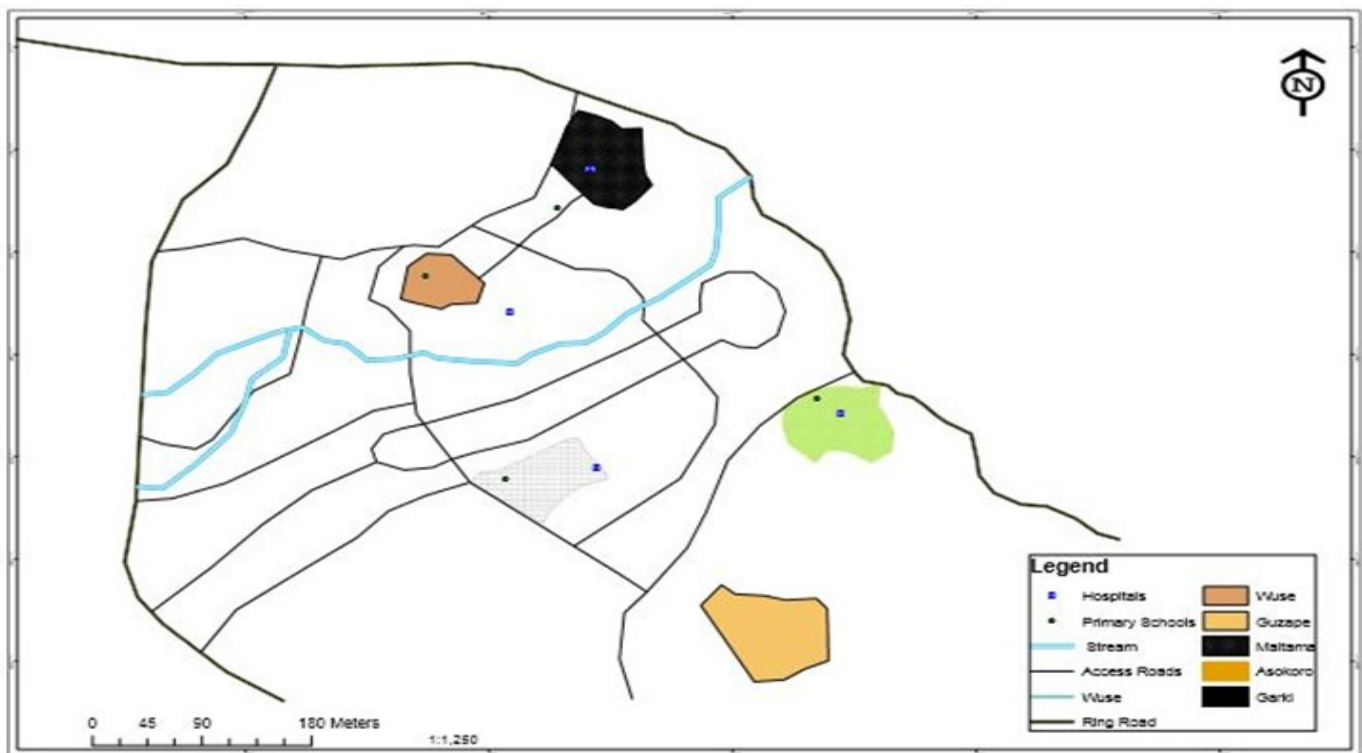


Figure 3. Social Infrastructure Distribution in the FCT

Source: Authors' (2025)

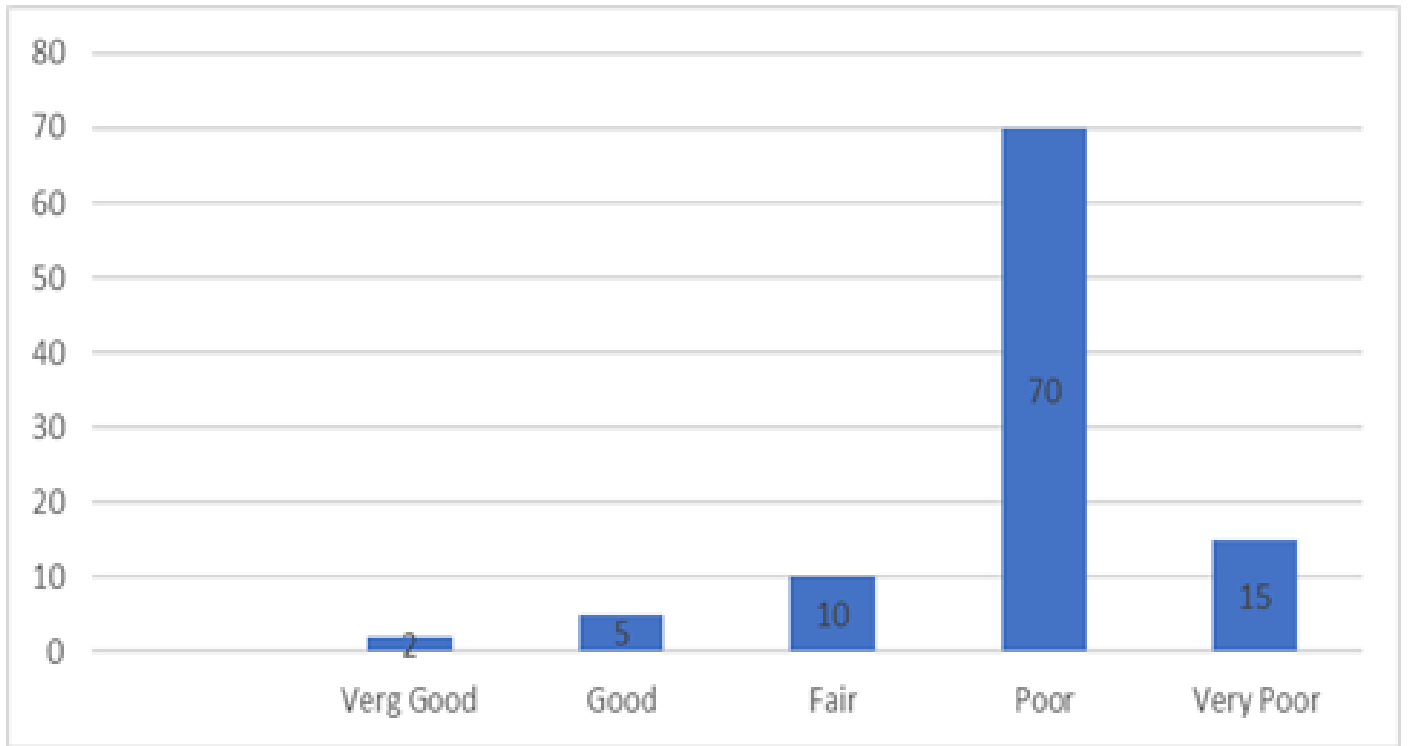


Chart 1: Condition of Infrastructure in Wuse, Abuja



Plate II: LEA Primary School Wuse, Abuja

The condition of social infrastructure in Garki area was perceived to be in a very good state (6.1%), good (7.1%), fair (37.0%), poor (30.8%) and very poor (12.3%). Also, Plate II shows the current state of a classroom in Garki area. In sum, social infrastructure condition in Garki was rated as either fair or poor since they have the highest percentage from the assessment. The results in Asokoro indicate that 10.8% accounted for very good, 41.4% for good, 29.7% for fair and 18.0% for poor while none can be regarded as very poor. According to the check list of assessment report, Asokoro compared to Wuse and Garki had better condition of social infrastructure. In the case of Maitama, 9.2% of the social infrastructure were in very good condition, 53.9% perceived them as good and the remaining 36.8% perceived them as in fair condition. The general observation in the study area shows that the condition of infrastructure was good and fair since these had the highest representation of the percentage rating.

5.2 Influence of social infrastructure on well-being of residents in Abuja, FCT

The study investigated the influence of social infrastructure on residents' well-being across various dimensions of daily life, with particular emphasis on the delivery of social services. Key services, including healthcare and educational facilities, were utilized to evaluate residents' perception of their overall well-being within the community, thereby capturing the subjective dimension of the analysis. Notably, some respondents indicated reliance on alternative service providers to supplement deficiencies in existing infrastructure. To capture the perception, a Likert scale rating, ranging from strongly agreed, agreed, slightly agreed, neutral (neither agreed nor disagreed), slightly disagreed, disagreed, to strongly disagreed, were employed.

In Wuse, 29.4% of respondents strongly agreed, 39.2% agreed, 9.8% slightly agreed, 14.7% expressed mixed opinions, and 4.9% slightly disagreed, while no respondent selected disagreed or strongly disagreed options. In Garki, 17.2% strongly agreed, 55.5% agreed, 30.8% slightly agreed, 12.3% reported mixed opinions, and 7.4% slightly disagreed, with no representation for disagreed and strongly disagreed. In Asokoro, 31.5% strongly agreed, 45.1% agreed, 9.0% slightly agreed,

5.4% expressed mixed opinions, 6.3% slightly disagreed, and 2.7% disagreed, while none strongly disagreed. Similarly, in Maitama, 46.5% strongly agreed, 32.8% agreed, 15.7% slightly agreed, 10.5% had mixed opinions, and 1.3% slightly disagreed, with no respondents indicating disagreement or strong disagreement. In Guzape, 14.5% strongly agreed, 27.2% agreed, 54.5% slightly agreed, and 3.6% expressed mixed opinions, while no respondents selected slightly disagree, disagree, or strongly disagree.

Overall, the findings summarised in Table 1 indicate that residents across the study locations reported relatively high levels of well-being. This outcome may be attributed to the presence of alternative service providers that compensate for the inadequacies in the provision of basic social infrastructure within the FCT. In general, the study establishes that the availability of social infrastructure significantly influences residents well-being, although the level of satisfaction varied across neighbourhoods depending on the extent and quality of infrastructure provision, as reflected in Table 1

5.3 Relationship between social infrastructure and well-being in the FCT

The social infrastructure index was correlated against the well-being figures of residents, and the result from the correlation as summarized in Table 2 shows how strongly the pair of variables are associated hence, the research established that there is relationship between social infrastructure and residents' well-being in the Federal Capital Territory. According to the result, the coefficient of correlation (ρ) of 0.95 which means there is a strong positive correlation between the two variables and the p value of 0.01 indicates that there is a statistically significant relationship between social infrastructure and resident's well-being in the FCT. Hence, it indicates that social infrastructure affects the residents' well-being in the FCT, Abuja,

Table 1. Living Conditions of Residents in the Neighbourhood

General living conditions	Wuse		Garki		Asokoro		Maitama		Guzape	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Strongly Agree	30	29.4	14	17.2	35	31.5	35	46.5	8	14.5
Agree	40	39.2	45	55.5	50	45.1	25	32.8	15	27.2
Slightly Agree	10	9.8	25	30.8	10	9.0	12	15.7	30	54.5
Mixed or neither Agree or Disagree	15	14.7	10	12.3	6	5.4	8	10.5	2	3.6
Slightly Disagree	5	4.9	6	7.4	7	6.3	1	1.3	0	0
Disagree	0	0	0	0	3	2.7	0	0	0	0
Strongly Disagree	0	0	0	0	0	0	0	0	0	0
Total	102	100	81	100	111	100	76	100	55	100

Table 2. Spearman Correlation Table

		Spearman		Kendall	
		rho	p	Lower	Upper
				95% CI	95% CI
Social Infrastructure Index	Well-being	0.95	0.01	0.41	1.00

* p < .05

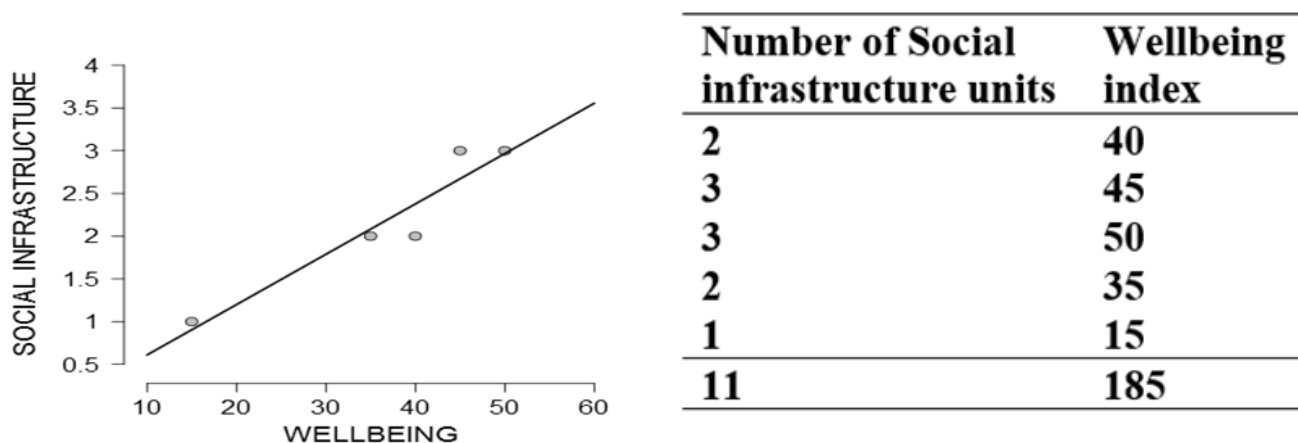


Figure 4: Correlation Plot

Source: Authors' fieldwork (2025)

6. Conclusion and Recommendations

6.1 Conclusion

This study examined the influence of spatial distribution and conditions of social infrastructure on well-being of residents in FCT. It concludes that having access to adequate social infrastructure positively correlated with better well-being of residents; potentially providing opportunities for greater social interactions. Essentially, the study increases our understanding of the influence of social infrastructure on well-being of people in the study area. However, it calls for new research to investigate the effectiveness of social infrastructure planning, service delivery, service quality, service capacities and socio-economic needs of Abuja. This would further aid decision-making and strategic planning across neighbourhoods in FCT, and ensure greater well-being of the people.

6.2 Recommendations

The following recommendations are suggested for the improvement of well-being of residents in FCT, Abuja through effective social infrastructure provision and maintenance:

1. Government through its relevant agencies saddled with the responsibilities of monitoring the implementation of physical development in the FCT should partner with private estate developers and communities to bridge the gap in adequate infrastructure provisions and maintenance.
2. Based on the analysis and findings of this study it is recommended that facilities such as primary health care centers and schools should be provided in the neighborhoods where such is lacking in the study area.
3. The study observed that most of the available social infrastructure are experiencing physical obsolescence especially education facilities, hence relevant authorities responsible for routine maintenance should swing into action in order to remedy the current trend. Nevertheless, more health facilities should be developed in the newly developing districts to reduce the pressure on the existing ones in phase one of the capital city and the education facilities in those areas should be properly equipped with all necessary facilities
4. The FCT administration should partner with private service providers to improve provision of schools and hospitals were necessary so as to improve residents well-being.
5. Unlike, Wuse, Garki, Maitama and Asokoro that have a considerable number of social infrastructure at the neighbourhood and district levels, Guzape district lacks these facilities. Hence, adequate attention should be given by relevant gov-

ernment agencies to implement the original design for social infrastructure provision in the spirit of spatial justice and equity and also in order to maintain orderliness and compliance with development control standards.

6. The government should be proactive rather than reactive to solving problems of inadequate social infrastructure.
7. Residents should be carried along in planning and implementation of social infrastructure development in order to promote inclusion and improve residents well-being.

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