

RURAL URBAN TRANSFORMATIONS IN THE DEVELOPING COUNTRIES

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Abstract

This study examined the trends of rural urban development globally, regionally and in the selected country among others. The methodology adopted includes the qualitative and quantitative research design methods based on secondary data. Data characterizing the regions/areas objectively were presented and by multistage sampling Nigeria was selected as one of the countries seriously affected by the phenomenon being studied. Appropriate analytical methods including factorial growth rates, differentials, factorials and cube root transformations, were used to determine the trends. The results showed that rate of rural urban transformations in Africa is one of the highest among regions/continents, and Nigeria which is exceedingly high, is one of the highest not only regionally/continentally but globally. The paper concluded that cities structures are very complicated and brought about by a network of myriad of forces. The cities evolved through evolutionary processes from human settlement which grew in sizes, population, and physical development et al; the form of such cities also increase in complexities and recommended that for the developing regions particularly African continent with two global megacities (Cairo, Egypt and Lagos, Nigeria) to be able to curb the numerous problems of poverty, hunger, malnutrition, population explosion and high rates of cities growth among others, associated with urbanization, there must be complete economic transformation and attainment of high level technological development as already attained by Europe and North America; which have the capability of bringing about great improvements in the image, forms or outlook of cities, as sustainable architecture/planning, urban design and construction of buildings and infrastructures can be carried out better and faster than they used to be, to aid human habitation with enhanced quality of life.

Keywords: Cities, developing countries, human settlement, rural areas, sustainability, urbanization.

I. INTRODUCTION

Background to the Study

Although the rural population is only forty-nine per cent (49%) of total population, seventy per cent (70%) of the world's poor live in rural areas (TWBG, 2012). In most parts of the world rural areas have been declining since the 19th century or earlier, both as a proportion of land area, and in terms of the proportion of the population living in them. Urbanization encroaches on rural land, and the mechanization of agriculture has reduced the number of workers needed to work the land, while alternative employment is typically easier to obtain in cities. In parts of the developed

world urban sprawl has greatly reduced the areas that can be called rural, and land use planning measures are used to protect the character of rural areas in various ways. Rural areas or the country or countryside are areas that are not urbanized, though when large areas are described, country towns and smaller cities will be included. They have a low population density, and typically much of the land is devoted to agriculture. About 91 percent of the American rural population now earns salaried incomes, often in urban areas. The 10 percent who still produce resources generate 20 percent of the world's coal,

copper, and oil; 10 percent of its wheat, 20 percent of its meat, and 50 percent of its corn (Howarth, 2011).

The United States Census Bureau's (USCB's) definitions, which are based on population density, define rural areas as all territory outside of Census Bureau-defined urbanized areas and urban clusters. An urbanized area consists of a central city and surrounding areas whose population (urban nucleus) is greater than 50,000. They may or may not contain individual cities with 50,000 or more; rather, they must have a core with a population density generally exceeding 1,000 persons per square mile; and may contain adjoining territory with at least 500 persons per square mile (other towns outside of an urbanized area whose population exceeds 2,500): Thus, rural areas comprise open country and settlements with fewer than 2,500 residents; areas designated as rural can have population densities as high as 999 per square mile or as low as 1 person per square mile (CRS, 2005; USDA, 2008). The United States Department of Agriculture's (USDA's) Office of Rural Development defined 'rural' by various population thresholds. The 2002 Farm Bill (P.L. 107-171, Sec. 6020) defined rural and rural area as any area other than (i) a city or town that has a population of greater than 50,000 inhabitants, and (ii) the urbanized areas contiguous and adjacent to such a city or town (CRS, 2005). For example, a metropolitan county is one that contains an urbanized area, or one that has a twenty-five percent commuter rate to an urbanized area regardless of population; Non-metro counties are outside the boundaries of metro areas and are further subdivided into Micropolitan Statistical Areas centered on urban clusters of 10,000-50,000 residents, and all remaining non-core counties (USDA, 2008; CRS, 2005). Eighty-four per cent (84%) of the United States' inhabitants live in suburban and urban areas (Yen, 2011), but cities occupy only 10 percent of the country.

Rural areas occupy the remaining 90 percent (Howarth, 2011). The nature of the term 'rural' varies from place to place. It often refers to areas in the country concerned which are less *densely populated*. There are different types of rural areas, depending on how accessible they are from urban areas. These range from the *rural urban fringe*, to the extreme (remote) rural areas (GCSEB, 2012). Rural areas change over time. These changes are caused by: *economic* factors - tourism income, farming profitability, primary sector jobs; *environmental* factors- land use, pollution, conservation; and *social* factors - population change and migration, leisure time, retirement population. There are different types of rural areas, which can be classified according to how accessible they are to the urban areas, the core and densely populated, where the number of people per square kilometre is high; rural-urban fringe, the very edge of the city, beyond the suburbs, where countryside and city merge; *economic*, to do with money and finances; *environmental*, your relationship with the environment around you; and *social*, to do with society and social organisations (Fig.1 Diagram showing the classification of rural and urban areas -See Appendices).

Statement of Problem

The world is in the midst of an unprecedented expansion of human numbers. It took hundreds of thousands of years for our species to reach a population level of 10 million, only 10,000 years ago. This number grew to 100 million people about 2,000 years ago and to 2.5 billion by 1950. Within less than the span of a single lifetime, it has more than doubled to 5.5 billion in 1993 (Ehrlich, and Ehrlich, 1994). Therefore, human population, after millions of years of extremely slow growth, grew explosively, in the preceding and this centuries reaching 6.1 billion, 7 billion and 7.036 billion in 2000 A.D., 2011 and 2012 respectively (USCB, 2012; GPSO, 2010; PRB¹, 2007; Babalola, 2006; WB, 2004;

Watson, Plattus and Shibley, 2003; and PRB, 2000). It was stated in 2009 by Ban Ki-moon, the Secretary-General of the United Nations that more than half of the world's population now living in urban areas, this is the urban century" (Dirks, Gurdgiev and Keeling, 2010). Nevertheless, this has only been the beginning of an unprecedented wave of urbanization as evidenced by a whole host of manifestations. Hundred years ago there were only 20 cities globally that had more than 1 million people, but this number has grown to 450 and more are added each year (Palmisano, 2009). Indeed, The United Nations has estimated that about half of the world's population, 3.3 billion people, live in cities and towns, and projects that this figure will increase to nearly 5 billion people or about 60% of world population by 2030 (UN, 2012). This implies that deeper understanding is expected on the part of all concerned with the complexities of rural urban interrelationships, in order to be able to prepare for and not to despair or bemoan the realities as they are unfolded.

Research Questions

From above discussion and literature, it has been observed that there is an urgent need to address the situation of challenges of cities growth. Hence the following questions for which the study seeks to provide answers were asked. What are the trends of rural urban development globally and regionally; how do the trends compare regionally; what is the nature of cities evolution in the selected country; and what are trends of rural urban development in the selected country?

Aim and Objectives

The aim of this study is to gain a better understanding of the mutations in morphology of rural urban environments for preparations for impacts. The more specific Objectives include: (i) To examine the trends of rural urban development globally and regionally; (ii) To make regional comparisons of the trends; (iii) To examine Cities evolution in the selected country; and

(iv) To assess the trends of rural urban development in the selected country.

Justification of the Study

The issues of rural urban transformations are not so clear to many people, even to many considered enlightened. This study will further elucidate the subject for better appreciation by those concerned. The need to embark on this study arose from the fact that there has not been any serious research, to the best of the researcher's knowledge, on production of cities forms (or images or outlook), and rates of evolution of cities. The links between the two aspects, are vast inexhaustible fields, hence the expected contribution to knowledge. Each can also act as a launch pad for further research.

Scope and Limitations of the Study

Although urban environment is global, as cities evolve in all parts of the world, this study is focused on better understanding of the mutations in morphology of rural urban environment. This means that the scope covers mainly, developed and developing regions of the world including Nigeria, since these are global phenomena. The scope of study covers issues relating to urban environmental development, origin, forms and images of cities, evolution of cities both on international and national levels.

The limitations of this study would be the gathering of relevant data for the research. Collection of primary data by individual or a small group of researchers is infeasible in a study like this; hence, data and analyses will be based on secondary sources. Although there are various definitions of cities as discussed below, the primary considerations in this study have been transformations on to global cities with populations of at least one million people.

Overview of the Study

Key Definitions and Concept

Birth rate (or crude birth rate): The annual number of births per 1,000 total populations.

Cities or urban population: Are defined based on standards established by either

one or a combination of the following criteria: population, population density, economic and administrative function. Most countries adopt simple numerical value of population. In Korea communities with at least 40,000 inhabitants are designated urban; 20,000 for Nigeria; 10,000 for Portugal, Spain, Switzerland and Turkey; 5,000 for Austria and India; 2,500 for USA; 2,000 for France, Germany, Greece, Luxembourg and Netherlands; 1,500 for Ireland and Malta; 1,000 for Canada; 2,000 for Iceland, Denmark and Sweden etc. Some countries combine these numerical standards with other conditions. In Nigeria and India, 75% of the designated population will be engaged in work other than agriculture. With the exception of India, density is rarely used as criteria. India insists on density of 100 per square unit. Economic and administrative functions are more important than density. Urban dwellers are generally not primary food producers, they engage more in secondary and tertiary activities. In the same vein, administrative function is characteristic of urban environment. Most states give administrative function to settlements and thus term them urban in such countries as Algeria, Japan, Tunisia, Hungary, Finland, United Kingdom, United Arab Emirate, etc. In Nigeria newly created local government headquarters are usually raised to the status of urban place. Hence in Nigeria, communities with at least 20,000 inhabitants and at least 75% of them engaged in work other than agriculture are designated urban. These two criteria notwithstanding, any newly created local government headquarters is usually referred to as urban. PRB (2012) explained the following terms- Urban: Countries differ in the way they classify population as 'urban' or 'rural'. Typically, a community or settlement with a population of 2,000 or more is considered urban. A listing of country definitions is

published annually in the United Nations Demographic Yearbook. *Urban agglomeration*: Refers to the population contained within the contours of a contiguous territory inhabited at urban density levels without regard to administrative boundaries. It usually incorporates the population in a city or town plus that in the sub-urban areas lying outside of but being adjacent to the city boundaries.

Countries development: Less developed countries- include all countries in Africa, Asia (excluding Japan), and Latin America and the Caribbean, and the regions of Melanesia, Micronesia, and Polynesia. More developed countries: include all countries in Europe, North America, Australia, New Zealand, and Japan (PRB, 2012 and PRB, 2010). *Doubling time*: The number of years required for the population of an area to become twice its present size, given the current rate of population growth. Population doubling time is useful to demonstrate the long-term effect of a growth rate, but should not be used to project population size. Many more-developed countries have very low growth rates. But these countries are not expected to ever double again. Most, in fact, are likely have population declines in their future. Many less-developed countries have high growth rates that are associated with short doubling times, but are expected to grow more slowly as birth rates are expected to continue to decline. *Forms*: Have to do with the structure, shape, composition, elements and image of or given to a thing, place, area, community, town or city. It is the body build-up. *Growth rate*: The number of persons added to (or subtracted from) a population in a year due to natural increase and net migration; expressed as a percentage of the population at the beginning of the time period.

Synopses of the sections

These are as follows, section I: Introduction, which comprises mainly, the aim and objectives and justification for the study; section II: Literature Review; section III: Research methodology; section IV: Data Presentation, Analyses and Discussion; and section V: Summary, Conclusion and Recommendations.

II. LITERATURE REVIEW

Evolution of Cities/ History of urban growth

The first urban areas Moerbeek (2011) explained, began approximately 7,000 years before present times, in what is often referred to as the Formative Stage. In these times, as in the millennia to follow, cities were mostly associated with the formation of the state, which gave rise to the concept of city-states such as in southwestern Asia, particularly in the Tigris and Euphrates basins, the Indus valley, the Nile valley and China. Urbanization also developed in Central America, the Maya Aztec area, and the Andean area of South America. These early cities were theocratic, where the rulers had divine authority and were in essence "god-kings". Urban growth required urban elite, a group of decision makers and organizers who controlled the resources, and sometimes the lives of others. This stratified society which during the preceding agricultural period had remained largely egalitarian (Sjoberg, 1965 in Moerbeek (2011). From there on, cities expanded into Greece where city-states became the dominant principle and Rome with its extensive focus on infrastructure, transport and city planning in order to sustain the ambitions of the empire. Both city types focused around an open market place which became the focus of city life: the agora in Greece and the forum in Rome. The pre-industrial city evolved further from here on and the consolidation of political power and the expansion of states were reflected in the growth of the cities, with eventually certain cities becoming so pre-eminent in their nations that they were

referred to as primate cities (e.g. Amsterdam, London and Paris). The dominant aspect of the preindustrial city was the imposing complex of religious (e.g., cathedrals) and governmental structures at its heart. Nevertheless, Mitchell & Casalegno (2008) argues that "The earliest cities consisted of little more than skeleton and skin. They provided walls, floors, and roofs for shelter and protection, in combination with simple structural skeletons to hold them up.

There is also evidence that cities emerged in the world as early as 5,500 years ago or longer. Some of the early ones were in Mesopotamia, the Nile valley, the Indus valley and the Hoang-ho valley. There were several organizational factors that may have precipitated the formation of these early cities, including commercial and trade, religious and political factors. Chandler and fox (1974) documented relatively large agglomerations existing in Babylon (250,000), Patna (350,000) and Rome (650,000) between 400 BC and 100 AD. The number of cities increased during medieval times, although, they remained small. Population in general, remained rural and was overwhelmingly involved in agricultural production. In fact the proportion of people living in urban areas fluctuated between 4 and 7% throughout history, until 1850 (Lowry, 1991). The real change in population distributions and urban living patterns occurred with the industrial revolution in the 19th century, which made it possible for large numbers of people to live in an urban centre. A number of factors include economy while improved transportation and communication created international trade routes. New forms of organization in industry allowed for the absorption of substantial numbers of individuals. The industrial revolution was accompanied by more than just changes in industry in fact revolutions occur in such diverse areas as philosophy, science, government,

technology, education, administration, politics and the military; which created the need for interdependence. Urban areas began to thrive on specialization.

Multiple functions needed to be conducted without close proximity, creating high population densities. Indeed it is the densities of functions that often demarcates between urban and rural areas. The implications of urban development were far reaching, impacting not merely on the economy, but on the social and ecological order within the city (McVey and Kalbach 1995). Changes in the city included the emergence of a middle class, an emphasis on social reform, the development of world trade, the founding financial institutions, the centralization of industry, the decentralization of the upper class, and the shift away from family operated handicraft industry to urban factories, The industrial transformation has also been credited with nucleation and mobilization of the family, two changes that go hand in hand.

Origin and history of cities: 4000 BC To 1750 AD

The City is a relatively recent form of social organization and Homo sapiens (the present human form) have existed on earth for about 40,000 years, but cities have existed for less than 10,000 years (FEFH, 2012). For instance Jericho in about 7000 B.C. grew from village to a "city" of about 3,000; and in about 3,500-4,000 B.C. first large cities (of population of about 25,000) were established in Mesopotamia.

More Developed and Less Developed Regions

The entire world has been divided into two great regions, namely, the More developed regions and the Less developed regions. Countries in the More developed regions are known as the More developed countries as PRB (2010) explained, and include all countries in Europe, North America, Australia, New Zealand, and Japan; while Countries in the Less developed regions are known as the Less developed countries

Less developed countries (also commonly referred to as developing countries) and include all countries in Africa, Asia (excluding Japan constituting 3.06% of Asia), and Latin America and the Caribbean, and the regions of Melanesia, Micronesia, and Polynesia. A study of the continents/regions and the vital issues in this research has led to the choice of the Less Developed regions and subsequently Africa and Nigeria (as explained under Methodology/sampling)

Africa: Africa with 56 Sovereign States or Countries ((USCB, 2009) is the world's second-largest and second-most-populous continent, after Asia. At about 30.2 million km² (11.7 million sq miles) including adjacent islands, it covers 6% of the Earth's total surface area and 20.4% of the total land area (Sayre, 1999). With 1.0 billion people (as of 2009), it accounts for about 14.72% of the world's human population.

Nigeria: Nigeria is the most populous country in Africa, the seventh to eighth most populous country in the world, and has the highest black population in the world (Worldatlas, 2010; LOC, 2008 and Nwaka, 2005). Population in Nigeria increased from 1990 to 2008 with 57 million and 60 % growth in population (IEA, 2011).

The United Nations estimates that the population of Nigeria in 2009 was at 154,729,000, distributed as 51.7% rural and 48.3% urban, and with a population density of 167.5 people per square kilometre. National census results in Nigeria in the past few decades have been disputed. The results of the most recent census released in December 2006 gave the population of Nigeria as 140,003,542. According to the census result, number of males is 71,709,859 while that of females is 68,293,683. According to the United Nations, Nigeria has been undergoing explosive population growth and one of the highest growth and fertility rates in the world. By their projections, Nigeria is one of eight countries expected to account

collectively for half of the world's total population increase from 2005–2050 (UN, 2005). The population of Nigeria will reach 390million to 402million by 2050, thereby will be the 4th most populous country in the world (US CBDIS, 2011; WPP, 2010). UN estimated that by 2100, Nigerian population will be no less than 730 million (WPP, 2010 and UN, 2010).

In 1950, Nigeria had only 33 million people (PRB, 2005). According to current data, one out of every four black Africans and one out of every seven Africans is Nigerian (BBC News, 2006). Presently, conservative estimates may conclude that more than 20% of the world's black population lives in Nigeria. 2006 estimates claim 42.3% of the population is between 0–14 years of age, while 54.6% is between 15–65; the birth rate is significantly higher than the death rate, at 40.4 and 16.9 per 1000 people respectively (US, 2008).

Cities forms/ evolution in Nigeria

The historical development of human settlements from isolated or groups of families to hamlets and to villages in Nigeria are likely to date back to biblical times according to Standard12 (2012) and Godwin (2005). The legacy map of historic monuments in Nigeria lists among others, Gidan Makana built in Kano in 18th century, Hake Mosque Magana near Zaria, said to be over 300 years old and a house in Hadeji said to be built by Babban Gwani the last master builder. The palace of Emir of Kano remains with its council chamber still intact having the largest span for a single room in mud and azara construction, covering 8.5m x 7.25m.

For centuries people had adopted the local construction technology without complication in most of their shelters. So who changed the construction technology here and when? The Roman soldiers of the 3rd Augustan Legion in North Africa had visited the Niger in their quest for gold and ivory but nothing has been found of their buildings south of Tamanresset in Algeria.

May be it was the Portuguese in the 15th century why by the way, carefully recorded the sophisticated construction of the palaces of Benin, with their courtyard plans incorporating pivoting roof panels to admit cooling breezes. Certainly they were the first Europeans to import bricks and tiles because we know that these were used in the construction of the Oba's palace at Lagos in circa 1709.

However in the absence of further evidence, it was accepted that the most significant contribution to the change of construction on the west coast of Africa and more particularly in Nigeria was made by the Afro-Brazilian, who started returning in the 1830s bringing with them the skills which they had learnt from the Portuguese and established an architectural style which had its origins in Renaissance architecture. The early missionaries also had an influence. The Anglican missionaries brought with them to Badagry in January 1845 a two-storey prefabricated timber house from Sierra Leone. In 1852 similar house was built in Lagos and later another one in Ibadan for the Hinderer's in 1854. It was likely that this form of construction was dictated by the practical consideration of creating a functional shelter suitable for Missionary status, where the only alternative was mud and thatch and early brick construction was expensive. Later it became a prototype for the first set of colonial buildings described by many Kingsley as "abominations" because of their noisy roofs and open verandahs.

The colonial interlined 1861-1960: The area bounded by the marina and Broad Street in Lagos is a microcosm of the history of this period, possibly unguessed in this country, with practically every architectural style represented together of course with those constructed up to the present day. 1861 is a significant date in the urban development of Lagos because the status of the territory changed from the so called "anomalous government" of the previous 10 years to a

British colony which by 1863 under the Governorship of John Glover had achieved a stable environment where development flourished. Glover introduced a degree of planning on the Island and allocated land to traders and the missions, which included Brazilians and Saros on which substantial buildings were constructed and at the same time the backbone of the building industry were the Afro-Brazilians. Obviously it took a little time for the indigenes to adapt to the new style of building and to attain the affluence which marked the possession of such solid building. Sadly many good examples of the "Brazilian Style" have disappeared but one or two have been restored such as that occupied by the Leventis foundation in Abibu Oke Street on Lagos Island which GHK worked on some years ago.

Broadly speaking for nearly 100 years from 1850's to the 1950's design and construction in "Brazilian" and "Colonial" imported styles influenced the architecture of the time and eventually local material such as fired bricks, east concrete blocks and tropical hardwoods substituted imported products. Of course not all buildings were just built without the benefit drawings or some professional input but certainly the very earliest buildings were put together by experienced craftsmen and certainly the colonial buildings up to the first world war were constructed by engineers in the public works Department (PWD) and Railways using standard plans or elements the specifications which were determined by administrators like Lord Lugard who drew on his experience from India and East Africa, also it was his engineers who laid out whole administrative townships like Zungeru (1902) and Kaduna (1912).

From about 1900 when the railways were being built and the colonial administration was expanding it was the PWD which under took the bulk of the major building works on a design build basis each provincial area having workshops, stores and offices. Out of

the sites the construction was carried out by direction of expatriate works supervisions. They had their own engineers who dominated the department and later when architects were employed it is interesting to note that they were seldom allowed on sites until after 1955 when it became clear that the engineers could not cope with architectural specifications and finishes. Initially the professionals were all expatriates who trained local draughtsman to produce the drawings.

Above discussions clearly identify that before the British invaders most human settlements in Nigeria were as individual families, groups of families, hamlets and villages without any of them that can be classified as towns or cities based on expected characteristics. These early villages such as Calabar, Lagos, Kaduna, Lokoja among others that became urbanized and grew in size and other characteristics to become big towns and presently cities and even Lagos now a megacity, had their influence and rapid growth due to Colonial/provincial administration bases at those locations.

Cities in Nigeria

Many of the cities had long histories. The city of Kano had been existence for 900 years or more before the British came. The city of Benin also has a long history. While the colonial and the post-colonial periods did not introduce large-scale urbanization to Nigeria, urbanization has rapidly accelerated in the latter half of the twentieth century (Standard12, 2012). There are 9 global cities each with population of at least one million, including Lagos, Kano, Ibadan, Abuja, Kaduna, Port Harcourt, Benin City, Maiduguri and Zaria across the country (GRON (2012); Demographia (2011); PL (2011); Butler (2009); FRN² (2009); FGN (2007); NBSN (2007) & Onuah (2006). A brief of three of them- Lagos, Kano and Abuja have been presented below.

Lagos City (South)

Lagos (TAH, 2005; Room, A. 2007; Olupona, J.O.K.; Rey, T. 2008; Williams, L. 2008) is a port city in Lagos State and the most populous city Nigeria. Officially, the population of Lagos was last recorded at 7,937,932 (FGN, 2007 and NBSN, 2007). Lagos is the second most populous and second fastest growing city in Africa, and the seventh fastest growing city in the world (Citymayors, 2010). It is a global megacity (Brinkhoff, 2012; UN PRB, 2000 in Watson, Plattus and Shibley, 2003), with estimated population 12,800,000 as at 1st July 2012 (PRB, 2012). Lagos is a metropolitan area which originated on islands separated by creeks, such as Lagos Island, fringing the southwest mouth of Lagos Lagoon whilst protected from the Atlantic Ocean by long sand spits such as Bar Beach, which stretch up to 100 km east and west of the mouth. From the beginning, Lagos has expanded on the mainland west of the lagoon and the conurbation, including Ikeja and Agege, now reaches more than 40 km.

In terms of administration, Lagos is not a municipality and has therefore no overall city administration (WOD, 2006). The Municipality of Lagos, which covered Lagos Island, Ikoyi and Victoria Island as well as some mainland territory, was managed by the Lagos City Council (LCC), but it was disbanded in 1976 and divided into several Local Government Areas, most notably Lagos Island LGA, Lagos Mainland LGA and Eti-Osa LGA (WOD, 2006 and Olowu, 1992). The mainland beyond the Municipality of Lagos, on the other hand, comprised several separate towns and settlements such as Mushin, Ikeja and Agege. In the wake of the 1970s Nigerian oil boom, Lagos experienced a population explosion, untamed economic growth, and unmitigated rural migration. This caused the outlying towns and settlements to develop rapidly, thus forming the *Greater Lagos metropolis* seen today. The history of Lagos

is still evidenced in the layout of the LGAs which display the unique identities of the cultures that created them.

Today, the word *Lagos* most often refers to the urban area, called 'Metropolitan Lagos' in Nigeria, which includes both the islands of the former municipality of Lagos and the mainland suburbs. Lagos State government is responsible for some of the utilities including roads and transportation, power, water, health, and education. Metropolitan Lagos (a statistical division and not an administrative unit) extends over 16 of the 20 Local Government Areas (LGAs) of Lagos State, and contains 88% of the population of Lagos State, and includes semi-rural areas (FGN, 2007; NBSN, 2007). The 16 LGA's include Agege, Ajeromi-Ifelodun, Alimosho, Amuwo-Odofin, Apapa (home of the main port of Lagos), Eti-Osa (home of one of Lagos's largest business centres and of the upscale communities of Victoria Island and Ikoyi, formerly the residence of the Nigerian federal government), Ifako-ljaiye, Ikeja, Kosofe, Lagos Island (the historical centre and commercial core of the Lagos agglomeration), Lagos Mainland, Mushin, Ojo, Oshodi-Isolo, Somolu, and Surulere. Lagos City has a considerable amount of high rise buildings which makes up its skyline. Most of the tall buildings are located in around the downtown Central Business District. Lagos was the former capital city of Nigeria but it has since been replaced by Abuja. Abuja officially gained its status as the capital of Nigeria on 12 December 1991, although the decision to move the federal capital had been made in Act No. 6 of 1976. Lagos is also home to the High Court of the Lagos State Judiciary, housed in an old colonial building on Lagos Island (LSJ, 2012).

Lagos has an estimated urban area of 999.6 Km² and density of 7,941 persons/km². Although the 2006 National Population Census of Nigeria credited the metropolitan area with a population figure of 7,937,932

(FGN, 2007), this figure was at variance with some projections by the UN and other population agencies and groups worldwide. This figure is lower than what had been anticipated and has created a controversy in Nigeria. Lagos Island, the central Local Government Area and historic centre of Metropolitan Lagos, had a population of 212,700 as of the 2006 Census (FRN², 2009). Authorities of Lagos State have attacked the results of the 2006 census, accusing the Nigerian National Population Commission of having undercounted the population of the state. This accusation is denied by the National Population Commission (NPC¹, 2007; NPC², 2007 and Obasola, 2007). Lagos is, by most estimates, one of the fastest-growing cities in the world. Lagos is currently experiencing a population increase of about 275,000 persons per annum. In 1999 the United Nations predicted that the city's metropolitan area, which had only about 290,000 inhabitants in 1950, would exceed 20 million by 2010 and thus become one of the ten most populated cities in the world. The population figure of Lagos State given by the Lagos State Government is 17,553,924 (Oshodi, 2011; Oshodi, 2010; and Nigerian Muse, 2007). It was based on conducted enumeration for social planning by the Lagos State Government and it believes that since the inhabitants of the metropolitan area of Lagos constitute 88% of the Lagos State population, the population of metropolitan Lagos is about 15.5 million (Nigerian Muse, 2007).

The UN estimates that at its present growth rate, Lagos city will be third largest mega city the world by Y2015 after Tokyo in Japan and Bombay in India (LSGN, 2011). Of this population, Metropolitan Lagos, an area covering 37% of the land area of Lagos State is home to over 85% of the State population. It is the second most populous city in Africa after Cairo in Egypt and estimated to be the fastest growing city in Africa and the seventh fastest

growing in the world with a population increase of about 600,000 persons per annum and with a population density of about 4,193 persons per sq. km. In the built-up areas of Metropolitan Lagos, the average density is over 20,000 persons per square km. Current demographic trend analysis revealed that the State population growth rate of 8% has resulted in its capturing of 36.8% of Nigeria's urban population (World Bank, 1996) estimate at 49.8 million people of the nation's million population. The implication is that whereas country population growth is 4-5% and global 2%, Lagos population is growing ten times faster than New York and Los Angeles with grave implication for urban sustainability (LSGN, 2011).

Kano City (North)

Kano is a city in Nigeria and the capital of Kano State in North-Western Nigeria (NgEX, 2006). Its metropolitan population is the second largest in Nigeria after Lagos. The Kano Urban area covers 137 km² and comprises six Local Government Area (LGAs) - Kano Municipal, Fagge, Dala, Gwale, Tarauni and Nassarawa -with a population of 2,163,225 at the 2006 Nigerian census. The Metropolitan Area covers 499 km² and comprises eight LGAs - the six mentioned above plus Ungogo and Kumbotso - with a population of 2,828,861 at the 2006 Nigerian census (FRN, 2006). The principal inhabitants of the city are of the Hausa people. As in most parts of Northern Nigeria, the Hausa Language is widely spoken in Kano. The city is the capital of the Kano Emirate, and the current Emir, Ado Bayero, has been on the throne since 1963. The city is home to the Mallam Aminu Kano International Airport, the main airport serving northern Nigeria and was named after Nigerian politician Aminu Kano. In the 7th century, Dala Hill, a residual hill in Kano, was the site of a hunting and gathering community that engaged in iron work; it is

unknown whether these were Hausa people or speakers of Niger–Congo languages (Iliffe, 2007). Kano was originally known as Dala, after the hill, and was referred to as such as late as the end of the 15th century and the beginning of the 16th by Bornoan sources (Nast, 2005). Muhammad Rumfa ascended to the throne in 1463 and reigned until 1499. During his reign, he reformed the city, expanded the Sahelian Gidan Rumfa (Emir's Palace), and played a role in the further Islamization of the city (NHM LAC, 2006), as he urged prominent residents to convert (EGM, 2011).

Abuja City (Federal Capital Territory/North Central)

Abuja is the capital city of Nigeria. It is located in the centre of Nigeria, within the Federal Capital Territory (FCT). Abuja is a planned city, and was built mainly in the 1980s. It officially became Nigeria's capital on 12 December 1991, replacing Lagos, which is still the country's most populous city. At the 2006 census, the city of Abuja had a population of 776,298 (FRN², 2009) making it one of the top ten most populous cities in Nigeria. It has an estimated population of 2,085,000 (Demographia, 2011). Abuja's geography is defined by Aso Rock, a 400-metre monolith left by water erosion. The Presidential Complex, National Assembly, Supreme Court and much of the town extend to the south of the rock. Other sights include the Nigerian National Mosque and the Nigerian National Christian Centre. The city is served by the Nnamdi Azikiwe International Airport, while Zuma Rock lies nearby. Abuja is known for being the best purpose-built city in Africa as well as being one of the wealthiest and most expensive; however, the population on the semi-developed edges of the city is living in rural areas such as Karu, Nasarawa State (Murray, 2007).

In light of the ethnic and religious divisions of Nigeria, plans had been devised since

Nigeria's independence to have its capital in a location deemed neutral to all parties. The location was eventually designated in the centre of the country in the early 1970s as it signified neutrality and national unity. Another impetus for Abuja came because of Lagos' population boom that made that city overcrowded and conditions squalid. The logic used was similar to the way Brazil planned its capital, Brasília. Construction broke ground and was dedicated in the late 1970s but, due to economic and political instability, the initial stages of the city were not complete until the late 1980s. The master plan for Abuja and the Federal Capital Territory (FCT) was developed by International Planning Associates (IPA), a consortium of three American firms: Planning Research Corporation; Wallace, McHarg, Roberts and Todd (Elleh, 2001); and Archisystems, a division of the Hughes Organization. The master plan for Abuja defined the general structure and major design elements of the city that are visible in the city's current form. More detailed design of the central areas of the capital, particularly its monumental core, was accomplished by Kenzo Tange, a renowned Japanese architect, with his team of city planners at Kenzo Tange and Urtec company. Most countries relocated their embassies to Abuja, and many maintain their former embassies as consulates in Lagos, still the commercial capital of Nigeria. Abuja is the headquarters of the Economic Community of West African States (ECOWAS) and the regional headquarters of OPEC. Abuja and the FCT have experienced huge population growth; it has been reported that some areas around Abuja have been growing at 20% to 30% per year (Matovu, 2000). Squatter settlements and towns have spread rapidly in and outside the city limits (Jibril, 2006). Tens of thousands of people have been evicted since former FCT minister Nasir Ahmad el-Rufai started a demolition campaign in 2003 (Polgreen, 2006).

There are Six urban districts: Central , Garki , Wuse , Maitama , Asokoro, and Gwarimpa, and five suburban districts: Nyanya, Karu, Gwagwalada, Kubwa, and Jukwoyi. Along the Airport Road are clusters of satellite settlements, namely Lugbe, Chika, Kuchigworo and Pyakassa. Other satellite settlements are Idu (the main industrial zone), Mpape, Karimo, Gwagwa, Dei-Dei (housing the International Livestock market and also International Building materials market).

III. RESEARCH METHODOLOGY

This refers to all the strategies employed in gathering or sourcing for information for this study. It has to do with the selection of the method for data collection, including instruments and methods of analysis in order to harvest relevant information for the study; and this needs to be clearly stated and defined. This section deals with the system of inquiry to be adopted for this study and the procedural steps to be taken to ensure the accomplishment of this task; and it focuses on sources of data, sample size, sampling frame, sampling technique, and method of data analyses applied.

Research design

Based on the aim and objectives of this study, the methodology adopted includes the qualitative and quantitative research design methods based on secondary data. Data characterizing the regions/areas objectively were presented and by multistage sampling Nigeria was selected.

Data collection method

The research methodology employed for data collection was to facilitate the information gathering process, in order to achieve the stated aim and objectives as well as to arrive at an accurate conclusion on the study. Because of the scope of this research, the secondary data were from available information gathered from previous documentation relevant to this area of study, information from textbooks, journals and relevant information from articles. This was done through the effective

use of the library and the internet. Relevant literature- including journals, websites, books and magazines were reviewed and extensively used.

Sampling frame and technique

The sample frame encompassed all the continents/ regions of the world. The entire world has been divided into two great regions, namely, the 'More Developed Regions' and the 'Less Developed Regions' (as explained in the Literature review section).

(a) Table 4(ii): Emergence of Megacities - Population size of urban agglomerations with ≥ 8 million by development regions 1950- 2000 AD, showed that globally in 2000A.D. there were a total of 28 megacities, 22 (78.57%) of which are in the Less Developed Regions while the remaining 6 (21.43%) are in the More Developed Regions. The more affected of the two broad regions is the *Less Developed Regions* where over 78% megacities reside.

(b) Table 4(i): Emergence of Megacities - Population size of urban agglomerations with ≥ 8 million by development regions 1950- 2000 AD, '%Factorial Rate of growth of megacities per annum (p.a.) 1970-2000', showed that the more developed region, the less developed region, and the entire world had 0.67,11.33 and 6.00 respectively. The more affected of the two broad regions is the *Less Developed Regions* where '%Factorial Rate of growth of megacities p.a 1970-2000' is highest of the values with 11.33.

(c) Table4 (iii): While all the other continents/regions were able to keep their Percentage Change in Population (2000-2010) below +18.0 (including Oceania had +17.5 and Europe with +1.6 being the least), only Africa with highest value had +26.0 as the Percentage Change in Population (2000-2010); hence *Africa (in the Less Developed Regions)* is the most affected in Percentage of change in population.

(d)Table4 (iv)b: While three of the continents/regions had negative Change in % proportion (1950-2025) with the least being Europe with -9.2, three others had their values between 0.0 and +3.0, and only Africa with highest value had +10.8 as the Change in % proportion (1950-2025); hence *Africa (in the Less Developed Regions)* is the most affected in Change in % proportion (1950-2025).

The choice of Nigeria, in Africa is natural from its status as the most populous State on the African Continent (See Nigeria in the Literature Review/ More Developed and Less Developed Regions).

From above, the selection of the *Less Developed Regions* followed by African continent and subsequently Nigeria had

been done sequentially by multistage sampling.

Method of data analyses

The data were analyzed using descriptive analytical methods, and including both qualitative and quantitative techniques. Specifically, the analytical methods including factorial growth rates also known as indices, differentials and cube root transformations were used to determine the trends.

IV. DATA PRESENTATION, ANALYSES AND DISCUSSIONS

This section focuses on the presentation data characterizing the regions/areas objectively, their analyses of the data gathered during the study by the researcher and resulting discussions.

Table 4(i): Emergence of Megacities -Population size of urban agglomerations with ≥ 8 million in 2000 AD (See Appendices)

Table 4(ii)a: Emergence of Megacities -Population size of urban agglomerations with ≥ 8 million by development regions 1950- 2000 AD

Data				
Region	1950	1970	1990	2000
More developed	2	5	6	6
Less developed	0	5	14	22
Total	2	10	20	28

Source: Author’s Summary of Table 4 (i) (2012)

Table 4(ii)b: Emergence of Megacities -Population size of urban agglomerations with ≥ 8 million by development regions 1950- 2000 AD- Analysis

Analysis		
Region	% megacities @2000	% Factorial Rate of growth of megacities p.a 1970-2000
More developed	21.43	0.67
Less developed	78.57	11.33
Total	100	6.00

Source: Author’s current work (2012)

Table 4(iii): World Percentage Change in Population (2000-2010) with Regional/Continental (Sub) Totals in 2010

Continent or Region	Population 2010	% Population Change (±) 2000-2010
World	6,895,889,000	+12.6%

Asia	4,164,252,000	+12.0%
Africa	1,022,234,000	+26.0%
Europe	738,199,000	+1.6%
Latin America and the Caribbean	590,082,000	+13.2%
Northern America	344,529,000	+10.0%
Oceania	36,593,000	+17.5%

Source: UN² (2011)

Table 4(iv)a: Total World Population by Regions 1950-2025 A.D.

Continent or Region	Data		
	1950	1990	2025
Asia	1,378,440,000 (54.7%)	3,060,750,000 (58.3%)	4,531,920,000 (55.2%)
Europe	393,120,000 (15.6%)	498,750,000 (9.5%)	525,440,000 (6.4%)
Africa	224,280,000 (8.9%)	654,750,000 (12.3%)	1,617,370,000 (19.7%)
USSR	181,440,000 (7.2%)	294,000,000 (5.6%)	369,450,000 (4.5%)
North America	166,320,000 (6.6%)	273,000,000 (5.2%)	344,820,000 (4.2%)
South America	163,800,000 (6.5%)	451,500,000 (8.6%)	779,950,000 (9.5%)
Oceania	12,600,000 (0.5%)	26,250,000 (0.5%)	41,050,000 (0.5%)
World Population	2.52 billion	5.25 billion	8.21 billion

Source: S. M. (1990)

Table 4(iv)b: Total World Population by Regions 1950-2025 A.D.- Analysis

Continent or Region	Analysis
	Change in % proportion 1950-2025
Asia	+0.5
Europe	-9.2
Africa	+10.8
USSR	-2.7
North America	-2.4
South America	+3.0
Oceania	0.0
World Population	-

Source: Author's current work (2012)

Table 4(i): Emergence of Megacities - Population size of urban agglomerations with ≥ 8 million by development regions 1950- 2000 AD, %Factorial Rate of growth of megacities p.a. 1970-2000, showed that the

more developed a region, the less developed region, and the entire world had 0.67,11.33 and 6.00 respectively. Also the more affected of the two broad regions is

the Less developed where over 78% of the megacities reside.

Table 4(ii): Emergence of Megacities - Population size of urban agglomerations with ≥ 8 million by development regions 1950- 2000 AD, showed that globally in 2000A.D. there were only 28 megacities

Table4 (iii): While four of the continents/regions were able to keep their Percentage Change in Population (2000-

2010) below +13.2 (including Europe with +1.6 being the least), Oceania had +17.5, and only Africa with highest value had +26.0

Table 4(iv): While three of the continents/regions had negative Change in % proportion (1950-2025) with the least being Europe with -9.2, three others had their values between 0.0 and +3.0, and only Africa had highest value of +10.8

Table 4 (v)a: Number of cities with population of one million or more by region 1950-1995-2010

Data						
Continent or Region	No. of Sovereign States or Countries	No of cities				
		1950	1965	1980	1995	2010 ****
Africa	56	2	5	14	31	41
Asia (Incl. Oceania)	62	27	50	84	142	180
Europe	50	29	39	56	62	73
Latin America	19	7	15	24	44	56
Northern America	2	14	23	32	39	47
Total	189	79	132	210	318	398

Source: UN (1995); [Asia= 48; Oceania=14]****Projection from existing data UN (1995).

Table 4 (v)b: Number of cities with population of one Million or more by region 1950-1995-2010 Analysis

Continent or Region	Analysis			
	Rate of growth of cities p.a	%Factorial Rate of growth of cities	%Factorial Rate growth of cities p.a. per State (or	Multiple of the Least value (f/ 0.04)
Region				
Africa	0.64	32.22	0.58	14.50
Asia (Incl. Oceania)	2.56	9.47	0.15	3.75
Europe	0.73	2.53	0.05	1.25
Latin America	0.82	11.75	0.62	15.50
Northern	0.5	3.97	1.98	49.50

America	6			
Total	5.3 1	6.72	0.04	1

Source: Author's current work (2012)

The observed differential rates of regional growth of cities tend to divide entire world into three development regions:

(i) Developed regions: With highest level of sophistication in economic and technological development (including Europe) succeeded in keeping the 'percentage (%) Factorial Rate of growth of cities p.a. per State' to under 0.2. This is with the exception of North America with highest value of 1.98, due to only 2 states (U.S. and Canada) in the Continent.

(ii) Medium developed regions: With medium level of economic and technological development (made up of Asia and including Oceania) also succeeded in keeping the 'percentage (%) Factorial Rate of growth of cities p.a. per State' at 0.15; which falls within the range for the developed region in Item(i) above which is an indication of increased level of technological development. This is also a signal to the momentary collapse of partition between the two regions leading to their merger into only 'developed regions'.

(iii) Less developed (or developing) region: With lowest level of economic and technological development (including Latin America and Africa) have difficulty in maintaining low level the 'percentage (%) Factorial Rate of growth of cities p.a. per

State' hence the two high values of 0.62 and 0.58; and with Multiple values of 15.50 and 14.50 respectively (Table 4 (v)b). Although Latin America has slightly higher values than Africa (Table 4(v)b), but the fact that the issues being investigated is likely to affect a population in Africa more than twice that of Latin America (Table 4(iv)a) in 2025 and the 56 States in Africa than the 19 States in Latin America (Table 4 (v)a) has led to the researcher's choice of Africa.

(iv) Both Latin America and Africa have the highest %Factorial Rates of growth of cities p.a. per State of 0.62 and 0.58 respectively with both having 0.6 to one decimal point, all other continents/regions each had values less than 0.20 except Northern America with exceedingly high value of 1.98 (Table 4 (v)b).

(v) The whole world has succeeded in keeping the 'percentage (%) Factorial Rate of growth of cities p.a. per State' to 0.04 which is far below 0.2 value attained for developed regions in Item (i) above with the exception of North America (for obvious reasons). This study has clearly shown that neglecting the anomalies in North America (for obvious reasons) the whole world may be classified into two regions, namely, 'developed regions' and 'developing or less developed regions'.

Table 4(vi)a: Number of cities with population of one million or more in Nigeria 1950-1995-2010

Data					
Region	No of cities				
	1950	1965	1980	1995	2010
Africa	2	5	14	31	41****
Nigeria	1*	3***	5***	7***	9**

Sources: *Oshodi (2011); **Demographia (2011); **Onuah (2006); UN (1995); ***Interpolation from existing data; ****Projection from existing data; and PRB (2000).

Table 4 (vi) b: Number of cities with population of one million or more in Nigeria 1950-1995 Analysis

Region	Analysis	
	Percentage (%) Factorial Rate of growth of cities p.a. per State (f)	Multiple of the Least value (f/0.04)
Africa	0.58*	14.50*
Nigeria	13.33	333.25

* Table 4 (v) b; Table 4(vi)a ; **Table 4 (viii)a in Appendices; Source: Author's current work (2012)

Table 4 (v): Number of cities with population of one million or more by region 1950-1995-2010 and Table 4(vi)b: Number of cities with population of one million or more in Nigeria 1950-1995-2010, % Factorial Rate of growth of cities p.a. per state or country, showed that the entire world and all the Continents/ Regions were able to keep their to values below 2.00, including whole World with 189

States (0.04), Northern America with only 2 States (1.98), Latin America with 19 States (0.62) and Africa with 56 States (0.58). Nigeria however, has a value of 13.33, which is over 300 times the global rate of 0.04; this is undoubtedly one of the highest globally. The rate of rural urban transformation in Nigeria is exceedingly high and one of the highest not only regionally but globally.

Table 4 (vii) a: Patterns of World Urbanization from 1900 to 1985 with projection to 2020 A.D.

Data				
Population	1900	1950	1985	2020
Rural	86.4	71.1	56.7	37.5
Cities less than 1 million	1.6	7.5	15.8	27.1
Cities greater than or equal to 1 million	12.0	21.4	27.5	35.4
World Population in billion	1.6	2.5	4.9	8.1

Source: PRB (2000)

Table 4 (vii)b: Patterns of World Urbanization from 1900 to 1985 with projection to 2020 A.D.- Analysis

Population	Change p.a. (1900-2020)	Analysis		
		Factorial Change p.a.		
		1900-1950	1950-2020	1900-2020
Rural	-0.4100	-0.0035	-0.0068	-0.0047
Cities less than 1 million	+0.2100	*	*	*
Cities greater than or equal to 1 million	+0.2000	*	*	*

Cities ±1 million	+0.4100	+0.0225	+0.0166	+0.0300
World Pop. in billion	+0.0500	+0.0113	+0.0320	+0.0339

Source: Author’s current work (2012); *Un-imputed values

Table 4 (vii) c: Patterns of World Urbanization from 1900 to 1985 with projection to 2020 A.D. - Analysis

		Analysis		
		Cube Root Transformations of Factorial Change p.a.		
Population	Change p.a. (1900-2020)	1900-1950	1950-2020	1900-2020
Rural	-0.41	-0.1518	-0.1895	-0.1675
Cities less than 1 million	+0.2100	*	*	*
Cities greater than or equal to 1 million	+0.2000	*	*	*
Cities ±1 million	+0.4100	+0.2823	+0.2551	+0.3107
World Pop. in billion	+0.0500	+0.2244	+0.3175	+0.3236

Source: Author’s current work (2012); *Un-imputed values

Global urbanization levels, measured by the percentage of the population living in urban areas (cities) increased from 13.6% in 1900 to 28.9% in 1950; and will also increase to 62.5% in 2020 based on Population Reference Bureau’s projection.

(i) Thus, the growth rate during the period 1900-1950 is $(28.9 - 13.6) / 50 = 15.3 / 50 = 0.36\%$ P.a.;

(ii) Thus, the growth rate during the period 1950-2020 is $(62.5 - 28.9) / 70 = 33.6 / 70 = 0.48\%$ P.a.;

(iii) But the growth rate during the entire period 1900-2020 is $(62.5 - 13.6) / 120 = 48.9 / 120 = 0.41\%$ P.a.

From the Cube Root Transformations of Factorial Change of Patterns of World Urbanization p.a. for the periods 1900-1950, 1950-2020 and 1900-2020: The rural areas

have values of: -0.1518, -0.1895, -0.1675; Cities have values of +0.2823, +0.2551, +0.3107; The entire world has values of +0.2244, +0.3175, +0.3236. While highest negative value (-0.1895) was recorded in the case of rural areas in 1950-2020, the highest positive values (+0.3107 and +0.3236) were recorded in the case of cities and the entire world in 1900-2020.

V. SUMMARY, CONCLUSION AND RECOMMENDATIONS

Summary of Findings

(i) The structures of cities are very complicated and brought about by a network of myriad of forces. The cities evolved through evolutionary processes from human settlement which grew in sizes and complexities. As cities increases in size, population, physical development etc., the

form of such cities also increase in complexity as observed in the cities of Philadelphia (1682-1876) (EVP, 2006); and Los Angeles/Hollywood (1880-1950s) in America (VELA, 2012). In fact there was a marked difference between the period preceding 1880s (when the use of steel in building construction was discovered) and the period beyond it. From then construction of skyscrapers began which changed the form, outlook and image of cities from essentially horizontality to verticality.

(ii) Even in Abuja, Nigerian Capital City created in 1976 (Dantata, 1993), with careful planning of the Capital which took place several decades after the discovery of the use of steel as building material, we felt the rapid transformation of a virtually virgin land to a Federal Capital City within a period of 15 years and subsequent development to present. Abuja due to modern planning is a spatial (not so compact) city. Lagos, however was developed over almost 2 centuries, hence it became a megacity before 2000A.D. with very compact structure due to high population and development densities. There is great population on relatively small land mass with a lot of sophistication in it.

(iii) With development in technology, there are improved communication, transportation, tools, machineries and techniques for construction purposes. For instance, before 1900, there were very few 2-3 storey structures in Lagos, Nigeria but afterward with improved technology most of the high-rise buildings on Lagos Island and Victoria Island/ Ikoyi among other areas in the city became possible, hence verticality of structures became greatly enhanced.

(iv) There are many factors or forces restricting the physical growth or expansion of cities, which may include government policies, such as green belt in large cities, fringe belt development in construction booms and slumps era, fortification zones, topographical constraints such as lakes, rivers, mountain etc. which tend to restrain

development resulting in more compact cities. Absence of any or all of these tends to liberalize outward growth resulting in more spatial (less compact) cities structures. There is no doubt that "the spatial structure of cities is a product of centripetal forces of attraction and congestion, centrifugal forces of dispersion and decongestion and forces of area differentiation". Technological development has led to improved mode of transport in vehicles, trains, roads and rails construction, resulting in more physical spread and improved development in construction technology resulted in construction of skyscrapers in cities, giving more interesting vertical outlook or forms to cities.

(v) Several pull factors such as job opportunities, social amenities; recreational facilities, educational opportunities etc. tend to draw people from less urban to existing cities which may result to explosion if growth is restricted but for Technological development which tends to counter or break some of these restrictions allowing more spread in development. Also growth in population due to increased birth rate as against death rate, improved technology can bring about birth control leading to reduced birth rate resulting in reduced population growth.

Conclusions

From the results of this research, it was concluded that, cities structures are very complicated and brought about by a network of myriad of forces. The cities evolved through evolutionary processes from human settlement which grew in sizes, population, and physical development etc.; the forms of such cities also increase in complexities.

Cities in the developing regions (that do not have most of the modern technological facilities) tend to grow faster than those in the developed regions. The differential rates of evolution of cities was observed globally and regionally that, the more highly

economically developed and technologically advanced a region is the less the rate of growth of cities (or the lower the rate of cities evolution in terms of number per annum on regional basis), i.e. North America and Europe with high level of technological development succeeded in keeping the %Factorial Rate of growth of cities p.a (1950-2010) very low compared to other regions (Table 4 (v)b) such as Africa with the highest value followed by Latin America.

Recommendations

The study recommended that:

(i) For the developing regions particularly African continent (with two global megacities Cairo, Egypt and Lagos, Nigeria) to be able to curb the numerous problems of poverty, hunger, malnutrition, population explosion, high rates of cities growth among

others, associated with urbanization, there must be complete economic transformation and attainment of high level technological development with attendant low cities growth rate as already attained by Europe and North America. These have the capability of producing more spatial cities structure and improved or better image or form or outlook of cities); as sustainable architecture/ planning, urban design and construction of buildings and infrastructures can be carried out better and faster than they used to be, to aid human habitation.

(ii) The respective national governments must step up the economic development at least to be able to make the rate of urbanization sustainable.

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APPENDICES

Table 4(i): Emergence of Megacities -Population size of urban agglomerations with ≥ 8 million in 2000 AD

Agglomeration	Country	Population (in Millions)					
		1950	1960	1970	1980	1990	2000
Bangalore	India	0.8	1.2	1.6	2.8	5.0	8.2
Bangkok	Thailand	1.4	2.2	3.1	4.7	7.2	10.3
Beijing	China	3.9	6.3	8.1	9.0	10.8	14.0
Bombay	India	2.9	4.1	5.8	8.1	11.2	15.4
Buenos Aires	Argentina	5.0	6.8	8.4	9.9	11.5	12.9
Cairo	Egypt	2.4	3.7	5.3	6.9	9.0	11.8
Calcutta	India	4.4	5.5	6.9	9.0	11.8	15.7
Dacca	Bangladesh	0.4	0.6	1.5	3.3	6.6	12.2
Delhi	India	1.4	2.3	3.5	5.6	8.8	13.2
Istanbul	Turkey	1.1	1.7	2.8	4.4	6.7	9.5
Jakarta	Indonesia	2.0	2.8	3.9	6.0	9.3	13.7
Karachi	Pakistan	1.0	1.8	3.1	4.9	7.7	11.7
Lagos	Nigeria	0.3	0.8	2.0	4.4	7.7	12.9
Lima	Peru	1.0	1.7	2.9	4.4	6.2	8.2
Los Angeles	USA	4.0	6.5	8.4	9.5	11.9	13.9
Manila	Philippines	1.5	2.3	3.5	6.0	8.5	11.8
Mexico City	Mexico	3.1	5.4	9.4	14.5	20.2	25.6
Moscow	Russia	4.8	6.3	7.1	8.2	8.8	9.0
New York	USA	12.3	14.2	16.2	15.6	16.2	16.8
Greater London	Great Britain	8.7	9.1	-	< 8.0	< 8.0	< 8.0
Osaka	Japan	3.8	5.7	7.6	8.3	8.5	8.6
Paris	France	5.4	7.2	8.3	8.5	8.5	8.6
Rio de Janeiro	Brazil	2.9	4.9	7.0	8.8	10.7	12.5
Sao Paulo	Brazil	2.4	4.7	8.1	12.1	17.4	22.1
Seoul	Korea (Republic of)	1.0	2.4	5.3	8.3	11.0	12.7
Shanghai	China	5.3	8.8	11.2	11.7	13.4	17.0
Teheran	Iran (Islamic Rep. of)	1.0	1.9	3.3	5.1	6.8	8.5
Tianjin	China	2.4	3.6	5.2	7.3	9.4	12.7
Tokyo	Japan	6.7	10.7	14.9	16.9	18.1	19.0
Total No.		2*	4	10	15	20	28

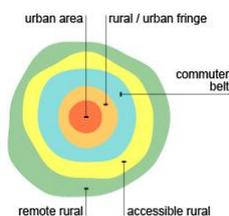
Source: UN PRB (United Nations and Population Reference Bureau), 2000 in Watson, Plattus and Shibley, 2003

Notes: Bangkok refers to Bangkok – Thonburi; Cairo, Cairo – Giza – Imbaba; Lima ,Lima – Callao; Los Angeles – Long Beach; Manila, Metro- Manila; New York, New York – North Eastern New Jersey; Osaka, Osaka – Kobe; Tokyo, Tokyo-Yokohama.*The Population of Greater London exceeded 8 million in 1950 (8.7 million) and 1960 (9.1million), but has been under 8 million since 1980.

Table 4 (viii)a: Population of Major Nigerian Cities

S/N	City	State	Population 2002	Population 2006	Population 2010	Population 2011	Pop. \geq 1m
1	Lagos	Lagos State	8029200	7,937,932	9,000,000	10,855,000	√
2	Kano	Kano State	3248700	3,848,885	3,626,068	3,490,000	√
3	Ibadan	Oyo State	3078400	3,078,400	3,565,108	2,915,000	√
4	Abuja	FCT	-	776,298	-	2,085,000	√
5	Kaduna	Kaduna State	1458900	1,652,844	1,582,102	1,605,000	√
6	Port Harcourt	Rivers State	1053900	1,320,214	1,148,665	1,130,000	√
7	Benin City	Edo State	1051600	1,051,600	1,125,058	1,340,000	√
8	Maiduguri	Borno State	971700	1,044,497	1,112,449	975,000	√
9	Zaria	Kaduna State	898900	1,018,827	975,153	985,000	√
	No. of Cities with Population of 1 Million or more	-	6	8	7	7	9
	Sources	-	Butler (2009)	GRON (2012); FRN ² (2009); FGN (2007); NBSN (2007) & Onuah (2006)	PL (2011)	Demographia (2011)	-

Fig 1(i) Diagram showing the classification of rural and urban areas



Source: GCSEB, 2012

Fig 4(i): Map of Nigeria exhibiting its 36 states and federal capital territory



Source: GRON (2012)

Views of Selected Cities in Nigeria



View of Lagos Megacity:

Lagos Island as seen from the harbour near Victoria Island; Source: World66.com (2007)



Murtala Mohammed International Airport in Ikeja Lagos- is one of Nigeria's 3 major international airports. Source: Adebayo (2006)

View of Kano City:



Panorama of Kano city from Dala Hill; Source: Chakera²(2007)



Gate to the Gidan Rumfa (Emir's Palace) in 2005;

Source: Chakera¹ (2007)

View of Abuja City:



Abuja City Gate; Source: NWE (2012)



**Zuma rock, near Abuja;
Source: NWE (2012)**



**National Church of Nigeria,
Abuja; Source: Chippla, V.
2007**



**National Mosque, Abuja;
Source: NEW (2012)**