# INFRASTRUCTURAL FACILITIES DEVELOPMENT AND URBAN DECAY IN OWO CITY

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**A**bstract: This paper examined the decay of urban infrastructure with particular reference to Owo city in Ondo State, Nigeria. The methodology applied depends on survey of questionnaires with the use of systematic random sampling of one in every five houses in Ehinogbe, Ijebu, Iselu and Otutu with fifty (50) questionnaires assigned to each area and the total questionnaires distributed were two hundreds (200). Other methods used were interview and observation. The data collected revealed that there was an upsurge in population which had a multiplier effects on some factors that caused the absurdity that resulted to urban decay of infrastructure in Owo. The tenancy rate of majority of the houses was high and most of them were built with mud more than sixty years ago. Pit latrines became the dominating toilets in houses and well water was the main source of water which was not safe for drinking as it contained contaminants. There was frequent out- break of electricity and waste collection was rarely practised while open and incinerator burning that caused pollution became a common phenomenon. It was recommended that one of the methods to tackle decay could be through periodic population statistics for infrastructure planning and development while dug wells should be well-treated, inspected and supervised by government agencies. The paper concluded that if urban cities are well-coordinated with vibrant law, define policies and prudent administrators, infrastructure development would be sustained.

**Key Words:** Infrastructure, urban, city Development, decay, population

## INTRODUCTION

Infrastructural facilities in urban area are essential developmental projects targeted at the need of the people to make life convenient for carrying out economic activities and is subjected to public regulation in terms of standard and pricing. These facilities consist of housing, water supply, drainage system, electricity supply, good access road, health facilities, solid wastes disposal etc.

They are spread within the glomeration of tribes, communities and people that reside in the urban set up so that they act as assets of growth to its domain. Cities are engines of growth, incubators of innovations and centre of social transformation. Therefore urbanisation is important for diversified and dynamic economies which increase natural productivity (Ude, 2008)

If the increase in population of cities was not commensurate with the provision of infrastructure, it would lead to backlog of unmet essential services which compounded urban decay. Apart from population growth, other factors that caused or orchestrated city decay were poor planning, inadequate budgetary provision and absence of operative physical developments.

In Nigeria, for more than three decades, government had been using various methods to resolve urban decay but had not find viable solution for it. As these options had failed, government had resolved to privatise some infrastructural facilities as electricity supply, solid waste disposal, some roads projects etc. This was implemented in order to remove the financial burden from government as her ability was no longer buoyant enough to fund facilities development and maintenance, and also wanted to experiment whether the adapted method is matured enough to provide sustainable solution that would bring the expected urban transformation. The situation became more complicated because the selected private companies pretended to be rich in funding the program and also with qualified technical staff whereas most of them lack the financial responsibilities, the technical staff and genuine urban administrators that could explore the benefits of privatisation for people to enjoy instead they were greedy and exploitative.

This paper is to study the decay in the infrastructural facilities in Owo with a view to proffer and suggest solutions to the problem.

**STUDY AREA**

Owo city is located in lat $07^014'N$ and longitude $05^035'E$ of the Greenwich. it is 48km of Akure capital city of Ondo State and 400km North East of Lagos, both in Nigeria. Owo and its environs spread over an area of about 20kilometer square and it is about 150meters above sea level.

According to calculation from 1965 census, Owo population was 283,249 (Ojo et al, 2013). the core area covers an area of 1,341 hectares (Denito Planning, 1980) with six main traditional quarters bounded by defence moat. each quarter has however overgrown far beyond the traditional moat and has incorporated many major landmarks in process of its spatial expansion. the major economic base is agriculture however other activities like commercial, industrial, health, educational services etc has been incorporated to boost it.
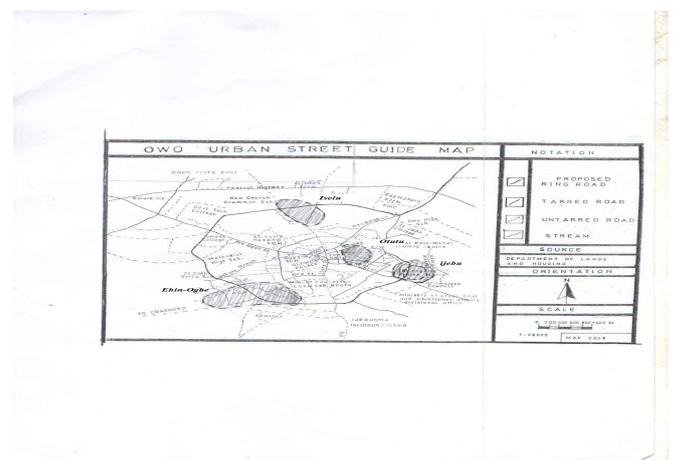
## LITERATURE REVIEW

Akingbohungbe (2002) confirmed that two thirds of urban housing in Nigeria were in varying degrees of serious disrepairs due to gross neglect and most of these houses and facilities were built sixty (60) years ago with low level of technology and without maintenance. He therefore suggested that a virile National Policy on maintenance that would guarantee adequate budgetary allocation, specify statutory standards of maintenance of all categories of building and to establish appropriate maintenance agencies that could overcome the existing decay and brought the expected transformation into urban areas. He elucidated further that the work of maintenance was a needed health care delivery system that had excellent abilities in persevering the performance standard, qualities and life span of facilities with a view of perpetuating its full capacity benefits and hence could be recommended as one of the measure that could curb urban decay.

Obabori and Olomu (2002) affirmed the inabilities of some cities to perform the expected basic functions. The rapid rate of increase in population was one of the factors responsible for city decay. The resulting increase overwhelmed the facilities and places the entire population in jeopardy. This mass movement from sub- urban to city centres create a staggering population in urban centres so that the provision of housing and other facilities become a concern to architects. As the expected balance between population increase and facilities provision was lost in a city, the population pressure and intensity caused many feature of the city to be broken down and its basic amenities exhibiting non performance or partial performance due to deterioration. The optional remedy was the establishment of vibrant urban development Ministry to initiate, promote, consolidate and implement programs that would correct the wrong of the past. This ministry would enforce building codes and building bye- laws in construction of its structures and maintenance ability should conform to its Master plan while renewal should be necessary when situation demand it.

The authors concluded by recommending the adoption of sustainability strategy and all developments programs should be embarked upon by architects and other professionals in the building industry. Sustainable expansion scheme, sustainable satellite town scheme and sustainable new town scheme would form the basis for solving most of the decay in the city.

Umuokafor (2002) aimed to improve the infrastructure and maintenance of the environment of the area occupied by the urban poor. As the local or municipal government in the third world countries were financially handicapped and ill-equipped in personnel development in addressing planning, installation and maintenance of infrastructure, they gave it up to government who had a better financial base. Since the expected higher government could not generate the needed fund for possessing, operating and servicing of

facilities, they eventually promoted privatisation because of the believe that the private companies would have enough money to own, operate, and service urban infrastructure. It was discovered that some of the private companies discriminate against investing on some facilities because the cost were high also in some areas they had majority of their inhabitants being impoverished. Such areas were devoid of infrastructure and the existing one and their environments were subject to decay. The author was agitating for a non- profit organisation that should be set up by residents of a particular area to provide cheaper services and also to provide some basic facilities which investors were non chalant about. Such organisations should be registered by local or city municipal government but their area of operation should be indicated. The author concluded that this was one of the sure ways to guarantee some services that were basic but not provided, and also to maintain cost recovery and increase coverage of the urban area and finally to reduce decay.

Adejumo and Taiwo (2006) observed the continuous increase in population had led to the multiplication of points of concentration and increase in sizes of individual concentration on Jos town and some Nigerian cities. This established enormous areas that cannot be totally covered by the Jos Metropolitan Development Board which some took the advantage by erecting illegal structures that contravened the law which finally end up in urban decay. Other factors that were responsible for city decay were poor mobility which makes effective monitoring to fail and inability of obeying planning and bye laws which are consequential to the emergence of slums. These slums lack sanitary facilities while light, air and privacy were grossly inadequate. Residential houses had been converted to commercial purposes along Bauchi road, Enugu road and Tafawa balewa Street because the available markets could not meet the supply of the needs of the people.

As a result of many of these developments, the form and structure of the town could not conform to the design of the master plan which are evidences of urban decay. The author concluded that in order to check and restore the city from further decay, government (local and Jos Urban Metropolitan) should frequently update their offices with population data of the town by contacting the National Population Commission (NPC) office in the state for projection and expansion. Illegal developers should be checked by planning offices and government should open up new layouts and provide infrastructures and other transforming facilities for development.

## METHODOLOGY

The methodology involved the systematic random sampling of one in every five houses and fifty questionnaires were distributed in each of the chosen areas .( Ehinogbe, Iselu, Ijebu and Otutu) and the total no of questionnaires distributed were

two hundred (200). Other methods included online information, observation, interviews. The following information were extracted from the questionnaires

i. Educational background
ii. Household size
iii. Age of buildings
iv. Ceiling materials
v. Roofing materials
vi. Toilet types
vii. Ceiling materials
viii. Bathroom types
ix. Water Services
x. Drainage system
xi. Common diseases
xii. Waste Disposal.

## FINDINGS, ANALYSIS AND DISCUSSION

The result of the distributed questionnaire were as follows: The household size per room of respondents could be identified as follows: 1-4 persons per room 28%, 5-6 persons per room 51%, 8-10 persons per room 13% and above 10 persons per room 8%(Table 2). It can be deduced that 72% of the people residing in this environment live in rooms where 5 or more persons occupy a room. This resulted to congestion and if maintenance was not regular undertaken, this would be consequential to decay.

**Table1:HOUSEHOLD SIZE(No. of people per room)**

| S/N | Range | Frequency | Percentage |
|-----|-------|-----------|------------|
| 1. | 1-4 | 56 | 28 |
| 2. | 5-7 | 102 | 51 |
| 3. | 8-10 | 26 | 13 |
| 4. | Above 10 | 16 | 8 |
| | Total | 200 | 100 |

Authors:2016

Table 2: The Population of Owo from 1965-2014.

| Year (Column 1) | Population | Every 5years increase (Column) |
|-----------------|------------|--------------------------------|
| 1965 | 80,413 | --- |
| 1969 | 88,761 | 8,348 |
| 1974 | 100,425 | 11,664 |
| 1979 | 113,622 | 13,197 |
| 1984 | 128,554 | 14,932 |
| 1989 | 146,288 | 17,744 |
| 1994 | 165,511 | 19,223 |
| 1999 | 187,260 | 21,749 |
| 2004 | 216,011 | 30,721 |
| 2009 | 250,413 | 34,402 |
| 2014 | 290,297 | 39,884 |

Source: Authors 2016

Source: Authors. Calculated with 2.5% growth rate from 1965-1999 and 3% growth rate from 2000-2013. from table, in 1965, the population of Owo was 80,413 and the projected population was 283,249 in 2013.

In column 3 the population increase in every five years was recorded at the end of the 5th year starting from 1965. i.e. between 1965-1969, 1969-1974, 1974-1979 etc, the population increase are recorded as 8,348, 11,664, 13,197 respectively. This showed a progressive increase in population and this increase in population had a multiplier effects on other factors as high tenancy rate, extension of existing houses without permission from appropriate authorities, disobedience to Bye and Planning laws, non conformity to master plan of the city, increase in water and electricity consumption without increase in power generation etc.

The age of the buildings could be identified as follows: 14.5% of the were between 1-20 years, 30% were between 21-40 years, 15% were between 41-60 years and 40.5% were above 60 years(Table 3). From the above data ,55.5% of the buildings were built more than forty years ago and houses of longer years were more subjected to devaluation of weather condition and utilisation of occupants.

**Table3: AGE OF BUILDING**

| S/N | Range | Frequency | Percentage |
|-----|-------|-----------|------------|
| 1. | 1- 20 | 29 | 14.5 |
| 2. | 21-40 | 60 | 30 |
| 3. | 41-60 | 30 | 15 |
| 4. | Above 60 | 81 | 40-5 |
| | Total | 200 | 100 |

Authors:2016

On assessing the materials used for the construction of the walls, 58,5% were made of non-plastered mud, 29% of plastered mud, 7% made of timber, 3% made of non plastered cement block and 2.5% (Table 4) made of plastered cement block. The non- plastered mud walls absorbed water during raining season and lost them in dry season. The continuity of these seasonal changes in volume for many years caused the walls of the buildings to be characterised with cracks while the plastered mud walls had reduced cracks. The non-plastered cement blocks still absorbed water while the while the plastered cement blocks were far better. The untreated and less treated timber walls were attacked by insects and got destroy. The understanding of the techniques of construction and preservation was also an essential factors in prevention of decay.

**Table:4 MATERIALS OF WALL CONSTRUCTION**

| S/N | Materials | Frequency | Percentage |
|-----|-----------|-----------|------------|
| 1. | Mud (Plastered) | 58 | 29 |
| 2. | Mud (not Plastered) | 117 | 58.5 |
| 3. | Cement Block ( Plastered) | 5 | 2.5 |
| 4. | Cement Block (not Plastered) | 6 | 3 |
| 5. | Timber | 14 | 7 |
| 6. | Others | - | - |
| | Total | 200 | 100 |

Authors:2016

In the provision of toilet facilities in the buildings, pit latrine was 63%, water system is 21.5%, bucket toilet is 12.5% and without toilet 3%(Table 5). The pit toilets were built separately at the back of the buildings. This type of toilet was common with the rooming houses and requires adequate maintenance to keep the occupants of the houses from flies, bad odour, bacterial infection that could jeopardised good health. In comparison, bucket toilets are worse than the pit latrines and should be eradicated by law. Occupants of buildings without toilets were fond of dumping their faeces in the bush and gutter nearby and was unhygienic.

**Table:5 TOILET FACILITIES**

| S/N | Type | Frequency | Percentage |
|-----|------|-----------|------------|
| 1. | Pit | 126 | 63 |
| 2. | Water System | 43 | 21.5 |
| 3. | Bucket Toilet | 25 | 12.5 |
| 4. | Not Available | 6 | 3 |
| | Total | 200 | 100 |

Authors: 2016

Outdoor shared bathroom is 56.5%, indoor shared 23.5%, shower shared 12.5% and shower exclusive 7.5%(Table 6).The waste water in the outdoor bath room were collected on the ground particularly during the raining season and breed mosquitoes which caused malaria fever

**Table 6: BATHROOM**

| S/N | Type | Frequency | Percentage |
|---|---|---|---|
| | Shower | 15 | 7.5 |
| | Shower Shared | 25 | 12.5 |
| | Indoor Shared | 47 | 23.5 |
| | Outdoor Shared | 113 | 56.5 |
| | Total | 200 | 100 |

Authors: 2016

From the data collected, it was discovered that the major source of water supply within the study area is well. 71% accounted for well water, public water 15%, treated water 5%, and buildings without water supply was 14.5%(Table 7). Water is essential to life as it is used by man for bathing, washing, flushing of toilets, scrubbing. Olawande

(1983) estimated the daily per capita need for these activities as 40.0, 100.0, 45.0, and 5.0 litres respectively for developing countries. From the data above, the 14.5% of the population were without water supply in the study area could cause havoc to the environment as there would be little or no water to carry out their daily activities which could result into outbreak of diseases.

**Table 7a: WATER SERVICES**

| S/N | Type | Frequency | Percentage |
|---|---|---|---|
| | Public water Supply | 19 | 9.5 |
| | Well water | 142 | 71 |
| | Treated water | 10 | 5 |
| | Not Available | 29 | 14.5 |
| | Total | 200 | 100 |

Authors: 2016

The table below showed the total aerobic bacterial counts that range from $1.1x10^3$ to $5.1 x10^3$ cfu/ml ( Table 7b) with the least and highest in Ijebu.

Table 7b: **Values of Physcio- Chemical Parameters and Aerobic Bacterial of Counts Selected Well Waters in Owo and Environs**

| Locality | Sample | Caco (PPM) | Total Solid (PPM) | $P^H$ | Alkalinity (PPM) | Chloride (PPM) | Sulphate (PPM) | Conductivity ohm-1cmd | Total Aerobic Bacterial count (cfu/ml) |
|---|---|---|---|---|---|---|---|---|---|
| IJEBU | 1 | 305,48 | 5200 | 7.74 | 352 | 216,44 | 220 | $19.3x10^4$ | $1.1x10^3$ |
| | 2 | 307.50 | 5310 | 7.44 | 510 | 246.14 | 190 | $19.0x10^{-4}$ | $3.2x10^3$ |
| | 3 | 306.30 | 5420 | 7.44 | 340 | 280.52 | 215 | $19.4x10^{-4}$ | $5.1x10^3$ |
| EHINOGBE | 4 | 499.49 | 6000 | 7.42 | 320 | 462.05 | 226 | $19.8x10^{-4}$ | $4.1x10^3$ |
| | 5 | 490.60 | 5980 | 7.42 | 320 | 446.20 | 218 | $19.7x10^{-4}$ | $3.6x10^3$ |
| | 6 | 487.68 | 6100 | 7.43 | 322 | 432.18 | 217 | $19.5x10^{-4}$ | $2.7x10^3$ |

Source: Adopted from Opawale (2008)

this show that all the six (6) samples of well water in Ijebu and Ehinogbe that was examined contain high content of bacterial Opawale (2008) which confirmed the findings of Opawale and Obayanju (2004) as related to Owo. This implied that high count of bacterial in Owo well water contain contamination and the water need to be well-treated before it could be considered pure for drinking.

61% of the drainages in the study area were blocked while 13% of drainages were not blocked but the remaining 26%(Table 8) did not have drainages. The buildings with drainages filled up with refuse deposits were blocked which prevented the free flow of runoff water (Omole, 2006). The resultant effect of this was that the runoff water can overflow into the environment during the raining season which could cause flooding if solutions were not proffered.

**Table 8 DRAINAGE SYSTEM**

| S/N | Type | Frequency | Percentage |
|-----|------|-----------|------------|
| 1. | Available but blocked | 122 | 61 |
| 2. | Available and free | 26 | 13 |
| 3. | Not Available | 52 | 26 |
|  | Total | 200 | 100 |

Authors: 2016

From the study, 71.5% of the respondents were not satisfied with the level of electricity supply in the area while the remaining 28.5% were satisfied(Table 9). This was partially due to the Federal Government's privatisation policy of the power sector and the unwillingness of the distribution companies to supply electricity to low income areas compared to public companies. Private companies were reluctant in extending their services to poorer household especially when large investments were required (Umeokaforo, 2002).

**Table 9: FREQUENCY OF ELECTRICITY**

| S/N | Request | Frequency | Percentage |
|-----|---------|-----------|------------|
| 1 | Frequent | 57 | 28.5 |
| 2 | Not Frequent | 143 | 71.5 |
| 3 | Total | 200 | 100 |

Authors: 2016

In the study area, 41.5%of the respondents indicated that there was basic health centre in the area, 40% indicated there was maternity centre, 12.5% indicated that the Federal Medical Centre was not far from the study area and 6% indicated that they live closer to State general hospital(Table 10) . It could therefore be deduced from the above that the availability of various health facilities in the area was responsible for the increase in natural population growth in the area as the infant mortality rate in the study area was very low ( Muoghalu, 2002). This high rate of population growth could put pressure on the basic amenities available in the area and could contribute to decay.

**Table 10: HEALTH FACILITIES**

| S/N | Type | Frequency | Percentage |
|-----|------|-----------|------------|
| 1. | Maternity | 80 | 40 |
| 2. | Basic Health Centre | 83 | 41.5 |
| 3. | General Hospital | 12 | 6 |
| 4. | Federal Medical Centre | 25 | 12.5 |
|  | Total | 200 | 100 |

Authors; 2016

On waste disposal methods, 64% indicated the use of open burning, 27% indicated private waste

collection and 9% just dump their waste at nearby bushes ,streams and gutters(Table 11) .The group at times drop waste with excreta inside drains and around houses. Those respondents that burned their waste in incinerators and within their compound could generate carbon monoxide and carbon dioxide whose cumulative effects could contribute to global warming and climatic change which are dangerous to health (Ojo, I.C. et al, 2013) The actions of the respondents that dumped their waste in the bush invited rodents and bacteria into the surroundings and such could cause infectious diseases while those who dump their waste on stream and drains breed mosquitoes which in turn results into malaria fever. This assertion was confirmed as 84% indicated that there was prevalence of malaria fever, 5.5% indicated that there was typhoid fever, 5.5% cholera and 5% for diarrhoea(Table 12).

**Table 11:    WASTE DISPOSAL**

| S/N | Type | Frequency | Percentage |
|---|---|---|---|
| 1. | Open Burning | 128 | 64 |
| 2. | Private Waste Collector | 54 | 27 |
| 3. | None | 18 | 9 |
|  | Total | 200 | 100 |

Authors: 2016

**Table 12: COMMON DISEASES**

| S/N | Type | Frequency | Percentage |
|---|---|---|---|
| 1. | Malaria | 168 | 84 |
| 2. | Typhoid fever | 11 | 5.5 |
| 3. | Diarrhoea | 10 | 5 |
| 4. | Cholera | 11 | 5.5 |
|  | Total | 200 | 100 |

Authors: 2016

## RECCOMMENDATIONS

❖    As a result of population increase due to natural growth in birth and migration from the rural to urban cities which had mounted pressure on the available facilities that caused urban decay ,there should be periodical population statistics in Owo and other cities for infrastructural planning and development.

❖    The local government is the closest to the people, it should be well equipped with vibrant and effective legislation for enforcing planning laws and development control, train their personnel and provide the finance required to tackle decayed infrastructure in their council areas.

❖    There should be continuous research on the inherent benefits in the use of mud as it is cost effective; the research should explore the various techniques available in its construction and proffer solution.

❖    Urban planning should be environmentally conscious; owners of buildings (private, public and commercial) should be mandated to provide waste bins from which wastes can be collected by waste management vehicles that has been assigned to their areas.

❖    Wastes collected by these waste management vehicles can be sorted out , some can be recycled and others transformed to manure, renewable energy, etc.

❖    The burning of waste by individuals should be discouraged as it caused pollution while those found dumping them in illegal places and drains

should be prosecuted as such actions could be influential to outbreak of diseases or irreparable destruction instigated by flood. To avoid such disasters, sanitary inspectors should always be assigned to communities

❖ The Ministry of Housing and Urban Development should as a matter of urgency, promote, articulate, consolidate and implement development programmes in conformity with the master plan. All extensions of existing buildings should be approved by the appropriate authority before work commences.

❖ Most of the available wells in the study area were contaminated and hence the purity of their water could not justify consumption without treatment. Majority of the people living in the area rely on manufactured or treated water popularly referred to as pure water because of its assumed purity for thirst, social and domestic use (Adebiyi, 2007). The dug wells should be well-treated, inspected and supervised by government appointed agencies for the provision of sustainable, clean and safe water for drinking. Government, Non Governmental Organisation (N.G,O.), community groups and philanthropies could also be approached in provision of boreholes in strategic places within the community.

❖ The use of pit latrines, bucket toilets and non provision of toilet facilities should be prohibited since they are unhygienic and injurious to health. Health inspectors are to regularly carry out the inspection of the area and buildings with these types of problems should be sanctioned.

**CONCLUSION**

As government is in short of fund, she should explore the potential of community groups in the provision and maintenance of locally developed infrastructure. Community groups should be integrated with organised private sectors in combination with the money generated from property tax as collected by government for infrastructures development and maintenance. Government should not hands off but continue to participate in the provision and maintenance of infrastructures that are financially cumbersome for community groups, private sectors and any other volunteer groups to handle. If community groups , private sectors and government are well co-ordinated with planning, vibrant law, define policies back up with budgetary allocation and effective and prudent administrators, facilities development in urban cities could be sustainable..

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