



**FEDERAL UNIVERSITY OF TECHNOLOGY  
MINNA**

**PROPERTY VALUE – WHAT IS BEHIND  
SIX IS MORE THAN SEVEN**

**By**

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**INAUGURAL LECTURE SERIES 103**

**8th February, 2023**

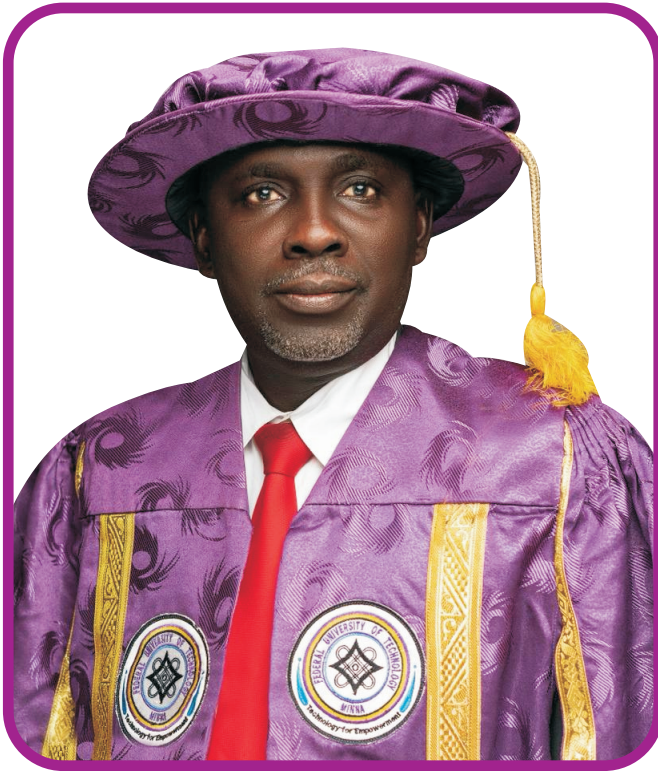
*Published by:*

**University Seminar and Colloquium Committee,**

**Federal University of Technology, Minna.**

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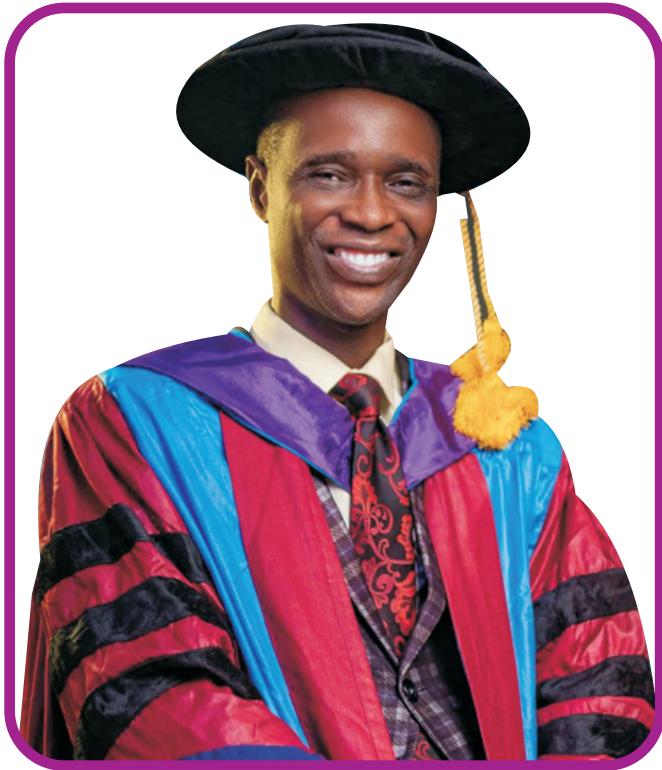
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## 1.0 INTRODUCTION

The first tenants to breach a tenancy agreement were Adam and Eve, and they paid dearly for it. Their ejection from the Garden of Eden affected subsequent generations, which include those of us still living and several yet unborn. The Garden of Eden (a place of pleasure) was a perfect estate for man, with all the amenities he required to survive. Man's search for a perfect and functional estate and city has continued since he lost the first estate. The population has increased from two to eight billion (UN, 2022). There is a global concern to create cities that are conducive and sustainable for the ever-increasing human population. Real Estate as a form of investment is usually intended to command a reasonable value with a view to giving investors profitable returns. There are emerging building designs and finishes geared toward wooing prospective buyers and tenants. However, there are other significant factors that influence property values. Have you ever wondered why property prices in Lagos and Abuja are so high while they are almost free in Jibya (an arid zone near Katsina and Niger on the outskirts of the Sahara Desert)? This inaugural lecture is conceived to unveil these significant factors and the extent to which they influence property values. This is expected to be an eye-opener for existing and potential Real Estate investors and hopefully change the mindset of those who see any available land as ideal for all types of development.

It is undeniable that all human activities, including Real Estate developments, take place within the environment. When viewed from an economic perspective, the environment is seen as a special resource that serves society's economic needs (Radoslaw *et al.*, 2012). The environment is made up of a variety of materials (both physical and biological) and non-biological components that can be things, forces, or phenomena and that work together to form a dynamic system in a small area (land).

The availability of land as a factor of production is essential for the progress of any community, whether it be in urban or rural areas of a country (FMH&UD, 2006). It is essential to the social, economic, and psychological growth of a person, a state, and a country as a whole (Ibrahim, 2013). The expansion of the population and increased demand for land necessitate the incorporation of new uses and developments into land (Aribigbola, 2008). The development of land for the basic need of shelter and other secondary needs, including economic and non-economic reasons, introduces the concept of real estate.

Real property values depend on the availability of certain basic facilities provided within the urban environment (Radoslaw *et al.*, 2012). Man's attitude towards their surrounding environment is not neutral because humans search for suitable locations that present and deliver a high quality of life in terms of accessibility, security, availability of electricity, water, green parks, and so on. A man's expectations of economic benefits and returns, which often come in the form of capital gain/appreciation or yearly rent income, are greatly influenced by the quality of his environment. The standard and condition of environmental facilities determine rent, sale prices, and mortgage value, which are the usual concerns of estate owners, prospective buyers or tenants, lenders, and tax authorities.

Globally, the quality and coverage of environmental facilities have major effects on living standards and economic growth, yet it is estimated that globally, about two billion people lack access to adequate sanitation and electricity, while one billion lack access to clean water (United Nations, 2010). Man's primary need is to have an environment characterised by high living standards, security, and scenic value (Radoslaw *et al.*, 2012). In Nigeria, poor environmental conditions have negatively affected property values, resulting in low rental income and slow capital gains. Nigerian cities are reputed to be among the dirtiest, due to unsanitary practices that make them unpleasant aesthetically and perilous for habitation (Agboola, 2002). They are characterised mostly by dysfunctional infrastructure facilities (Aluko, 2000).

This lecture focuses on the extent to which environmental facilities influence real estate values.

### **1.1 Evaluation of Environmental Facilities**

The quality of the surrounding environment is mostly measured by the degree of natural and man-made facilities present in a specific location. The man-made component of the environment, which usually comes in the form of infrastructure, covers a wide range of services and facilities including water, roads, waste disposal, drainage, communication, primary health services, schools, and housing (Ajibola, Awodiran & Salu-Kosoko, 2013). Infrastructure is a determinant of property values as its presence results in the appreciation of property values (Johnson, Davies, & Shapiro, 2005).

Real estate as a heterogeneous good comprises a bundle of unique attributes that reflect not only the effects of location alone but also the effects of other amenities such as the quality of the neighbourhood and infrastructure. The provision of good and adequate infrastructure is central to property values (Hammer, Booth, & Love, 2000). Consolidated theories on urban economies are based on the trade-off

between accessibility and willingness to pay for the landed property (Alonso, 1964).

The effectiveness of any type of human activity on the environment is heavily reliant on the availability of efficient facilities (Babarinde, 1998). Therefore, it is impossible to overstate the importance of environmental facilities for a region's efficient operation. It is estimated that nearly two billion people lack access to proper sanitation and power, and that one billion do not have access to clean water, the quality and coverage of environmental facilities have a significant impact on living standards and economic growth (United Nations, 2010).

## **1.2 Real Estate Value Determinants**

Property value is a crucial aspect of real estate markets around the world and is determined by a variety of variables whose identification is important for property valuation (Ge & Du, 2007). Kamali, Hojiat, and Rajabi (2008) group the variables determining property values into four categories: environmental, neighborhood, accessibility, and property variables. The determinants of real estate values can be further broken down to include: population, change in fashion and taste, institutional factors, technology, economic factors, and location.

### **1.2.1 Factors influencing tenants' choice of location of residence**

When families move into apartments, the idea of residential location options takes centre stage. Residential location choice refers to a household's decision over where to locate its home and is influenced by a number of variables. Individual taste for housing attributes varies by household type and from one geographical location to another (Oladapo *et al.*, 2019). As a result, the circumstances under which households choose their residential locations in various geographical locations are influenced by some adherent factors.

The choice of residential area is crucial to a city's pattern of urban growth. A family decides where to live by comparing the housing qualities of each available dwelling unit and choose the one that provides the greatest utility. The two main factors in determining a tenant's residential location are dwelling attributes (such as the number of bathrooms, toilets, and bedrooms) and accessibility attributes (such as proximity to work, adequate facilities, proximity to schools, and others) (Oladapo *et al.*, 2019).

### 1.3 The Effects of Environmental Facilities on the Value of Real Estate Property

The organization of land uses is based essentially on three criteria which include: economic prosperity, quality of life and quality of the environment. The environment, therefore, has a strong influence on real estate business as the impact of environmental amenities (roads, water, waste disposal system, open space or proximity to parks) or environmental disamenities (air pollution, water pollution or proximity to noxious facilities) on housing price is obviously reflected through capitalization (Karanikolas, Vagiona & Xifilidou, 2011). The price paid for a property measures the differences in people's desirability based on the environmental services rendered by the property, (Amrusch, 2007). Two housing units identical in all respects except on environmental features will possess different values as the one with the best environmental characteristics will command higher prices.

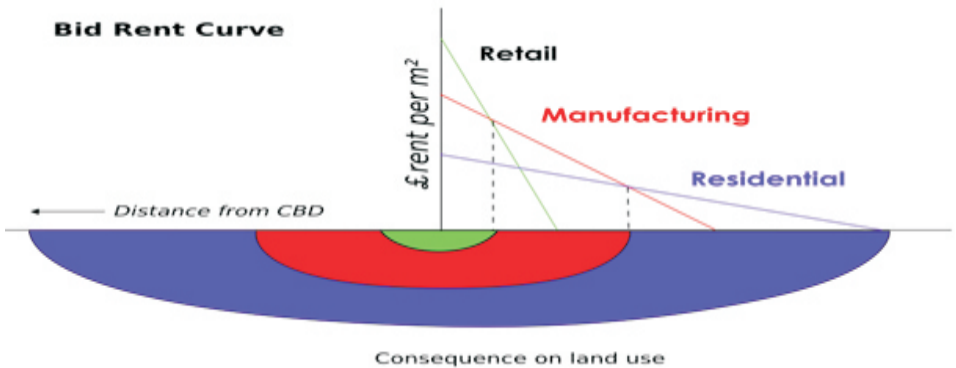
Basic infrastructure has suffered major neglect over a long period of time in many Nigerian cities. However, the efficiency of any human activity is heavily reliant on the provision of efficient infrastructure, which in turn influences the demand for and selection of real estate property. The availability of infrastructure is typically one of the variables influencing demand and choice of real estate property, particularly residential units because man is a socioeconomic being who seeks to reside in a shelter that gives the largest supply of necessities at affordable costs. Therefore, it is crucial to offer amenities that enhance inhabitants' quality of life in their surroundings. The accessibility of facilities is one of several elements that affect property values across different locations. For example, the value of a residential neighborhood will rise the closer it is to new infrastructure improvements (Udoka, 2013). Additionally, infrastructure development is the catalyst for economic and technological advancement.

Infrastructure provision, operation, management, and maintenance are always big employers of labour. In the same vein, the majority of economic activities also rely on infrastructure to thrive. To better understand the impact of public infrastructure on property value, highlighting some theoretical constructs of urban dynamics will give great insights into the topic to be discussed. The work carried out by Hurd (1903) is essential to the urban location choice theory, which combines Von Thunen's agricultural land theory with the theory of David Ricardo on land rent. Hypothetically, Hurd surmised that value depends on economic rent, rent on location, location on convenience (infrastructure), and convenience on nearness.

By eliminating the intermediate steps, it can be concluded that values depend on infrastructure and proximity.

The Space-Access (bid-rent) Theory, put out by Alonso, provides insight into the fundamental significance of neighborhood placement preference for public infrastructure.

The standard access-space model formulated by Alonso (1964) for the analysis of urban land and property markets posit that housing and accessibility are bought together and that it is only removing location-specific activities for which households would lower their bid price housing as commuting costs increase from the city center.



**Figure 1: Bid-Rent Theory (Alonso, 1964)**

The property value in the centre of the city will command the highest prices as most infrastructure and services are found within the Central Business district, as shown in Figure 1. However, as one moves away from the centre to places with fewer facilities, it will be observed that the value will keep reducing. The relevance of this theory even in contemporary times is valid.

### 1.3.1 Effects of open spaces and green parks on real estate values

The significance of green spaces and their positive association with real estate market values are obvious. Green spaces boost a home's market value by up to 20% while raising the value of real estate intended for commercial use. A city's ecological, economic, and social functions can be improved when well-planned and preserved green spaces are combined with a comprehensive urban design (Lange et al. 2005).



It is remarkable that just 400 meters, or two to three blocks from a park, can boost a property's market value by 10%, while the presence of a park (not free for the public) can push prices up to 20%. (Kathleen, 2007). A park for specific uses raises market value by 15.4%, a natural park by 19%, and an urban park by up to 2%. (Royal Institution of Chartered Surveyors, 2007).

### **1.3.2 Impact of water infrastructure on property values**

Water as a commodity is irreplaceable when considering the survival of all living things, as it constitutes their basic need (food). Consumers are left without alternatives as regards water; hence, the adequate development and maintenance of a constant supply are required to promote healthy living and development in national economic terms. The flow of controllable, pipe-borne potable water to the residents from public reservoirs as provided by municipal, state, or federal governments connotes public water infrastructure (Famuyiwa & Otegbulu, 2012).

Households have incurred high costs in providing water amenities for their private use and are in dire need of good water supply, which are yet to meet the best standards (Otegbulu & Adewunmi, 2009). Daniel (2003) states that in places where rapid population growth is experienced, making plans to supply water is of great importance as a lack of reliable supply could create a decline that limits community growth. According to Sowdagur (2006), in a UNDP report, 1.2 billion people lack access to healthy and safe drinking water, and approximately 3 billion lack sanitation facilities.

Occupants of properties in areas without access to good water will move to other places where they can find healthy drinking water. This trend will be in their quest to survive, as water is basic to sustenance and health. The value of property in areas without adequate water infrastructure will fall.

### **1.3.3 Effects of waste treatment and management on property values**

The disposal and initiation of waste management programmes in developing countries like Nigeria cannot be treated with little attention, considering the impact it has on the environment and real property values (Adeniran, Adewole & Olofa, 2014). The greater the economic prosperity of a nation and its population growth, the greater the level of waste generated due to lifestyle changes (Ogedengbe & Oyedele, 2006).

Household waste is primarily composed of food waste and other items ranging from paper to plastic materials, worn-out furniture, and metal scraps, all of which negatively impact environmental quality and adjoining properties. The quality of man's environment is critical to his quality of life and family (Adedeji, 2005). The real estate value of properties located in polluted areas will be low as people will migrate to places where their health and well-being can be assured. For value to be appreciated, a variety of waste management services must be in place as well as functioning effectively to the satisfaction of users.

### **1.3.4 Impact of transportation on property values**

A property located near public transportation is more likely to be sold at a higher price because of the convenience it provides in an area of its influence, particularly rapid access to networks with minimal travel time (Costin, Ion & Sandra, 2018). Providing access for people to education, markets, employment, recreation, and other key services is one of the essential functions of transportation in urban development. Nearness to public transportation systems is highly valued when considering the quality of life in urban environment.



**Figure 2: Improved Transport Infrastructure and Facilities- Lagos Rail Mass Transit (Vanguard, 2022).**

The quality of a neighbourhood as influenced by adequate transportation facilities could be seen to have increased aesthetic value, which will improve the property value positively, as shown in Figure 2. Deng et al. (2019) confirm that investments in the provision of infrastructure, such as highways and bridges, led to increased property prices. According to Tsai et al. (2017), property values increased significantly in areas with more ferry-oriented development opportunities. Similarly, Yen et al. (2018) realise property prices have increased in catchment areas where the announcement of the Light Rail Transit (LRT) was made along the Gold Coast of Australia. Premium land value is commanded in walkable localities (Rauterkus & Muller, 2011). Pivo and Fisher (2011) figure out that greater

walkability, as a proxy for access to amenities, has induced higher values for office, residential, and retail properties. However, traffic congestion could cause a drop in housing values.

### 1.3.5 Security and Real Estate value

The perception of safety by an individual is directly impacted by the increased crime level in a locality; as the safety of a person's community deteriorates, residents in urban areas will prefer to move out in search of neighbourhoods that are safer in comparison to their impacted communities (Tita et al., 2006). Neighborhood decline could be created by property crime, which results in stigmatisation and mobility in an area, bringing about the lowering of rental and capital values (Boggess et al., 2013; Lynch & Rasmussen, 2001).

Nigeria, a developing country in West Africa, has emerged as a significant potential for investment and growth for real estate investors. Over the years, the returns on real estate investment in Nigeria have skyrocketed, resulting in significant per-capital profits and returns for both the government and investors. However, in recent decades, the country has experienced security challenges, which have worsened periodically since 2009 and are now visible in almost every state in the country. Activities in the country are greatly affected by insecurity, and not only is violence becoming more common, but the nature of the crime, particularly armed robbery, burglary, terrorism, kidnapping, and murder, has become more sophisticated and takes many forms.

Insecurity jeopardises a country's social and economic stability as well as its citizens' quality of life. These could be acts of political, economic, or social violence, as long as they disrupt society's peace and stability, consequently disrupting people's normal lives. Furthermore, it is a total collapse of law and order in a country that disrupts people's and the government's daily existence, culminating in social upheaval and wanton destruction of lives and properties, as shown in Figure 3.



**Figure. 3: Aftermath of Boko Haram's Bombing of the Nyanya Bus Park in Abuja, Nigeria (United Nations 2015).**

To further emphasize the effect of insecurity on Real Estate, Table 1 shows the effects of insecurity on the performance of property values in Niger and Kaduna State.

**Table 1: Effects of Insecurity on the Property Transactions in Niger State**

Years	No. of attacks	No. of Lettings	No. of Sales
2016	10	79	17
2017	18	75	7
2018	9	105	20
2019	24	89	10
2020	65	78	8
2021	107	56	6

**Source:** *Kemiki (2022)*

From Table 1, it can be deduced that insecurity affected the performance of property transactions, owing to the fact that as the number of attacks increased, the number of properties let and sold decreased. This can be observed evidently from Table 1 as the number of attacks decreases to 9, the number of lettings increases to 105, and the number of sales increases to 20 in 2018. The implication of this is that as the number of attacks increased, people got discouraged from taking up space in such locations under attack, and this had negative effects on the property market of such locations, which indirectly affected the performance of properties in such locations.

**Table 2: Effects of Insecurity on the Performance of Property Values in Kaduna State**

Years	No. of attacks	No. of Lettings	No. of Sales
2016	36	152	25
2017	34	146	33
2018	63	129	29
2019	94	113	18
2020	162	93	12
2021	277	80	10

**Source: Kemiki (2022)**

From Table 2, it can be deduced that insecurity affected the performance of property value, as an increase in the number of attacks led to a decrease in both the number of properties let and sold out in 2021. As the number of attacks increased to 277, the number of lettings decreased to 80, while the number of sales decreased to 10. The implication of this is that as the number of attacks increases, people get discouraged from taking up space or preferring accommodation in such locations under attack. This has negative effects on the property market, indirectly affecting the performance of properties in such locations.

### **1.3.6 Housing value as a function of environmental quality and condition**

The collection of social, economic, and physical amenities required for the productivity and well-being of economic units (government, businesses, and individuals) inside a country has numerous definitions (Nubi, 2003). Long-term, the public sector's complacent commitment to infrastructure investment in Nigeria has sparked a dramatic slowdown in the expansion of the sector's infrastructure.

Property values tend to differ between the classified neighborhoods: high-infrastructure neighborhoods have higher residential property values than those

associated with low-infrastructure neighborhoods (Kemiki et al., 2016). The existence of a capitalization impact of public infrastructure can be supported by the fact that renter families are more prepared to pay higher property values in areas with high levels of public infrastructure than in areas with low levels of infrastructure supply.

#### **1.4 Problems and Prospects of Public Infrastructure Development in Nigeria**

Infrastructure provision is central to all known intervention methods utilised by the government. It can be described as the backbone of a nation's economy and the pivot of human livelihood. Regarding human livelihood, infrastructure is seen as the bedrock upon which people make their living, transport goods, and communicate in today's global world. Infrastructure defines the standard of human living anywhere in the world. Similarly, Nigeria's 2017 Economic Recovery and Growth Plan (ERGP) identified poor infrastructure as a factor that had in the past undermined economic performance. This can, by extension, be seen as an important indicator of the present state of affairs, which the nation can improve upon to achieve a better future.

In recent times, the availability and provision of infrastructure have to a great extent distinguished underdeveloped countries from developed ones. The sharp difference between cities in the developing world and those in the advanced parts of the world is usually visible through the technology and the adequacy of their infrastructural systems. The best infrastructural facilities are usually available in urban areas and cities; therefore, human settlements exemplified by cities provide the quintessential context for infrastructure in any country. The fundamental difference between Mushin slum and the Victoria Garden City (VGC) in Lagos is simply the presence of adequate infrastructure. There is an increased quality of life among people with access to basic amenities. This is to say that the presence or adequacy of infrastructural services in a place defines the standard of living of the people in such an area. We can therefore say that infrastructure is what makes human life modern or otherwise.

The dwindling state of Nigeria's physical infrastructure has become the greatest drawback in her quest for economic and human development. It is no news that Nigeria has not been able to meet the needs of its populace on most measuring standards in recent times. The average Nigerian today has no idea what a standard

infrastructure facility system consists of. The country is marred by the inadequacy of all but the most basic infrastructural facilities.

Despite some commendable government efforts over the past decades, levels of access to basic physical infrastructure, such as clean water and improved sanitation, electricity, paved roads, and the revival of the Nigerian railway system, remain woefully inadequate, especially given the country's rapidly growing population. Table 3 shows the 2018 Global Competitiveness Index compiled by the World Economic Forum, Nigeria ranking 116 out of 140 countries in the year 2016, and 110 out of 140 ranked countries in 2018. The result of which is evident on the human development chart, where the country ranks as low as 157 out of about 190 countries. As a result, Nigeria faces multiple pressures to expand its economy, particularly to accommodate its teeming youth population and improve its self-sufficiency. Prioritizing basic physical infrastructure and ensuring that people have access to the associated services are likely to catalyse progress across multiple other systems, in particular the economy, health, and education.

**Table 3: Infrastructure Profile of Nigeria**

Indicators	
Infrastructure competitiveness:	Ranked 116th out of 140 world economies by the Global Competitive Index of World Economic Forum in 2019 and projected to trend around 115 before the end of 2021
Quality of overall infrastructure:	116 <sup>th</sup>
Quality of roads	131 <sup>th</sup>
Quality of railroads	96 <sup>th</sup>
Quality of air transport	125 <sup>th</sup>
Quality of ports and Port Traffic	122 <sup>nd</sup> in quality of ports and 51 <sup>th</sup> (Based on 100 Countries)

Quality of electricity system	124 <sup>th</sup>
Quality of telecommunication system	117 <sup>th</sup> (mobile phones) and 134 <sup>th</sup> (fixed telephones)
Roadways	Total (195,000km), Paved (60,000km), unpaved(135,000km) as at 2017 (29th)
Railways	3798km(2014): 293km (standard guage) ; 3505km(narrow guage)
Waterways	8600km(2011) 15 <sup>th</sup>
Communication network	144,920,170 subscribers (9th); Internet users(47,759,504) amounting to 25.7% of the population as at 2016 (14th)
Pipelines	3940km(refined products); 4441km(oil); 164km(liquid petroleum gas); 4045km(gas)
Ports	40 ports(paved) with 10 ports over 3,047m (2017)
Electricity	92 million without access

**Source: World Economic Forum 2019; CIA (2018)**

Nigeria will transform as a result of a well-developed infrastructure development and rejuvenation strategy. Along with generating jobs and putting money into the economy during the construction period, it will also help the nation attract foreign and domestic investment, promote tourism, make conducting business easier, and build up its human capital. To guarantee that the approach is successful, the government must make this a priority in its planning and spending. The GDP per capita growth could increase by 2.6% annually if the infrastructure gap between the worst performers in the world and the top performers was closed.

As earlier identified, challenges to infrastructure provision in Nigeria include a lack of strategic vision for infrastructure provision and weak institutional structure; undue political interference and uncoordinated good policies; a public attitude toward urban infrastructure; a high cost of provision; corruption; and poverty. Some of the solutions to the current infrastructural deficit include harnessing the benefits from other sources of funding, budgetary control, institutional reform, more



efficient spending, adopting a strategic vision for infrastructure provision, an improved regulatory framework, resource allocation across urban and rural spaces, and the provision of infrastructure before shelter.

#### **1.4.1 Impact of industrialization on other sectors of the economy**

The impact of industrial activities is felt in a variety of ways. Presence of industries in any community, most especially large scale industries such as textile, automobile, and cement have recorded substantial impact on the economy in the area of employment generation, infrastructural provision, and boost in the residents' social-economic status. In an attempt to control development, urban planners oftentimes design industrial layout when zoning for land uses in order to site industrial plants and equipment away from residents.

On the other hand, concerns have been expressed over the years about the negative impact of industry, most especially on the host communities (Olaleye & Oluyemi, 2010). A range of negative environmental impacts is associated with manufacturing, the most prominent being pollution, land use, and a rising cost of living. Despite the distance between residential layout and industrial layout in an urban setting, the overall quality and condition of properties are impacted.

#### **1.4.2 Emerging issues in environmental pollution and Real Estate**

One of the greatest challenges that the world is facing today is that of environmental pollution, which is increasing with every passing year and causing greater havoc on environmental inhabitants and property (Needham & Louw, 2003; Louw et al., 2004; Olaleye & Oluyemi, 2009). Environmental pollution threatens human health through air pollution, which causes a shorter lifespan for the dwellers or inhabitants of the immediate environment. Manufacturing has an impact on the environment at all stages of production. These include emissions of airborne pollution, noise, water pollution, and waste generation.

Bakare (2006) finds the impact of industrial pollution on adjoining property in Ikeja, Lagos, to include pollution of water, land, and air; an increase in building maintenance costs; and depreciated property value. Improved air quality promoted property values in Seoul, Korea (Kim, Phipps, & Anselin, 2003). The negative impact of environmental pollution can be seen in the works of Leggett and Bockstael (2000), who found a significant effect on property values due to poor water quality arising from a concentration of coliform bacteria.



**Figure 4: Example of Poor Municipal Solid Waste Disposal (Udoakah & Akpan, 2013)**

Environmental protection is a crucial concern, as is the requirement to mainstream eco-friendly development practices into national development consciousness. The situation in many third-world nations is at best tepid, while environmental consciousness in the industrialized world has resulted in generally efficient systems for pollution abatement over the last two decades. One of the main issues in Nigeria resulting from subpar waste recycling regulations and practices has been environmental contamination.

### **1.5 Effects of Industrial Activities on Real Estate Values**

Both developed and developing nations' ability to maintain sustainable development has been seriously threatened by the industrial revolution and the subsequent emergence of rapid industrialization. Modern industries used energy, other raw materials, and various natural resources extracted from the environment to create tangible goods and services. However, these uses and production methods led to massive emissions of waste into the environment, endangering traditional agrarian practices, suppressing the value of rural and urban property, and lowering the standard of living (Baby 2003).

According to Leggett and Bockstael (2000), it was discovered that water quality, which was determined based on the quantity of faecal coliform bacteria, had a considerable impact on real estate prices. In addition, Bakare (2006) discovers in her studies that industrial pollution has negative consequences on nearby properties in Ikeja, Lagos, including contamination of the water, soil, and air, an increase in building maintenance expenses, and a decline in property value.

Researchers have studied the potential adverse consequences of industrial activity on other businesses, the environment, and particularly on households (Schuur, 2001; Needham and Louw, 2003; Louw *et al.*, 2004; & Blaauw, 2007). The impacts of noise pollution on property value were investigated in a different study conducted in Chicago, it was evident that homes with high noise exposure near O'Hare airport lose 9% of their value (McMillen, 2004). Kim, Phipps, and Anselin (2003) examined the effects of improving air quality on housing prices in Seoul, Korea, taking into consideration the benefits of increased air quality on property value. Improved air quality has been shown to increase the value of real estate.

Espey and Lopez (2000) also discovered, through the use of inferential statistics, that there was a statistically significant inverse relationship between airport noise and the prices of properties close to the Reno-Sparks airport, with homes that have been recorded as having a noise level of 65 decibels selling for \$2400 less than homes in relatively quieter settings.

Adewusi and Onifade (2006) discovered that rent paid on properties near garbage dumpsites was lower than rent paid on comparable properties further away. They also discovered that property transaction rates were extremely slow and unattractive as one approached a dumpsite. These worries can relate to everything from health dangers to community reputation. They can be seen in the real estate market since people are willing to pay more to reside in places that are far from supposedly undesirable amenities. The study reveals that unfavorable facilities, such as landfills, garbage sites, and hazardous manufacturing operations, lower property prices nearby.

Numerous studies that have documented effects on property values due to contaminated locations provide other instances. The negative effects become less noticeable the further you are from these areas, increasing the value of your property. Furthermore, these negative effects on property values seem to be rather confined, dependents on the level of pollution and the location of the property (Baby 2003; David 2006).

Industrial sites are now the primary source of industrial land. The quantity and proportion of jobs at industrial locations are both increasing gradually. For many businesses, industrial sites are becoming preferable locations to dwell (Louw & Bontekoning, 2007). Industrial sites in the Netherlands account for around one-third of the country's output yet only take up about 2% of its total land area, so it seems that they can be regarded as significant (local) economic drivers (Louw *et al.*, 2007). However, the quality of industrial sites has received significant attention in the most recent planning discussions regarding industrial sites in the Netherlands (Louw *et al.*, 2004). According to Subair (2004), setting up a cement factory near a farming community can negatively affect farms. This has been ascribed to the removal of limestone, gypsum, and clay as well as the release of manufacturing waste like cement dust and slurry water into the environment. These activities eventually lead to the degradation of the land and the instability of the ecosystem. Other issues have been raised regarding the potential harmful external impacts of industrial activity on other businesses, the environment, and households (Schoor, 2001; Needham & Louw, 2003; Louw *et al.*, 2004; Blaauw, 2007).

### **1.6 Sustainable Real Estate Development Through Urban Regeneration**

Most cities worldwide have experienced an incessant influx of people, which has increased the population growth rate. The rate of urbanisation in developing countries varies from country to country due to population diversity. Urbanization invariably leads to an urban population burst, which leaves the urban environment with more people struggling to consume the limited services within the environment. Because such improvised structures do not adhere to any form of urban land policy, the growth of slums and shanties begins to degrade our environment.

As a result, urban regeneration can be defined as a deliberate effort to improve the degraded environment through large-scale adjustments to existing city areas to meet present and future needs for urban living and working (Osuide, 2004). Urban regeneration, which tends to renew the urban environment, is also faced with challenges that, if not properly considered, may defeat the whole essence of urban regeneration. Urban regeneration programmes are characterised by challenges such as a lack of a

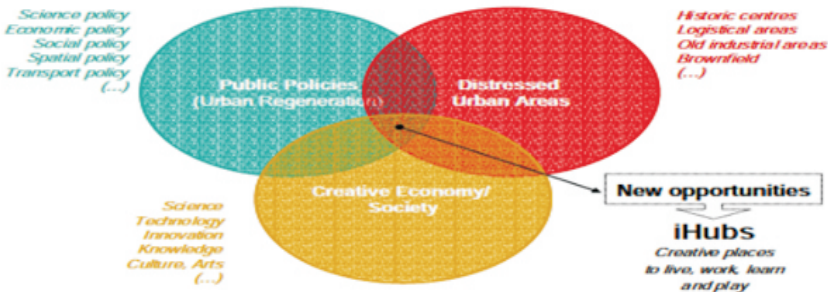
resettlement plan, increased poverty, a low level of awareness, differences in stakeholders' interests, and a lack of an infrastructural database (Shuaeeb, 2011).

United Nations Centre for Human Settlement (UNCH-Habitat) research conducted in 2001 established that almost half of the world's population (50%) resides in cities, while a billion people out of this 50% are located in inadequate housing because cities cannot provide for the ever-growing population.

### 1.6.1 Concept of an Innovation Hub

The innovation hub is an instrument classified as a strategic intervention through which the creative urban regeneration process is positioned toward the utilisation of urban policies in the development of places inside cities (Intelli, 2007).

The concept constitutes the fusion of technology, science, and engineering factors, including culture, design, media, and the arts, in the regeneration and redevelopment of urban areas. Innovation hubs are made up to address social and environmental problems, particularly urban decay, through the exploration of competitiveness and creativity that are innovation-based (Hall, 2001). The concept of IHub, as shown in Figure 5, exceeds the contemporary processes of urban regeneration as carried out by developing countries like Nigeria, where the provision of housing is done mostly without further introduction of creativity into regeneration as regards the integration of science, technology, and engineering of cities.



**Figure 5: Concept of an Innovation Hub (Adapted from Intelli, 2007)**

## 1.7 Environmental Facilities and Real Estate from Global Perspectives

The impact of infrastructural provision on real estate pricing can be measured from an international viewpoint based on indices that factor in the overall availability of adequate amenities and services in different countries and the global housing price index growth. The obtained variables, if compared side by side between different countries in the world, could corroborate the assertion that availability of facilities has a significant effect on property value.

**Table 4: Ranking of Countries with the Highest Infrastructure Index and their Housing Price Growth**

COUNTRIES	GII	IR	GHPII	HRI
Singapore	95.4%	1 <sup>st</sup>	5.7%	6 <sup>TH</sup>
Netherland	94.3%	2 <sup>nd</sup>	13.8%	2 <sup>ND</sup>
Hong kong	94.0%	3 <sup>rd</sup>	1.2%	9 <sup>TH</sup>
Switzerland	93.2%	4 <sup>th</sup>	3.6%	8 <sup>TH</sup>
Japan	93.2%	5 <sup>th</sup>	9.0%	3 <sup>RD</sup>
Korea Rep	92.3%	6 <sup>th</sup>	14.2%	1 <sup>ST</sup>
Spain	90.3%	7 <sup>th</sup>	-2.0%	10 <sup>TH</sup>
Germany	90.2%	8 <sup>th</sup>	6.8%	5 <sup>TH</sup>
France	89.7%	9 <sup>th</sup>	4.2%	7 <sup>TH</sup>
Austria	89.0%	10 <sup>th</sup>	8.0%	4 <sup>TH</sup>

**Source: World Economic Forum (2020); Knight Frank (2021)**

**GII** = Global Infrastructure Index; **GHPII** = Global Housing Price Index (adjusted for inflation); **IR** = Infrastructure Ranking; and **HPR** = Housing Price Ranking.

It could be observed from the Table 4 that the countries, which have a high level of infrastructure, were able to record growth in their housing prices, which if valued during appraisal could result in capital growth.

## **1.8 Sustainable Infrastructural Facilities Policies for Real Estate Development**

The challenges faced globally in the maintenance and management of facilities provided in the cities have attracted the attention of policymakers towards the formulation of action plans that are effective in addressing environmental and real estate issues arising from deficits in urban facilities, frequent breakdowns of facilities and poor maintenance of infrastructure.

The United Nations' (UN) Sustainable Development Goal (SDG) as a framework that is geared towards achieving positive impact on properties throughout their life cycle is valuable to teams involved in the management of assets (Sarasin, 2020). In order for sustainable development to occur globally, it is imperative to integrate the SDG goals into national planning and development policies. The SDG captures 17 goals that are key to the growth of any nation; notable among these goals are:

### **Goal 6: Ensure the availability and sustainable management of water and sanitation**

The objectives of Goal 6 include, but are not limited to:

- Achieve universal and equitable access to safe and affordable drinking water.
- Improve water quality by reducing pollution, eliminating dumping, and minimizing hazardous chemicals and materials by way of safe reuse and recycling.
- The supply of freshwater to address scarcity and increase water use
- The implementation of water resource management through trans-boundary cooperation.

### **Goal 9: Build resilient infrastructure and promote inclusive and sustainable industrialization.**

The objectives of Goal 9 include, but are not limited to:

- Support economic development by developing quality, reliable, sustainable, and resilient infrastructure, including regional and trans-border infrastructure.
- Upgrade infrastructure and retrofit industries to make them sustainable by adopting clean and environmentally sound technologies and industrial processes.



## **Goal 11: Make cities and human settlements inclusive, safe, resilient, and sustainable.**

he objectives of Goal 11 include, but are not limited to:

- Improvement of road safety by expanding public transport through sustainable systems which take into consideration vulnerable persons in the society.
- Reduction in the adverse impact of the environment per capita city by giving rapt attention to air quality and other waste management needs.
- Access to green and public spaces that guarantee safety universally.

## **Goal 13 –Action to combat climate change and its impacts**

he objectives of goal 13 include but not limited to:

- Strengthen resilience and adaptive capacity towards resolving hazards that are climate related.
- Integration of measures focusing on climate change into national planning policies.
- Enhanced awareness through education on the mitigation and adaptation of impacts

Developing countries like Nigeria could stand a chance in promoting the effective management of its facilities through the integration of SDG goals into her policies during decision making process, aimed at enhancing environmental performance which is critical to the development of real estate. The United Nation programme enhances collaboration, which, if keyed in, will provide developing countries with the window of opportunity to obtained aids and grants towards mitigating environmental impacts.

igeria will find it difficult to sustain its increasing rate of population and economic growth without enhancing her infrastructural facilities. Encouraging investment in infrastructural facilities development will drive economic growth, provide jobs, and enhance the delivery of vital services to the country and majority of its populace. The inadequacies of infrastructural facilities in power supply, water supply, transportation, information communication technology (ICT), waste management amongst others tat



are evidenced in all core and social infrastructural sectors provide opportunities in Nigeria. This dynamic creates a vision for prospective investors that are keen on engaging infrastructural facilities developmental projects in Nigeria. The availability, stability and efficiency in the cost of power have been widely regarded as vital in the path of any nation toward successful economic development. Yet, the power sector in Nigeria has been deficient in limited access to electricity by citizens across the country and therefore remains one of the biggest infrastructural challenges. Other infrastructural facilities are also faced with similar challenges such as transportation, healthcare, water, telecommunication and waste management (Ogbonna & Ohiri, 201). The SDGs are meant to improve on the previous MDGs based on 17 goals and 169 targets.

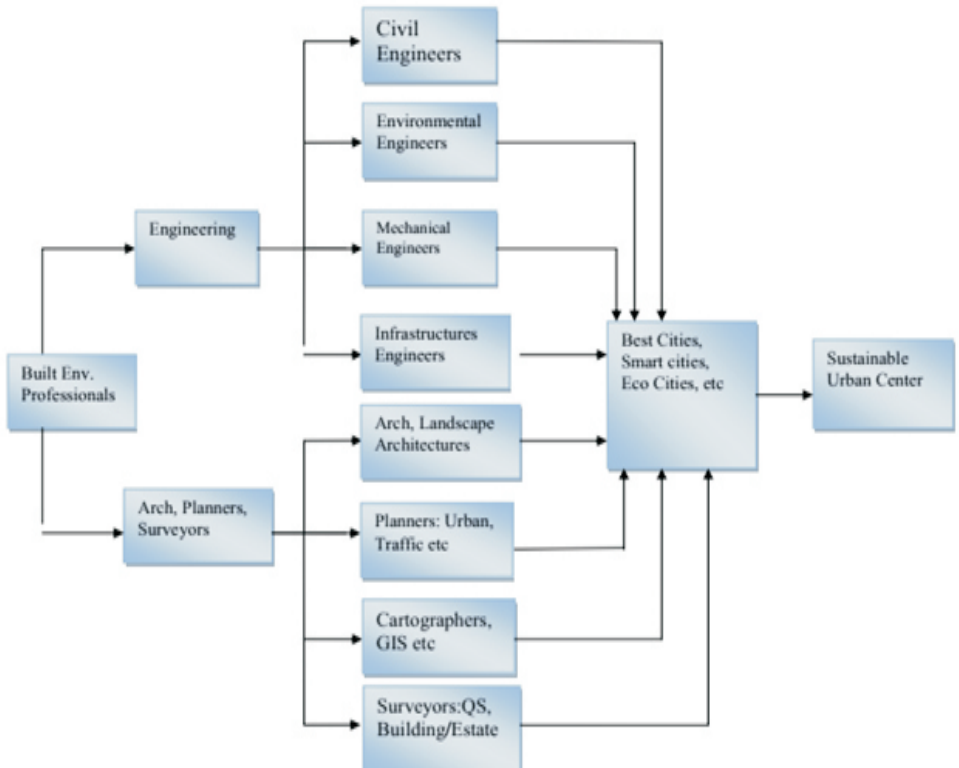
Generally, modern infrastructural facilities and national development can be said to be interwoven as they have a strong link that has propelled the trend in Public-Private Partnership (PPP) model. Developmental objective must be clearly stated in order to properly align it with the monetary, fiscal and regulatory policies to achieve the set aim. These policies should be well formulated so that the overall essence of attracting investors to the infrastructural sectors in Nigeria from both the local and foreign scenes is not defeated.

Some of the important identified factors that will accelerate sustainability in infrastructural facilities' development in Nigeria from the public and private perspective in order to propel the attainment or realisation of the country's potentials are efficient developmental planning, improvement of the regulatory environment, infrastructural master plan and design put in place, building strength in technical partnerships and capacities at the implementing agencies, proper mobilisation and innovative fund arrangement for infrastructural facilities developments.

## **.9 Professionals in Environmental Facilities Development and Management**

Professionals from interdisciplinary fields regarded as custodians of environmental design, construction and management have been recognized

by the International Standard Classification of Occupations (ISCO) as captured in Figure 6 to include professionals in two categories, namely Engineering professionals (Civil, Mechanical and Electrical Engineering) and Architects, Planners, Surveyors and designers (Estate Surveyors, Quantity Surveyors and land Surveyors,). The role played by these professionals in environmental facilities development and management involves the critical determination of quality, durability and integrity of services provided in cities.



**Figure 6: Professionals in Built Environment (International Standard Classification of Occupations, 2012)**

### 1.9.1 Specific role of Estate Surveyors and Valuers

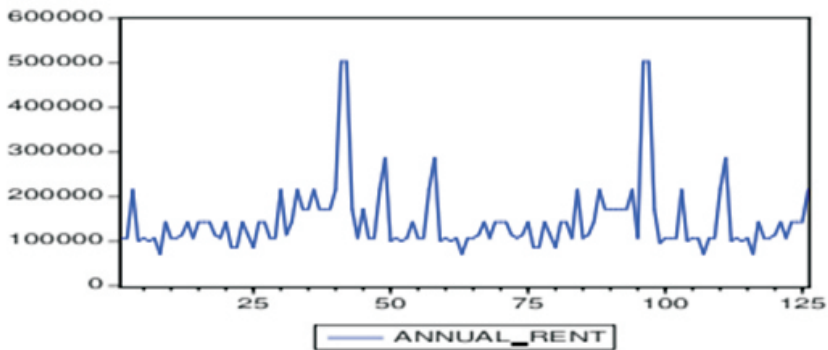
1. Determination of the highest and best use of a location based on feasibility and viability appraisal using market analysis technique to avoid siting properties in an inappropriate or incompatible location.
2. Appropriate and accurate estimation of land and property values through the adoption of valuation methods to proffer public authorities with adequate rates to be charged on properties during compensation or when raising revenues through taxation for the development and maintenance of infrastructure.
3. Development of land information and management system for the purpose of housing provision scheme by the virtue of their profound knowledge in the concepts of urban housing need, housing supply and demand as well as housing stocks with registered titles and tenure.
4. **Management of urban spaces, energy consumption, waste disposal and treatment, security, property maintenance, modification and alteration through facilities management principles.** (*possess skills in design, construction, surveying, planning, GIS, budgeting, finance, condition survey, outsourcing, report writing, coordination, controlling, valuation, procurement, supervision, maintenance, and market dynamics, among others*).
5. Arbitration and conciliation consultants in situations of land dispute arising from trespass, unlawful possession and illegal land transactions.

## 2.0 MY CONTRIBUTIONS

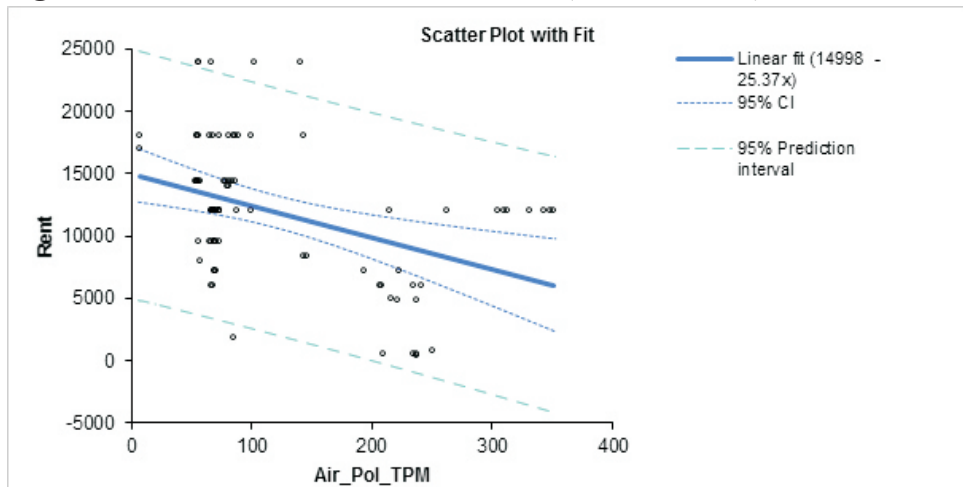
### 2.1 The Impact of Noise and Dust Level on Rental Price of Residential Tenements

The study on the impact of noise and dust level on rental price of residential tenements around Lafarge Cement Factory in Ewekoro Town, Nigeria was carried out by Kemiki, et al. (2014). The aim of the study was to investigate the impact of noise and dust spewed from a cement factory on the rental prices of residential property around Lafarge Cement

Factory in the studied area. This study employed Hedonic Pricing model to investigate the impact of noise and dust spewed from a cement factory on a sample of 126 tenements from 11 residential settlements within Ewekoro local housing market in Nigeria. Market-wide Hedonic model for all the 126 tenements within 5.5km of the cement factory was estimated. In addition, two separate unrestricted Hedonic models were also estimated (the first consisting of 38 tenements within 2.5km of the factory and the other comprising 88 tenements located between 2.5km to 5.5km of the factory). The Hedonic models taking the double log functional form were estimated with house rent (a proxy for house price) as the dependent variable (see Figures 7 & 8).



**Figure 7: Annual Rent of 126 Tenements (Kemiki, 2014)**



**Figure 8: Hedonic Values of Properties Across Different Pollution Levels (Kemiki, 2014)**

Generally, the results of the market-wide model revealed that dust level and noise, which are negative externalities from the cement factory, dampen rent by 21.90% (N 13815) and 1.49% (N 24.80) respectively within the studied area. Findings from the unrestricted models further signify that tenement rents tend to decrease with increasing distance to Lafarge Cement Factory due to severity of dust and noise. As panacea to this problem, it is recommended that government should provide policy response - the introduction of effluent fees which would force the cement and other manufacturing companies to internalize their externalities by paying for noise and dust pollution. The basic objective of such policy response is for manufacturing companies to move to the use of energy efficient and eco-friendly plants that generate less noise and dust in their production operations. On the other, the cement company should also imbibe Corporate Social Responsibility (CSR) as part of its efforts in providing a sustainable living environment for the residents in Ewekoro town.

## **2.2 Problems and Prospects of Infrastructure Development in Nigeria.**

Kemiki (2019) examined the problems and prospects of infrastructure development in Nigeria. The study adopted empirical review of related journals that cut across infrastructure development to investigate the state of Nigeria infrastructure development in the past, the present and make a projection to the future. The major findings showed that lack of a strategic vision for infrastructure provision and weak institutional structure, undue political interference and uncoordinated good policies, public attitude to urban infrastructure, high cost of provision, corruption, poverty, and low regard for rural areas and low productivity in rural activities were the challenges to the provision of infrastructure in Nigeria. The study also suggested solutions to the problems identified to include harnessing the benefits from other sources of funding, budgetary control, institutional reform, more efficient spending, adopting a strategic vision for infrastructure provision, an improved regulatory framework, resources allocation across urban and rural spaces and provision of infrastructure before shelter. Estate Surveyors and Valuers should also be involved in the nation's infrastructural development as they possess a wealth of knowledge and expertise in the field.

### **2.3 Assessment of Land Use Change as Influenced by Industrial Property**

**Kemiki *et al.* (2016) assessed land use change as influenced by an industrial property in Ewekoro between 1986 and 2015 using remote sensing technique, with a focus on the implications for Estate Surveyors and Valuers.** To assess the growth rate of built-up area in Ewekoro, LandSat images of the studied area for 1986, 2001 and 2006 and Nig Sat for the 2009 and 2015 images were obtained from National Remote Sensing Centre, Jos and processed accordingly.

The satellite image generated data on the condition of the landscape over specific periods (1986, 2001, 2006, 2009 and 2015) to study possible land use changes on the immediate environment due to manufacturing activities of the cement industry. Findings revealed growth in property development as influenced by Lafarge Cement Factory. In 2015, the built-up area increased by 28.32%. The increase in built-up area in 2015 may not be unconnected with the additional plant lunched in 2011. This new plant producing 2.5 million metric tons of cement will no doubt attract property development (both commercial and residential). The study highlighted specific implications for Estate Surveyors and Valuers vis- a-vis land use dynamics in Ewekoro.

### **2.4 Nature of Environmental Pollution and its Impact on the Residents**

**Kemiki and Baba (2012) examined the nature of environmental pollution and the impact on the residents of Ewekoro, Ogun State, Nigeria.** The study assessed the nature and level of pollution and the impact on the host communities. Air and noise types of pollution were considered. For the air pollution the principal pollutants from Cement Factory: Carbon monoxide, sulphur dioxide and total particulate matters were measured. Noise level was equally measured in decibels.

The results of the hypothesis for both air and noise pollution showed a statistically significant difference in the pollution level across the affected communities ( $P < 0.0001$  at 95% confidence interval). Measures to reduce to the bearest minimum the negative environmental effects such as conscious

efforts on the part of Lafarge Cement Factory in boosting its technique of production with a view to reducing the air and noise pollution and the government's role of providing the law required to make it compulsory for the companies to practice all necessary precautions in their operations that will minimize adverse environmental effects among other viable options.

## **2.5 Emerging Global Best Practices in Urban Regeneration: Implication for Estate Surveyors and Valuers in Nigeria.**

Awolaja and **Kemiki** (2015) highlighted the emerging global best practices in urban regeneration and their implication for Estate Surveyors and Valuers in Nigeria. Urban regeneration is a long-time global practice. While many cities in the world have gone ahead to imbibe emerging concepts in urban regeneration with resounding successes, most urban regeneration programmes in Nigeria cannot be said to be in line with global best practices. In Nigeria, urban regeneration programmes are characterised by challenges such as a lack of resettlement plan, increased poverty, and low level of awareness, insufficient urban built environment professionals, differences in stakeholders' interest and lack of infrastructural database (Shuaeeb, 2011)

This study was based on the identification of the concepts of innovation hubs (i-hubs) and Responsible Property Investment (RPI) as the global best practices in urban regeneration. It also delved into literature and studies on urban regeneration practices in Nigeria. The basic finding revealed the existing urban regeneration practices problems in the country. The study also identified the need for the integration of science, technology, engineering, culture, design, media and arts as driving forces for effective urban regeneration practices and policy formulation in Nigeria. The study recommended Estate Surveyors as a major player in the emerging implementation of iHub urban regeneration and RPI that will lead to achievement of attractive, harmonious and aesthetically pleasing environment that would guarantee environmental sustainability for the present and future generations

## **2.6 Factors Influencing Tenants' Choice of Residential Location.**

Oladapo *et al.* (2019) identified the factors influencing tenants' choice of location of residence in Bosso local municipality, Minna, Nigeria. *Residential Location Choice* (RLC) is key to any city's urban development pattern. This study investigated the factors influencing tenants' choice of residential location in Bosso Local Government Area (LGA), Minna. The study's objective was to establish the roles played by various housing attributes, and thus the design was an analytical survey.

The results reveal that the principal component in the determination of the residential location of tenants were *dwelling attributes* comprising the number of bathrooms, number of toilets and number of bedrooms. In addition, the second principal component, named *accessibility attributes*, played a modest role with proximity to a secondary school and/or primary school with a very high rating.

The study recommended that property owners should respond to the desires of tenants by paying attention to the provision of the right ratio of bathrooms and toilets to the number of bedrooms. Also, urban planners and policymakers should efficiently allocate educational properties like secondary and primary schools across all the neighbourhoods in the studied area. With these recommendations, it is hoped that residential locations across Bosso LGA will be equally attractive to tenants.

## **2.7 Assessing the Impact of Cement Factory on Nature and Condition of Property Values and Infrastructural Development**

Kemiki. (2012) assessed the impact of Lafarge Cement Factory on nature and condition of property and infrastructural development in Ewekoro, Ogun State, Nigeria. Data sources were both primary and secondary. The population for this research included the host communities (property owners), staff of Lafarge Cement Company, and Estate Surveyors/Agents.

Results showed a considerable level of infrastructural development in the study area. The presence of Lafarge Cement Factory in Ewekoro is obvious in terms of infrastructural development (see Figure 9). Many projects such as drainage, water, electricity, and town hall were tagged to Lafarge cement.



Properties within the studied area were predominantly tenement buildings (row of rooms with shared facilities). The tenement buildings range between 4 and 8 room tenement building. Similarly, 4% of the sampled properties had building approval while 6% had certificate of occupancy. The rent passing in the studied area ranges between N5000 and N 24,000 per room per annum.

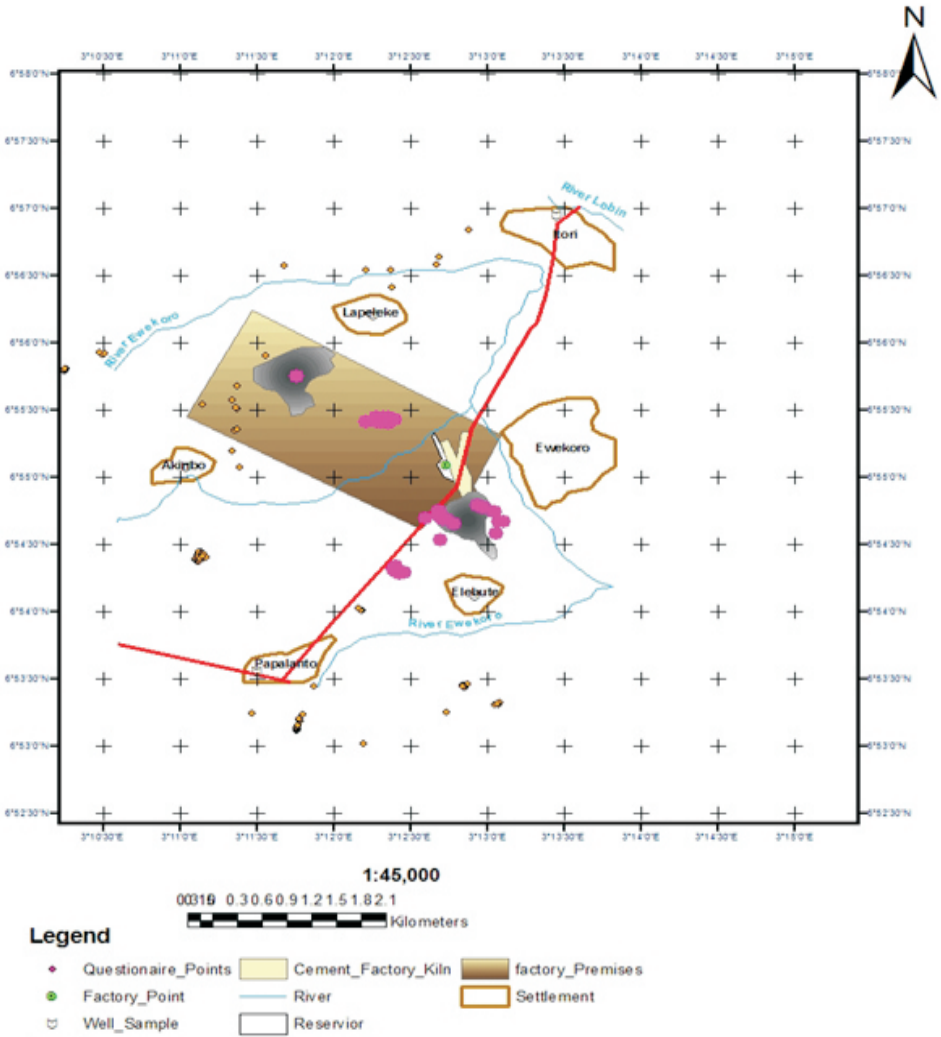


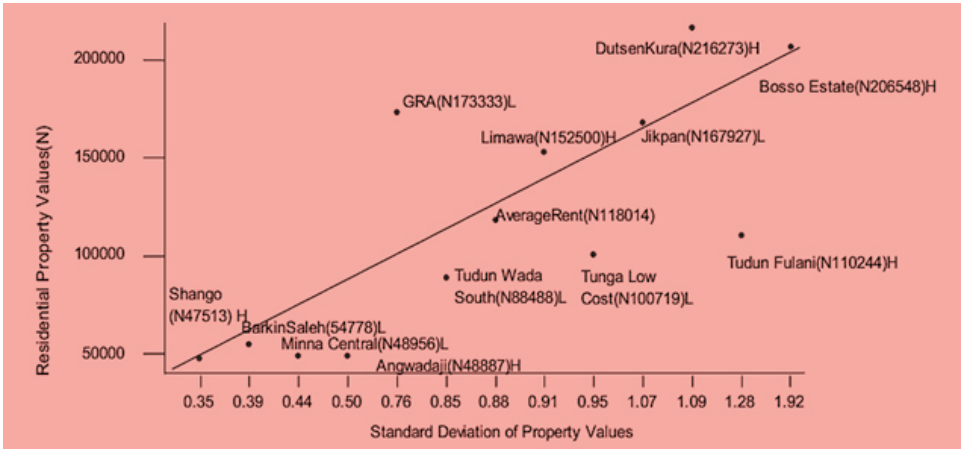
Figure 9: Ewekoro Cement Factory and Environs (Kemiki, 2012)

The impact of the cement dust from the factory on the internal and external accounted for the low rating. As high as 93% of the sampled properties were dusty and 43.2% of the sampled external walls had paint-peeling walls. The research concluded by recommending viable options in minimizing the negative industrial impacts on property; such as prospective property developers considering the option of building finishes that are cement friendly, and the government's role is to provide the law required to make it compulsory for the companies to practice all necessary precautions in their operations that will minimize negative environmental effects.

## **2.8 Impact of Public Infrastructure on Residential Property Values.**

Ayoola *et al.* (2016) examined the impact of Public Infrastructure on Residential Property Values in Minna. The study provided evidence on the value capitalization effect of public infrastructure in Minna. It employs rental transactions and datasets constructed from various secondary sources to provide information on the geometric and spatial distribution of 4 groups of public infrastructure. Due to aggregation bias in these data sets, the study utilized the quartile procedure to construct aggregate indices which capture the effect of the different infrastructure stock component but not infrastructure quality. The quartiles were used to compute location quotients for 12 a priori neighbourhoods, hence providing the basis for grouping and classifying neighbourhoods into low and high-infrastructure neighbourhoods (Figure 10)

A tenable statistical justification for this neighbourhood split by infrastructure is the Hodges-Lehman point estimate of shift ( $\Delta$ ) at 95.89 confidence level (-3.234,-11.072,-0.339) which revealed that the two classified neighbourhoods (low and high) are different . Findings revealed that infrastructure's geometric and spatial distribution were reasonably uneven across the studied area. In addition, marked variability existed in the quality of infrastructure between the low and high-infrastructure neighbourhoods based on respondents' perceptual rating.



**Figure 10 : Distribution of Residential Property Values (Ayoola *et al.*, 2016)**

The conjecture that high-infrastructure neighbourhoods have higher residential property values in contrast with that, associated with low-infrastructure neighbourhoods was also found to be plausible. The capitalization effect of public infrastructure is evident in a falling market: high-infrastructure neighbourhoods significantly outperformed low-infrastructure neighbourhoods by N14470, while in period of soaring property value, high-infrastructure neighbourhoods command N 57305.60 more than the low-infrastructure neighbourhoods.

These findings have substantial implications for optimal location of public infrastructure and its capitalization into urban residential property value. Policy makers and planners should efficiently allocate public infrastructure across space to maximize this capitalization effect.

### 2.9 Effect of Insecurity on Real Estate Investment Returns

**Kemiki** (2022) conducted a study on the effect of insecurity on real estate investments returns in Kaduna and Minna. The rise of insecurity in Nigeria is a major source of concern for everyone as it has drawn international attention to the country, the number of attacks might be demoralizing for any rational investor because they indicate danger, and this has major effects on real estate investment. Therefore, the principal objective of this research

was to determine the effects of insecurity on real estate investment returns in Northern Nigeria. In achieving this objective, a structured questionnaire was designed and administered to the Estate Surveyors and Valuers through the selected Estate Surveying and Valuation Firms in Niger and Kaduna States. Data were also obtained from Nigerian Police Force Headquarters. Descriptive statistics was adopted using frequency tables, line graphs and mean value in analyzing and comparing the data gathered for the study.

Findings showed that there are many properties for sale with very low demand arising from insecurity and economy downturn (unstable inflationary trends, high exchange rates and escalating attacks from in 2016 to 2022), as shown in Figures 11 and 12.

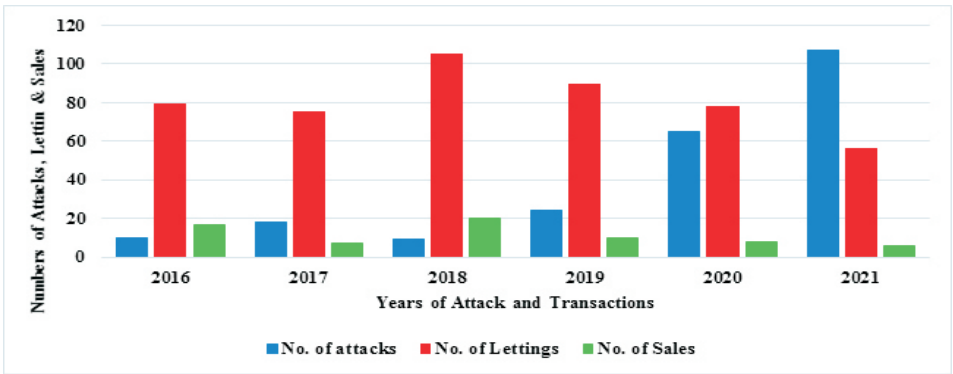


Figure 11: Insecurity Plotted against Number of Lettings and Sales in Niger State (Kemiki,

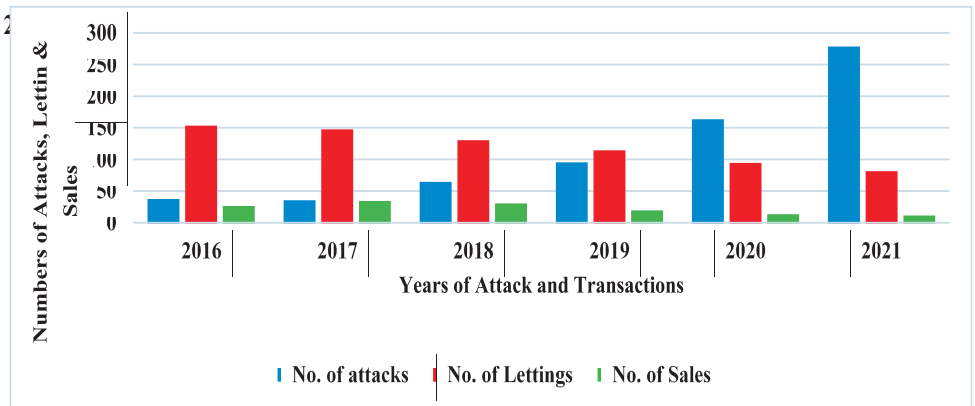


Figure 12: Insecurity Plotted against Number of Lettings and Sales in Kaduna State (Kemiki, 2022).

Therefore, while carrying out property valuation, it is necessary to adjust the yield appropriately considering the high risk (yield for residential properties in Minna can be adjusted to 7-7.5% from the conventional 5%). The adjusted higher yield will earn the property a corresponding lower capital value, which reflects the realities in the property market. Otherwise, the the opinion of value will be higher than the capital value obtainable in the markets. While the capital value of property in Minna and Kaduna appears to be on a downward course (average value from 2016 to 2022), the cost of construction keeps rising (presently, N 55,000 – 70,000/M<sup>2</sup> for bungalows and N 90,000 – 115,000/M<sup>2</sup> for two (2) floors building); giving a 55 – 59% increase in cost of construction from 2016 – 2022. New real estate investors who build and sell would have to exercise caution while investing in towns bedeviled with high insecurity to avoid investment loss as return on property investment presently in the studied areas tends to take a negative pattern.

In conclusion, the responsiveness of real estate investment to the effect of insecurity should be adequately taken into cognizance by investors. Real Estate professionals should be aware of the changing economic dynamics in the property market in order to avert the possibilities of running at loss, be it partly or fully. From the findings of this study, it is hereby recommended that, the government should provide enabling environment for investors, Property investment appraisal should factor in the security level of the proposed area with a view to determining the associated risk factors and making necessary adjustments, Collaboration between real estate professionals and security operatives should be enhanced with a view to encouraging the exchange of information. New real estate investors who build and sell should exercise caution while investing in towns bedeviled with high insecurity to avoid investment loss, and Estate Surveyors and Valuers should be consulted on Real Estate investment proposals and decisions.

### **3.0 CONCLUSION**

The lecture has established the fact that there are other factors influencing property value beyond the building types and finishes. Environmental facilities, which are often overlooked, have significant influence on property value. This lends credence to the idiom: what is behind six is more than seven in terms of property value. The degree of influence varies from location to location, depending on the level and quality of infrastructure. Property negatively affected by water, noise or other types of pollution tend to be transacted at a lower price, resulting in reduced investment returns. Property within neighborhoods of high-quality infrastructure commands higher property values. The interdependency of real estate variables (rental growth and capital gain) on the corresponding environmental facilities cannot be overlooked as there is a strong significant relationship which introduces change in terms of current income generated and that which is expected to accumulate over a given time period.

Integrating sustainable environmental policies into the physical, social and economic frameworks across the neighborhood and workplaces will enhance the quality of living standard and aid the efficient performance of infrastructure, which will in turn boost property investment returns; as evident in countries with high global infrastructure index with a corresponding high housing price index

### **4.0 THE WAY FORWARD**

There should be deliberate incentives for private developers to invest in environmental facilities development and management. There should be conscious efforts to develop policies that will drive and sustain environmental facilities provision and maintenance in Nigeria's rural and urban areas. Estate Surveyors and Valuers should be accorded relevant recognition in infrastructural development and management in Nigeria.

### **5.0. ONGOING RESEARCH**

An important work in progress worthy of mention in this lecture is the research titled Flood Risk Identification and Mapping for Sustainable Real Estate Development and Investment returns in North-Central Nigeria. Flood in Nigeria

causes a lot of damage to properties and to the national economy. To guide against and prepare for future occurrences, this research focuses on Flood Risk Identification and Mapping in the North-Central Nigeria with a view to ensuring sustainable Real Estate development and investment returns.

## **6.0 ACKNOWLEDGMENTS**

First and foremost, I want to thank God the Almighty through Jesus Christ our Lord for His saving grace, keeping power, and how far He has helped and led me. To Him be the glory alone in Jesus name (Amen). I want to appreciate those who have contributed to my academic success at one point or another. I appreciate the Vice-Chancellor, Prof. Farouk Kuta, and the entire University management. I appreciate former Vice-Chancellors, Prof. Abdullahi Bala, Prof. Adewumi Akanji, Prof. Audu, and the late Prof. Daniyan. I recognise former Deputy Vice-Chancellors, Prof. A.O. Osunde, Prof. S.O.E. Sadiku, Prof. O.O. Morenikeji, Prof. Iyaka, Prof. Udensi, and Prof. Suleiman. My profound gratitude to Dr. and Mrs. Sunday Oyegbile, the pioneer Head of the Department of Estate Management and Valuation, who gave me admission and employment and housed me for two years; they have been father and mother to me. My sincere appreciation goes to Chief Sanjo Alagbe, who has been a father to me; Dr. Jide Babatunde and his family, the inaugural Chairman of the Niger Branch, Alhaji Adamu Mohammed, Mallam Moshood Mustapha and Mallam Ahmed Abdullahi. I treasure the contributions of my lecturers, Prof. O. O. Morenikeji (my benefactor), Prof. M. T. Ajayi, Dr. Mrs. N.I. Popoola, Mr. Aderemi Oyewo, Mr. Akuru, ESV. Roland Abonta, the 23<sup>rd</sup> President of the Nigerian Institution of Estate Surveyors and Valuers (NIESV), Mr. Mike, Mr. Banuso, Prof. Yomi Ayesimi, Prof. Abdulmajeed T. Ijaiya, Drs. Okoli and Okoli, Prof. Dukiya, Prof. L.M. Ojigi, Surv. Nwose, Dr. Wuna, Dr. Halilu, and Prof Dalih. I sincerely appreciate my PhD supervisors, the late Prof. J.M. Baba, Prof. J.I. Igalo, and Prof. Y.A. Sanusi. Appreciation to Prof. Reuben Kolo, Prof. Ducan Aluko, Prof. Ajayi Cyril, Prof. Asaju, Prof. Olatoye, Prof. Kakulu, Prof. Udoh, Prof. Bello, Prof. Ogunba, Prof. Adebayo, Prof. Ogunleye, Prof. Aluko, Prof. Iroham, Prof. Nubi, Prof. Omirin and other Professors of Estate Management.

I appreciate HRH Oba Kehinde Olugbenle, FNIVS, MFR, the Olu of Ilaro. I am grateful to Prof. and Mrs. A. O. Osunde, they have contributed so much

to my growth and development as an academic. I do not forget Prof. and Mrs. Oyero, Prof. and Mrs. Rotimi Olaleye, and Prof. and Mrs. Sadiku, Dr Bajere, Prof Olutoye, Prof. and Dr. Akanya, Prof. Abubakre, Prof. Kolo, Prof. Uno, Prof. Yahaya, Prof. Saka, Prof Jimoh and Mallam Baba for their love and care. I thank my fellow staff in the Department: Prof. M. B. Nuhu, Dr. Udoekanem, Dr. Sule, Dr. Adama, Dr. Rukayat, Dr. Sekinat, Mr. Kuma, Mr. Adoga, Mrs. Fabunmi, Mr. Liman, Bar Aliyu, Mr. Sanusi, Bar Akeem, Mr. Muazu, Dr. Abdul, Hassan, Wasiu, Fati, Jubril, Silas, Asafa, and Ndako. Special appreciation to Dr. & Mrs. A. B. Ayoola and Adesesan Sunmola, for being very good friends through thick and thin. I sincerely appreciate my Dean, Prof. R.E. Olagunju, Appreciation to Prof. Junaid, who was the Dean when I was the Deputy Dean, Prof. and Prof. (Mrs) Zubairu, Prof. R.A. Jimoh, Prof W. Akanmu, Prof Abalaka, Prof Nwadiolor, Prof Onuigbo, Prof. Ahmed and all present and past Heads of Department, Professors, Directors, Prof. John Musa, Chairman University Seminar and Colloquium Committee. I am grateful to my spiritual leaders, Rev. Jacob Amadu, Rev. J. T. Yisa, Rev. Awumoyi, Rev. Olamijulo, Rev. Darling George, Rev. Festus Oniyide, Rev. Emmanuel Adeniran, Rev. Isaac Adigun, Rev. Ogunrinde, Bro Festus, Pastor Asogba, Pastor Kunle, Rev. Adejo, Bro. Popoola, Bro. Aderibigbe, and other men of God. I do not forget my friends: Fatai Agboke, Emmanuel, Daniel Kotin, Oyesikun, Oguntuwase, Noah, Sonowo, Ben, Okunlola, Tmak, Bolajoko, Arinze, Lekan, Ayo Adeniran, Tunde, Funmi, Joke, Fasilat, Agbana, Chata, Lapai, Amina, Mojeed, Felix, Jasper, Queen, Doyin, Hannah, Adesogan family, Jumoke Ayeni, Akinwumi, Hassan Nuhu and Newgate, Hon. Aminu, Hon. Manko, Prof. Abinu, Yusuf, Paul, Alh. Ibrahim, The Apostolic Church and others. I appreciate the entire membership of the Apostolic Faith Church. Special appreciation to the NIESV family under the present President, Johnbull Amayebo, 1<sup>st</sup> Vice President, 2<sup>nd</sup> Vice President, HNS, HNT, HNPS, AHNPS, AHNT and past presidents, Dr. Patunola Ajayi, ESV. Emmanuel Wike, ESV. Roland Abonta, Chairman and members of the Board of Trustees NIESV, Chairman and Registrar ESVARBON, and ESV Kunle Awolaja. I appreciate all the staff of the Lagos State Valuation Office, the Lands Department, the Planning Department, the Ministry of Lands and Housing of the Niger State Government, Chevron, Diya Fatimilehin & Co. I thank my dear friends Prof. Philip Ayuba and Dr. O. F. Adedayo, for their assistance. I appreciate all



residents of Staff Quarters, Gidan Kwano (Main) Campus, FUT Minna, and the host community. I appreciate CDA Ojokoro Lagos, the Anglican family, and AFCF, the Engine Group, EMSA, NESAs, and my beloved NIESV family. Special appreciation to Estate Management FUT Minna Alumni and the entire FUT Minna Alumni. Special appreciation to all staff of School of Environmental Technology. I will not forget Golden Trust Multipurpose Cooperative Society, Yoruba Forum, University Board of Survey. Commercial Activities Committee and Timi Kemiki and Co.

I appreciate the people who contributed to the editing of this inaugural lecture – Prof O.O. Morenikeji and Prof Kur. Their thorough touch on the manuscript has made the difference. I appreciate Enwerem Precious Nd, Alake Seye Samuel, Augustine and Godwin Abedoh. I specially appreciate my family, Late Pa and Mrs Kemiki, the entire Ojomoh family, late Sade Bolarinwa nee Kemiki and Tunde Bolarinwa. I want to appreciate Mrs. Odedele and family, Dr. and Mrs. Adedayo Kemiki and family, Bale Olusegun Kemiki and family, Mr. and Mrs. Oyebayo and family, Asiwaju and Mrs. Kemiki and family, Elder and Mrs. Fawunmi and family, Mr. and Mrs. Adekanye and family, Mr. and Mrs. Ogu-egege and family, Mr. Seyi Kemiki, Taye, and Kehinde, Sani family, Bolaji family, Pa and Mrs. Emmanuel and family, and my lovely daughter, Iyanuoluwa. I sincerely appreciate my wonderful children, Testimony and Emmanuel. I cannot forget the role my late wife, Olori Oluwatoyin Kemiki nee Ojomoh played in my life. Finally, special appreciation to my beloved wife, Mrs. Folakemi Kemiki.

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## PROFILE OF THE INAUGURAL LECTURER

Olurotimi Adebowale Kemiki was born on 18<sup>th</sup> day of August, 1975 to the family of Late Pa and Mrs Kemiki in Lagos, Nigeria. He is an indigene of Ijebu Ode, Ogun State. He attended Temple Primary school and Ebenezer Comprehensive High School in Lagos. He obtained Bachelor of Technology in Estate Estate Management from Federal University of Technology in 1998/1999 Session and was awarded Jide Babatunde's Award for the best student in Professional Practice. After completing his NYSC at Chevron, he proceeded to obtain Master of Technology in Remote Sensing Applications and Doctor of Philosophy in Environment Management (with specialization in Real Estate Spatial Analysis) in 2004 and 2013 respectively from Federal University of Tecvhnology, Minna.

He joined the services of the Federal University of Technology, Minna, in 2002 as an Assistant Lecturer in the Department of Estate Management and rose to the rank of Professor of Estate Management and Valuation in 2019. He had served the Department in various capacities such as Examination Officer, Level Adviser and Postgraduate Coordinator.

At the School level, he served as the School of Environment Examination Officer between 2013 and 2017, and in his genuine commitment to work and drive for excellence, he restored sanity in the conduct of examinations and reduced examination malpractice to the barest minimum through preventive measures, while ensuring non-crowded examination halls. This motivated other school examination officers to understudy the SET model in examination conduct. He was also the Coordinator of School Examination Officers under the then Director of Academic Planning, Prof Yahaya. After the completion of his tenure as School Examination Officer with sterling accomplishments, he was elected as the Deputy Dean of the School of Environmental Technology in 2017. He superintended numerous research activities that propelled huge success for the School. He was appointed Head of Department of Estate Management and Valuation in 2018. He is the first sitting Professor to head an Estate Management Department in Northern Nigeria. He led the Department to produce the first three Professors of Estate Management in Northern Nigeria and to emerge the winner of the 2021 National Quiz Competition organised by Nigerain Institution of Estate Surveyors and Valuers, for the first time in the history of the University. He coordinated the collaboration that led to a research grant of 14,664 euros from DAAD, Germany. He donated 100 real estate text books and attracted over 200 text books to the Department, which assisted the Department in achieving full NUC accreditation in 2016 and 2021. As the Chairman Lands Committee, Secretary and Vice President of



Golden Trust Multipurpose Cooperative Society, he played key role in repositioning the cooperative for optimal performance. He is a strategic member of Commercial Activities Committee of the University. As the Chairman, University Board of Survey, Federal University of Technology Minna, he recorded the highest income generation in the history of the University in 2022. A leader par excellence, he dutifully served as the National Vice President of the Federal University of Technology, Minna Alumni, from 2008 to 2012 and is presently a Trustee of the Alumni. He was a member of the FUT Minna 2022 Council Selection Board that coordinated the screening and appointment of the 8<sup>th</sup> substantive Vice-Chancellor of the University. He has over 60 publications.

As an astute professional, he has recorded giant strides in his profession. He emerged as the nationwide "Best Candidate" in the Nigerian Institution of Estate Surveyors and Valuers (NIESV) Direct Final Professional Exams in 2001. He became a Fellow of NIESV in 2015. He diligently served as the Branch Secretary of NIESV Niger State (2005–2009), and Branch Chairman, and Member of NIESV Council (2015–2019). During his tenure, he led the Branch to emerge for the first time as the best-performing branch in Nigeria in the 2016/2017 council year. He served as the National Chairman of the NIESV National Education Committee (2016–2019) and introduced the Study Pack and the use of biometric technology to improve the standard and integrity of NIESV exams. He also introduced a national quiz competition, which has become a ritual during the institution's annual conference. His drive for excellence motivated him to initiate and lead the NIESV family on an academic visit to the Dubai Real Estate Institute in 2015. He has supervised numerous candidates seeking election to the Associate grade of our institution, and he is currently the Assistant Honorary National Secretary of NIESV. He is the first Professor in the 54-year history of the Nigerian Institution of Estate Surveyors and Valuers (NIESV) to be elected as a National Management Officer of NIESV. As NIESV National Vice Chairman MCPD Committee, he has coordinated technical sessions that have witnessed robust and topical NIESV National MCPD seminars. Regularly, he conducts career talks where primary and secondary school students are encouraged to study Estate Management. He is an alumnus of the Experiential Classroom School of Business, Oklahoma State University, USA, and the Dubai Real Estate Institute, Dubai. He is a member of the International Society on Urban Health (USA), Association for the Advancement of Cost Engineering (USA). He is happily married and blessed with children.