An Open Access Journal available online

Covenant Journal in Research &Built Environment (CJRBE)

Vol. 4 No. 2, Dec, 2016

Publication of the School of Environmental Sciences,
Covenant University, Canaanland.

Editor-in-Chief: Professor S. A. Oloyede
Samuel.oloyede@covenantuniversity.edu.ng

Managing Editor: Edwin O. Agbaike
me@covenantuniversity.edu.ng

Website: http//Journal.covenantuniversity.edu.ng/cjrbe/

ISSN: Print 2384-5724
Online 2384-5716

Published by Covenant University Journals,
Covenant University, Canaanland, Km 10, Idiroko Road,
P.M.B. 1023, Ota, Ogun State, Nigeria

Printed by Covenant University Press

Articles

The Siege on Estate Surveying and Valuation Profession in the Global Setting: A Review of Nigeria Experience
Ayedun Caleb Abiodun **1**

Employee Perception of Maintenance Practices at Selected Public Healthcare Facilities in Niger State, Nigeria
Bajere, P. A., Abubakar, M. R., andMuazu, D. A. **16**

Alternative Property Documentation in Nigeria: A Case Study of Ogun State Home-Owner Charter Programme
Bello Nurudeen Akinsola Jolaoso, Babatunde Adekoyejo & Kilasho, Musiliudeen Omotunde **33**

Prospects, Barriers and Development Control Implications in the use of Green Roofs in Lagos State, Nigeria
I. C. Ezema, O. J. Ediae & E. N. Ekhaese **54**

A Heuristic Method of Establishing Operational Effectiveness of Hotel Facilities in South-Western Nigeria
Olufemi D. Durodola, Abiodun C. Ayedun, Olufunke A. Oluwunmi & Olayinka C. Oloke **71**

Demographic Factors and Students' Satisfaction in Nigerian Private Universities
Oluwunmi A. O., Emeghe I. J., Oni S. A. & Ajayi O. **87**

Covenant Journal in Research & Built Environment (CJRBE) Vol. 4 No. 2, Dec, 2016

The Siege on Estate Surveying and Valuation Profession in the Global Setting: A Review of Nigeria Experience

Ayedun Caleb Abiodun

Department of Estate Management,
College of Science & Technology,
Covenant University, Ota
caleb.ayedun@covenantuniversity.edu.ng

Abstract: Investment in real estate has come of age and assumed a pride of place in the globalized world. The practice of investment in real estate that often result in having edge against inflation or inflation proof through investing in residential, commercial, industrial, institutional and agricultural land uses has inevitably made that aspect of socio-economic sphere caught the attention of every individuals as well as nations of the world. The need to have professionals to manage, improve and sustain such investment or development is imperative. The paper examines and chronicles the incursion into the Estate Surveying and Valuation practice by people not so trained in the field at both national and global levels. Also, the various bodies in Europe, America, New Zealand and Australia acknowledged competitions from other allied professionals. The paper advocated the need for adherence to professional ethics and code of conduct by professional Estate Surveyors and Valuers with view to differentiating their performance from those of non-members who are not trained in the art and science of the estate surveying and valuation profession. In addition, the paper conceptualized and recommended some strategies to be adopted by NIESV, ESVARBON, institutions offering Estate Management in Nigeria and the practicing firms in the country for the purpose of attaining global relevance, standardization and meeting quality expected of professionals.

Key words: Code of Conduct, Estate Surveying and Valuation, Nigeria, Professional Ethics, Real Estate.

1. Introduction

Investments in real estate has come of age and assumed a pride of place globally. The central role of investment in real estate in any of residential, commercial, industrial, institutional and agricultural land use has inevitably made that aspect of socio-economic sphere caught the attention of every nation of the world. For any meaningful

and balance development to take place in any country, the five major areas of real estate development stated above often serve as the spring-board and engine room of economic buoyancy. Just as it was in the ancient times investment in real estate in today's modern system constitutes a significant index for man's wealth, and moreover, as economic activities have assumed more sophistication over time, real estate investment has continued to play a central role in individuals and nations development.

Like any of socio-economic development, the real estate profession is bedevilled with vicissitudes and arrogant rape of the professional norms, ethics and ethos that hitherto serves as the bedrock of the profession. This has posed intractable challenges especially in an emerging economy such as Nigeria. Presently, the real estate economic sector is witnessing unbridled polarization occasioned by dramatic challenges in the world economy with focus on globalization, dynamic growth in demography that require more accommodation, sophistication in architectural tastes, incursion of quacks and invasion by an army of unprofessional personnel of all manners into the fields unrelated to their area of study or competency thereby resulting into unhealthy competition from allied professionals as well as outright quacks leading to flagrant disrespect for professionalism even within the upper echelon of the government as people might not be able to recognise real professionals from those purportedly laying claim to professionalism when they are not.

2. Estate Surveying and Valuation Practice in Global Perspective

Just like many other professions within the built environment, estate surveying and valuation profession is experiencing fierce and unhealthy competition other professionals as well as quacks. Hence, there is a serious need to establish the sources where the competitions are coming from for purpose of putting in place strategic planning for the estate surveying and valuation profession with a view to guarding against bastardisation of the profession at both the individual and corporate level. While reviewing the prevailing state of the estate management profession, Elliot and Warren (2005) observed that the property professions have had to address a number of significant issues including the role of desktop valuations, the level of fees, the supply of qualified valuers, the role of education and conflicts relating to professionalism in an increasingly competitive market. Fundamental questions regarding the future direction of the real estate valuation profession are also need to be addressed in holistic manner. The business environment has become more competitive for valuers as with most knowledge based professional services. The global village and information exchange via the internet means that only the most competitive will.be able to survive as there will no room for inefficiency just as the clients will not be willing to pay for services that do not add value to their function. If valuers are to survive, they must be ready to offer services have competitive advantage over others that do not belong to the profession and also provide cost effective services that meet clients'

objective and expectation. This is most succinctly put by Gilberson (2003) when he noted '*there is agreement that the pace will accelerate the pace of change, the need for electronic and dynamic knowledge transfer, the degree of compulsion and the urgency to find a workable solution to reverse the graying of the profession.*

3. Rivalry Among Competing Firms in The Industry

Since valuation is the core area of estate surveying and profession, everything possible need to be done to keep professional Estate Surveyors and Valuers relevant in the field of valuation. Thus, Ring and Boykin, (1986) while justifying the importance of valuation posited that:

> *"…valuation is the heart of all economic activity. Everything we do as individuals or as groups of individuals in business or as members of society are influenced by the concept of value. A sound working knowledge of the principles and procedures of valuation is essential in all sorts of decisions relating to real estate buying, selling, financing, developing, managing income tax considerations. Sound valuation is basic to zoning, ad valorem taxation, and city planning and to effective management of urban affairs…"*

The profile of the valuation industry is generally of a fragmented nature. Fragmented industries are common within the service sector of the economy. It is argued that 'smaller firms are often more efficient where personal service is the key business. The quality of the personal service and the customer's perception that individualized, responsive service is being provided often seem to decline with the size of the firm once a threshold is reached. Also where a local image and local contacts are keys to business, the small firm often has an advantage in terms of contact building.' (Porter 1980)

Valuation practices have their strength in local knowledge, contact building, personal services and an ability to be responsive. These strengths are the underlying economic reasons for its fragmented nature. Despite what appears to be some recent trends of amalgamation of firms in the estate sector, it is suggested that the fundamental economic basis of the valuation sector will not change and will continue to cause an industry which is fragmented in nature (Porncholchal, 2001). However, it would be reasonable to argue that the intensity of rivalry between competing firms will differ according to the nature of their markets. Those firms that are largely involved in residential mortgage work will continue operating in an increasingly competitive business environment, in terms of price and market share, whereas those involved in more diverse markets will be less affected by pressure on prices for their services.

Professional Ethnics and Guidance Notes as RICS Core Values

In the developed world such as Britain, Estate Surveying and Valuation practice standard is already in the superlative form compared to what is obtaining in the developing country like Nigeria. Royal Institute Chartered Surveyors (RICS) which regulate the profession in the country has over time come up with

a set of central values it expects members to apply in their work. Following this set of values is one of the key features that define the professionalism of all chartered and technical surveyors. All actions and judgments are based on these core values. These include the following:

Act with integrity: Never put your own gain above the welfare of your clients or others to whom you have a professional responsibility. Respect their confidentiality at all times and always consider the wider interests of society in your judgments.

Always be honest: Be trustworthy in all that you do – never deliberately mislead, whether by withholding or distorting information.

Be open and transparent: Share the full facts with your clients, making things as plain and intelligible as possible.

Be accountable: Take full responsibility for your actions, and don't blame others if things go wrong.

Act within your limitations: Be aware of the limits of your competence and don't be tempted to work beyond these. Never commit to more than you can deliver.

Be objective at all times: Give clear and appropriate advice. Never let sentiment or your own interests cloud your judgment.

Always treat others with respect: Never discriminate against others.

Set a good example. Remember both your public and private behaviour could affect your own, RICS' and other members' reputations.

Have the courage to make a stand: Be prepared to act if you suspect a risk to safety or malpractice of any sort.

The guidance note provide advice for RICS members on tasks which encourages 'best practice', i.e procedures, which in the RICS, meet high standard of professional competence. When an allegation of professional negligence is made against a member, the court is likely to take account of the contents of any relevant guidance notes published by RICS in deciding whether or not the professional concerned acted with reasonable competence or not.

5. Bench-Marking Real Estate Surveying and Valuation Practice In Nigeria By NIESV And ESVARBON.

Estate Surveying and Valuation profession is relatively young in Nigeria compared to other professions in the built environment such as Architecture, Land Surveying, Quantity Surveying, Building Construction, Town and regional planning. However, in attempt to introduce sanity to the profession, a corollary of RICS which is NIESV came up with a bench mark for its members to distinguish their practice from unprofessional members who are on daily basis intruding the practice. The Nigerian Institution of Estate Surveyors and Valuers (NIESV) was recognized by Act No. 24 0f 1975; and according to the Constitution of the NIESV (2012), the objects of the Institution are spelt out thus:

(a).Establish high and reputable standards of professional conduct and practice in the landed profession throughout the Federal Republic of Nigeria.

(b).Secure and improve the technical knowledge that constitutes Land Economy, Real Estate and Allied Matters, Valuation and Appraisal of plant, Machinery and Business Asset, Land and Facilities Management, Building Maintenance, Property Development and Investment and Town and Country Planning, as well as Land Administration Systems.

(c). Facilitate the acquisition and dissemination of such knowledge by establishing Training Institution and working in close collaboration with universities, other institutions of higher learning and other professional bodies.

(d). Promote the general interests of the profession and maintain and extend its usefulness for the public good by advising, educating and informing members of the public, government departments, statutory bodies, local government. Associations, institutions and such like bodies on all matters coming within the scope of the profession.

(e). Initiate and consider any legislation relevant to the objects of the Institution.

(f). Endeavour to acquaint the public with the role of Estate Surveyors and Valuers in the economic development of the country.

(g). Enter into contracts, agreement, arrangements or joint ventures with member firms or individuals, company, trust, government, society, organization, institution, authority for the purpose of delivering complex professional services to a third party in the profession of Estate Surveying and Valuation and other professions.

(h). Engage in any other lawful activity (vies) which may be conducive to the promotion of any or all the objects of the Institution mentioned above for profit or no profit purposes.

While NIESV is saddled with the monitoring of enabling platform for the training and educating potential Estate Surveyors and Valuers, the Decree thus vested in the Institution the following functions:

(i). Determining the value of all description of property and of the various interest therein.

(ii). Managing and developing estates and other business concerns with the management of landed property.

(iii). Securing the optimum use of land and its associated resources to meet social and economic needs.

(iv). Determining the structure and conditions of buildings and their services, and advising on their maintenance, alteration and improvement.

(v). Determining the economic use of the resources by means of financial appraisal for the building industry.

(vi). Selling (Whether by auction or otherwise) buying or letting as an agent, real or personal property or any interest therein.

In order to provide complementary functions, a regulatory body; Estate Surveyors and Valuers Registration Board of Nigeria (ESVARBON) otherwise known as the 'Board' was empowered to oversee the activities of Surveyors in practice. Apart from the general duty of superintending the practice of Real Estate in Nigeria, the Board is specially charged by the law establishing the profession with the following functions:

(i). Determining who are Estate Surveyors and Valuers.
(ii). Determining what standard of knowledge and skills are to be attained by persons seeking to become registered as Estate Surveyors and Valuers and reviewing such standards from time to time for the raising them.
(iii). Securing in accordance with the provision of the Decree the establishment and maintenance of register of persons entitled to practice as Estate Surveyors and Valuers and the publication from time to time of list of such persons.
(iv). Regulating and controlling the practice of Estate Surveying and Valuation in all its aspects and ramifications.
(v). Performing the other functions conferred on the Board by the Decree.

6. Internalized Challenges Facing Estate Surveying and Valuation Practice in Nigeria.

Estate Surveying and Valuation practice in Nigeria is currently undergoing unprecedented barrages arising from the global recession and of course, the offshoot of the battered economy on Nigeria. The aftermath effect was massive unemployment gravely aggravated by epileptic supply of electricity. Many artisans, craftsmen and people of modicum level of education who were hitherto factory workers lay off due to both fiscal policy of the Government or poor management of many companies inevitably take succour in property dealings and agency.

Of all the professions in the built environment, Estate profession stands out as the only area found to be largely invaded by others such as Architects, Town Planners, Quantity Surveyors and Building Engineers. Akomolade (2007) observed that one of the major problems faced by the profession today is that of quacks and other professional who are daily encroaching on the area that is not within their professional competence. Agency and management have virtually been taken over by Lawyers and other people of undefined professions, valuation of plant and machinery by engineers, valuation for insurance by Quantity Surveyors, feasibility appraisal by Economists and Accountants, management of equipment and services in a building by facility managers. The menace of the various categories of quacks to contend with is of grave concern. Akomolade (2006) classified quacks who often parade themselves as agents into groups.

The first category are the educated ones who have had the benefit of a higher education in a University or Polytechnic but in other disciplines different from Estate management. As stated earlier, majority of these people are found selling and letting properties and even get involved in the management of houses. The scenario with this class of quacks is considered as an emerging trend that resulted from the harsh economic conditions and unemployment in the country. Lack of work of economic viability in their hitherto areas of business prompted a diametrical incursion into other peoples' area of discipline. The assumption has been that, if they have been successful in the core areas of their professional callings, the need for encroaching on other fields would not have arisen.

The second class of quack agents are those half-baked literates and some stack illiterates who often operate from make-shift offices. Many of them are school drop outs, retrenched workers, unsuccessful artisans and charlatans. The emergence of this category was as a result of many factors. The stratification of the property coupled with the fact that certain categories such as tenement houses and properties in the remotest areas are sometimes not in the management portfolio of Surveyors. The low class estate agents therefore fill the vacuum that would have been created by the reluctance of the big time estate agents to deal with these types of accommodation. This gap has been capitalized upon by the local agents hence, reveling on this to dupe or exhibit unprofessional ethnics both in management and disposal of properties in such neighborhoods. Sometime, they collect money from two or more prospective tenants for the same property or even non-existent property and disappear with the money. Many prospective buyers too have been traumatized with unpalatable experiences either from Lawyers and other interlopers parading themselves as competent agents. The activities of this class of agents have often given the practice a bad name since people cannot distinguish between them and professionally trained agents. A model showing areas of unethical encroachment by quacks is shown in Fig 1 below. The model in Figure 1 shows the four major areas of professional Estate Surveying and Valuation namely valuation, agency and management, feasibility appraisal and space and utility maintenance. It is apparent from the model how each activity are has been intruded upon by other professionals and worst still, stack illiterates. These are emerging challenges faced by Estate Surveying Profession in the present dispensation.

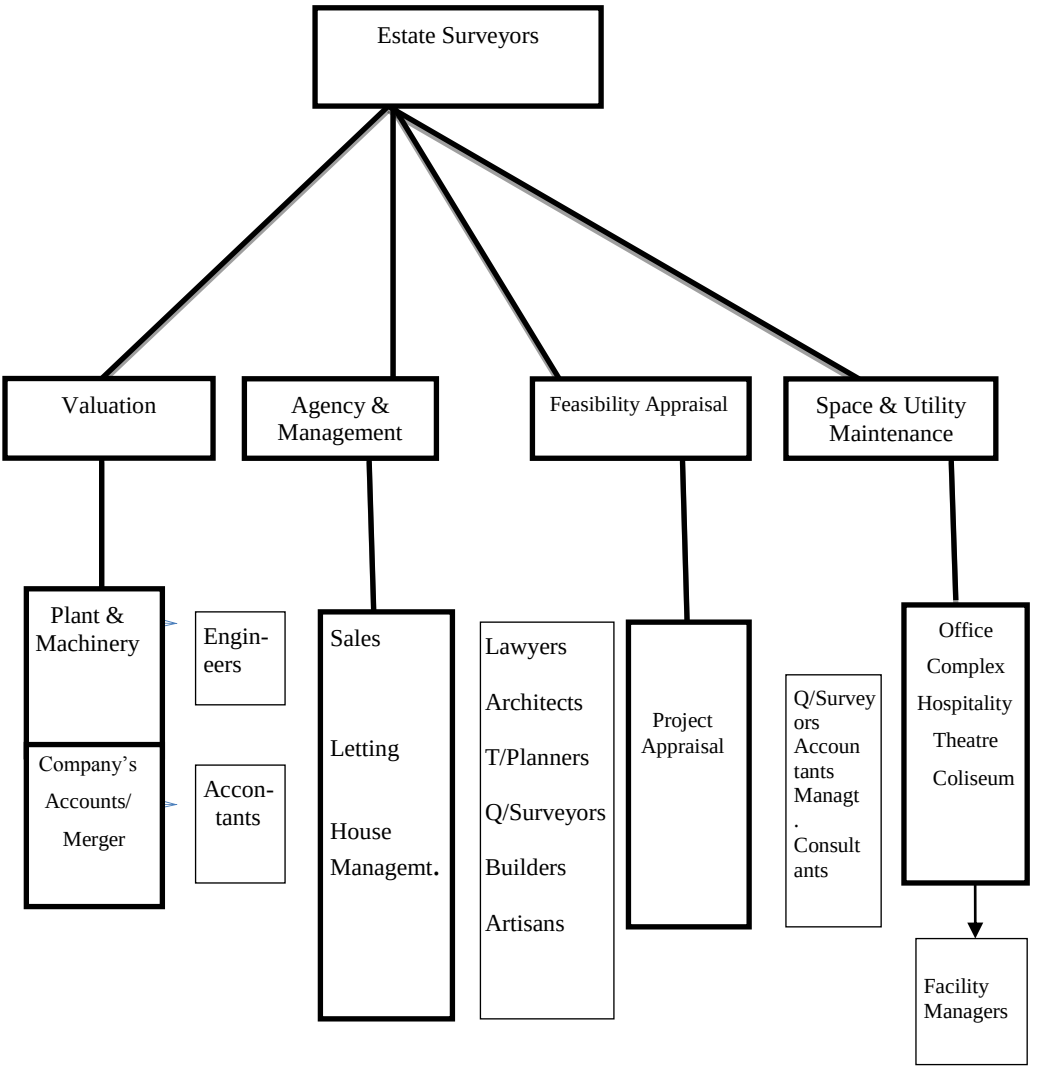

Fig 1: Model Showing Areas of Encroachment into Estate Surveyors and Valuers' Competence Areas

7. Global Perspectives of Estate Surveying and Valuation Practice in Relation to Other Professionals.

From the above model, it becomes apparent that certain core areas of professional practice have been encroached upon by other people; there is a need to have a global perspective of what obtains in the contemporary world. For instance, in Australia, Horwath (2005) discussing valuation in Australia Horwath use the term "the valuation profession" to mean that group of persons who conduct valuations of business interests (including shares and trust units) in Australia. As discussed below, there is no generally recognized Australian qualification or accreditation system for business valuers per se, although, it would appear that most

valuers hold professional qualifications as accountants or financial analysts. Looking at the way Accountants are competence in Valuation, **IS EVERY ACCOUNTANT AN EXPERT VALUER?** The Oxford Dictionary for the Business World l defines "professional Valuation as:

> *"an assessment of the value of an asset (share, property, stock, etc) in the balance sheet or prospectus of a company, by a person professionally qualified to give such a valuation. The professional qualification necessary will depend on the asset; for example, a qualified surveyor may be needed to value property, whereas unquoted shares might best be valued by an accountant"*

It is obvious why a surveyor should be qualified to value real estate and neither is it immediately apparent why an accountant should be qualified to value shares. In a report entitled: Shareholder Remedies" published in October 1997, the UK Law Commission recommended law reform designed to make shareholder remedies more affordable and more appropriate to modern conditions. The study canvasses the question of who should value the shares of an outgoing shareholder 2: the researcher argued that even an accountant may be always being the best person to value the shares. The auditor may have a conflict of interest so far as his duties to the outgoing shareholder are concerned because of his on-going relationship with the company. Moreover, share valuation requires particular skills which do not necessarily form part of an accountant." However, the perception that any accountant/auditor can competently undertake a valuation persists in some quarters. Another example is the provision found in some Constitutions requiring a "fair value" to be set by auditor when a shareholder wishes to dispose of shares.

In Kizquari6 Young J reiterated the views he had expressed in Sapir7 about the standing of accountants as "expert valuers"

> *"In [Sapir] I observed that I was not then convinced that merely because a person was chartered accountant or had given evidence on share valuations in other cases before a court that person was necessarily to be considered an expert in the valuation of shares. I said then and I still hold that the evidence of such a person is very useful to the Court in saving the Judge having to commence his calculations from raw data, but the conclusions reached by the person concerned are not to be considered in the light as expert evidence."*

It is however established that not everyone would agree, that not every accountant/auditor has the requisite training and experience to be qualified to undertake business valuation work. Thus, such valuation falls within the purview of Estate Valuers.

Also in Canada, the legislation does not require a valuation to be undertaken until the disposition of a property and neither is there a requirement that the valuation be undertaken by a qualified valuer. The Canadian Institute of Chartered Business Valuators ("CICBV") formed in 1971 heralded the formation of specialised department within the major accounting firms and a range of new small firms specialising in business valuation. Many of the members of these practices appear to be members of the CICBV, which offer

extensive training, maintains rigorous accreditation standards and publishes regularity materials on valuation-related issues. On 3December 2002 the CICBV entered into an accreditation agreement with The Canadian Institute of Chartered Accountants. The main objective of this agreement was to accredit the CICBV as the only body whose professional designation leads to recognition for a chartered accountant as a designated specialist in business valuation.

United State of America

There are four major bodies involved in the education, accreditation and, to some extent, regulation of business valuers. They include:

(i) The American Society of Appraisers ("ASA");

(ii) The National Association of Certified Valuation Analyst ("AICPA");

(iii) The Institute of Business Appraisers ("IBA"); and

(iv) The American Institute of Certified Practising Accountants ("AICPA").

These four US organisations have formed a Joint Business Valuation Task Force to make recommendations to the Appraisal Standards Board of the Appraisal Foundation in connection with USPAP11. The first three of these bodies themselves publish business valuation standards (much more detailed than USPAP). Those published by the ASA are the most comprehensive. The four organisations, together with the CICBV, have promulgated a "valuation glossary" and undertake other projects to attempt to make valuation practice more consistent.

United Kingdom

As at 1997, it was observed that "There was not yet a recognised professional qualification in the United Kingdom for share valuers. The Society of Share and Business Valuers in the United Kingdom were only in its second year of existence."

The Society was in its early days then and does not at this stage appear to have any significant public profile although some UK valuers include its membership as their qualifications.

New Zealand

There is no professional body concerned only with business valuation in New Zealand. The Institute of Chartered Accountants of New Zealand has promulgated Advisory Engagement Standard No2 2001 (effective from 1 April 2003) entitled "Independent Business Valuation Engagements", which applies when a member is providing a business valuation report in the role of an independent business valuer. The standard lays down certain standards to be adhered to in relation to planning, documentation and reporting performance of the assignment.

International Bodies

The European Group of Valuers ("TEGoVA") was established on 4 May 1977 in response to the increasing integration of Europe. Its members include professional bodies representing valuers from countries including Belgium, France, Germany, Ireland and the United Kingdom. The objectives of the body include the writing and promoting of valuation standards Europe, the management of a system of certification, to promote the minimum educational requirements with which

European professional bodied must comply, and to participate in the work of the International Valuation Standards Committee has promulgated various standards (including Standard 4: "Valuation bases") and Guidance Note (including Guidance Note 5: Valuations for the Purpose of Financial Reporting") and Guidance Note 7 dealing with business valuations.

The International Valuation Standards Committee ("IVSC") was established in 1981. Its principal objective is "to formulate and publish, in the public interest, valuation Standards and procedural guidance for the valuation of assets for use in financial statements, and to promote their worldwide acceptance and observance". The second objective involves standardisation of standards among the world's states. Membership of the IVSC is through national valuation societies and institutions. The members (representing 39 countries) include the Australian Institute of Valuers, the New Zealand Property Institute, the Royal Institution of Chartered Surveyors, the Appraisal Institute of Canada and the American Society of Appraisers. Although, as the membership suggests, the primary focus is real estate, the IVSC clearly intends that business valuation be within its scope. As at February 2005 the IVSC has issued three international valuation standards, two "Applications" and eleven guidance notes including Guidance Note 6 dealing with business valuations.

From the above expositions, it has become obvious that accountant modicum degree of recognition in valuation practice is limited to company's shares and not inclusive of real estate valuation for whatever purpose. It has however been established that by training, accountants were not well equipped to claim expertise in the valuation of shares. It is therefore instructive that their incursion into valuation activities especially within Nigeria context in an aberration.

The same view could be held in respect of Engineers. While their technical inputs during plant and machinery valuation exercise could be of tremendous use, it does not automatically make them an expert in value.

Similarly, past studies by Akomolade (2006) observed that quackery in estate agency is not peculiar to Nigeria, it was further established that countries like Singapore, Malaysia, United States and United Kingdom had tasted the bitter pills of the rising waves of quackery till today. In Nigeria, the menace of quacks in Estate agency is a major challenge more so, that the span of barrages is increasing on daily basis. Figure 1 shows a modest array of professionals and independent individuals bastardizing this aspect of Estate Surveying and Valuation practice in Nigeria. The attendant results have manifested themselves in some unethical practices and misconducts.

8. Inculcating Professionalism by Estate Surveying and Valuation Firms as the Way Forward.

One could say with some degree of certainty that the levels of professionalism in the country has somewhat declined in the recent past. These days, it is not uncommon to hear of corrupt practices and unethical

conduct in the public and private sectors about professionals generally including estate surveyors and valuers. Professionalism entails possessing specialist knowledge and a standard of conduct based on ethics that is deployed in providing essential and quality services to the society. As a result, the public depend on them and also perceive them as the engine room of a growing economy. Therefore, one could say that professionalism is an implied social contract to provide a service over and above normal duties. In essence, a professional is viewed as one who carries moral responsibility with honesty, objectivity, impartiality and integrity as additional qualities. Suffice it to say that the importance of professionals cannot be over emphasised. If we are to succeed economically as well as socially, we need to demonstrate appropriate levels of professionalism. Professionals are open to the views of others, embrace objectivity while their decisions are to be made in the best interest of the country at large.

As professionals, Estate Surveyors and Valuers need to continually evaluate their performances and the aim to constantly improve on them should their desire as the wealth of the nation is directly proportional to the quality and discipline put in the service. Professional Estate Surveyor and Valuer like other professionals need to see ourselves as part of the solution to the survival of the nation as our basic primary responsibility rather than creating atmosphere that may jeopardise or compromise the ethics of the profession through our conducts, actions or inactions thereby exacerbating the problem in the country. It is equally important to realise that professionalism is a key component of government as it supports the formulation and implementation of government policies and service delivery to the public. The role of professionals in public service is to ensure that government objectives and goals are achieved in an effective and efficient manner thus assuring confidence to the public.

In order to carry out our duties as professional Estate Surveyors and Valuers, we need to be guided by the code of professional ethics and practice enacted by the Nigerian Institution of Estate Surveyors and Valuers (NIESV) in concert with the Estate Surveyors and Valuers Registration Board of Nigeria ESVARBON) which essentially stipulates the core values and responsibility of the profession. The code of conduct or professional ethics and practice is enacted by the regulating bodies to guide and prevent exploitative behaviour by members and to preserve the integrity of the profession. The NIESV code of conduct sets a framework for standardization and provides disciplinary guidelines for unprofessional behaviours and conducts. In order to enhance professionalism by Estate Surveyors and Valuers working either in the public or private sector, it is imperative that they demonstrate high standard and values. Professional Estate Surveyors and Valuers are expected to take ethics seriously in order to enhance efficient delivery of services to the people. A robust and strong level of ethics can be achieved by providing ethical training and sensitization as a component of continuous professional development. Even though professional

Estate Surveyors and Valuers may be found qualified and competent in their duties, it is vital to ethical in the performance of their duties. Equally, there is the need to imbibe high level degree of integrity in handling their duties.

It is pertinent to note that the country and global community today need professionals with high level of social and moral awareness so that all will be aware of the moral obligations and potential impact of our decisions and actions. As professionals, we need to be good role models for others in behaviour, attitude and relationships. We must endeavour to act in a way which is professional so as to be able to gain and retain the confidence of the clients and the public at large at all times.

9. Strategies for Repositioning Estate Surveying and Valuation Profession for Future Relevance in Nigeria

With due cognizance of the various challenges confronting the profession, the need to evolve strategies for repositioning the profession for the future has become imminent. Thus the following solutions are proffered:

1. The need by institutions offering estate management in the country to design their syllabus to meet challenges on contemporary issues both at national and international levels to include emerging courses of global relevance such as environmental valuation and management, forestry, facility management and marketing.
2. Efforts should be made by NIESV and ESVARBON to encourage practicing members to show interest in academics so as to enhance their knowledge both in theory and practice. Most Surveyors have no interest of improving their educational standard beyond the first degree, whereas researches in different areas of estate management has almost rendered useless most of the knowledge acquired some decades back. The need to move with time at global level is the only way to guarantee relevance
3. The Nigerian Institution of Estate Surveyors and Valuers and Estate Surveyors and Valuers Registration Board of Nigeria as the regulatory bodies controlling estate surveying and valuation practice in the country should evolve a way of protecting the interest of their members in all ramifications including employment in academic community. If a standard of payment is recommended to institutions offering estate management as it is done by ICAN, this may encourage some members to take to academics. The dearth of lecturers in most institutions definitely affects the quality of students being turned out.
4. The need to encourage partnership and mergers of firms to ensure quality standards should be given consideration. In this way, there will be rooms for researches through standard liberay, bid for competition at global level and adequate funding for training and development. The size of such firms would allow for massive employment of young graduates

guaranteed of adequate exposure to professionalism and security of income. In addition, there will be continuity even with the demise of any member. This development would discourage touting due to perceived poor salary from one-man company. The concept of mega companies is a prelude to adopting pseudo names in the form of Limited Liability Companies for massive expansion and trading of stocks and shares.

5. Since quackery in estate agency is not peculiar to Nigeria, the strategy proposed by NIESV to organize other agents into manageable groups for effective monitoring, control, education and integration is a right step in the right direction. In line with this thought, a 2 week training of agents was organized by the Department of Estate Management of the Covenant University, Ota sometime in 2009.
6. The culture of 'Best Practices' based on ethics and proper conduct would automatically bring a difference between professionally trained agents and interlopers. The gradual awareness by the public extinguishes quacks in the profession.
7. The Continuous Professional Development (CPD) programme aimed at updating members along global trends is highly essential, thus, the public would appreciates quality delivery of services commensurate with international standards.
8. Also there is the need to emphasize specialized in our valuation exercise to disarm completely competitors who might capitalize on areas where they tend to claim competence.
9. Agency is just one of Estate Surveying areas of professionalism, efforts should be geared towards new frontiers such as forestry management, facility management, aviation and environmental valuation and management among others.

10. Conclusion

The paper has attempted to x-ray issues confronting Estate Surveying and valuation practice from global perspective. The general observation is that some of the challenges are always evolving with socio-economic trends at a particular point in time. While the challenges are hydra-headed, a model diagnosing them from Nigeria context gave an insight. Also, a juxtaposition of standards and ethics from other countries was brought to focus. The current position as it were in the society informed of the way forward so as to be assure of best practices in the future.

References

Akomolade, K. (2006) *Estate Agency in Nigeria.* Published by Bamboo Books, Printed by Ed-Asae Press, Lagos.

Akomolade, K. (2007) *Estate Management Education and Practice in the 21th Centuary*, A paper Delivered at the Continuing Professional Development (CPD) Seminar at Covenant University, Ota.

Eliot, P. and Warren, C.L.J (2005) *The Valuation Profession in*

Australia: Profile, Analysis and Future Directions Pacfic Rim Real Estate Society Conference_Melbourne "4-27 January

Gilbertson, B. (2003) The Issues Facing The Real Estate Profession, *The Australian Property Journal*, Vol. 27(4), pp. 345-347.

Kizquari Pty Ltd V Preston Pty Ltd (1993) 11 ACLC, 518

Kuye, O. (2008) *Estate Office Practice*, Climax Communication Limited, Yaba, Lagos

NIESV (2012) The Constitution of the Nigerian Institution of Estate Surveyors and Valuers

Oni, O. (2009) *Real Estate Marketing and Code of Conduct in Nigeria*, Rehoboth Consulting, Ijaye, Lagos

Pornchokchai, S. (2001) "*Valuation Practices in USA Today*" (Translated from a Speech of Mr Mark Bates, Director, International Affairs Department, Appraisal Institute on 28th February, 2001 at Government Housing Bank) in Pornchokchai, Sopon (ed), VAT News (Official Journal of the Valuers Association of Thailand). Quarter 2/2001, April 2001

Pornchokchai, S. (2001) *International Workshop: Valuation in Vietnam: Status-Quo, Problems and Solutions, Experience of Development Valuation Standard,* Thai Appraisal Foundation System and Its Content in Thailand **1**Under Contract: TF 050960-03

Porter, M.E. (1980) "*Competitive Strategy"*, The Free Press, A Division of MacMillan Publishing Co. Inc; New York

Ring, A.A. and Boykin, J.H. (1986) *The Valuation of Real Estate*, 3rd Edition, Englewood Cliffs, NJ: Prentice-Hall,. P.1 Sapir V Sapir (No. 2, !989) FLC, 92,042.

Employee Perception of Maintenance Practices at Selected Public Healthcare Facilities in Niger State, Nigeria

Bajere, P. A. [1], Abubakar, M. R. [2], & Muazu, D. A.[3]

[1,3]Department of Building, School of Environmental Technology,
Federal University of Technology, Minna, Niger State, Nigeria
paulbajere@aol.com

Abstract: Maintenance practice involves deliberate and orderly way that deals with planning, evaluation, organizing, and monitoring of maintenance activities and their expenses. An excellent maintenance management framework combines with learned and proficient maintenance staff can avoid safety and health issues and environmental harm; yielding longer assets life with less breakdowns, lower working costs and higher personal satisfaction for the users and occupants. Experienced and highly trained workers are inspired with a very friendly atmosphere and they are also in turn individual friendly.Lack of maintenance of our healthcare facilities is evident in the deplorable condition of the structures and equipment.This study assessed maintenance practices of maintenance staff at six (6) selected healthcare facilities in Niger State through a structured questionnaire. Data collected was analysed with Minitab 17 statistical software using descriptive statistics. The analysis revealed among others that majority of maintenance practice were preventive in nature, and that the maintenanceproblems in the healthcare facilities of Niger State was caused bylack of lack of funding and lack of successful adaptation of ineffective maintenance programmes and practices. The study recommended a proactive and aggressive approach to reduce the occurrence of defects in and around the healthcare facilities. It was also recommended that individual healthcare centres should solicit for both private and public funding for maintenance activities since they have partial autonomy to generate revenue internally for their operation.

Keywords*:* healthcare facilities, maintenance practice. preventive maintenance.

Introduction

Maintenance practice is a deliberate and orderly way that deals with planning, evaluation, organizing, and monitoring of maintenance activities and their expenses (Technical Information Document (TID), 2000). An excellent maintenance management framework combined with learned and proficient maintenance staff can reduce safety and

health issues and environmental harm; yielding longer assets life with less breakdowns, lower working costs and higher personal satisfaction for the users and occupants (TID, 2000). Experienced and highly trained workers are inspired with a very friendly atmosphere and they are also in turn individual friendly.

The importance of healthcare facilities or hospitals has been identified in the literature (Streifel, 2002; Ulrich, 1992; Onifade, 2003; Geisler, 2002). For instance, Streifel (2002) explained that these facilities are needed to prevent the spread of infection and provide adequate control of diseases. Ulrich (1992) also described healthcare facilities as medical-care atmosphere that measurably enhance individual results on health issue, decrease or remove ecological stresses, provide clear direction on issues impacting appropriate wellness care. The hospitals also offer healthcare surgery and psychiatric testing, including pregnancy testing, inpatient, and outpatient services.

Smith (2003) claimed that all healthcare facilities usually have common goals regardless of the location, size or budget: performance and cost-effectiveness, flexibility, expandability, therapeutic atmosphere, cleanliness, sanitation, accessibility, controlled circulation, aesthetics, security, safety and sustainability. According to Smith (2003), a well-organized style can help expertise, economic system conveniences and comfort; a non-functional style can impede actions of all kinds, detract from high quality of suitable care, and raise outlays to intolerable levels. Hardy and Lamner (1996) explained that lack of these goals can impede actions of all kinds and cause distraction from provision of quality care. Johassen et al. (2001) noted that the provision of health and suitable care is continuously changing world over and that the speed of change is ever rushing.

Several studies investigated maintenance practices of healthcare facilities (Igal et al., 2005; Shohet, 2003; Adenuga, 2007). For instance, Igal et al., (2005) analyzed integrated maintenance monitoring of hospital facilities. Igal et al., 2005 suggested a multi-system structural model and the performance of maintenance with guidelines and substitute sources of labour (outsourcing versus in-house). Shohet (2003) also identified key performance indicators for maintenance of healthcare facilities and suggested a condition-based maintenance (CBM) which was a common solution for the maintenance in a highly complicated system under tight economic circumstances. Adenuga (2007) also reviewed the operational state of hospital facilities in Lagos State as average and recommended proactive measures to reduce the nature of maintenance problem.

Friendly atmosphere inspires experienced and highly trained workers and this makes the individuals to be friendly. Healthcare facilities are places suitable for care and treatment, lack of appropriate upkeep of healthcare facilities have become a place where individuals have allergic-like responses to unspecified stimuli: responses like dizziness, nausea, discomfort of mucous membrane, eye and/or nasopharyngeal

discomfort and sensitivity to bad odour from individual waste, poor toilet features, and inadequate cleaning methods (Iyagba, 2005).

With reference to the older healthcare structures, especially, Onifade (2003) claimed that those which were previously well-known for their strength and act have now become less attractive because of lack of regular and adequate planning and mismanagement of the facilities. Onifade (2003) warned that if no proper step is put in place, the entire structures and facilities will corrode and will only be replaced in function if the means are available. Turrel (1999) suggested that the performance of hospital structures and its elements rely mostly on on-going and regular planned maintenance based on a well-organized maintenance programme considering the complex nature of medical healthcare structures, the sensitive technical electrical systems and insufficient maintenance budgets.

The conditions of public healthcare facilities in Nigeria are extremely unacceptable as a result of total neglect (Iyagba and Adenuga, 2005). Despite the millions of naira being spent to erect all these facilities, soon as commissioned, they are left to face premature but steady and rapid deterioration, decay and dilapidation. Iyagba and Adenuga(2005) confirmed that the conditions of public healthcare facilities in Nigeria as a result of total neglect are extremely unacceptable. According to Amobi (2006), most healthcare facilities in Nigeria are suffering from insufficient maintenance and as such they are in very poor and deplorable conditions. Banful (2004) claimed that the financial consequences of neglecting maintenance is often not only seen in terms of reduced asset life and premature replacement but also in increased operating cost and waste of related, natural, and financial resources. Geisler (2002) suggested that healthcare facilities must be prepared to accommodate whatever the long run holds considering the many developments coming to light every day.

Maintenance is related to the background of any project. Unfortunately, development plans and approved recurrent and capital estimates in public hospitals in Nigeria have revealed that thought have not been given to maintenance work (Onifade, 2003). A considerable analysis has been performed on aspects responsible for the insufficient maintenance of public housing, and there has been limited investigation on the subject with regards to healthcare structures. There is still a research gap especially in the northern part of Nigeria with regards to maintenance of hospital facilities. Adenuga (2012) performed an analysis of maintenance management practice in public hospital environment in south western Nigeria, and identified the important skills for maintenance supervisors in a medical center built atmosphere. Adenuga (2012) suggested that federal and state government authorities stop ignoring the problems in the healthcare service sector and develop strategies for effective maintenance practice.

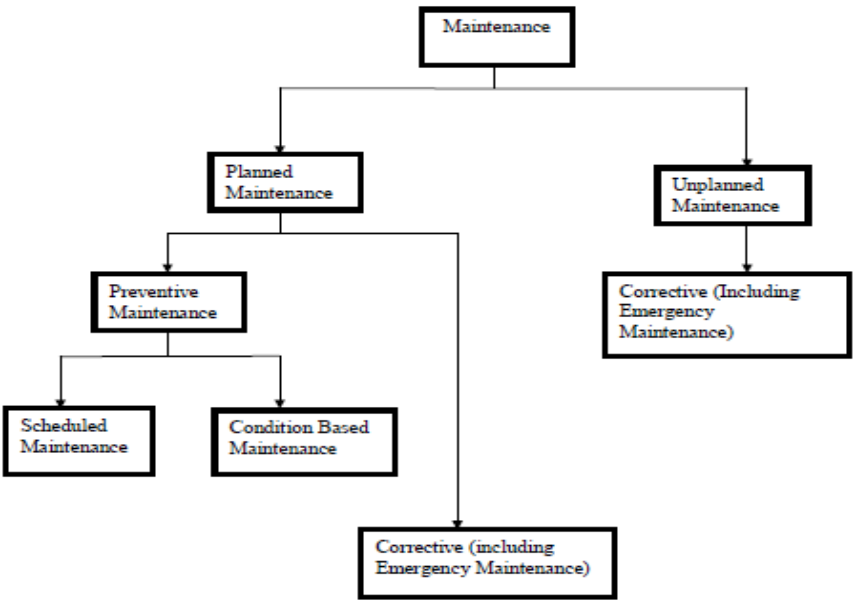

Figure 1: Types of Maintenance (Source: B.S 3811: 1984)

Figure 1 explains the theoretical framework for the study. As shown, the maintenance practices identified in BS 3811 (1984)categorises and explained terms as shown in Figure 1 as follows:

(i) Planned maintenance: "The upkeep prepared and achieved with consideration, administration and upkeep documents using a pre-specified policy. "Such policy must be extensive, well organised method covering all brief and phrase concerned.

(ii) Unplanned maintenance: This explains the performance of unexpected work or malfunction of loss. For instance, the ripping- off building through the action of a storm mostly constitute unexpected loss. It can also be known as unforeseen and inevitable maintenance.

(iii) Preventive maintenance: "The maintenance performed at pre-specified durations or corresponding to prescribed criteria and designed to decrease the probability of failing or the performance deterioration of products."

(iv) Corrective maintenance: "The maintenance performed on a building after damage is done, to recover facilities to serve its useful life".

(v) Emergency maintenance: "The upkeep required instantly to

prevent serious consequences." This is known as day-to-day upkeep, as a result of such occurrences like gas leaking.

(vi) Condition-based maintenance: "The protective upkeep initiated due to identification of defects of items during routine monitoring."

(vii) Schedule maintenance: "The protective upkeep performed to a pre-specified period of effort, number of functions and mileage."

(viii) Running maintenance: "Maintenance which could be done whilst products is still functioning".

The aim of the study was to assess the maintenance practices at selected healthcare facilities in Niger State, Nigeria. The objectives of the study were (a.) to evaluate maintenance problems as perceived by the maintenance staff at the selected healthcare facilities; (b.) to assess the level of commitment from management of the selected healthcare facilities; and (c.) to determine the reasons for the ineffective maintenance practices employed at these different healthcare facilities.

Four research questions were identified for this study as follows: (i) What are the major causes of maintenance problems in Niger State healthcare facilities? (ii) What maintenance guidelines and methods are used by the maintenance departments at the selected healthcare facilities? (iii) How committed are the management to solving maintenance problems at the selected healthcare facilities? (iv) What is the effect of maintenance problems on maintenance staff performance and productivity?

Study Area

The investigation considered state owned healthcare facilities in the three senatorial zones of Niger State. It investigated the maintenance at six selected healthcare facilities. These include (1) the General Hospital, Minna; (2) Umar Sanda Hospital, Bida; (3) General Hospital, Kuta; (4) General Hospital, (5) Kontagora; General Hospital Rijau (Tungan Magajiya) and (6) General hospital, Lapai.

Methodology

The population for this research consisted of maintenance staff from the six selected public hospital facilities in Niger State. Both inductive and deductive research methods were employed for the study.

Data was collected using 115 questionnaire sent to the staff of maintenance departments at the selected Healthcare facilities. A total of 58 questionnaires were returned giving a 50.4% response rate which was very adequate for the research. The sample size was calculated using 95% of the population size as illustrated in Table 1.

The researchers also interviewed the Director of Maintenance in seven of the healthcare structures analysed, to provide sufficient details as regards maintenance management practices, including maintenance budget and funding issues. These responses could not be gotten from the maintenance staff. The responses are presented in Table 13 under data analysis.

Probability sampling was used in this research to randomly administer questionnaire on the maintenance staff and users of the public hospital facilities. Stratified sampling method was also used to select from the sample frame categories. Simple random sampling was used to administer question on the maintenance staff of the different health care facilities sampled. Stratified sampling technique was used to select the health care facilities from the three zones in Niger State. Three hospitals were selected from the urban zones while three health maintenance areas were selected from the rural zones to compare the maintenance practices from the urban – rural perspective.

Applying the formula, the sample sizes was derived as shown in Table 1: The sample size for this study was calculated using an equation by Glenn (2013) as follows:

$$n = \frac{N}{1 + N(e)^2}$$

Where; n = Sample size

N = Population size in the sample unit

e = Level of precision which is $\pm$ 5% (0.05), at 95% confidence level.

Table 1: Calculation of study sample size

S/n	Description of Population	Population size	Source of population	Sample size at 95% Confidence level 95% confidence level
1	Maintenance staff	30	General Hospital, Minna	28
2	Maintenance staff	25	Umar Sanda Hospital, Bida	24
3	Maintenance staff	12	General Hospital, Kuta	12
4	Maintenance staff	26	General Hospital, Kontagora	24
5	Maintenance staff	10	General Hospital Rijau (TunganMagajiya)	10
6	Maintenance staff	18	General Hospital, Lapai	17
	Total	**121**		**115**

Data collected was analysed with Minitab 17 statistical software. Descriptive statistics (frequencies, percentages and mean rankings) were used to analyse the data.

Data Presentation

A reliability analysis was conducted using Cronbach's Alphafor the scales. As summarized in Table 2, several scales that represent the constructs appeared to have a good degree of reliability since each computed statistic was above 0.70.Table 2also shows the values of Cronbach's alpha for each construct of the questionnaire and the entire questionnaire. For the construct, values of Cronbach's Alpha were in the range of 0.725 and 0.866. This range is considered good and acceptable; the result ensures the reliability of each construct of the questionnaire. Cronbach's Alpha equals 0.885 for the entire questionnaire which indicates a good degree of reliability of the entire questionnaire, as supported by Cohen, Manion and Morrison (2000). Hence, it is proved that the questionnaire is valid, reliable, and suitable for the population sample.

Table 2: Reliability Analysis using Cronbach's Alpha

Construct	Cronbach's Alpha
Nature of maintenance practice Adopted in healthcare facilities	0.725
Extent to which healthcare management provide training for its personnel	0.866
Extent to which healthcare management provide level of motivation to maintenance personnel	0.732
Extent to which maintenance personnel consider the operational state of the healthcare building components	0.792
Major causes of maintenance problems in the healthcare	0.758
Total	0.885

Source: Field Survey (2013).

Table 3: Length of Service as Maintenance Department Staff

Duration	Frequency	Percentage
Less than 10 years	18	31.0
10-19 years	27	46.6
20-29 years	10	17.2
30 years and above	3	5.2

Total	58	100.0

Source: Field Survey (2013).

Table 3 describes the length of service as maintenance staff which reflects that 27 (46.6%) of the respondents had between 10– 19yearsworking experience, while 10 (17.2%) of the maintenance staff were above 20 years. Only 3 respondents had over 30 years' experience.

Table 4: Frequency of training to improve the skills and productivity of technicians and maintenance staff.

The option for training performance	Frequency	Percentage
Every month	0	0
Quarterly	38	76
Yearly	3	6
Every 2 years	9	18
Never	0	0
Total	50	100

Source: Field Survey 2013.

Table 4 reveals how often technicians and maintenance operatives acquire good training to improve their skills. 38 (76%) of the respondent claimed that training is provided at quarterly bases. All the respondents receive on training or another at least once in two years. This will enhance their training and development on the improvement of public hospital facilities in Niger state.

Table 5 reveals the type of training received by the maintenance staff. As shown, 46 of the 58 respondents (79%) of the total maintenance staff received training and attend conference to improve their technical skills, while 12 of the 58 respondents (21%) claimed to have certified professional course. This is not adequate for maintenance personnel to meet the technical nature of maintenance problems in the hospital. The response is also contradictory to the fact that all the respondents received at least one training within every two years.

Table 5: Type of Training received to Improve Technical Skill.

Training Option	Frequency	Percentage
Seminar/Conference	46	79
Certified Professional Course	12	21
Total	58	100

Source: Field Survey 2013.

Table 6: Motivation of Maintenance Staff by Management

Level of motivation	Frequency	Percentage
Staff regular payment of salary	16	27.6
Regular promotions	9	15.5
Good allowances	12	20.7
Opportunities for training/development	7	12.1
Safe/health working condition	2	3.4
Good working tools/equipment/materials	4	6.9
Job security	3	5.2
Job recognition	5	8.6
Total	58	100

Source: Field Survey (2013).

Table 6 shows the response rate on the level of motivation provided by hospital management which 27.6% was rated for staff regular payment of salary and 20.7% were for good allowances. This indicates that maintenance personnel are well motivated by the hospital management. Safe health working condition was rated low with 2 (3.4%).

Table 7: Detection of Maintenance Problems in Hospital Building.

Detecting maintenance problems	Frequency	Percentage
After a building component fail	5	8.6
Routine inspection	28	48.3
When complain is made	25	43.1
Total	58	100

Source: Field Survey (2013).

The analysis in Table 7 shows that maintenance staff carries out inspection on hospital facilities with 28 (48.3%) of the total respondents, while 25 (43.1%) claimed that only when they received complain from the management.

Table 8: Nature of Maintenance work on Healthcare Facilities

Nature of work	Frequency	Percentage
Renovation	24	41.4
Extension	21	36.2
Replacement	13	22.4
Total	58	100

Source: Field Survey 2013.

Table 8illustrates the analysis and type of maintenance work in hospital facilities in Niger State. It was shown that 41.4% mostly carried out renovation work on hospital facilities. Next in the table were extension and replacement with ratings of 36.2% and 22.4% respectively. This was attributed to the age of the facilities and population from the users.

Table 9: Maintenance Guideline and Methods.

Maintenance operatives	Frequency	Percentage
Maintenance manual	22	37.9
Maintenance policy	36	62.1
Total	58	100

Source: Field Survey (2013).

Table 9: reveals the level of maintenance work by the operatives. 37.9% of the respondents claimed to have maintenance manual that guides maintenance operation and better performance. While 62.1% indicates that public hospital facilities have formal maintenance operation policies that enhanced performance of building for effective healthcare services.

Table 10: Maintenance Record System.

Records of Maintenance Work	Frequency	Percentage
Filling System	44	75.9
Use of Computer	4	6.9
Book Keeping System	10	17.2
Total	58	100

Source: Field Survey 2013.

Table 10 reveal the system adopted by the maintenance operatives for keeping their record. As shown, 75.9% of the respondents claimed to keep maintenance records with the use of filling system, followed by book keeping system rated 17.2%.

Table 11: Maintenance Practice Adopted in Healthcare Building.

Maintenance practices	Frequency	Percentage
Corrective	16	27.6
Preventive	34	58.6
Planned	3	5.2

Proactive	5	8.6
Total	58	100

Source: Field Survey 2013.

Table 12: Rating the Effect of Maintenance Problems on Maintenance Staff

Effect on maintenance staff	Frequency	Percentage
Very High (4)	11	18.9
High (3)	25	43.1
Low (2)	15	25.9
No effect (1)	7	12.1
Total	58	100

Source: Field Survey (2013).

Table 11 indicates the type of maintenance practice adopted in public hospitals in Niger State. The respondent rated preventive type of maintenance with 58.6%. Next were corrective with 27.6%. Planned and proactive types of maintenance were rated the least with 5.2% and 8.6%,respectively. This indicates that different kind of maintenance is being practiced in the public hospital.Planned and proactive types of maintenance were rated the least with 5.2% and 8.6% respectively. 43.1% of the respondents rated high on staff wok performance.

Table 12 reflects maintenance problem on maintenance staff wok performance on public hospital facilities. 43.1% was rated high by the respondents. This implies that maintenance problems have great effect on staff performance and productivity.

Data Analysis

Table 13 gives the breakdown of the overall ranking of 15 major causes of maintenance problems identified by maintenance staff of the public hospital facilities in Niger state. As shown, lack of successful maintenance programmes was ranked first by maintenance staff with a mean score of 3.62, followed by the scale of efforts, extent of facilities and resources for maintenance operations on quality of management in the hospital with a mean score of 2.98. Insufficient funds for maintenance job with a mean score of 2.84. Others that follow were difficulty in procurement of spare parts due to unavailable funds, Inflation of cost of maintenance by the operatives, lack of skilled personnel in the maintenance department, attitude of users and misuse of facilities, complexity of design and non-involvement of maintenance expert during design stage, no long–term

arrangements made for the supply of essential parts for replacement, no adoption of appropriate maintenance cycle for building maintenance, absence of form of planned maintenance programmes, natural deterioration due to age and environment, persistent breakdown through indiscipline and ignorance, lack of discernible maintenance culture. The factors that ranked last contributing to maintenance problems were the 'use of poor quality components and materials' with a mean score of 2.00.

Table 14 reveals interview responses from seven maintenance directors. The interview focuses on funding and budget. As shown, six of the 7 maintenance directors (85.7%) claimed that they have a budget for maintenance of healthcare facilities, while only one (14.3%) did not have a budget for maintenance. It was clear that the healthcare budget for maintenance work is in form of long term budget with 57.1% response from the directors of maintenance. The annual estimated budget for healthcare facilities ranges between 16 - 20 million naira. The study also

Table 13: The ranking of major causes of maintenance problems in Niger State Healthcare facilities

Factors	Maintenance Mean score	Staff Overall Rank
Lack of successful maintenance programmes by the maintenance department	3.98	1
The scale of efforts, extent of facilities and resources for maintenance operations on the quality of management in the hospital	2.98	2
Insufficient funds for maintenance jobs	2.84	3
Difficulty in procurement of spare parts due to unavailable funds	2.76	4
Inflation of cost of maintenance by the operatives	2.74	5
Lack of skilled personnel in maintenance department	2.57	6
Attitude of users and misuse of facilities	2.36	7
Complexity of design and non involvement of maintenance expert during design stage	2.35	8
No long-term arrangements made for the supply of essential parts for replacement	2.24	9
No adoption of appropriate maintenance cycle		

for building maintenance	2.21	10
Absence of a form of planned maintenance programmes	2.19	11
Natural deterioration due to age and environment	2.10	12
Persistent breakdown through indiscipline and ignorance	2.04	13
Lack of discernible maintenance culture	2.03	14
Use of poor quality components and materials	2.00	15

Source: Researchers' Field Survey (2013).

Table 14: Directors Interview Responses regarding Maintenance Management Practices

S/No	Funding	Options	Frequency	Per cent
1	Does the hospital have a budget for its maintenance?	Yes	6	85.7
		No	1	14.3
		Total	7	100
2	Is the budget inform of	Long Term	4	57.1
		Medium Term	2	28.6
		Short Term	1	14.3
		Total	7	100
3	Idenfity the range of estimated annual maintenance budget for the hospital	5-10 Million	1	14.3
		11 - 15 Million	1	14.3
		16 - 20Million	2	28.6
		21- 25Million	1	14.3
		26Million and above	2	28.6
		Total	7	100
4	Are the approved funds sufficient to carry out maintenance needs in the Hospital	Yes	2	28.6
		No	4	57.1
		Not Really	1	14.3
		Total	7	100
5	How long does it takes to approve funds for maintenance	Immediately	3	42.9
		2 weeks	2	28.6
		2 months	2	28.6
		3 months	1	14.3

		Total	7	100
6	How is the fund released for the maintenance	In bulk	1	14.3
		Part payment	6	85.7
		Total	7	100
7	How are the funds generated?	Government funding	4	57.1
		Internal generated revenue	1	14.3
		Appeal funds/donations	1	14.3
		All of the above	1	14.3

Source: Researchers' Field Survey (2014).

revealed that funds for maintenance work are not sufficient to meet the demand and nature of maintenance work. However, the funds for maintenance work are released to them on time, in form of part payment, to carry out maintenance work on the healthcare facilities. The interview also revealed that funds are principally generated through government budget. It also indicates that the hospital has a partial autonomy to generate revenue internally for its operation.

Analysis of the data shown in Table 3 revealed that 27 (46.6%) of the respondents had working experience of between 10-19years as maintenance staff, while 10 (17.2%) of the maintenance staff were above 20 years. Only three respondents had over 30 years of experience.

Analysis of the data shown in Table 4 revealed the levels at which technicians and maintenance operatives acquired good training to improve their skills. 76% of the respondent claimed that training is provided at quarterly bases. It also showsthat 79% of the total maintenance staff received training and attended conference to improve their technical skills, while 21% claimed to have certified professional course.

Analysis of the data shown in Table 6 revealed that the response rate on the level of motivation provided by hospital management which 27.6% was rated for staff regular payment of salary and 20.7% were for good allowances. This indicates maintenance personnel are well motivated by the hospital management. This shows that maintenance personnel are faced with poor and unsafe working condition that was rated low at 3.4%.

Analysis of the data shown in Table 7 revealed that maintenance staff carried out inspection on hospital facilities with 48.3% of the total respondents, while 43.1% claimed that only when they received complain from the management. The frequency however, is not adequate for hospital facilities. Maintenance staff should inspect regularly and report defect for rectification.

Analysis of the data shown in Table 9 revealed that the 37.9% of the

respondents claimed to have maintenance manual that guides maintenance operation, while 62.1% indicates that public hospital facilities have formal maintenance operation policies.This shows that maintenance problem reported by the users and repaired is being kept for record purposes.

The analysis of data shown in Table 14revealed the maintenance management practices of funds in the healthcare facilities. As shown, 85.7% of the maintenance directors claimed that they have a budget for maintenance of healthcare facilities and the budget for maintenance work is in form of long term budget with 57.1%. The estimated budget for healthcare facilities ranges between 16- 20 million. The study also revealed that funds for maintenance work are not sufficient to meet the demand and nature of maintenance work.

Conclusion

This study investigated maintenance management practices at selected public healthcare facilities in Niger State. The analysis revealed major maintenance problems and maintenance constraints. Research finding confirmed that budgetary limitation and funding issues are partly to blame for the poor maintenance condition of the surveyed healthcare facilities. It was suggested that since the administrators of these facilities have autonomy to generate funding, these organizations should take advantage of such opportunities.

Another observation was the inadequacy of maintenance personnel training, tomeet the technical challenges of maintenance problems, especially in the healthcare facilities.Analysis of the finding revealed that maintenance staffs rated maintenance problems high as a factor which affects their work performance,.

A final observation in regard tothe maintenance management practice was the record keeping system. Research finding revealed that 44 (75.9%) of the maintenance records is kept by manual filing and only 4 (6.9%) of the respondents claimed that their maintenance records is kept by the use of computer. In other to improve the effectiveness of the maintenance practices employed, Adenuga (2012) suggested that federal and state government authorities stop ignoring the problems in the healthcare service sector and develop strategies for effective maintenance practice. Based on the research findings, the following recommendations are suggested:

i. Maintenance managers and their team should adopt proactive approach to reduce the occurrence of defects and high rate of maintenance problem. It is also important that maintenance management work together with top hospital administration management, to provide more effective organizational structure and adequate training of maintenance personnel that will lead to better maintenance management of healthcare facilities and exposed maintenance personnel ahead on current maintenance technologies and innovation.
ii. Government should provide adequate funding for the running of public hospitals as well as ensure

that such funds is judiciously utilized. Private individuals and organizations should endeavours to assist government health related issues by involving in fund raising activities.

iii. Government should equally make it as a matter of policy for private and public hospitals that there should be a maintenance policy guiding their maintenance programmes.

iv. Putting in place a computerized maintenance management system (CMMS), for improved record keeping of maintenance activities.

References

Adenuga, O. A. (2012). Maintenance Management Practices in Public Hospital Built Environmnet. Retrieved on May 5th 2013, from www.jsd-africa.com/jsda/vol14No1. Spring2012A/PDF/Maintenance

Adenuga, O.A (2012), Maintenance Management Practice in Public Hospital Facilities in South-West, Nigeria, Unpublished PhD. Thesis, Department of Building, University of Lagos, Nigeria.

Adenuga, O. A. (2007). Assessment of Factors Affecting Maintenance Management of Public Hospital Facilities in Lagos State Nigeria. *The construction and Building Research Conference of the Royal Institution f Chartered Surveyors* (pp. 1-12). Atlanta USA:RICS.

Amobi C.O (2006). Fundamentals of Building Maintenance Technology and Management. Achugo publications, Owerri.

Banful, E (2004). A Stitch in Time Saves Nine; Cultivating a Maintenance Culture in Ghana,An Article Presented at a Seminar on Maintenance Culture in Ghana. March 16, 1 – 2

Barrie, C., and Peter, S. (2007). *Building Maintenance Management*.2nd Edition. Oxford, United Kingdom: Blackwell Publishing. British Standards Institution. BS 3811: 1984 Glossary of Maintenance Management Terms in Terotechnology Chicago: APWA, 1992.

Cohen, Louis, Lawrence Manion, and Keith Morrison. (2000). Reseach Methods in

Education. London; New York: Routledge / Falmer.

Cronbach, L. J. (1982). Designing evaluations of educational and social programs. San

Francisco: Jossey-Bass.

Geisler, E. (2002). *Trends in Hospital and Healthcare Technologies – The future. Hospital Engineering and Facilities Management*, 18 – 22.

Hardy, O.B. and Lammers, L.P. (1996) *Hospitals: the planning and design process*, Aspen Publishers.http://www.auditor.leg.state.mn.us

Igal M. S, Sarel L, and Dany B, (2005). Integrated Maintenance Management of Hospital Facilities in Israel. *Journal of Building Appraisal* , 50-62.

Ikpo, I. J. (2006).Building Maintenance Management. Mason Publishing Company. Calabar, Nigeria. 2-4.

Iyagba, R. O. A. (2005): *The Menace of Sick Facilities – A challenge to All for its Prevention and Treatment*. An Inaugural lecture delivered at University of Lagos, Lagos.

Johassen, J., Klemenic, R., and Leinenwever, M. (2001) *Health facility flexibility and humanity: an agenda for the 21st century*, Stockholm.

Nous Hospital Consultants (2002): *Generating the master plan for hospitals*. Leading Hospital and Health Care Management Consultants of India pp. 1-3.

Onifade, K (2003). *Informatics in Hospital Management*, An unpublished Msc Research Report, Department of Business Administration, University of Lagos. Nigeria.

Shohet, I. M (2003). Key Performance Indicators for Maintenance of Health Care

Facilities 21 (1) 5-12.

Smith, R. (2003) "Best Maintenance Practices. Journal for Maintenance and Maintenance Management Vol. 16 No. 001 (www.MaintenanceJournal.com)

Streifel, A.J (2002) *Infection Factors in Hospital Building Maintenance and Operations*, Department of Environmental Health and Safety, University of Minnesota.

Turrell, P (1999) Small is Different: *A Strategy of Effective Management of Maintenance in Nonprofit-making Organization*, The Royal Institution of Chartered Surveyors, pp 1-3

Ulrich, R (1992) *Garden in Health Care Facilities' Use, Therapeutic Environments Forum*, Academy of Architecture for Health, Hellmut, Obata.

Zubairu, S. N. (1999): Maintenance of government office facilities in Nigeria – a post

occupancy evaluation approach. Unpublished Ph.D. thesis, Department of Building, University of Lagos, Lagos, Nigeria.

Alternative Property Documentation in Nigeria: A Case Study of Ogun State Home-Owner Charter Programme

Bello Nurudeen Akinsola Jolaoso[1], Babatunde Adekoyejo[2] & Kilasho, Musiliudeen Omotunde[3]

[1]Department of Estate Management, Faculty of Environmental Sciences, University of Ilorin, Ilorin, Nigeria
[2]Department of Architecture, School of Environmental Studies, Moshood Abiola Polytechnic, Abeokuta, Nigeria
[3]Department of Urban & Regional Planning, School of Environmental Studies, Moshood Abiola Polytechnic, Abeokuta, Nigeria.
Bello4all0007@yahoo.com

Abstract: Most occupied residential property developers in Nigeria urban centers are faced with lack of land-title and physical development documentation and problem of acceptability of population census data. Consequent upon these and in the realization of likely loss of significant revenue accrual there from, and perhaps due to the emerging sporadic yearning and aspiration of most property owners to have their respective properties properly and statutorily documented for record purpose or for financial obligations or both, the government of Ogun State, Nigeria came up with a program tagged " Homeowner Charter (HOC) 2013 ". The programme provides window of opportunity for home-owners or property developers in respect of residential buildings for securing statutory land-title and development permit, with concession/waiver on some usual pre-requisites and financial obligations. This was to stimulate voluntary compliance with the physical development requirements by homeowners for generating appropriate population data for developmental project planning and implementation. This paper therefore attempts the assessment of the level of achievement of the Government of Ogun State, Nigeria in this pursuit. Pertinent data were obtained through a case study approach and field survey of randomly selected 304 respondents in Ogun State and data there from were subjected to descriptive statistical analysis. Findings revealed that although revenue-raising was not indicated as one of the objectives of HOC programme, the programme was able to create a considerable revenue share from property market both in primary form and secondary form to the Government. The Ogun State Government gave priority to revenue generation above other objectives

set for the program and the program is generally not meeting up with the scheduled time for the exercise. The study also found out that the HOC program benefitted all the stakeholders, but with shortcomings of abuse of existing planning and land documentation processes and encouragement of pre-mature inhabitation of buildings. It is therefore recommended that Government should emphasise on speedy delivery of the HOC programme rather than revenue generation and take caution so that the programme do not extinguish the already established land documentation and planning permit approval system.

***Keywords*:** Home-Owner Charter (HOC), land-title, development permits, remedial, compliance, population data.

1. Introduction

Land is one of the most important resources available to mankind because all human activities take place on it. It is a factor of production as well as, factor of development. It is a wealth of the nation, if appropriately tapped; otherwise it remains a *dead capital* (Ukaejiofo, 2009).

An official record of who owns a piece of land is simply termed land title. Land is mere natural resources, but land with secured property right is seen as an economic resource (Perera, 2008), this is because land resources that is untitled is deemed to be informal and may not be economically visible in a nation's economy.

Land titling is the process of providing enforceable legal and secured rights to the possession and use of a given portion of land. Universally, land titling is a central concern, catalyst for national development and meaningful land reform programme while untitled land promotes segmentation of land markets and equally serves as a constraint to volume of property transactions.

Nigeria as a nation, is endowed with a vast land resource which is largely untapped because only 3% of land titling have so far been recorded, thereby retarding its physical development and full economic potential (Ukaejiofo, 2009). Similarly, Eleh, (2009) opined that, if truly land is an asset and a good store of wealth, it means that unleashing its potential and making it convertible to capital will serve to empower the populace and also foster national development.

However, the full potential of land as a factor of production can only be realized with appropriate documentation, titling and registration and human activity can become dynamic and more valuable only with secured or confirmed title.

Next to land titling in property development is securing a planning and development permit. A planning permit is an entitlement given by law and as right to developer(s) or owner(s) to make particular use of piece of land owned by statutory right, in a specific manner which a designated area of land is to be developed and within a time limit and expires under specified circumstances.

Development permit implies and means a permit to develop any piece of land or building granted by the statutory authority empowered to give such, in accordance to the planning laws and building regulations. This permit/approval must be obtained for new construction, renovations,

businesses, and changes of use to existing buildings.

In some urban centers in Nigeria, it is required to have a valid planning or land use permit before applying for a development or building plan permit to construct the building or structure, or to apply for business license/permits. In Lagos, Abeokuta, and their environs (Nigerian urban centres), requirements for securing development permit include: the Certificate of Occupancy (C of O), and/or Proof of Land ownership, receipts of payment of the prescribed statutory fees, evidence of Tax payment by applicant, sets of Architectural drawings, Structural Drawings and Engineering Services drawings, Original/Sun print copy of Survey Plan or Beacon Sheet among others (Lagos State Ministry of Physical Planning, 2011, Ogun State Urban and Regional Planning Law 2005 and Ogun State Building Planning Regulations 2010).

The statistical knowledge of people's population is central and fundamental to its developmental plans, as it provides information for effective national planning, equitable governance and planning for the future. Census, i.e. the recording of human numbers using statistical method is not a new development; it has in the past used for collection, analyzing and interpretation of numerical data relating to a certain area of investigation as well as for drawing valid conclusions in situations of uncertainty and variability (Eniayejuni & Agoyi 2011). It also serves as a basis for resource distribution and/or revenue allocations, constituency representation, employment, the location of industries and social amenities etc.

The political and economic development would be easy if reliable population data were available because the absence of trustworthy or accurate population data directly affects the government's inability to ensure balanced political representation and equal access to important governmental resources (Eniayejuni & Agoyi 2011). In most situations however, it has been observed that population census was a subject of manipulation, ineffectiveness and falsification of figures (Eniayejuni & Agoyi 2011). Thus, when a society does not know the proportion and the total number of its citizens, its planning process is likely to be haphazard, difficult and ineffective.

Statistical records available in Ogun State, Nigeria indicates that many residential structures in the state are built illegally on both the Government and private parcel of land without building plan or development permit. Most of the buildings have no title documents on them because they do not possess C of O, probably due to the perceived high processing cost.

Asides, majority of building owners have encroached on Government acquired lands without appropriate legal documentation from Government. The Ogun State Government has also noted this as a problem in the state. In solving these identified problems of land documentation, lack of planning and development permit, as well as, unreliable population data for proper planning, Government of the State came up with HOC programme.

What are then the precedent processes of documenting land title and planning permit in Ogun state? What are the objectives of the HOC programme and how is each objective achieved and to what extent? are the stated research questions for this work. It is against this backdrop that the paper sets to study the level of achievements of Ogun State Government in line with its stated objectives for the HOC programme.

To achieve the stated objectives of the paper, the paper has been structured into seven sections, the next section is on the study area and the HOC programme, followed by review of related literature in section 3, section 4 is on the study methodology,followed by findings of the study in section 5, discussions of the findings was done in section 6 before inferences and conclusion of the work was done.

2. The Study Area and Home Owners Charter (HOC)

Ogun state otherwise called the Gateway State is one of the 36 states that make up the Federal Republic of Nigeria (figures 1and 2 refer). It covers a land area of about 16,409.26km, made up of 10 zonal land areas, with 20 local government areas, 3 senatorial districts, 4 ethnic zones (Egba, Yewa, Ijebu and Remo) and having population of 3.751million comprising 49.71% male and 50.29% female.

Ogun State is bounded in the west by the Republic of Benin, on the South by Lagos State and the Atlantic Ocean, on the East by Ondo State and in the North by Oyo State. Abeokuta is the capital and largest city in the state. Internally, the state is geographically adjacent to Lagos State hence it provides road and rail links, connecting Lagos with the rest of the country.

Ogun State has the highest number of registered universities in Nigeria (nine in all) and one of Africa's largest industrial centres, with significant industrial capacity for (especially medium and large scale), wholesale, retail, and financial activities. Ogun State's Gross State Product (GSP) was N128.92Billion in 2008, accounting for 0.56 percent of Nigeria's GDP.

It is 100 percent non-oil, dominated by wholesale and retail trade, real estate and road transport, which jointly account for 60 percent of its quoted GSP. Trading, Real Estate and Road transportation are predominant economic activities in Ogun State. Each of these generates about N25 billion worth of economic output annually to individually contribute about 20 percent of Ogun's economic output and jointly account for about 60 percent of its GSP (Ogun State Website).

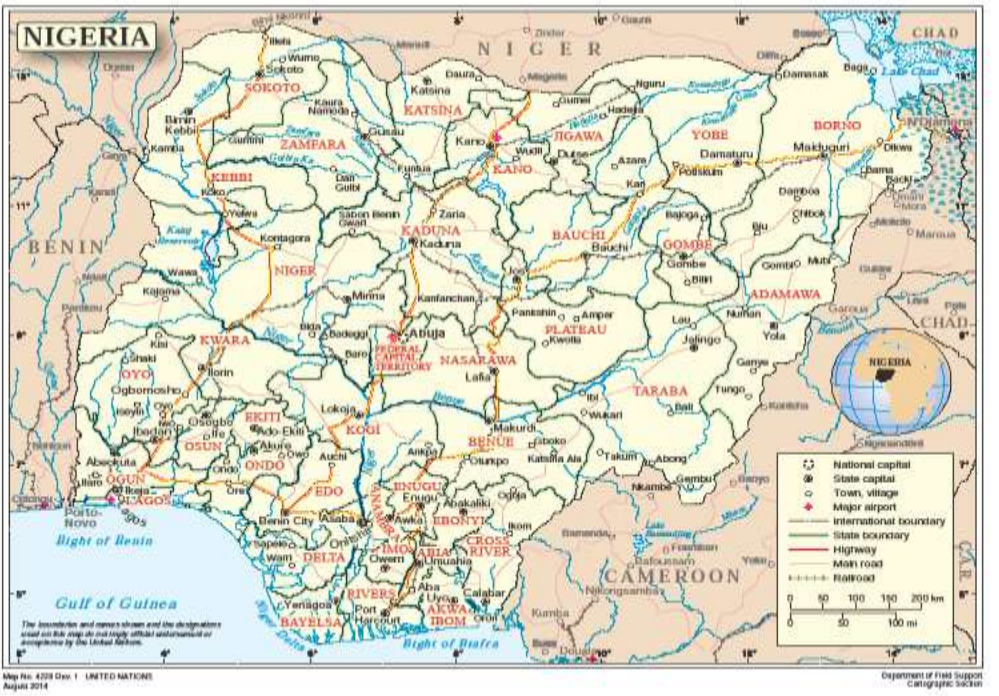

Figure 1: Map of Nigeria Showing its 36 States (www.un.org/depts/cartographic/map/profile/Nigeria.pdf#page=1&zoom=auto,-270,612)

According to Ogun State Ministry of Urban and Physical Planning (2013), the GIS Satellite mapping of the State revealed that there are significant numbers of unrecorded properties and thousands of houses in the state that have no building plan approval, certificate of occupancy and other title documents. This according to the Government is attributable to the perceived high cost of securing title to land and planning permit for development. This has made majority of property owners to avoid the payment of property taxes and Government is therefore losing substantial sum from property related taxes.

There is also lack of data in the areas of education, health and other essential infrastructures to guide Government in the provision of medium-term planning for provision of roads, schools, hospitals and other essential services. The population data released in 2006 by National Population Census still remain a subject of doubt by the state Government and the people (Eniayejuni & Agoyi 2011). This has negative impact on the effective planning of facilities in the state.

Government's urban renewal policy forming an integral part of the government's mission to rebuild the state was seen by the Government to be un-achievable without reliable data. The state was also characterized by disputes of ownership of properties, while property related fraud and problems of

land speculators have been noted to be rampant, which often manifest in the form of encroachment on land under Government acquisition and low value of the land-property in the State property market.

In realisation of these, the Ogun State Government, on Monday, December 16, 2013, launched the "Home Owners Charter" (HOC) - a programme designed to enable property owners in the State to regularise their land and landed-property documents. Owners of properties who built without government approval/permit would not only have the opportunity to regularise its legal status and title documentation, but also obtain development (building) plan approval/permit and Certificate of Occupancy (C of O) at a huge discounted rate with concession/waiver on some usual pre-requisites and financial obligations such as penalties and fines that are normally levied against those who build houses without permit or approval.

Apart from being an integral part of the government's mission to rebuild the State, the scheme will also source and provide data for the medium-term planning for provision of roads, schools, hospitals and other essential services. In addition to this, the scheme will be extended to the owners of properties who built on land belonging to the State government. It is expected to unlock the latent potentials of property owners at creating wealth and enhancing the development of Ogun State's housing market. It will help also, to minimise disputes of ownership of properties while property related fraud and problems of land speculators will be reduced to the barest minimum (Eleh, 2009).

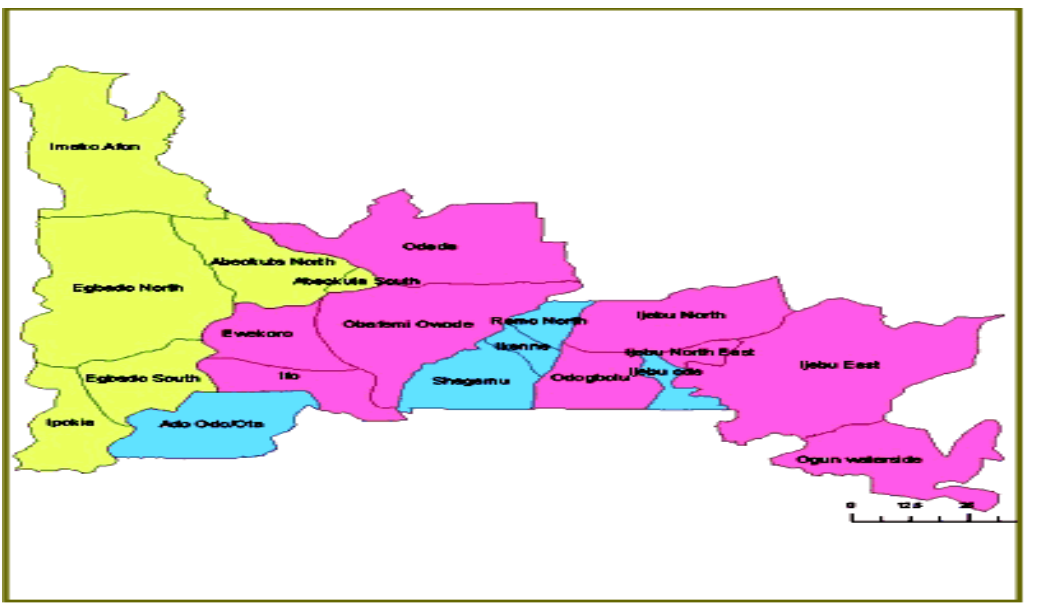

Figure 2: Map of Ogun State, Nigeria showing its 20 Local Government Areas.

(Source: Ogun State Government Economic Plan Development 'Mission to Rebuild' 2012-2015)

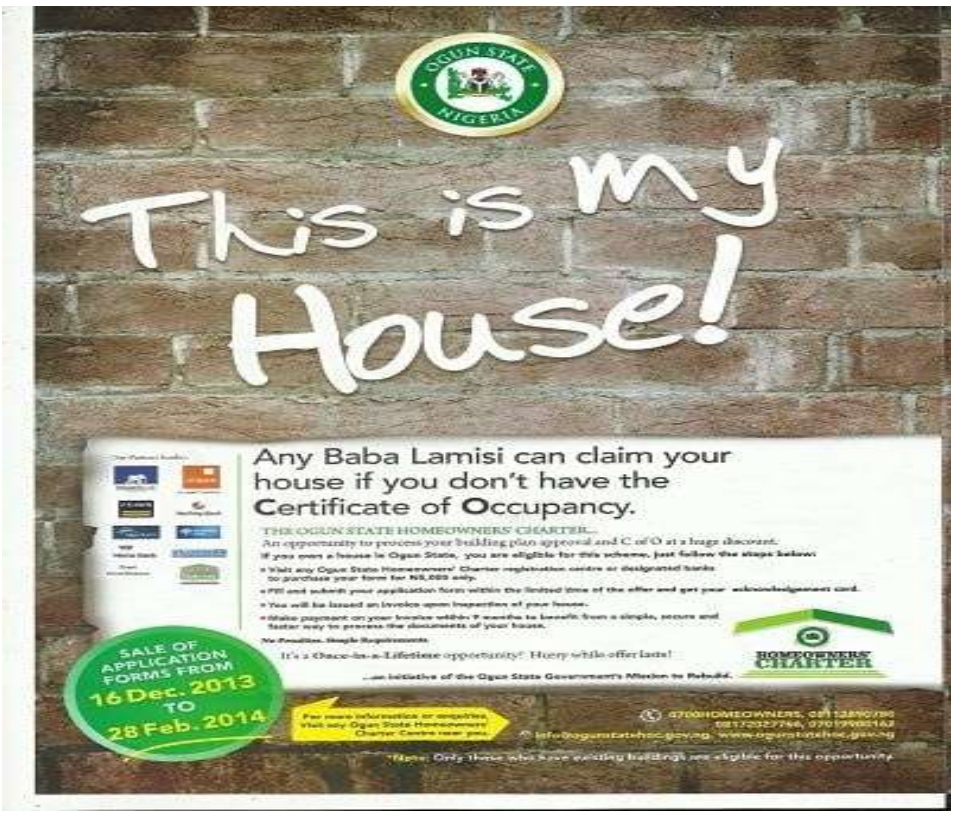

Plate 1:HOC Programme Awareness Poster (HOC website 2014)

The HOC Programme relaxes the documentation requirements and fees are discounted so that many residents, especially those who would otherwise not be able to afford it, could benefit from the programme. Interested property owner are expected to make an initial deposit of N5, 000.00 and then submit documents that can be used to establish ownership of the property.

These documents include land purchase agreements, deed of gift or sub-lease, receipts of payment of the prescribed fees and survey plan (if available). To qualify for consideration under this programme, such property must be a functional and fully occupied/inhabited residential house on a plot or maximum of two plots of land. Building structures uninhabited and under construction at a level not beyond lintel are not eligible for consideration under this charter.

Properties that are built under Power Holding Company of Nigeria (PHCN) high tension cables, those on Right-of-ways, on the 'set-back' of roads, and

those on petroleum or gas pipelines, water ways, flood plain, gullies and government committed acquisitions are excluded under this charter. Other structures excluded are substandard or defective property and property under legal dispute etc. Communities expected to benefit from the initiative under this phase of consideration are Abeokuta, Ijebu-Ode, Shagamu, Sango-Ota, Magboro, Ifo, Ogijo, Ojodu, Alagbole, Ado-Odo, Oke-Odan, Akute, Agbado, Agbara, and Ijoko-ota, all urban.

The HOC programme provides simplified payment plan by allowing applicant's instalment payment and facilitated payment through bank loans with re-payment plan not exceeding two-year tenure. The final cost payable by the applicant depends on property size and the area in which the property is located. A typical family bungalow (four-bedroom bungalow on a single plot of land) attracts a discounted sum of N95, 000.00 instead of the normal fees of N430, 000.00 and the maximum processing (moratorium) period of 9 months. The government agencies concerned with the HOC programme are the Ministry of Urban and Physical Planning, Ministry of Justice, Ministry of Finance and Bureau of Lands and Surveys (Authors survey, 2013).

3. Literature Review

Ugonabo and Emoh (2013) opined that land is a crucial element in the property development process and gaining access to land especially by the urban poor is one of the serious constraints confronting housing development in many developing countries. According to Omirin (2002), accessibility to land encompasses its tenure security, affordability, availability and the ease with which it is acquired, while Erguden (2001) was of the view that promoting security of tenure is a prerequisite for sustainable improvement of housing and environmental conditions.

Cases of land invasion as a means of land acquisition are well documented in Latin America and some parts of Asia, while in East and Southern Africa, squatting on illegal land has been very popular (Opoko & Ibem, 2013). In both cases, occupation precedes housing construction which involves house owners, friends and family members, using rudimentary houses that are improved and expanded over time in a process Renaud (1984) referred to as "progressive investment".

In those regions of the world, many of the settlements that evolved in this process have been able to undergo regularization of tenure and in the process attracted public provision of basic infrastructural services. In Nigeria, development of housing by the poor has followed a different pattern because comparatively, land invasion and squatting are very minimal but land titling feature mostly. Land is often purchased not through public channels but through the informal market from land owning families or those who desire to resell their plots. House building process is usually incremental using grades of materials within the means of each household.

Land titling is a policy intervention to recognize rights on land; to guarantee ownership of rights and recorded interests; to monitor and improve land market. It also provides support for government towards revenue drive

through property taxation, as well as, encourages physical and economic development.

The goals of ideal land policy according to Eleh (2009) are to confer title on the land owners and empower them economically. It creates a secured land registry system and helps to establish efficient, fast land transfer and administration system that will foster market fluidity, equitable distribution of land resources. It facilitates the development of land information systems and creation of database of addresses that could be used in the service and collection of bills in respect of levies, tenement rates, crime control etc.

It therefore suggests that, land titling activities focuses on the improvement on land tenure security and the attendant promotion of its economic use. It involves analysis of the existing legal framework of land administration, property adjudication and registration, mapping and land surveying as well as, the formalization of informal property rights.

It is perhaps in this stead that Atilola (2013) posits that, the major objective of the land reform is to transform Nigeria into a land market economy by issuing land titles to all land owners especially the rural dwellers who cannot use their asset land to raise capital because they do not have titles. The pivot of the land reform agenda is the systematic land titling and registration of all land parcels in Nigeria with a view to creating a land market economy, towards empowering the owners whose land asset is currently locked up as "dead capital" due to lack of relevant titles.

However, the need to involve relevant professionals and the adoption of best practices in the implementation of the land titling is underscored. Emerging Markets Group (2009) advocates that, land tenure regularization has generally failed where methodologies have not sufficiently taken into consideration the local reality of informal settlements and the importance of community-based dispute resolution and planning.

It was further revealed that successful tenure formalization is directly linked with the upgrading of informal settlements and requires the participation of all stakeholders – the community residents, the public, and the government – in resolving disputes and formalizing settlements. Part of Government control over the use of land is by controlling the development on the land and curtail the excesses of people on the use of their land.

Planning laws are meant to control the excesses of people concerning the use of land and the general environment and Government has a duty to enforcing these planning laws (Omole and Akinbamijo 2012). Part 2 Sections, 28-34 of Nigerian Urban and Regional Planning Law, (NURPL) Decree No. 88 of December 15, 1992 also made it clear that approval should be sought before any development can be carried out on land. The law makes it mandatory for not only the people, Government and its agencies to obtain approval before commencing any development and planning bodies have the power to approve with amendment, or delay approval of an application, or if

circumstances so required, reject development permit completely.

Section 60 provided that where a developer contravenes the provision of a planning law, the control department shall have the power requiring the developer to: (a) prepare and submit his building plan for approval or (b) to carry out such alteration to a building as may be necessary to ensure compliance or (c) to pull down the building or (d) to reinstate the piece of land to the state in which it was prior to the commencement of building. The HOC programme waived all these provisions/requirements in respect of the pre-conditions for granting planning and development permits.

From international experience, the Afghanistan's experience indicated that an estimated 5.5 million Afghan citizens live in urban informal settlements throughout Afghanistan. These settlements do not conform to existing master plans and do not meet the formal requirements for access to land. The Kabul Master Plan of 1978 is over 30 years out of date and does not account for the recent population boom in returning refugees.

Basic services such as power, sanitation, and potable water are either not provided or are insufficient. The government's response historically has been inadequate in terms of upgrading physical infrastructure and improving tenure security for the residents of informal settlements.

USAID/LTERA has piloted tenure formalization methodologies in Kabul, Kunduz, Taloqan and Mazar-i-Sharif to address tenure insecurity in informal settlements through an incremental, community-based methodology of upgrading and tenure regularization. The teams have developed a replicable and cost-effective process that integrates the upgrading of basic services with the regularization of tenure and formalization of informal settlements into the municipalities' urban planning processes.

The project identified gaps in the legal framework affecting tenure regularization and provided advice to the Islamic Republic of Afghanistan to improve its urban land administration system. With the aid of reported judgments particularly in reference to judgment in Walker v. Burton 2012, Dixon (2013) analyse whether title to land is secure in England and Wales when registered under the Land Registration Act 2002, most especially when a title is registered without the proprietor being able to establish good title under pre-registration rules of property law, to discover an uncertainty at the heart of the registration system: the uncertainty as to the extent to which a registered title may be rectified to remove the proprietor.

This is acute when it appears that the registered proprietor has no claim to the land other than by reason of his registration. There may be a difference in this regard between intangible property titles and tangible titles. The Land Registration Act 2002 is meant to replace registration of title with title by registration. The real force of this is only now being realised and there are few reported judgments, and less consistency, working out what this means in practice.

Towards the same direction, Van Rij et al (2014) reviewed the rescaling of integrated planning policies for the built environment by the transposition of European directives on air quality in The Netherlands, examining European and Dutch policies, legislation, case law and reports by various Dutch Courts of Auditors and assessment agencies. They found combination of measures that prohibit practices and measures constituting new ways of working has facilitated environmental protection and integrated planning. The findings of this study of Dutch air quality regulation may contribute to other studies into the rescaling of environmental governance in relation to interactions between central norm-setting and integrated local policies.

The paper of Lusiani and Zan (2013) aims at advancing knowledge about the variety of uses and meanings of planning tools and practices in the cultural heritage field, by bridging disciplines and by building on evidence from the studies to reflect that in the fields of both management and urban studies, a similar trajectory of "rise and fall" of rationalistic views of planning has taken place. Today's discourse of planning in urban studies is strongly dominated by the issue of inclusiveness and participation. When looking at "who" really participates in these processes, it is clear that a vast array of public and private actors is involved, at least formally.

When looking at "how" they are involved, a variety of possible approaches to participative planning are in use, from more formal, to more informal and emergent ones. Whether these participative forms of planning in cultural heritage actually "work" remains in part an open question. Despite the increasing centrality of plans and planning in cultural heritage management, an investigation about the state-of-the-art of the debate on planning in this field and an exploration of how planning is done in practice are missing.

4. Research Method

Experimental research design may be impractical for social survey of this kind, because of variety in human behaviour; hence survey research design was adopted through the use of questionnaire which was administered through cross sectional survey.

In this study, the target population is all the 199,980 applicants for the HOC programme from where the sample of 400 was chosen through simple random sampling technique. The questionnaire was semi-structured questions to test the view of the respondents. Data are obtained in line with their possible analysis with both nominal and ordinal scaling process.

The questionnaires were administered through cross sectional survey. Four hundred (400 Questionnaires) were prepared and distributed to the participating home owners, out of which 304 were successfully administered representing 76% response rate. Data gathered from structured questionnaires were analysed and descriptively presented in tables with appropriate interpretation.

Also, survey of literature on the subject matter was explored through journals, textbooks and internet.

5. The Findings

The findings from the secondary data revealed that a total of 199,980 applications were submitted for processing; and that as at the end of January 2015, only 3850 certificate of occupancy have so far been issued to the applicants. It is confirmed that each and every applicant must have paid N15, 000.00, which comprises of N5000.00 for the application form and N10, 000.00 as initial assessment deposit. This amount is however deductible from the final assessment payable by the applicant. The payment options in this regard are: ***Option one*** – 100% 9 months interest –free payment option for schedule installment periods effective from the date on notice of assessment i.e. 40% of assessment payable in the first 4 months and remaining 60% payable before the remaining 5 months

Option two -For payment within **30 days** of issue of the assessment a rebate of 5% of assessed value that is to say the applicant that wish to pay within 30 days of assessment date will only pay 95% of the assessed value.

Option three **–** For payment within **90 days** of issue of the assessment a rebate of 2.5% of assessed value that is to say the applicant that wish to pay within 90 days of assessment date will only pay 97.5% of the assessed value.

There are 3 revenue codes, account names and payment plans for the programme and each of the accounts were operated in a sequential form; HOC registration form, HOC deposit on assessment and HOC final assessed value account'. The detail of the assessment of HOC program has indicated that as against the 100% usual charge, 92.7% was charged for building plan approval, 66.67% was charged for survey plan, 55.56% was charged for stamp duty and 30% was charged for a certificate of occupancy. All the charges amount to 22.09% and having a rebate of 77.91% as indicated in table 2.

Table2: Details of Assessment Charges and Rebate for HOC

Charge Type	Normal charge	HOC Charge	Rebate Receivable
Building Plan Approval	100%	92.73%	7.27%
Survey Plan	100%	66.67%	33.33%
Stamp Duty	100%	55.56%	44.44%
Certificate Of Occupancy	100%	30.00%	70.00%
Total Charge	100%	22.09%	77.91%

Source: Ministry of Finance, Oke-Mosan, Abeokuta, Ogun State. Nigeria (2014)

For ratification of Government land, it was found out that 1/3 market price was expected to be paid as the purchase price to the Government, indicating 66.67% HOC rebate. For the purpose of gathering population data for the state, the questions in the HOC application form were divided into 3 sections purposely:

Section A was about the **owner of the property** (title, surname, other names, date of birth and gender, religion, GSM number, email, occupation, name of employer and address of employer)

Section B was about **the property itself** (date of construction, area of land, building type, number of property occupiers and their details, mode of

acquisition of the property and attached documents to the property).

Section C was about the **residents of the property** (title, surname, other names, date of birth and gender, religion, gsm number, email, occupation, name of employer and address of employer). All this information is expected to be supplied by the applicants of HOC program.

However, the findings from the primary data (in the appendices) indicated that 233 (76.64%) of the respondents attribute their initial reason for not documenting the land title to affordability problem, but 28 (9.21%) respondents who can afford it thought it was not necessary. 29 respondents representing 9.54% were of the view that it requires a long processing period, while the remaining 4 respondents representing 1.31% believed that since they don't have land title problem, then there was no need for them to document anything about the land title.

The majority of the respondents are aware of the importance of development permit before construction as revealed by 259 respondents representing 85.19%, 38 respondents representing 12.51% were not aware of the importance of development permit 7 (2.30%) were undecided on this question. It was revealed that the reason why 241 respondents representing 79.27% were unable to obtain the development permit was because they could not afford it, while 13 representing 4.27% considered it not necessary. Fourty eight (15.79%) were of the view that it is a waste of money and resources, while 2 respondents representing 0.65% responded that their property location is not noticed by town planning officers.

Two hundred and thirty two respondents representing 76.32% are not having development permit before constructing their property, 69 respondents (22.70%) secured a development permit before they constructed their property, while 3 (0.98%) were undecided on whether they secured or not secured development permit on their properties.

The reasons were given on why respondents applied for the HOC programme in respect of their properties, 209 respondents (68.75%) were of the belief that HOC is affordable. 29 respondents representing 9.54% applied for HOC to secure their property against possible title problem, 11 respondents (3.62%) applied to secure certificate of occupancy as collateral security in the bank, while 55 respondents representing 18.09% applied for the HOC program to enhance the property value.

185 of the respondents representing 60.85% have received the HOC assessment notice and paid fully. However, 52 respondents (17.11%) have received their assessment notice, but prefer to pay in instalments, while 31 respondents representing 10.20% have not paid any of the assessment fee. 36 (11.84%) have not yet received an assessment notice from the Government agency in charge.

32 of the respondents representing 10.53% prefer payment option one, 185 (60.85%) prefer payment option two, 20 representing 6.58% prefer payment option three while 67 respondents representing 22.04% were undecided on this question.

It was also revealed that 271 of the respondents representing 89.14% confirmed that they filled in population related data in their HOC application form, while 14 representing 4.61% responded that they did not fill in population related data in their HOC application form. However 19 of them representing 6.25% were undecided on this question.

Only 9 of the respondents representing 2.96% have so far received the certificate of occupancy and/or development permit on their properties under the HOC program. 293 representing 96.38% are yet to receive theirs, while 2 respondents (0.66%) were undecided on this question.

The respondents were further asked to prioritize the objectives stated in the program in the order of attention given to them by the Government. The ranking of the respondents in table 3 indicates that revenue generation is the major priority of the Government in the HOC program, as it is ranked first by the Relative Importance Index (RII). Obtaining Certificate of Occupancy was ranked second, while, the assurance of development permit was ranked third. The fourth in the ranking was for the gathering population data. However, promptness of the Government of the schedule and stipulated time for the program was ranked the lowest at the fifth position.

Table 3: Respondents Perception about HOC level of achievement by Ranking

Respondents' perception About HOC	Very High (5)	High (4)	Average (3)	Low (2)	Very Low (1)	Sum of Weighted Frequency	Relative Importance Index	Ranking
HOC assures development Permit/approval	5 (25)	17 (68)	188 (564)	51 (102)	43 (43)	802	2.64	3rd
HOC is a means of Generating revenue For Government	289 (1445)	9 (36)	4 (12)	2 (4)	0 (0)	1497	4.92	1st
HOC is a means of Gathering population Data by Government	13 (65)	6 (24)	19 (57)	85 (170)	181 (181)	497	1.63	4th
HOC is prompt to the Schedule/Stipulated time	1 (5)	17 (68)	28 (84)	17 (34)	241 (241)	432	1.42	5th
HOC is a means of getting Certificate of Occupancy	197 (985)	66 (264)	21 (63)	15 (30)	5 (5)	1347	4.43	2nd

Source: Authors' field work (2015)

6. Discussions

The majority of the respondents is aware of the importance of documenting their land title and securing a development permit on their properties before constructing them, but they are unable to do so because of their affordability problem then. Consequently, they preferred to apply for it under the HOC program, as they found it affordable through that. They therefore paid their assessment fee in full once the assessment notice was issued to them.

Those who could not pay in full prefer payment in installments. In spite of the eagerness and responses of the

applicants to meet their financial obligations, insignificant percentage of them have so far been issued the Certificate of Occupancy and/or development permit as at the time of preparing this report. In terms of priority, Government's most paramount priority in the order of the objectives of the program was noted to be on the revenue generation.

This opinion has also been strengthened by the extension in the duration of HOC program, which was initially scheduled for only nine (9) month period (April - December 2014). The duration of the window of grace appears to have become open-ended, because as at 31st January 2015, submission of completed application forms for consideration under the charter is still being collected with the concomitant revenue gains from the sales of about 199,980 application forms and the payment of initial deposit at N15, 000.00/application.

This translates into about N999, 900,000,000.00 as proceed from the sales of application forms and N1, 999,800,000.00 as deposit for assessment, excluding possible revenue from the payments of a minimum of 80,000.00/application as assessment fees and other sources such as subsequent annual ground rent, fees for consent to transfer, mortgage, sublease, capital gain tax and levies, etc. all of these, has implications on the property market for the benefit of the Government.

It is noted that the initially stipulated time of 9 months was not realized due to logistic and other competing responsibilities by the civil servants saddled with the implementation of the program. In realization of this challenge, complementary services of 13 experienced and competent professional firms in the built environment were engaged as consultants for efficient and effective delivery. However, only 3,850 out of about 199,980 applicants representing 1.92% have so far been issued and received the Certificate of Occupancy, for over a period of ten (10) months, under the HOC Program.

Obtaining development permit under HOC is not applicable to all applicants, but those who do not have a prior development permit or approval. They are expected to submit the completed prescribed application form alongside with the sets of architectural and related engineering drawings, copy of survey plans, evidence of payment of prescribed discounted fees, upon which a decision on the approval or otherwise shall be made accordingly.

At the objective of gathering population data for planning is seen to be a skeleton, because the information that can possibly be gathered from the application form is only related to those who applied for the HOC program, whereas, there are several other people whose data were not collected or captured. The percentage of the HOC applicants to that of the total resident population cannot give adequate information required for planning purposes for a whole State. From the interview session with the applicants, the fear of the people, especially those who are waiting to be issued with the certificate of occupancy was that the program may be truncated, whenever there is a change in government.

7. Inferences from HOC Program and Recommendation

The benefits of the HOC program mostly serve the Government, the property owners and property market. It is a viable source of revenue for the Government, especially from the property owners' default of property taxes to the previous administrations in the State. It is a means of accumulating the wealth missed by the previous Government administrations in the State. It provides a platform for enhancing property value, where property owners will have their properties becoming more marketable and buyers can confidently buy when they know that title documentation is available.

Property with correct legal status and documents can be used as collateral for bank loans and other business transactions. It helps in the control of disputes over ownership, especially in the event of death of the original owner and the consequence of such in respect of heirs and inheritance issues. It helps in solving or reducing incidents of property related fraud, speculations and land grabbing.

HOC program stimulates voluntary compliance with the physical development requirements by homeowners for generating appropriate population data and improving upon the internally generated revenue base for developmental project planning and implementation. The shortcomings arising from the program are that, it provided an alibi or an opportunity for people to abuse or gate-crash the process through manipulation of the property development and related documents to fall within the stipulated time of the program and thus, encouraging mushroom development across the State. It also encourages pre-mature inhabitation of uncompleted buildings by people, in an attempt to surreptitiously meet up with one of the pre-requisites.

Some of the respondents fear about the programme is that Government only want to use the programme as a platform to raise revenue from the participants probably to finance the political campaign for second term re-election bid.

As at the time of this study, only 1.92% of the total applicants of the programme have so far received the land title and planning permit. It is hereby recommended that Government should emphasise on speedy delivery of promised services rather than lay more emphasis on revenue generation.

Government should also streamline the programme so as not legalise illegality, they should not allow HOC programme to extinguish the already established and existing system of land documentation and planning permit approval. The unabated HOC programme may lead to abandonment of already established existing land documentation system.

8. Conclusion

It is deemed to be normal in land documentation and property development to acquire land with good documentation and also secure planning and other development permit before embarking on building construction. When this is not done at the appropriate time any attempt to do such later is seen as a remedial measure.

Ogun State Government recognizing that majority of homeowners in the state has defaulted in taking this step attempted to remedy in favour of the concerned home owners, but the objectives were not fully achieved, although the revenue generation was not indicated as one of the objectives of HOC program, but this was given priority over the other vital stated objectives.

By the HOC program the Government was able to create a considerable revenue share from property market in primary form and secondary form and this is line with the state Government economic plan of 'enhancing Internally Generated Revenue (IGR) by movement of the large informal sector of the economy into structured trade groups to enable taxation' (Ogun State Government economic plan (n.d). By this revenue generation from HOC program, it is expected that the IGR of Ogun state will substantially increase upward from N16.1 billion (29%) indicated in figure 3.

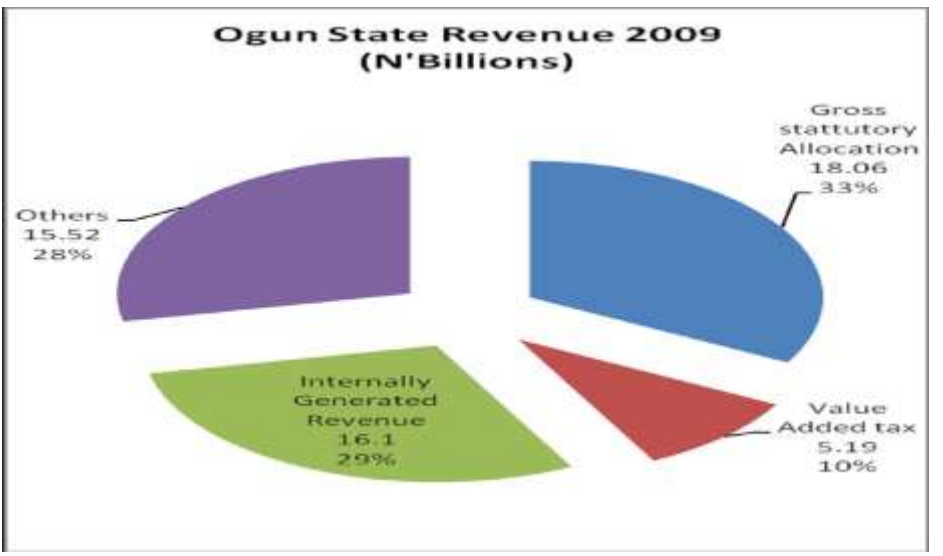

Figure 3: The revenue generation by Ogun State (source: Ogun State official website)

References

Atilola O. (2013), 'Systematic Land Titling and Registration in Nigeria: Geo-information Challenges' Nigeria 6 FIG Working Week 2013 Environment for Sustainability Abuja, Nigeria, 10 May 2013 TS02A -Administration in Africa 2-6653

Eleh D. E. (2009) 'Land Reform as a tool for national development' being the text of

lead paper presented at the 39th Annual Conference of the Nigeria Institution of Estate Surveyors and Valuers held at Awka, Anambra State, 21st-26th April.

Emerging Markets Group (2009) 'Land Titling and Economic Restructuring in

Afghanistan-Project Completion Report USAID/LTERA 2004-2009 Submitted

and Reviewed by USAID September 2009 AFP-1-801-03-00029-00 P 4-14

Erguden S. (2001). Low-cost Housing: Policies and Constraints in Developing Countries International Conference on Spatial Information for Sustainable Development held at Nairobi, Kenya, 2–5 October, 2001.

Eniayejuni A.T & Agoyi M. (2011) A Biometrics Approach to Population Census and

National Identification in Nigeria: A Prerequisite for Planning and development

Asian Transactions on Basic & Applied Sciences (ATBAS)Vol 01 Issue 05 Nov pp 60-67

Van Rij, E., Willem K. Altes, K. (2014), "Integrated air quality and land use Planning in The Netherlands", International Journal of Law in the Built Environment, Vol. 6 Iss: 1/2, pp.194 – 210 Lagos State Ministry of Physical Planning (2011) Requirements for the grant of Planning Permit in Lagos June 2011

Dixon, M. (2013) "Title by registration or conquest: Interpreting the Land Registration

Act 2002 in England and Wales", International Journal of Law in the Built

Environment, Vol. 5 Iss: 3, pp.194 – 206

Lusiani, M. and Zan, L. (2013) "Planning and heritage", Journal of Cultural Heritage

Management and Sustainable Development, Vol. 3 Iss: 2, pp.108 – 115

Odigbo E.M.C. (2015) 'Acquisition and Compensation Issues in Urban Regeneration (The Power Sector Experience)' being a paper presented at the 45th Annual Conference of Nigerian Institution of Esatate Surveyors and Valuers (NIESV)

held at Wocdif Event center, Ring Road, Osogbo. 10th -14th March.

Ogun State Government (2005). Ogun State Urban and Regional Planning Law. Ogun

State Government. Nigeria, No. 20, July 2015. Abeokuta. Ogun State, Nigeria

Ogun State Government (2010).Ogun State Building Regulations. Gazette No. 35, Vol. 35, Notice No. 14, A3- A72, 2nd September 2010. Ogun State Printing Corporation, Abeokuta, Ogun State, Nigeria

Ogun State Government (n.d.) Rebuilding Ogun State- Economic Plan Development

2012- 2015). Ogun State Official Website.

Omirin, M. M. (2002). "Issues in land accessibility in Nigeria". Proceedings of a National Workshop on Land Management and Property Tax Reform in

Nigeria, Department of Estate Management, University of Lagos, Nigeria.

Omole, F. K. & Akinbamijo, O. B. (2012) 'Land Development and Planning Laws in

Nigeria:The Historical Account' *Journal of Law, Policy and Globalization*

Vol. 8, 2012 online Available at www.iiste.org

Opoko, A. P. and Ibem, E. O. (2013) Housing procurement in informal settlements: a case study of Ayobo, Lagos, Nigeria *In:* Laryea, S. and Agyepong, S. (Eds) *Procs 5th West Africa Built Environment Research (WABER) Conference,* 12-14 August 2013, Accra, Ghana, 603-618.

Perera TGUP (2008) 'The role of land management in relation to urban sprawl in Sri

Lanka, unpublished master dissertation, international development and Planning unit, university of Tokyo, Japan.

Renaud, B. (1984). Housing and Financial Institutions in Developing Countries. Prepared for the International Union of Building Societies and Savings Associations Chicago, Illinois.

Ugonabo, C. U. and Emoh, F. I. (2013). The Major Challenges to Housing Development and Delivery in Anambra State of Nigeria. *Civil and Environmental Research*. Retrieved from www.iiste.org on May 13, 2013.

Ukaejiofo C.A.N (2009) 'Land Titling and Registration as Necessary Factors in the National Land Reform Programme' being a paper presented at the 39th Annual Conference of The Nigeria Institution of Estate Surveyors and Valuers held at Awka, Anambra State, 21st-26th April.

Appendices: Questionnaire Analyses Tables

Respondents' reasons for not documenting the land

Why have you not documented your title before the HOC Programme?	Response Frequency	Percentage of Response (%)
I cannot afford it because i have no fund to finance it	233	76.64
I can afford it but i don't think it is necessary	28	9.21
It requires long period to process	29	9.54
I don't have title problem with my land then	4	1.31
Total	304	100

Source: Field survey (2015)

Respondents' awareness about importance of obtaining planning permit

Are you aware of the importance of obtaining Development permit before the HOC programme?	Response Frequency	Percentage of Response (%)
Yes	259	85.19
No	38	12.51
Undecided	7	2.30
Total	304	100

Source: Field survey (2015)

Respondents' reasons for not obtaining planning permit

Why have you not obtain Development permit before the HOC Programme?	Response Frequency	Percentage of Response (%)
I cannot afford it because I have no fund to finance it	241	79.27
I can afford it but i don't think it is necessary	13	4.27
It is a waste of money/resources	48	15.79
My property location is noticed by Town Planning Officers	2	0.65
Total	304	100

Source: Field survey (2015)

Respondents has Development **permit on the property**

Are you having Development permit on your property before the HOC programme?	Response Frequency	Percentage of Response (%)
Yes	69	22.70
No	232	76.32
Undecided	3	0.98
Total	304	100

Source: Field survey (2015)

Respondents' reasons for applying for HOC programme

Why do you apply for the HOC Programme in respect of your property?	Frequency	Percentage of Response (%)
I discovered that it affordable	209	68.75
I have title problem to solve and need to secure title to my land	29	9.54
I need certificate of occupancy on my property to take loan from bank	11	3.62
I want to enhance the value of my property	55	18.09
Total	304	100

Source: Field survey (2015)

Has the respondents paid the HOC final assessment fee?

Have you paid the HOC final assessment fee on your property?	Response Frequency	Percentage of Response (%)
I have paid in full	185	60.85
I am paying in instalments	52	17.11
I have not paid any final assessment	31	10.20
I am ready to pay but i have not yet being given assessment notice	36	11.84
Total	304	100

Source: Field survey (2015)

Which of the options of payment do you subscribe to?

Which of the payment options do you adopt for your assessment fee?	Response Frequency	Percentage of Response (%)
Option one	32	10.53

Option two	185	60.85
Option three	20	6.58
Undecided	67	22.04
Total	304	100

Source: Field survey (2015)

Do you fill any data relating to population in your application form?

Do you fill any population related data in the HOC application form?	Response Frequency	Percentage of Response (%)
Yes	271	89.14
No	14	4.61
Undecided	19	6.25
Total	304	100

Source: Field survey (2015)

Have you now been issued certificate of occupancy and or planning permit?

Have you now been issued certificate of occupancy and or Development permit?	Response Frequency	Percentage of Response (%)
Yes	9	2.96
No	293	96.38
Undecided	2	0.66
Total	304	100

Source: Field survey (2015)

Prospects, Barriers and Development Control Implications in the use of Green Roofs in Lagos State, Nigeria

I. C. Ezema[1], O. J. Ediae[2] & E. N. Ekhaese[3]

[1,2,3] Department of Architecture, Covenant University, Ota, Nigeria
isidore.ezema@covenantuniversity.edu.ng
osahon.ediae@covenantuniversity.edu.ng
noel.ekhaese@covenantuniversity.edu.ng

Abstract: Green roofs are gaining importance as "soft" engineering approach to urban environmental management and have been found to be beneficial in storm-water management, noise and thermal insulation, mitigation of the urban heat island effect, carbon sequestration and ultimately climate change mitigation. Lagos, a fast growing megacity is characterized by a rapidly growing population within a very limited land area. The resultant development pressure on land has given rise to dense urban fabric with associated loss of green cover especially within the inner city thereby eliciting suggestions for the adoption of green roofs. The present paper examined the prospects and the barriers to the adoption of green roofs as well as the attendant development control implications in Lagos, Nigeria. A combined quantitative and qualitative research strategy was adopted for the study. For quantitative data, pre-tested questionnaire was administered to 60 purposively selected built environment professionals in academics, consultancy and in government while qualitative data were obtained from interview of four key stakeholders. Secondary data were obtained from literature. Analysis of primary data was by the use of descriptive statistics and relative importance index while content analysis was used for the analysis of qualitative data. The study found that while opportunities for adoption of green roofs exist, they were not popular in the study area because of cost, technical challenges, poor knowledge as well as limitations imposed by the interpretation of planning laws. The paper proposed context-relevant application of green roofs as a complement to ongoing green infrastructure programme in the study area.

Keywords: barriers, development control, green roofs, Lagos megacity, sustainable development

1. Introduction

Rapid urbanization coupled with physical development pressure on land, increased physical density as well as ineffective urban governance structures combine to make many cities of developing countries rather unlivable. Lagos, the most populous city in Nigeria and one of the fastest growing mega cities in Africa is a typical example. With a population estimated by the Lagos Bureau of Statistics (2013) to be over 23million by the end of 2015 and accommodated within a highly limited land area in comparison to other cities in Nigeria, the pressure on land for development is real. The land challenge is also indicated by the vast areas of wetlands which are being depleted through uncontrolled reclamation for development purposes in spite of the difficulties associated with developing such lands. Such invasion of wetlands depletes the natural vegetative cover of the wetlands and renders them ineffective as natural sinks for storm-water, carbon and other chemical compounds. Evidence abound of land-use and land cover variations in Lagos indicating that the naturally available soft green infrastructure is vanishing at a fast rate (Okorie, 2012; Olaleye, Abiodun and Igbokwe, 2009; Adepoju, Millington and Tansey, 2006).

As a result, the administrative authorities of Lagos, in realization of the emerging megacity status and associated challenges, are driving a green agenda. This includes provision of soft green infrastructure such as parks and gardens, climate change advocacy programmes, sustainable environmental management policies, sustainable and low-energy/low-carbon building practices as well as the renewable energy initiatives (Ezema, 2013). A specific aspect of the green programme is the regulation through approval order of the minimum green coverage area for all types of developable plots of land in different parts of the city. Incidentally, the greening programme is being implemented alongside a densification programme aimed at accommodating more people in the already built up areas by increasing the prevailing density and encouraging mixed use development (Lagos State Government, 2006). Under the mixed use corridor for the Ikoyi-Victoria Island Model City Plan, building coverage is fixed at 30% while soft landscape (green space) is fixed at 30% with driveways and car parks taking up the remaining 40% (Lagos State Government, 2006). However, in built-up high density areas, providing green areas at ground level is difficult. As a result, more creative options for bringing the green benefits to this class of buildings such as the use of vertical greening systems (VGS) are being explored (Akinwolemiwa and Gwilliam, 2015). In this regard, green roofs are also proposed for adoption especially in redevelopment projects which are increasing in frequency due to income and ownership redistribution. This is expected to complement the densification programme, which in addition to increasing both physical and population densities as a way of maximizing access to existing infrastructure and discouraging sprawl, also has negative effect on available green-fields (Ezema and Oluwatayo, 2014).

This paper therefore examined the characteristics, advantages, opportunities and barriers to the adoption of green roofs as well as the associated development control implications in Lagos mega city. The development control implication of green roofs in the study area is

necessitated by the additional architectural and structural design requirements. The study investigated the following: (i) level of awareness of green roofs by the selected built environment stakeholders, (ii) perceived advantages of green roofs, (iii) barriers that impede the widespread adoption of green roofs, (iv), measures to encourage increased use of green roofs, and (v) physical planning and development control implications of green roofs in the study area.

2. Literature Review

A green roof refers to living vegetation installed on a roof for a number of beneficial purposes. As continuous physical development characteristic of rapid urbanisation depletes natural green landscapes, interest in green roofs is growing especially in the world urban areas, which indicates that green roofs are urban phenomena. Green roofs are, however, not of recent origin as they have been used in the past in vernacular architecture which tended to emphasize architecture that is in harmony with the natural ecosystems. The development of buildings which are responsive to the natural ecosystem has been of interest to architects over the years. Distinguished American architect Frank Lloyd Wright strove to design buildings that were in harmony with nature in expression of the concept of organic architecture (Cruz, 2012). Even at the peak of the international style strand of modern architecture, one of its greatest exponents, Le Corbusier recognised the value of buildings being in harmony with nature. In the five points of a new architecture, Le Corbusier espoused the value of the roof garden as an attempt to recapture, at the roof level, the natural green landscape that has been displaced by the building (Corbusier, 1926). In fact, green roofs may have predated the cited examples above and could be traced back the hanging gardens of Babylon (Peck, 2002).

In modern times, green roof have been used extensively especially in Northern Europe and America with Germany regarded as a clear leader in the use of green roofs (Kohler, 2006). The leadership role of Germany in the use of green roofs has been linked to favourable government policy in the form of legislation, municipal grants and financial incentives for green roof adoption (Peck and Kuhn, 2003; Li and Yeung, 2014). Other European countries and cities have also adopted green roofs as part of new construction on flat roof buildings. The Swiss city of Basel is reputed to have the highest area of green roofs per capita in the world, a feat that was achieved through a combination of financial incentives and building regulation (Kazmierczak and Carter, 2010).

2.1 Green Infrastructure

Conceptually, green roofs are usually considered in the broader context of the low impact development strategies and more specifically within the context of green infrastructure. Green infrastructure (GI) has become, in recent times, an important word in the environmental management lexicon. In the context of this article, green infrastructure refers to "an interconnected network of green space that conserves natural ecosystem values and functions and provides associated benefits to human populations" (Benedict and McMahon, 2002:12). It is believed to have emerged

from two major precedents namely: linking of parks and other green spaces for the benefit of people, and the linking of natural areas for the benefit of biodiversity. From the foregoing, green infrastructure has a human component and a biodiversity component.

Green infrastructure is still an evolving concept and is therefore prone to a multiplicity of interpretations of which its link to environmental theory on one part and socio-economic policy on the other have been highlighted (Wright, 2011). However, irrespective of the theoretical bent of the interpretations, there is general consensus among scholars to the effect that natural environmental resources can be managed to deliver the desired benefits both to the environment and the inhabitants of the environment (Lennon, 2014).In this respect, it has been proposed as a climate change adaptation strategy (Matthews, Lo and Byrne, 2015). Green infrastructure is integrative as it seeks through design to link elements into a system that functions as a whole, rather than as separate, unrelated parts (United States Department of Agriculture, 2000).Inherent in the foregoing is the multi-functionality of green infrastructure (Science for Environment Policy, 2012). Hence, its function in promoting ecosystems services and societal well-being is the direction highlighted in this study. Green roofs constitute an important part of urban green infrastructure.

2.2 Structure and Types of Green Roofs

Typically, green roofs, also referred to as roof garden, vegetated roof, eco-roof and living roof (Voelz, 2006), have eight layers including the roof structure which is usually a deck. Other layers as shown in Figure 1 are waterproof membrane, root barrier, protection fabric, drainage layer, filter bed, a growing media and vegetation. Sometimes an insulation layer is added between the roof deck and the waterproof membrane.

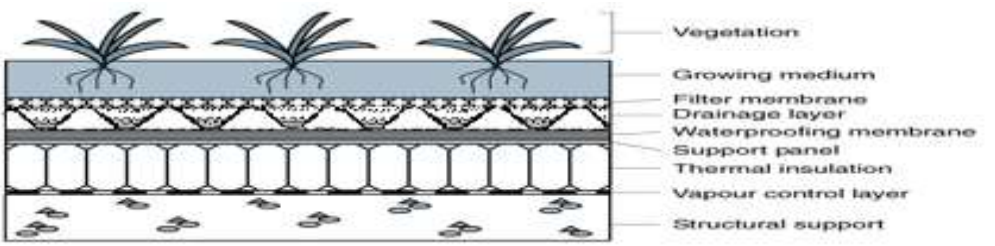

Figure 1: Typical Structure of Extensive Green Roof (Hui, 2006).

Broadly, there are two main types of green roofs: extensive green roofs and intensive green roofs. The two types are differentiated by the depth of growing medium, type of plant, the cost of construction and maintenance of the green roof (Peck and Kuhn, 2003). Intensive green roofs have deep growing media (usually greater than 150mm thick) and present opportunities for wide variety of plants and vegetation. Intensive green roofs are more

expensive to construct and maintain than extensive green roofs. Extensive green roofs, which are gradually replacing intensive green roofs are characterised by thinner (less than 150mm thick) and lighter growing media (Zhang, Shen, Tam and Lee, 2012). In addition, Hui (2006) identified a third type known as semi-intensive which falls between the intensive and extensive types. A pictorial comparison of the three green roof types according to the International Green Roof Association (IGRA) is presented in Figure 2.

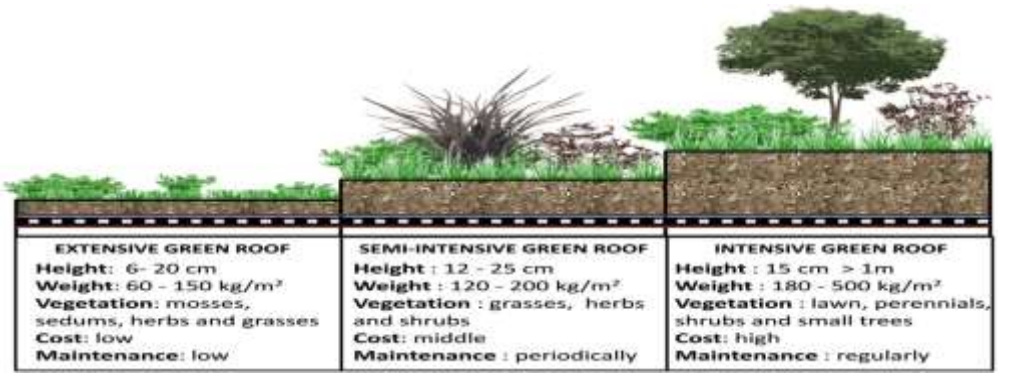

Figure 2: Types and Characteristics of Green Roofs (IGRA, 2008).

Renewed interest in green roofs has been associated with attempts to mitigate decline in the quality of the urban ecosystems as well as by the need for environmental sustainability. According to Bolund and Hunhammar (1999), urban ecosystems perform a number of functions including acting as a natural sink for carbon and other noxious emissions to the environment. With rapid urbanisation, the green component of urban ecosystems is depleting at a high rate. Green roofs are therefore seen as opportunity to bring back the lost green component of the urban ecosystem.

2.3 Functions and Benefits of Green Roofs

Green roofs have been shown to be beneficial in many ways (Nurmi, Votsis, Perrels and Lehvavirta, 2013). In more specific terms, green roofs help in the management of storm water by delaying run off from roof to the storm water drainage system thereby preventing the drains from overflowing. Delays of between 95minutes and four hours have been reported in the literature (Getter and Rowe, 2006). Also, green roofs have been shown to cool the interior and surrounding environment (Li and Yeung, 2014). At the urban scale, green roofs have been associated with mitigation of the urban heat island effect (Susca, Gaffin and Dell'Osso, 2011). Itprovides natural habitats for birds and other organisms thereby enhancing biodiversity in the urban environment (Fernandez-Canero and Gonzalez-Redondo, 2010). As a natural sink for

nitrogen, lead and zinc and as a filter for particulate matter, green roofs reduce environmental pollution (Getter and Rowe, 2006). Roof membrane longevity as a result of reduced membrane temperature and protection from ultraviolet radiation is an acclaimed advantage of green roofs (Connelly and Liu, 2005). Temperature moderation is believed to increase the life span of roof membranes by reducing the stress associated with daily contraction and expansion of the roofing membrane materials (Getter and Rowe, 2006).The low temperature range between exterior and interior spaces ensure thermal comfort of the occupants thereby reducing the need for air conditioning and associated energy consumption. In an experimental study of thermal behaviour of green roofs in tropical Brazil, Cardoso and Vecchia (2013) confirmed that green roof had the lowest temperature range when compared with four other roof types. Green roofs have also been shown to increase sound transmission losses which makes them able to mitigate low frequency noise in buildings (Connelly and Hodgson, 2013).

2.4 Barriers to Green Roofs

Green roofs can be considered as innovations and as a result, challenges of innovation adoption also confront green roofs. According to Rogers (1995), the innovation adoption decision process is hinged on adequate knowledge of the innovation as well as attitude towards the innovation which may be dictated by factors such as cost. Hence, barriers would result from loop holes in the decision process. A number of barriers to green roof use in urban areas have been identified in literature. In a Hong Kong study, Tam, Zhang, Lee and Shen (2011), identified the four major barriers to be, in order of importance, (i) lack of promotion by government, (ii) lack of incentive by government, (iii) increase in maintenance cost, and (iv) lack of awareness. The above finding is corroborated by another study which attributed the high rate of green roof uptake in a country like Germany to favourable government policy and incentives (Liu and Yeung, 2014). The additional construction and maintenance costs of green roofs constitute another barrier. Closely related to the above is the increased structural load on the building as a result of increased weight of the roof (Alkhrdaji, 2012). The increased structural load becomes important in areas such as developing countries where the maintenance of appropriate construction standards is a big challenge. The additional cost of green roofs is of special importance to property developers given that the potential private benefits of green roofs are limited when compared to the public benefits. In cost-benefit terms, private benefits are mostly not high enough to induce private property developers to embark on the additional investments required by green roofs (Nurmi et al., 2013). As a result, incentives are considered necessary in view of the overriding public benefits of green roofs. The study area of Lagos is highly urbanised. According to a report by the United Nations on the ranking of the world urban agglomerations, Lagos was ranked 33rd in 1990, 19th in 2014 with a projected ranking of 9th in the year 2030 (UN, 2014). Urbanisation in Lagos, a fast growing megacity has given rise to

a myriad of challenges especially with respect to sustainability at the urban scale. As a response to the challenge of urban sustainability in the study area, green infrastructure development is evolving with such initiatives the green Lagos programme which incorporates street tree planting, provision of public parks and gardens as well
as encouraging property owners to include green areas within residential areas. However, green roofs have not been comprehensively examined in the study area. In the study area, roof gardens in the form of potted plants, plants in free-standing containers and planters as well as vertical gardens do exist but they are not green roofs as described in this study. With the high percentage of built up area, opportunity for green roof abound.

2.5 Strategies for Green Roof Adoption

Modern green roofs are products of careful planning. A look at the countries and cities that have good record of green roof adoption indicates that deliberate policy integrated with incentives and planning regulations played central roles. In cities where green roofs have been used substantially, it had always been predicated on state policies which are most times supported by a number of incentives mostly financial. Such incentives include direct incentives like tax rebates, grants and access to special loans as well as indirect incentives like development fee reduction (Shepard, 2010; USEPA, 2010). There are also intangible incentives such as fast track development permit, density and zoning bonuses, utility rebates and recognition/awards (Shepard, 2010). The incentives are usually supported with robust building regulations such as compulsory inclusion of green roofs for some categories of buildings (Kazmierczak and Carter, 2010). The purposes had ranged from climate adaptation to energy reduction, urban heat island reduction, air quality and urban greening.

3. The Study Context

The study area is Lagos, the most urbanized city in Nigeria and one of the fastest growing mega cities in the world. Lagos, a coastal city covers a gross area of about 3,577 km2, a sizeable proportion of which was originally made up of wetlands, thus making it the smallest in terms of land area of all the states in the Federal Republic of Nigeria (Jeje, 2013). The official 2006 population census in Nigerian put the population of Lagos at just over 8 million people (NPC, 2007). However, more recent projections for the population of Lagos put it at over 23 million by the end of 2015 (Lagos State Government, 2013).Due to rapid urbanization, land vegetative cover cover is depleting at a fast rate. Adepoju et al (2006) found that within the period 1984 to 2002, built-up area in Lagos increased by 35.5% while forest and agricultural land decreased by 57.8%. Even in the peri-urban areas that hold more prospect for preservation of the vegetative cover, a study by Dekolo and Olayinka (2013) indicate that between 1990 and 2011, built-up area increased by 672% while forest and agricultural land depleted by 58%. From the foregoing, loss of vegetative cover in the study area is increasing rapidly. The rapid loss of vegetative cover necessitated the adoption of a green agenda in Lagos (Ezema, 2013). In

addition, structures for managing development control in the area are ineffective and fraught with all kinds of challenges which include unwillingness to comply with planning regulations and weak enforcement structures (Aluko, 2011).

4. Research Methods

This research is an exploratory study. It incorporates both quantitative and qualitative research strategies. Given the low prevalence of green roofs in the study area, the exploratory study targeted only built environment practitioners who are more likely to know the intricacies involved in green roofs. Hence, a sample of 54 built environment practitioners in such professional areas as architecture, engineering, quantity surveying, estate management, building technology, and town planning was purposively selected for the survey. The sample was evenly distributed between professionals in academia, private practice and in government employment. The practitioners were known to be involved in built environment research, management and practice within the study area. The data collection instrument used is the questionnaire which was divided into five parts namely: (i) background information of respondent, (ii) level of awareness of green roofs, (iii) advantages of green roofs, (iv) barriers to the use of green roofs, and (v) measures to improve the uptake of green roofs. In parts (iii), (iv) and (v) of the questionnaire, respondents were required to rate the advantages, barriers and recommendations on a 5 point Likert scale with '1' for strongly disagree; '2' for disagree; '3' for neutral; '4' for agree; and '5' for strongly agree. Descriptive statistics and relative importance index (RII) were used to analyse questionnaire responses. The relative importance index was calculated as follows:

Relative Importance Index (RII) = $\frac{\sum w}{AN}$, $(0 \leq \text{RII} \leq 1)$

Where w is the sum of individual scores; A is the possible highest score and N is the total number of responses. For result interpretation the RII value closest to the value 1.00 is selected as the highest ranked.

For the interview aspect of the research, the Lagos State Ministry of Physical Planning and Urban Development (MPP&UD), the Lagos State Parks and Gardens Agency (LASPARK), and two property development companies were targeted. The two companies were: Lagos State Development and Property Corporation, a government-owned company and UAC Properties PLC, a publicly quoted company. Senior personnel such as departmental heads were chosen to represent each of the organisations. Both companies are strong players in the Lagos property market with the former being a dominant player in the low and medium income segment while the latter is a dominant player in the medium and high income segment. Content analysis was used for analysing the interview responses.

5. Findings and Discussion

The findings of the study and the associated discussion of findings are presented below under the following sub-headings: background information of respondents, awareness of green roofs, benefits of green roofs, barriers to

the adoption of green roofs, and recommendations on how to improve green roof adoption in the study area.

5.1 Background Information

Out of the 60 practitioners surveyed, 46 representing 85% responded. As shown in Table 1, 9 architects, 9 engineers, 8 quantity surveyors, 8 builders, 6 estate surveyors and 6 town planners responded and returned the questionnaire. Similarly, out of the 46 that responded, 18 (39%) were in private practice, 16 (34%) were in teaching/research while 12 (26%) were in government employment. In terms of experience, about 70% of the respondents had a minimum of 11 years post-qualification experience, indicating that those surveyed were well experienced built environment practitioners.

5.2 Awareness of Green Roofs

When asked to rate their familiarity with green roofs, the responses according to Table 1, showed that 36 (78%) were very familiar with green roofs, 7 (15%) were somewhat familiar while 3(7%) were slightly familiar, indicating that all the respondents had some knowledge of green roofs. However, none of the respondents had been involved in any green roof project which indicates that most of what the respondents know about green roofs was obtained from secondary sources. Pilot and experimental green roofs for research and advocacy purposes can help deepen the experience of built environment professionals regarding green roofs.

Table 1: Background Information of Respondents

Category	Frequency
Type of Practitioner	
Architects	9 (19.6%)
Engineers	9 (19.6%)
Quantity Surveyors	8 (17.4%)
Builders	8 (17.4%)
Estate Surveyors	6 (13.0%)
Town Planners	6 (13.0%)
Experience of Practitioners	
0 – 5 years	4 (8.7%)
6 – 10 years	10 (21.7%)
11 – 15 years	18 (39.1%)
16 – 20 years	12 (26.1%)
21 – Above years	2 (4.3%)
Type of Practice	
Private Practice	18 (39%)
Teaching / Research	16 (35%)
Government employed	12 (26%)
Familiarity with Green Roofs	
Very Familiar	36 (78%)
Somewhat Familiar	7 (15%)
Slightly Familiar	3 (7%)
Not Familiar	0 (0%)

Source: Authors' Fieldwork (2015)

5.3 Benefits of Green Roofs

Eight green roof pluses were listed and the respondents were asked to rate the benefits in order of importance on a 5point scale. The result is presented in Table 2. Accordingly, the ability of green roofs to provide thermally comfortable indoor environment was rated the most important while the ability of green roofs to prolong the life span of roof membrane was rated least. The most important benefits were found to be: indoor comfort, air quality improvement, aesthetics, urban heat island reduction, and improved biodiversity. The storm water management and roof membrane longevity benefits received the lowest ratings. While it could be inferred from observation that green plants enhance visual amenity, create habitats for birds, and play a moderating role on the micro environment in terms of air quality and cooling effect, its role in managing storm water and improving roof membrane longevity is not easily discernible. Such can only be proved or disproved through research on green roofs which is not yet well established in the study area.

With particular reference to research in green roofs, it is important to understand the multi-disciplinary nature of green roofs as practitioners in the fields of general agriculture, horticulture, environmental science, environmental biology and soil science can complement the work of core built environment practitioners in advancing the frontiers of research in green roofs.

Table 2: Ranking of Green Roof Benefits

s/n	Green Roof Benefits	rongly Disagree	Disagree	Neutral	Agree	Strongly Agree	RII	Ranking
1	Reduces Urban Heat Island Effect	0	0	4	28	14	0.843	4
2	Improves Air Quality	0	0	9	17	20	0.848	2
3	Provides Indoor Comfort	0	0	6	18	22	0.870	1
4	Helps to manage storm water	0	10	12	10	8	0.591	7
5	Encourages Biodiversity	0	3	15	16	12	0.761	5
6	Improves aesthetics	0	0	10	16	20	0.844	3
7	Reduces air and noise pollution	1	5	10	18	12	0.752	6
8	Increases life span of roof membrane	15	10	5	10	6	0.522	8

Source: Authors' Fieldwork (2015).

5.4 Barriers to Green Roof Use

Six factors considered as constraints to green roof adoption in the study area were rated by the respondents and the result is shown in Table 3.From the analysis, all the listed barriers were rated very high. However, the barriers that most negatively affect the adoption of green roofs in the study area were found to be: cost of construction, cost of maintenance, absence of government regulation, and low knowledge and technical capacity. In the study area, construction cost is usually high and any item that would add to the cost of construction without necessarily

contributing directly to the use of the building is usually discarded. Green roofs may therefore be seen as unnecessary additions to the basic components of a functional building.

The above is corroborated by the property development companies interviewed who preferred the cheaper option of providing green area at the ground level. In addition, green roofs are mostly placed on reinforced concrete roofs which have the capacity to withstand the envisaged additional load. Reinforced concrete roofs are comparatively more expensive than non-concrete roofs. While properly sloped non-concrete roofs within the study area are easy to maintain, green roofs require frequent maintenance. Similarly, no specific government planning regulation on green roofs was found in the study area. According to an official of MPP&UD interviewed, a reinforced concrete flat roof is usually interpreted to mean that an additional floor may be added later. This is because instances of increasing the height of an existing building abound in the study area. In many cases, such modifications do not follow the statutory procedures and have often resulted in serious building failures and outright collapse in some cases.

Table 3: Ranking of Barriers to Green Roof Use

s/n	Green Roof Barriers	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	RII	Ranking
1	Increased Construction Cost	0	0	3	10	33	0.930	1
2	Increased maintenance cost	0	0	4	9	33	0.926	2
3	Absence of government regulation	0	0	3	12	31	0.922	3
4	Lack of government incentives	0	0	3	13	30	0.917	4
5	Increase in structural load of building	0	0	6	12	28	0.896	7
6	Challenge of installation on existing roofs	0	0	4	15	27	0.900	6
7	Low knowledge and technical capacity	0	0	3	16	27	0.904	5

Authors' Fieldwork (2015)

5.5 Measures to encourage Green Roof Adoption

Five strategies aimed at improving the use of green roofs in the study area were ranked by the respondents. Government incentives with an RII score of 0.848 was ranked highest and was closely followed by government policy with a score of 0.835. The third strategy in order of importance with an RII score of 0.813 was encouraging research and development. The result underscores the important role of government in driving the adoption of green roofs. Also of

particular importance is the role of research and development which not only has the potential of improving the knowledge base but also reducing the installation cost of green roofs. Incidentally, the use of modular green roof panels which holds a lot of prospects for built-up areas did not rank highly as a strategy for green roof adoption. This can be explained by the high ranking of research and development which may be able to identify other more efficient strategies of encouraging green roof adoption in built-up areas. Similarly, public education and enlightenment ranked least apparently because public education without the requisite government intervention may not achieve the desired result.

Government intervention can also be in the form of advocacy for green roofs. Advocacy in this regard may take the form of adopting green roofs for the entire roof or part thereof of public building. By adopting this strategy government is showing leadership by example.

Table 4: Measures to encourage green roof adoption

s/no		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	RII	Ranking
1	Educating the public	2	4	15	13	12	0.726	5
2	Encouraging research and development	1	3	10	10	22	0.813	3
3	Government policy on green roofs	0	2	11	10	23	0.835	2
4	Government incentives for green roofs	0	2	9	11	24	0.848	1
5	Use of modular green roof panels	3	5	15	10	15	0.752	4

Source: Authors' Fieldwork (2015).

5.6 Development Control Implications of Green Roofs

According to operative laws in the study area, responsibility for physical planning regulation of which development control is an important part of, falls on the Ministry of Physical Planning and Urban Development. The ministry exercises development control function through the various agencies such as: Lagos State Planning Permit Authority (LASPPA), Lagos State Urban Renewal Agency (LASURA) and Lagos State Building Control Agency (LASBCA).The basic document is the Urban and Regional Planning and Development Law 2010(Lagos State Government, 2010) and approval orders and regulations made pursuant to the stipulations of the law. Under the extant law and regulations, there is no clear provision on green roofs in buildings. There are however regulations on the minimum green area per developable plot. Based on interview with an official of the MPP&UD, the minimum green area coverage per plot in high density residential areas is 10%. However, in the mixed use development corridor of the Ikoyi and Victoria Island Model City Plan, the proportion of green areas relative to the plot size is considerably

higher (Lagos State Government, 2006). This is in line with the greening programme being implemented by the administrative authorities of Lagos.

It is important that government should be at the forefront of driving green roof adoption as a necessary complement to the green agenda in the study area. This can be done through appropriate legislation, regulations and institutionalized incentives. Incentives may include monetary incentives such as property tax rebates, reduced planning approval processing fees and access to special grants for green roof development. Incentives could also be non-financial such as accelerated planning approval and density bonuses. Density bonus is particularly important in a city like Lagos where available land for property development is scarce and continually dwindling. In order for the development control function to be used for the advantage of green roofs, planning laws and regulations should accommodate some flexibility in their interpretations.

5.7 Green Roof Prospects

One of the most frequent violations of planning laws especially in residential areas is inadequate air space around and between buildings (Aluko, 2011). The MPP&UD staff interviewed confirmed that the most frequent violations are building without government approval, changing the design after approval and building with inadequate air space around the buildings. Given the tendency of property developers to exceed recommended and built-up ratios thereby decreasing opportunity for ground level green areas, the interview respondents agree that the prospect for green roofs in the study area is high. It provides an opportunity to provide green areas above the ground level thus making the ground level available for other uses.

6. Conclusion

Green roofs are desirable in the study area because of the obvious environmental advantages derivable. Such advantages as found in the study include improved indoor comfort, better air quality, improved aesthetics, reduction of urban heat island effect and improved biodiversity. A number of barriers beset the widespread use of green roofs in the study area which include increased construction and maintenance costs, absence of government regulation, lack of appropriate government incentive, and low level of knowledge and technical expertise. In order to encourage the adoption of green roofs in the study area, the study found that strategies such as appropriate government policy, government-driven incentives and encouraging research and development in green roofs should be deployed.

In all, given the public benefits of green roofs, government through regulations and incentives should be at the forefront of promoting the adoption of green roofs. In this respect, it can be made mandatory for new government buildings in urban areas to incorporate in their designs, an extensive green roof at the least. In addition, commercial buildings with gross floor area in excess of a given benchmark should also incorporate a given minimum green roof area. Other property owners can be encouraged to incorporate green roofs in their buildings through appropriate

incentives from government. Given the pressure on land for development in the study area, incentives such as density and floor area bonuses should be considered. Very importantly, in a built-up city like Lagos, the modular green roof panels may be the appropriate way to go for existing buildings.

References

Adepoju, M. O., Millington, A. C. and Tansey, K. T.,(2006), Land Use/Land Cover Change Detection in Metropolitan Lagos, Nigeria, Proceedings ASPRS 2006 Annual Conference, Reno, Nevada, pp.1 – 5. www.aspre.org/a/publications /proceedings/ reno 2006/0002.pdf.

Ainwolemiwa, O. and Gwilliam, J. (2015), Evaluating the impact of Vertical Greening Systems on Thermal comfort in Low income residences in Lagos, Nigeria, Procedia Engineering, 118, pp.420 – 433.

Alkhadaji, T. (2012), Structural Roof Strengthening to Support New Green Roofs, Concrete Repair Bulletin, pp.11 – 14

Aluko, O. (2011), Development Control in Lagos State: An Assessment of Public Compliance to Space Standards for Urban Development, African Research Review, 5(5), 169 – 184.

Bendict, M. A. and McMahon, E. T. (2002), Green Infrastructure: Smart Conservation for the 21st Century, Renewable Resources Journal, 20(3), 12 – 17.

Bolund, P. and Hunhammar, S. (1999), Ecosystem Services in Urban Areas, Ecological Economics, 29: pp. 293 – 301.

Cardoso, G. T. and Vecchia, F. (2013), Thermal Behaviour of Green Roofs Applied to Tropical Climate, Journal of Construction Engineering, open access. Retrieved from: http://dx.doi.org/ 10.1155/2013/940386 on 23/07/2014.

Corbusier, L. (1926), Five Points of New Architecture. Retrieved from: http://www.geocities.com/nl7bb/Le Corbusier5.html on 15/02/2015.

Connelly, M. and Hodgson, M. (2013), Experimental Investigation of the Sound Transmission of Vegetated Roofs, Applied Acoustics, 74(10), pp.1136 – 1143

Connelly, M. and Liu, K., (2005), Green Roof Research in British Columbia: An Overview, Proceedings, 3rd North American Green Roof Conference, Washington DC, pp. 4 – 6

Cruz, C. A., (2012), Wright's Organic Architecture: From Form Follows Function t Form and Function are One, CLOUD-CUCKOO-LAND, 32: pp. 27 – 36.

Dekolo, S. O. and Olayinka, D. N. (2013), Monitoring Peri-urban Land use change with Multi-temporal Landsat Imagery, Paper at the Urban and Regional Data Management Symposium (udms 2013), May 29 – 30, University of London, UK.

Ezema, I. and Oluwatayo, A., (2014), Densification as Sustainable Urban Policy: The Case of Ikoyi, Lagos, Nigeria, Proceedings, International Council for Research and

Innovation in Building and Construction (CIB) Conference, University of Lagos, 28-30

Ezema, I. C.,(2013), Operation Green Lagos Programme and its Implication for Sustainable Development. In Laryea, S. & Agyepong, S. (Eds.), Proceedings 5th West Africa Built Environment Research (WABER) Conference, 12-14 August, Accra, Ghana, pp.835-842

Fernandez-Canero, R. and Gonzalez-Redondo, P. (2010), Green Roofs as a Habitat for Birds: A Review, Journal of Animal and Veterinary Advances, 9(15), 2041 – 2052.

Getter, K. L. and Rowe, D. B. (2006), The Role of Extensive Green Roofs in Sustainable Development, HortScience, 41(5), pp.1276 – 1285.

Hui, S. C. M., (2006), Benefits and Potential Applications of Green Roof Systems in Hong Kong, Proceedings of the 2nd Megacities International Conference 2006, 1-2 December 2006, Guangzhou, China, pp. 351-360.

International Green Roofs Association (IGRA), (2008), Types of Green Roofs, IGRA, Retrieved from: http://www.igra-world.com/green-roof-types/index.html on 23/03/2015

Jeje, B. (2013), Green Buildings and Low energy houses as adaptation tools for climate change in Lagos State, Lead paper, 5th Lagos State Climate Change Summit, 13-15 March, 2013, Lagos, Nigeria.

Kazmierczak, A. and Carter, J. (2010), Adaptation to climate change using green and blue infrastructure: A database of case studies, The University of Manchester.

Kohler, M. (2006), Long-term Vegetation Research on Two Extensive Green Roofs in Berlin, Journal of Urban Habitats, 4(1),3 – 26.

Lagos Bureau of Statistics (2013), Digest of Statistics 2013, Lagos Bureau of Statistics, Ministry of Economic Planning and Budget, Lagos State Government, Alausa-Ikeja, Lagos.

Lagos State Government (2006), Ikoyi Victoria Island Model City Plan, Lagos State Regional and Master Plan Department, Ikeja, Lagos.

Lagos State Government (2010), Lagos State Urban and Regional Planning Development Law 2010, Lagos State Government

Lagos State Government (2013), Digest of Statistics 2013, Lagos Bureau of Statistics, Ministry of Economic Planning and Budget.

Lennon, M. (2014), Green infrastructure and planning policy: a critical assessment, Local Environment: The International Journal of Justice and Sustainability, 20(8), 957 – 980.

Li, W. C. and Yeung, K. K. A. (2014), A Comprehensive Study of Green Roof Performance from Environmental Perspective, International Journal of Sustainable Built Environment, 3(1), 127 – 134.

Matthews, T., Lo, A. Y. and Byrne, J. A. (2015), Re-conceptualizing green infrastructure for climate change adaptation: Barriers and drivers for uptake by spatial

planners, Landscape and Urban Planning, 138, 155 – 165.

National Population Commission (2007), Report of Nigeria's National Population Commission on the 2006 Cenus, Population and Development Review, 33(1), 206 – 210.

Nurmi, V., Votsis, A., Perrels, A. and Lehvavirta, S. (2013), Cost-benefit Analysis of Green Roof in Urban Areas: Case Study in Helsinki, Report No. 2013:2, Finish Meteorological Institute. Helsinki: Unigrafia.

Okorie, F. C., (2012), A Spatio-Temporal Analysis of Deforestation in Epe and its Environs (Lagos, Nigeria), International Journal of Science, Environment and Technology, 1(5), pp. 548 – 562.

Olaleye, J. B., Abiodun, O. E. and Igbokwe, Q., (2009), Land Use Change Detection and Analysis Using Remotely Sensed Data in Lekki Penninsula Area of Lagos, Nigeria, Proceedings FIG Working Week 2009, Eliat, Israel, 3 – 8 May, Available online at: http://www.fig.net/pub/fig2009/papers/ts08b/ts08b_olaleye_etal.

Peck, S. W. (2002), Green Roofs: Infrastructure for the 21st Century, Paper prepared for Clean Air Partnership and presented at the 1st Annual Urban Heat Island Summit, May 2 – 3, Toronto, Canada.

Peck, S.and Kuhn, M. (2003), Design Guidelines for Green Roof. Ontario: Ontario Association of Architects.

Rogers, E. (1995), Diffusion of Innovations (4th Edition), New York: The Free Press.

Science for Environment Policy (2012), The Multi-functionality of green infrastructure, Directorate-General Environment, European Commission.

Shepard, N. (2010), Green Roof Incentives: A 2010 Resource Guide, dcgreenworks.

Susca, T., Gaffin, S. R. and Dell'Osso, G. R. (2011), Positive effects of vegetation: urban heat island and green roofs, Environmental Pollution, 159(8-9), 2119 – 2126.

Tam, V. W. Y., Zhang, X., Lee, W. W. Y. and Shen, L. Y. (2011), Applications of Extensive Green-roof Systems in Contributing to Sustainable Development in Densely Populated Cities: A Hong Kong Study, Australian Journal of Construction Economics and Building, 11(1), 16 – 25.

United Nations, Department of Economic and Social Affairs, Population Division (2014), World Urbanisation Prospects: The 2014 Revision, Highlights (ST/ESA/SER.A/352.

United States Department of Agriculture, (2000) Natural Resource Conservation Service, National Resources Inventory, (available at www.nrcs.usda.gov/ technical/NRI/1997/ summary report/index.html).

USEPA (2009), Managing Wet Weather with Green Infrastructure Municipal Handbook: Incentive Mechanisms, EPA.

Voelz, J. (2006), The Characteristics and Benefits of Green Roofs in

Urban Environments, Sustainability and the Built Environment Programme, University of California, Davis.

Wright, H. (2011), Understanding green infrastructure: the development of a contested concept in England, Local Environment: The International Journal of Justice and Sustainability, 16(10), 1003 – 1019.

Zhang, X., Shen, L., Tam, V. W. Y. and Lee, W. W., (2012), Barriers to Implement Extensive Green Roof Systems: A Hong Kong Study, Renewable and Sustainable Energy Reviews, 16: 314 – 319.

A Heuristic Method of Establishing Operational Effectiveness of Hotel Facilities in South-Western Nigeria

[1]Olufemi Daniel Durodola, [2]Abiodun Caleb Ayedun, [3]Olufunke Adedamola Oluwunmi & [4]Olayinka Clement Oloke

Abstract: Assessing the operational effectiveness of hotel facilities has always been problematic in that opinions of technicians or engineers when sought were rooted in intuition (subjective and speculative, though cheaper) instead of reliance on standard tests laid down by established institutions (objective and scientific, though expensive and laborious). One sure way of achieving good result is by seeking the perception of the hotel users (the customers) on the level of functionality of the facilities paid for and being enjoyed. This research seeks to establish a method of establishing operational functionality of hotel facilities by exploring the perceptions of the customers about these facilities. The research is executed in order to find an alternative way of measuring performance of hotel facilities beyond technical modulation. Data were collected from hotels' customers in addition to physical assessment of hotel facilities and system operations. Stratified sampling technique was used in selecting the samples while sample size was determined based on formula suggested by Kothari (1978). Data analysis was executed using descriptive statistics, mathematical permutation and combination principle and Spearman Correlation analysis. It was found out that facilities' performance could be established by assessing quantity, quality and workability of facilities independently as variables and then combine these variables mathematically using permutation and combination principles reinforced with Chi-Square (X^2). While Engineers focused on operational sturdiness of facilities as main yardstick for measuring performance of facilities; users focused on quantity and quality as well as operational sturdiness of the facilities. Although engineering test and mechanical manipulation are sine qua non in facilities operations, yet it could be reinforced with perception of customers focusing majorly on three parameters (Quantity, Quality and Operational Sturdiness) duly analysed to give independent opinion devoid of human manipulation.

***Keywords*:** Customers; Facilities Management; Hotel; Investment; Operations; Performance Measurement

1.0 Introduction

In order for a robust business to be conducted in any hotel, it is essential for constructed assets to be appropriately managed if the business is to be preserved. Durodola and Oloyede (2011) identified facilities management as one of the property assets management styles that could be used effectively in managing the facilities of the hotels. Facilities Management, in this context, is defined as the proactive management of constructed facilities and organizational assets to improve their efficiency and add value to their performance and services (Okoroh, Jones and IIozor, 2003). Facilities for hotels, from customers' perspective would include buildings, industrial kitchen equipment, central air-conditioning system, fans, elevators, lifts, electrical installations, escalators, bakery equipment, amongst others.

Going by Kotler and Armstrong (1989) 'levels of product' principle, the core service being rendered by hotels is provision of comfortable accommodation for guests while the facilities are the actual tools that bring the comfort into reality. The implication is that hoteliers must be concerned about the operational effectiveness of these facilities at all times as they translate to functionality assessment. But there are three dimensions to functionality assessment of facilities especially when viewed from the perspective of facilities management as a strategic management tool for enhancing hotel performance. These dimensions are quantity of the facilities provided, their quality and then the operational readiness of the facilities at all times.

In such a scenario, the expectation then is that such hotels must vigorously pursue adequate availability of facilities that are of superior quality and are operationally ready at all times. It is only through this that the objective of facilities management as a strategic management tool could be achieved. This is a form of performance measurement which hotels should ordinarily be carrying out on a regular basis. Thus, a proactive hotel management must not wait until a facility breaks down completely but always trying to find out whether the facility is performing optimally at all times. Performance assessment of facilities could be achieved in two major ways namely scientifically (objectively) or heuristically (subjectively). The former is within the realm of the engineers and technicians assessing required quantity of each type of equipment and performing maintenance operation at regular interval. The latter is achieved by seeking the opinion of the users on how they feel about such installations since they are the direct beneficiary of such installations.

This work aims at establishing the degree of operational effectiveness of hotel facilities in South-Western Nigeria. In order to achieve the aim, the following objectives are set to: establish the quantum of facilities on ground in comparison with need, assess the quality of the facilities from customers' perspective and establish the operational effectiveness of these facilities through wholeness analysis. It is imperative to give the operational definition of certain core terms here as such terms might slightly deviate from constitutive definitions. Such terms include quantity, quality, operational effectiveness and wholeness.

Quantity is the number of equipment required to satisfy the need of the need of the environment taking into cognizance size available space in relation to the size of the equipment,

technical capacity of the equipment in relation to design and the amenity of the environment. In-adequate quantity leads to discomfort so also excessive quantity. Quantity determination is the purview of the designer. Quality essentially means conformity to standard or essential specification as given by relevant institutions such as British Standard or American Standard or International Standard Organization (ISO) specification or manufacturer's specification. This becomes an issue because of fake and sub-standard products dominating the market un-controllably. Operational effectiveness is the functionality trait displayed by a machine when turned on. In essence, seamless operations of the facilities when put to use by the users or customers. Finally, wholeness is the synergy or operational synchronization between the three variables; quantity, quality and operational effectiveness of the equipment. The paper is structured into five major segments namely introduction, literature review, the research method, result and discussion and finally conclusion and recommendations.

2.0 Literature Review

Property is anything that can be owned. But acquisition of real estate comes along with acquisition of bundle of rights in the property. These are the rights of use, possession, control, enjoyment, exclusion, and disposition, including the right to pass the properties on by means of wills. Investment in property can be spread on bare land, residential properties, office buildings, strip stores and shopping centres, industrial properties and diverse realty investments such as hotels and motels, commercial hotels, convention hotels, resort hotels, all-suite hotels, extended-stay hotels, motels, amusement parks, golf courses including medical buildings (Sirota 2004). The building fabrics or the carcasses cannot be said to be functional unless and until facilities as identified earlier are installed. The diverse opportunities to spread investment, the legal connotations associated with property, the bundles of rights that accompany investment in properties and, of recent, the ability to separate property from support services and the complexity of the structure and the facilities necessarily implies proactive management.

Thorncroft (1965) opined that proactive management had gone beyond the day-to-day routine activities of the estate manager but what he called the 'shaping of an estate'. By the 'shaping of the estate' Thorncroft (1965) meant what properties within the estate should be retained and what might be sold to the advantage of the organization; what opportunities are there for adding to the estate, by buying in new property or by terminating leases previously granted out of the ownership; is the policy of the estate to be one of disposal of property to raise capital? This point was re-emphasized by Hanford (1970) who opined that 'real estate is a dynamic resource, requiring constant care, attention and management. Property asset management, being canvassed, is aimed at efficiency of the assets which will translate to high profitability as demand is enhanced and sustained. This stand was buttressed by Edgar and Teicholz (2003) when they opined that total asset management (TAM) is a holistic, inclusive and coordinated

approach to facility asset management. Property assets' management tools, commonly identified in literature, are maintenance management, property management and facilities management. Maintenance management focuses on sustenance and conservation of existing buildings with a view to retaining their structural stability and functionalities (Seeley, 1977 and Oyefeko, 1999). At an individual's level of self-occupation, un-planned maintenance is the norm. Where properties are held as a means to production, a combination of planned and un-planned maintenance holds sway. Where properties are held for investment purposes, then this management activity may be passed on to a professional management agent who then applies property management principles as the nub of maintenance activities is to ensure functionality and high performance of facilities at all times.

Property management focuses on tenant selection and letting; control over the estate; rent review and lease renewals; insurance of the properties; repairs; services and service charges; property management records; property marketing and portfolio management (College of Estate Management, 1995). Property management is more than maintenance management in that maintenance is an aspect of property management which becomes a necessary tool when properties are held for investment purposes and become extensive or can be easily separated from operator's daily business activities and entrusted into the hand of a professional property manager. At this level, performance of the properties, in terms of returns, are to be assessed and this explains the issue of portfolio management (Nwankwo, 2004). Here, there is dexterous application of maintenance principle coupled with witty application of management principles to ensure high returns.

Facilities management on the other hand is broad based incorporating maintenance management, property management but more importantly, workspace management, churn management, strategic property management and the management of support services, among others (Hamer, 1988; Alexander, 1996). It is a strategic tool that readily comes in when there is a need to re-invigorate the performance of property investment. Grimshaw (2003) was of the opinion that some of the major goals of facilities management include improvement of overall work environment, development of functional standards for offices, workstations, equipment and special facilities, reduction in average procurement cost and programme evaluation including strategic analysis of situation, which introduces performance measurement. At this level, performance assessment is not limited to end of financial year activity and theoretical but a continuous one in terms of physical assessment of facilities to ensure optimum operation.

Douglas (1996) viewed performance as the process or manner of functioning or operating. From an organisation's and management perspectives, performance is measured by the realisation of the organisation's goals. From management perspective, performance is seen as an object's ability to achieve desired results. From corporate real estate management point of view, performance

can be seen as the ability of the real estate to support the organisational objectives, strategies and, at the end, business success (Lindholm and Nenonem, 2006).

Maintaining profitability and productivity are the most important long term success factors and the measurement of the success factors is called strategic performance measurement which is the process whereby the strategy of an organisation is translated into concrete objectives and the achievement of those objectives is evaluated. This predicates that performance evaluation can be carried out on the real estate/building/facility itself and also on the operations of the organization as a whole.

The level of performance an organisation attains is a reflection of the efficiency and effectiveness of the actions it undertakes and thus performance evaluation can be said to be the process of quantifying the efficiency and effectiveness of an action (Amaratunga and Baldry, 2002). In simple terms, performance evaluation can be seen as the variance between the set goal/objectives and the achieved goal. Applying the disciplines of performance evaluation helps building managers and operators to determine, firstly, those issues that are crucially important to the overall success of an organisation, and secondly, those issues that are critical to the successful delivery of the specific function or operation concerned (Varcoe, 1996).

Various writers have categorized performance criteria differently depending on their perspective of performance evaluation. This is responsible for the various terms like indicators, performance categories, performance metrics and so on, used mainly in describing performance criteria [Lutzkendorf, Speer, Szigeti, Davis, Le Roux, Kato and Tsunekawa (2005); Myeda, Kamaruzzaman, Pitt and Tucker (2011); Sinopoli (2009)]. However, Lutzkendorf et al., (2005) proposed six major performance evaluation categories for a building as shown in Figure 1.

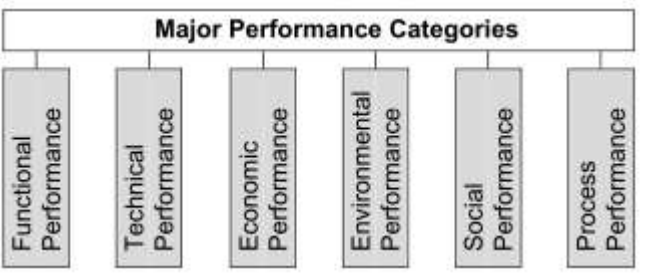

Figure 1: Major performance categories
Source: Lutzkendorf et al. (2005)

Functional performance describes and assesses how well use-specific activities and processes can be performed in a building. It is closely related to the needs of the building users and others such as visitors and the public

community. Technical performance describes structural, physical and other technical features or characteristics. Economic performance is divided into two which are real estate performance and cost performance. Real estate performance is the earnings trend and value of a real estate property. Cost performance describes financial expenditures involved in planning, construction, operation, maintenance, demolition or waste disposal at a particular time or within the life cycle of a facility. Environmental performance describes and assesses the building's features and characteristics relevant to its impact on the environment. Social performance is closely tied to the health indicators. The overall building performance is influenced by the quality of processes involving planning, construction, and use and facility management. On the other hand, Brackertz and Kenley (2002) take into account four different perspectives of facility performance vis a vis the community, services, building and financial perspectives.

Traditionally, the use of financial indicators determines the way in which businesses operate. If the cost is low and the return is reasonable then the business is performing. The need for new measures to evaluate performance has to be set within the context of a changing external environment with organisations increasingly being concerned with holism, together with such issues as soft systems, culture and the establishment of competencies as well as accountability. This has led to the need for evaluating company's performance against a set of diverse and often conflicting criteria which has also led to the emergence of non-financial or qualitative indicators, focused on process, structure and change, instead of traditional cost, profit, and output measures to evaluate company's performance for quite different purposes (Crowther, 1996). Figure 2 shows various researchers who have identified several indicators or factors suggested to be of paramount importance for carrying out performance evaluation.

Thus, Myeda, Kamaruzzaman and Pitt (2011) view performance measurement indicators as dependent on the equipment, cost and process performance. Pitt and Tucker (2011) focused on functional performance and technical performance which indicated the service quality and the property quality. Brackertz and Kenley (2006) agree that machine or facility maintenance is among other factors like task, organisational and profit or cost that should be measured with focus on the efficiency level of each subject.

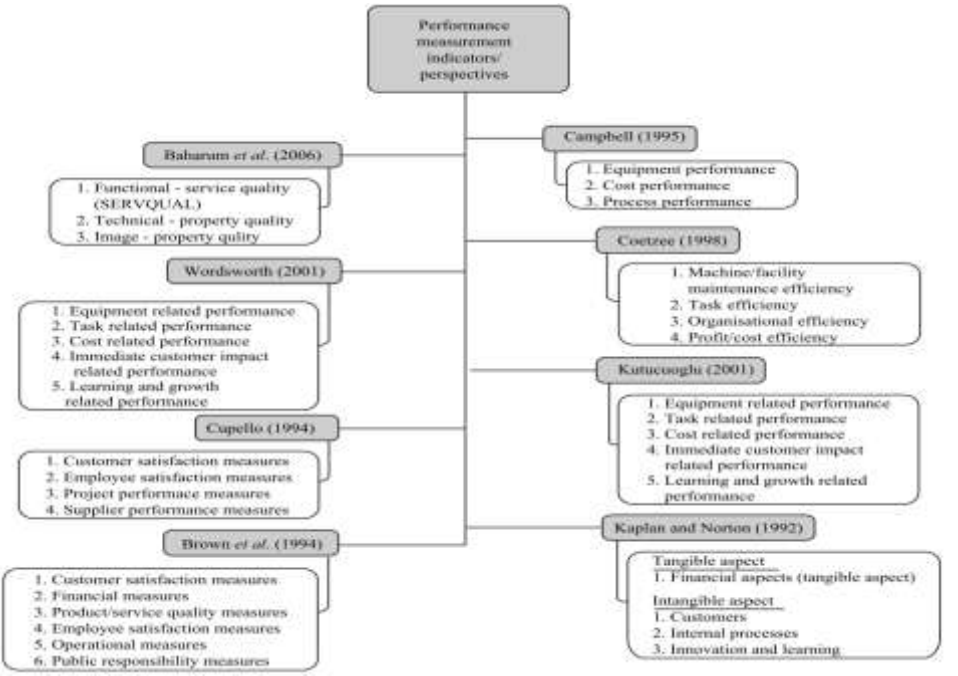

Figure 2: Different views of performance indicators
Source: Myeda, Kamaruzzaman and Pitt (2011)

Lindholm and Nenonen (2006) suggested that the techniques of carrying out performance evaluation can be grouped into tactical and strategic techniques depending on the user of the evaluation. The tactical tools are important for evaluating, controlling, and improving internal process which are related to the physical workplace. The strategic tools on the other hand are used in measuring the performance of the workplace.

Tactical tools are used for analysing the current situation of the work place. The object that is being measured by the tactical tool is the office building. The tactical techniques for performance evaluation are varied. However, some of the identified techniques includes Logometrix, six sigma, benchmarking, post occupancy evaluation (POE), balanced score card (BSC), Microscan$_{fm}$, building quality assessment (BQA) Building-in-use (BIU) and Apgar real estate scores (ARES).

Logometrix considers service, physical, environmental, community, utilisation and financial perspectives of facility performance, each represented by a Key performance indicator (KPI) (Brackertz and Kenley, 2006). When it comes to facilities performance measurement, the Logometrix comes in handy as it considers the perspectives of the community; the provider, the users, the customers and the operators themselves. The community perspective, has always been neglected in that when a machine

is functioning, the presumption is that the system is okay. In the hotel environment however, where comfort is the principal product on offer, this may not be okay hence the need to begin operational performance measurement of facilities from the perspective of users, the main beneficiaries.

3.0 Research Method

This is a survey research covering South-Western States of Nigeria comprising of Ekiti, Lagos, Ogun, Osun, Ondo and Lagos States. There are one hundred and eighty-two hotels in the zone with eighty (44%) of the hotels concentrated in the State capitals, prompting selection of the samples from the State capitals. The sample frame is composed of the hotels that meet the National Classification and Grading of Hotels as stipulated by the Nigerian Tourism Development Corporation (2001). A sample size of 57 hotels was arrived at using the formula suggested by Kothari (1978). In order to secure representative responses, the size of the sampled hotels for the study did not fall below the representative size determined from statistical estimation theory, which is based on the degree of confidence that the researcher wishes to employ. For this study, the researcher defines how large a sample of hotels should be in order to be 95% confident that the probable error of using a sample rather than surveying the whole population will not exceed 0.05% by the formula; given as:

$$n = \frac{Z_{\alpha 2}\, N\hat{p}(1-\hat{p})}{(N-1)\,\delta^2 + Z_{\alpha 2}\,\hat{p}(1-\hat{p})}$$; Where:

n = Sample Size

$Z\alpha$ = A value such that the probability of a normal variable exceeding it is (1 – α)/2 and obtainable from Z Table. In this case 1.96

$\hat{p}$ = Unknown value we are trying to estimate and taken to be 0.5 conservatively in which case N will be maximum and the sample will yield at least the desired precision.

δ is the true value of β which in this case is 0.02 or 2%

In this case, the formula yields 57. Thus, a sample size of 57 was obtained and this figure was split among the States based on the number of hotels within each State. Out of the fifty-seven questionnaires administered on hotel organizations, twenty-eight (49%) were retrieved while in respect of customers, six hundred and seventy-one questionnaires were administered from which three hundred and sixty (54%) were retrieved. Expert opinions from environmental sciences, behavioural sciences and tourism industry were sought to ensure content validity of the questionnaires.

Data analysis relied on descriptive statistics, mathematical principles of permutation and combination using quantity, quality and operational performance as variables and Chi-square (X^2). The variables were assessed by relying on Likert scale with four points each. Each variable is as then analysed using mean item on the assumption that each individual is looking at each variable individually. Secondly, the three were combined from composite point of view on the assumption that individuals are being allowed to take a decision based on the overall perception of quantity, quality and operational performance of the facilities. This is termed wholesomeness test.

Thus, supposing quantity is assigned A so that we have A_1, A_2, A_3 and A_4; the quality is assigned B so that we have B_1, B_2, B_3 and B_4; and operational performance is assigned C so that we have C_1, C_2, C_3 and C_4 then each can be treated individually and then collectively using combination. Preliminary analysis did show that a series of the form n^x is possible where n represents numbers in a group and x represents number of groups. In this case 4^3 and this gives 64 possible combinations. Table 1 shows the total possible combinations as used for the analysis. For quantity of facilities, A_1 represents (highly adequate), A_2 (adequate), A_3 (somewhat adequate) and A_4 (in-adequate). For quality, B_1 (Superior), B_2 (Standard), B_3 (Somewhat Standard) and B_4 (Inferior). Finally, for operational effectiveness of facilities C1 represents (Very efficient), C2 (Efficient), C3 (Somewhat Efficient) and C4 (In-efficient). The scales are assigned values of 4, 3, 2, and 1 in that order respectively.

Table 1: Total possible Combination of Perceptions about Quantity, Quality and Operational Effectiveness of Facilities in Favored Hotels

S/NO	Combinations	S/NO	Combinations	S/NO	Combinations	S/NO	Combinations
1	$A_1B_1C_1$	17	$A_2B_1C_1$	33	$A_3B_1C_1$	49	$A_4B_1C_1$
2	$A_1B_1C_2$	18	$A_2B_1C_2$	34	$A_3B_1C_2$	50	$A_4B_1C_2$
3	$A_1B_1C_3$	19	$A_2B_1C_3$	35	$A_3B_1C_3$	51	$A_4B_1C_3$
4	$A_1B_1C_4$	20	$A_2B_1C_4$	36	$A_3B_1C_4$	52	$A_4B_1C_4$
5	$A_1B_2C_1$	21	$A_2B_2C_1$	37	$A_3B_2C_1$	53	$A_4B_2C_1$
6	$A_1B_2C_2$	22	$A_2B_2C_2$	38	$A_3B_2C_2$	54	$A_4B_2C_2$
7	$A_1B_2C_3$	23	$A_2B_2C_3$	39	$A_3B_2C_3$	55	$A_4B_2C_3$
8	$A_1B_2C_4$	24	$A_2B_2C_4$	40	$A_3B_2C_4$	56	$A_4B_2C_4$
9	$A_1B_3C_1$	25	$A_2B_3C_1$	41	$A_3B_3C_1$	57	$A_4B_3C_1$
10	$A_1B_3C_2$	26	$A_2B_3C_2$	42	$A_3B_3C_2$	58	$A_4B_3C_2$
11	$A_1B_3C_3$	27	$A_2B_3C_3$	43	$A_3B_3C_3$	59	$A_4B_3C_3$
12	$A_1B_3C_4$	28	$A_2B_3C_4$	44	$A_3B_3C_4$	60	$A_4B_3C_4$
13	$A_1B_4C_1$	29	$A_2B_4C_1$	45	$A_3B_4C_1$	61	$A_4B_4C_1$
14	$A_1B_4C_2$	30	$A_2B_4C_2$	46	$A_3B_4C_2$	62	$A_4B_4C_2$
15	$A_1B_4C_3$	31	$A_2B_4C_3$	47	$A_3B_4C_3$	63	$A_4B_4C_3$
16	$A_1B_4C_4$	32	$A_2B_4C_4$	48	$A_3B_4C_4$	64	$A_4B_4C_4$

With these assigned values, Table 1 could be translated figuratively to give Table 2

Table 2: Figurative Translation of Table 1

comD	$(abcE)_1$	$(abcE)_2$	$(abcE)_3$	Val	comD	$(abcE)_1$	$(abcE)_2$	$(abcE)_3$	Val
C_1	4	4	4	64	C_{17}	3	4	4	48
C_2	4	4	3	48	C_{18}	3	4	3	36
C_3	4	4	2	32	C_{19}	3	4	2	24
C_4	4	4	1	16	C_{20}	3	4	1	12
C_5	4	3	4	48	C_{21}	3	3	4	36
C_6	4	3	3	36	C_{22}	3	3	3	27
C_7	4	3	2	24	C_{23}	3	3	2	18
C_8	4	3	1	12	C_{24}	3	3	1	9
C_9	4	2	4	32	C_{25}	3	2	4	24
C_{10}	4	2	3	24	C_{26}	3	2	3	18
C_{11}	4	2	2	16	C_{27}	3	2	2	12
C_{12}	4	2	1	8	C_{28}	3	2	1	6
C_{13}	4	1	4	16	C_{29}	3	1	4	12
C_{14}	4	1	3	12	C_{30}	3	1	3	9
C_{15}	4	1	2	8	C_{31}	3	1	2	6
C_{16}	4	1	1	4	C_{32}	3	1	2	6
C_{33}	2	4	4	32	C_{49}	1	4	4	16
C_{34}	2	4	3	24	C_{50}	1	4	3	12
C_{35}	2	4	2	16	C_{51}	1	4	2	8
C_{36}	2	4	1	8	C_{52}	1	4	1	4
C_{37}	2	3	4	24	C_{53}	1	3	4	12
C_{38}	2	3	3	18	C_{54}	1	3	3	9
C_{39}	2	3	2	12	C_{55}	1	3	2	6
C_{40}	2	3	1	6	C_{56}	1	3	1	3
C_{41}	2	2	4	16	C_{57}	1	2	4	8
C_{42}	2	2	3	12	C_{58}	1	2	3	6
C_{43}	2	2	2	8	C_{59}	1	2	2	4
C_{44}	2	2	1	4	C_{60}	1	2	1	2

C_{45}	2	1	4	8	C_{61}	1	1	4	4
C_{46}	2	1	3	6	C_{62}	1	1	3	3
C_{47}	2	1	2	4	C_{63}	1	1	2	2
C_{48}	2	1	1	2	C_{64}	1	1	1	1

Key
comD > Combination Designation
$(abcE)_1$ /$(abcE)_2$ / $(abcE)_3$ > Variables' Combinations
Val. > Calculated Value

4.0 Results and Discussion

4.1 Ascertainment of Quantity of available Facilities in Investigated Hotels

Analysis was carried out from two perspectives namely organization and customers. From organizations' perspective, emphasis was placed on the availability of basic facilities which operational hotels should have (from 2-Star and above) as contained in the National Classification and Grading of Hotels (2002) in Nigeria. Thus, the organization questionnaire requested for services on offer and schedule of available facilities. This deals with quantity of facilities from organizational perspective. However, this was regarded as in-adequate arising from the fact that some element of bias might be there. Thus, customers' views were sought to rate the hotels in terms of quantity, quality and operational performance of facilities they enjoyed. Table 2 shows the overall positions of facilities and services in the investigated hotels.

A discreet study of Table 3 shows that facilities provision seems to be adequate overall especially in basic facilities. However, in areas of recreation facilities, security facilities and shopping facilities, there is glaring deficiency. Nonetheless, facilities cannot be examined from the perspective of the organizations alone but also from the customers' perspective which takes into considerations quantity, quality and operational performance of facilities, otherwise termed wholeness.

Table 3: Degree of Facilities/Services Availability in investigated Hotels

S/No	Facilities/ Services	Availability Frequency	Non-Availability Frequency	% Availability	% Non-Availability	Deficiency Level
1	Electricity from Main	28	0	100	0	Nil
2	Standby Generator	27	1	95	4	Low
3	Audio-VisualAids	7	21	25	75	High
4	Shopping Outlet	8	20	29	71	High
5	ICT	16	12	57	43	Medium

6	CCTV	9	19	32	68	High
7	Public Phone	17	11	61	39	Medium
8	Intercom	28	0	100	0	Nil
9	Fire Fighting Aids	28	0	100	0	Nil
10	Tennis Court	11	17	39	61	High
11	Swimming Pool	15	13	54	46	Medium
12	Accommodation	28	0	100	0	Nil
13	Catering Services	28	0	100	0	Nil
14	Bar Services	28	0	100	0	Nil
15	Reception	21	7	75	25	Medium
16	Seminar Hall	18	10	64	36	Meduim
17	Banquetting Hall	15	13	54	46	Meduim
18	Conference Hall	15	13	54	46	Meduim
	Training Centres	9	19	32	68	High
	Overall % Availability			68%		
	Overall % Non-Availability				32%	

4.2 Assessment of the Quality of the Facilities in the Hotels from Customers' Perspective

Table 4 shows the frequency distribution for facilities' wholeness which confirms the disposition of customers to facilities in the hotels. Customers believed that facilities are adequate quantity-wise but deficient in quality and operationally too. For wholeness status, the responses of the customers using Likert scale presented in Table 1 was analysed and the ensuing combinations were obtained using Likert Scale where A_1 represents (highly adequate), A_2 (adequate), A_3 (somewhat adequate) and A_4 (in-adequate).

Table 4: Frequency Distribution for Facilities' Wholeness

Scales	Frequency	Percentage	Ranking
Facilities' Rating Quantum			
Highly Adequate	25	7	4
Adequate	169	47	1
Somewhat Adequate	73	20	3
In-adequate	93	26	2
Total	360	100	
Facilities' Rating Quantity			
Superior	54	15	4
Standard	92	26	2
Somewhat Standard	124	34	1
Inferior	90	25	3

Total	360	100	
Facilities' Rating Quality			
Very Efficient	51	14	4
Efficient	57	16	3
Somewhat Efficient	156	43	1
In-efficient	96	27	2
Total	360	100	

4.3 Operational Effectiveness of Facilities in Investigated Hotels from Customers' Perspective

This gives a mean ($\bar{A}$) of 16, mode (Z) of 12 and median of 12. The distribution is nearly normal since the mode and median are equal and the mean is almost equal to both. The lower quartile (Q1) is 6 while Q2 (median) is 12 and the upper quartile Q3 is 24. In this case, 16 could be regarded as the threshold of wholeness while a figure of 24 and above could be taken to be a good degree of wholeness. However, when Likert scale was applied to Table 4, a similar distribution was achieved. But the first distribution is supposed to be similar if indeed wholeness is in place. Therefore, the distributions obtainable from these possible combinations could be presented as follows representing the observed frequency while the below frequency distribution represents the expected frequency enabling Chi-square (X^2) to be calculated.

Thus, the following statistics were derived: Chi-square (X^2) calculated was 8542.17 against Chi-square (X^2) tabulated at 5 degree of freedom and 5% level of significance was 24.996. Thus, 24 to 64 could be regarded as wholeness and this gave a total of 106 out of 360 which was 29%. The calculated Chi-square (X^2) amounting to 8,542 is greater than tabulated value of 24.996 at 5 degree of freedom and 5% level of significance which led one to conclude that there was no synergy between the variable of quantity, quality and operational effectiveness of facilities.

Table 5: Observed/Expected Frequency

$(Var)_x$	$(Obv)_f$	$(Exp)_f$	$(Var)_x$	$(Obv)_f$	$(Exp)_f$
1	1	1	16	6	9
2	3	3	18	3	6
3	2	3	24	6	3
4	6	6	27	1	6
6	7	6	32	3	1
8	7	7	36	3	3
9	3	0	48	3	3
12	9	3	64	1	1

Key: Var_x > Variable (Obv)f > Observed Frequency
(Exp)f > expected frequency

The expected mean was 16 while observed mean was 15. The expected mode gave 12 and the observed mode gave 1. Interestingly, the median of the expected frequency was 12 which tallies with the observed median. The standard deviation of expected frequency was 13.33 while the observed counterpart was 30.12. The variance of the expected distribution was 177.74 while the observed counterpart was 907.16. There was thus, a wide gap between expected mode and observed mode as well as the standard deviations and variances. This could be interpreted to mean that there was no convergence between quantity, quality and operational effectiveness as variables of assessment for the facilities in the hotels and by implication; lack of wholeness among the variables.

5.0 Conclusion and Recommendation

It could be concluded that subjecting the perceptions of users of facilities in hotels could yield a more responsive and succinct result that would reflect the real status of the facilities, highly functional, functional, somewhat functional and indeed un-functional. The result could be used as supporting independent report to technical report. It could be a one-off assessment or a continuous on. The implication here is that hotel operators should lay emphasis on quality of facilities which could be achieved by sustained maintenance of facilities and they should always give thought to examining facilities holistically than just quantities and one-off performance rectification but a holistic assessment, taking into cognizance the variables of quantity, quality, operational functionality and wholeness, that is the synergy or interactive relationship between the three main variable.

References

Alexander, K (1996). Facilities Management: Overview. In Alexander, K [Ed.]. Facilities Management London: Theory and Practice(pp. 1-12). London E & FN Spon.

.Amaratunga, D and Baldry, D (2002). Building Performance Evaluation in Higher Education Properties: Towards a Process Model. RICS Foundation, 2 (14), 45 - 56

Brackertz, N and Kenley, R (2002): A service delivery approach to measuring facility performance in local government. Facilities. 20 (3/4):127 – 135.

Brackertz, N and Kenley, R (2006): Evaluating community facilities in local governments: Managing for service enablement. Journal of Facilities Management, 1, (3): 283 – 299

College of Estate Management (1995). Property Management. Whiteknights, Reading The College of Estate.

Crowther, D (1996): Corporate performance operates in three dimensions. Managerial Auditing Journal. (11/8) :4 – 13.

Douglas, J (1996): Building performance and its relevance to facilities management. Facilities. 14 (3/4) 23 – 32.

Durodola, O.D and Oloyede, S.A (2011)"Empirical Determination of Property Assets Management Styles in South-Western Nigeria Hotels". Journal of Sustainable Development, February 4(1), 151 – 159

Edgar, A and Teicholz, E (2003). Accomplishing Total Asset

Management. Facility Management Journal (FMJ), International Facility Management Association. March/April 2003, 19 – 21

Grimshaw, R.W (2003). FM: The Professional Interface. Facilities, 21(3/4) 50 - 57

Hanford, L.D (1970). Analysis and Management of Investment Property 1st Ed. Chicago: Institute of Real Estate Management of the National Association of Realtors.

Hamer, J.M (1988). Facility Management System, 1st Ed, New York: Van Nostrand Reinhold Inc.

Kothari, C.R (1978). Quantitative Techniques 3rd Ed. New Delhi: Vikas Publishing House PVT Ltd.

Kotler, P and Armstrong. K. (1989). Principles of Marketing, (4th edition) Prentice- Hall International, Pp. 4, 5, 132, 180.

Lindholm, A and Leväinen, K (2006): A framework for identifying and measuring value added by corporate real estate, Journal of Corporate Real Estate, 8 (1):38 - 46

Lindholm, A. and Nenonem, S. (2006): A conceptual framework of CREM performance measurement tools. Journal of Corporate Real Estate. 8 (3):108 – 119.

Liyanage, C. and Egbu, C. (2008): A performance management framework for healthcare facilities management, Journal of Facilities Management, 6 (1): 23 - 36

Lützkendorf, T; Speer, T; Szigeti, F; Davis, G; le Roux, P; Kato, A and Tsunekawa, K (2005): A comparison of international classifications for performance requirements and building performance categories used in evaluation methods. Technical Research Centre of Finland (VTT) / Association of Finnish Civil Engineers (RIL). Assessed from http://www.irbnet.de/daten/iconda/CIB6731.pdf

Myeda, N.E; Kamaruzzaman, S. N and Pitt, M (2011): Measuring the performance of office buildings maintenance management in Malaysia, Journal of Facilities Management, 9(3):181 – 199.

Nigerian Tourism Development Corporation (NTDC) (2001). Standard for National Classification and Grading of Hotels and Other Serviced Accommodations in Nigeria. 1st Ed. Abuja: Nigerian Tourism Development Corporation.

Nwankwo, P.C (2004) Property Management Practice in Nigeria, 2nd Ed. Lagos: B.G Company.

Okoroh, M.I; Jones, C.M and Ilozor, B.D (2003) "Adding Value to Constructed Facilities: Facilities Management Hospitality Case Study" Journal of Performance of Constructed Facilities, February 24-33

Oyefeko, S.T (1999) "Methodology for the Practice of Building Surveying". The Nigerian Institute of Building National Seminar on 'Professional Builders in Practice'.October. Zodiac Hotel, Enugu.

Pitt, M and Tucker, M (2011): Performance measurement in facilities management: driving innovation?, Property Management. 26(4): 241 – 254

Seeley, I.H (1977) Building Maintenance 1st Ed. London: Macmillan Publishers Ltd.

Sinopoli, J (2009): How do we measure the performance of a building? Smart Building LLC. Assessed from http://www.smart-buildings.com/uploads/1/1/4/3/11439474 /howdowemeasure0809.pdf on 4th August, 2012 at 21:41 pm

Sirota, D (2004): Essentials of Real Estate Investment,(7th ed.) Chicago, Dearborn Financial Publishing, Inc.

Thorncroft, D. (1965) Principles of Estate Management. 1st Ed. London: Estates

Gazette.

Varcoe, B.J (1996): Facilities performance measurement, Facilities, 14 (10): 46-51

Demographic Factors and Students' Satisfaction in Nigerian Private Universities

Oluwunmi A. O.[1], Emeghe I. J.[1], Oni S. A.[1] & Ajayi O.[2]

[1]Department of Estate Management, Covenant University, Ota, Ogun State
[2] Department of Estate Management, Obafemi Awolowo University, Ile Ife, Osun State
funke.oluwunmi@covenantuniversity.edu.ng

Abstract: Private institutions in Nigeria are constantly challenged to improve on the quality of their facilities with a view to continually satisfy students, their primary consumer. This research examined the demographic factors that determine students' satisfaction with academic facilities in private universities in Ogun State, Nigeria. The study is an exploratory cross-sectional survey which sampled seven hundred and seventy (770) students in selected universities. Five hundred and twenty-two (522) questionnaires were returned and analysed using Mann Withney-U test, Kruskal Walis and Cross-tabulation. The analyses showed that four out of the five demographic factors sampled have no effect on students' satisfaction. The implication of these findings were discussed and appropriate recommendations made.

Keywords: Demographic Factors, Determinant, Students' Satisfaction, Universities, Nigeria

1. Introduction

In educational setting, students' satisfaction has been the focus of research efforts both in developed and developing countries. This is because studies have shown that satisfied students are more likely to be committed to their studies (as measured by a higher retention rate) than unsatisfied students, who are likely to be less willing to regularly attend classes, and are more likely to quit their studies (Borden, 1995; Jamelske, 2009).

Considering the importance attached to student satisfaction in educational institutions, several researchers have shown interest in examining factors that determine or enhance students' satisfaction. A study by Carey, Cambiano and De Vore (2002) in the US compared campus satisfaction levels between students and faculty using the Student Satisfaction Inventory (SSI) and

the Institutional Priorities Survey (IPS). A total of 692 students and 174 faculties were sampled in Midwestern State University. Using a 7-point Likert scale, respondents' expectation and satisfaction with service quality. The findings indicated that there were no significant differences in satisfaction among gender, age groups and ethnicities.

Oldfield and Baron (2000) evaluated students' perception of service over time revealed that the mean score for final year students was lower than those of the first year students. This suggests that, as students become more experienced in the higher educational settings, they tend to be more critical in their perceptions of the service quality. In Malaysia, Yusoff (2012) evaluated the drivers that influence business student satisfaction in private educational environment. The study sampled 1,200 undergraduate business students at four private educational institutions in Malaysia and a response rate of 69% was achieved.. Findings from the study showed that there is a significant difference among the demographic factors (gender, year of study, nationality, programme of study and semester grade) and five out of the twelve factors that drive business students' satisfaction (student support facilities, class sizes, classroom environment, business procedures and relationship with the teaching staff).

In the United States of America, Tessema, Ready and Malone (2012) carried out a study on the effects of gender on different college outcomes such as students' satisfaction, ACT scores, and GPA at a mid-sized Midwestern public University. Selected demographic and attitudinal data were collected between 2001 and 2009 from a sample of 5,223 respondents in five colleges at the University (Business, Education, Liberal Arts, Nursing/Health Sciences and Science/Engineering). Findings showed that gender has a significant effect on student's satisfaction, ACT scores and GPA. However, the effect of gender on satisfaction and ACT scores was minimal.

Another study in the US by Tessema, Ready and Yu (2012) assessed the extent to which eleven academically related factors affect the overall satisfaction with major curriculum at a midsized public University. Five thousand, two hundred and twenty-three (5223) questionnaires were returned and analysed. Using descriptive statistics, findings showed that five out of the eleven factors identified in the model (quality of instruction, capstone experience, academic advising, overall college experience and preparation for career or graduate school) showed a statistically significant positive impact in explaining satisfaction with major curriculum and were greater than or equal to ß= .089. Moreover, the study revealed that both males and females were satisfied with the major curriculum and gender has a significant effect on satisfaction ($t\ 5205 = -2.31$, $p < .05$)., however, the study indicated that the size of the effect was small (Cohen's d effect size=0.08); below 0.2, which is considered a small effect.

In Singapore, Min and Khoon (2014) investigated the role that demographic factors play in service quality evaluation

in the higher education sector. The framework, used in this study, was adopted from Min, Khoon and Tan (2012) and consists of four key constructs, namely motivation, expectation, perception and satisfaction. Applying the Structural Equation Model (SEM) approach to data collected from a sample of 263 international students in a private higher education institution in Singapore, the study found that motive of study has moderate relationship with expectation and perception of service quality. Satisfaction of students is also closely and significantly related with the perception of service quality. It was also found that demography impacted on the relationships among the elements of service quality. The study included four demographic variables (gender, age, nationality and current level of study) and it was found that nationality and gender have considerable impact on the weights of relationships. Hence, it was suggested that education marketers should take demographic factors into consideration in the design and development of education services.

In line with the suggestion made by Min and Khoon (2014), that the issue of demographic factors should be taken into consideration by education marketers, this study is set to examine the demographic factors that determine students' satisfaction in private universities in Ogun State, Nigeria.

3. Research Methods

Data for this research was obtained from a survey of students from four private universities in Ogun State, Nigeria. Seven hundred and seventy (770) questionnaires were administered to students, with the help of trained field assistants, in each of the universities. A total of 522 valid questionnaires representing 68 per cent of the distributed questionnaires were retrieved for analysis. Questionnaires were analysed using Statistical Package for Social Scientists (SPSS). Mann Withney-U test was adopted to compare the mean of two groups of variables, Kruskal Wallis to compare the mean of more than two groups of variables and cross-tabulation to ascertain the relationship between each of the selected demographic factors and satisfaction.

4. Results and Discussion

4.1 Demographic Information of Students

Students' demography were analysed based on their gender, age, year of study, religion and college. Five hundred and twenty-two students responded to the structured questionnaires in the selected private universities as presented in Table 1. The analysis showed that most of the students (51%) were male, between 16 and 25years old (91%), in 400 level (30%), of their programmes, Christian (62%) and in the college of science and technology (53%).

Table 1: Students' Demographic Information in the Selected Private Universities

S/N	Demographic Factors	Sub - headings	BU	CU	Bells	CRE	Mean %
			F (%)	F (%)	F (%)	F (%)	
1	**Gender**	Male	61 (45)	90 (56)	60 (52)	56 (52)	51
		Female	75 (55)	72 (44)	56 (48)	52 (48)	49
2	**Age**	<16 yrs	15 (11)	0 (0)	0 (0)	10 (9)	5
		16-20 yrs	85 (63)	39 (24)	53 (46)	49 (45)	45
		21-25 yrs	29 (21)	123 (76)	59 (51)	41 (38)	46
		26-30 yrs	7 (5)	0 (0)	4 (3)	6 (6)	3
		> 30 yrs	0 (0)	0 (0)	0 (0)	2 (2)	1
3	**Level of Study**	100-Level	21 (15)	0 (0)	9 (8)	11 (10)	8
		200-Level	43 (32)	6 (4)	14 (12)	51 (47)	24
		300-Level	23 (17)	17 (10)	61 (52)	19 (18)	24
		400-Level	42 (31)	76 (47)	23 (20)	23 (21)	30
		500-Level	1 (1)	63 (39)	9 (8)	4 (4)	13
		Spill Over	6 (4)	0 (0)	0 (0)	0 (0)	1
4	**Religion**	Christianity	117 (86)	156 (96)	77 (66)	0 (0)	62
		Islam	19 (14)	6 (4)	39 (34)	108 (100)	38
5	**College**	Science & Technology	44 (32)	81 (50)	86 (74)	62 (57)	53
		Social Science	44 (32)	32 (20)	30 (26)	28 (26)	26
		Humanities	48 (36)	49 (30)	N/A	18 (17)	21

4.2 Comparison of Students' Satisfaction with Demographic Factors

This analysis was considered in order to adduce explanations on students' level of satisfaction as assessed generally in the work. In order to establish if there is difference in mean satisfaction of the students based on their demographic information, the researchers compared the mean using Mann Whitney-U test and Kruskal Wallis. The analysis using these statistical tools for sex, age, year of study, religion and college of students are shown in Tables 2 to 5.

Table 2: Comparison of Means Satisfaction using Mann-Whitney U Test

University	Group	Variable	N	Mean Rank	Sum Rank	U	Z	P
BU	Sex	Male	61	65.70	4008.00	2117.000	-.830	.406
		Female	75	70.77	5308.00			
	Religion	Christianity	117	67.18	7859.50	956.500	-1.083	.279
		Islam	19	76.66	1456.50			
CU	Sex	Male	90	78.32	7048.50	2953.500	-1.039	.299
		Female	72	85.48	6154.50			
	Age	16 – 20 yrs	39	82.50	3217.50	2359.500	- .164	.869
		21 – 25 yrs	123	81.18	9985.50			
	Religion	Christianity	156	82.38	12851.0 0	331.000	-1.308	.191

		Islam	6	58.67	352.00			
BELLS	Sex	Male	60	60.71	3642.50	1547.500	-.751	.453
		Female	56	56.13	3143.50			
	Religion	Christianity	77	60.10	4628.00	1378.000	-.740	.459
		Islam	39	55.33	2158.00			
	College	Science & Technology	86	52.15	4485.00	744.000	-3.531	.000
		Social Science	30	76.70	2301.00			
CRE	Sex	Male	56	53.42	2991.50	1395.500	-.381	.703
		Female	52	55.66	2894.50			
	Religion	Christianity	0	.00	.00			
		Islam	108	54.50	5868.00			

* The difference is significant if $P < 0.05$ *
* The difference is insignificant if $P > 0.05$ *

Table 2 indicates the group with the highest overall mean satisfaction using Mann-Whitney U Test. From data relating to gender of the students, it can be concluded that there is no significant difference in the mean of both groups in the selected Universities (Babcock University - $U = 2117$, $P = .406 > 0.05$; Covenant University - $U = 2953.5$, $P = .299 > 0.05$; Bells University - $U = 1547.5$, $P = .453 > 0.05$; and Crescent University - $U = 1395.5$, $P = .703 > 0.05$).

Considering religion, Table 2 shows that only the means of students in Babcock, Covenant and Bells Universities can be compared. The results from the Universities inferred that there is no significant difference between the means of both Christians and Muslims in Babcock University ($U = 956.5$, $P = .279 > 0.05$), Covenant University ($U = 331$, $P = .191 > 0.05$) and Bells University ($U = 1378$, $P = .459 > 0.05$).

Using Mann-Whitney and Kruskal Wallis test in Tables 2 and 3 to compare the age of students, the analysis revealed that in Babcock ($H(2) = 4.410$, $P = .220 > 0.05$), Covenant ($U = 2359.5$, $P = .869 > 0.05$), Bells ($H(2) = 0.169$, $P = .919 > 0.05$) and Crescent ($H(2) = 1.756$, $P = .780 > 0.05$) Universities, there is no significant difference in the satisfaction of the age groups. Based on these results, it can therefore be inferred that age difference of students have no effect on their level of satisfaction.

Table 3: Comparison of Age of Students using Kruskal Wallis

University	Group	N	Mean Rank	Chi-Square	P
BU	< 16yrs	15	76.43	4.410	.220
	16 – 20yrs	85	65.05		
	21 – 25yrs	29	69.05		
	26 – 30yrs	7	91.07		
BELLS	16 – 20yrs	53	59.38	.169	.919
	21 – 25yrs	59	57.42		
	26 – 30 yrs	4	62.75		
CRE	< 16yrs	10	47.00	1.756	.780
	16 – 20yrs	49	55.17		
	21 – 25yrs	41	56.23		
	26 – 30yrs	6	45.00		
	> 30yrs	2	68.50		

* The difference is significant if $P < 0.05$ *

* The difference is insignificant if $P > 0.05$ *

Table 4: Comparison of Means Satisfaction using Kruskal Wallis

University	Group	N	Mean Rank	Chi-Square	P
BU	Science & Technology	44	52.72	36.520	.000
	Social Sciences	44	57.32		
	Humanities	48	93.22		
CU	Science & Technology	81	68.54	16.432	.000
	Social Sciences	32	85.75		
	Humanities	49	100.14		
CRE	Sciences & Technology	62	48.55	16.984	.000
	Social Sciences	28	50.29		

	Humanities	18	81.56

	Humanities	18	81.56

* The difference is significant if $P < 0.05$ *
* The difference is insignificant if $P > 0.05$ *

The difference in means for college of the students in Tables 2 and 4 indicated that in Babcock University (H(2) = 36.520, P = .000 < 0.05), Covenant University (H(2) = 16.432, P = .000 < 0.05), Bells University (U = 744, P = .000 < 0.05) and Crescent University (H(2) = 16.984, P = .000 < 0.05), college of students significantly affects students' level of satisfaction with facilities. This implies that the facilities available in a college that students is admitted to can determine their level of satisfaction. Hence, universities should make adequate provision for essential facilities in colleges available.

Table 5: Comparison of Means Satisfaction using Kruskal Wallis

University	Group	N	Mean Rank	Chi-Square	P
BU	100 level	21	63.86	1.845	.870
	200 level	43	65.97		
	300 level	23	72.22		
	400 level	42	72.31		
	500 level	1	45.50		
	Spill Over	6	66.17		
CU	200 level	6	95.50	10.494	.015
	300 level	17	98.56		
	400 level	76	87.55		
	500 level	63	68.27		
BELLS	100 level	61	61.67	1.301	.861
	200 level	9	54.06		
	300 level	14	55.21		
	400 level	23	56.22		
	500 level	9	52.39		
CRE	100 level	11	35.77	7.807	.099

200 level	51	56.66
300 level	19	57.34
400 level	23	51.67
500 level	4	81.25

* The difference is significant if $P < 0.05$ *
* The difference is insignificant if $P > 0.05$ *

Table 5 used to analyse the difference in mean of level of study of the students in the four (4) Universities revealed that there is no significance difference in Babcock University (H(2) = 1.845, P = .870 > 0.05), Bells University (H(2) = 1.301, P = .861 > 0.05) and Crescent (H(2) = 7.807, P = .099 > 0.05). However in Covenant University (H(2) = 10.494, P = .015 < 0.05), the difference is highly significant. This means that in Covenant University, students' level can determine their level of satisfaction.

4.3 Relationship between Demographic Factors and Students' Satisfaction with Facilities

To further establish if there is any relationship between students' satisfaction and the selected demography, the researchers adopted cross-tabulation for the analysis. The outcome is presented in Tables 6 to 10.

Table 6: Relationship between Gender and Student Satisfaction with Academic Facilities

University	Symmetric Measures	Value	Approx. Sig
BU	Phil	.080	.650
	Cramer's V	.080	
CU	Phil	.126	.464
	Cramer's V	.126	
BELLS	Phil	.129	.746
	Cramer's	.129	
CRE	Phil	.222	.254
	Cramer's	.222	

* .01 – .29 (Weak Relationship)*
* .30 – .49 (Moderate Relationship) *
* .50 – 1.0 (Strong Relationship) *

Table 6 revealed a weak relationship between gender and satisfaction of students in the selected private Universities [BU (Cramer's V = .080, p > .650); CU (Cramer's V = .126, p > .464); Bells (Cramer's V = .129, p > .746) and CRE (Cramer's V = .222, p > .254)]. The level of significance across the Universities suggests that the relationship between students' gender and satisfaction with their facilities cannot be generalised to the entire population of students.

Table 7: Relationship between Level of Study and Student Satisfaction with Academic Facilities

University	Symmetric Measures	Value	Approx. Sig
BU	Phil	.306	.239
	Cramer's V	.216	
CU	Phil	.327	.043
	Cramer's	.189	
BELLS	Phil	.330	.698
	Cramer's	.165	
CRE	Phil	.401	.364
	Cramer's	.200	

* .01 – .29 (Weak Relationship)*
* .30 – .49 (Moderate Relationship) *
* .50 – 1.0 (Strong Relationship) *

From Table 7, there is weak relationship between students' level of study and satisfaction in the four (4) private Universities. The relationship between level of study and satisfaction cannot be generalised to the entire population of students sampled in BU (significance level = .239), Bells (significance level = .698) and CRE (significance level = .364), however in CU (significance level = .043), the relationship between level of study and their satisfaction is generalisable to the entire population of students in the University. That is in CU, students' level of study determine their satisfaction. However, considering the analysis across the Universities, level of study cannot predictor students' satisfaction with their academic facilities.

Table 8: Relationship between Religion and Student Satisfaction with Academic Facilities

University	Symmetric Measures	Value	Approx. Sig
BU	Phil	.113	.419
	Cramer's V	.113	
CU	Phil	.113	.562
	Cramer's	.113	
BELLS	Phil	.145	.653
	Cramer's	.145	

* .01 – .29 (Weak Relationship)*
* .30 – .49 (Moderate Relationship) *
* .50 – 1.0 (Strong Relationship) *

In Table 8, it is observed that the relationship between religion and satisfaction cannot be generalised to the entire population of students in the selected private Universities [BU (significance level = .419); CU (significance level = .562) and Bells (significance level = .653]. There is no close association between religion and level of satisfaction in BU (Cramer's V = .113, p > .419), CU (Cramer's V = .113, p > .562) and Bells (Cramer's V = .145, p > .653), thus religion is not a strong predictor of satisfaction in the Universities, however in Bells, religion is a better predictor than others.

Note: Crescent university students' data cannot be computed because all the students that participated in the study were Muslims.

Table 9: Relationship between Age and Student Satisfaction with Academic Facilities

University	Method	Value	Asymp. Std	Approx. T	Approx.Sig
BU	Gamma	0.72	.129	.556	.578
CU	Gamma	-.025	.157	-.160	.873
BELLS	Gamma	-.027	.127	-.212	.832
CRE	Gamma	.045	.116	.389	.697

* .01 – .29 (Weak Relationship)*
* .30 – .49 (Moderate Relationship) *
* .50 – 1.0 (Strong Relationship) *

Table 9 revealed that there is strong relationship between students' age and their level of satisfaction only in Babcock University (BU - Cramer's V = 0.72, p > .578), while other Universities have weak relationships (CU - Cramer's V = -.025, p > .873; Bells - Cramer's V = -.027, p > .832; CRE - Cramer's V = .045, p > .697). Thus, age is a stronger predictor of students' satisfaction in BU than others. However, the relationships in the four private Universities cannot be generalised to the entire population of students

.

Table 10: Relationship between College and Student Satisfaction with Academic Facilities

University	Symmetric Measures	Value	Approx. Sig
BU	Phil	.525	.000
	Cramer's V	.327	
CU	Phil	.394	.000
	Cramer's V	.279	
BELLS	Phil	.368	.003
	Cramer's V	.368	
CRE	Phil	.441	.007
	Cramer's V	.312	

* .01 – .29 (Weak Relationship)*
* .30 – .49 (Moderate Relationship) *
* .50 – 1.0 (Strong Relationship) *

Table 10 indicates that there is moderate relationship between student's college and satisfaction in three out of the four Universities (BU - Cramer's V = .327, p < .000; Bells - Cramer's V = .368, p < .003 and CRE - Cramer's V = .312, p < .007 and CRA - Cramer's V = .322, p < .001), while in CU there is weak (Cramer's V = .279, p < .000) relationship. This relationship is generalisable to the population of students in the selected Universities. This finding butress the outcome of analysis in Table 4 that suggested that college facilities significantly affects students' level of satisfaction. Analysis in Table 10 further revealed that in Bells university with a Cramer's Value of .368, college of student, is a stronger predictor of students' satisfaction when compared to other universities.

5. Conclusion and Recommendations

Students' satisfaction in their academic pursuit in universities has been a subject of discussion over the years. This study examined the demographic factors that determine students' satisfaction in private universities in Ogun State,

Nigeria. Five (5) demographic factors were selected for analysis. Findings from this study showed that only college of student out of the five demographic factors (gender, age, level of study, religion and college) determines student satisfaction with their facilities. This outcome provide support to the work of authors like Ilias, Hasan, Rahman and Yasoa (2008). The authors suggest that the intake of students at any particular level should be a function of the available functioning facilities in each of the colleges in the universities. In addition, efforts should be made by university management to upgrade existing college facilities as well as making provision for any identified shortfalls of facilities within their colleges.

Reference

Borden, V. M. H. (1995). Segmenting Student Markets with a Student Satisfaction and

Priorities Survey. *Research in Higher Education*. 36(1), 73-88.

Carey, K., Cambiano, R. L., & De Vore, J. B. (2002). Student to Faculty Satisfaction at a Mid-western University in the United States, HERDSA, 93 - 97. *Quality Assurance in Education*, 5(1), 22 - 31. Available@ http://www.ecu.edu.au/conferences /herdsa/ main/papers/ref/pdf/ Carey.pdf

Jamelske, X. X. (2009). Measuring the Impact of a University First-Year Experience Program on Student GPA and Retention. *Higher Education*, 57(3), 373-391

Min, S & Khoon, C. C. (2014) Demographic Factors in the Evaluation of Service Quality in Higher Education: A Structural Equation Model (SEM) Approach. *International Journal of Marketing Studies*, 6(1), 90 -102.

Min, S., Khoon, C. C., & Tan, B. L. (2012). Motives, Expectations, Perceptions and Satisfaction of International Students pursuing Higher Education in Singapore. *International Journal of Marketing Studies*, 4(6), 122–138.

Oldfield, B. M., & Baron, S. (2000). Student Perceptions of Service Quality in a UK University Business and Management Faculty. *Quality Assurance in Education*, 8(2), 85-95.

Tessema, M., Ready, K., & Malone, C. (2012). Effect of Gender on College Students' Satisfaction and Achievement: The Case of a Midsized Midwestern Public University. *International Journal of Business and Social Science*, 3(10), 1-11.

Tessema, M. T., Ready, K., and Yu, C. W. (2012). Factors Affecting College Students' Satisfaction with Major Curriculum: Evidence from Nine Years of Data *International Journal of Humanities and Social Science*, 2(2), 34-44.

Yusoff, M. (2012). Evaluating Business Student Satisfaction in the Malaysian Private Educational Environment (Unpublished professional PhD thesis) University of Northumbria, Newcastle.