

# Facility Management in Educational Institutions: A Study of Nnamdi Azikiwe University Awka

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## Abstract

This study evaluated the facilities available at Nnamdi Azikiwe University, Awka with a view to making recommendations for effective management and efficient service through: identifying the facilities available in the school, measuring their efficiency and effective management of these facilities through data collection from the inhabitants, analyzing the data so obtained and drawing inference from them. The Facilities investigated includes: Electricity Supply Facilities, Water Supply Facilities, Hostels and Library. The study adopted a questionnaire survey method to sample the opinion of students inhabiting the school hostels. It was found that although some facilities were provided, the quantity provided is adequate and mostly ill maintained for two possible reasons; acute growth in population and lack of funds. The conditions of the available facilities are below standard and even were up to standard, they were considerably below the required capacity. It was also discovered that on individual opinion for each facility analyzed, the number of respondents who think that the facilities management operations need to be improved are a lot higher than those who do not. The study thus recommended that for the empowerment of facilities management in the university and the country as a whole; Formal training in facilities management should be incorporated in various tertiary institutions with necessary inputs from key staff organizations that have applied facilities management principles and theories; as funds are set aside for procurement of facilities, provision also be made for the efficient management of the facilities; better planning techniques should be adopted by the facilities managers, with this misappropriation of funds made available for facilities development and management will be avoided.

## 1.0 INTRODUCTION

### 1.1 BACKGROUND TO THE STUDY

Facilities management is not completely new. It is an offspring of maintenance management and property management. These specialties have been expanded and broadened. Owen (1995) affirmed that facilities management became recognized as an identifiable management concept in the United States at the start of the eighties and has been practised in the United Kingdom since 1983 with the main growth occurring in the nineties. All the functions, which are now incorporated under facilities management umbrella, existed prior to the recognition of facilities management. What facilities management has achieved, which is new, is an understanding that a coordinated and integrated approach to a range of business activities can add value to an organization's process. This trend is captured by Alexander's (1996:1) definition of facilities management as "the process by which an organization delivers and sustains support services in a quality environment to meet strategic needs".

Undoubtedly, facilities management has come to stay as a profession in Europe and other developed nations of the world. However, in Nigeria its existence and even its practice are not sufficiently documented. The Nigerian Institution of Estate Surveyors and Valuers's 28<sup>th</sup> Annual Conference of March 1998 focused on the theme 'Facility Management in Nigeria – The Estate Surveyor and Valuer's perspective'. That Conference might be regarded as the pioneering effort on facilities management awareness in Nigeria particularly from the estate surveyors' point of view though it does not necessarily mean that elements of facilities management had not been in operation before 1998.

Presently, there has been much argument as to whether it should be a distinct professional calling at all. However, some surveyors do not see any difference between facilities management and maintenance management or property management while others doubt the practicability of its principles being applied in business circles in Nigeria Ojo (2002).

European and American industrial and commercial organizations (including Hotels) have gone ahead to adopt facilities management as one of their strategic management instruments to improve the performance of their hotels (Telfer, 2005). Effective facilities management (FM) combines resources and activities to generate the work environment vital to the success of any organization. At a corporate level, it contributes to the delivery of strategic and tactical objectives. On a day-to-day level, effective FM provides a safe and efficient working environment, which is essential to the performance of any establishment, whatever its size and scope of works (Edum-Fotwe, Egbu and Gibb, 2003). It is imperative that research must begin to be conducted on the

responsiveness of Nigerian society to facilities management and whether facilities management, where and whenever it is adopted and practised, is actually enhancing the quality of service delivery.

One major area of the Nigerian economy, which should attract such investigation, is the Academic institutions.

## 1.2 STATEMENT OF THE RESEARCH PROBLEM

Most of the current literature in Nigeria on the Facilities Management are preliminary and pedagogic addressing issues such as definitions and scope [Odiete (1998), Ojo (2002)], facilities management tools [Mbamali and Adebayo (2006), Opaluwah (2005)] and which of the professionals within the environmental setting is best suited to serve as facilities manager or to handle what within the facilities management field [ Odiete (1998), Ahmad (1998), Ojo (2002)].

It is only recently that facilities management has come to be applied to specific sectors of the economy usually education, industrials, and hospital sectors. Most of earlier studies have taken place in South Africa [Kotze and Nkado (2003)] and United Kingdom [Amaratunga and Baldry (1999), Amaratunga (2000)]. In Nigeria, studies have not yet been applied to any sector of the economy except for few that studied hotel facility management. Most of the studies in Nigeria have been devoted to clarifying what facilities management really entails and distinguishing it from the traditionally practised property management and maintenance management. The present study will fill this gap by providing a in-dept application of facilities management to a major economic sector in Nigeria and that is the educational sector but with specific interest in analyzing the availability of the facilities, their efficiency and effective management.

## 1.3 AIM AND OBJECTIVES

The aim of this study is to evaluated the facilities available at Nnamdi Azikiwe University, Awka with a view to making recommendations for effective management and efficient service.

To achieve this aim, the following objectives were pursued:

1. Identifying the facilities available in the school,
2. Measuring their efficiency and effective management of these facilities through data collection from the inhabitants,
3. Analyzing the data so obtained and drawing inference from them.

## 2.0 METHODOLOGY:

The study adopted the survey method through Oral interview, observation and Questionnaires survey. A field inspection / survey of the case study with regards to available facilities, the performance of these facilities or their relative efficiency and the nature of management of the facilities. Personal interviews were also carried out with some students as well as members of staff as regards the adequacy and management of the facilities.

The questions contained in the questionnaires were primarily directed towards obtaining information as to whether the management of facilities in the university are adequately provided and the satisfaction of the users of these facilities to their management. The data analyses was restricted to analysis to the data collected to the identified available facilities which include: hostels, electricity, water, library, etc.

## 3.0 DATA PRESENTATION, ANALYSIS AND INTERPRETATION

### 3.1 RESEARCH QUESTION 1

Are the facilities provided adequate?

#### ELECTRICITY

Since the supply of electricity from PHCN as good as not available, the analysis on the various generating sets in the institutions. These generators are coded A, B, C based on their location.

**Code A:** Represents the generators servings the hostel area used and in located at hostel A (female) and B (male)

**Code B:** Represents the generators serving the classroom and surrounding office areas and is located each at an appropriate space available to the given faculty.

**Code C:** Represents the generator serving the administrative block and is located at appropriate space serving the block.

In the table below, the number of have each generator supplies electricity to various areas is recorded.

**Table 1: Showing the working hours of the generators**

Categories of generator	Working hours day	Idle hours per day	% of working hours per day	% little hours per day
A	7	17	29.17	70.83
B	4	20	16.67	83.33
C	8	16	33.33	66.67

(Source: Field survey 2013)

The table shows that the working hours the generator are code A, 7, B, 4, C, 8. The percentage of working hours are 29.17, 16.67, 33.33 for generators A,B,C respectively.

The rating shows insignificance in the working hours of the generators, and reflects that generators are used when there is power outage in the admin block and timed at key productive hours in hostels and classrooms.

### WATER

Here, the researcher tried to look at the number of hours water is supplied to hostel, classroom restive facilities and administrative blocks in the university. This information is displayed in the table below.

**Table 2: Showing water distribution**

Areas of water supply	No of hours supplied	No of hours not supplied	% of hours supplied	% of hours not supplied
Hostel	10	14	41.67	58.33
Classroom	4	20	16.67	83.33
Admin block	4	20	16.67	83.33

Source: Field survey (2013)

The table above shows that water is supplied to the hostel area 10 hours per day, to classroom and admin block 4 hours per day. The percentage representing these hours can be calculated as being 41.67%, 16.67% and 16.67% respectively for the analysis it could be said that water supply distribution is inadequate. Water in hostel is supplied with reference to key water demanding hours that is, 5 hours in the morning and 5 hours at nights, while the situation at the classrooms and the administration block reflects the poor provision of facilities requiring the use of water.

### HOSTELS

This research in examining the provision of hostel accommodation for the student assumed that not all students would want to stay on campus (that is in Hostels) provided by the university.

This research worked with an estimated student population of 10,000 students. The table below shows the hostels and the number of rooms in each hostel and the number of students in each hostel actually.

**Table 3: Showing the provision of hostel accommodation**

Hostel	No of room	Proposed no of student/ hostel	Actual no of student per hostel	Excess no of student accommodated	%of excess students to hostel population of student
A	70	375	420	45	0.45
B	70	375	420	45	0.45
C	70	375	420	45	0.45
D	70	375	420	45	0.45
<b>Total</b>	<b>280</b>	<b>1500</b>	<b>1680</b>	<b>180</b>	<b>2</b>

Source: Field Survey (2013)

The table shows that only 280 rooms are provided to accommodate a total of 1500 students. In reality, however, a total of 1680 students are accommodated. This means that there is an excess of 45 students accommodated in relation to the number of students accommodated originally provided for. The percentage total of those students is 2% leaving a whopping percentage of 98% of the estimate number of student un-accommodated. This analysis shows an acute lack of student un-accommodated. This institution to accommodate students and thus reflects that a vast majority of students stay at locations outside the institutional premises.

### LIBRARY

This research at this point wishes to find out the capacity of the university library per unit time. The information acquired is shown in the table below. There are two broad sections the original and analogue which equally have subsection.

**Table 4: showing the library capacity.**

Questionnaire	Responses
Returned	300
Not returned	50

**SOURCE: FIELD SURVEY, (2013)**

**Analogue section**

Sections	No of seats
Reference	40
Project	25
General reading	235
Total	300

**SOURCE: FIELD SURVEY, (2013) Digital Section**

Section	No of seats
Research	100
On lane reading	200
Total	300

**SOURCE: FIELD SURVEY, (2013)**

The above table shows that the number of students that the university library is likely to take at a particular time is 400 students. When compared to the present students population of about 14, 000 students it can be seen to amount to an insignificant percentage of 4% representation for the analogue section.

This figure shows that in as much as the library is an upgraded facility it still falls short of that required to provide adequate space for all students. No attention is given to the attitude of reading in drawing the analysis as it does not fall within the scope of our study for facility adequacy. Also, only the reading areas of the library are considered here in determining the carrying capacity.

The digital section show that total capacity of 300 students for unit of time, which equally those not serve the need underlying full capacity of student population.

**3.2 RESEARCH QUESTION 2**

**What are the conditions of the available facilities in the study area?**

Still using the facilities and a sample population of 300 students, the researcher attempted to determine the condition of the facilities from the responses received. However, the response were gotten based on certain criteria which are mentioned alongside the analysis.

**ELECTRICITY (generating sets)**

In determining the condition of electricity supply, the respondents considered the frequency of electricity supply i.e. number of hours per day in which power is supplied.

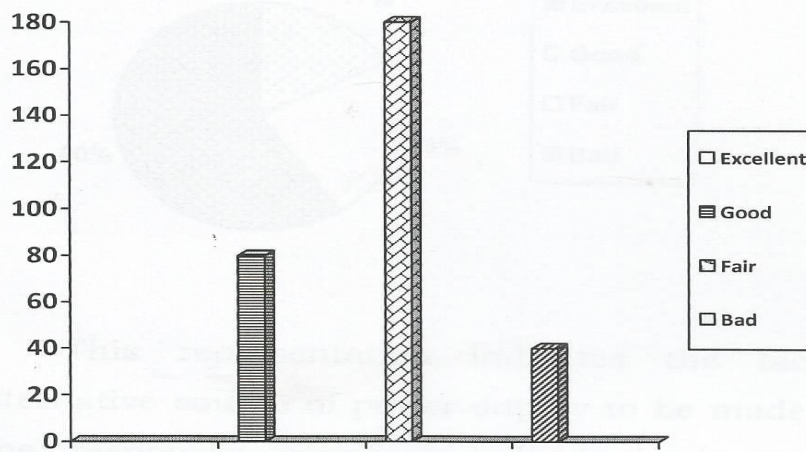
Questionnaires returned 300 Questionnaires not returned 50 Questionnaires faulty 49

**Table 5: showing responses to the condition of electricity supply.**

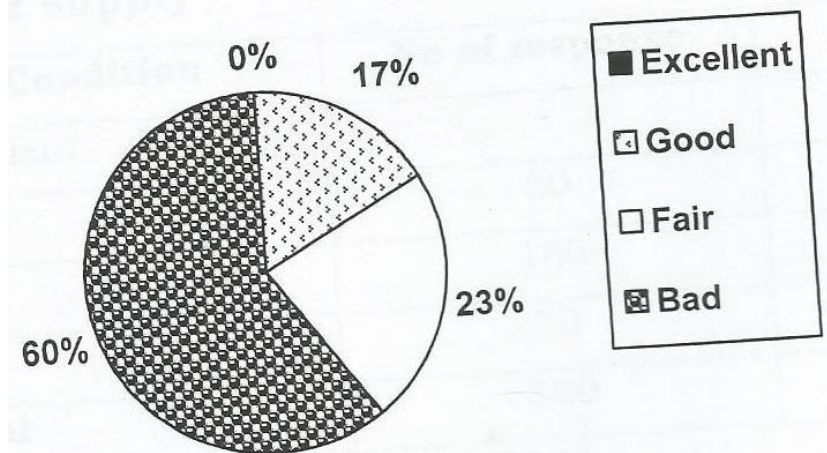
Condition	No of response	Percentage of response
Excellent	-	-
Good	80	27
Fair	180	60
Bad	40	13
<b>Total</b>	<b>300</b>	<b>100</b>

**Source: Field Survey, (2013)**

From the above table 60% of the respondent think that the supply of electricity is fair, 27% feel it is good while 13% say it is outrightly bad. Questionnaires returned are 300, while not returned are 50 and faulty 49. This information can be further illustrated in the figure below.



**Figure 1:** Bar chart showing responses to the condition of electricity supply



**Figure 2:** Pie chart showing responses to the condition of electricity supply

This representation indicates the fact for an alternative source of power supply to be made available. The responses connote individual views as to the condition of power supply and since the fair category has the highest number of respondents, it can be observed that the state power supply falls below the average and hence the need for facilities installation and its eventual management.

#### **WATER**

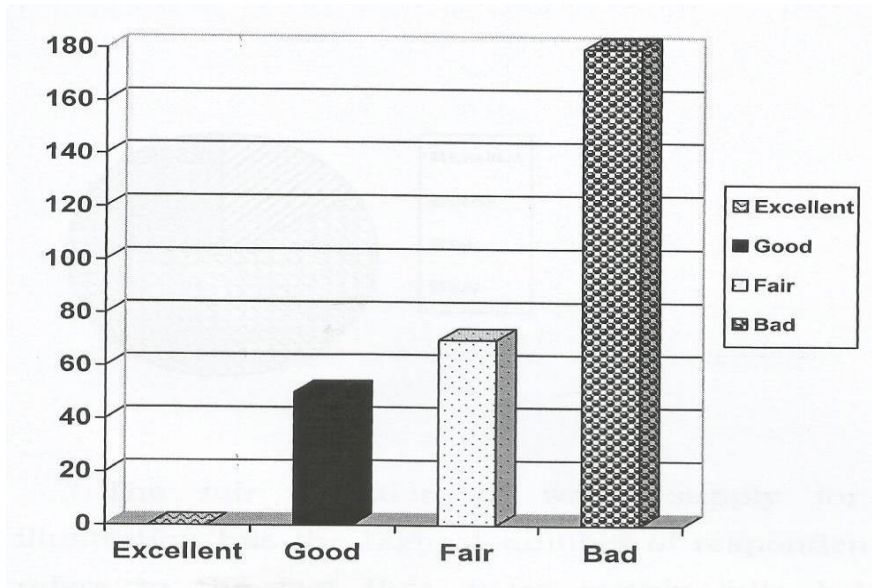
The condition of water supply also based on the frequency (i.e. number of hours of water supply)

**Table 6: Table showing response to the condition of water supply**

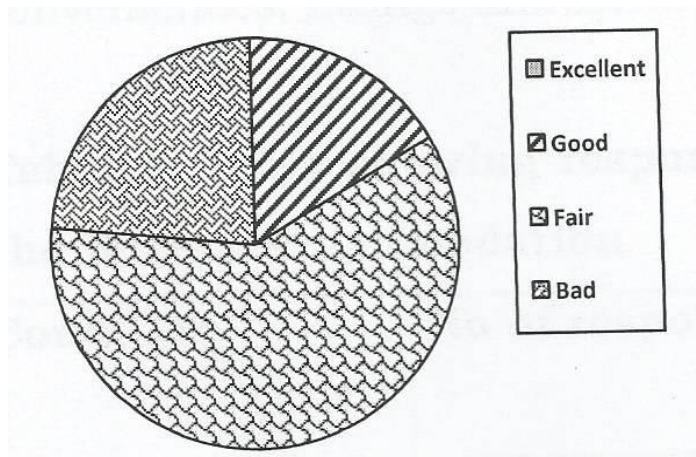
Condition	No of response	% of response
Excellent	-	-
Good	50	17
Fair	180	60
Bad	70	23
<b>Total</b>	<b>300</b>	<b>100</b>

**Source: Field Survey, (2013)**

The information above shows that 17% of the total respondents feel that the frequency of water supply is good, 60% feels it is fair while 23% feel it is bad. Based on this, it would be safe to say that the condition of water supply to the university leaves much to be expected. The above shown data can be further illustrated in the figure below.



**FIGURE 3: Bar chart showing responses to the condition of water supply**



**Figure 4: Pie charts showing responses to the condition of water supply**

The fair situation of water supply for above illustration has the highest number of respondents, this refers to the fact that water supply falls below the average, and as such the institution must introduce the use of alternative sources of water supply and the installation of adequate facilities such as force pumps to carry them to required storages.

**HOSTEL**

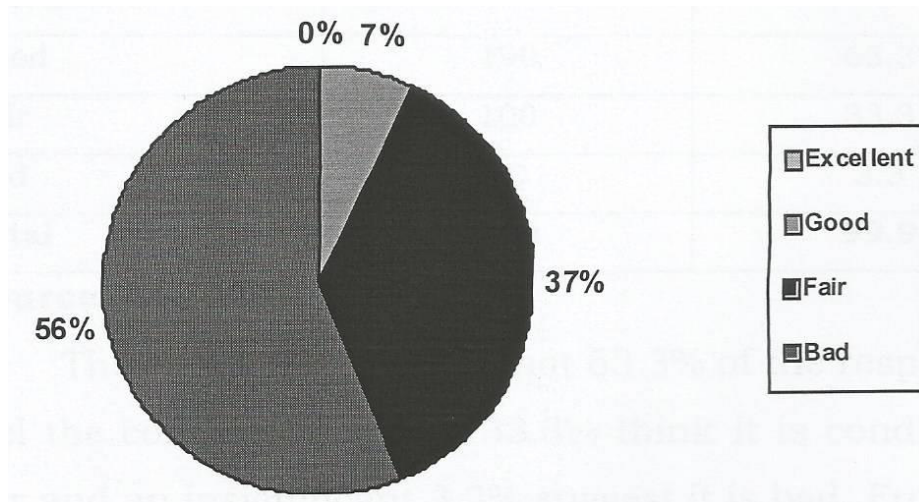
Here the responses made by respondents were based on the following criteria such as the structural stability of the building, the state of repairs, condition of conveniences, fittings and fixtures.

**Table 7: Table showing responses to the condition of the Hostel accommodation**

Condition	No of response	Percentage of response
Excellent	-	-
Good	20	7
Fair	110	37
Bad	170	56
<b>Total</b>	<b>300</b>	<b>100</b>

**Source: Field Survey, (2013)**

The responses show that the condition of the hostels is poor. Only 7% of the respondents say that the condition is good, 37% say it is fair and 56.60% say that it is bad. To further illustrate this are the figures below.



**Figure 5:** Pie chart showing responses to the condition hostel accommodation

The above illustrates the state of hostel accommodation in the university which reflects the high intensity use of available facilities over and above the construction of more hostel accommodation to curb this effect.

**LIBRARY**

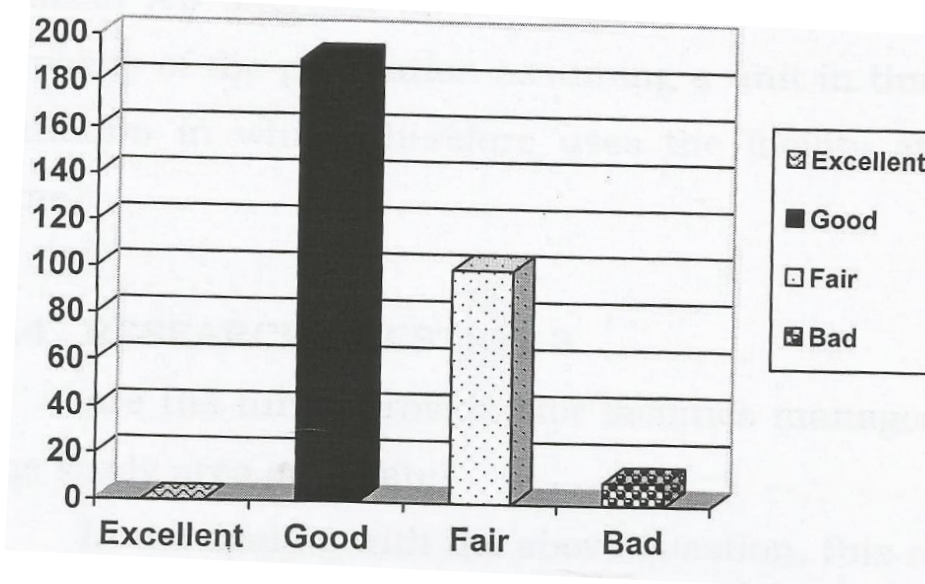
The criteria for rating the condition of the library were based on the structural stability of the building, state of furniture repairs, quality of staff, quality and quantity of books, carrying capacity.

**Table 8:** Table showing responses to the condition of the library

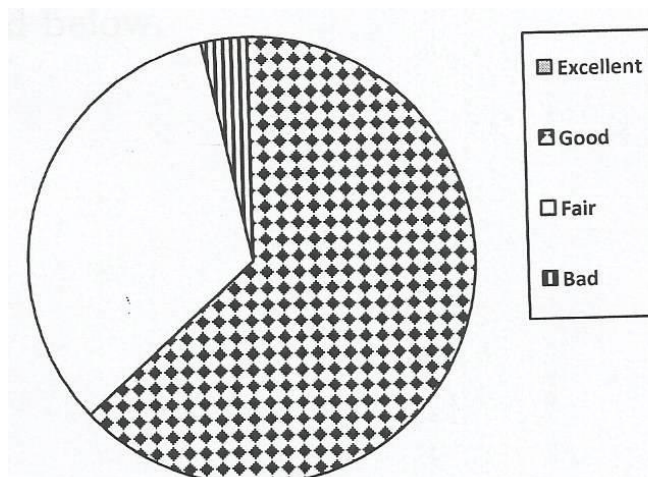
Condition	No of response	% of response
Excellent	-	-
Good	190	63.3
Fair	100	33.3
Bad	10	3.3
<b>Total</b>	<b>300</b>	<b>99.9</b>

Source: Field Survey, (2013)

The above table shows that 63.3% of the respondent feel the condition of good, 33.3% think it is condition is fair and an insignificant 3.3% suggest it is bad. From this one can point that the condition of the library is at least above the average standard as satisfaction for space, convenience data is adequately provided.



**Figure 6:** Bar Chart showing responses to the condition of the Library



**Figure 7:** Pie Chart showing responses to the condition of the Library

However, the response, it still is a fact that the situation of library is considered not excellent this reflects it's shortfall as it does not provide for the full capacity of the population assuming a unit in time and a situation in which therefore uses the facility at a said time.

### 3.3 RESEARCH QUESTION 3

Are the funds provided for facilities management in the study area adequate?

In the dealing with the above question, this research compared the budget proposed of the works and services department of the university for the year 2010/2011 against the amount approved by the university. The proposal for the maintenance of the highlighted facilities is stated below.

**Table 9**

Works department budget proposed for the year 2010/2011

Proposed (estimate)	Approved actual
Electricity-10, 380, 000.00	
Water supply- 3,107,500.00	
Hostels-4,856,000.00	
Library- 100, 000. 00	
Other facilities- 1,200, 000. 00	
Grand total- 19,643,500	5,000,000

**Source: Field Survey, (2011)**

From the table above, it is shown that the total amount of works needs for the year 2010/2011 proposed is 1419, 643,500. This is the estimated figure for the maintenance of all the facilities in the university. The total amount approved by the university authority is =N5, 000, 000. The percentage of the amount approved to that proposed is approximately 25% which is not even up to half the amount required for provision and maintenance of facilities.

### SUMMARY OF FINDINGS

This research work took a general look at facilities management as a whole, its operational level and some problems militating against its practice in the country. It then focused on the facilities management in educational institutions more specifically on the situation in Nnamdi Azikiwe University Awka. This research postulated some questions at the beginning of the research and has tried to analyze the data collected in order to answer the questions.

The first research question asked was working towards determining whether basic facilities required in the university are adequately provided. Not all facilities were analyzed, gave the researcher a good idea of the adequacy of the provision of facilities in the study area.

At the end of the day, the researcher was able to establish that although some facilities were provided, the quantity provided is adequate and mostly ill maintained.

However, from interaction and observation, the researcher was able to identify two possible reasons for this situation. These reasons are the acute growth in population and lack of funds.

For a university campus as large as Nnamdi Azikiwe University to have for example generating sets serving it is not quite appropriate. Moreover, these generating sets do not even run fro a period of up to 12 hours each day. They do not run for a long time because there is insufficient supply of gas, breaks down of parts or the facility or there is an attempt to conserve the life span of the facilities.



Why do these measures have to be taken? From interactions, the researcher was able to further find out it is because funds are not made available to purchase sufficient gas neither are made available for the procurement of genuine space parts in the event of a break down.

Research question two attempted to examine the condition of the available facilities from the analysis carried out; it can be safe to conclude that the conditions of the available facilities are below standard and even were up to standard, they were considerable below the required capacity. Additionally, from interaction, it was also discovered that on individual opinion for each facility analyzed, the number of respondents who think that the facilities management operations need to be improved are a lot higher than those who do not.

From the works department, even they believe they could a lot better if their requirements are met and more funds are made available.

In the area of population growth, it was noticed that this has an adverse effect in the number of facilities available. The pressure in these facilities is overbearing. This causes a rapid increase in the rate of deterioration of the facilities.

The third research question was directly addressing the issue of provision of funds for facilities management operations in the university. From interaction in the works and senior department, the researcher was able to discover that the crux of the matter is funding. A look at the budget proposal for the year 2010/2011 was able to give a clearer picture.

The grand total of the proposal was N19,643,500 but the amount approved by the university authority was N5,000,000. Now, additional questions become, how do they (at the works department) begin to apportion money to the different sections in the department in the department?

What impact can such a negligible amount have on the management of the facilities?

What get done and what is left undone?

In summary, it can be said that the present facilities management operations in the university leaves much to be expected of it.

## 5.2 CONCLUSION

Facilities management can be a considerably new field trying to gain its footing in the Nigerian system of building construction and maintenance. It needs to be encouraged for the benefit of both property owners and users.

The range of facility services is larger, embracing these functions that seek to keep the building or establishment (educational or otherwise) operational within its defined performance parameters, and all the support services that the organization may require to enable it efficiently and effectively carryout its operations and meet its objectives.

Maintenance commonly absorbs between 15% and 25% of total operating cost of facilities. It is often mistaken to cover other elements, which should be treated separately. Adequate resources both physical and financial must be made available for the tasks to be implemented. Staff must also be appropriately trained and managed.

Finally, it is important to note that poor maintenance culture and practices which is obvious even in the maintenance of various big fine/large structures in the country like the international airports as well as universities stems basically from lack of resources. In addition to lack of resources comes lack of workable strategies, methodologies and techniques for effective utilization of available resource in an efficient, organized and systematic manner.

The bottom line is that the availability of facilities in any organization is important but more important is the effectiveness and efficiency in the management of facilities to achieve the desired goals. In a university, the desired goal is a conducive environment that will encourage education, research and outreach.

## 5.3 RECOMMENDATION

Having considered the general idea of facilities management, its application in bulk organizations and educational institutions are problems experienced in its practice, the following recommendation are necessary for the empowerment of facilities management in the university and the country as a whole.

a. Formal training in facilities management should be incorporated in various tertiary institutions with necessary inputs from key staff organizations that have applied facilities management principles and theories. The advantage of this is to ensure that organizations are attracted to the discipline and that they embrace its practice. With the programs being run at both graduate and post graduate levels, there would be more people trained specifically for the management of facilities and there will be no need to settle for unskilled persons or mediocre to do the job.

Additionally, seminars and workshops should be organized by Nigerian institution of estate surveyors and valuers (NIESV) to educate even layman on facilities management as this would help widen their

consciousness to its importance and what is involved.

b. A vital issue is that of funding first as funds are set aside for procurement of facilities, provision also be made for the efficient management of the facilities. It is not good enough to provide funds for facilities managements rather providing sufficient funds that will allow for serious and constant maintenance checks on the facilities. With the provisions of adequate funds for FM, the managers will not be under too much pressure trying to ensure that the facilities are maintained at a good enough standard.

c. Better planning techniques should be adopted by the facilities managers. With this, misappropriation of funds made available for facilities development and management will be avoided.

d. The mode of execution should be by "direct labour" or "in-house" system rather than "contractor system" or "out-sourcing system" as this is more economical.

Another reason is that with "in-housing" there is familiarity with the culture of the organization and it allows for full-control of operational activities making room for flexibility and direct quality control.

Furthermore, a good standard of workmanship by the operatives is ensured because they enjoy continuity of employment. It eliminates the problems of contractors default in the form of non-performance and where direct labour is adopted. There should be some incentives scheme to aid workers productivity.

e. Periodic checks and study of spare parts and other material should be carried out regularly and properly especially when management is done in-hours. These periodic checks would help avoid complete breakdown of the facilities, as likely problems would be spotted on time.

f. In most multinationals and even in the universities works department majority of the professionals involved in facilities management are engineers. Engineers are not and cannot be the sole operators of facilities management. Estate surveyors should take more interest in facilities management practices as there are numerous opportunities and challenges awaiting them in the discipline of facilities management which they are duly qualified to fill.

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