

Published 20 November 2025 by the University of KwaZulu-Natal
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Journal of Inclusive cities and Built environment. Vol. 5 Issue 9

How to cite: UNAH M. O., 2025. Urbanization and Challenges of Uncontrolled Physical Development in Kano Metropolis, Nigeria. *Journal of Inclusive cities and Built environment*. Vol. 5 Issue 9, Pg 75-85.

URBANIZATION AND CHALLENGES OF UNCONTROLLED PHYSICAL DEVELOPMENT IN KANO METROPOLIS, NIGERIA.

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Published 20 November 2025

ABSTRACT

This study examines planning amidst the effect of urbanization and its implication of uncontrolled city growth around Metropolitan Kano. This urban challenges requires regulatory management strategies to curb haphazard physical development in the built environment. The nearly emerging cosmopolitan city is engulfed with mirage of basic integration of informality in urban activities; increasing social inequalities, challenges of urban sprawl of unplanned peri-urbanization that requires sustainable monitoring. A total of Sixty- nine (69) respondents, accounting for 92% out of 75 distributed questionnaires were retrieved, using purposive sampling techniques. Factors responsible for controlling Physical Development in Kano Metropolis were assessed using on a 5 Likert scale rating. The major finding of the study is there is the dearth of regulatory Planning for sustainable urbanization challenges. The study uncovers the strong need for policy intervention with regards to the rapid urban growth that has serious environmental implications on Kano built environment. The study concludes by recommending for in-depth research on urban planning and way to developed a frame work with emphasis on physical development management amidst urbanization Challenges in Kano metropolis.

KEY WORDS Built environment, Urban planning, Kano Metropolis, Physical development, Regulation, and Urbanization..

1. INTRODUCTION

Metropolitan settlement all over the world are being influence by urbanization that requires intervention of government on how they are to managed the city through urban housing regulation. Since the earliest days of human settlement, people have consciously planned and collectively intervened with activity of nature and it built environment in order to achieve particular social, political objectives (UN-HABITAT, 2009). Physical planning as a tool that deals with the unprecedented challenges facing 21st-century of developing cities including sub-Sahara African, and this will continue to experience rapid rates of urbanization (Dankani, 2011). Kano exist of critical challenges and practices that lack the effectiveness in controlling and coordinating the development and management planning of it metropolitan built environment (Unah *et al.*, 2024a, 2024c; Umar *et al.*, 2019). The city being the most urbanized epi-Centre in northern Nigeria, is bewailed with some negative consequences of the socio-economic and environmental aspects of human beings such as weak urban planning, duplication of agencies regulation, land tenure system, environmental pollution, urban heat island phenomenon that creates discomfort to dwellers (Zakka *et al.*, 2017) and high population growth (Gambo, 2014), and mismanages of urban open green spaces f(Maiwada, 2016), contravention of subdivision of plots, (Ibrahim and Mai., 2020, Ibrahim,2014), environmental deterioration (especially air and water pollution), illegal conversion of land to explore the economic opportunities (Unah and Ali, 2024), traffic congestion, effect on sprawling of unplanned and spantenous expansion of peri-urbanized areas which are responsible for activities of designated un-developed open spaces conversion (Unah and Muktar, 2020), social services as housing and water supply and sewage services that are virtually none-existent in the rapidly growing urban periphery areas..

However, Nasidi, (2022) posited urbanization as an important element for sustainable development, has serious challenges inhibit through exclusionary policies. This challenges are without some degree of standardization, enforcement regulation measures, and guidelines strategies for collaborative planning processes and adequate implementation for sustainable physical development of built environment (Unah, 2022). The city growth and constant segregation of it's physical developmental activities has not been remarkable in the economic expansion of it metropolis (Unah, 2020). In same opinion, Unah (2024b) Zakkal *et al.*, (2022) apted that Kano city indisputably of becoming a mega city has undermine the power of urbanization as a factors of controlling the physical development of infrastructural in the state. The growth and management of a developing city like Kano has to takes into cognizance decision-making that will account for sustainable economic, ecological, and social impacts that seeks to improve the built environment restoration and effective functions of both human quality of life and activities in near cosmopolitan city (Unah *et al* 2024c). The preponderance of several duplicate in the effective growth and planning management of Kano urban land, were over looked by the state administrator (Umar *et al.*, 2019). Planners and other regulatory enforcement officers are often incapacitated by political office holders and corrupt government officials, as they are often responsible for disregarding planning rules and regulations (Dankani, 2011). However, the consequences are at the detriment of it built environment where the general public or property owners compromise any form of planning controlled. This has depicted the physical environment and is responsible for haphazard piece-meal mixed-functions of residential - commercial environment (Dankani, 2011). Nkolika *et al.*, (2018) averred uncoordinated land use environment distort the original plan and poise a serious problem to planning authorities. This however, required the need to control the regulatory policy

of the state, since it constitutes one of the major instruments required for sustainable development. Unah and Ali (2024) posited that the sprawling among residential extensions with densely commercial and industrial built-up development are all intermingled with rural-urban fringes and has been characterized by fast unplanned but yet sustainable growth. Ibrahim and Unah (2023) avers the rate of urbanization in most African countries" capitals has diverse consequences on the efficient functioning of the cities and its environs. Jiboye (2011) emphasized that cities-built environment increased in sizes due to contravention of building regulatory policies, which today are the many critical factors that determine the poor quality of human habitation. This by extension are impeding adequate settlement and sustainable controlled of it growth (Eze *et al.*, 2019). This unauthorized building colonies requires urgent restoration of it built environment (Unah *et al.*, 2024c) since Kano is becoming a cosmopolitan city. As this factors significantly reshape the city metropolis over the centurys, uncontrolled physical development negate the concept of sustainability and dwart urban growth. Therefore it is necessary to addressed, regulatory planning for effective and inclusive transformations (UN-Habitat, 2009). The emerging cosmopolitan city like Kano must find a new role in its growth for sustainable urbanization and control to ensure that basic needs for coordinating the built environment are met.

It is on this basis that the study is aim at assessing planning challenges as effective means of uncontrolled physical development in Kano metropolis. The study objectives will outlined regulatory planning and environmental consideration that play a more effective role as a consequence of urbanization and violation for planning implication that is responsible for controlling physical development of the built environment. The study will recommends areas for regulatory interventions and management strategies for sustainable and livable human settlement.

2. LITERATURE REVIEW.

2.1. Urban Growth and Planning of Kano City

In most developing countries (and particularly in Sub-Saharan Africa), rapid metropolis growth and expansion of informal development activities is on steady raise. The ancient city of Kano faced more challenges of uncontrolled physical planning that are unguided by the inner ancient city walled demarcation and the adjoining settlement outside the walled. This significantly influenced the pattern of settlements (Dankani, 2016). Kano city today has been infringed by development practices (Ibrahim and Gyoh,2018), which were envisioned to achieve sustainable built environment by creating policies integration of the old and new city (Ibrahim, 2014). The inner walled are without the jurisdiction of development control laws (Ibrahim, 2021), and has influence most of peri-fringe settlement and beyond. They exist native settlement at Tudun Wada, Gwagwarwa and Brigade (for natives) with traditional norms and practices. This outer wall fringe of Nassarawa, and Bompai (for the Europeans), and Sabon Gari (for non-Europeans and non-natives) were absolve into the urban culture of metropolitan dwelling and organized into the physical development (Eze *et al.*, 2019). The walls surrounding these ancient city serves three main purposes: defining the settlement, protecting the inhabitants from external threats and controlling growth (Hull, 1976). This brought about urban renewal responsible for Kano being developed into dual city (Ibrahim 2014). The old walled City and the new city (outside) (Gambo, 2014). These two units formed what is known as Kano Municipal (Umar *et al.*, 2019) (See Fig. 1). But today, this magnificent ancient walled of earth has being taking over by urbanization (Unah, in-press) of massive development. However, this continues to develop rapidly causing significant impacts on land and environmental dynamics at detriment to residential and cityscape hub in the metropolis. This associated land use/cover changes (Akpu, *et al.*,

2017) has greatly effect the sustainability of the built environment.

The non-adherence to implementation of current regulatory policies and practice have failed to curtail the negative impact of sustainable built environment (Ogunsola, 2016). Urbanization and proper physical development growth (Unah *et al.*, 2024c, Unah, 2020, Ibrahim, 2014) if un restored, uncoordinated, un-enforced planning regulations may result in haphazard development and cause excess deterioration of the built and natural environments. Zubair, *et al.*, (2015) opined that land use changes has a distinctive pattern on the landscape as an expression of 'man-land' relationship, while (Enoguanbhor *et al.*, 2019) opted such condition allows human society to meet their current needs without compromising the future health, social, economic, and cultural considerations of creating a functional urban environment for current and future generations. Dankani, (2016) opined Kano City will continues to grow in terms of population and physical development, so does its residential, commercial and industrial activities. Which requires steady regularization and control.

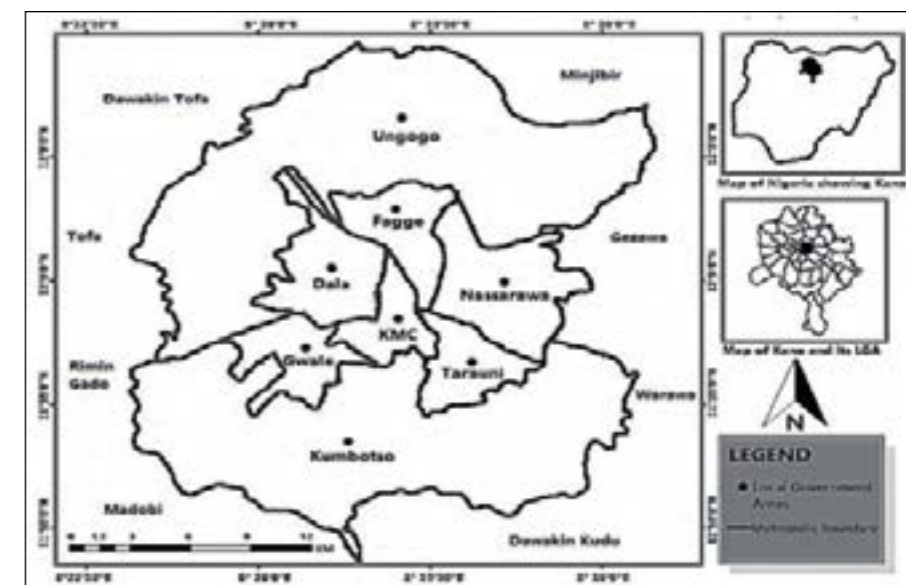


Figure 1: Map of Kano Metropolis and its surrounding LGAs.

2.2. Sustainable Growth and Regulatory Framework for Planning

Framework vary as they are derived and form the wider governance contextual trends in the contemporary development of planning systems and the activities that related to them. Rapid urbanization in Kano since 2000 has brought a lot of changes to the socio-political, economic and environmental development of the Kano capital city. Unplanned urban development has alarmed a great danger to the city and its landscapes due to the incessant uncoordinated human activities such as the emergence of slums. Unah (2024b, 2021a) and Abubakar, (2011) emphasized on notable sustainable growth implications on controlling physical development of urban attributes such as housing construction, encroach to suburban settlement, plot and street sizes, demolition of old settlement, Master Plan implementation, planning regulation, (Nasidi, 2022) urbanism and the conservation of the natural nvironment for sustainable development,. This are the purposes of planning and how it is undertaken are shaped by the wider context of governance. No doubt Nigeria remain the most urbanized countries south of the Sahara (Ogundele *et al.*, 2011) and Kano metropolis as one of its densely populated built environment that has not adhered to regulatory compliance (Ibrahim and Unah, 2023). The poor planning and non-compliance of building regulations (Unah and Ibrahim, 2021) has resulted into what is as unplanned or spontaneous growth (Unah and Muktar, 2020). The Kano city expansion has been accompanied by enormous deficiencies in supervisory roles of regulatory agencies which is

accompany with the core of towns and fringe settlements been too crowded in housing dwelling, uncontrolled and unplanned urban sprawl environmental pollution, deterioration, (Maigari, 2018, Unah and Murkhar 2020) deficiencies in modern basic facilities, and general urban decay (Unah, 2022, Umar *et al.*, 2019). This is impacting negatively on the built environment, while the peripheral areas (suburbs) are fast been transformed due to influx population in the development of most peri-urban sustainable communities as a path – way of Kano being a mixed-function urban (Unah and Ali, 2024).

Planning agencies may undermine and resist evolving opportunities for social progress and environmental sustainability (UN-Habitat 2009). This otherwise promote directions for acceptable of providing new possibilities, which include infrastructures such as water supply, sewage, epileptic electricity supply, health facilities. Satellite town such as Sharada, Rimi Gado, Dorayi, Fagge, Kura, D/Kudu, Rimi Gado, Challawa, Dawanau, Mariri (Umar *et al.*, 2019; Nabegu and Mustapha, 2014) were integrated as result of urbanization. Urbanization has direct and indirect impacts on urban area and their urban-rural linkages transformation are characterized by high dynamics of human influence and the associated control of physical development (Balogun, 2020). The challenging problem of most city physical development control in countries of the sub-Sahara Africa, has been found to developed haphazard and uncontrolled manner, which are responsible for poor planning policies and implementation. Sagada (2016) averred rapid urban population growth in Nigeria cities are on the rise and due to government failure to monitor and control physical development to cope with this expansion remain unprecedented.

Sustainable development constituent three major parts: environmental sustainability, economic sustainability and social-political sustainability. This implies that sustainable development is

improving the quality of human life while supporting natural environment. This invariable implies that the growth and sustainability of cities of any place is hinge on development control as a regulatory aspect of physical development that coordinate the orderly planning and the guidance growth of the built environment in accordance with standards of it Master plan (Ibrahim ,2014, 2016, Okoro, 2014). This emphasized that development control ensures an orderly growth of settlements by stipulating adequate planning standards in areas of lighting, ventilation, open spaces, and other socio-cultural factors that make life worth living in accordance with the development plan. This ensures that sustainable needs of the present and future generations are develop based on proper management of the built environment. The urgent needs to an urbanized and sustainable development, is an attempts to provide the concepts and strategies that will lead to the development of friendly and habitable environment. Jibril, (2009) concluded that due to series of inconsistencies and changes on government policy is reverting back to the original provisions of the Master Plan which has suffered a lot of distortions, emphasized that it should be review every five years.

2.3. Legal and Theoretical Framework Analysis

Development control also known as planning authority is mechanism that maintain building standards. It is a process which regulates the development of land and building, and is carried out by building professionals in order to ensure compliance with the approved Master Plan by ensuring orderliness. Aluko (2011) posit that the activity of development control lies in the reduction of negative effect, accompanying physical development and contravention of land use (Ibrahim, 2013). Kano urban center inherited land use pattern fashioned by incorporating the ancient walled city that is entrally place on traditional core city with adjoining contemporary new metropolis. The development pattern has inclined

toward mono-centric model due to the fragile land used planning measure (Dowell and Ellis, 2009). Karen *et al.*, (2012) opined urbanization and urban growth in Africa usually surpass the Master plan, therefore leading to uncontrolled physical development. The need for development control in Kano came about in an attempt to curb the city haphazard development. This in order to address the impacts of human activities on the built environment, the Kano State government since 1960s enact different urban planning laws, building regulation, policies and edicts. The state has also established important urban and development agencies such as Kano State Environmental Planning and Protection Agency (KASEPPA) in 1989, and late change name to Kano State Urban Planning and Development Authority (KNUPDA) in 1990 (KANUPDA, 2022) to curb the excess of building violation in the state.

2.4. The Contextual Framework

The rate of urbanization has increase the demand for land use for various purpose of residential, commercial, industrial and public development. This transformation of of the city from mono-central form to polycentric form has create inbalance that is responsible for uncontrolled problem of the metropolitan growth and management of Kano. Understanding this trajectory of uncontrolled built environment is very cardinal, since Kano initial Master plan for the city (metropolitan Kano 1963-1983) has expired. Effort to review the Master plan to accommodate present reality and challenges has not yielded fruit. For over 40 years of physical development in Kano metropolis, the central business district (CBD) and it environs has continued to grow without any legal document to serve as a guide Nasidi, (2022). The expansion of the city is termed to be very poor growth that is driven by uncoordinated building layout. Amoateng *et al.*, (2013) noted that the built environment are characterized by paced of unplanned physical growth, that has given rise to complex and unregulated pattern of organic growth.

Abubakar, (2011) uncontrolled urban growth Kano metropolis, (Silva, 2012) need for urban planning in Sub-Saharan Africa, (Umar *et al.*, 2019), urban land use and planning and (Zakka *et al.*, 2017). This authors opted weak planning system in form of development control trailing from behind. The fact that the current population is over 4 million and second to Lagos, is a path of becoming a mega city (Beall *et al.*, 2010). Zakkal *et al.*, (2022) note that Kano growth is characteristic by steady expansion of the built-up area. This haphazard development continue to grow outward to it fringes base on various factors of influences, such factors are responsible for uncontrolling physical development in Kano Metropolis (table 2). it is belived that urban growth contributed to natural increase in population, and will require strong development of more infrastructure and enact viable planning and development policies. According to Ola (1984), physical planning should be seen as related to development control, without which it will fail to achieve its objectives.

3. METHODOLOGY

3.1. Study Area:

Kano capital city is located within the metropolis, one of the most urbanized centers and the biggest commercial city in Nigeria which formation is incorporated the ancient city walled (Ibrahim and Mai, 2020). The area is located between latitudes 11o 59'-59.57-12o 02'-39.57 N and longitudes 8o 33'19.69 E-8o 40' E, which is about 481 metres above the sea level (Ibrahim and Mohammed, 2016) Based on the 2006 population census, the capital city has a total population of 1,147,829 spreading across 54 Area km2. Kano State comprises of 44 Local Government Areas (LGA) and the metropolitan is composed of Seven LGA"s, namely: Kano Municipal, Dala, Fagge, Nassarawa, Ungogo, Kumbotso and Tarauni. Largely inhabited by Hausa-Fulani Muslims which urbanization was influenced by early local civilizations in the Western African sub-region savannah zone (Urquhart, 1977). Part of

the early settlement and informal setting is found outside the walled city (Ibrahim and Mai, 2020), peripheral areas of the city and some areas lately settled by the indigenes built environment.

3.2. Methods

The study uses mixed method research, employing both quantitative and qualitative techniques. This allows theoretical framework and conceptual frame to explore. The quantitative analysis enables the researcher to determine to what extent there exist relationships between two or more variables (Grix, 2001, Creswell, 2003), while qualitative approach is characterized by several related research strategies which majorly include Case Studies (Yin 2009). The inquiry in this study focuses on providing evidence which shows; how can one know and understand the complex attributes of planning challenges that requires regulatory and enforcement that are responsible for uncontrolling physical development (table 2). Using purposive sampling, questionnaire were administered to participant survey were key attributes for assessment of factors responsible for controlling physical development were explored (table 2). A total of Sixty- nine (69) respondents, accounting for 92% out of 75 distributed questionnaires were retrieved, Factors responsible for controlling Physical Development in Kano Metropolis were assessed on a 5 Likert scale rating (Likert, 1932) on scale ranging from Strongly Agreed (SD)-5, Agreed (A)-4, (N)-3, Disagreed (D) =2 and Strongly Disagreed (SD)-1 point respectively. The data from the completed questionnaires were analyses using the relevant descriptive and inferential statistics techniques. The Mean Weighted Score (MWW), Relatively Important Index (R.I.I) standard deviations and ranking (table 2). The results findings were presented and discuss using ranking and nterpretation in various quartile (Table 1).

Equations is mathematically expressed as

$$RII = \frac{1n1+2n2+3n3+4n4+ 5n5}{5N} \quad (1)$$

Factors with RII of 0.7 and above were considered "high negative Impact "in this study. These correspond to ratings in the first quartile range (75% and above). RII values between 0.60 and 0.69 corresponding to the second quartile (50%-74%) are considered "negative Impact" RII values between 0.50 and 0.59 corresponding to the third quartile (Vanduhe, 2012) in this study.

Table 1: Likert Scale

Range	Interpretation	Quartile
0.7 - 0.80	High Negative Impact	First
0.6 - 0.69	Negative Impact	Second
0.5- 0.59	Positive impact	Third

Vanduhe (2012)

4. DISCUSSION

Frequency distribution of variable under study including summation of the Weighted Values (ΣWV) was divided by number of respondents (n) to arrive at each component Mean Weighted Value (MWV). The rating of all the factors for the degree of significance was based on the value of their respective Relative Importance Index (RII). This is used to Rank the level of Interpretation the respondents attached to the variables affecting the built environment. The distribution of Standard deviation across the built environment variables indicates that the result from the study can be generalized from the study population.

Table 2: Factors responsible for Uncontrolling Physical Development in Kano Metropolis

Attributes	MWV	STD	RII	Rank	Interpretation	Quartile
Weak Urban Planning	3.88	.0562	0.78	1st	high negative impact	First
Subdivision of plot	3.82	.0553	0.76	2nd	high negative impact	„
Traffic Congestion	3.68	.0533	0.74	3rd	high negative impact	„
Environmental pollution	3.57	.0517	0.71	4th	high negative impact	„
Duplication of regulatory agencies	3.53	.0511	0.70	5th	negative impact	„
Urban Heat Effect	3.39	.0491	0.68	6th	negative impact	second
Landscape distortion	3.17	.0459	0.63	7th	negative impact	„
Sprawling informal dev.	3.14	.0455	0.62	8th	negative impact	„
Land Tenure System	3.06	.0443	0.62	9th	negative impact	Third
Rural-Urban immigrants	2.50	.0362	0.50	10th	negative impact	„

Source: Author Fieldwork, 2023

4.1. Result and Discussion

The study analysis ten (10) keykey attributes for assessment of factors responsible for controlling physical development in Kano metropolis as shown in (table 2) Weak urban planning has mean value of (M=3.88), R.I.I of 0.78, Subdivision of plot has (M=3.82), R.I.I of 0.76, while other are traffic congestion has (M=3.68), R.I.I of 0.74, environmental pollution has (M=3.57), R.I.I of 0.71, duplication of regulatory agencies has (M=3.53), R.I.I of 0.70. This were rank 1st, 2nd, 3rd, 4th, and 5th respectively and are in the first quartile accordingly. This interpreted to have high negative impact on the built environment. Urban Heat Effect has (M=3.39), R.I.I of 0.68, Landscape distortion has (M=3.17), R.I.I of 0.63, Sprawling informal development has (M=3.14), R.I.I of 0.62, This were ranked 6th, 7th and 8th and were found in the second quartile, and interpreted to have negative impact on the built environment as well. Land tenure system has (M=3.06), R.I.I of 0.62 and Rural-Urban

immigrants has (M=2.50), R.I.I of 0.50 respectively and were found in the third quartile, and interpreted to have positive impact on the built environment as well.

The study demonstrates that controlling physical development in northern Nigeria's most populous city, Kano. The inability of relevant government authorities at the state levels to manage the city's growth and expansion effectively as a result of Weak Urban Planning (Zakka et al.,2017; Aluko, 2011). Duplication of regulatory agencies are among the factor that inducing failure in controlling physical development (Unah, 2024b) in Kano metropolis. Urbanization as created numerous management challenges like Haphazard and rapid urban growth and significant population increase that has lead to high rate of imbalance in land use allocation, overcrowding, pollution and loss of natural habitation (Unah, 2021a,; Dankani, 2011), effect of urban morphology dynamics and environmental change (Barau, 2015) as well as illegal conversion of land to

explore the economic opportunities in the property market (Unah and Ali, 2024.; Zakka et al., 2017). Nkolika et al., (2018) averred uncoordinated land use as environment distort to the original plan and poise a serious problem to planning authorities. Land tenure system in Kano's built environment has distortion the landscape of the metropolis that is characterized by a combination of formal (planned) and informal built environment (Ibrahim and Mai.; 2020, Ibrahim,2014). Zakka et al.,(2017), opted adherence to the concept of urban planning that integrates physical development and environmental consideration will enhance urban greenery and there by reduces environmental pollution and urban heat effect (Barau, 2018). The uncontrolled physical development are responsible for sprawling informal spontaneous development into peri-urban fringes settlement (Unah and Muktar, 2020).

5. CONCLUSION AND RECOMMENDATIONS:

This situation justifies the need for the relevant authority to proper control plan and execute timely physical development attaining at sustaining the built environment fabric. The following are necessary thus;

- The Kano state government already initiated urban renewal and rural transformation projects tagged 'Lungu Kal-Kal' and 'Karkara Salamu-Alaikum.' aimed at addressing the deteriorating infrastructures in the city while beautifying the urban landscape enforcement through various infrastructure project.
- The state mega construction and rehabilitation of new and existing roads, bridges and under-pass, renovation, has been commendable in line with vision of the state in become cosmopolitan- city in the near time.

In order to achieve efficiency in the growth of Kano Municipal physical planning measures must be actively adhered to in order to organized structures and effective allocation of land to ensure orderliness, convenience, functionality and security thus promoting a sustainable urban environment.

Failure in controlling Physical development has refers to the inability of the regulatory building officers in carrying out developmental operations that makes a significant environmental changes that would impacted one built environment. City planning regulation in urbanizes city like Kano must constantly be revised to keep up with challenges and issues. Planning authority must embrace innovative ideas and understanding of rapid urbanization of city informality. This will inculcate planning for climate change consideration due to the eminent disappearing greenery and serene environment has to be accelerated to the increasing physical development of the city open spaces. Kano metropolis will

continue to experience more extensive physical development as urbanization continues to be very fast with its associated environmental concerns.

The study conclude that effective policy framework involving property developers and stakeholder should adhere to implementation and control measures while policy makers should focus more on meeting contemporary urban challenges such as rapid urbanization, balance between economic development and urban sustainability as well as environmental changes that are eminent. The study uncovers and call for strong recommendations for in-depth research on urban planning practices to be developed with emphasis on physical development management frame work amidst urbanization in Kano metropolis. This will be used as guide for adoption by Kano State Urban Planning Development Authority (KANUPDA), Ministry of Environment, and Ministry of Housing. The urban growth management frame work could also be used in other Nigerians major cities and in African countries as well

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