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# **The Yaba Journal** of **Environmental Research**

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## SPATIAL MANAGEMENT OF SPACE FOR THE DEAD: A COMPARATIVE STUDY OF AYOBO AND VICTORIA COURT CEMETERIES

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### **ABSTRACT**

*The paper compares space design and management of cemeteries between the Victoria Garden Court (Privately owned cemetery) and Ayobo( publicly owned cemetery). Research was applied in nature and primarily field based. The study showed that large disparity exist between the two cemeteries based on parameters like service provision, space design and layout, environmental impacts, physical attributes and security . The Victoria Court cemetery owned by HFP Engineering exhibits better attributes over the Ayobo public cemetery. The paper opined that minimum requirements should be set for cemeteries and both private and public sectors should strive to meet these requirements. Provision of cemeteries should also be done on district basis as against its regional provision. Re-use of grave sites should also be discouraged while private investment and corporate support for building of cemeteries should be encouraged.*

*Keywords: Cemetery Private, Public, space the dead, the living .*

### **1.0 Introduction**

Increasing profile of human population and its activities have all subjected land resources into high pressure. Man, like the nature declares, keep on multiplying and increasing dominating his environment. Space all over the world is increasingly becoming restricted in the midst of all these. Consciously man provides for all activities; recreation, communication, industry, commerce, residential and farming but little did he realize that he has limited time on earth and thereafter he will die. His place of rest after cessation is never given proper attention in the midst of all his adventures. Physical planning is one of the major occupation of man primarily concerned with management of

space, the greater part of this activity is devoted to active uses, and little or nothing in some cases are done concerning spatial allocation for the dead. Land value in the urban centre, the heterogeneous nature of our population, modern housing design and the globalised nature of our system have made it increasingly difficult for land to be properly allocated for the dead.

In most cases, lands allocated are either marginal, loop lands or lands that command no value and in most cases such space/site are either ill managed or not managed at all. Place for the dead by all standard is receiving little or no attention.

It is obvious that death is inevitable and it is compulsory for all being irrespective of

social status and size. Where the dead are not properly disposed and traditionally taken care of, it is capable of creating physical, environmental, health and spiritual problems.

The evidence of this neglect is more pronounced in a country like Nigeria where unlike the other sector of the society investments come from both public and private sectors. Cemeteries being the site for the dead has remained a public provision several years ago. But lately in the cities of Lagos and Port-Harcourt cemeteries, because of the importance attached is gradually capturing the attention of private investor, hence private cemeteries such as that of Victoria garden court in Lagos have sprang up. More so, the number is highly insignificant compared to the need and to that of the public cemeteries.

The general assumption is that the states of these public cemeteries are nothing to write home about. The sites are poorly kept, ill arranged and unsafe even for the dead. Human remains in most of our cemeteries are haphazardly done; plots in them are unplanned. Some constitute source of atmospheric and underground water pollution, also burial in most cases lacks records. It is for this reason that the management of space in Ayobo cemetery (public) is compared against the Victoria court cemetery (private).

The paper is aimed at improving the spatial provision for both public and private cemeteries in order to secure a better environment not for the reason of the dead but for the good health of the living ones. The paper therefore advocates the need for proper management of burial sites.

### **1.1 Related Researches**

A place for the dead in every literature refers as cemetery, (Dent, 1998, Badejo, 1999). They all define cemetery as a place set apart for the burial or embalmment of the dead. Spatial restriction, cultural variation and religion beliefs in the opinion of several authors (Ajala, 1993, Oladejo, 2002, Dent, 1998) are the basic factors shaping burial practices across the globe. The cessation state of the dead ones buried in cemeteries make their sites vulnerable to ill management and maintenance (Saidi, 2009).

Contrary to worldwide standards, major burial sites in the less developed countries like Nigeria are ill maintained and poorly managed. Researches over the years have paid little or no attention on the need to plan for the dead in term of their spatial requirement.

### **1.2 Study Area**

The study area of this paper includes Ayobo and Victoria Court cemeteries. Ayobo cemetery is one of the newest public cemeteries in Lagos Metropolis. The cemetery was established in year 2004 on 10 hectares of land existing along Ipaja - Ayobo road adjoining landscape include the PHCN 33kv sub station. The cemetery is presently managed by Alimosho L.G.A, one of the 20 LGAs in Lagos State.

Victoria Court cemetery on the other hand is the first private cemetery in Nigeria. It is a novel idea in the country. The cemetery was built in 1997 on 4,128 hectares of land on plot AB Lekki Peninsula sub region along km 36 Lagos- Epe Expressway, Epe in Ibeju- Lekki LGA. The cemetery unlike

the Ayobo cemetery is divided into different segments along religious lines. The cemetery is managed by HFP Engineering. The site since inception have provided for a total of 12,876 dead.

### **1.3 Research Methodology**

The research relies largely on field survey. The two cemeteries were compared using the following variables; location, accessibility, planning regulation compliance, environmental impacts, site suitability and many others. Each of these variables was measured comparatively and scores obtained were weighted against each other. Results obtained were compared for purpose of decision making on the two compared cemeteries.

Perception of the residence around the two cemeteries was also obtained via the use of questionnaire. Houses at about 200 meters radius away from the two cemeteries had questionnaires administered on their occupants. The Victoria Court cemetery has a total of 30 houses within the desired radius while Ayobo cemetery has a total of 120 buildings. The entire 30 buildings around Victoria Court cemetery had one questionnaire administered per building and twenty five percent of the building at Ayobo cemetery representing 30 buildings equally had one questionnaire randomly administered on them. In all a total of 60 questionnaires were administered on the residents around the cemeteries. Data solicited from them include; residential characteristics of the respondents, locational impacts of the cemeteries on them and their general view about the cemeteries. Managers of the two cemeteries equally had questionnaire

administered on them, touching on subjects like: operation and maintenance costs, design consideration, development cost, management, location consideration among others.

Users of the cemeteries also had questionnaires administered on them on issues relating to satisfaction, service delivery, security, confidence, cost and relating issues. A particular Friday was set aside for this purpose, a total of 24 questionnaires were administered on the relations of those that come to bury their dead ones at an average of one questionnaire per buried person. This was done on a Thursday and Friday of the week.

## **2.0 Results**

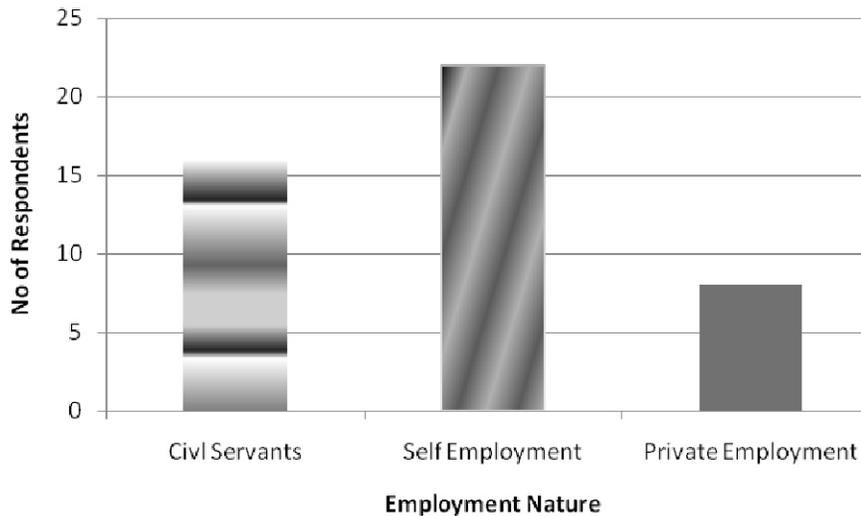
### **2.0.1 The People Living Around the Cemeteries**

The survey reveals that 52 (89%) of the respondents are married while 8(11%) of them are not, a total of 41 (68%) of them are females and 19 (32%) are males. All of the respondents have their age above 24 years, out of the number a total of 24 (40%) had secondary education though this figure is slightly higher around Ayobo cemetery, 18 (30%) all found around Ayobo had primary education and a total 18 (30%) of them have post secondary education, greater proportion this is found around Victoria court cemetery, Eputu.

The survey equally showed that 48 (80%) of the respondents are employed, while 6(10%) are unemployed and 6 (10%) are retirees. Out of the total number of the respondents that are employed 16 (33%) of them are civil servant, 22 (50%) are into

self employment and 8 (17%) of them are into private employment (see fig. 1.0).

**Figure 1.0 Employment Structure of the Respondents**



Greater proportions of these people are of Yoruba tribe, other tribes are insignificant. A total of 46 (77%) of them have a long history of residence of 5-10 years while 14 (23%) of them have residence history of less than 5 years.

All of these indicate that the residents are in good position to assess the two cemeteries around them and their comments on any issues can be taken seriously.

### 2.0.2 Locational Impact of the Cemeteries

Respondents were asked to identify various impacts of the cemeteries on their environment. A total of 12 (20%) of the respondents primarily found in Ayobo and who are landlords opined that the location of the cemetery around their area has

reduced land value as most people opted to sell away their land because of the location of the cemetery within their proximity.

A total of 46 (77%) of the respondents who cut across the two communities of Ayobo and Ewutu agreed that the location of cemetery around their areas have brought about scanty development in and around the cemetery as most developers are of the view that the location have traumatic and spiritual effects on the people. The entire respondents were of the view that the location of the cemeteries are of no positive effects on their environment and may be responsible for dearth of physical development around. Unusual traffic movement most especially on weekends Thursdays, Fridays, and Saturday was equally identified by about

(88%) of the respondents as another impact of location of cemeteries around them. Noise generation is another factor

pointed at by over 48% of the respondents see table 1.0

**Table 1.0 Locational Impact of the Cemeteries**

Impacts	% of Respondents
Unusual Traffic	88
Noise	72
Reduction in Land Value	38
Scanty Development	82

### 2.0.3 The Users of the Cemeteries

#### 2.0.3.1 Where are they from?

Survey revealed that a total of 10 (83%) of the dead buried in Ayobo cemetery originate within Alimoso LGA where the cemetery is situated. While the other 2 (17%) come from outside the local government area of the cemetery but within Lagos metropolis. On the other hand, 9 (30%) of those that come to bury their dead ones in Victoria garden court come from within the LGA where the cemetery is located ,while the rest 21 (70%) come from outside the LGA but from other LGA adjoining the location within the metropolis.

#### 2.0.4 Cost of Acquisition of Burial Sites

Survey revealed that great disparity in term of burial site acquisition exists between the two sites. In Ayobo the cost of acquiring burial site as at the time of investigation stood at N27,000 and N10,000 for permanent and temporary sites respectively while that of Victoria Court stood at N300,000 with no option for temporary site. This represents over 100% difference. The users at the Victoria garden court cemetery are of the view that the charges are reasonable compared to

the services provided by the site, while those that patronize the Ayobo public cemetery are of the view that the charges are on the high side since the cost exclude that of excavation and services provided according to them are poor.

A close observation of the relations outfits, casket design and furnishings between the two sites show a wide disparity in their socio-economic status. Those of the Victoria garden court portray a high income status while that of Ayobo reflect low income status.

#### 2.0.5 The Managers

The managers of the two cemeteries also had questionnaires administered to them, relating to the cemeteries. The survey reveals that the Victoria court cemetery is managed by HFP Engineering, the cemetery by this arrangement is directly overseen by the general manager assisted by cemetery site manager and retinue of supervisors. The entire site is guided by some security personnel directly employed HFP Engineering and cleaners equally appointed by the company on contractual basis.

Ayobo cemetery on the other hand is under the Alimosho LGA administration

directly overseen by a park and cemetery superintendent designate, assisted by the duo of chief cemetery and senior cemetery officer. The senior cemetery officer is field based and assisted by cemetery keepers and other attendants.

None of these officers was forthcoming on the cost of putting up the cemetery and cost per unit. The managers of Victoria court cemetery were able to show that the land within which the cemetery is situated is granted for that purpose via the statutory certificate of occupancy issued to the general manager of HFP Engineering dated 22<sup>nd</sup> of January 1997.

The same cannot be said for the Ayobo public cemetery, the land which house the cemetery can be described as marginal land as it directly exist under the 33KV PHCN electric cable.

#### **2.0.6 The State of the Cemeteries**

Physical observation of the two cemeteries revealed as follows:

That the Victoria garden court cemetery is well laid out, fenced, with good, appealing and aesthetic view. Existence of ample space for vehicular parking, existence of landscape elements, segmentation of the burial plots along religious beliefs, provision of water, all of the burial vaults linked by well paved walkways, all of the vaults are legible. Each vault measures 2.3 x 1.2 x 1.8 translating into a volume of 4.968m<sup>3</sup> per vault. Regular organised security arrangement is available. There is also a large reception hall.

Ayobo cemetery on the other hand is characterised with haphazard arrangement of grave site (vault) even contrary to spiritual belief of arranging human heads

into a particular and uniform direction. Grave sites are inaccessible, lack defined pattern of arrangement, and the entire site is overgrown with weeds and muddy during rainy season and dusty during dry season. Burial sites are indiscriminately dug and human remains are not buried along any line of religious beliefs. The average volume per vault varies depending on whether it is permanent or temporary. Temporary burial sites measures slightly above 2.9m<sup>3</sup> while permanent site measures about 3.0m<sup>3</sup>. This represents a significant disparity from that of Victoria court garden cemetery. The site lacks regular and organised security arrangements though security fees are often charged.

#### **2.0.7 Victoria Court and Ayobo Cemeteries: A Comparison**

The two cemeteries were compared using the following variables:

- (a) Services such as**
  - i. Provision of portable water supply
  - ii. Water for gardening
  - iii. Religious activities such as ablution
  - iv. Parking Facilities
  - v. Access and road condition
  - vi. Storm Water Drainage
  - vii. Access control, gate house and cemetery superintendent
  - viii. Worship Place
- (b) Land Requirement and Space Design/Layout**
  - i. Vault specification
  - ii. Provision for children
  - iii. Segmentation of vaults

**(c) Environmental Impact**

- i. Noise
- ii. Traffic
- iii. Air Pollution
- iv. Reduction in land value
- v. Isolation of settlements around

**(d) Physical Characteristics of the soil around**

- i. Soil excavability
- ii. Stability of soil
- iii. Water table depth
- iv. Subsoil permeate
- v. Backfill permeate

**(e) Security**

Each of these variables was comparatively assessed between the two cemeteries based on earlier results obtained and physical observation. Each of the variables was attached weight index for empirical comparison and the rating was done in line with some examined cemeteries standard for some selected African countries. The rating index for each of the variable is given in table 1.1 And results obtained are summarized in tables 1.2 to 1.7.

**Table 1.1 Comparison Rating Index**

Variables	% of Weight
Services	15
Layout/Space Design	25
Environmental Impact	25
Physical Characteristics	25
Security	10
<b>Total</b>	<b>100</b>

Table 1.1 outlines the various variables used in comparing the two cemeteries, these include;

1. Services: These include utilities and infrastructure which include; water supply for various uses, vehicular parking

provision, road provision and condition, traffic management and reception hall. A total 15 percent was attached to this variable for purpose of assessment, see table 1.1

**Table 1.2: Service**

Services	Victoria court cemetery	Ayobo Cemetery	Maximum Obtainable
Potable water supply	2	0	2
Water for gardening	1½	0	1½
Water for Religious activities e.g ablution	1	0	1
Parking Facilities	2	0	2½
Access and road condition	2	0	2½
Storm Water Drainage	1	0	2
Access Control	2	0	2
Worship Place/Hall	1	0	1
<b>Total</b>	<b>12</b>	<b>0</b>	<b>15</b>

2. Lay- out/ space design: This variable comparatively assessed the two cemeteries based on space arrangement and specification. Sub- variables compared include vault specification, segmentation and provision. A total of 25 percent weight was attached, see table 1.3.

**Table 1.3 Land Requirements and Space Design**

Variables	Victoria court cemetery	Ayobo Cemetery	Maximum Obtainable
Vault Specification	7	5	10
Provision for Children	0	0	5
Vault Segmentation	10	0	10
<b>Total</b>	<b>17</b>	<b>5</b>	<b>25</b>

3. Environmental impacts: This variable compares the two cemeteries on the basis of the impacts they exert on their immediate environment. Main environmental impacts considered include; noise, traffic, air quality, settlement isolation, and rental value. Impacts are measured on negative and positive terms. Negative impacts attract lower marks while positive impacts attract higher marks. Weight index of 25 percent was attached to this variable, see table 1.4.

**Table 1.4 Environmental Impacts**

Variables	Victoria court cemetery	Ayobo Cemetery	Maximum Obtainable
Noise	4	4	5
Traffic	2	1	5
Air Pollution	5	3	5
Reduction in Land Value	3	1	5
Isolation of Settlements	3	1	5
<b>Total</b>	<b>17</b>	<b>10</b>	<b>25</b>

**4. Physical Characteristics of soil around:** This variable comparatively assessed the physical condition of soils in and around the two cemeteries. Features

assessed include; soil excavability, stability, water table depth and permeability. Weight index of 25 percent was attached, see table 1.5.

**Table 1.5 Physical Characteristics of the Soil around**

Variables	Victoria court cemetery	Ayobo Cemetery	Maximum Obtainable
Soil excavability	5	5	5
Stability of soil	3	5	5
Water table depth	3	3	5
Subsoil permeate	2	4	5
Backfill permeability	2	4	5
<b>Total</b>	<b>15</b>	<b>21</b>	<b>25</b>

**5. Security:** This variable compared state of safety in the two cemeteries with a

weight index of 10 percent, see table 1.6.

**Table 1.6 Security**

Variables	Victoria court Cemetery	Ayobo Cemetery	Maximum Obtainable
Security	8	2	10
<b>Total</b>	<b>8</b>	<b>2</b>	<b>10</b>

**Table 1.7 Summary of Results**

Variables	Victoria court cemetery	Ayobo Cemetery	Maximum Obtainable (%)
Services	12	0	15
Land Requirements/Space Segmentation	17	5	25
Environmental Impacts	17	10	25
Physical Characteristics of Soli	15	21	25
Security	8	2	10
<b>G. Total</b>	<b>69</b>	<b>38</b>	<b>100</b>

Table 1.7 shows that Victoria Court cemetery has a total score 69 percent while Ayobo cemetery has a total weight score of 38 percent. The assessment shows that significant difference exist between the two cemeteries. The Victoria court (privately owned cemetery) shows a high degree of compliance to standards for space for the dead cemetery while Ayobo cemetery (publicly owned cemetery) significantly varies away from required standard for space for the dead. Costs however was not a factor considered by this paper notwithstanding, those that patronize Victoria garden court cemetery claimed that the site is affordable to them. It must however be noted that the performance of the private cemetery may not be far from the cost attached to it while that of public cemeteries is left for the municipal to handle, this may be responsible for its poor state lower cost ,yet its users still opined that cost of acquisition in relative term is high.

### 3.0 Conclusion and Recommendations

The paper concludes that using the parameters above, private cemeteries in Lagos metropolis in term of spatial arrangement and management exhibit better performance above that of public cemeteries.

Since the provision of cemeteries in a secular state like Lagos is a sensitive matter and is influenced by a wide range of issues ranging from environmental, political, religious, tradition, socio-economic, personal preference of individuals to affordability. It is the opinion of this paper that public cemeteries should be encouraged because of affordability question. Corporate organisation support should be sought for a public-private partnership approach towards provision of space for the dead. It is therefore recommended that design requirement for cemeteries should be spelt out and all cemeteries public or private should comply with this minimum requirement. Cemeteries needs not to be

provided for on a regional basis, it could be provided for as a district good (combination of 4-8 neighborhoods) where appropriate cemetery requirement of each of these districts should be projected and appropriate land space be designated for such purpose.

The re-use of graves, in the opinion of this paper is not accepted and should be discouraged. Government, planners, investors, corporate organisations, religious organisations need to pay adequate attention to provision of cemeteries as there exist monumental danger for human remains that are not properly and rightly disposed.

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**EVALUATION OF PROCUREMENT SYSTEMS PERFORMANCE FOR  
MECHANICAL AND ELECTRICAL SERVICES TOWARDS EFFECTIVE  
DELIVERY OF BUILDING PRODUCTS**

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**ABSTRACT**

*This study critically evaluates different procurement mechanisms and approaches practised in the Nigeria construction industry, and ascertained the appropriateness of each method towards building services installation and project delivery in the industry. Views of scholars and authors on procurement system were reviewed and discussed summarizing the procurement methods. Questionnaires were administered to stakeholders in the industry within sixteen (16) local government areas in Lagos state involved in the procurements of mechanical and electrical services for building projects. The data collected from the questionnaires were analyzed using the statistical package for social sciences (SPSS) software, and frequency and percentiles as statistical tools. From the analysis, it was deduced that labour only procurement method enhance the achievement of clients objectives of cost effectiveness, project management mostly ensures the achievement of clients objective of specified quality standard while design and install mostly enhance the clients objective of quick completion of mechanical and electrical services within required time among other things. The paper recommends, among others, that a clear understanding of project objectives, identifying the project constraints and clear understanding of the roles of the contracting parties are essential for procurement of building services. If the issues identified in this research study are managed properly, a project will significantly achieve its time, cost and quality objectives, in addition to client satisfaction.*

**Key Words:** Building services installation, client satisfaction, construction industry, procurement, project delivery, project management..

## **1.0 INTRODUCTION**

Building services are an important aspect of building; hence the design and installation require a critical examination. However, these services, (mechanical and electrical services) cannot be designed and installed independently, but have to be integrated with other building elements. In addition, the procurement requires adequate coordination towards effective building products delivery. Lam et-al., (1996) states the significance of intimate working relationship between all designers and contractors. To these authors, it is essential to produce a building product in which all the services and structural elements are fully integrated, planned, and organised. These indicate that adequate integration of mechanical and electrical services are paramount towards successful building project delivery.

Consequently, inappropriate selection of procurement system often cause delay in building services installation, cost overrun and claims, and a significant maintenance difficulty in aftermath. Thus, to ensure adequate design and installation of building services, it is essential that the design and installation team, work mutually and in alignment to the procurement approach chosen.

Ogunsanmi (2000), state different procurement methods usually adopted in the Nigerian construction industry; these include the traditional method, design and build, management procurement, direct labour and labour only procurement methods. Noteworthy, a typical procurement system has both advantages

and disadvantages. The complex nature of these specialist area in building production: the design of the services, technical know-how required, foreign materials content, high capital outlay, level of risk involve, contract documentation complexities and seasoned administration skill and expertise required, make it a requisite to adopt a suitable procurement system that will facilitate cost effectiveness, ensure value for money and timely building products delivery, in addition to efficient and effective project production. In respect, this study critically evaluates different procurement mechanisms and approaches practiced in the construction industry, and ascertain the appropriateness of each method towards building services installation and project delivery in Nigeria building industry.

## **2.0 LITERATURE REVIEW**

This section presents the views of scholars and authors on procurement systems. Among the issues discussed in this section are selections of an appropriate procurement method of building services in building projects, and procurement types used for building projects. This section summaries the application, advantages and disadvantages of each method, and presents the relevancies of each method towards achieving client's objectives and satisfaction.

### **2.1 PROCUREMENT TYPES USED FOR BUILDING PROJECTS**

Previous research by McMillan (1996) Gunning and McDermott (1997) identifies the following methods of

procurement as those which are commonly used (in descending order of preference):

- 2.1.1 Traditional procurement method;
- 2.1.2 Design and build procurement method;
- 2.1.3 Management contracting procurement method;
- 2.1.4 Construction management procurement method;
- 2.1.5 Design and manage procurement method.

Lam (2009) also indicates that the main types of procurements strategy used for most hospital project in Hong Kong are:

- a) traditional procurement method;
- b) construction management;
- c) Design and build.

Thus, Akinpelu (2009) finding is based on evidences around the world, and states the various procurement mechanisms with diverse range of approaches to project delivery. The modern international procurement strategies for international projects are; Build-Operate-Transfer, (BOT) or Concession Constructs; Variants-Builds-Own-Operate, (BOO); Build-Operate-Transfer, (BOT); Build-Own-Operate-Transfer, (BOOT); Design-Build-Finance-Operate-Transfer, (DBFOT); Build-Operate-Lease, (BOL); Design-Build-Operate-Maintain, (DBOM); Build-Own-Deliver, (BOD); Build-Own-Operate-Subsidize-transfer, (BOOST); Build-Rent-Transfer, (BRT); Build-Transfer-Operate, (BTO); Maintain-Transfer-Operate, (MTO); and Build-Claim-Deliver-and-Depart (BCDD). Also, Design and Build with

variants-pure design and build, Design and manage, Turnkey, Package deal or All-in service contracts, contractors design portion supplement, Develop and construct guaranteed, maximum price are use. However, the limit of discussion in this study is the Nigerian construction industry.

According to El-Rufai (1997) Ogunsanmi (1998) procurement methods that can be identified in the Nigerian construction industry include the following;

- a) The traditional method
- b) The design and build method.
- c) Management procurement system.
- d) Direct labour procurement system.
- e) Labour only procurement system

All these procurement systems identified in the Nigerian construction industry are therefore reviewed to ascertain their relevance to mechanical and electrical services in building projects. Procurement according to Ogunsanmi (1998) starts from the moment a client perceives the need for a construction project up to completion whereas tendering and contract award are components of the procurements functions.

### 2.3.1 Traditional procurement method of building services

In this method, the client enters into separate contracts with each member of the design team (Architect, Quantity Surveyor, and other consultants) and the contractor. In other words, the design and installation functions are spilt. The design team is paid fees for service rendered

while the contractor is paid for the installation aspect on the basis of the type of contract existing between him and client. Lam (2009) asserts that in this type of procurement system, design by consultants is complete before contractors tender for, then carry out installation.

Based on research findings of many professionals, Lam (2009) observed that the traditional approach does not easily foster a co-operative and coordinated project organization, and it is therefore difficult to manage the building services design and installation with the building and structural elements. He further asserts that the increasing complexity of building services design and installation in building, the need to reduce design and installation periods, the transfer of risks and management problems to the contractors and the need to achieve better project performance have all brought pressure to find better ways and alternative procurement paths to achieve building services project.

Ogunsanmi (1998) states that the traditional (or conventional) procurement system has been used for many years in Nigeria. The system is fully understood by all parties of the building team though very popular and well established it has its merits and demerits.

The design team leader and other consultants according to Ayeni (1998) are the clients' professional team responsible for design and supervision of construction. The contractor is responsible for construction while the mechanical and electrical engineers oversees the services

installations.

### **2.3.2 Design and install method of building services procurement**

Lam et al (1996) affirms that those factors contributing to the decline in the traditional forms of contracts are creating constant demand on the construction process to improve the standard and quality of service provided for the industry's clients, not only in terms of time, cost and performance, but also in the administration and procurement. All these needs have created the desire to bring the whole construction process under a single point of control, directly responsible to the client. The construction industry have reacted not only with improved installation techniques and materials for building services but also with new dimensions to building services procurement in that it is structured, primarily in the interests of the client, towards giving him/her an improved deal and with far greater emphasis upon the client obtaining better value for money. Design and install in the context of procurement of mechanical and electrical services in building project is not a single system but a generic term for any method of procurement whereby the contractor has overriding design responsibility, which may be total or in part.

### **2.1.3 Design and Construct**

In this method, the contractor is given performance specifications and drawings which although fully prescribes and predetermine the design. It requires further working drawings to illustrate construction details. Examples are large

industrial complexes, some civil engineering projects, power plants, etc. the contractor takes the responsibility of producing these drawings, obtaining all necessary approvals and to carry out the construction. It should be noted that the architect or design team leader will still have to cross check and approve the contractor's working drawings which will normally be produced ahead of construction work by the contractor. The quantity surveyors role as the cost controller will subsist like in the traditional method.

#### **2.4.3 Management procurement methods**

These methods of project procurement is developed in response to demands for better management on exceptionally large and complex construction project, (Frank and Ronald 1997). The two main types in practice are:

- i. Management contracting
- ii. Project management

##### **2.4.3.1 Management contracting procurement method**

Management contracting method involves a management contractor who is employed by the client to organize, manage and supervise the execution of a project on his behalf. Both Ogunsanmi and Bamisile (1997) and Ayeni (1998) acknowledged that the management contractor does not undertake any physical installation on site, but arranges the entire project into work packages. Such work packages are sublet to subcontractors whom he manages, coordinates and supervise. The management

contractor also provides additional services and on-site facilities, like equipment, plants and accommodation. Management contracting system operates like the traditional system except for the conceptual design stage where only the outline design and cost plans are prepared for selection of the management contractor. The contract documents between the client and the management contractors is made up of the production drawings, total contract value, the management responsibilities and the facilities to be provided by the contractor Ogunsanmi and Bamisile (1997) further asserted that the underlying philosophy of this approach is to allow the contractor to become part of the client's team and for the management function to be carried out, therefore, in partnership with the members of the design team to the overall benefit of the client. The major difference between the management contracting system and the design and install is that a contractor does not directly carry out the roles of the designers or the contractor; the contractor is concerned solely with the overall management of the project and provision of site facilities.

##### **2.4.3.2 Project Management procurement method**

This is a system whereby a project manager is appointed by the client at inception. The project manager would manage the design and installation function of the project to completion. According to Ogunsanmi and Bamisile (1997), the method is fast gaining acceptance in Nigerian construction industry. Two major type of project

management methods are in use in Nigeria, the executive and non executive. In the executive project management system according to Ogunsanmi and Bamisile (1997), the project management practice manages and co-ordinates all the activities of the design, cost control and appointment of other team members. The project manager acts exclusively on behalf of the client on all matters relating to the project. In the case of the non executive type, the project manager co-ordinates the design and installation matters alongside other professionals while the clients' takes greater control of the management of the project. In this method, the architect need not be the design team leader as in the case of traditional system since team leadership depends on the nature of the project and who among the consultants is nearer the source of the job.

#### **2.4.3.3 Distinction between management contracting and project management.**

The essential difference between project management practices and management contractors are;

- a. Management contractors are usually traditional building contractors while project management practices are consultants, managed and structured like other professional practices.
- b. Management contractors enter in direct subcontract agreement with subcontractors. Project managers submit proposals to their clients and subsequently act as the client's

agent in managing the contractors and subcontractors.

#### **2.4.4 Direct labour method of building services procurement**

This is a system where the client uses own in house; resources for the production of the design and the actual installation of building services. The client may be an individual who is in the building profession or a private or public organization which has a well established projects execution outfits e.g. (Institutions of higher learning, Federal Ministry of Works and Housing, Central Bank of Nigeria. Federal Housing Authority, Local Government e.t.c) in some cases, the in house resources are used to produce the designs while a contractor is engaged for the installation of building services.

Some other client may choose to have the design and installation information prepared by practicing consultants while the installation is handled in house.

The direct labour system is widely used these days in the Nigerian construction industry for projects that are straight forward and with short duration.

#### **2.4.5 Labour only procurement method**

Labour only contract, as a procurement method, is one of the several terms which are widely used to describe work arrangement, which do not fall within the traditional or definition of employment.

Labour Only contract means work performed for a natural or legal person referred to as a user enterprise" by a person (referred to as a "contract worker"), pursuant to a contractual

arrangement other than a contract of employment with the user enterprise, under actual conditions of dependency on or subordination to the user enterprise, where these conditions are similar to those that characterize, an employment relationship under national law and practice.

The client in labour only procurement method takes upon himself or herself the preparation and provision of all materials required for installation of building services in a building project and then call upon the electrical or mechanical engineering contractor/specialists to execute the installation on the project. The electrical and mechanical contractor is sometimes allowed to purchase consumables. At time, the client provides the plants and tools required for the work or may leave it for the contractor.

Adenuga, and Akinsola (2007), asserts that clients in Nigeria readily, embrace labour only mode of procurement because it affords them the opportunity to control quality of materials used. Moreover, clients deemed it fit to achieve savings on installation cost of building services through trade discounts obtained from bulk purchasing. Taking the materials components out also demystifies unit rate pricing as the client is able to appreciate what he is paying the contractor better.

Summarily, this method of procurement is prominent among private individuals who initiate building services project in Nigeria construction industry. Since in most circumstances, the private individual develops and often adopts the approach of do-it-yourself strategy.

### **3.0 RESEARCH METHODOLOGY, DATA ANALYSIS AND DISCUSSION OF FINDINGS**

#### **3.1 Preamble**

This section presents the research methodology, data analyses and discussion of findings. The under listed information are considered necessary and included in the methodology of the research;

- 3.1 Research design
- 3.2 Population of the study
- 3.3 Data collection instrument
- 3.4 Sample technique and procedure for data collection

#### **3.2 Research Design**

Questionnaires were administered to the stakeholders in the industry which comprise of construction professionals and other active players in the procurements of mechanical and electrical services for building projects.

#### **3.3 Population of the Study**

The population of the study consist of sixteen local governments in Lagos state. This was on the premise that clients and organisations involved in the procurement of M&E services in building projects abound in the state and it was understood that the result of the data collected could be generalised for construction industry application.

### 3.4 Data Collection Instrument

Data was collected using choice structured questionnaire consisting of one section which deals with the assessment of the performance of each of the procurement system for mechanical and electrical services procured by clients in building projects.

The surveyed respondents were asked to choose an appropriate rating on the scale against each identified method that reflected their opinions on the significant level.

### 3.5 Sample Technique and Procedure for Data Collection

A preliminary field survey was conducted covering Federal and State parastatals, construction companies, private consultancy firm of mechanical and

electrical services engineers', professionals, as well as, public and private clients/individuals known as initiators of electrical and mechanical services in building projects in Lagos state.

A total of 70 questionnaires were administered and 53 were received. This results in a response rate of 75.71%.

### 4.0 DATA ANALYSIS AND DISCUSSION OF FINDINGS

The questionnaire was carefully examined for the purpose of extracting relevant information required to achieve the research objectives. The data and results were presented using frequency table to establish the percentage occurrence of each of the variables.

### 4.1 Data Analysis on the Performance of Procurement Systems for M&E Services

The data collected from the questionnaire are analysed as follows:

Table 4.1: Cost effectiveness objective

	Frequency	Percent
Traditional method	7	13.2
Design and install method	11	20.8
Management contracting method	8	15.1
Project management method	10	18.9
Direct labour method	4	7.5
Labour only method	12	22.6
Modern method	1	1.9
<b>Total</b>	<b>53</b>	<b>100.0</b>

Table 4.1 above shows the procurement methods which mostly ensure the full achievement of clients objectives of cost effectiveness for M&E services in building project 13.2% of the respondents

say traditional method most ensure the cost effectiveness objectives of clients while 20.8% agree that design and install method ensures the cost effectiveness objective 15.1% and 18.9% says

management contracting and project management respectively mostly ensure clients objectives of cost effectiveness while 7.5%, 22.6% and 1.9% says direct

labour, labour only and modern method of procurement respectively mostly ensure the full achievement of clients cost effectiveness objectives.

Table 4.2: Specified quality standard objective

<b>Procurement Method</b>	<b>Frequency</b>	<b>Percent</b>
Traditional method	10	18.9
Design and install method	15	28.3
Management contracting method	9	17.0
Project management method	16	30.2
Labour only method	2	3.8
Modern method	1	1.9
<b>Total</b>	<b>53</b>	<b>100.0</b>

Table 4.2 above shows the procurement methods and their relative degree of achievement of specified quality standard of clients, 18.9% and 28.3% respondents says traditional method and design and install methods mostly ensure the quality

achievement objectives, 17% and 30.2% agree that management contracting method and project management respectively mostly ensure it while 3.8% and 1.9% respondents agree with labour only.

Table 4.3: Required time or duration objective

	<b>Frequency</b>	<b>Percent</b>
Traditional method	7	13.2
Design and install method	15	28.3
Management contracting method	6	11.3
Project management method	13	24.5
Direct labour method	6	11.3
Labour only method	6	11.3
<b>Total</b>	<b>53</b>	<b>100.0</b>

Table 4.3 indicate that 13.2% and 28.3% of respondents say traditional and design and install method respectively mostly ensure the full achievement of clients objectives of specified quality standard, 11.3% and 24.5% agree that management contracting and project management most ensure on time objectives while 11.3% and 11.3% of labour only and modern method mostly ensure time objectives of clients.

Table 4.4: Appropriateness of situation

	Frequency	Percent
Yes	51	96.2
No	2	3.8
<b>Total</b>	<b>53</b>	<b>100.0</b>

Table 4.4 shows that 96.2% of the respondents agree that the performance of the procurement methods is dependent on the appropriateness of situation it is used while non disagree with the statement as shown in table 4.4 and figure 4.4 above respectively.

Table 4.5: Proper involvements of required professional

Professional Involvement	Frequency	Percent
Yes	51	96.2
No	2	3.8
<b>Total</b>	<b>53</b>	<b>100.0</b>

Table 4.5 shows that 51% of respondents agree that proper involvement of required professional has its impacts on the performance of procurement method while 2% do not agree.

Table 4.6: Traditional procurement method performance

Performance	Frequency	Percent
Low	21	39.6
Medium	19	35.8
High	13	24.5
<b>Total</b>	<b>53</b>	<b>100.0</b>

Table 4.6 shows that 39.6% and 35.8% respectively says that traditional method individual performance when adopted for M and E services in building project is low and medium while 24.5% agree that its individual performance is high with a percentage agreement of 24.5%.

Table 4.7: Design & Install procurement method performance

<b>Performance</b>	<b>Frequency</b>	<b>Percent</b>
Low	5	9.4
Medium	25	47.2
High	22	41.5
Total	52	98.1
Missing	1	1.9
<b>Total</b>	<b>53</b>	<b>100.0</b>

Table 4.7 show that 9.4% respondents agree that the individual performance of design and install is low, 47.2% agree its performance is medium while 41.5% respond by saying the performance of design and build is high.

Table 4.8: Management contracting procurement method performance

	<b>Frequency</b>	<b>Percent</b>
Low	9	17.0
Medium	30	56.6
High	13	24.5
Total	52	98.1
Missing	1	1.9
<b>Total</b>	<b>53</b>	<b>100.0</b>

Table 4.8 shows that 17%, 56.6% and 24.5% respondents respectively agree that management contracting methods individual performance for M&E services in building is low, medium and high respectively on the percentages previously mentioned.

Table 4.9: Project management procurement method performance

	<b>Frequency</b>	<b>Percent</b>
Low	5	9.4
Medium	23	43.4
High	23	43.4
Total	51	96.2
Missing	2	3.8
<b>Total</b>	<b>53</b>	<b>100.0</b>

Table 4.9 shows that 9.4% respondents agree that projects management Individual performance is low while 43.4% agree that its performance for M&E services is medium and high respectively.

Table 4.10: Direct labour method performance

	<b>Frequency</b>	<b>Percent</b>
Low	13	24.5
Medium	25	47.2
High	14	26.4
Total	52	98.1
Missing	1	1.9
<b>Total</b>	<b>53</b>	<b>100.0</b>

Table 4.10 shows above agree that 24.5% and 47.2% of respondents indicate that direct labour individual performance is low and medium respectively while 26.4% respondents indicate that its individual performance is high when used for M&E services in building projects

Table 4.11: Labour only procurement method performance

	<b>Frequency</b>	<b>Percent</b>
Low	16	30.2
Medium	27	50.9
High	6	11.3
Total	49	92.5
Missing	4	7.5
<b>Total</b>	<b>53</b>	<b>100.0</b>

From table 4.11, it could be deduced that 30.2% represents are in support that labour only method is low in terms of degree of individual performance while 50.9% and 11.3% of respondents agree that its individual performance is medium and high respectively when used for M&E services in building projects.

#### **4.2 SUMMARY OF FINDINGS**

From the analysis, it can be deduced that labour only, project management and design and install procurement method mostly ensure the full achievement of clients objectives of cost effectiveness, specified quality standard and completion of M&E services within required time and duration respectively. However, it can also be rightly said that the performance of each of the procurement method is dependent on the appropriateness of the situation it is used and the involvement of the required professional at each stage of the procurement process has its impacts on the performance of the procurement method. Finally, the analysis revealed that project management procurement method was rated as the most performing procurement method as far as M&E services in building project is concerned. Design & install method and management contracting followed in the rating respectively while traditional procurement method was the least performing procurement method in use for M&E service in building projects.

#### **5.0 TOPICAL ISSUES**

Choosing the right procurement method is vital to the success of a building project. Noteworthy, the construction parties risk

management strategy will strongly influence the choice of a procurement method.

As indicated in Office of Building and Development, (1997), Construction participants need to be aware that a variety of procurement methods are available for acquiring a building facility. From the analysis, it can be deduced that labour only, project management and design and install procurement method ensure the achievement of clients objectives of cost effectiveness, specified quality standard and completion of M&E services within required time and duration respectively. Although, Construction Management method is a fast track procurement method that enables work to commence on the early stages of construction, while the design and documentation of later trade packages are being finalised; a client engages a construction manager to organise, and supervise trade packages. Construction management is useful in volatile economic and industrial climates by helping to reduce the time and cost of project delivery. Clients can modify specifications of later trade packages according to changing project requirements. However, the early involvement of the contractor in a Design and Construct project should help to improve the constructability of the facility. Hence, in all methods of building procurement, it is the client's responsibility to define their requirements.

The project clients should be aware that problems often arise as a result of poor briefing, poor documentation, poor co-ordination, client changes and difficult site conditions.

The purchase of everyday items is relatively simple and usually involves some form of evaluation, selection and payment as stated in the Office of Building and Development, (1997). However, with the acquisition of a building or construction facility there are significant factors associated with the choice of procurement method which will impact on the success of a building project. That is:

- a) having a clear understanding of project objectives and constraints
- b) defining the roles of the various contracting parties
- c) considering the fair allocation of risks and obligations between the contracting parties to the contract

Poor management of these factors will significantly give rise to: claims and disputes; additional costs; delays in completion and a failure to achieve project objectives. However, if these issues are managed properly, a project will significantly achieve its time, cost and quality objectives, in addition, client satisfaction.

## 6.0 CONCLUSION AND RECOMMENDATIONS

As Building services is an important aspect of building, then choosing the right procurement method is vital to the success of a building project; thus, require a critical examination. Noteworthy, the construction parties risk management strategy will strongly influence the choice of a procurement method. However, in acquisition of a building or construction facility there are significant factors associated with the choice of procurement

method which have impact on the success of a building project. Among these factors are a clear understanding of project objectives, identifying the project constraints and clear understanding of the roles of the contracting parties.

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## A COMPARATIVE STUDY OF THE PERFORMANCE OF TRADITIONAL AND DESIGN & BUILD PROCUREMENT METHODS IN LAGOS STATE.

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### **ABSTRACT**

*In recent years, there has been a remarkable increase in the use of design and build procurement method in Nigeria. This trend is based on the presumption that it offers better prospect for higher performance on projects relative to the traditional procurement method. This research investigates the performance of these two procurement methods in order to determine if effort at embracing design and build procurement method has translated into any significant improvement in project performance. Data were collected, through the administration of questionnaire, from 57 randomly selected respondents on the performances of these methods. Statistical analyses were carried out using descriptive analysis and mean response analysis. A general consensus exists among clients, consultants, contractors and other stakeholders of the building industry on the criteria considered as appropriate measures of performance for a project for the procurement method adopted for the project. The results reveal no significant difference in the performance of the two procurement methods in respect of all variables relating to quality. This study discussed the relative performance of the two procurement methods evaluated. More research effort is recommended to raise the general level of awareness on project performance among all stakeholders in the building and construction industry.*

**Key Words:** Design and Build, Construction Projects, Lagos State and Traditional Procurement.

### **INTRODUCTION**

The overall goal of project management is to meet client's requirements and ensure completion on time, within cost limit and to the required standard of quality. The procurement method adopted for a project is increasingly being seen as a key element in achieving this vital goal. Clients are raising their expectations and construction industry practitioners have

challenge to produce client driven timely, cost effective and high quality outcomes. These various procurement methods in use in the construction industry are differentiated by their management structure, design management, liability and risk sharing, tendering procedures and determination of the contract price.

Though the traditional form of procurement is still the most widely used,

other forms are growing in popularity and acceptance. The design and build method is the most prominent of such alternative systems. According to Dickerson (2002), the growing interest in design-build projects has taken shape over the last few years. Banik (2001) asserted that design-build is the fastest growing construction project delivery system in the United States.

With all these four-reaching developments, there has however been no significant interest shown in procurement. Ogunsanmi and Iyagba (2001) stated that whether the projects that were commissioned by government and other various clients had performed or not, nobody bothers provided the building has been completed and delivered to the owner.

#### **CONCEPT OF PROCUREMENT**

Procurement has been defined by various researchers in ways that clearly distinguishes it from contract system. In the context of the Code of Practice for project management, procurement is defined as the process by which the necessary contributions of the various participants in the design and construction phases of the project are secured (CIB, 1996). In the same vein, Bamisile (2004) stated that the procurement method chosen for a project will determine the relationship, obligation and the line of communication between the client, consultants and the contractors.

On the other hand, Ogunsanmi (2003) adopts the working definition of procurement as developed by International Council of Building

Research Studies and Documentation (CIBW 1992) as the framework within which construction is brought about, acquired and obtained.

But Omotosho (1999) sees it more or less as a concept rather than an absolute way of realizing projects. It is one of the several functions of the project delivery chain which should not be confused with tendering procedures or types of contract. The distinguishing features of any procurement system would therefore include:

- The design and construction phase
- Parties to execute the project
- Contractual arrangement for the execution of the project.

#### **PROCUREMENT AS A CENTRAL ISSUE IN THE CONSTRUCTION INDUSTRY**

The contribution of the construction industry to the socio-economic development of any nation has been recognized by industry watchers. Windapo and Iyagba (2001), regard the construction industry as an important sector of every economy, playing an essential role in socio-economic development. Odusanmi (2000) contends that construction output form a significant share of capital formation in developing countries.

The contribution of the construction industry to national economic growth necessitates improved efficiency in the industry by means of cost effectiveness and timeliness and would certainly contribute to cost saving for the industry as a whole (Aibinu and Jagboro, 2002). Table 1 is an adaptation of the comparison.

Egan report (1998) recognises that the industry as a whole is underachieving. It has low profitability and invests too little in research, development and training. Also, too many clients are dissatisfied with its overall performance. But clients of the industry as opined by Harris and McCaffer (2002) are becoming

more exposed and demanding and are beginning to query hitherto held views and concepts and opting for ways that can give them maximum satisfaction. Nubi (2000) contends that the solution to the retardation in the industry is embracing modern procurement methods.

Table 1

Wants	Modern Motor Car	Modern Building		
		Domestic	Commercial	Industrial
Value for money	*****	*****	*****	*****
Pleasing to look at	*****	*****	*****	*****
Largely free from faults	*****	*****	*****	*****
Timely delivery	*****	*****	*****	*****
Fit for purpose	*****	*****	*****	*****
Guarantee	*****	*****	*****	*****
Reasonable running cost	*****	*****	*****	*****
Durability	*****	*****	*****	*****
Customer delight	*****	*****	*****	*****

Source: Ashworth (2001)

From the foregoing therefore, it would appear that procurement is now seen as being extremely important in transforming the construction industry. It is no wonder then, as observed by Ashworth (2001), that changes in the methods of construction procurement have been one of the most fundamental driving forces within the construction industry during the past decades. Ogunsanmi (2003) sees construction procurement process as the totality of all processes involved right from conception to use of the facility. When procuring a new building, the two most easily and

commonly recognized tasks are 'design' and 'construction' (Bamisile 2004). Some of the essential differences as highlighted by Bamisile (2004) include:

- i. Tradition tends to separate the design and production processes while manufacturing adopts integrated process.
- ii. Almost all building projects are unique with the production process representing a single production run.
- iii. Inspection and supervision of building construction work is less systematic than in manufacturing

- where inspection procedures can be clearly controlled.
- iv. Considerable mobility of design and production teams precludes development of long-term production teams and each construction site is clearly controlled.
  - v. Feedback from the building in use to the designers is remote from the actual time of design and production and often precludes the useful analysis of the defectiveness of design and construction.

#### **PROCUREMENT METHOD IN USE**

There are a number of procurement methods in use in the construction industry. Franks (1990) identified the following methods:

- a) Traditional system
- b) Management contacting/  
Construction management
- c) Package deal/Design and build
- d) Project manager/Client's  
representative
- e) The British property federation  
system.

Ogunsanmi (1997) declares that a client can use any of the seven procurement systems suitable to its organisation to procure building works. These include the traditional procurement system, three types of design and build- design and construct, design and package deal or turnkey. Also listed are the management procurement systems of management contracting and project management.

Nubi (2002) highlighted different procurement approaches from Austen and Neal which in ascending order of the degree of integration between design and construction are as follows:

- a) Traditional approach
- b) Accelerated traditional approach
- c) Management contracting
- d) Construction management
- e) Project management
- f) Design and build/Turnkey
- g) Build-Operate-Transfer

Mojekwu (1998); Ogunsanmi and Bamisile (1997) and Omotosho (1999) identified five broad classes of procurement methods that is in use in Nigeria. They are:

- Traditional method
- Design and build
- Management contracting
- Labour only
- Direct labour system.

The differences in characteristics of the various procurement systems are noted by Rowlinson (1999) are principally in the areas of how liability for design and procurement is assigned, how the tenderers of each method is selected, the contract pricing system used and who assumes responsibility for project design.

#### **TRADITIONAL PROCUREMENT METHOD**

Under this method, the responsibilities for the design and construction aspects of the project are that of separate organisations (Koleoso, 2001). Accordingly, the client enters into separate contracts with each member of the design team (i.e. the

architect, quantity surveyor and other consultants for design and cost control functions and later selects a contractor to execute the project (Ogunsanmi, 2003). Ogunsanmi (1997) summarizes the make-up of the traditional procurement process as a process whereby the architect develops the client's brief and in conjunction with the other consultants, the design and other tender documents are produced. Based on the available production information and tender documents, tenders are invited from main contractors. Pre-selection of the contractors is done and hence final selection is also achieved by competition or negotiation at the construction stage, the architect often acts as the leader of the client's representative to administer the contract and coordinate the project. Also, the quantity surveyor provides the financial control system for the project.

#### **DESIGN AND BUILD PROCUREMENT METHOD**

(Ashworth, 2001; Songer and Molenaar, 1997) define design and build is a procurement arrangement where one single entity or consortium is contracting responsible to the client for both the design and construction of a project. This according to Ogunsanmi (1997), allows one point accountability to the client and for the contractor to have full control over major parts of the work. With a design and build arrangement, instead of the client approaching an architect for separate design services, he chooses to go directly to a contractor for an all-in design and construction commission (Igwe, 2002). The main variants of the system as

highlighted by Turner (1997) are as follow:

**Direct:** in which no competition is obtained in tenders. Only one tender is obtained even though some appraisal of possible competitors may be made before tendering.

**Develop and Construct:** Consultants design the building requirement and stage often called a 'scope design' and then obtains competitive contractors who develop and complete the design and then construct the building.

**Package Deal,** which is often, used where the contractors competing will use a significant part of their own or another's proprietary building system or they will be constructing variations of repetitive theme..

**Turnkey:** the 'key' referred to its perhaps to symbolise that the client's only apparent required action, in addition to paying money by means of a lease or outright purchase, is to "turn the key" and take up occupation.

**Private Finance Initiative (PFI):** arguably seen as an example of turnkey on a grand scale.

**Build-Own-Transfer (BOOT):** the BOOT organisation is given a license to operate the facility for a given period during which period they can make charges by way of a toll, or a rent or a fee for the use of the facility. When their term of operation comes to an end, ownership of the facility is then transferred to the commissioning organisation.

**CHOICE AND USAGE OF THE SYSTEM**

**PROCUREMENT METHOD SELECTION**

Public awareness of procurement performance generally and in Nigeria particularly is seen as not commensurate with the considerable research effort that have been devoted to finding the relationships between procurement and project performance. Ogunsanmi (2001) opined that, it is surprising though that quite a lot of projects had been procured in this country but none of the key players in housing procurement has shown significant interest in procurement performance, according to him,

completion to time, cost and quality seems to be elusive to clients, consultants and contractors.

Dada (2003) in seeking to determine the awareness of the various procurement strategies avers that the Nigerian construction industry participants have knowledge of some methods that integrate organisationally the design and construction processes. Hence, Ogunsanmi (2003) recommends that the culture of imbibing procurement performance in projects should be practiced by all professionals, consultants and shareholders in the construction industry as to improve on all coming project and also manage better future projects in the country.

**TABLE 2: APPRAISAL OF THE TWO PROCUREMENT METHODS**

<b>TRADITIONAL METHODS</b>		
	<b>ADVANTAGES</b>	<b>DISADVANTAGES</b>
1.	It is commonly used and most Clients are familiar with it.	It consumes time both at commencement and completion stage of projects.
2.	It is highly favoured in terms of its quality consideration for effective management.	It cannot be used effectively for large and complex projects
3.	There is inherent capacity to monitor and control cost during the design and construction stage.	It makes coordination of information and resources difficult.
<b>DESIGN AND BUILD METHOD</b>		
1.	It enables the contractor to offer the benefits of specialised construction knowledge and methods.	There is inability to provide effective monitoring, control of cost and quality standard.
2.	It reduces the time spent in traditional tendering procedure.	
3.	There is no claims by contractor for due to lack of information since he has the full responsibility of design and build	
4.	It protects the Client against the risk of cost overruns.	

### **PERFORMANCE MEASUREMENT MEASUREMENT CRITERIA AND PERFORMANCE VARIABLE**

Performance measurement in the construction procurement process is as important as in the manufacturing process where companies in a broad range of industries have committed substantial resources to develop performance measures for their products, services and operations. In reality the design of performance measures has often been influenced and sometimes solely determined by the availability of data or ease of measurement rather than the true value of information captured (Chang and Ibbs, 1998).

It has been established that individual categories of clients adopt different criteria in determining the success of projects (Koleoso, 2001). Differing client characteristics will generate different expectations and criteria for achieving satisfaction with respect to cost, time, quality and use of building and hence will influence the client's selection of a procurement method and subsequently the performance of the project (Ogunsanmi, 2001).

### **TIME**

Delivery on time is one of the universal goals in project development. (Aibinu and Jagboro 2002). A major criticism facing the Nigerian construction industry is the growing rate of delays in project delivery.

### **COST**

The importance of cost as a major consideration in project development is well reflected in the scriptural verse from

the Holy Bible “For which of you intending to build a tower sitteth not down first and counteth the cost, whether he have sufficient fund to finish it?” (Luke 14:28). Masterman's survey reveals more subtle and important secondary criteria for project satisfaction in terms of cost (Koleoso, 2001).

### **QUALITY**

Quality is interpreted differently in the literature. Quality is the totality of characteristic of an entity that bears on its ability to satisfy stated or implied needs (PMI, 2000). A quality process is one that continually improves (Stevens, 1996). According to the ISO 9000 standard, quality is the degree to which a set of inherent characteristic fulfils the requisites (Serpell and Labra, 2002). The design expressed in the form of drawings and specifications plays the role of yardstick for assessing conformance”.

### **RESEARCH METHODOLOGY**

This study is a survey research that utilizes cross-sectional design to obtain the primary data. Population of the study consisted of Architects, Builders, Engineers, and Quantity Surveyors. Random sampling technique was employed in selecting the desired sample from the population of the study. The sample size consisted of 93 questionnaires that were sent to different respondents. Out of which only Fifty-Seven (57) were retrieved and fitted for analysis and representing a response rate of 61.3 Percent. The survey questionnaire solicited information on the bio-data of the respondents (such as their academic

qualification, working experience etc), procurement method adopted for the project, criteria for judging the performance of project, data related to project quality. Descriptive statistics in form of tables, mean-item scores and frequency ranking were used for analyzing the primary data.

**DATA ANALYSIS PRESENTATION AND SUMMARY OF FINDING**

**Analysis of Demographic Data**

The analysis shows that architects and quantity surveyors top the list of respondent with respective frequencies of

16 and 15 which represent a combined proportion of about 57 percent. Civil engineers constitute about 17 percent of the respondents, builders 15 percent while the rest are either project managers or mechanical/electrical engineers. These respondents are affiliated to two or more professional bodies are about 27 percent, while the rest have affiliation to one professional body.

All the projects had at least a supervising consultant as can be seen from Table 4. In most of the projects 4 or 5 supervising consultants were involved.

**TABLE 3: PROJECTS ACCORDING TO NUMBER OF SUPERVISING CONSULTANTS INVOLVED**

No of supervising Consultants	Frequency	Percentage (%)
1	12	21.8
2	9	16.4
3	4	7.3
4	20	36.4
5	8	14.5
No response	2	3.6
<b>Total</b>	<b>55</b>	<b>100</b>

**PROCUREMENT METHOD ADOPTED AND RATIONALE FOR THE CHOICE ADOPTED**

For each project which data is filled into the questionnaire, respondents were asked to indicate the procurement method adopted. Of the 55 projects analysis, 31 of them representing 56.4% were delivered using the traditional procurement method while 23 numbers (41.8%) used design

and build procurement method. The respondents were also asked to indicate the rationale for the choice of the procurement method adopted for the project. 47.3% indicated that the choice of procurement method was made on the basis of clear knowledge of its apparent advantages over other methods. 29.1 % said the choice was made based on recommendation. A negligible proportion

(7.3%) of respondents cited lack of awareness of other methods as the rationale for sticking to the procurement method adopted for their projects. See Table 4

**TABLE 4: RATIONALE FOR CHOICE OF PROCUREMENT METHOD**

Rationale for choice of method	Frequency	Percentage (%)
Clear knowledge of advantages	26	47.3
Lack of awareness of others	4	7.3
On recommendation	16	29.1
Other reasons	8	14.5
No response	1	1.8
<b>Total</b>	<b>55</b>	<b>100</b>

The results of the responses received on the respective ratings for the various criteria in respect of their importance in judging the performance of project and of procurement method are summarized in Table 5

**TABLE 5: PROCUREMENT METHOD PERFORMANCE CRITERIA**

S/N	Criteria for Judging Performance	Proportion of Respondents (%)	Rank
A	Shorter delivery time or speed of total process	77.7	1
B	Degree of duration certainty or minimum time overrun	62.9	6
C	Lowest possible cost or cost economy	62.9	6
D	Degree of cost certainty or minimum cost overrun	67.3	5
E	Low maintenance/Life cycle cost	61.8	8
F	Aesthetic quality of design and workmanship	70.9	4
G	Conformance to design & specification	74.5	3
H	Functionality & fitness for purpose	75.6	2

It can however be observed from the MIS table that the most important criterion for judging performance is shorter delivery time or speed of total process and the least is low maintenance/life cycle cost. Also, of the two criteria relating to project time, shorter delivery time is more important than degree of duration certainty or minimum time overrun. Moreover, of the three criteria relating to project cost lowest possible cost or cost economy is the most important, while conformance to design and specification is the most important of the three criteria relating to project quality.

**TABLE 6: RANKING OF THE CRITERIA FOR JUDGING PERFORMANCE ACCORDING TO MIS**

Criteria for Judging Performance	level of Importance					Mean Item Score (MIS)	Rank
	Not (1)	slightly (2)	Fairly (3)	Very (4)	Extremely (5)		
Shorter delivery time or speed of total process	2	2	8	22	20	81	1
Conformance to design & specification	2	6	6	6	23	0.8	2
Lowest possible cost or cost economy	1	3	16	18	16	0.77	3
Degree of cost certainty or minimum cost overrun	1	6	11	22	15	0.76	4
Aesthetic quality of design and workmanship	5	5	6	21	18	0.75	5
Degree of duration certainty or minimum time overrun	1	8	11	20	14	0.74	6
Functionality & fitness for purpose	2	1	7	16	15	0.72	7
Low maintenance/Life cycle cost	4	7	10	23	11	0.71	8

**COMPARATIVE RESULT OF PROCUREMENT METHOD IN RESPECT OF PROJECT TIME VARIABLE**

The variance from the design time is more or less the same for traditional procurement method as it is for design and build method. For the construction period, the variance is much less for the traditional method but the overall schedule variances is more or less the same for both methods though slightly less for design and build method. Worthy of note is the fact that the variance from

ideal completion time is more for design and build method. This is understandable in view of the fact that there is rarely any competitive proposal in respect of time at tendering stage.

The result reveals that there is higher cost of certainty in the design and build projects but the difference is marginal. Cost variance and cost of variation are more or less the same for both methods. It would appear though that design and build method has better cost economy as seen from its almost zero variance from its ideal completion cost.

**TABLE 7: COMPARATIVE RESULT OF THE PROCUREMENT METHODS IN RESPECT OF THE REASONS OF COST OVERRUN**

S/N	Responses (reason for cost overrun)	Traditional method	Design & Build method		
		Frequency	Percentage	Frequency	Percentage
A	Variations, etc	13	41.9	12	52.2
B	Fluctuations, etc	6	19.4	5	21.7
C	Delayed completion	3	9.7	0	0
D	Re measurement	3	9.7	0	0
E	initial underestimation	0	0	2	8.7
F	Others	0	0	0	0

**TABLE 8 SUMMARY OF QUALITY RATING FOR THE PROCUREMENT METHOD BASED ON THEIR MIS**

Quality Criteria	Procurement Method	Rating Score				Mean Item Score (MIS)
		Very High(4)	High (3)	Average (2)	Poor (1)	
Design Aesthetic	Traditional	9	17	3	0	0.802
	Design & build	9	10	4	0	0.804
Extent of detail & specification	Traditional	6	12	11	0	0.707
	Design & build	6	13	4	0	0.772
Conformance to design & specification	Traditional	7	18	4	0	0.776
	Design & build	10	12	1	0	0.848
Quality of construction	Traditional	5	19	5	0	0.75
	Design & build	7	11	5	0	0.772
Meeting functional expectations	Traditional	9	16	4	0	0.793
	Design & build	10	10	3	0	0.826
Adequacy in term of safety standard	Traditional	5	18	6	0	0.741
	Design & build	5	13	5	0	0.75
Minimal maintenance requirement	Traditional	6	10	13	0	0.69
	Design & build	4	14	5	0	0.739
Level of satisfaction to the client	Traditional	10	19	0	0	0.836
	Design & build	8	12	3	0	0.804

## CONCLUSION AND RECOMMENDATION

### Conclusion

Based on the result of the analysis the following can be concluded:

There is no significant difference in the performance of traditional and design and build methods in terms of design time, tendering time, construction time, total completion time and ideal completion time.

Also, there is no significant difference in the performance of the two procurement methods in term of cost certainty, construction cost, variation cost, ideal completion cost and maintenance/running cost.

Thus, this research work has helped to confirm that there is no significant difference between the performances of design and build procurement method and traditional method in general.

### Recommendation

In light of the above, the following recommendations are been made:

On the subject of procurement, more research work should be done in order to produce more empirical basis for the acceptance or rejection of the various claims by protagonist of each of the different procurement methods.

Those procurement methods which valid research findings consistently prove to have engendered better performance and efficiency to the building and construction industry should be embrace encourage and fine-tuned for better performance.

An enabling environment should be created for other alternative methods to

thrive and grow or fade off depending on what they have to offer over the prevailing methods. The appropriate circumstances in which each of these methods should be adopted be better defined in order to lessen the dilemma of the industry stakeholders in the choice of an appropriate procurement method for any project.

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## FINANCE: ITS INFLUENCE ON THE HOUSING INVESTMENT AND DELIVERY DECISIONS BY PRIVATE SECTOR IN LAGOS.

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### ABSTRACT

*The private sector investor in housing is often profit driven, and depends on his equity contribution and loan which make up capital to fund housing development and delivery. Raising capital is at a cost, to be able to meet the cost and make profit in the short and long run, the private sector has to be prudent in the housing investment decision made. Therefore this work sought to establish if the availability of capital influences urban housing decisions made by the private sector, to public liability and limited liability companies, partnerships and sole proprietorships. Questionnaires were administered to and the responses were analyzed using SPSS (statistical package for social sciences). The hypotheses were tested using chi square test since the natures of the responses were categorized and in frequencies. The results were found to be mostly significant and in such cases the Null hypothesis accepted. The findings showed that the activities of the private sector have been impaired by the unavailability of adequate capital. Thus is due to low capital base of the organizations, the high cost of borrowed fund and stringent lending terms. These have hindered the private sector from adequately contributing to housing the different income groups in Lagos. Based on these findings the following recommendations among others were made. The private sector should widen their capital base and fund mobilization base by embracing the concept of unitization or the pulling together of resources to enable large scale development and delivery.*

*Key words: Capital, housing delivery, investment, private sector.*

### Introduction

The National Housing policy of 1991 acknowledges that over 90 percent of the available stocks of urban housing are produced by the private sector. The policy also accords recognition to the importance of the private sector participation and delivery.

Chapter 8 of the policy is mainly devoted to the mobilization of the private sector, identification of the problems encountered by the private sector and the

provision of accommodation for different income groups in the country.

Despite the promulgation of the policy almost two decades ago, there is still shortage of dwellings in Nigeria and the situation is still at crises level. In Nigeria, 85 percent of the urban dwellers live in rented single room apartments mainly in informal settlements with occupancy rate ranging between 8 to 12 persons per room (Ajanlekoko 2001, and Omirin 2007).

The above situation, perhaps is most

obvious in Lagos, being the most urbanized state in Nigeria (Odumosu and Adedokun 1987). Recently the Brinkoff, in principal agglomeration of the world, ranked Lagos 25<sup>th</sup>, with a population 11,800,000 and annual growth rate of 3% to 20%. It also predicted that by the year 2015 Lagos will be the third largest mega city after Tokyo and Bombay in India (Castle 2010).

The housing situation in Lagos therefore will be further complicated by this predicted population growth rate. There are housing difficulties particularly of the low-income group, inflated real estate values and speculative activities. Also low cost homes provided by the public sector are bought or 'hijacked' by car owning, low income individuals (Akintola 1998, and Agbola and Adegoke 2007). Rents have escalated by between 800 percent to 1000 percent of their 1990 levels (Omirin 2007). The low income and incomeless are forced into informally produced sub-standard units in slums and peri-urban areas.

Ideally housing should be provided for the teaming population that falls into different households of varying socio-economic status, diverse cultural background and age brackets. The private sector as an acknowledged actor in housing delivery is expected to do this.

Ironically, the private is viewed as institutions, firms and individuals active in different aspects of shelter process but always organized to generate profit on the investment of their resources (UNCHS 1993). Therefore the private sector being aware of its resources and the capital intensiveness of housing, aims at striking

a balance between resource input and profit or returns.

Given this scenario, is it possible that the private sector would be discriminating in the housing investment decisions it makes? This work seeks to provide pertinent answer to this question.

To this end the aim of this work is to determine what influences the urban housing investment decisions made by the private sector. Based on this, the following objectives are pursued.

1. Investigating if the capital needed for the development and delivery of housing is available to the private sector.
2. Establishing if the availability of capital determines the availability of other inputs in housing development and influences the private sector decision to target certain segments of the population.
3. Finding out if the private sector housing investment is targeted towards specific segments of the population.

### **Housing Investment**

Housing may mean different things to different people depending on the circumstances and perspectives from which the concept is viewed. Early writers like Adams (1964) asserts that housing is not just shelter, but part of the fabric of neighborhood life and the whole social milieu, it touches upon the facets of industrialization, economic activity and development.

Miles (1974) summarizes the concept of housing into three as follows; economic,

social and environment. Housing is also conceived as an economic food or commodity, a consumer durable good, which is traded or exchanged in a market and as an investment good which returns equity to its owner (Bourne 1981).

The economic significance and investment potentials of housing have been affirmed by several writers, (Omirin 1992, Agbola 1998, Nubi 2000, Ogueffi and Adesanmi 2004 and Agbola and Adegoke 2007). Their assertions are confirmed by IFC (2003), stating that investment in housing accounts for between 15% and 35% of aggregate investment worldwide. Also, personal residences account for between 75% and 90% of household wealth in emerging market economies, and that housing represents between 15% and 40% of the monthly expenditure of households worldwide.

Investment in housing is carried out by the public sector, private sector, including private persons or individuals. However, it has been severally argued that the public sector alone is not a good investor and cannot solve the housing problems (Mabogunje 1978, Agbola 1998). As early as 1969, Freedman gives the responsibility for housing production and delivery to the private sector when he asserts that housing delivery should be left to the private sector; hinging his argument on the strength of capitalism (Agbola and Adegoke 2007). The arguments in the favour of private sector are based on the efficiency and effectiveness of the private sector as well as the corruption and inefficiency of the public sector (Agbola and Adegoke 2007).

Therefore, in recent times the role of the public sector or national governments in the provision of housing has changed. According to Forest (2008) there has been a retreat from direct state provision of housing which has been paralleled by the growth of individual home ownership and more market oriented housing systems. Forest (2008) further argues that the reduction in direct housing provision by the state or public sector has diminished state capacities to respond as effectively as in the past to the shifting housing needs and demands of the population. Thus, there is now greater reliance on the private sector for housing provision. The private sector has been more efficient in both production and delivery of housing to all categories of the population (Agbola and Adegoke 2007). However Omirin (2007) contradicts this view, asserting that low-income housing is unattractive to the private sector investors, and further argues that low income housing is risky, perceived to be relatively unviable because it is mostly rental tenure with poor capital recovery potential; involves problematic management practices, carries welfare connotations which make it prone to government interventions which affect profitability.

### **The Private Sector**

The private sector is categorized into organized and unorganized private sector. The organized private sector, consists of formal organizations mostly set up by law and have organized and identifiable offices, employ a number of staff and keep proper books of accounts. In this category are financial institutions, trading and

manufacturing companies, oil companies, property development companies e.t.c. The unorganized private sector is on the other hand characterized by informal organizations and private individuals.

In whatever context this is looked at, both categories participate in housing development, as discussed elaborately by (Parson 1989, Ajayi 1995, Agbola 2000 and Udoetuk 2000); the investor, dealer, house owner and business or the owner-occupier for business purposes.

Also in some instances an owner may hold property for more than one objective e.g. an owner-occupier may sublet part of his premises; in which case he expects rental income which is an investment.

### **The Cost Components**

Since the primary motive of the private sector is usually financial return, cost in relation to return plays a vital role. Oyiboka (1996) opines that housing development process means adding capital to land resources to alter its natural state or form, changing the use of and demolishing old structures and erecting new ones. This process involves cost implications. Cost guides the private developer on the type, size, timing of the development and the resources to use out of the available ones and the prospect returns. Thus Barlowe(1978) and Nwuba (1991) see costs as those associated with the out lay of cash and human effort, time, supersession and social costs; although stressing the social costs are less important to private developers. Lichfield (1974), Ratcliff (1981) and Serbeh-Yiadom (1993) are of the opinion that the main costs in terms of outlay of cash or

financial cost associated with housing development are land cost (acquisition and supersession cost) statutory cost, construction cost, consultancy/ professional cost and cost of funds or capital.

The final cost of housing is obviously influenced by the cost of land, construction and finance for construction. According to Okpala (1994) next to land and building materials, housing finance is perhaps the most important factor in housing production and considering that adequate finance can help the purchaser of land and materials.

Due to the large outlay of resources involved most real estate transactions involve debt financing, and borrowing is usually the major source of funds (Greer and Kolbe 2003).

Therefore, the investor mixes borrowed funds with equity (his personal resources) and creates a financial leverage. Greer and Kolbe (2003) further explain that the higher the ratio of borrowing to equity, the greater the degree of leverage. Higher leverage magnifies the yield on the investor's equity funds, multiplies the tax deduction for depreciation expense, and amplifies the benefit from favourable tax rates applicable to capital gains. Greer and Kolbe (2003) further explain that a highly leveraged investment even a small favourable spread significantly magnifies return on equity.

On the other hand a small negative spread (i.e. unfavourable leverage) on a high leverage deal will negatively affect the yield to equity investor. This can make what would otherwise have been a good investment venture bad.

Housing development finance open to a private sector developer, can be classified with reference to the duration of credit as follows; short i.e. bridging or front finance; medium, and long terms. These finance types can be sourced from commercial banks, development banks, insurance companies and pension funds. Sale and lease back, mortgage, contractor finance, syndication are some methods of providing credit to the private sector.

The cost of finance i.e. interest rate is high and has fluctuated between 18% p.a. to 22% p.a. in the last 5 years (CBN 2009). Most often the interest burden surpasses the income from the investment leading to reverse yield back, which is the bane of the private sector developer. Also the extent or form taken by capital will depend on the interest rate. The interest rate encourages or discourages investment in housing since the developers hope for a growth potential in future having foregone an immediate benefit or reward.

### **Research Method**

#### **Source of Data**

The primary source of data was from questionnaire administration, and secondary source from scholarly journals, books and professional publications e.t.c.

The questionnaire was administered using convenience sampling a non probability

sampling method. The sampling frame is based on data from property development companies as advertised in major newspaper publications in the last one year. A representative population of 40 made up of public liability companies, partnerships and sole proprietorships were chosen. HFP, UAC properties and Stallion properties major players in housing delivery were specifically included. The research hypotheses were tested using the chi-square test since the nature of responses were categorized; also Relative Index was employed for ranking of the factors / variables.

### **Data Presentation, Analysis and Discussion of Findings**

Data has been analyzed using percentages and the chi-square since the nature of responses were categorized. The Likert scale was also used.

### **Characteristics of Respondents' Organizational Structure**

As a first step towards understanding the nature of a particular problem in a study such as this, its component characteristics have to be known. In this case therefore, the organizational structure, capital base, and number of housing units delivered to date were considered and further summarized in tables 1, 2 and 3.

**Table 1 Respondents’ organizational chart**

Organizational structure	Frequency	Percentage
Limited Liability	16	57.1
Public Liability	1	3.6
Partnership	5	17.9
Sole Proprietorship	6	21.4
Total	28	100

As shown in table 1, limited liability companies constitute 57.1%, public liability companies 3.6%, partnership 17.9% while sole proprietorship 21.4%. This infers that most of the respondents are limited liability companies.

**Table 2 Respondents’ capital base**

Capital base	Frequency	Percentage
Below N300m	15	53.6
N501m – N1b	9	32.1
N1.01b – N1.5b	1	3.6
N1.51b – N2.0b	1	3.6
Above 2.0b	2	7.1
Total	28	100

Considering the capital base of the private sector, it was indicated from the table 2 that 53.6% have capital base below N500 million, while 32.1% have between N501 million and N1 billion, while 3.6% have between N1.01 billion to N1.5 billion, and 3.6% have between N1.51 billion to N2 billion, while 7.1% have above N2 billion. It is clear from the above table that most organizations have below N500 million capital base. Reasons for this could be that their sources of finance are mainly from banks and financial institutions (shown in table 3) which is not used to acquire fixed assets but is used for raw materials, equipment and working capital. However, the more capital base of a company, the more eligible the company may be for credit facilities.

**Table 3 Respondents’ Sources of Finance**

Source of finance	Frequency	Percentage
Bank and other financial institutions	17	60.7
Savings	4	14.3
Funds from other Investments	7	25.0
Total	28	100

Table 3 shows that 60.7% of the respondents source funds/capital from banks and other financial institutions. 14.3% use their savings while 25% use the funds from other investments within their portfolio or in other words consociate

funds.

This interferes that the private sector depends mainly on the banks and other financial institutions for funds. This means they have no direct control over their source of funds.

**Table 4 Estimated number of housing units delivered by respondents to date.**

Housing Units	Frequency	Percentage
0 – 250 units	12	42.9
251 – 500 units	8	28.6
501 - 750 units	6	21.4
751 – 1000 units	1	3.5
Above 1000	1	3.5
Total	28	100

In table 4, we sought to know the actual number of housing units that respondents have been able to deliver to date. Analysis of the result shows that 42.9% of the respondents have been able to deliver below 250 units, while 28.6% delivered 251 – 500 units. The next 21.4% delivered

between 501 and 750 units, and the remaining 3.5% and 3.5% delivered 751 to 1000 units and above 1000 units respectively. When this result is weighted against the annual estimated housing need of 107,000 units, the above range is low and short of expectations.

**Table 5 Respondents’ views on the investment capital for development and delivery of housing**

		SD	D	SA	A	Und
V2	Availability of enough capital/fund for the organization to undertake the housing delivery	60.7	32.1	0	0	7.1
V3	Willingness of financial institutions and banks to give loan/credit	15	39.5	28.6	7.1	0
V4	Loan interest rates and loan repayment terms are good incentives to private developers/creditors.	35.7	35.7	17.9	10.7	0
V5	Availability of capital determines the ability to procure land for housing delivery	0	17.9	35.9	35.9	10.7
V6	Availability of capital makes the procurement of building materials easier	0	0	60.7	39.3	0

V7	Workers and professionals in the building industry are easily engaged when capital is available	0	0	39.3	57.1	3.6
V8	Availability of capital is a major factor determining the rate of housing delivery	7.1	14.3	28.6	35.7	14.3
V9	Availability of capital/funds at lower interest rates and better repayment terms will increase the rate of housing delivery	3.6	10.7	28.6	50	7.1
V10	The private sector concentrates on the delivery of flats, semi detached and detached houses.	7.1	14.3	28.6	42.9	7.1
V11	The private sector provides housing mainly in low and medium density residential neighborhoods.	3.6	10.7	35.7	42.9	7.1
V12	The private sector concentrates on housing delivery for the high and medium income earners than low income earners.	7.1	14.3	28.6	35.7	14.3
V13	Capital / fund invested is recouped faster when housing is for the high income earners.	0	7.1	50	28.6	14.3
V14	High cost of capital / fund is a major reason for providing mainly flats, semi-detached and detached houses	0	7.1	50	35.7	7.1

**Key -:** V = Variable, Und = Undecided = 0, SD = Strongly Disagreed = 1, D = Disagreed = 2, SA = Strongly Agreed = 3, A = Agreed = 4.

One sought to know the response of respondents on whether there is enough capital/fund at their disposal to undertake housing delivery **V2, V3** and **V4**.

**V2** shows 60.7% of the respondents strongly disagree and 32.1% disagree that there is enough capital, while 7.1% undecided.

This means that the greatest percentage of the respondents strongly disagree that there is enough capital/fund at their disposal.

**V3** shows that 28.6% and 39.3% strongly disagree and disagree respectively that banks and financial institutions are always willing to give credit/loans, while 35.7%

agree and strongly agree that these institutions are always willing to give credits/loans.

This result shows that a greater percentage disagree that these institutions are willing to provide loans. However, a reasonable percentage of the respondents are of the opinion that the financial institutions do give loans.

**V4** shows 35.7% and 35.7% of the respondents strongly disagree and disagree respectively that loan interest rate and loan repayment terms are good incentives to private sector housing developers, while 17.9% and 10.7% strongly agree and agree respectively.

Respondents' view on the availability of capital in determining the availability of the other inputs in housing delivery i.e. land, labour and building materials is

shown with V5, V6, V7.

V5 shows 35.9% and 35.9% of the respondents strongly agree and agree respectively that the availability of capital determines the ability to procure land while 17.9% disagree and 10.7% are not sure that availability of capital determines the ability to procure land for housing delivery.

This infers that, although a greater percentage agree that availability of capital ensures the procurement of land, the others believe that capital is not the only determining factor in the procurement of land for the housing delivery.

In V6 one sought to know if the availability of capital /funds makes the procurement of building materials easier. 60.7% and 39.3% of the respondents strongly agree and agree respectively that availability of capital makes for easier procurement of building materials.

V7 shows 39.3% and 57.1 of the respondents strongly agree and agree respectively that the availability of capital makes it easier to engage workers and professionals in the building industry. However, 3.6% of the respondents are not sure that availability of capital makes engaging labour in the building industry easier.

Respondents' view on the availability of capital determining the rate of housing delivery, shown by V8 and V9.

V8 28.5% and 35.7 of the respondents strongly agree and agree respectively that availability of capital is a major factor determining the rate of housing delivery. While 7.1% and 14.3% of the respondents strongly disagree respectively and 14.3%

of the respondents are not sure.

This infers that although a greater percentage of the respondents agree that the availability of capital is a major determining factor in housing delivery, the other respondents believe that there are other factors apart from capital which determines the rate of housing delivery by the private sector.

In V9, 28.6% and 50% of the respondents strongly agree and agree respectively that capital is made available to the private sector at lower lending rates and better repayment terms there will be an increase in the rate of housing delivery. While 3.6% and 10.7% of the respondents strongly disagree and disagree respectively, and 7.1% of the respondents are not sure.

This results indicates that although a greater percentage of the respondents are of the view that lower lending rates and better repayment terms will increase their rate of housing delivery, the other respondents are of the opinion that is not only lower lending rates and better repayment terms that will increase the rate of housing delivery. This infers that other variables apart from the above will increase the rate of housing delivery.

Respondents' view on whether the private sector caters for particular income earners, housing development type and residential density type. Shown by V10, V11 and V12.

V10 shows that the result of the respondents' opinion on whether the private sector concentrates on the delivery of flats, semi-detached houses, and detached houses in Lagos. 28.6% and 42.9% of the respondents strongly agree

and agree respectively, while 7.1% and 14.3% strongly disagree and disagree respectively; and 7.1 are not sure.

This result infers that although a greater percentage are of the opinion that the private sector concentrates on these development/housing types, the other respondents believe the private sector does not concentrate only on the mentioned housing types. Thus, it can be inferred that the private sector also delivers other housing types e.g. rooming apartment i.e. tenement building.

In V11, 35.7% and 42.9% of the respondents strongly agree and agree respectively that private sector provides housing mainly in low and medium density residential neighborhoods of Lagos e.g. Victoria Island, Ikoyi, Lekki, Magodo, Ikeja GRA, etc. While 3.6% and 10.7% strongly disagree and disagree respectively, 7.1% are undecided.

V12 is to determine the respondents' opinion on whether the private sector concentrates on housing delivery mainly for the medium and high income earners, than the low income earners. 28.6% and 35.7% of the respondents strongly agree and agree respectively that private sector concentrates on housing delivery for medium and high income earners. While 7.1% and 14% strongly disagree and disagree respectively; and 14.3% are not sure.

These results V10, V11 and V12 infer that although a greater percentage of the respondents are of the opinion that the

private sector concentrates on provision of housing for the medium and high income earners, the other respondents are of the opinion that the private sector also delivers housing for low income earners.

Respondents' view on the availability of capital determining the private sectors' decision to concentrate on housing delivery for specific income earners, shown by V13 and V14.

V13 shows that 50% and 28.6% of the respondents strongly agree and agree respectively that capital investment in housing delivery is recouped faster when housing is provided for the high income earners than low income earners while 7.1% of the respondents disagree and 14.3% of the respondents were not sure.

This infers that a greater percentage of the respondents are of the opinion that housing for the high income will enable the investor amortize profits faster.

In V14, the result shows that 50% and 35.7% of the respondents strongly agree and agree respectively that high cost of fund is a major reason for the private sector delivering mainly flats, semi-detached and detached houses. While 7.1% of the respondents disagree, 7.1% were undecided.

V13 and V14 infer that a greater percentage of the respondents are of the opinion that the private sector delivers this housing type to be able to dispose of the same faster and thus service the loans and eventually repay the loans.

### TESTING THE HYPOTHESES

Due to the nature of the responses on the majority of the 28 cases, the most appropriate statistical test is the chi-square ( $X^2$ ) test, which is a test of significance when responses are categorized and when data are expressed in frequencies.

Analytically, the  $X^2$  is computed as:-

$$X^2 = \sum \frac{(O-E)^2}{E}; \text{ Where } O = \text{Observed frequency, } E = \text{Expected frequency}$$

The observed frequencies are the actual respondents. Corresponding to each observed frequency is an associated expected frequency and is given as;

$$E = \frac{RT * CT}{N}; \text{ Where } RT = \text{Row Total, } CT = \text{Column Total, } N = \text{Grand total of both row and columns.}$$

The computed chi-square ( $X^2$ ) value i.e.  $X^2$  (cal) is then compared with the tabulated chi-square i.e.  $X^2$  tab. Anytime  $X^2$  cal is less than  $X^2$  tab (i.e.  $X^2$  cal <  $X^2$  tab) we accept the Null Hypothesis and reject the Alternative Hypothesis while anytime  $X^2$  cal is greater than  $X^2$  tab (i.e.  $X^2$  cal >  $X^2$  tab) we reject the Null Hypothesis and accept the Alternative Hypothesis.

- (I) **Null Hypothesis  $H_{01}$ :** The needed capital for housing development and delivery is not readily available to the private sector. Significant level = 0.05
- (II) **Null Hypothesis  $H_{02}$ :** The inputs of housing development and delivery, land, man power or labour, building materials cannot be procured without adequate capital/fund. Significant level = 0.05
- (III) **Null Hypothesis  $H_{03}$ :** The rate of housing delivery cannot be increased without the availability of capital/fund. Significant level = 0.05
- (IV) **Null Hypothesis  $H_{04}$ :** The private sector housing delivery does not cater for specific segment of the population. Significant level = 0.05
- (V) **Null Hypothesis  $H_{05}$ :** The availability of capital does not determine the private sectors decisions to concentrate on housing delivery for specific segment of the population. Significant level = 0.05

Results of the chi-square tests performed to prove each hypothesis is presented in table 6.

Table 6: Results of the chi-square tests performed to prove each hypothesis

Hypothesis	Variable	X <sup>2</sup> Cal	D.F	X <sup>2</sup> Tab	Significant	Decision
Hypothesis I	V <sub>1</sub> estimated capital base of the organization	27.714	4	11.143	S	Accept H <sub>1</sub> and reject H <sub>0</sub>
	V <sub>2</sub> enough capital at disposal to undertake housing delivery	12.071	2	7.378	S	Accept H <sub>1</sub> and reject H <sub>0</sub>
	V <sub>3</sub> Banks and other financial institutions willingness to give loans / credit	6.00	3	9.438	N.S	Accept H <sub>0</sub> and reject H <sub>1</sub>
	V <sub>4</sub> Loan interest rate repayment terms	5.429	3	9.318	N.S	Accept H <sub>0</sub> and reject H <sub>1</sub>
Hypothesis II	V <sub>5</sub> availability of capital determines ability to procure land	4.286	3	9.436	N.S	Accept H <sub>0</sub> and reject H <sub>1</sub>
	V <sub>6</sub> availability of capital determines ability to procure building materials and land.	1.286	1	5.024	N.S	Accept H <sub>0</sub> and reject H <sub>1</sub>
Hypothesis III	V <sub>8</sub> availability of capital determining the rate of housing delivery	7.714	4	11.143	N.S	Accept H <sub>0</sub> and reject H <sub>1</sub>
	V <sub>15</sub> availability of capital would deliver more housing units annually.	4.857	4	11.143	N.S	Accept H <sub>0</sub> and reject H <sub>1</sub>
Hypothesis IV	V <sub>10</sub> private sector concentrates on delivery of flats, semi-detached and detached houses.	13.429	4	11.143	S	Accept H <sub>1</sub> and reject H <sub>0</sub>
	V <sub>11</sub> private sector concentrates on housing in low and medium density residential areas	18.071	4	11.143	S	Accept H <sub>1</sub> and reject H <sub>0</sub>
	V <sub>12</sub> private sector concentrates on housing for medium and high income earners	7.814	4	11.13	N.S	Accept H <sub>0</sub> and reject H <sub>1</sub>
Hypothesis V	V <sub>13</sub> Capital Invested in housing delivery is recouped faster from housing for high and medium income earners.	12.00	4	9.348	S	Accept H <sub>1</sub> and reject H <sub>0</sub>
	V <sub>14</sub> High cost of capital as the reason for developing flats, semi-detached and detached houses.	15.429	3	9.348	S	Accept H <sub>1</sub> and reject H <sub>0</sub>

Chi-square results of testing the available needed capital for housing delivery to the private sector are shown by V1, V2, V3 and V4.

The calculated  $X^2$  value of variables V1 and V2 are higher than the tabulated  $X^2$  value, while the calculated  $X^2$  value of the variables V3 and V4 are lower than the tabulated  $X^2$  value. Since some of these results were significant, hence the alternative hypothesis was accepted. From the above it infers that the needed capital for housing development and delivery is readily available to the private sector.

However, it should be noted that the capital base V1 of the organization in this study also refers to their fixed assets in the form of land and buildings, plant and machinery and not only liquid asset of cash, which should be used to finance housing delivery.

While V2 refers to finance available to respondents who source finance from, private savings, consociate funds i.e. their other investments and financial institutions.

However, V3 and V4 which test the response of respondents who source finance from mainly financial organizations infers that the needed capital/funds from financial organizations for housing delivery is not readily available to the private sector.

Chi-squared results for testing ability of capital to procure the components of housing delivery; shown by V5 and V6.

The calculated  $X^2$  values of V5 and V6 are lower than the tabulated  $X^2$  value. This means that results for these variables are not significant, the null hypothesis is

accepted, that is the components of housing delivery cannot be procured without adequate fund.

This infers that availability of adequate capital/fund is a major determinant in the ability to procure the components of housing delivery, land, building materials and labour.

Chi-square results for testing whether the rate of housing delivery can be increased by the availability of capital; shown by V8 and V15.

The calculated  $X^2$  value of V8 and V15 are less than the tabulated  $X^2$  value. Thus, the hypothesis is accepted while the alternate hypothesis is rejected.

This infers that the rate of housing development and delivery by the private sector cannot be increased without the availability of capital/fund.

Chi-square results for determining whether the private sector caters for specific income earners, housing development type and residential type; shown by V10, V11 and V12.

V10 and V11 have calculated  $X^2$  value greater than the tabulated  $X^2$  value. While V12 has calculated  $X^2$  value lower than the tabulated  $X^2$  value. However, since V10 and V11 show significance, we accept the alternate hypothesis and reject null hypothesis.

This infers that the private sector housing delivery does cater for specific segment of the population, i.e. specific income earners, specific housing residential density type. This also means that this specific segment is high and medium income earners, within low and medium density residential neighborhoods; and the housing development type are mainly

flats, semi-detached and detached houses. Chi-square results for determining whether the availability of capital determines the private sector's decision to concentrate on housing for particular income earners; shown by V13 and V14. The calculated  $X^2$  value for V13 and V14 is greater than the tabulated  $X^2$  value. This

shows that the results are significant. Thus, the null hypothesis is rejected and the alternate hypothesis is accepted. This infers that the availability of capital determines the private sector's decision to concentrate on housing delivery for specific income earners i.e. the high and medium income earners.

**Table 7: Analysis of availability of investment capital being determinant of some elements of housing delivery using Relative Index.**

Elements of housing delivery	No	Sum	Ranking
The procurement of building materials	28	101	1
The procurement of labour (skilled and unskilled)	26	86	2
The acquisition of land	25	80	3
Determining the rate of housing delivery	24	72	4
Determining the type of housing and for particular income group	24	62	5

Table 7 shows that the procurement of building materials is the most affected by the availability of investment capital.

**FINDINGS**

1. Based on the analysis, research questions and the hypotheses it would be seen that the private sector involved in housing delivery is made up of mainly limited liability companies who depend on banking and other financial organizations for the capital/funds needed for housing delivery.
2. The ability of the private sector to deliver housing depends on the availability of capital. There is adequate capital/funds within the system from private savings, other investments, financial organization; that can be channeled

3. towards housing delivery by the private sector. However, the bulk of the capital/funds which is within the banking and financial sector is not readily available to the private sector property developer. Where these are made available to the private sector, the high interest rates on loans and the unfavourable repayments terms are deterrent to the developer.
3. The other components of housing delivery whose cost of acquisition or procurement is quantifiable in monetary terms i.e. land, labour and building materials have to be available to the private sector for adequate housing delivery. The availability of capital to the private sector developer is a major factor determining the ability to produce these other components

- of housing delivery. However, capital is not the only determinant of the ability to procure these components. It is most important for the procurement of building materials.
4. The contribution of the private sector to housing delivery in terms of yearly addition to the housing stock has not been impressive. However, the availability of capital at lower interest rates, reasonable repayment terms will increase the rate of housing delivery and provide more housing units annually.
  5. The private sector housing delivery provides mainly flats, semi-detached and detached houses, within the low and medium density residential areas for the medium and high income earners. Thus, the private sector provides housing for a particular segment of the society.
  6. The availability of capital determines the private sectors decision to deliver flats, semi-detached and detached houses in low and medium density residential areas for the medium and high income earners. The capital procured at high cost is recouped faster when the private sector delivers housing for this population.

## **RECOMMENDATION**

### **Unitization**

The private sector developer should seek a source of funding which combines long

maturity with low interest rates. This is only feasible in the present economy, if the private sector pulls together financial resources from within the sector in a concept called UNITIZATION, as smaller organizations within the sector will merge to form large organization with larger capital base. Thus such large organization will have access to move funds.

## **CONCLUSION**

Capital is the fulcrum or base on which the private sector can adequately deliver quantitative and qualitative housing to the teaming population of Lagos State. The researcher believes that housing delivery is not the sole responsibility of the private sector, the public sector and the non-governmental organizations are also veritable tools in the quest for housing for all.

It is believed that the private sector would succeed in housing delivery if the government and the other sectors of the economy appreciate their role in housing delivery and courageously work towards achieving that.

Finally, this research has made some recommendations, which if adopted and implemented, would enable the private sector housing developers play their roles successfully.

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## THE USE OF BALANCED SCORE CARD BY FACILITY MANAGERS: A MEANS TO EFFECTIVE PERFORMANCE

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### **ABSTRACT**

*The balanced score card is a strategic performance management tool supported by proven design method and automation tool that can be used by managers to keep track of the execution of activities in an organization for the actualization of the organization's vision. It was invented in the late 1980's and became popular in the mid-late 1990's. It is seen as a tool which enables executives to truly execute their strategies. However, the use of this dynamic tool is still foreign in Nigeria due to the low level of awareness. This paper seek to examine amongst others the characteristics, designs, variants, criticisms and perspectives of the balanced score card. Yaba College of Technology was used as a study area. The study found out through the use of questionnaire that Yaba College of Technology has an aggregate performance of 47.01% showing a fair performance in how activities are being carried out within the college. It was however recommended that operating goals of the several units and departments should align directly with the strategic vision of the organization as specified by the Balanced Score Card.*

**Keywords: Balanced score card, facility and performance.**

### **1.0 INTRODUCTION**

The ultimate aim of implementing a performance measurement system is to improve the performance of an organization such as a bank, an institution of higher learning etc so that it may better serve its customers, employees, owner etc.

A performance measurement can be defined as a metric used to quantify the efficiency and effectiveness of an action. Homec (1993) defined performance as that vital sign of the organization which quantify how well the activities within a process or the output of a process achieve

a specific goal. In the opinion of Sink (1991) performance measurement is a “mystery... complex, frustrating, difficult, challenging, important, abused and misused function”. The level of performance a business attains is a function of the effectiveness of the actions it undertakes, and thus performance measurement can be defined as the process of quantifying the effectiveness of an action. Performance measurement system developed as a means of monitoring and maintaining organizational control which is the process of ensuring that an organization

pursues strategies that lead to the achievement of overall goals and objectives. Nani, Dixon, Vollman (1990). Facilities management on the other hand exists to support core business, Simpson (1996). Empirical research (Barrett 1992, Douglas 1996, Simpson 1996) indicates that facilities management appears to utilize a wide range of measures, not only traditional financial accounting measures but also indicators of managerial behaviour as well as various other measures of effectiveness.

This paper considers both the basis for measurement of performance by facilities managers with reference to the Balance Score Card, and the possibility of applying such a management system in facilities management.

## **2.0 FACILITIES MANAGEMENT**

Facilities management can be defined by reference to its nature, scope and role. Becker (1990) suggested. Facilities management is responsible for coordinating all efforts related to planning, designing and managing buildings and their system equipment and furniture to enhance the organization's ability to compete successfully in a rapidly changing world. Speeding, Holmes (1994) identified that the function of facilities management should be that of managing the property in the best interest of the core business. Therefore, the aim of facilities management should not just be to optimize running costs of buildings, but also to raise efficiency of the management of space and related assets for people and processes in order that the mission and the goals of the organization may be achieved

at the best combination of efficiency and cost.

Facilities management encompasses a vast spectrum of perspectives about people, organizations and changing processes to realize the value of any organization. These practices are generally consistent with the ideas and techniques originally articulated by Nutt (1992), Akhalaghi (1992). Mole and Taylor (1992) classified all these into Four categories: Facilities Planning, Building operations and Maintenance, Real Estate and Building construction and general services.

Facilities management advocates appear to give an equal weight to the importance of customer involvement and satisfaction is needed to support continuous improvement within the organization; Becker (1990). They also appear to assume a strong correlation between satisfaction and performance, Eccel (1992), Kaplan and Norton (1992) Letza (1996).

The link between the human resources management and facilities management can also be seen in the models of facilities management proposed by Barret (1994) and in the work of Hoxley and Bareet (1992).

## **2.1 FACILITY PERFORMANCE EVALUATION**

Alexander (1998), Amaratunga and Baldry and Sharsar (2000) focused their extensive studies on evaluation of performance management. In the study of

Amaratunga and Baldry (2000) they expoused that various techniques of performance measurement has been used extensively since 1980. Amongst these are Benchmarking and Post Occupancy Evaluation, Kincaid (1994).

Organizations have measured facilities performance using financial indicators and some efforts have also been directed at determining unit cost of facilities components part. Tramfield and Akhalagi (1995). These methods they opined may have been appropriate in the past but due to competitiveness of facilities management organizations, they are no longer adequate. A new performance evaluation method is proposed and used in their research work to take care of users' satisfaction, finance, internal process, growth and learning of the organization. This technique is called the Balance Score Card.

## 2.2 BALANCE SCORE CARD

Sanger (1998), Kaplan and Norton, (1992) all agreed that Balance Score Card BSC is a management system that focuses the efforts of people, through-out the organization, towards achieving strategic objectives and converts the organization's vision and strategy into a comprehensive set of performance and action measures that provides the basis for a strategic measurement and management system. BSC translates the organization's vision into a set of performance indicators distributed among the following four perspectives:

- **Internal Processes:** What internal processes of satisfying the customers must we excel at?

- **Financial:** What is the perspective of the shareholders / clients on our operations?
- **Innovation:** How can the organization learn and improve?
- **Customer Perspectives:** How must the organization look to the customers?

**Source:** Adapted from Kaplan and Norton, (1992)

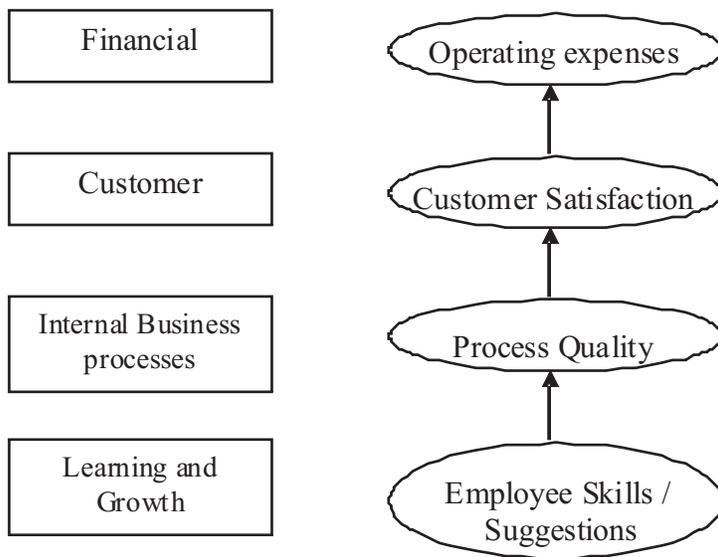
### Setting Up a Balanced Scorecard

Amaratunga, Baldry and Sharsar (2000) were of the opinion that the first step is to translate the organizations strategy into objectives and measures for each of the four perspectives and that the design structure for a balanced scorecard applications will include the following:

- **Measures:** This is a performance metric that will reflect progress against set objectives. This measure must be quantifiable. It must state the specific way to achieve the objectives and become the action statement of how the strategic objectives will be accomplished.
- **Targets:** This is a quantifiable goal for each measure. These sets of targets found in balanced score cards becomes the overall goals of the organization.
- **Cause and Effect Linkages:** The objectives are related to one another through cause and effect relationships.
- **Strategy Initiatives:** These are action programmes which drives the strategic performance. These

are the activities that will be focused on to achieved the desired results.

### Cause and Effect Relationship



**Figure 15: Cause and Effect Relationship**

*Source: Amaratunga et al., (2000)*

Amaratunga (2000) in his study in Building performance evaluation in higher education properties. A facilities management approach came up with sixteen strategic objectives which are sub-sector of the four perspectives of balanced score card that could be used as measurements for objectives and

perspectives of Facility Management balanced scorecard. This measurement enable the Management organization the basis to evaluate how well its performing towards its predetermined objectives and assists in identifying its areas of strength and weaknesses.

**Table 1: Perspectives of Balanced Score Card**

Perspectives	Strategic Objectives	Strategic Measurement
Financial	F1 – Financial Growth	Cash Flow
	F2 – Cost reduction/Productivity Improvement	Cost reduction rates Unit costs (per unit of output)
	F3 – Assets Utilization	Reduce indirect costs
	F4 – Management of working capital	Services sharing with other units Reducing the working capital
Customer	C1 – Timeliness of service	Customers satisfaction survey
	C2 – Service quality	
	C3 – Range of service offered	
	C4 – Effectiveness of partnership, Communication and co-ordination	
Internal	11 – Service excellence technology Capability	Process Management Service quality survey
	12 – Understand the customers	Superior project management
	13 – Employee Competence	Employee satisfaction index
	14 – Process efficiency	Customer contacts, surveys
	15 – Team work and co-ordination	Output/cot ratio Number of multi-skilled staff.
Learning and Growth	L1 – Technology leadership	Time to develop new processes
	L2 – Continuous service Improvement/ service Innovations	Staff attitude and survey Number of employees /customer suggestions
	L3 – Upgrade staff competencies /staff Development	Degree of new facilities/services introduced. Employee satisfaction Staff development programme Courses completed Internal promotions made New business development Expanded services. Training hours per employee Independent training courses

**Table: Balance Score Card Perspectives. Source: Amaratunga (2000)**

The four perspective of the scorecard permit a balance short-term and long term objectives, between desired outcome and outcome and performance drivers of those outcomes, and between the objectives measures and softer, more subjective measure. While the multiplicity of measures on a balanced scorecard seems confusing to some, properly constructed scorecards contain a unity of purpose since all the measure are directed towards achieving an integrating strategy. Kaplan and Norton (1992) expanded the definition of the balanced scorecard as

follows:

***Customer Perspective: How do customers see us?***

The customer perspective looks at the organization through the eyes of its customers. Many organizations today have a corporate mission that focuses on the customer's perspective has become a priority for top management. The balanced scorecard demands that managers translate their general mission statement on customer (Kaplan and Norton, 1992). Customer's concerns tend to fall into four categories: time, quality, performance and services and cost. Customer satisfaction measurement, for example, is one of the generic outcome measures. Customer satisfaction measures provide feedback on how well the organization is doing, depending on customer's evaluation to define some of the organizations.

Performance measures forces the organization to view its performance through customer's eyes.

***Internal Processes Perspectives: What must we excel at?***

The internal processes perspective reports on the efficiency of internal processes and procedures. The premise behind his perspective is that customers-based measures are important, but they must be translated into measures of what the organization must do internally to meet its customer's expectation (Kaplan and Norton, 1992). This perspective must reflect the organization's core skills and critical technology involved in adding value to the customer's business. The

critical internal business processes that will have the greatest impact on customers satisfaction and achieving the organization's financial objectives.

The internal business processes perspectives reveals two fundamental differences between the traditional and balanced scorecard approach to performance measurement (Kaplan and Norton, 1992). Traditional approaches attempt to monitor and improved existing business processes. The balanced scorecard approach, however, will usually entail new processes at which the organization must excel to meet customer and financial objectives. The internal business process objectives highlight the processes most critical for the organization's strategy to succeed.

***Innovation and Learning Perspectives: Can we continue to improve and create value?***

➤ The learning and growth perspective deals with research and development. The customer and internal perspectives will have focused on the organization's current competitive position. The innovation and learning perspectives is required in order to recognize that what is constantly changing. Intense global competition requires that companies make continual improvement to their existing processes and have ability to introduce entirely new processes with expanded capabilities (Kaplan and Norton, 1992). The organization, its management and all of its employees, must continually seek to learn, to innovate and to improve every aspect of the organization and its business

just to maintain their competitive situation, let alone to improve it in future.

**Financial Perspective: How do we look to shareholders?**

The financial performance measure defines the long run objectives of the business unit (Kaplan and Norton, 1992). Financial performance measure indicates whether the organization's strategy, implementation, and execution are contribution to bottom-line improvement. A well designed financial control system can actually enhance an organization's management system. Currently, the balanced scorecard is a powerful and widely accepted framework for defining performance measure and communicating objectives and vision to the organization. Roest (1997) based on practical experience in pivoting the balanced to work, determines the following ten golden rules for its implementation.

- There is no standard solution: all business differ
- Top management support is essential
- Strategy is the starting point
- Determine a limited and balanced number of objectives and measures.
- No in-depth analyses up-front, but refine and learn by doing.
- Take a bottom-up and top-down approach
- It is not system issue, but system are issues
- Consider delivery system at the start
- Consider the effect of perfor-

mance indicators on behaviour

- Not all measure can be quantified.

**3.0 HISTORICAL BACKGROUND OF YABA COLLEGE OF TECHNOLOGY**

Yaba College of Technology started as the Yaba Higher College, in 1932, at the kings college premises in Lagos Island and later moved to its present site in 1934. Yaba Higher College was established with the aim of providing basic vocational education for secondary school leavers from every part of Nigeria, in recognition of the acute shortage of manpower in Nigeria.

However the colonial administration in 1947 established the Yaba Technical Institute, the institute, a precursor of the present Yaba College of Technology took over the facilities being used by the Yaba Higher College. The students were moved to form the nucleus of the college by 1948. The name of to the institution was formally changed to Yaba College of Technology on the 23<sup>rd</sup> September 1963 by his Excellency, Dr Nnamdi Azikiwe, the then Governor General of Nigeria during the official opening of the Engineering Block built from a donation by Shell BP towards the development of the institution. The institution consist of eight schools or faculties namely: School of Arts and Printing, School of Science, School of Technology, School of Liberal Studies, School of Management and Business Studies, School of Engineering, School of Environmental and School of Part Time Studies and technical Education.

Other principal units are: Library, Students Affairs Units, the School Medical Centre, the Registry, the Rectory, the College Library, Works and Services Section, other sub-units are also as follows: Centre for Entrepreneurship Development (CED), Servicom Dept, CITM, Applied Research and Technology Unit, the College Consult. Currently, the college is being upgraded to a university.

faculties of the college and members of staff in the bursary unit and lecturer as well.

The respondents were chosen based on the four perspectives of the balance scorecard and the research questions were structured accordingly.

A total of 150 questionnaires were administered to the various respondents. 80 of this were administered to students, while 20 were administered to the bursary staff. 40 were administered to the lecturers while the remaining 10 were administered to management staff (policy makers).

The use of descriptive analysis is employed and the data analysed are presented in tables and percentages. (The question are prepared to cover the 4 perspectives of the balanced score card and the 16 sub-sectors attached to it).

#### 4.0 RESEARCH METHODOLOGY

The primary form of data was considered suitable for the study and it was adopted accordingly. Students from the eight schools lecturers and some management staff were given questionnaires by the adoption of the random sampling technique to students from the various

#### 4.1 DATA PRESENTATION AND ANALYSIS

##### Bursary staff

**Table 1: Prompt release of annual budget**

Option	Number	%
Yes	14	70
No	06	30
Total	20	100

**Source: Field Survey, 2010.**

Table 1 showing prompt release of budget shows that 70% of the respondents agree that the budgets are released on time while

30% affirm that the budgets are not released on time.

**Table 2: Correlation of spending to budget**

Option	Number	%
Yes	16	80
No	04	20
Total	20	100

**Source: Field Survey, 2010.**

Table 2 showing spending match budget the year while 20% agrees that spending shows that 80% of the respondents agree does not match budget at the end of the that spending matched budget at the end of year.

**Table 3: Response level of management to request from heads of units**

Excellent	Very Good	Good	Fair	Poor	Total
1	1	12	6	-	20
5	5	60	30	-	100

**Source: Field Survey, 2010.**

Table 3 showing level of management to request from heads of units shows that 20% out of 100% of the respondent responds.

**Table 4: Contract Allocation**

Option	Number	%
Yes	04	20
No	16	80
Total	20	100

**Source: Field Survey, 2010.**

Table 4 showing whether contract allocation follows due process shows that 20% of the respondent answered that contract allocation follows due process while 80% of the respondent answered that contract allocation did not follow due process.

**Table 5: Payment of contractors**

Option	Number	%
Yes	08	40
No	12	60
Total	20	100

**Source: Field Survey, 2010.**

Table 5 showing whether contractors are paid as at when due shows that 40% of the respondents say No. therefore it shows that they are not paid when due. while 60% of the respondents says Yes.

**Table 6: Lecturer punctuality to class**

Option	Number	%
Yes	62	77.5
No	18	22.5
Total	80	100

**Source: Field Survey, 2010.**

Table 6 showing whether lecturers attend their classes regularly shows that 77.5% of the respondents says Yes while 22.5% says No, therefore it shows that lecturers attend classes regularly.

**Table 7: Victimization of Students by lecturers**

Option	Number	%
Yes	77	96.25
No	03	3.75
Total	80	100

**Source: Field Survey, 2010.**

Table 7 showing whether students are being victimized by lecturers shows that 96.25% of the respondents says Yes while 3.75% says No. Therefore students are not victimized by lecturers.

**Table 8: Adequacy of school library**

Option	Number	%
Yes	35	43.75
No	45	56.75
Total	80	100

**Source: Field Survey, 2010.**

Table 8 showing the adequacy of school library shows that 43.75% says Yes while 56.75% say No. Therefore, it implies that the school library is not adequate for the student.

**Table 9: Management-Student-Forum**

Option	Number	%
Yes	08	10
No	72	90
Total	80	100

**Source: Field Survey, 2010.**

Table 9 showing the student / management forum effectiveness shows that 10% of the respondents agrees that the student/ management forum are effective while 90% says that the student/ management forum are not effective.

**Table 10: Provision of hostel facilities**

Option	Number	%
Yes	11	13.75
No	69	86.25
Total	80	100

**Source: Field Survey, 2010.**

Table 10 showing the provision of hotel facilities and other facilities adequate shows that 13.75% of the respondents

says Yes while 86.75% says No. Therefore, this implies that these facilities are not adequate enough.

**Management Staff (Policy Makers)**

**Table 11: College staff competence**

Option	Number	%
Yes	9	90
No	1	10
Total	10	100

**Source: Field Survey, 2010.**

Table 11 showing the competent of the college academic staff shows that 90% of the respondents says Yes while 10% of the

respondents says No. This implies that the academic staffs are competent in their duties.

**Table 12: Relationship between management and college staff**

Excellent	Very Good	Good	Fair	Poor	Total
2	5	3			10
20	50	30			100

**Source: Field Survey, 2010.**

Table 12 showing the relationship between management and college of staff shows that only 10% out of 100% of the respondents strictly respond that there is a

relationship between management and college staff. Therefore, it shows that the level of relationship between the management and college staff is quite low.

**Table 13: Remuneration of college staff**

Option	Number	%
Yes	4	40
No	6	60
Total	10	100

**Source: Field Survey, 2010.**

Table 13 showing the adequacy of the college staff remuneration shows that 40% of the respondents says Yes while

60% of the respondents claim No. Therefore, this shows that the college staff remuneration were not adequate.

**Table 14: Students performance**

Option	Number	%
Yes	4	40
No	6	60
Total	10	100

**Source: Field Survey, 2010.**

Table 14 showing that the student while 60% of the respondents did not performances commensurate with agree that the students performance lecturers' inputs shows that 40% of the commensurate with the lecturers' inputs. respondents agrees that it commensurate

#### SECTION D

**Table 15: College facilities and teaching aids**

Option	Number	%
Yes	31	77.5
No	09	22.5
Total	40	100

**Source: Field Survey, 2010.**

Table 15 showing that college have Yes while 22.5% says No. This implies adequate facilities to aid teaching practice that the there are adequate facilities to aid shows that 77.5% of the respondents says teaching practice.

**Table 16: Students' attitude to learning**

	Excellent	Very Good	Good	Fair	Poor	Total
Number	11	21	3	5	-	40
%	27.5	52.5	7.5	12.5		100

**Source: Field Survey, 2010.**

Table 16 showing how to access students' 7.5% agree good while 12.5% agree a fair attitude towards learning, it shows that result. Therefore it is observed that very 27.5% of the respondents agrees excellent good can be used to access students performance, 52.5% agree very good, towards learning.

**Table 17: Internet facilities**

Option	Number	%
Yes	02	5
No	38	95
Total	10	100

**Source: Field Survey, 2010.**

Table 17 showing whether the availability of internet facility are adequate to cater for students needs, shows that 5% says Yes while 95% says No. This implies that availability of internet facility is not adequate to cater for students needs.

**Table 18: Sponsorship of research and further studies**

Option	Number	%
Yes	35	87.5
No	5	12.5
Total	40	100

**Source: Field Survey, 2010.**

Table 18 showing the management sponsor research and studies for further degrees by staff shows that 87.5% says Yes while 12.5% says No. Therefore, it implies that the management sponsor research and studies for further degrees by staff.

## 5.0 SUMMARY OF FINDINGS

### Bursary Staff

$$\frac{70 + 80 + 5 + 40 + 20}{5} = \frac{175}{5} = 43\%$$

### Student

$$\frac{77.5 + 96.25 + 43.75 + 10 + 13.75}{5} = \frac{241.25}{5} = 48.25\%$$

### Policy Makers

$$\frac{90 + 20 + 40 + 40}{4} = \frac{190}{4} = 47.5\%$$

$$\frac{77.5 + 27.5 + 5 + 87.5}{4} = \frac{197.5}{4} = 49.3\%$$

The total aggregate of performance for Yaba College of Technology will be:

$$\frac{43 + 48.25 + 47.5 + 49.3}{4} = \frac{188.05}{4} = 47.01\%$$

### KEY:

#### Performance Appraisal Key

- 1 – 39% - Poor
- 40 – 49% - Fair
- 50 – 59% - Good
- 60 – 69% - Very Good
- 70 – 100% - Excellent

The total aggregate performance for Yaba College of Technology after analysis of the questionnaires was 47.01. This result shows a fair performance in how Yaba College of Technology carries out its activities.

## 6.0 CONCLUSION

The ability of facilities management to plan, anticipate and initiate change is enhanced if it utilizes management tool such as the balanced scorecard. However, the scorecard must be balanced in order to facilitate the achievement of short, medium and long term goals and objectives of the organization.

This paper addresses the applicability of the balanced scorecard in to facilities management as a performance assessment tool. The adoption of this process would be major change initiatives in most organizations. Kaplan and Norton (1992) provided a very useful generic model in the form of their balanced scorecard. As seen in the study detailed in this paper, the quadripartite model they present is suited to different types of business situations. The original idea of the scorecard technique, as they pointed was “not whether you had created value, but if you are going to create value in the future”. The impact of this management and measurement process is the basis for the research currently being conducted by the authors. Issues such as completeness of the balanced scorecard measures, effectiveness of enhancing facilities management performance and barriers to implementation should be the focus of future investigations.

## 7.0 RECOMMENDATION

This study has made necessary investigations into the use of the balanced scorecard and based on this the following recommendations are hereby suggested:

1. It is recommended that all day-to-day decision by facilities managers should be based on the strategic plan of the firm/ organization as specified by the organization using the balanced scorecard.
2. The operating goals of departments and individual should align directly with the strategic vision of the organization.
3. The role of communication in an organization needs to be emphasized as the vision/plan of the organization must be communicated to full understanding by individuals in that organisation through the use of balanced scorecard.
4. It is of utmost importance that organizations do not fail to collect the right information to monitor progress towards achieving the strategic goals.

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