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Aim and Scope

Tropical Journal of the Built Environment (TJBE) is a biannual publication of high-quality peer reviewed journal that is published by the College of Environmental Sciences, Joseph Ayo Babalola University (JABU), Nigeria. Tropical Journal of the Built Environment provides a platform where academics and built environment professionals can publish well-researched empirical and theoretical papers on issues related to the built environment. TJBE encourages prospective authors to submit original articles that offer feasible solutions and planning implications for improving the environment.

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Editorial

The publication of Tropical Journal of the Built Environment (TJOBE) Volume 3 Number 1 marks the beginning of a new dawn in the history of the Journal and the College of Environmental Sciences. This edition of TJOBE is a confirmation of the acceptance of the journal within the growing academic sphere. The papers in this this edition covers a wide range topics and issues affecting the built environment. The authors in this issue displayed good knowledge of their various fields and current trends in research.

Shittu et al, in the first article examined causes of fire disaster and occupants' level of fire safety provision in residential buildings in Minna, Niger State. The level of fire safety provision, in terms of fire prevention and firefighting, in residential buildings in Minna was revealed to be low. It was thus concluded that the level of compliance with fire safety measures in residential buildings in Minna, Niger State is low. The study therefore recommended that public enlightenment should be carried out to sensitise building occupants about effective fire prevention and firefighting in the area.

Oladimeji in the second paper undertook a review of the macroeconomic environment in Nigeria and Malaysia with a focus on its effect on the growth of the construction sector (CS). This study observed that the CS significantly contributed more steadily to Malaysia's Gross Domestic Product (GDP) than that of Nigeria. Low manpower development, weak implementation of construction policy and low construction work volume were more prominent in Nigeria construction sector than Malaysia. The study concluded that there is the need for more investment in public and private infrastructures and manpower development so as to improve the Nigeria construction sector's contribution to the GDP.

The third article by Okosun discussed Participatory Role of Self-Help Groups in

Infrastructure Development in Ilawe-Ekiti, Nigeria. The study identified the main problems as inadequate funding, wasteful bureaucratic process in accessing fund from government, high interest rate chargeable on loans, collateral constraint and insufficient fund in infrastructure projects in Ilawe-Ekiti. The paper recommended that, the government of Ekiti state should support the activities of SHGs with adequate funding and good policies and canvassed Government-SHGs Partnership development in order to upgrade and expand facilities, which tend to engender sustainable infrastructural development in the state

The fourth article examined Influence of Logistics on Material Procurement for Construction Projects in Abuja, Nigeria. It found that "Competence of procurement officer" and "Quality" were the most critical components required for material procurement. It concluded that Procurement officers with good pricing and negotiation skills should therefore be appointed for material procurement.

Basic Factors Influencing Gender Discrimination of Land Ownership in Minna, Niger State is the fifth article and it examined the basic factors influencing gender discrimination of land ownership in selected neighbourhoods of Minna, Niger State. The study concluded by asserting a high degree of derivation and gender discrimination on land ownership in Minna, owing to the fact that just few women get share from land proceeds, in which such classes of women cannot use land for credit facilities for business or investment. The study, therefore recommended the support of government at different level to uphold equity in the area of land allocation and accessibility in favour of women.

Muhammad in the sixth article discussed Energy Efficiency from Vernacular Architecture- Case Study of Kano City Northern Nigeria. The study takes lessons

directly from traditional and vernacular architecture of Hausa land of Kano state in North West Nigeria which aimed to offer to architects as guidance and inspiration for new and future buildings in an urban context. The appropriate technical, cultural, religious and social solutions provided by vernacular and traditional architecture in terms of energy efficiency in planning and design were analysed in detail. The paper recommended the intervention of the regulatory planning agencies to ensure the inclusion of the basic vernacular strategies.

The seventh paper examined climate related infrastructure system failure and its implication on agrarian products and processes. Findings indicated that, the long-established approach of generalising climate risks and impacts over regions underrates strategies for climate risk reduction and despite geographical variations the risk of agrarian losses is on the increase across the selected locations. Based on the results obtained recommendations were made towards adaptation and resilience strategies for effective risk reduction to help practitioners, policy makers and the academia.

Kehinde et al, in the 8th paper undertook an Appraisal of the Adoption of GIS in Facilities Management by Real Estate Professionals in Lagos State. The findings from the study reveal that the Real Estate professionals have positive perception to the use of GIS in their day to day facility management practice but with low adoption rate. The study concluded by recommending that the Real Estate professional should embrace the vast opportunities offered by the application of GIS in facility management.

Onanuga and Fakere in the ninth paper discussed Users' Perception of Public Housing Indoor Spaces: Case of Ijapo Estate, Akure, Nigeria. The study showed that the majority of the respondents in the public housing study were low-income earners. Also, the test of the relationship between the socio-economic characteristics

and perceptions of the respondents revealed significance at 5% and 1% levels of probability. It concluded by recommending that the socioeconomic status of users should be considered as one of the determining factors in the design of residential interiors in Nigeria.

The tenth paper is on Perceptions of Yoruba Cultural Ornamentation on Monumental Buildings in Lagos, Nigeria. This study evaluated the perceptions of ornamentation and decorations in the design and construction of monument buildings in Lagos with a view to understand reasons for the gradual disappearance of Yoruba architectural features on monumental buildings. The findings indicated that religious Beliefs, over dependence on foreign goods and lack of value for these features among the urban population are some of the reasons discovered. The study thereby suggested for collaborations among the professionals for providing necessary modern tools for productions of these features in commercial quantities.

Adeleye et al, in the eleventh paper examined Architectural Philosophy and Design Process: A Case Study of Guiding Light Assembly, Lagos Nigeria by showing the evolutionary trend of a notable project that reveals the underpinning philosophy guiding Architectural practice from conceptualization to actualization. The paper equally discussed the philosophy of the architect and concluded that the architect's designs design has always been tailored towards spatial dynamism per time in progressive contextualism, an approach which seeks to express the physical, budgetary, climatic, cultural and technological inclination of the community and zeitgeist in the design process.

In the twelfth paper by Damu et al, the Influence of School Based and Personal Factors on the Academic Performance of Architecture Undergraduates was examined. . The analysis indicated that passion or interest for architecture (M 4.24),

for assignment (4.11) were the most influential variable that influence students' performance among the personal based variables. It recommended that the Architecture students need to go through proper orientation, personal contact, encouragement and mentoring by all academic staff. The department also needed to liaise with the Guidance and Counselling unit to boost morale of students. Professionals in practice also have a role to play especially with the internet meetings, seminars, scholarships and study grant for students who might have difficulty with academic funding. Furthermore, it also recommended that the studio be revitalised in order to encourage better academic performance.

Adebisi and Bankole discussed Rental Default in Abuja Residential Private Rented Sector in the thirteenth paper by assessing the rate of rental default and factors influencing rental default in the residential private rented sector in Abuja. The study revealed that the rate of rental default varied between property types and locations. The study showed that the average rate of rental default for a room self-contained, 2-bedroom, 3-bedroom, 3/4-bedroom bungalow, and duplex apartments between 2017 and 2019 were 36.6%, 32.76%, 30.01%, 27.5%, and 18.34% respectively. The study recommended that practising Estate Surveyors and Valuers consider the factors mentioned in tenant selection to achieve an investor's investment objective.

The fourteenth paper by Abdullahi and Abdullahi was on Challenges Facing the Development of Sustainable Petrol Filling Stations. This study assessed the barriers encountered by Architects and building developers in the development of sustainable Filling Stations with a view to encourage the existence of eco-friendly Filling Stations. It conclude by stating that Sustainability requirements that can be included in Filling Stations include: sustainable planning (zoning of activity area), use of fire resistant materials such as Polytetrafluoroethylene (PTFE), tent and

canopy structures, plastic, bricks and landscape feature. The findings from this study concluded further that the barriers to sustainability in Filling Stations include; lack of knowledge on sustainability, lack of integration of sustainability features in the design stage by Architects, influence of design by clients, high cost of sustainable building materials, lack of technical manpower, and absence of subsequent maintenance plan.

Idowu et al examined Urban Transformation and Road Infrastructure Development in the fifteen paper. The study investigated land-use changes in respect to road infrastructure transformation in Gwagwalada Township, Gwagwalada Area Council of Abuja. The study was based on geospatial analysis of existing Gwagwalada township base map including acquired 1m resolution IKNOX satellite imagery of 2019, 2009 and 1999. The study found out that there was a high disparity in the level of urban growth and transportation infrastructure in the study area, hence the need for intervention for the development of road networks to save the satellite settlement from turning into sprawl.

Ale, et al contributed the sixteenth paper and they examined Buka as a focal point for interaction with Owode in Akure South Local Government Zone of Ondo State. The study showed that there is good interaction between Buka users and that customer retention is high due to the price of local dishes. The study concluded that architects should consider eco-friendly and sustainable building materials favourable for construction to improve comfort while encouraging facility management to provide a hygienic environment for the users. It is therefore recommended to provide more Buka in Owode community that accommodates all ages, genders and no different classes for rich and poor.

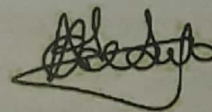
The seventeenth paper by Adeogun et al examined the distribution of intercity motor parks location within Minna Metropolis and determined the implications of the motor

parks' location on the adjoining environment. They analysed eight (8) government-approved motor parks. In terms of the environmental implications of location they discovered that, five (5) of the eight (8) variables examined were more prevalent in all areas, and they are road-side parking, often high volume of traffic delay, blockage of drainage-way, hawking, and noise pollution. The study concluded that in the arrangement and development of city's landscape, planning and designing of motor parks should not be taken for granted.

The eighteenth paper by Sodiya, et al, was on Alternative Financing Models for Transport Infrastructure: Factors Influencing its Adoption and Challenges in Lagos State. This study investigated the factors affecting choice of financing model to fund the provision of transport infrastructure as well as barriers militating against the acceptance of contemporary financing models in Lagos State. Their findings revealed that out of 16 factors identified from literature, economic development, environmental issues and sprawling growth and urbanisation were the most influential factors determining choice of financing approach.

In undertaking the production of this edition of the journal a lot of energy and resources went into the process especially those of the authors and the reviewers who trusted us enough in ensuring that the quality of the manuscripts were good, which by extension improved the standard of the journal. I can only crave your support in recommending Tropical Journal of the Built Environment to colleagues (academic/professionals) and institutions as we begin the process of December 2022 edition and beyond.

I welcome the readers to enjoy this Volume 3 Number 1 edition and for the contributors let us kick start Volume 3 Number 2 immediately.



O.F. Adedayo, PhD
Managing Editor

Basic Factors Influencing Gender Discrimination of Land Ownership in Minna, Niger State

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Abstract

This study therefore examines the basic factors influencing gender discrimination of land ownership in selected neighbourhoods of Minna, Niger State. Both the primary and secondary data used in the study. Primary data was collected through interviews and Questionnaires with key stakeholders such as community heads, household head and the adult women. A total of 398 respondents sampled using questionnaire administration. The data was analyzed using Statistical Package for Social Sciences (SPSS). Descriptive statistical approach and Likert scale were used in determining the factors influencing gender discrimination in land ownership. The results show a high level of gender discrimination of over 60% against women. Considering the aspects of customary land ownership, just 16% of the women have access to land, while over 50% of the men acquire land through inheritance and purchase (65.8%). On decision making, it clearly obvious that over 65% of female child are uncertain to owns land through inheritance. Investigation on causative factors influencing gender discrimination identified five factors: traditional/cultural practice against women (3.73), religious sentiment against women (3.64), high level of illiteracy among women (3.62), perception of women as temporal member of a community (3.57), lack of women representation in decision making (3.51) and poor financial/economic status of women (3.51). The study shows a high impact of 59% of gender discrimination on income of women, while every efforts of government (72%) not encouraging for women to venture into land investment without men support or input. The study concluded by asserting a high degree of derivation and gender discrimination on land ownership in Minna, owing to the fact that just few women get share from land proceeds, in which such classes of women cannot use land for credit facilities for business or investment. The study, therefore recommended the support of government at different level to uphold equity in the area of land allocation and accessibility in favour of women.

Keywords: Discrimination, Ownership, Gender, Land, neighbourhoods, and Community

Introduction

The fundamental source of wealth, social position, and power is land. It is the foundation for agricultural production, shelter, and economic activities, and nearly everyone relies on land for their livelihood, whether directly or indirectly. As a result, everyone should be offered fair and equitable opportunities without discrimination. Land in every part of the world is seen as a property which inter-links

the economic, cultural, political, and legal dimensions of social life (Budlender & Alma, 2011). Land tenure systems that recognize the interests of all people are critical in advancing social and economic equity. Issues around land tenure as its concern women are always ignored especially when it comes to access. Women are denied their land rights in practice, despite the fact that the law technically recognizes them. Women face several forms of discrimination, including gender,

urban/rural, tribal, ethnic, religious, immigrant status, marital status, age, class, disability, sexuality, and other identities or markers. A responsible land administration entails the engagement of all people, especially grassroot women, and is more than just a set of laws, information, and proposals. Traditional institutions and customary tenure regimes are frequently criticized for containing discriminatory elements that jeopardize women's and other vulnerable members of society's enjoyment of fundamental human rights, particularly by perpetuating male dominance and control over land, limiting women's ability to acquire and keep land assets. As a result, components of traditional institutions and tenure arrangements that do not meet the norms of traditional rules are frequently prohibited. In Niger State, the majority of the population is still rural in nature, and the overwhelming majority of rural households do agricultural work. In view of these, this study assesses the causal factors of gender discrimination in customary land ownership and control in Minna, Niger State.

Literature Review

The way land is owned and possessed in a given culture is known as the land system. It is an institutional framework within which decisions regarding land use are made, including the legal or customary system through which individuals, groups, or organizations gain access to economic and social possibilities (Udo, 2003). The laws and processes that regulate the rights and duties of individuals and groups in the acquisition, use, and management of land are also part of the land system. Denman (1978) stated that property rights are woven into the land systems of all cultures, regardless of culture or political belief. Total interests offer absolute ownership rights, allowing for the broadest range of private decisions on land use and maintenance. On the other hand, derivative interests are interests that have been derived or cut out of bigger or superior estates (Udo, 2003). Leaseholds, life interests, kola tenancies, mortgages, loaned interests, and pledges, among others, are of lower quality (Nwabueze, 1972).

Land Ownership in Nigeria

In Nigeria, land ownership is divided into absolute and derived interests. The country's ownership structure of these interests has developed during three significant periods. These periods are the pre-colonial, colonial and post-colonial periods. During the pre-colonial period in Nigeria, the most common land tenure system was customary land tenancy, in which land holdings were owned by villages, cities, communities, and households. Individuals were not considered to be the owners of land, but rather communities and families who held it in trust for all family members (Omuojine, 1999). Land belonged to the community or a large family during this time, of which many are dead, few are alive, and innumerable descendants are yet to be born. As a result, individuals did not have a fee simple absolute in possession interest since true property ownership or absolute interest was vested in the community. Individuals' derivative interests or rights in common land were referred to as derivative interests.

Under colonial administration, the land ownership structure in Nigeria was intended to fit the interests of British colonialists. The colonial rulers needed land to pursue their economic, social, and political agenda. The Treaty of Cession of Lagos to the British, signed in 1861, became the most important of all the colonial treaties with traditional leaders in Nigeria. To allow them to obtain and impart land titles for the purposes of trade and government, colonial authorities enacted laws and regulations controlling property ownership, land use, and development, among other things. The laws enacted by colonial administrators are the following: Land Proclamation Ordinance (1900), Land and Native Rights Act (1916), Niger Lands Transfer Act (1916), Public lands Acquisition Act (1917), Native lands Acquisition Act (1917), State Lands Act (1918), Town and Country planning Act (1947) and the Town and Country planning Ordinance of 1956.

Following independence of Nigeria, land ownership by individuals, families, and

communities became the primary land tenure system in the Southern States of Nigeria, whereas land in the Northern States of Nigeria were considered state-owned under the terms of the Land Tenure Law of 1962. After Nigeria's independence, two major laws governing land ownership are the Land Tenure Law of Northern Nigeria of 1962 and the Land Use Act of 1978. The Land Use Act of 1978 was designed to nationalize land ownership in Nigeria and to promote effective governmental control over land use and development.

Customary Land Ownership and Gender Discrimination

The consideration of existing statutory law of land does not exhibit any gender discrimination on land ownership, however, the real discrimination on land ownership exists in the customary system of land ownership. In Nigeria, less than 40% of the population are considered to live in rural areas and depend on subsistence agriculture (Kassim & Zin, 2011). Land is frequently the most significant household asset for rural women and men in terms of sustaining agricultural productivity and ensuring food security and nutrition. Secure land tenure is highly connected with better levels of investment and production, according to evidence (Food and Agriculture organization of the United Nation, 2018).

Given this general understanding that women are more concentrated in rural areas, more dependent on land, and more likely to be poor, it is clear that land is a central issue and is key to advancing the rights and well-being of women in Africa. The informal slogan of the United Nations' Decade for Women (1975–85), for example, stated that "while women do two-thirds of the world's work, they receive 10 percent of the world's income and own 1 percent of the means of production. Although that slogan focuses on women's low rate of land ownership as the crux of the issue, gender theorists have recently been looking at the relation between women and land in more complex terms, considering the distinctions between access to, use of, and control over land (Food and Agriculture organization of the

United Nation, 2018). Rural Sociologists, Jesse et al. (2003) opined that access to land as the ability to derive benefits from things including material objects, persons, institutions, and symbols, leads them to conceive of access as a bundle of powers" rather than necessarily a bundle of rights.

The distinction among access, use, and control is particularly important given the prevalence in Africa of customary land tenure systems, which often contain no equivalent to the Western concept of "ownership." This distinction is much more than just an exercise in semantics. Although many poor rural women have access to land and use it, they are generally far less likely than men to have control over it and its products or to own it. In practical terms, as many of the research projects referred to later in this book will show, this lack of control places many women in highly insecure and precarious situations. Many women who have only conditional access to land may lose it when their husbands die; others may lose the right to use the land their livelihoods depend on if male family or community members believe they can profit by selling it. This is an especially significant threat to women in an era of rising land prices, increasing land scarcity, and rising competition to control this resource.

Land policies and reforms sometimes include elements that attempt to address gender issues explicitly, for example, gender equality clauses. Some land policies do not include such clauses, but nevertheless have different impacts on women and men and on different subgroups of women and men. In particular, policies that attempt to commercialize and privatize land, in the hope that this will promote investment and economic growth, can have negative consequences on women's access to and control over land. Globally, findings show that women's land right when compare with men's are seriously disadvantaged. Food Agriculture Organisation report put it down that less than 15 percent of all landholders are women, the report stated further that only about 5 percent of women holds land in the

Middle East and North Africa, and about 18 percent in the Latin America and the Caribbean, less than 20 percent in Honduras, (FAO, 2018). Therefore, it is necessary to assess the causal factors of gender discrimination with a view to examine the level of women's ownership, access and control of customary land in Minna.

Study Area

Minna presently is widely disposed along the main spine road which separated the city into two (West and East), this road span from Chanchaga in the South to Maikunkele in the North, with distance about 20km. Also, in the West - East pattern, it spanned from Gidan-Kwano in the West to Maitumbi in the East, the distance which covers about 15km. The present spatial situation of Minna has shown that the city metropolis has grown to engulf the suburb settlements such as Bosso, Maitumbi, Dutsen Kura,

Kpakungun, Shango and Chanchaga. Immediately to the north of rail tracks are higher -density quarters, Sabon-Gari, and the main markets (Max Lock Nigeria Limited, 1980). Minna is about 135km away from the Federal Capital Territory and 300km away from the Kaduna city (Max Lock, 1980). It is about 90km away from the ancient city of Bida, 100km from Suleja, and about 130km from Kotangora (Figure 1.4) (Max Lock Nigeria Limited, 1980).

Recently, the compositions of Minna traditional wards or neighborhoods were viewed in light of the twenty-five (25) political neighborhoods (Figure 1). The new pattern encompasses both the inner core and the peri-urban neighbourhoods. Primarily, this study shall focus on selected peri-urban neighbourhoods which are Barkin-sale, Dutsen-Kura, Shango, Sahuke-Kahuta, Fadikpe, Gbaganu, Tayi-village, Tundun-Fulani

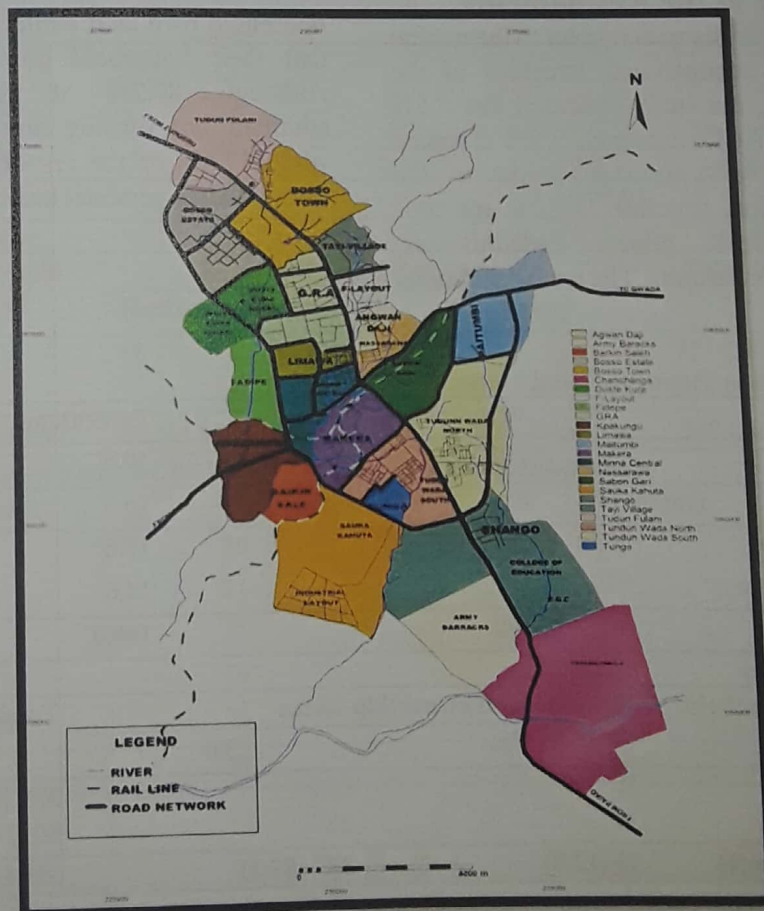


Figure 1: Map of Minna, showing the neighbourhood Demarcation

Methodology

Both the primary and secondary data were used in this study. The secondary data was acquired through the aid of questionnaires from the respondents who are majorly adult women. The secondary data was based on the existing population of the area. The systematic random sampling technique was used in the process of collection of data for this study. A total of 398 respondents sampled cut across eight (8) selected peri-urban neighbourhoods. The data was analyzed using Statistical Package for Social Sciences (SPSS). Descriptive statistics such as frequency and percentages, Likert scale and Relative Importance Index were employed to examine the casual factors of Gender discrimination in customary land Ownership in the study area.

Result and Discussion

Marital Status and Occupational Structure of the Respondents

From the analysis with respect to the marital status and occupational structure of the respondents, the study indicated that 5.5% are single, 70.4% married, 9.5% divorced while only 14.6% are widow/widower. On the occupation structure, 27.1% are civil servants, 24.9% private trade/business, while 48% are farmers. The analysis implies

that the majority of women (70%) that are sampled in this study that have married are gainfully engaged with one vocation or the other. This, however, could be of influence on accessibility to land.

Landownership and Gender Accessibility to Land

Foremost, investigations on the status of individual that mostly make decision on land matter was conducted to form the basis for gender discrimination on land matter and land ownership.

With respect to gender access to land and decision on land matters (Decision taking on land matter and ownership), Table 1 revealed the gender contribution, both the husband and the male child (75.1%) are more involves in taken decision on land issue compared to the women/female child of 24.9%. On any land personally owned by women, the results revealed that 85.2% of the respondents provided that their household own land while 14.8% provided that their household do not own land. Although, 87.2% of the respondents admitted not owning any personal land while 12.8% of the respondents provided that they own personal lands.

Table 1: Decision Taking on Land Matters

Persons	Frequency		Percentage
	Yes	No	
Husband	201		50.5
Wife	65		16.3
Male Children	74		18.6
Female Children	58		14.6
Total	398		100.0
Does your household own land?	Personal land ownership status		Total (Percentage)
	Yes	No	
Yes	30	309	339 (85.2%)
No	21	38	59 (14.8%)
Total (Percentage)	51 (12.8)	347 (87.2)	398 (100%)

Land Acquisition, Registration and Female-Girl Land Ownership

This section focuses on the method of land acquisition and registration. Issue under consideration that has to do with methods of land purchase, inheritance, gift, leased/rental and communal use. For land registration, in the name of the person for land registration as regarding household land ownership.

According to Table 2, 13.3% acquired their land through purchase, 52.5% through inheritance, 4.3% was gifted, 5.3% through lease, while 24.6% through communal use. with regards to the name registered against the land. 30.4% of the respondents provided

that their land is registered while 69.6% provided that their land is not registered. Also, 24.6% of the respondents provided their land is registered under the husband's name, 1% provided it is registered under the wife's name while 5.3% provided it is registered under their child's name. In Table 1, the level of certainty that portion of the family land transferred to female child during inheritance is considered. The Table shows that 9.0% provided that it is very certain, 17.8% provided that it is certain, 7.8% provided that it is neither certain nor uncertain, 47% provided that is it uncertain, while 18.3% provided that it is very uncertain.

Table 2: Method of Household Land Acquisition

Methods	Frequency	Percentage
Purchase	53	13.3
Inheritance	209	52.5
Gift	17	4.3
Leased/Rented	21	5.3
Communal Use	98	24.6
Total	398	100.0

Land Registration

Is the household registered?	Land registered name			Total (Percentage)
	Husband	Wife	Offspring	
Yes	98	2	21	121 (30.4%)
No	-	-	-	277 (69.6%)
Total (Percentage)	98 (24.6%)	2 (1%)	21 (5.3%)	398 (100%)

Level of Certain of Female Child Land Ownership through Inheritance

Level of certainly	Frequency	Percentage
Very Certain	36	9.0
Certain	71	17.8
Undecided	31	7.8
Uncertain	187	47.0
Very Uncertain	73	18.3
Total	398	100.0

Gender Discrimination on Land Ownership

This section exposed the level of discrimination on gender land ownership in Minna. Table 3 shows the responses provided on the level of gender discrimination in customary land tenure system in Minna. 22.4% responded that gender discrimination is very high, 41.2% responded that it is high, 18.3% responded that it is moderate, 11.3% responded that it is low, while 6.8% responded that it is very low.

Basic Factors influencing Gender Discrimination of Land Ownership.

This section portrayed the information on the approval of tradition of women land ownership, assessment of human right on land ownership, level of satisfaction of women in land ownership decision making, the rate of ignorant of women on land ownership.

Table 4 illustrates the respondents' tradition with respect to permission of women land ownership in the study area. It can be observed from the table that 27.6%

responded that their tradition permits women land ownership, 64.3% responded that their tradition does not permit women land ownership while 8% responded maybe. On the awareness of women's right to own land. 23.1% provided that they are aware of women land right, 59.8% provided that they are not aware while 17.1% provided that they may be aware. On the level of respondents' satisfaction with women representation in the decision-making process in communities in Minna. 5.3% responded that they are very satisfied with women representation, 14.1% responded that they are satisfied, 18.3% responded that their satisfaction level is fair, 47.7% responded that they are unsatisfied, while 14.6% responded that they are very unsatisfied. the responses rate of ignorance of customary ownership of land by women in Minna. 21.9% responded that there is a very high rate of ignorance, 44% responded that the rate is high, 10.8% responded that the rate is moderate, 16.8% responded that the rate is low, while 6.5% responded that the rate is very low.

Table 3: Level of Gender Discrimination in Land Ownership

Level	Frequency	Percentage
Very High	89	22.4
High	164	41.2
Moderate	73	18.3
Low	45	11.3
Very Low	27	6.8
Total	398	100.0

Table 4: Tradition Permits Women Land Ownership

Response	Frequency	Percentage
Yes	110	27.6
No	256	64.3
Maybe	32	8.1
Total	398	100.0

Awareness of Women Land Right

Response	Frequency	Percentage
Yes	92	23.1
No	238	59.8
Maybe	68	17.1
Total	398	100.0

Level of Satisfaction with Women Representation in Decision Making

Methods	Frequency	Percentage
Very Satisfied	21	5.3
Satisfied	56	14.1
Fair	73	18.3
Unsatisfied	190	47.7
Very Unsatisfied	58	14.6
Total	398	100.0

Rate of Ignorance of Women Land Ownership

Methods	Frequency	Percentage
Very High	87	21.9
High	175	44.0
Moderate	43	10.8
Low	67	16.8
Very Low	26	6.5
Total	398	100.0

Factors Influencing Gender Discrimination in Land Ownership

The variables examined on the factors influencing discrimination of female girl in land ownership are as follows: religious sentiment against women, traditional/cultural practice against women, high level of illiteracy among women, ignorance of women on land rights, perception of women as temporal member of a community, lack of women representation in decision making, ineffectiveness of the land use act and poor financial/economic status of women.

Table 5 shows the weighted mean of the responses provided on the level of

agreement to the identified factors influencing gender discrimination in customary land tenure in Minna, Niger state. It can be observed that the respondents neither agree nor disagree that ignorance of women on land rights and ineffectiveness of the Land Use Act are causes of gender discrimination in customary land tenure in Minna. Although, the respondents agreed that religious sentiment against women, traditional/cultural practice against women, high level of illiteracy among women, perception of women as temporal member of a community, Lack of women representation in decision making and poor financial status of the women are causes of gender discrimination in customary land tenure in Minna.

Table 5: Weighted Mean of Factors Influencing Gender Discrimination of Land Ownership

Identified Factors	Causal	SA	A	U	D	SD	TOTAL	Weighted Mean	Interpretation
1. Religious sentiment against women		89 (445)	179 (716)	57 (171)	45 (90)	28 (27)	398 (1450)	3.64	Agree
2. Traditional/Cultural practice against women		97 (485)	186 (135)	45 (135)	51 (102)	19 (19)	398 (1485)	3.73	Agree
3. High level of illiteracy among women		59 (295)	205 (820)	74 (222)	43 (86)	17 (17)	398 (1440)	3.62	Agree
4. Ignorance of women on land rights		39 (195)	179 (716)	99 (297)	67 (134)	14 (14)	398 (1356)	3.41	Undecided
5. Perception of women as temporal member of a community		50 (250)	188 (752)	109 (327)	41 (82)	10 (10)	398 (1421)	3.57	Agree
6. Lack of women representation in decision making		67 (335)	158 (632)	108 (632)	41 (82)	24 (24)	398 (1397)	3.51	Agree
7. Ineffectiveness of the Land Use Act		45 (225)	101 (404)	134 (402)	87 (174)	31 (31)	398 (1236)	3.11	Undecided
8. Poor financial/economic status of women		78 (390)	167 (668)	59 (177)	67 (134)	27 (27)	398 (1396)	3.51	Agree

Where: SA = Strongly Agree; A = Agree; U = Undecided; D = Disagree; SD = Strongly Disagree

Parameters for interpretation of weighted mean response.

- 4.50 – 5.00 = Strongly Agree
- 3.50 – 4.49 = Agree
- 2.50 – 3.49 = Undecided
- 1.50 – 2.49 = Disagree
- 1.00 – 1.49 = Strongly Disagree

Ranking of Causal Factors

With respect to the ranking of the causal factors influencing gender discrimination on land ownership, the eight (8) variables were assessed, and the rating presented in Table 6 below.

Table 6 shows that ranking of the identified causal factors of gender discrimination in customary land tenure in Minna. According to the table, traditional practice against

women with a RII of 0.75 tops the list of causal factors of gender discrimination in customary land tenure in Minna. Religious sentiment against women ranks 2nd having a RII of 0.73. Ignorance of women on land rights and ineffectiveness of the Land Use Act rank least with RII of 0.68 and 0.62 respectively.

Economic Effect of Gender Discrimination in Customary Land Ownership

Issues examined on the effect of economic on gender discrimination are land productivity, land income collector and sharing, and land collateral.

Table 7 shows the responses on whether productive activity is conducted on household land. 77.6% provided that they carryout productive activity on the land, 3.3% provided that they do not while 19.1% provided that they may be conducted productive activity on the land somehow. On whom collects the income gotten from household, 92.7% of the respondents provided that their land yields financial returns while 7.3% provided that their land does not. Also, 72.4% of the respondents provided the husband is the one who collects the returns from the land, 12.8% provided that the wife collects the return

while 7% provided the children collects the return.

The responses on whether women have share in income from land in customary land tenure in Minna. 23.9% provided have their share in the income, 52% provided that they do not have share while 24.1% provided that they have share in a way that is not direct. The responses on whether land can be used as collateral by women in the study area. 11.3% provided that they will be allowed to use the land as collateral, 70.2% provided that they will not be allowed while 18.6% provided that may be allowed in a way that is not direct. The level of monthly income of women in the study area. It can be seen from the table that 16.8% earn below 10,000, 34.2% earn from 10,000 to 20,000, 21.9% earn from 20,000 – 30,000, 17.3% earn from 30,000 – 40,000, while 9.8% earn above 40,000.

Table 6: RII and Ranking of Factors influencing Gender Discrimination in Land Ownership

Identified Causal Factors	N	Weighted Mean	RII	Rank
1. Traditional/Cultural practice against women	398	3.73	0.75	1 st
2. Religious sentiment against women	398	3.64	0.73	2 nd
3. High level of illiteracy among women	398	3.62	0.72	3 rd
4. Perception of women as temporal member of a community	398	3.57	0.71	4 th
5. Lack of women representation in decision making	398	3.51	0.70	5 th
6. Poor financial/economic status of women	398	3.51	0.70	5 th
7. Ignorance of women on land rights	398	3.41	0.68	7 th
8. Ineffectiveness of the Land Use Act	398	3.11	0.62	8 th

Table 7 Productive of Land

Response	Frequency	Percentage
Yes	309	77.6
No	13	3.3
Somehow	76	19.1
Total	398	100.0

Land Income Collector

Does the land yield financial returns?	Collector			Total (Percentage)
	Husband	Wife	Offspring	
Yes	288	51	28	367 (92.7%)
No	-	-	-	31 (7.3%)
Total (Percentage)	288 (72.4%)	51 (12.8%)	28 (7.0%)	398 (100%)

Women Share from Land Income

Response	Frequency	Percentage
Yes	95	23.9
No	207	52.0
Somehow	96	24.1
Total	398	100.0

Women Ability to Use Land as Collateral

Response	Frequency	Percentage
Yes	45	11.3
No	279	70.1
Somehow	74	18.6
Total	398	100.0

Level of Income

Methods	Frequency	Percentage
Below 10,000	67	16.8
10,000 – 20,000	136	34.2
20,000 – 30,000	87	21.9
30,000 – 40,000	69	17.3
Above 40,000	39	9.8

Impact of Gender Discrimination on Income

In this section, the level of impact of gender discrimination on income, impact of government in reducing discrimination and the reform implementation level of government are all discussed and presented.

In Table 8 level to which gender discrimination has affected women's ability to get income in the study area. 14.3% of the respondents provided that the level of impact is very high, 44.7% responded that the level is high, 21.9% responded that the level is moderate, 13.8% responded that the level is low, while 5.3% responded that the level is very low. The responses on whether

government has done enough in mitigating gender discrimination in customary land tenure. 15.8% responded that government has done enough, 72.6% responded that government has not done enough while 11.6% responded that government may have done enough. The level to which respondents rate the implementation of various land reforms by the government to mitigate gender discrimination customary land tenure. 7.8% of the respondents provided that the level of implementation is very high, 15.8% responded that the implementation level is high, 10.6% responded that the level is fair, 45.2% responded that the level is low, while 20.6% responded that the level is very low.

Table 8: Impact Level of Gender Discrimination on Ability to Get Income

Methods	Frequency	Percentage
Very High	57	14.3
High	178	44.7
Moderate	87	21.9
Low	55	13.8
Very Low	21	5.3
Total	398	100.0
Government Has Done Enough to Reduce Gender Discrimination		
Response	Frequency	Percentage
Yes	63	15.8
No	289	72.6
Maybe	46	11.6
Total	398	100.0

Effectiveness of Government Efforts

Effectiveness of government efforts and the inability of the government to implement land reform in favour women were expressed.

According to Table 9, the level of effectiveness of government's effort in mitigating gender discrimination in customary land tenure. 11.3% responded that the effectiveness level is very high, 18.1% responded that the effectiveness level is high, 8.8% responded that the effectiveness level is fair, 42.5% responded that the effectiveness level is low, while 19.3% responded that the level is very low. The responses on whether government's inability to make land registration mandatory affects gender equality in customary land tenure. 50% responded yes, 22.4% responded no while 27.6% responded may be.

Effectiveness of Land Reforms

Assessment of the effectiveness of land reform was based on the reform programmes such as introduction of Land Use Act, land registration, administration, and compensation.

Table 10 reveals the weighted mean of the responses provided on the effectiveness of government reforms in mitigating gender discrimination in customary land tenure in Minna, Niger state. It can be observed that the respondents provided that introduction of Land Use Act and compensation are neither effective nor ineffective in tackling gender discrimination in customary land tenure in Minna. Although, the respondents provided that land administration and land registration are ineffective in mitigating gender discrimination in customary land tenure in Minna.

Table 9: Level of Effectiveness of Government's Effort

Methods	Frequency	Percentage
Very Effective	45	11.3
Effective	72	18.1
Fair	35	8.8
Ineffective	169	42.5
Very Ineffective	77	19.3
Total	398	100.0
Government Has Done Enough to Reduce Gender Discrimination		
Response	Frequency	Percentage
Yes	199	50.0
No	89	22.4
Maybe	110	27.6
Total	398	100.0

Table 10 Weighted Mean Response on Level of Effective of Government's Reform.

Measures	VE	E	U	I	VI	TOTAL	Weighted Mean	Interpretation
Introduction of Land Use Act	54 (270)	79 (316)	85 (255)	101 (202)	79 (79)	398 (1122)	2.82	Undecided
Land registration	21 (105)	43 (172)	77 (231)	151 (302)	106 (106)	398 (916)	2.30	Ineffective
Land administration	31 (155)	68 (272)	79 (237)	89 (178)	131 (131)	398 (973)	2.44	Ineffective
Compensation	45 (225)	67 (268)	119 (357)	98 (196)	69 (69)	398 (1115)	2.80	Undecided

Where: VE = Very Effective; E = Effective; U = Undecided; I = Ineffective; VI = Very Ineffective

Parameters for interpretation of weighted mean response.

- 4.50 – 5.00 = Very Effective
- 3.50 – 4.49 = Effective
- 2.50 – 3.49 = Undecided
- 1.50 – 2.49 = Ineffective
- 1.00 – 1.49 = Very Ineffective

Land Reform Measures Ranking

The ranking of the four reform factors as examined were presented in this section of the result analysis.

Table 11 shows that ranking of the effectiveness of the measures put in place by government in tackling gender discrimination in customary land tenure in Minna. According to the table, Introduction of Land Use Act and compensation with a RII of 0.56 ranks 1st. Land administration and land registration rank least with RII of 0.49 and 0.46 respectively.

Discussion of Results

The results from the study showed that all the identified rural areas where communal land tenure is practiced were duly represented. Data showed that the percentage representation of each of the location falls between 10% - 15% which implies there is no extreme value in geographical representation. The biodata of the respondents showed that almost all the respondents (89.7%) are women. This is good for the study as the perception of women on gender discrimination was duly needed in other to draw valid conclusion for the study. The other relevant biodata showed that most (70.4%) of the respondents are married, majority (48%) are farmers and over 65% of the respondents have lower level of qualification (SSCE and FSLC) as their highest qualification. All these data are important to the study as they affect the level of gender discrimination and economic status of women in rural communities.

Table 11 RII and Ranking of Factors of Gender Discrimination Land Ownership

Identified Causal Factors	N	Weighted Mean	RII	Rank
Introduction of Land Use Act	398	2.82	0.56	1 st
Compensation	398	2.80	0.56	1 st
Land administration	398	2.44	0.49	3 rd
Land registration	398	2.30	0.46	4 th

The study found that 85.2% of households own land in rural areas in Minna. Although only 12% of the woman own their personal land. This shows evidence of gender discrimination in land ownership in rural communities in Minna. The result also showed that majority of the land owned by households were inherited proving that there is case of gender discrimination in land transfer through inheritance in Minna. Land in rural communities in Minna are seen to be mostly unregistered as over 69% of the respondents provided their land is not registered. Although only 1% of the registered land was under the wife's name. The study found that majority of the decision on land are taken by the husband or male children, sidelining the wife and female children. Also, majority (65.3%) of the respondents provided that the likelihood that the household land will be transferred to a female child is uncertain. The study also found that the level of gender discrimination in customary land ownership and control is 63.3% high.

The study found that majority (64.3%) of the traditions do not permit land ownership by women in the study area. Also, over 55% of the women are not aware of their right to own land. The study also found that there is an unsatisfactory level of representation of women in the decision-making committee across rural communities in Minna. Also, there is high rate (over 65%) of ignorance as to woman land right. All these downsides can increase the rate of gender discrimination in communal land tenure.

Several factors have been seen to cause gender discrimination in customary land tenure. The study identified these factors to include ignorance of women on land rights, ineffectiveness of the Land Use Act, religious sentiment against women, traditional/cultural practice against women, high level of illiteracy among women, perception of women as temporal member of a community, lack of women representation in decision making and poor financial status of the women. Respondents were asked to select the level to which they agree or disagree that these factors cause

gender discrimination in customary land tenure in Minna. The responses were weighted using; strongly agree = 5, agree = 4, undecided = 3, disagree = 4 and strongly disagree = 1. The result showed that it is not certain that ignorance of women on land rights and ineffectiveness of the Land Use Act causes gender discrimination in customary land tenure in Minna. Though, the study found that religious sentiment against women, traditional/cultural practice against women, high level of illiteracy among women, perception of women as temporal member of a community, lack of women representation in decision making and poor financial status of the women causes' gender discrimination in land ownership in Minna. Result from analysis using RII showed that traditional practice against women and religious sentiments against women are the major causes of gender discrimination in customary land tenure in Minna. Measure should be put in place to correct those factors.

The study attempted to examine the economic effect of gender discrimination in customary land tenure on the women. It was discovered that majority of the land (92.7%) yield financial returns owning that some of the households carry out farming activities on the land. Although, only 12.8% of the women collect the income from the land. Aside collection of income, the study also discovered that majority of the women do not receive any share from the proceeds from the land. It was also found that over 70% of the women cannot be allowed to use the land as a collateral in obtaining loan in order to carry out a business or an investment that can fetch returns. Majority of the respondents provided that gender discrimination have had high impact in their ability to get income. All these unpleasant result translates to women poverty. It is evident in the study as majority of the respondents earn below 30,000 monthly. There is need to address the issues on gender discrimination so as to ensure reduction of women poverty in the study area.

Over the years, government had attempted to respond to calls on land reform that can

ensure reduction in gender discrimination in land ownership in rural communities. The study assessed some of these reforms. It was discovered that majority (72.8%) believed that government has not done enough in tackling gender discrimination in customary land tenure. Also, many believe there is low level of implementation and low level of effectiveness of the land reforms made by the government. About half of the respondents believe governments' inability to ensure land registration throughout the country has not helped in fighting gender discrimination. Several measures were identified and analyzed based on level of effectiveness. They include introduction of Land Use Act, compensation, land administration and land registration. Responses from the respondents were weighted using 5 = Very Effective, 4 = Effective, 3 = Undecided, 2 = Ineffective and 1 = Very Ineffective. Analysis from the study found that introduction of Land Use Act and compensation are neither effective nor ineffective in mitigating gender discrimination in customary land tenure in Minna. While land administration and land registration are considered to be ineffective in tackling gender discrimination in customary land tenure in Minna. There is need for more measure to be put in place and proper implementation of these measures.

Conclusion and Recommendations

This study has shown that there are cases of gender discrimination with regards to ownership of land and decision making on land matters in customary land tenure in Minna. The study identified the major causes in Minna to include religious sentiments and traditional practices which are against women. Also, the unfortunate situation has resulted to evidence of women poverty in Minna owning that only few women get share from land proceeds and the women cannot use land to get credit facilities that can help them go into business or investment. Conclusively, although government had been putting effort to mitigate gender discrimination, there is much to be done as there has not be evident improvement in the reduction of gender discrimination in customary land tenure.

Therefore, this study supports the several calls on the government to as a matter of urgency implement the existing land reform document for better land administration and governance. Also, State and local governments must establish policies targeted at economically empowering women by guaranteeing their land rights and providing equal economic possibilities. This will make available to them capital and other training on investment opportunities, entrepreneurial skills and good farm practices. Economic empowerment will then be a tool to equitable land market participation. It is also recommended that Land Administrators and appropriate Non-Governmental Organizations (NGOs) organize seminars and workshops for community chiefs, family heads, and elders to educate them on the importance of women's access to and ownership of land.

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Urban Transformation and Road Infrastructure Development in Gwagwalada, F.C.T., Abuja

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Abstract

Population growth and migration has been asserted as the major driver of urbanization, with 2.8% annual growth rate and 5.5% per annum of urban areas in Nigeria and studies have asserted the concentration of urban population in the periphery of the Nigeria cities, all these attributes make urban transformation state in Nigeria to be of great concern. Transportation was noted as an integral tool for city development and functioning, and without adequate provision of transportation infrastructure in urban transformation processes, sprawl settlements will evolve. Abuja the Federal Capital Territory of Nigeria conceived in 1976 based on the Newtown concept and central place theory was planned with the incorporation of satellite towns to accommodate envisage growth from the main city. After the movement of Nigeria's capital seat to Abuja city in 1991, the city has been recorded to be experiencing rapid growth including the satellite towns. Poor planning of the Cities and deplorable state of Infrastructures among others has been identified as challenges of urban growth in Nigeria. The study investigates land-use changes in respect to road infrastructure transformation in Gwagwalada Township, Gwagwalada Area Council of Abuja. The study is based on geospatial analysis of existing Gwagwalada township base map including acquired 1m resolution IKNOX satellite imagery of 2019, 2009 and 1999 were used to prepare updated cadastral maps for urban expansion and transportation growth analysis and ASTRA satellite imagery was acquired for land use land cover analysis for 2019, 2009, and 1999. The analysis shows that there is spatial growth in Gwagwalada Township without corresponding growth in the transportation network. There is a high disparity in the level of urban growth and transportation infrastructure in the study area, hence the need for intervention for the development of road networks to save the satellite settlement from turning into sprawl.

Keywords: settlement, sprawl growth, development, city

Introduction

Since the 19th Century, the population growth and urbanization have surged. Despite the fact that cities and towns make just a small percentage of the overall land area on the planet, they are home to nearly half of the world's inhabitants (United Nations 2001). Due to its consequences, urbanization has been a prominent topic of controversy for the last three decades. According to the United Nations, the number of people living in cities will double

by 2050 (from 2.4 billion to 5.5 billion in 2025); by 2030, the major developing world regions will have more urban than rural residents; and by 2050, two-thirds of the population will likely live in cities. Nigeria with a 2.8% growth rate is a developing country with urban growth of 5.5% is at the alarm state site. The United Nations (2006) reported that over 50% of Nigerians population lives in the cities. Aguda & Adegboyega (2013) noted that much of the

urban population is located on the periphery as the cities, which lead to sprawl.

With the high rate of urbanization, population growth and migration have been asserted as the majors' driver of urbanization, with a 2.8% annual growth rate of Nigeria and 5.5% per annum of urban areas (Alabi, 2009). The concentration of the urban population on the periphery of the Nigeria cities attributes to urban transformation problems (Aliyu, 2011). Ever since the period of industrialization that brought about separation in an industrial area and residential area, transportation infrastructure has become a unifying factor between the two land uses. Transportation problems have been caused concerned too many urban/city managers, which is multidimensional, such as air pollution, traffic congestion/holdup, accident and road social vices have impacted the social, economy and wellbeing of the people. Poor planning of the Cities and deplorable state of Infrastructures among others has been identified as challenges of urban growth in Nigeria (Abonta, 2016).

The connectivity of a city is determined by its transportation network; without a good transportation system in urban transformation, sprawl settlement is prevented. Transportation, according to Solanke (2013), is an important tool for city development and operation. According to Aluko (2000), transportation is the ability to move people, products, and services across space to attain some social, economic, political, or psychological goal. Transportation looked at the behavioural and socioeconomic components of a systems approach to transportation development, economic, environmental, and social systems, as well as their interconnected implications on development (TRB 1997).

According to Solanke, (2013) transportation is a city life, while functioning adequately, the city enjoys tremendous growth, without good transportation set-up, cities bound to animate and function. Aljoufie *et al*, (2011)

in Jeddah city of Saudi Arabia, revealed that the relationship between urban growth and transportation is give-and-take in nature and transport infrastructure expansion strongly correlates with population growth, spatial expansion, and land-use change. However, in Nigeria (Abuja in context) the rate of urban/city expansion has been on increase, resulting in high demand for transportation infrastructure to ease the rate of urban deterioration across the nation. This study assesses the urban expansion of road infrastructure expansion of Gwagwalada area council.

Transportation infrastructure most especially land transportation infrastructure as (the medium of migration, upon which urbanization rides, promote and sustain the liveable city. The concept of Newtown and satellite towns was developed on the transportation model, transportation is a yardstick for city functioning (maker a breaker city). Gwagwalada is one of the five area councils (Satellite towns) and Federal Capital City FCC as the city centre (Newtown). The study of urban transformation of the Gwagwalada Area Council as FCC and transportation infrastructure will establish the relationship between the city growth and the transportation growth over the thirty (30) years.

This study aimed at assessing the level of urban transformation in Gwagwalada township, with the view to determine its impact on road infrastructure development in the satellite town of the Federal Capital Territory of Nigeria. The objective for the study has to do with the examination of the rate of urban transformation in Gwagwalada between 1999 to 2019; to assess the road infrastructure/ network changes between the period of 1999 to 2019 and determine the effect of spatial transformation on the road infrastructure development in the study area.

The Study Area

The Federal Capital Territory Administration of Abuja was established on February 3rd, 1976. The Federal Capital

Territory of Nigeria is located at 8050'N 7010'E. Kaduna State borders it on the north, Kogi State on the south, Niger State on the west, and Nassarawa State on the east. The FCT has a land area of 7,135km² (2,824 square miles) and is immediately identifiable by a hill, which accounts for around 250 square kilometers of the total land area of the FCT; the rest land area is used for development (IPA Abuja Master Plan, 1977). The total area is 7,135 square kilometers (2,824 square mile). In 2011, the population was estimated to be 2,238,000 people. Area council under Abuja include Abaji, Abuja Municipal, Gwagwalada, Kuje, Bwari and, Kwali. Figure 1.1 shows study area map.

Methodology

Secondary data was used in this study. These data comprise of existing Gwagwalada township base map, population data, processed 1m resolution satellite imagery for baseline mapping and Processed ASTRA satellite imagery for land use land cover analysis for 2019, 2009, and

1999. The population data was sourced from the National Population Commission to examine population growth; the satellite imagery will be acquired from the United State Geological Survey website. Existing Gwagwalada base map was obtained from Abuja Geographic Information System (AGIS) office. In this study spatial-temporal analysis of the study area was carried out at an interval of 10 years between 1999 – 2019. A metre resolution IKONOS satellite imagery and existing Gwagwalada township base map were used to prepare the cadastral maps for the road infrastructure and urban expansion. Processed ASTRA satellite imagery was acquired for land use land cover analysis for 2019, 2009, and 1999. Supervised image classification was used to determine spatial expansion of Gwagwalada township, while buffer spatial proximity analysis was used to determine influence of transport infrastructure in spatial temporal growth of Gwagwalada township. Mapping/geometry calculation of road length was employed to determine growth on transportation infrastructures.

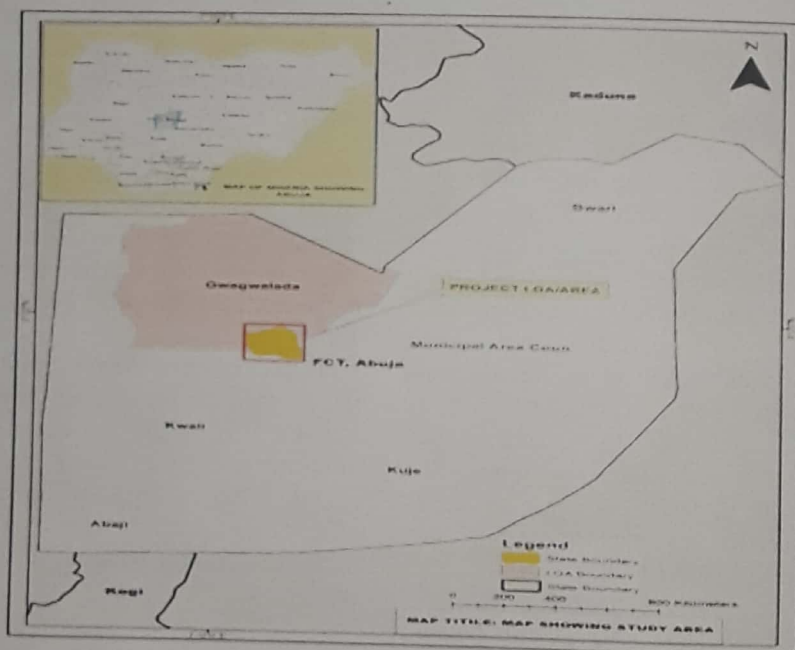


Figure 1: Map of FCT Showing Location of Gwagwalada Township

Results Discussions Assessment of Urban Transformation in Gwagwalada

This section of the analysis explains the extent of urban transformation in the study area. On the course of this, the land use /land cover of the town was estimated between 1999, 2009 and 2019, respectively, thereafter, the extent areal of the built-up area was deduced, to develop reference on the trend of development that had occurred in the study area under the period covered by this study.

Land use /Land cover of Gwagwalada Between 1999 and 2019

In 1999 (Table 1), the Gwagwalada the extent areal of the built-up area was estimated of 400.4skm which was over

11%, the vegetation cover of the area was calculated to almost be 40% of the total land masses, the water body 25%; cultivation land (23%). Figure 2 reveals the graphical outlook of the extent of the study area in 1999.

Table 1 and Figure 3 shows the land use land cover of Gwagwalada in 2009. The analysis reveals that the built-up area was over 22% of the total land coverage, vegetation land use 23%; water body 18%; bare soil less than 1% and cultivated land has the total areal 35%. This analysis implies that the built-up was increased compared to the report of the previous period of 1999. In the similar view, the vegetation cover was drastically reduced, while the waterbody gained an increase in the total areal coverage and the cultivation area increased as well.

Table 1: Land use/Land Cover of Gwagwalada between 1999 and 2019

Land Use	1999		2009		2019	
	Area (Km ²)	%	Area (Km ²)	%	Area (Km ²)	%
Built-up Area	400.3	11.35	811.13	22.99	1636.14	46.37
Vegetation	1400.88	39.71	812.41	23.03	204.57	5.8
Waterbody	900.05	25.51	653.05	18.51	87.24	2.47
Bare Soil	15.12	0.43	13.63	0.39	491.84	13.94
Cultivation	811.67	23.01	1237.85	35.09	1108.29	31.41
TOTAL	3528.09	100	3528.09	100	3528.09	100

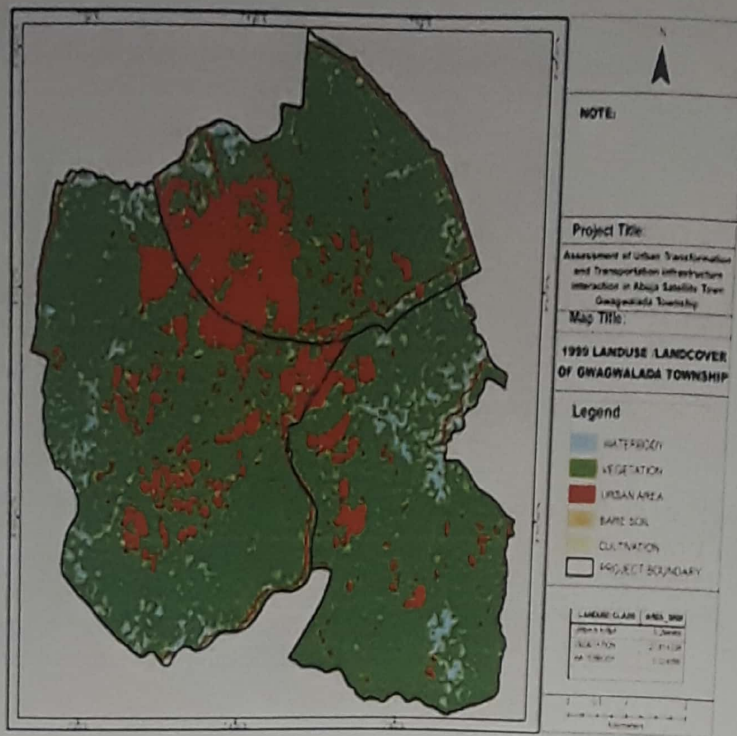


Figure 2: Land use /Land cover of Gwagwalada 1999

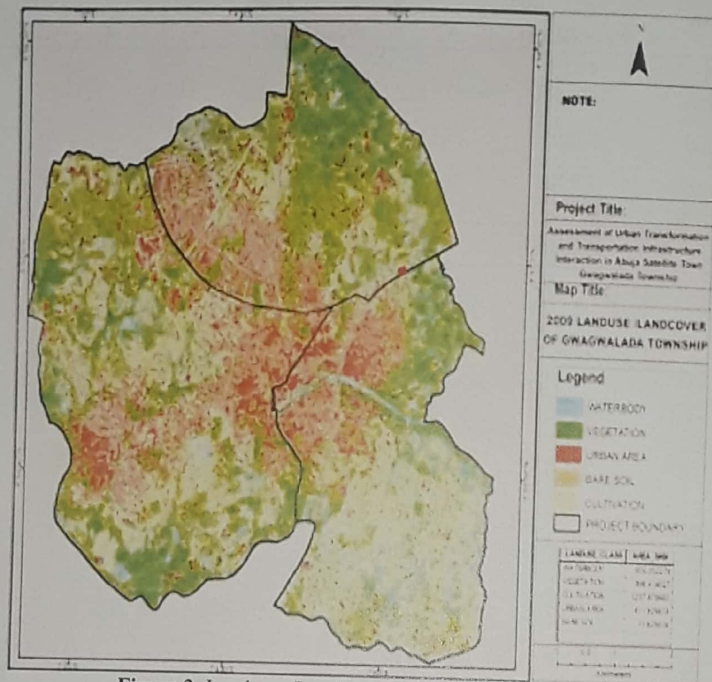


Figure 3: Land use /Land cover of Gwagwalada 2009

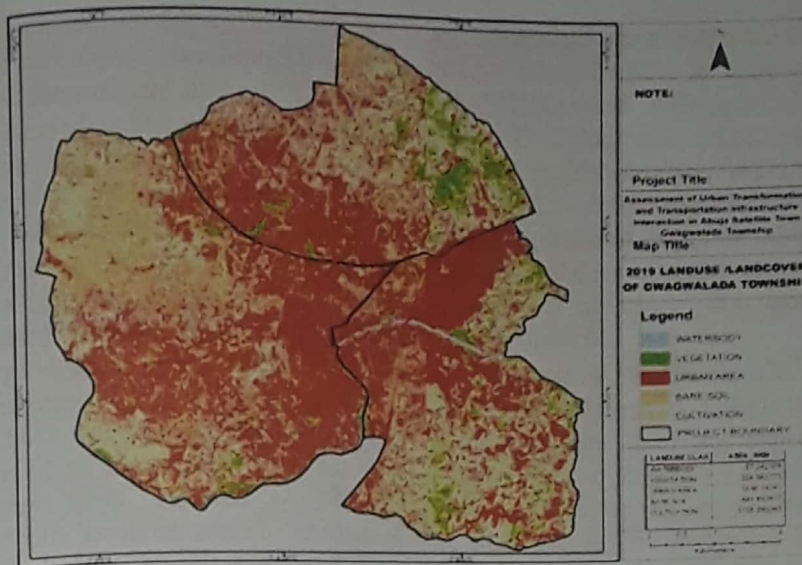


Figure 4: Land use /Land cover of Gwagwalada 2019

According to Table 1 of the land use/ land cover of Gwagwalada in 2019, the built-up area was estimated to have drastically increased above 46%, while the vegetation area reduced to 5%, also the waterbody decreased less than 3% and there were more of the bare land to the tune of 13%, the cultivation land in the study was also observed to decreased to 31%, all as revealed in Figure 4.

Trends of the Land use/Land Cover of Gwagwalada (1999 and 2019)

Figure 5 exhibits the trends in the LULC of Gwagwalada between the periods undertaken in this study. For the built-up area: there was a steady increased throughout the periods, from just little

above 400km² to above 811km² and to 1636km² in 1999, 2009 and 2019, respectively. The vegetation cover of the area during the period steadily declined from 1,400km² to 812km² and to 204km² within the said period. For the waterbody: the coverage area slightly reduced within the first two periods (900km² and 653km²) but was drastically declined at the third period (87km²). The bare soil of the study area, which was just little above 15km² in 1999 slightly decreased to 13km² in 2009 and sharply increased to 491km² in 2019. The cultivation area of Gwagwalada, which was just at 811km² in 1999, increased sharply above 1,200km² in 2009 and slightly reduced to 1108km² in 2019

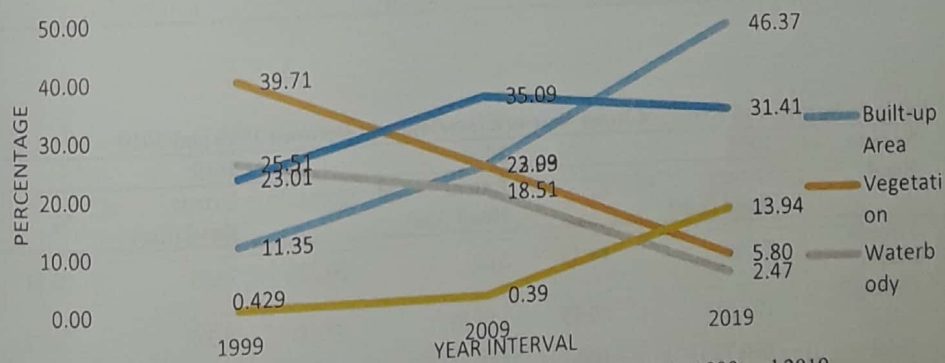


Figure 5: Analysis of land use /land cover of Gwagwalada in 1999 and 2019

Rate of Changes in the Built-up Area

The changes that occurred in the built-up area of Gwagwalada between 1999 and 2019 is summarized in Table 2. There was an over 11km² of built-up area by 2009 and the area also over 23km² in 2019. This indicates an over 100% increase in the in the built-up area within the periods covered by this study.

Road Infrastructure Development in Gwagwalada between 1999 and 2019

The nature of road infrastructure in Gwagwalada in during the period were more of untarred access, few metres of drainages, culverts and narrow bridges (see Table 3). From the imagery analysed on road network in 1999 (Figure 6), the extents of road access during the period were just about 130km², while the untarred roads were estimated to slightly be above 105km², the value that constitutes a higher percentage (above 80%) of the entire access roads of the town. The tarred roads, also, was estimated to slightly above 25km², which the percentage was below 20%. This implies that there were limited physical development available in the areas as at the period analysed.

Between 1999 and 2009, the nature of roads in Gwagwalada was fairly enhanced in the year 2009 with an increase in road development compared to the previous year in 1999. In 2009, the entire road network in the study area increased more above 160km² as against the total estimate of road network of 130km² in 1999 (Table 3). In this view, the untarred stood at 116km², which is above 60% of the entire roads network and the percentage of the roads in the same area was estimated to slightly increase above 51km², the percentage which stood at 30% of the entire road network for the period of 2009. As observed, there were more numbers of roads developed after between 1999 and 2009 (Figure 7), which was aided by rapid increase in physical developed of residential buildings and other commercial activities which sprang up in the area. The impact of the location of the University of Abuja, which is not far from the town was quite noticed, as numbers of staff and students resides in the town. Within this period, a serious demolition exercise by the Federal Government at the FCT, influenced the swift movement of large numbers of people into Gwagwalada area council and by extension, into Gwagwalada town.

Table 2: The Rate of Changes in Built-up Area

Year	Built-up Area (km)	Change in Built-up (km)	Rate of Change (%)
1999	11.346	-	-
2009	22.990	11.64	102.6
2019	46.375	23.38	101.7

Table 3: Nature and Extent of Road Network Development Between 1999 and 2019

Nature of Road	1999		2009				2019	
	Extent of Road (km)	%	Extent of Road (km)	%	Extent of Road (km)	%		
Tarred Roads	25.56	19.55	51.1	30.52	76.91	20.81		
Untarred Roads	105.21	80.45	116.31	69.48	292.7	79.19		
Total	130.77	100	167.41	100	369.61	100		

Table 3 reveals the nature and extent of road network of Gwagwalada in 2019. The analysis shows that in the year 2019, the extent of road developed stood at 369km², which is quite increased compared to the previous 2009. The extent of untarred road network at the period was considerably higher from the previous period, which implies that there are quite areal of land used as built-up area. Nevertheless, within the same period, the extent of tarred road also

got increased at above 75km², at about 20% of the total land areal in 2019 (Figure 8). The impact of increased in housing development and road construction were on the increased, hinterland was opened, the boost in commercial activities due to the location and proximity of government establishments and projects were among the factors that influenced the rapid spatial transformation.

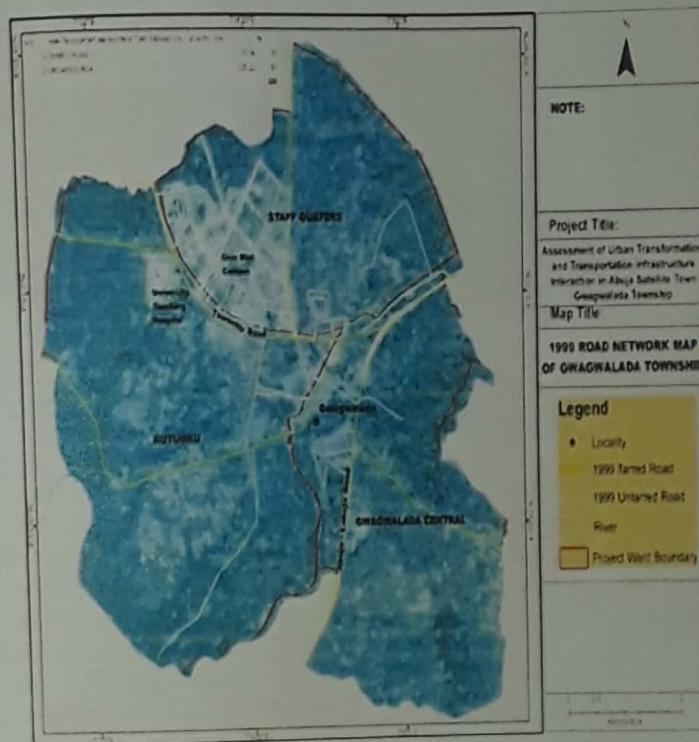


Figure 6: Road Development Network in 1999

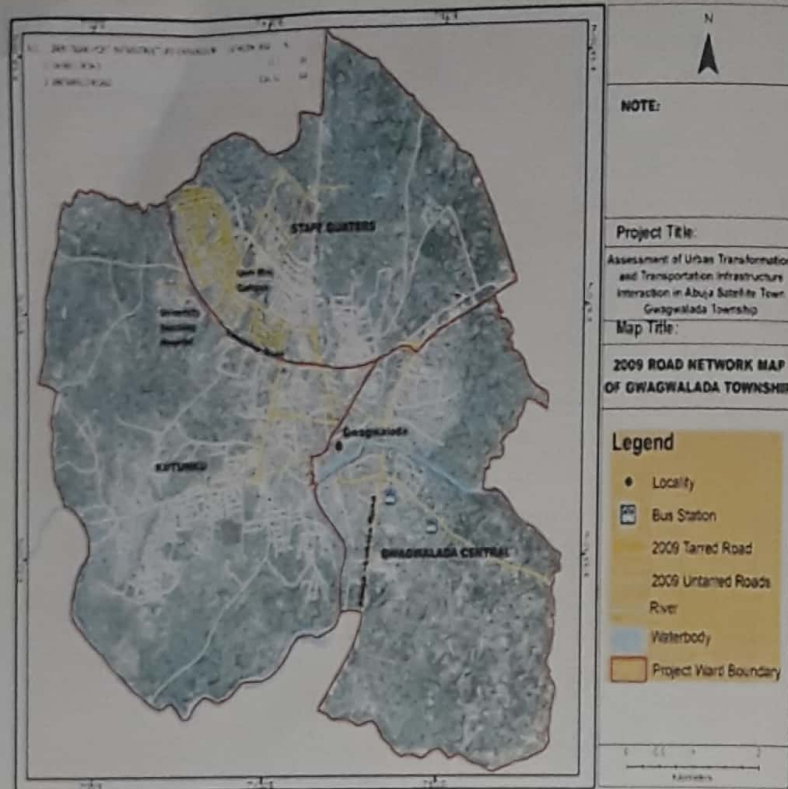


Figure 7: Road Development Network in 2009

Impact of Urban Expansion and Road Infrastructure on Gwagwalada Population Growth, Spatial and Road Development in Gwagwalada

With the population of Gwagwalada which stood above 66,000 in 1999, the spatial development of the town then was just little above 11km² (Table 4). The nature of road infrastructure was majorly (80%) untarred.

They are without drainages, culverts were few, and bridges that run over the available rivers were few. The tarred road that existed in 1999 were more concentrated within the University Staff Quarters area, the town itself, recorded a very low development in road infrastructure. The effect of urban transformation is the increase in number of untarred roads in most of the settlements around the area (Figure 9).

Table 4: Population and Spatial Development in Gwagwalada (1999 – 2019)

Year	Population Growth ('000)	Built-up Area (km ²)	Road Developed (km ²)
1999	66,458	11.35	400.29
2009	158,588	22.99	811.12
2019	378,000	46.37	1636.14

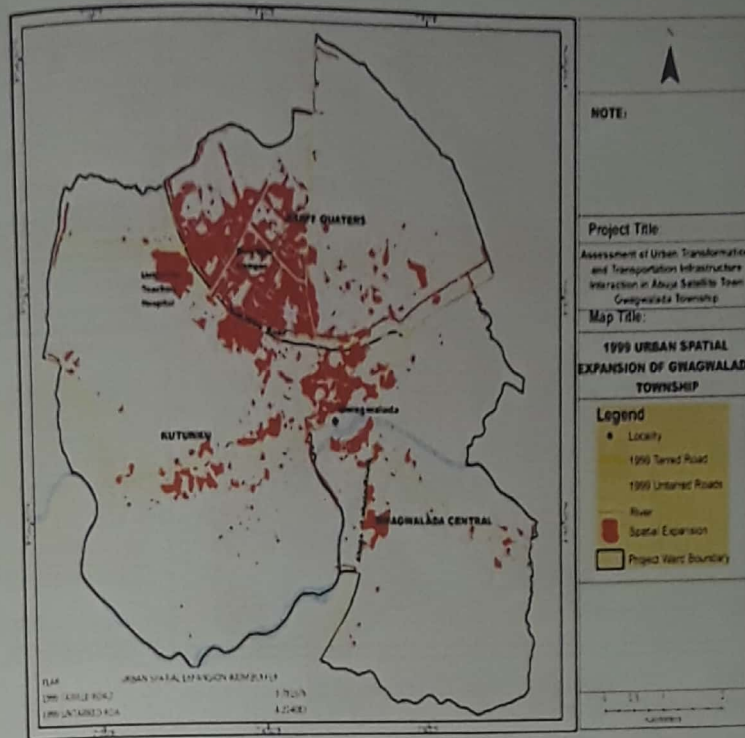


Figure 9: Road Development in Gwagwalada, 1999

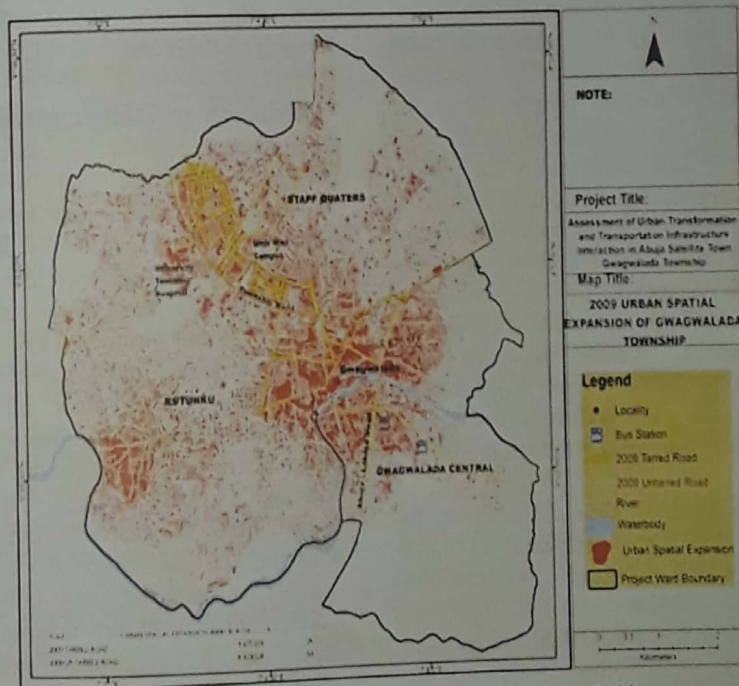


Figure 10: Road Development in Gwagwalada, 2009

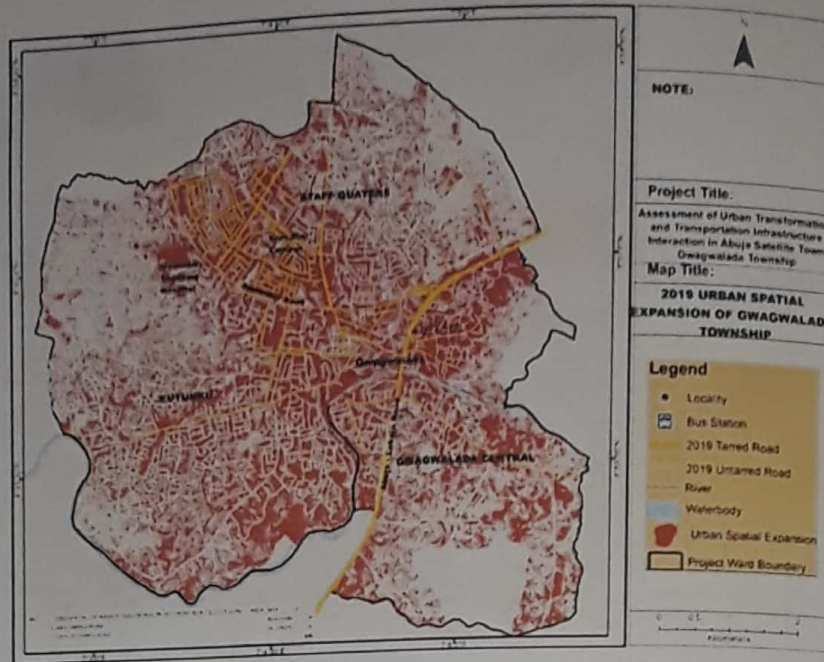


Figure 11: Road Development in Gwagwalada, 1999

As observed the spatial changes that occurred in the study area as a result of population changes between 1999 and 2019. Between 1999 and 2009, while the study area recorded a rapid increase in population from 66,458 – 156,588 people, the spatial expansion of the area also increased from 11.35km² – 22.99km² within the period. Considerably, road development within the period experienced a sharp increase with a bit over 811km². Although, there were more of road development, as the numbers of houses increasingly spread to the previously vacant space within Kutunku and Gwagwalada Central (Figure 10), but most of these roads were untarred, narrow and without other supporting infrastructure.

Gwagwalada in 2019 was characterized by a huge population increase (378,000 people), which doubled the previous population (158,588 people) of 2009 (see Table 4). With the extent of development of Gwagwalada, in 2019, the growth was twice of its previous expansion, a total coverage which stood at 46.4km². Based on road infrastructure of the area, the road construction that were noticed to be higher, were more of untarred access way. From the analysed imagery (Figure 11), Kutunku, Gwagwalada and other spaces were now

filled up with houses and other forms of development, to support these expansion, road infrastructure (1600 km²) spreads through all the areas.

Conclusion and Recommendations

The investigation on the spatio-temporal changes conducted on Gwagwalada between 1999 and 2019 revealed in the areal coverage of the town over a period. The analysis shows that the town steadily increase as the population changes from 11km² – 46km² between 1999 and 2019, indicating an over 400% increase in spatial development. The road infrastructure development in the study area was also on the increase for the period of the study. Although, there were more road construction, at different period, these, however, did not reduce the rate of the increase in untarred road infrastructure. Results indicate a strong increase in spatial expansion of Gwagwalada township as urban area increase in geometry progression, while there is no corresponding growth in transportation infrastructure. The study revealed most roads in Gwagwalada township are untarred.

This study also points out a strong significant influence of transport infrastructure on the spatial temporal expansion and land use change. Although majority of the roads are not tarred, urban expansion tends to grow along these roads as indicated in figures. also, the study shows that highways and main roads have stronger influence on spatial expansion and land use change in comparison with minor roads. The study recommends proper road planning and development in Gwagwalada township in order to stimulate economic development, reduce traffic congestion, avoid sprawl, and increase value of commercial, industrial, and residential development.

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Implications of the Locations of Intercity Motor Parks on its Adjoining Environment in Minna, Niger State

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Abstract

Nigeria's vehicular usage has increased as a result of rapid urbanization and transportation infrastructure development. With changes in the urban landscape, the location of motor parks has become a serious issue, affecting the free flow of traffic in urban areas. This study aims at assessing the distribution of intercity Motor Parks location within Minna Metropolis and determine the implications of the motor parks' location on the adjoining environment. The primary data were sourced from the residents within the area where the motor parks were located with the aid of questionnaire, while the secondary data sourced was the street guide map of Minna and Google earth map of the town. Ground Positioning System (GPS) was used to determine the coordinates' location of the motor parks. This street guide map of the town was digitized, and the location points were fixed on the map. A total number of 200 copies of questionnaire was administered across the neighbourhoods where the motor parks were located using stratified sampling approach. The analysis was done descriptively, and results were presented in table using percentage. In the study, eight (8) government-approved motor parks were identified: Nice Travel and Kpakungu Garage in the Kpakungu area; Abdulsalam Garage, NSTA Tunga Park, and Peace Mass-Transit in the Tunga area; Mobil Garage and Central Park in the Minna central area; and NSTA Shango in the Minna - Suleja area. Only one of these motor parks (Peace Mass-Transit) is privately owned, while the others are government-controlled. In terms of the environmental implications of location, five (5) of the eight (8) variables examined were more prevalent in all areas, and they are road-side parking, often high volume of traffic delay, blockage of drainage-way, hawking, and noise pollution. The study concludes that in the arrangement and development of city's landscape, planning and designing of motor parks should not be taken for granted being an important part of transportation infrastructure required for city development. The study, therefore, recommended that adequate designing, planning and development of motor parks in Minna should be considered, also, monitoring of the activities at the motor parks should be done to reduce to reduce traffic problem and other disturbance. The need for collaboration of the motor parks Management with the Niger State Environmental Protection Agency should be considered for cleanliness of motor parks and evacuation of blocked drainages with the areas of the motor parks.

Keywords: Development, Environment, Garage, Hawking, Location, Motor Parks.

Introduction

Rapid urbanization and transportation infrastructure development continually increases the rate of vehicular usage in

Nigeria. With the changes in the landscape of urban environment citing of motor parks have become a serious issue affecting the free flow of traffic in and out of urban

centres. motor parks are usually associated with transportation that involves the use of commercial vehicles by offering services for travelers boarding to different places of their choices or destination. Salami *et al.* (2020) admitted that motor park is an important part of the urban transportation fabric, which area designated by relevant authority to provide ease of intra and inter-state transportation for long and short journey passengers. motor parks motor plays an essential role in traffic management and congestion in cities. However, the activities of a motor park could pollute the air especially from exhaust pipes of vehicles coupled with the use of fossil fuel through incomplete combustion by the engine causing air pollution in the forms of smokes, and dusts. One of the major problem of the environment that has affected and is still affecting both developed and developing countries of the world today is air pollution and has recently been linked to increased morbidity and mortality rates (Anake, et al. 2018).

Motor parks activities have the potential to generate an unpleasant atmosphere in the environment they are located, which can range from the increase level of noise, hawking activities, level of touting/ theft, improper disposal of refuse, drinking and smoking by staff, improper parking of vehicles, beggars, increase in business activities, accident, dust (Ogbazi, 1992; Ibekwe, 2010). In some cases, emission, from combustion engines represents the largest air quality impact associated with motoring. The prominent air quality issues related to motor parks are CO², NO²PM and H²S. Although carbon dioxide is nontoxic to human but is a major greenhouse gas and motor vehicle emission are important contributor to the growth of CO² concentration in the atmosphere which causes severe environmental impact (Sax, 2001).

Motor parks are generally linked to the transport system by offering a place for commuters to board vehicles to their destination and these could be journeys such as intra-city or inter-city. Motor parks are

believed to have come into existence in response to the need to have a central collection points for passengers and goods as business activities and population increase (Adedayo & Zubairu, 2013). According to Onokala, (2001) the importance of transport in any given city to its inhabitants cannot be overstated, as it is responsible for the movement of people in and around the city. According to Adedayo & Zubairu (2013), the nature and environment of these motor parks often affect the users in various ways particularly in terms of comfort and functionality, and also affect the environment where the motor parks are located. A visit to some selected motor parks in Nigeria will show an environment that appears not conducive for commuters and operators. Due to the importance of motor parks to city dwellers and the image of the city, customer satisfaction is the desire of any service provider hence that of the commuter should be the desire of the motor park providers. According to Anable, (2005) for a transport system to be considered as providing good service it must ensure that commuters are satisfied with the quality of the service provided.

One of the main purposes for the construction of motor parks by various governments in modern times is to give room for orderliness and accountability in the transport business through a tripartite arrangement between transporters and the government on one hand, and between transporters and the public, on the other hand. But this purpose has been defeated by the various happenings in and Nigerian motor parks. The impacts, of motor parks on their immediate environment are quite much: These include increased level of noise, hawking activities, touting/ theft, release of CO², improper waste disposal, drinking and smoking, improper parking of vehicles, beggars, accident, and dust. The current rowdy state of motor parks in Nigeria makes it a haven for criminal activity to thrive (Salami et al. n.d).

This study will seek to examine the impact of intercity motor park's location on

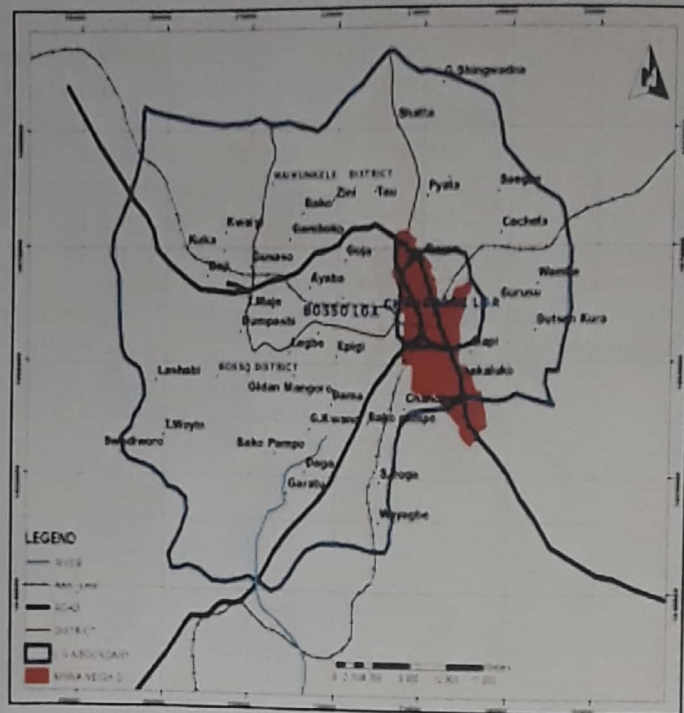


Figure 2: Location of Minna
Source: URP Dept, FUT Minna

Methodology

The primary data for this study were sourced from the residents of the areas where the motor parks were located in Minna. The street guide map of Minna, google earth image were employed in the study. A well-structured open and close ended questionnaire were used for data on the implications of the motor park's location on the adjoining land use. A total number of 200 copies of a set of questionnaire was administered within the adjoining environment of where the motor parks were location, this implies that 40 copies of the questionnaire were administered in the area. Stratified sampling method was adopted in the administration of the questionnaire. The data obtained were analyzed using descriptive method and the results were

presented using table and percentage value. This street guide map of Minna was digitized, and the location points using GPS were fixed on the map. The analysis of this study was done descriptively, and results were presented in table using percentage.

Result Discussion

Distribution of Motor Park Location

Investigation of the distribution of intercity motor parks within Minna metropolis have shown a total numbers of government designated and approved motor parks. These motor parks comprise of Nice Travel, Kpakungu Garage, Abdulsalam Garage, Mobil Garage, NSTA Tunga Park, Peace Mass-Transit, Central Park, NSTA Shango area of Minna (Table 1).

Table 1: The Locations, Routes, and Coordinates of Motor Parks in Minna

	Name of Motor Park	Area Located	Routes	Coordinates
1	Nice Travel	Kpakungu	Bida, Mokwa, Kanji/New Bussa	N 09°35.792' E 006°31.653'
2	Kpakungu Garage	Kpakungu	Lagos, Ilorin,	N 09°35.837' E 006°31.883'
3	Abdulsalam Garage	Tunga	Oshogbo, Kanji/New Bussa Abuja, Kano, Bauchi, Sokoto,	N 09°35.310' E 006°33.979'
4	Mobil Garage	Mobile roundabout	Jos Suleja, Abuja, Kaduna,	N 09°36.828' E 006°32.865'
5	NSTA Tunga	Tunga	Bida, Lagos, Ilorin Lagos, Kano, Jos, Sokoto, Kano,	N 09°35.792' E 006°31.653'
6	Peace Mass-Transit	Tunga	Benue, Kogi, and Kaduna. Lagos, Eastern part of Nigeria	N 09°35.713' E 006°33.769'
7	Central Park	Kwasua-Gwari	Lagos, Ilorin, Ibadan	N 09°35.792' E 006°31.653'
8	NSTA Shango	Shango	Lokoja, Eastern part of Nigeria and Ibadan (TCTC)	N 09°34.792' E 006°34.653'

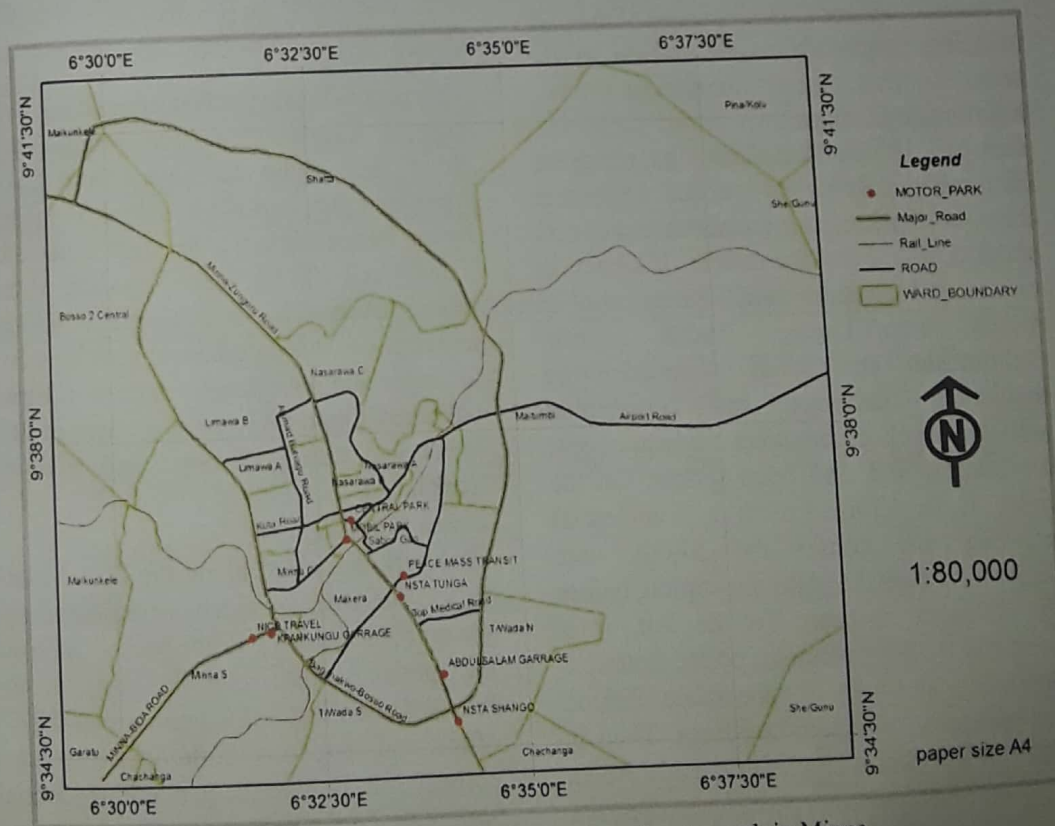


Figure 3: Location and Distribution of motor park in Minna

Motor Park Locations and the Adjoining Environment/Land uses

In presenting the location of these motor parks within the metropolis, the neighbourhood locations, the physical features, arrangements of facilities, the size of the parks and description of the adjoining land uses were presented in this section, and they are presented as follows:

Nice Travels Park

Nice travels motor park is located at Kpakungu, along Minna-Bida Road, it covers a total land mass of about 1300 square meters. Due to the current reconstruction of the Minna-Bida Road, which affected the axis where the park is located, there have been a lot of changes in and around the park. It is adjoined by the Oando gas station to the south, to the west, an open space, then residential buildings, to the north; stores and an illegal market, and to the east; the Minna-Bida Road, then other commercial shops, and residential buildings behind it. The area is characterized by on-street trading, and this is as result of the park bringing people from everywhere to the area.

Kpakungu Garage

This park is located at Kpakungu, along the Minna-Bida Road. It's about 150meters from the Kpakungu roundabout and covers about 5,602.38 square meters. It's been in existence for more than 20years, and its routes are Lagos, Ibadan, Ilorin, Ogbomosho etc. It is surrounded by residential buildings, and commercial activities such as on-street trading, shops, workshops, and also open spaces. On the right, it is adjoined with a commercial building that houses the APGA state secretariat, then the MRS gas station, before the Western by-pass. To the left, it is bordered by the Kpakungu police station, a pharmacy, and then an open space. Behind the park are residential buildings. Then in front of the park is the Minna-Bida Road, which demarcates the park from opposite commercial shops and workshops, that has residential buildings behind them.

Abdulsalam Garage

This park is located on the Minna-Suleja Road, it is about 1km from the city gate.

Adjacent it is Conoil gas station, opposite it are shops and supermarkets, there is a presence of a paint manufacturing industry, and they are all being separated from the by the famous Minna-Suleja Road. Behind the park is a service industry, for car repairs, and after that are residential buildings. To the left are food vendors, phone repairs shops, and both private commercial and government owned buildings (Abdulsalam youth center, Nigerian Union of Journalist secretariat) a pharmacy and a car dealers. Finally, on the right are residential buildings, with shops in front of them.

Mobil Park

This motor park is located at the center of the city of Minna, at the Mobil roundabout. It is characterized by all sorts of commercial activities such as on-street trading, Keke drivers, and commercial banks. Behind it is the Mobil gas station, where the name of the area was derived from. On the left-hand side is a public place (church). Opposite it are abandoned government owned buildings, and open spaces. To the right, are open spaces and the railway.

NSTA Tunga

This park is located at the commercial of the city of Minna, along the Minna-Suleja Road. It is about 150meters from David Mark junction, and it's bordered on the left by the Tunga market, to the right, Guarantee Trust Bank (GTB), then Newline Minna branch. Behind it are residential buildings, and opposite it is commercial activities such as supermarkets, shops, eateries (Ostrich bakeries). Opposite it are also traces of light industries, such as furniture and windows workshops.

Peace Mass Transit

This park is located along the David Mark Road. The area is majorly a residential and government owned public spaces. Opposite the park is the road leading to the Independent Electoral Commission (INEC) office, and residential buildings with shops in front of it. Behind the park are residential buildings. To the right is an open space, and a school, and to the left, are residential buildings with shops in the front.

Central Park

This park is located in a densely populated area, close to the Kwasua-Gwari market.

There is predominantly a residential and commercial area. It is bordered on every side by residential.

NSTA Shango

This park is located on the Minna-Paiko Road and is about 300meters from the city gate. It spans about 18,573.23 square meters. The area is not a residential area, as it is border by commercial, and government public places on the left and on the right. Behind the park, is an open space, and in front are various commercial activities like gas stations, supermarkets, shops, and light industries like block industry. This garage was originally for NSTA, but due to the ploy by Niger state government to reduce traffic in and around the city of Minna, First Tarzan motors, Young Shall Grow Motors be move from Sabon-gari to this garage, to convey passengers to the East.

Implications of Motor Parks Locations on Adjoining Environment Land use

Eight (8) variables were employed in the assessment of the implications of the location of intercity motor parks on the adjoining environment/land uses. These variables comprise of noise pollution, hawking, drainage blockage, selling of hot drinks/ alcohols and cigarette, road-side

parking, loitering dust pollution, and traffic hold-up.

At the Nice Travel motor park, Kpakungu, the prevalent implications of the Motor Park location have been observed to encourage road-side parking (20%); high rate of noise pollution (15.5%); hawking (15.4%); and traffic problem (14%) in the area in most of the time, due to high level of travelers/commuters along Minna - Bida Road to the Western part of the country. Also, at Kpakungu garage: road-side parking (22.7%); traffic hold-up (18.5%); and noise pollution (14.5%) were the prevalent implications of locating the motor park within the environment. These first two motor parks were located at the same axis of Minna, along the Minna – Bida Road, the high volume of vehicular movement along the road are due to multiple factors. For instance, this is the road linking the State Capital to the other part of the state such Bida, Mokwa, Jebba, New Bussa, as well as the southern part of the country, the presence educational facilities along the route attracts huge volume of traffic, and with the residential neighbourhoods located along the routes are bound to generates high volume of traffic, which the aftermath effects will be on-street parking and traffic hold-up or delay.

Table 2: Implications of Location of the Motor Parks on the Environment

S/N	Park	Noise Pollution	Hawking	Drainage blockage	Selling hot Drink	Road-side Parking	Loitering	Dust pollution	Traffic Hold-up
1	Nice travel	15.5%	15.4%	12.6%	3%	20%	8%	3.8%	14%
2	Kpakungu park	14.5%	11.5%	13.8%	7%	22.7%	8%	5%	18.5%
3	Abdulsalam garage	9.5%	20.5%	20%	5%	21%	10%	4%	15%
4	NSTA Tunga	15%	11%	11%	4%	20%	12%	8%	19%
5	Peace Mass-Transit	22%	31%	4%	0	10%	9%	7%	17%
6	Mobil garage	14.3%	10.3%	9.5%	8.1%	22%	8.3%	9.5%	18%
7	Central Park	8%	11%	14%	7%	17%	9%	8%	26%
8	NSTA Shango	22.3%	17.4%	9.5%	8%	7.8%	14%	11%	10%

Abdulsalam Garage, NSTA Tunga and Peace Mass-Transit Park were all located within the same area, Tunga environs. At Abdulsalam garage, road-side parking (21%); hawking (20.5%); drainage blockage (20%); and traffic delay were the major implications of location of the motor park. Also, at the NSTA Motor Park at Tunga road -side parking (20%); traffic delay (19%); and noise pollution (15%). The Peace Mass-Transit admitted that hawking (31%); noise pollution (22%); and traffic hold-up 17%. The analysis of these three parks indicate that traffic problems, road-side parking and noise pollution and hawking were prevalent among the issues affecting the motor park environment/neighbourhoods.

Mobil garage and Minna Central motor park are located at the core area of Minna. These two motor parks were the earliest to be located and developed in the city. At the Mobil garage, roadside (22%); traffic delay (18%); noise pollution (14.3%) was prevalent as complaints of residence of the neighbourhoods. In the case of central Motor Park, traffic hold-up (26%); road -side parking (17%); and drainage blockage (14%). The NSTA motor park at Shango is located adjacent the city gate along Minna – Suleja – Abuja Road. This residents of the neighbourhoods around the motor park have admitted noise pollution (22.3%); hawking (17.4%) and loitering (14%) are the prevailing implications of locating the Motor Park in the environment. From this analysis, road -side parking, traffic hold-up, noise pollution, hawking and drainage blockage are the prevailing implications on the environment where the motor parks are located.

Conclusion and Recommendation

In the arrangement and development of city's landscape, planning and designing of motor parks cannot be taken for granted being an important part of transportation infrastructure required for city development. The survey revealed the prevalent implications of the location of the intracity motor park's locations, which are road -side parking, traffic delay and hold-

up, drainage blockage, and hawking. All these activities pose serious impact on the adjoining environment/land uses. The study, therefore, recommended that the need for adequate designing, planning and development of motor parks away from heavy traffic routes, monitoring of the motor park's location that has adequate loading and parking space should be given consideration, so as to reduce traffic problem and other disturbance. The parks located within the core area of Minna Mobil motor park should be given a face-lift, by rebuilding and designate mainly for intercity usage to allow for free flow of traffic. There is need for sensitization of the motor park workers, the traders and even the commuters on importance of cleanliness in and around the motor parks. The need for collaboration of the motor parks Management with the Niger State Environmental Protection Agency should be considered for cleanliness of motor parks and evacuation of blocked drainages with the areas of the motor parks.

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