



INCLUSIVE CITY GROWTH AND THE POOR:

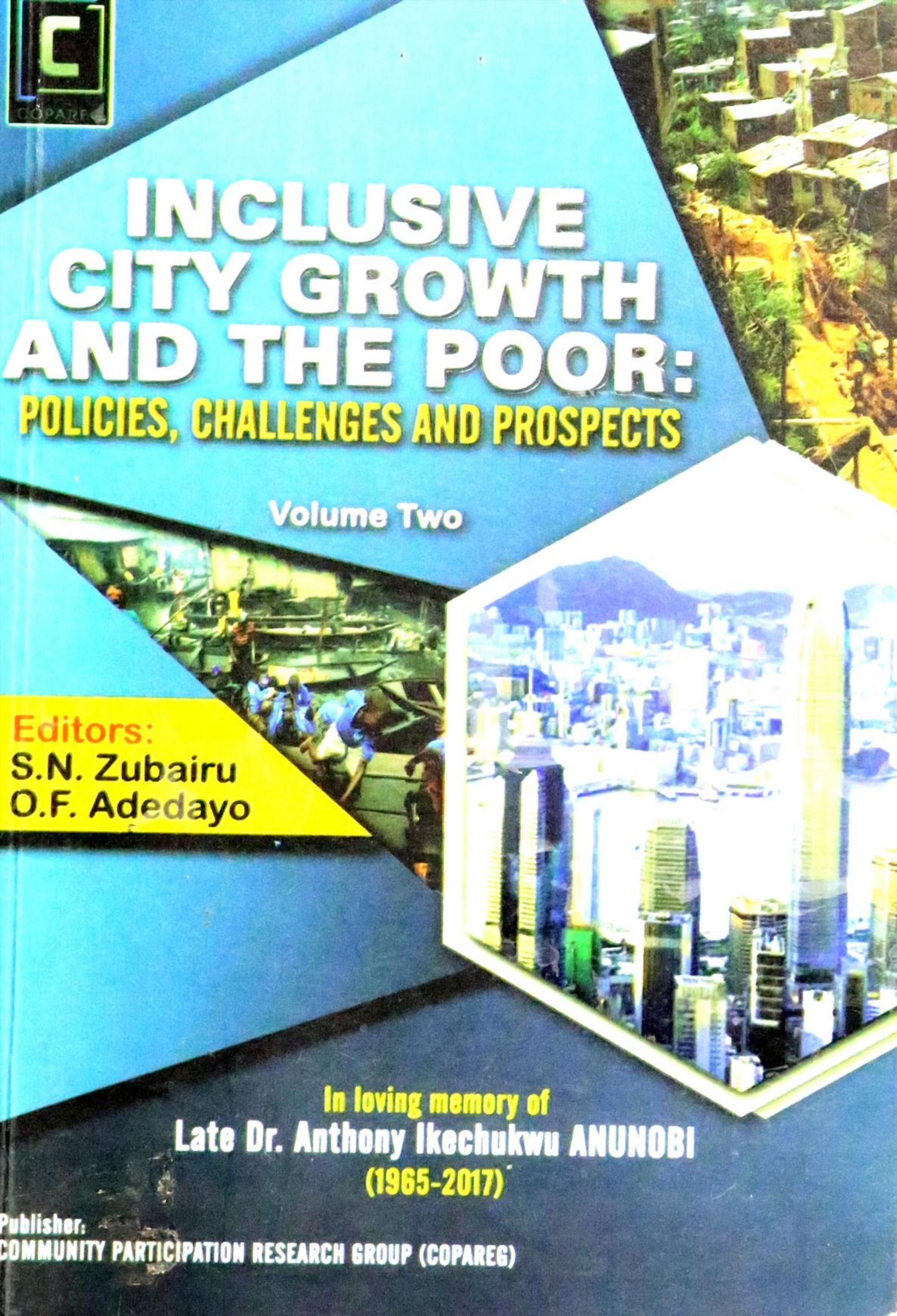
POLICIES, CHALLENGES AND PROSPECTS

Volume Two

Editors:
S.N. Zubairu
O.F. Adedayo

In loving memory of
Late Dr. Anthony Ikechukwu ANUNOBI
(1965-2017)

Publisher:
COMMUNITY PARTICIPATION RESEARCH GROUP (COPAREG)



*Inclusive City Growth and the Poor: Policies,
Challenges and Prospects*

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**In loving memory of
Dr. Anthony Ikechukwu ANUNOBI
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ISBN 978-978-54580-9-1

SUPPORT

We wish to thank the following individuals and corporate organisations that contributed to production of the book:

Arc. John Bassa,

Arc. Salihu Umar

Arc. NasiruAbubakarAjanah

Arc Hauwaldris

Arc Jiya David

Arc. Offiah Kenneth

Arc. AwuloBarka

Arc MogboNwando

Arc Benjamin Michael

Arc. JigoMicheal

Arc Terwase Timothy

Metrodec Design and Construction Ltd

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TRIBUTE

This book is dedicated to the memory of Late Dr. Anthony Ikechukwu ANUNOBI who dedicated his working life towards improving the quality of life of the poor.

He was a man that preached and ensured that everyone he had dealings with enjoyed inclusiveness. As a trained architect he ensured that he undertook designs that had minimum negative impact on the environment and the livelihood of the people within the community. He was a typical example of a detribalized individual as evident with the mix of friends and community services he rendered.

Late Dr. Anthony Ikechukwu Anunobi had always been passionate about community integration and inclusiveness which was demonstrated in his leadership style as the Head of Department of Architecture, Federal University of Technology Minna, Nigeria, while he held sway and even in the community. He never discriminated against anybody. He shared the philosophy of COPAREG *that everyone has a role in the community/city and should be involved in the planning process.*

Late Dr. Anunobi will be remembered for his contribution towards the growth of Architecture in Nigeria with his involvement in the training of over 1500 students and graduates who are practicing within and outside Nigeria. His contribution to the Community Participation Research Group (COPAREG) team is what led the team to produce the first Book in its many series of books and conferences to come by the group.

INCLUSIVE CITY GROWTH AND THE POOR: Policies, Challenges and Prospects

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Published by:

Community Participation Research Group (COPAREG)

Federal University of Technology

Main Campus, Gidan Kwano

Minna, Niger State, Nigeria.

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CHAPTER 22

The Effects of Spatial Distribution of Infrastructure on Residential Property Values in Minna

Adeogun, A. S., Sule, A. I., Idowu, O.O. & Raheem, W. M.

Introduction

The availability of infrastructure in any neighbourhood has great impact on the environment as well as neighbourhood. Greater concentration of infrastructural facilities in a few places is part of the spatial transformation that accompanies development. In fact, the main message of the World Bank's latest World Development Report "Reshaping Neighbourhood Development" (WDR 2009, UN HABITAT 2008) is that concentration of infrastructure on one urban point will encourage unbalanced development. If infrastructure distribution is evenly done and properly monitored for effective functionality, then landed property, especially residential, by extension will appreciate in value and but, if otherwise the value depreciates.

Akogun, (2011) postulated that the availability of infrastructure in a neighbourhood has a significant influence on the rental value receivable on the property to the extent that, even when the rental value is soaring high there is still high demand for the property, but reverse is the case today because, what we see today are un-even and unbalanced distribution of infrastructure which is making some certain areas of urban setting to experience the flow of development while other areas are lagging behind. (Agbola, 2007; Fagbohun, 2007). This is buttressed by Aribigbola (2013) that our cities are characterized as one of the least aesthetically pleasing as a result of concentration of infrastructure facilities in one urban point areas. It is against this backdrop that this study is conducted to compare residential property rental values in planned (infrastructure dominated areas) and unplanned neighbourhoods (less or no infrastructure areas) of Minna metropolis so as to ascertain the difference in income from residential property investment.

With various planning challenges such as traffic congestion, slums, solid waste control, housing, pollution and among others, physical development of certain part of the cities such as Government Reservation Areas, New Layout Neighbourhoods as well as New Town Setting have been enjoying availability of functional infrastructure while in the unplanned urban sprawl, environmental pollution, shortage in modern basic facilities and broad base metropolitan decay has been the case (Aigbokan 2002).

Although, the concentration of neighbourhood infrastructure cannot be divorced from the political power undertone and the influence of able men "*cream of the societies*". Patchin (1994) as cited in Bello (2010) posit that people avoid properties that are located close to perilous facilities or properties that are contaminated because of lack of infrastructure, thus the full rental value of a property is usually affected by the heterogeneity characteristic of real estate. This characteristic might be intrinsic or extrinsic in nature. This view is supported by Bello & Bello (2008) who posited that the rental value of a residential property is essentially characterized by the inherent character of the property as a whole pack of goods and services; infrastructure inclusive, this shows that residential property transcends just shelter it as well incorporates the quality of the surrounding or neighbourhood.

The real estate developer needs to quickly recoup his invested funds. The effect of infrastructure on residential rental value relates to a particular region only, it will be unsustainable to make generalization on the effect of residential features on rental value (Owusu-Ansah, 2012) therefore these make a case for making individual isolated research for different geographical areas. Infrastructure provides the support on which the structure of development of residential real estate asset can be built upon. However, the social-economic growth and development of residential properties can only be completely achieved if development, availability, provision and even distribution of infrastructure are holistically implemented.

The Study Area

Minna became state capital of Niger State on 1st of April 1976, and translated to urban centre. It is located on Latitude 9° 37' North and Longitude 6° 33' East, based on the Master Plan, (MP). Minna city is rapidly growing in property investment and it enjoys infrastructure provision but not evenly distributed, the topography is mostly covered by

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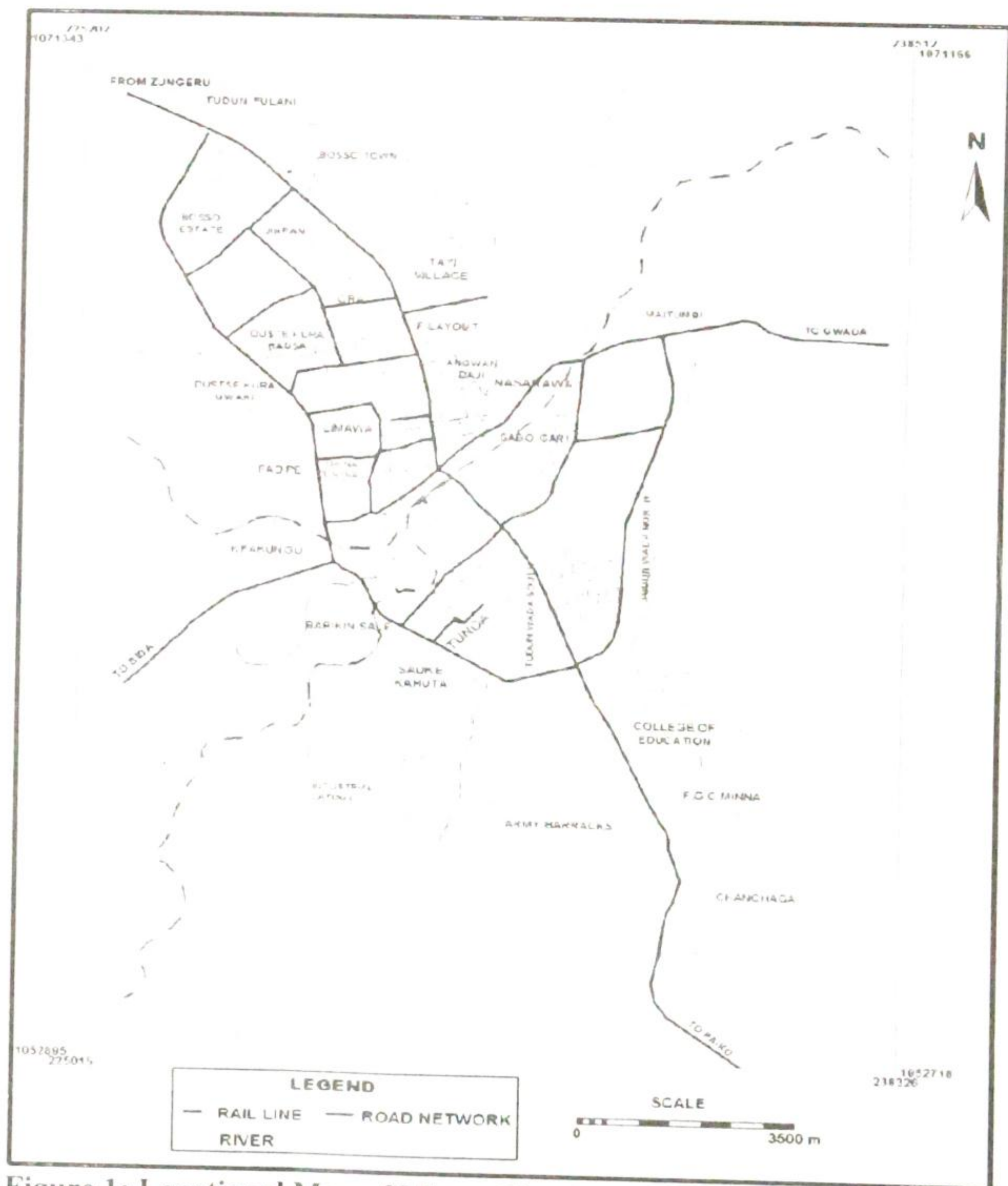
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gentle sloping plain to the central, southern and western section traverse railway lines, multiple road networks and good drainage system. Minna has a projected population 438, 827; rural-urban migration and proximity to Federal Capital Territory influence the population growth. Minna is blessed with some natural resources and small scale industries thrive in Minna with a fairly good economy. However, there are a lot of financial and educational institutions.



Source: Extract from Minna Metric Sheet (2015) as produce by Niger State Geographical Information System (NIGIS).

Literature Review

Infrastructure is described as social “overhead capital”, and it include public utilities such as power, telecommunication, water supply, sanitation and sewerage; and public works such as roads, dams, and drainage (World Bank, 1994). World Health Organization (WHO 2001) updated the concept of infrastructure and relates the infrastructure to well-being of individual and family. In other word, the term infrastructure according to World Health Organization (WHO, 2001) viewed infrastructure as services, facilities, devices and equipment that are necessary and needed or desired for physical, mental, health and social well-being of the family or individual. Also WHO has conceptualized infrastructure to include sewage, sanitation, road, electricity, waste disposal, drainage and other public transportation systems.

Akinbabijo, O. B. (2012) indicate that road infrastructure significantly leads to poverty reduction in Africa. Canning & Pedroni (2008) indicate that there is a positive correlation between improved infrastructure and economic growth. There has been improved economic growth at 5% per annum in the recent past despite the World Economic Forum Global Competitiveness Index of 2012 – 2013 indicating that Africa remained the least competitive global region

Khan & Haupt (2006) state that one of the benchmarks used in the value of property is to have the minimal infrastructural services. Chulanova (2007) stated that the development of infrastructure is necessary and has become indispensable in contemporary societies for the development of real estate as it will enhance values of the property where education and healthcare are strategic factors for economic growth, social progress and the competitiveness of the country in global markets. Evidence suggests that inadequate infrastructure is an impediment to the rate of growth of property market investment in Africa, which has resulted in some African countries trailing behind other developing countries (Familoni 2010).

Also in Nigeria there are diverse views of infrastructure as provided by several authors. Nubi (2002) describes infrastructure as the totality or aggregate of all services facilities that permit a city to function efficiently and effectively. It is also seen as a wide range of economic and social facilities crucial to creating an enabling environment for economic growth and enhances quality of life. They include housing, electricity, pipe-borne

water, drainage, waste disposal, roads, sewage, health, education, telecommunications and institutional structures like police station, fire-fighting stations, banks and post office. Urban infrastructure encapsulate into a wide range of services and facilities, which include electricity, water, roads, waste disposal, drainage, communication, primary health services, schools and housing as the key ones (Ajibola et al 2013). These are more often provided by the government. The efficiency of any form of human activity system, including an urban area, largely depends on the provision of efficient infrastructural facilities and services (Babarinde, 1998). Oyenuga (2006) housing comprises immediate accommodation, environment and facilities like roads, water, electricity and a host of other facilities that make living comfortable to the dwellers.

Urban infrastructure, apart from being a major pointer of environmental quality, is a critical agent for the socio-economic development of an urban area (Okusipe, 1999, Okorongwu, 2006 and Tomlinson, 2001), infrastructure is the system of land-based physical assets and technology which collectively provide the enabling environment and deliver the services required to enhance economic growth and the quality of human life in the society.

Zakout (2006), stated that infrastructure is important to attain adequate and quality real estate and good quality of life for individuals especially in the construction of low cost housing. Urban infrastructure can be broadly broken down to different types which include water supply, sewerage, sanitation, urban roads, electricity drainage, waste disposal and other transport system.

Donald (2007) looked at infrastructure a little bit differently when he asserted that infrastructure is the physical structure and facility that is developed or acquired by public agencies to house government functions and provide necessary needs such as, water supply, waste disposal, transportation and similar services to facilitate the achievement of common social and economic objectives.

Determinant of Property Value

Olusegun. (2008) suggested that it is the shared aspiration for real estate that give rise to value, the opinion of Olusegun (2008) is limited because different individual tender to pay different price on the same property base on multiplicity of order variable that determine the value to the individual, However, Ajibola, Awodiran & Salu-Kosoko (2013) went further to postulated that the value of real estate is dependent on it utility, scarcity and

the effectiveness of demand, basically real estate importance relay on its ability to satisfy the aspiration and need of man economic, social, political and other craving .

Millington (2006) in his book introduction to property valuation put forward that value of a Property is the monetary worth obtainable from a person (s) with effective demand when the property is presented for sale by a willing seller, permitting for a reasonable time for negotiation (between buyer and seller) and with the full knowledge of the nature and use in which the land property is capable of being utilize. Appraisal Institute (2008) as cited in Oloke, Simon & Adesulu (2013) advocated that the basic factors shaping residential property value are not intrinsic in the commodity traded in the property market itself to which it is ascribe but created in the mind of the human resource that make up the property market and further stress that the bond that create residential property value are complex and the value change when the variable that create the value charges. Bhargava (2013) in a research based on hedonic pricing model in India postulated that property value is a function of not only the physical attributes but also encompass the availability of infrastructure in the neighbourhood where property is located.

Harrison (2001) assessed the values of homes with adequate and functional infrastructure and observed that the properties with infrastructure facilities commanded higher value than those property without infrastructure, theses unequivocally shows that the enabling environment concentrated with functional infrastructure in which a property is located have a direct bearing to its sales and rental values. Also Aliyu (2012) and Ogunleye (2012) agreed and postulated that the core determinant of residential property value is functional infrastructure.

But Ruivo (2010) in his research on rental value in the United State of America realize that cities with good infrastructure are correlated with high rental value, in order words rental value have a positive relationship to infrastructure. level, in the same vain Hanink, Cromley & Ebesistein (2010) observed in a research using hedonic model on spatial variation in the determination of housing price /value in china and discovered rental value or housing price is establish by the structural features such as window, doors, floor areas among others. In a study in Barbados on the development of real estate value it was observed that the location, property size, numbers of bedroom are the most germane factor that influence the value of property (Browne, Clarke & Moore, 2008) this view is broader in perspective than the initial author view. Olayiwola *et al.*, (2006) and Adebayo (2009)

discovered in their research that infrastructural facilities and economic variable are positively related in determining rental value of a residential property, in order words that were there is an adequate and efficient infrastructural facility there is a corresponding increment in rent value and value of residential land use properties. To this end, his study takes into consideration inequality in distribution of infrastructural facilities and also how it has effect on the residential property rental value level.

Methodology

Data were generated from the peri-urban residents and Estate Surveyors and Valuers, through questionnaire administration. The systematic random sampling technique was employed in the selection of 409 respondents. Primary and secondary sources of data collection were also employed. Essentially, the research method adopted for this study is the quantitative and inference research method because the data required can only get though series of inquiries. The study population consist of Estate Surveyor and Valuers and residents of the selected neighbourhoods to obtain data on rental values for a period of years under review.

Table 1: Showing the Infrastructure/Neighbourhood Condition Rating Standard

Condition	General Description	Rating	Condition Index
Very Poor	Neighbourhood in bad state, unit for occupancy, Absence of infrastructure and facilities, pollution and environmental degradation.	1	0.00 - 0.19
Poor	Deteriorated neighbourhood, structural problems, none functional infrastructure, contamination and pollution elements.	2	0.20 - 0.49
Fair	Average neighbourhood condition, evident of significant defects on infrastructure, malfunctioned of infrastructure facilities, minor environmental and pollution elements.	3	0.50 - 0.74
Good	Minor deterioration of neighbourhood, major maintenance on infrastructure not	4	0.75 - 0.94

	require, good condition of infrastructure.		
Very Good	The neighbourhood not deteriorated, infrastructure are new and in good state. absence of contamination and pollution issue.	5	0.95 -1.00

Source: Adapted from Australian Association of Higher Education Infrastructure Officer, (2000).

Results and Discussion

In determining the pattern of distribution of infrastructure (access roads, portable water supply, electricity and waste disposal infrastructure) on the basis of responses of the respondents who are inhabitants of these neighbourhoods, the detailed distributions of infrastructural facilities in low and high density neighbourhoods are presented below:

The distribution of infrastructure in terms of access roads, portable water supply, electricity and waste disposal is being depicted from the table below in percentage of neighbourhood in unplanned high densities areas of Minna (Dutsen-Kuran-Gwari, Angwan-Kaje, Anguwan-Biri, Angwan-Roga, Barkinsale, Gbeganu, Keteren-Gwari Kpakungu, Nykangbe,). In addition, the percentage of each quintile/neighborhoods to their total responses is given in parenthesis. It is discovered that the total response of the households is seen to be resultant to the availability of infrastructure facilities in these high density neighbourhoods.

Table 2: Showing the Quintile and Proportion (in Percentage) of the Distribution of Infrastructure in High Density Neighbourhoods.

Quintile and Percentage of Household	Access Road	Water	Electricity	Waste Disposal
1 st Quintile & 20% of Neighbourhoods	45 (0.216)	41 (0.201)	47 (0.199)	41 (0.272)
2 nd Quintile & 40% of Neighbourhoods	37 (0.178)	41 (0.201)	50 (0.212)	12 (0.079)
3 rd Quintile & 60% of Neighbourhoods	40 (0.192)	40 (0.196)	42 (0.178)	46 (0.305)
4 th Quintile & 80% of Neighbourhoods	39 (0.188)	40 (0.196)	45 (0.191)	22 (0.146)
5 th Quintile&100% of Neighbourhoods	47 (0.226)	42 (0.206)	52 (0.220)	30 (0.199)

Total No. Responses	208	204	236	151
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Source: Authors field survey. (2017)

The distribution of infrastructure such as; access roads, portable water supply, electricity and waste disposal are being shown in terms of fraction of neighbourhoods in low density neighbourhoods of Minna such as, Government Reservation Area, {GRA}, Dutsen-Kura- Hausa, Farm Centre/NECO State office Area, M I Wushishi, Talba Estate, Bosso Estate Extension, Okada Road and London Street). Further, the percentage of each quintile/neighbourhoods in the neighbourhood to their total response is therefore given in parenthesis. It indicated that, the total response from the neighbourhoods is corresponding to the availability of infrastructure facilities in the selected low planned neighbourhoods.

Table 3: Showing the Quintile and Proportion (in Percentage) of the Distribution of Infrastructure in Low Density Neighbourhoods.

Quintile and Percentage of Household	Access Road	Water	Electricity	Waste Disposal
1 st Quintile & 20% of Neighbourhoods	37 (0.183)	42 (0.194)	47 (0.213)	34 (0.183)
2 nd Quintile & 40% of Neighbourhoods	41 (0.203)	40 (0.199)	44 (0.199)	39 (0.206)
3 rd Quintile & 60% of Neighbourhoods	40 (0.198)	35 (0.189)	40 (0.181)	40 (0.215)
4 th Quintile & 80% of Neighbourhoods	39 (0.193)	40 (0.204)	50 (0.226)	35 (0.188)
5 th Quintile & 100% of Neighbourhoods	45 (0.223)	42 (0.214)	40 (0.199)	41 (0.223)
Total No. Responses	202	199	221	186

The two graphical representations below indicate inequality distributions of infrastructure provision in the selected low and high residential density areas of Minna. The inequality distribution of infrastructure makes rental values of residential properties in the low density areas to surge up due to availability of infrastructure while reverse was the case in the high density areas. For instance 5th quantile have highest percentage in low density areas with 45 (0.223) for access road, 42 (0.214) for portable water, 40 (0.199) for electricity and 41 (0.223) for waste disposal system. While have low percentage in high density areas. This infrastructure distribution has

positive effect in low density urban point and negative effect on high density residential areas.

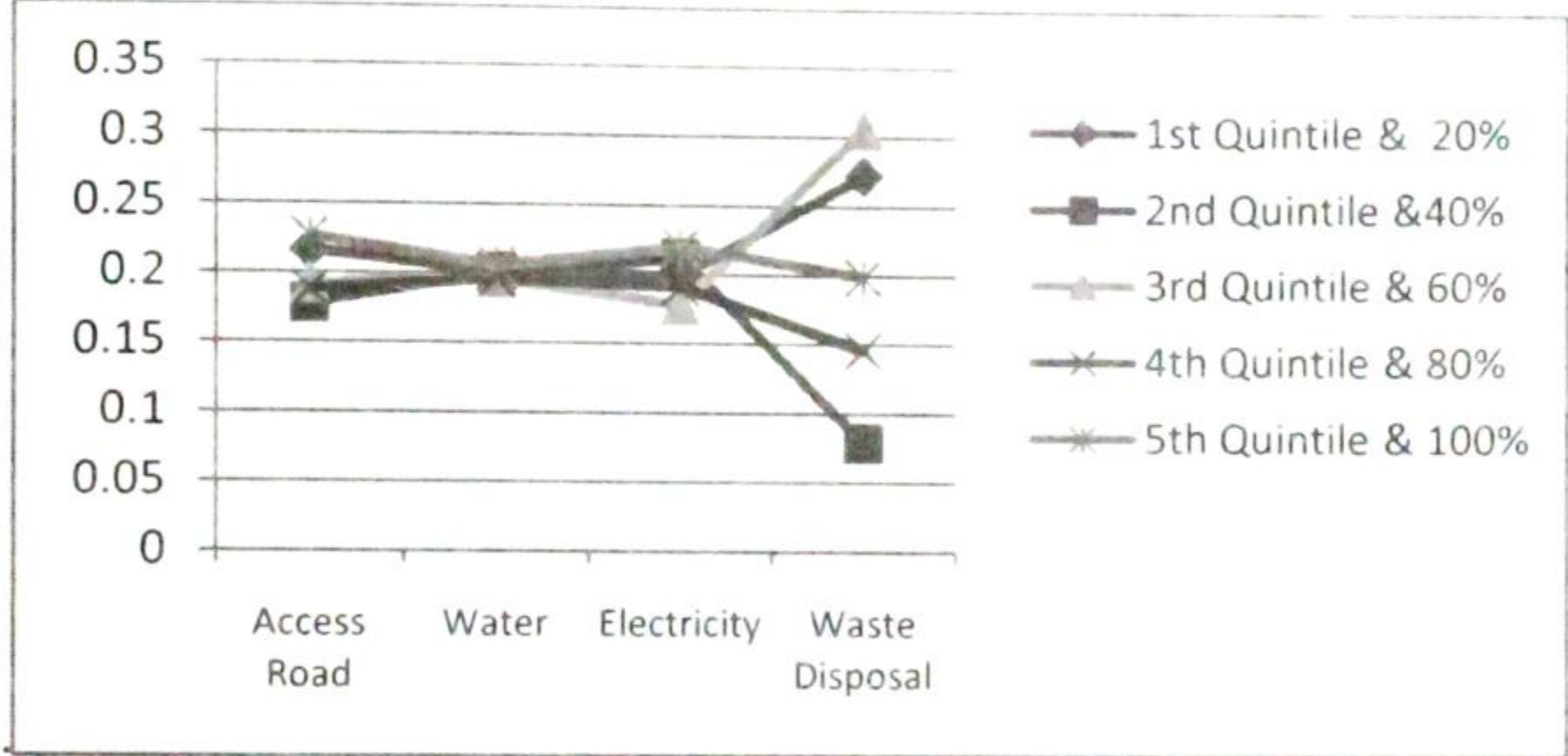


Figure 2: Graph of Quintile and Proportion (in Percentage) of the Distribution of Infrastructure in High Density Neighbourhoods.

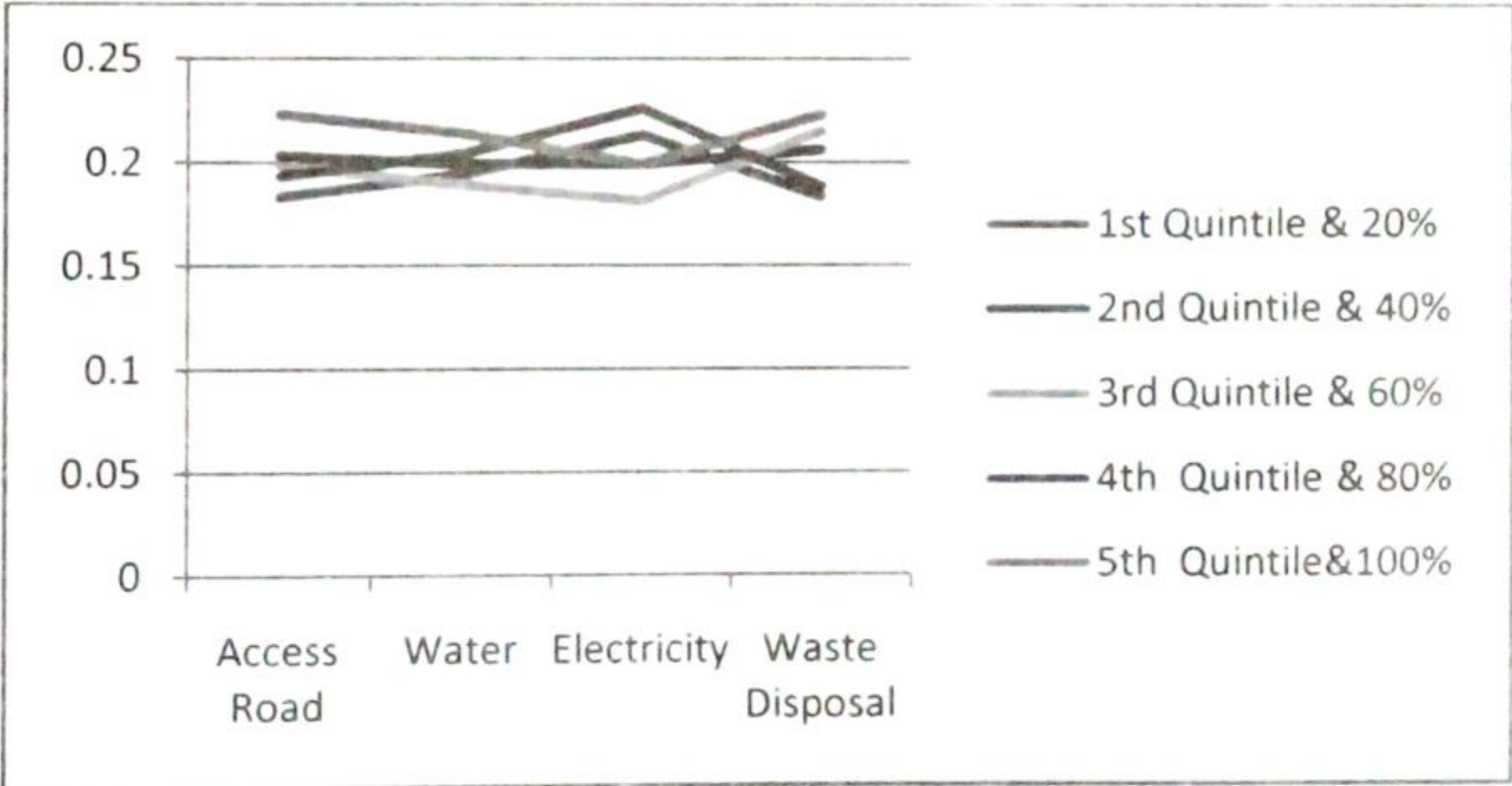


Figure 3: Graph of Quintile and Proportion (in Percentage) of the Distribution of Infrastructure in Low Density Neighbourhoods.

Summary of Findings

Having analysed the data collected to ascertain the effects of spatial distribution of infrastructure on residential property values in the area under study, the following findings were made:.

1. The study discovered that, infrastructure facilities were concentrated more only on the planned and low density areas such as Government Reservation Area (GRA) and its extension. In

Minna, bulks of functional infrastructure like road, electricity water supply are distributed to GRA, Farm Centre area, M.I. Wushishi Housing Estate to mention but a few.

2. Further, the study revealed that, infrastructure were in poor condition in the unplanned and high density areas of Minna for instance Kpakungu, Angwan-biri, Barken-Sale and so on and if available the level of their functionality is low.
3. Also, it was discovered that, the infrastructure were not evenly distributed as there is concentration of infrastructure on only one or more urban points of Minna.
4. It was found out that the infrastructure facilities in low density areas are being maintained for continuous function while that of high density were in poor condition and decayed and this made high density areas to be deteriorated.
5. Residential property rental values are very low and poor in high density neighbourhood while that of low density areas are encouraging

Recommendations

Consequence upon the result from the interpretation drawn from the this study the following recommendations were submitted.

1. Once government is the major stakeholder in the infrastructure distribution, government should try to distribute the infrastructure evenly especially in the residential neighbourhood.
2. Increase in the source of funding infrastructure provision can be done by partnering with international organisations for equitable distribution of infrastructure facilities in the entire residential neighbourhoods of Minna.
3. Neighbourhood restructuring can be done by tactically creating planning mode in unplanned and high density areas in order to pave way for infrastructure installation.

Conclusion

This study sought to assess the effect of spatial distribution of infrastructure on residential property values in Minna metropolis. If the infrastructure is evenly distributed in Minna it will improve the standard of living of people and make the aesthetic nature of Minna to manifest. Conclusively, it is undoubtedly convinced that, if all the recommendations submitted are accurately and adequately attended to there will be improved standard of living of people. Also, there will be increase in the residential property

values in both low and high density neighbourhood and it will serve as encouragement especially to residential real estate investor.

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