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Editorial

Welcome to Volume 3, Issue 2 of the Journal of African Real Estate Research. This will be my final issue as Editor-in-Chief of JARER, and it has been a great pleasure to be a part of the journal's recent relaunch. I am very confident of the journal's continued success under the stewardship of my successor who will be announced in the new year. I am very grateful for the opportunity to play such an important role in the advancement of real estate research on the African continent.

This issue we have introduced an exciting new addition to the journal which is to include research notices to provide a platform for researchers to inform the broader community of projects that they are working on. We hope that through this forum the journal may be able to link the research community as well as increase interest in ongoing research.

The first research note comes from Jonas Hahn and Professor Karl-Werner Schulte from the International Real Estate Business School (IRE|BS) who discuss their work in creating greater visibility for African academics' research via the creation of a database. AfRES is actively engaging with this database project to strengthen the resources available to researchers across the continent

A further research note was submitted by Rachel Mirembe and Professor François Viruly from the University of Cape Town who highlight their ongoing research project which sets out to better define a curriculum reflective of an African real estate body of knowledge.

In this issue we showcase a number of high-quality research publications relating to a variety of pertinent real estate related topics in Africa. The first article by Chukwuemeka Ogbu and Patience Iruobe compares informal and formal land administration systems in Lagos State and propose the development of a hybrid system that seeks to optimise the merits and minimise the challenges of the two systems of land administration. Funlola Famuyiwa uses hedonic price modelling to study the impact of environmental amenities on residential rentals in Lagos. In the following article, Lucky Kabanga and Professor Manya Mooya examine compensation theory and analyse the applicability of these theories when dealing with customary property rights. Basirat Oyalowo, Timothy Nubi and Taibat Lawanson discuss the possibility of co-operative societies in delivering affordable formal housing at scale in Lagos. Ndubisi Onwuanyi examines the unusually high residential property values in Abuja and compares them to Lagos, finding that residential real estate prices in Abuja are difficult to associate with value. Jonathan Adama and Professor Kathy Michell look at the adoption of technological innovation in facilities management and examine the impact that this may have on the social sustainability of facilities management professionals. Lastly, Ayobami Abayomi Popoola, Moruf Alabi, Adeshina Ojo and Bamiji Adeleye study household responses to the high rates of burglary in Ibadan, Nigeria.

Once again, a huge thanks to the production team, journal manager and assistant editor who have made the revival of JARER a possibility. Their attention to detail and passion for upholding the integrity and quality of the journal is second to none. I would also like to acknowledge the generous financial contributions of the IRE|BS at Regensburg University, Germany who have helped ensure that the journal remains operational. Lastly, thank you to the authors for submitting their work to the journal and for their efforts during the publication process.

Best wishes,

Dr. Felician Komu
Editor-in-Chief

Research Notice: A Strategy and Tool for Improving the Visibility of African Real Estate Research

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Abstract

The body of knowledge in the context of African Real Estate is constantly growing. The research discipline has attracted increased interest, and thereby, the number of available publications has expanded. As the discipline progresses, it becomes more and more difficult to keep track of the various research avenues and the contemporary research output in African Real Estate. New technology provides a viable solution to the problem as it allows institutions and individuals to track and archive research in an accessible way. Online databases and search engines have changed the way knowledge is accessed and produced. This contribution outlines concepts for promoting research on African Real Estate, exemplified by the AfRER.org Research Database. It presents an outlook on scaling the list of available publications into a dynamic web-based system that will support both authors and researchers alike on their quests for information and data. This paper also makes suggestions on how to involve relevant stakeholders by fostering and developing research peer-groups regarding African Real Estate research output. Entitled ,Promoting Publications in African Real Estate Research – Status Quo and Outlook, this topic was initially presented at the 2018 Annual Conference of the African Real Estate Society in Abeokuta, Nigeria.

Keywords: Research Output; Publication; Key Performance Indicators; Research Database; Social Networks

1. An Inconvenient Perception of African Real Estate Research

Once a year, when a multitude of researchers and practitioners in the field of African Real Estate meet for the annual African Real Estate Society Conference, young talents and experienced players gather to share their newest research and findings. Hearing this exchange and the variety of outcomes, one cannot help but place these pieces of information on the continuum of one's industry-knowledge - how it could influence one's research, how it could improve what is being done at one's institution or which mistakes to avoid when undertaking studies? However, the longevity

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of this knowledge exchange is contextual and often what is learnt fails to materialise in everyday academic work. This is unfortunate as research traditionally benefits from strong academic connection and collaboration. Perhaps, it is this failure to use combined research outputs or cooperation that leaves the academic field of African Real Estate lagging. From a managerial perspective, one must ask: why is that? Was everything possible done to improve the exposure and reutilisation of existing research? What else could have been done?

2. Generating and Measuring Exposure and Visibility of Research

In understanding the requirements and expectations of academic output, it is useful to attempt to understand the publication of research using basic economics. Let us suppose that the production, processing and consumption of research is a question of demand and supply like any other good. This particular good, however, comes from a niche supply and demand pattern – one that is individual, and certainly limited. The role of quality may impact demand and supply by increasing demand or the acceptance of the work. Contrastingly, quality also illustrates a barrier for academic production as the quality of the good is only ensured when academic standards are met. The relevance of the topic or the outcomes ensures a greater audience and thereby demand. Alternatively, from another economic point of view, one could argue that one's incentive to produce lies in establishing knowledge and in connecting it with one's brand or portfolio, maybe even becoming a market leader in a particular field. One's incentive to consume is premised on a desire to gather knowledge, develop capabilities and, last but not least, to appropriate in individual production activities. In that sense, publishing on African Real Estate is always a social activity in a collaborative and integrated market. It is never a one-way street – at least if a certain level of quality and relevance is exceeded.

The common understanding of measuring the visibility of research is based on key performance indicators including, views (how often was the abstract accessed), downloads (how often was the full paper downloaded) and citations (how many times was the respective work interesting or relevant enough to be a basis for another publication). When speaking of "improving visibility", there are certainly many definitions of visibility amongst researchers. However, we found the following pattern to be a generally accepted indication of performance amongst published research (see Figure 1).
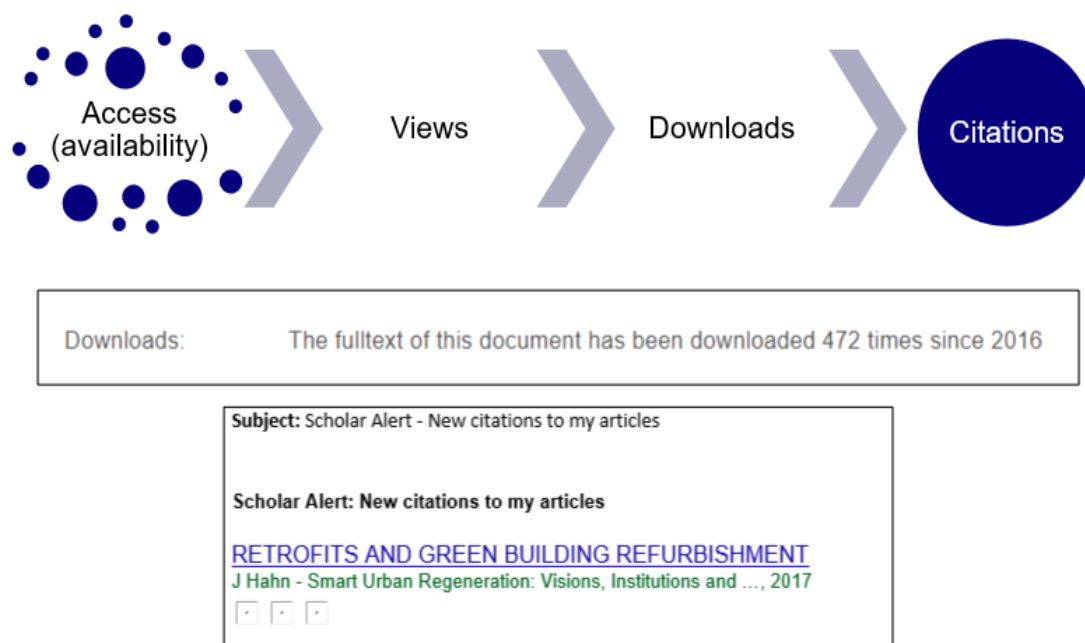
Figure 1: KPIs in Research – "The Chain of Successful Reuse"

The idea of a multi-layered or rather multi-step evolution of visibility contains a very individual micro-perspective: *how do I design my topic and my specific study in a way that is interesting, high-quality and valuable for readership (demand) and citations (reutilisation)*? Of course, this is important, as the quality of content is a prerequisite and a unique selling-point of research output.

However, from a strategic (macro) perspective, one must go a step back and ask from a macro perspective: *have we as researchers, networks, associations, publishing houses, and last but not least AfRES – done everything to ensure access to other researchers* (as it is the basis for any of the further steps in successfully development exposure)?

3. New Technology Provides Viable Solutions for the Problem

In the past ten or so years, various online research platforms have evolved. Collectively, they bring together the micro and macro perspective outlined above by addressing both readers and authors and thereby try to overcome the issue of lacking access or transparency in current research. As a basic principle, research databases have attempted to overcome the obstacle of bringing together supply and demand in the field. For instance, EBSCOhost, EconLit and other platforms are very paradigmatic in this regard. Furthermore, they are limited by library access. Google Scholar is a product that tries to add search engine intelligence functionality for its users and thereby may be believed to exceed EBSCOhost or EconLit technologically but does not necessarily cover the same scope or depth as these scientific databases. Similarly, limitations of access may exist for Google Scholar users' due to licensing. In more recent years, the idea of social networking has been added to overcome the demand/supply issue. Platforms such as

ResearchGate have individualised the regulation of exposure and publication in research and left this, to some extent, to the respective author. And indeed, access to resources help solve the fundamental problem of finding African Real Estate Research. However, are these platforms enough to optimise its exposure?

4. Promotion of Research – A (Social) Networking Challenge?

In discussions during this year's AfRES conference, it became apparent that researchers find additional challenges to accessing content. One is licensing models, which are partially global but also limit regional access. A second obstacle, closely related, is the under-funding of some university libraries – especially those already struggling to access (digital and current) research content. Another barrier is the differences in terminology when people do not find results due to different expectations regarding the regional vs. continent-wide scope of the research. Also, individual preferences of authors concerning access as well as different dimensions of relevance limit the possibilities for researchers (especially younger individuals) to access information. Despite these challenges, there is good news as slow internet connection has become less and less of a problem at many universities. This connectivity is vital for the exchange and production of knowledge internationally.

In the light of the barriers listed above, it seems that generating visibility for one's research is more than a question of hashtags, but as a matter of fact, active involvement and engagement on a different level. It connotes that successfully increasing the exposure and utilisation of one's research output in African Real Estate requires working together to generate benefits and progress for all parties involved. Based on the discussion and findings so far, is it possible to derive some general rules or guidelines for researchers?

5. Operationalisation of the Strategy

What do we derive from these strategic considerations? We believe that a productive way to successfully increase the visibility of African Real Estate Research is achievable in line with the following constituents:

1. Provide and acknowledge quality in African Real Estate Research. In this context, it requires the establishment and education of research methods in the community starting from a Bachelor's level.
2. Ensure relevance and improved data transparency by actively interacting with practitioners.
3. Build up micro-networks and research peer-groups and design them openly but premised on a common understanding of aim and quality.
4. Optimise exposure for one's AfRES presentations by sharing with others.

6. AfRERDB.org – An Essential Tool for Access and Collaboration

Sharing with others is quintessential and the ultimate appeal of this discussion paper. The IRE|BS Foundation for African Real Estate Research has been collecting outputs and publications of researchers, who delivered their work and published it on the foundation's website. And, while we find that only a small share of what is being published can be uploaded onto the site, we have always ensured that research performed by Master and PhD Students at our home university (IRE|BS at University Regensburg) has been included. This could and should also include our partner universities. Figure 2 gives an overview of the original AfRER.org database and selected entry.

Figure 2: Existing AfRER.org Database

We are happy to announce that we have improved the existing database by launching the project as its own, stand-alone platform at www.afrerdb.org.

This platform systematically collects and circulates African Real Estate research work to make it visible and available to other researchers. Also, the new platform comes with a more powerful search engine and a responsive web-design which adjusts to mobile devices such as tablets or smartphones. Figures 3a to 3c give an impression of the new platform and exemplify entries in the database with the site's preview function.

Figure 3a: Home Page www.afrerdb.org – Responsive Design, Clear Layout

Figure 3b: Search Result at www.afrerdb.org – with Preview Function

Figure 3c: Exemplary Entry at www.afrerdb.org – with Download Tracking

This platform is designed and intends to cover the following categories, therefore providing an online location for presenting and sharing African research output on the following:

- **AfRES Conference Proceedings and Papers**
  o Use the valuable outcomes of AfRES conferences
  o Showcase high-quality research and detailed information
- **Publications of the African Real Estate Research Centre at IRE|BS**
  o PhD Dissertations to ensure exchange of new research findings
  o Master Theses, Bachelor Theses to ensure further use of student's contributions
  o Seminar Papers as research briefs or literature overviews (to be discussed)
- **Publications of other Universities (Academic Staff, PhD, MSc, BA)**
  o Intention: foster international research exchange
  o Promote collaboration and strengthen networks between institutions
- **Journal of African Real Estate Research**
  o Link to existing website and issues
  o Intention: increase exposure of blind-reviewed content
- **Research Papers and Presentations from Other Individuals**
  o Working Papers (not necessarily final outputs)

     o   Provide content for other researchers of the same field as a call for collaboration

7. Maintaining and Operating the African Real Estate Research Database

Despite being fully aware that other platforms may provide additional features, an African Real Estate Research Database intends to provide a structured and targeted platform for collecting, presenting and sharing high-quality research in the field. The platform is neither Google nor an own publishing house – and doesn't intend to be either - but rather a collection of relevant academic material and a collaborative archive. Maintaining it and keeping it current requires commitment, activity and involvement – not to mention motivation and communications skills – from all involved parties. Also, the quality gates installed on the platform and its publication process require knowledge and understanding concerning legal topics and quality standards in research. For the moment, a team of non-profit IRE|BS Foundation for African Real Estate Research members are covering these tasks. However, this can change at any time, based on the honest conviction of other institutions to complete these tasks as efficiently as we can. The African Real Estate Research Database is a platform based on the opinion that African Real Estate Research is not a once-a-year event, but continuous collaboration requiring coverage.

To conclude, we believe that the African Real Estate Research Database is not the answer to "everything", but a positive step in the progress of the field. Therefore, this paper cordially invites **everyone who finds him or herself in the list of potential research outputs** for the database to get in touch with us for further consideration, potential inclusion and sharing with other researchers. Our contact information is provided on the website.

8. Related Links

- African Real Estate Database (http://www.afrerdb.org)
- IRE|BS Foundation for African Real Estate Research (http://www.afrer.org)
- EBSCO Host (http://search.epnet.com)
- EconLit (http://www.aeaweb.org/econlit/)
- Google Scholar (http://scholar.google.com)
- ResearchGate (http://www.researchgate.net)

Research Notice: Real Estate Knowledge and the Development of a Real Estate Curricula for African Universities

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Abstract

Real estate education across the globe has, at its core, certain universal and value-neutral skills and knowledge. This knowledge has developed over decades to reflect the functions of specific market structures which characterise real estate markets. Moreover, it is reflective of the maturity of real estate markets, and as such, the tools developed reflect specific market structures. Real estate analysts are becoming increasingly interested in real estate markets in emerging economies. The challenge facing these analysts is that the dominant real estate theory is based on mature markets within an industrialised context and therefore do not accurately reflect real estate markets in emerging economies. The generic context of real estate markets in emerging economies tends to be characterised by a dual economy, a lack of transparency in the markets, high levels of uncertainty and the existence of communal/customary and informal rights in the ownership of real estate. Hence, this study examines the real estate academic syllabus taught by universities in Sub-Saharan Africa. In doing so this ongoing research aims to assess and understand the differences that exist between the real estate programmes and examine the direction that these programmes could take in an emerging country context.

Keywords: Real Estate Education; Real Estate Curricula; Emerging Economies; Sub-Saharan Africa

1. Introduction

Over the years, there have been calls to standardise the real estate curricula, but due to the dynamic nature of real estate, this has not been achieved (Kampamba, Tembo, & Nkwae, 2017). As a result, it has become increasingly difficult to define a singular body of knowledge for real estate education (Black & Rabianski, 2003). There are differences not only reflected in the international divergence of real estate education, but also in real estate

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practice and the contextual organisation of the profession (Boyd, Amidu, & Smith, 2014). This can be evidenced by the differences in programme names, the structure of programmes and curricula content at various universities. As a result, where one chooses to pursue real estate studies will, to a very large degree, determine the type of education they receive. For example, if one pursues a real estate degree in the United States, one will most likely get a comprehensive exposure to the multiple disciplines of business (Black & Rabianski, 2003; Roulac, 2005, Schulte et al., 2005; Kampamba et al., 2017). Contrastingly, if one purses real estate studies in the United Kingdom (UK), greater emphasis is placed on a classic surveying curriculum, involving an orientation to land disciplines (Roulac, 2002; Jayantha & Chiang, 2012).

In Africa, real estate education, and the profession at large, is developing (Cloete, 2002; Adewunmi & Olaleye, 2011; Oloyede & Adegoke, 2014; Kampamba et al., 2017). In general, the real estate curricula in Africa is diverse and multi-disciplinary in nature. Viruly and Hopkins, (2014: p.11) note that "*while there are a number of institutions offering real estate programmes across the continent, there seems to be little consistency in an academically taught body of knowledge and hence there are no standards being achieved*". Perhaps this can be explained by the context of real estate markets in emerging markets, which tends to be characterised by dual economies, a lack of market transparency, high levels of uncertainty and the existence of communal/customary and informal rights of ownership. This research notice, therefore, outlines an ongoing research project that aims to examine the academic syllabus taught by universities across Sub-Saharan Africa (SSA). It also provides insight into the multi-disciplinary knowledge base required to enable graduates to succeed in contextually diverse real estate markets.

The objectives of this study are to; explore the existing literature on real estate education and the real estate body of knowledge; assess and understand the differences that exist between the real estate programmes in SSA; and understand the direction that real estate programmes could take in an emerging country context.

2. Literature Review

Defining the body of knowledge in real estate is extremely difficult, since there appears to be no clear consensus on the boundary lines of the discipline (Black & Rabianski, 2003; Jayantha & Chiang, 2012). Several scholars have attempted to define the body of knowledge in real estate with different claims of being comprehensive. Often the analysis arises from specific philosophical perspectives. For instance, the American approach places a strong emphasis on finance, with the vast majority of real estate academics being housed or affiliated with business colleges (Roulac, 2002). On the other hand, the UK approach mainly focusses on the classic surveying curriculum with strong emphasis on land related disciplines. Typical courses include valuation, law, economics, building construction, planning, management and information technology (Dasso & Woodward, 1980; Schulte & Schulte-Daxbök, 2000; Galuppo & Worzala, 2004). In Brazil, India and China, real estate courses have been organised in a diffused and heterogeneous manner with varying emphasis (Schulte & Schulte-Daxbök, 2000). Some of the major themes

include real estate investments, financial systems, economic evaluation, project management, appraisal, land economics, information technology. Thus, real estate courses in these countries can be regarded as adopting a multi-disciplinary approach. The American approach can be justified because real estate development and investment can largely be defined as a business (apart from the residential buildings). The American approach underlines that if one is to understand business (real estate), then scholars ought to be exposed to multiple disciplines of business (Roulac, 2002). However, the UK approach is better at exposing students to the hands-on involvement required for land and buildings. The UK model, therefore, places less emphasis on viewing real estate purely as an investment class.

In response, some scholars have supported the need for a multi-disciplinary approach for real estate programmes that would bring out the advantages of both the American and UK approach and hence develop better graduates (Newell et al., 2004, Musil, 2005; Mooya, 2007). Further, there is also an argument that real estate curricula should bring in line the diverse needs of the student population and the changing work environment instead of rigidly sticking to the traditional (American or UK) approaches (Butler, Guntermann, & Wolverton, 1998; Schulte & Schulte-Daxbök, 2000; Roulac, 2002; Galuppo & Worzala, 2004; Musil, 2005; Schulte et al., 2005). The argument is made that real estate education curricula should include topics ranging from information technology to entrepreneurship, corporate strategy, mortgage securitization, urban form, technological innovation, environmental concerns, globalization, strategic resource and public–private concerns. However, these topics may only be of benefit to the more mature economies located in the Global North and that they have less relevance for emerging markets of the Global South, particularly those located in Africa. In these contexts, factors such as institutional market arrangements, market maturity as well as the political and economic environment, contribute to the increasing inapplicability of many traditional real estate disciplines. Thus, the problems that affect Africa in the real estate industry are different from those in the Global North. The way universities prepare students for real estate profession in Africa must reflect the way graduates will work and solve real estate problems on the African continent.

3. Methodology

Previous scholars who have considered this issue have largely carried out their studies using surveys and internet searches. These projects relied on surveys distributed to professionals and academics (Donald, 1996; Black & Rabianski, 2003; Schulte et al., 2005). This was often complimented with secondary data from educational institutions that teach real estate studies. They also included the verification of data from university websites.

This research explores the existing literature on real estate education to derive an understanding of the body of knowledge in the real estate sector. To achieve the second objective of assessing the differences that exist between programmes, university websites were checked for information concerning their relevant programmes. Real estate academics in different universities in Africa were contacted to provide the researchers with the necessary programme backgrounds. Eight academics from eight universities engaged

with the researchers and were involved in the survey. The eight universities are: the University of Cape Town and the University of Witwatersrand in South Africa; Copper Belt University in Zambia; the University of Nairobi in Kenya; Ardhi University in Tanzania; Makerere University in Uganda; the Federal University of Technology in Minna, Nigeria; and Kwame Nkrumah University in Ghana. An analysis of the eight universities was conducted and the university courses in real estate were catergorised into eight sub-components based on the literature (Black & Rabianski, 2003; Schulte et al., 2005; Harrison & Manning, 2009; Jayantha & Chiang, 2012; Boyd et al., 2014). The eight categories include: Business in Real Estate; Law and Taxation; Construction and Technology; Business and Management; Finance and Valuation; Economics; Land Surveying and Environment; and Others. The different courses under each of the eight categories are shown in Table 1 below.

Table 1: Categorisation of Real Estate Programmes in Sub-Saharan Africa

Business in RE	Finance & Valuation	Law & Taxation	Economics	Construction & Technology	Land & Surveying	Business Management	Others
- Facilities Management - Property Maintenance - Housing - RE Principles - RE Market Analysis - RE Management - RE Development - Brokerage Business Management - Development Perspective - Property Development - Estate Management - Corporate RE Management - RE Marketing & Agency - RE Information Systems	- Mathematics for RE - Valuation - Accounting - Financial Management - Investment Appraisal & Analysis - Land Taxation - Value & Risk Management - RE Finance - Business Finance - Management Accounting - Risk & Insurance Practice - Corporate Finance	- Elements of the Law & Government - Law of Contract & Tort - Law of Real Property - Business Law - Property Dispute Resolution - Commercial Law - Real Estate Law - Labour Law - Property & Contract Law - Land Law - Planning & Public Policy Analysis - Landlord Tenant Law	- Micro-economics - Macro-economics - Agriculture & Economics - Management Land Economics - Natural Resource Economics - Housing Economics& Administration - Econometrics for Property Studies - Urban Economics - Property Studies	- Architectural Drawing & Design - Building Technology - Science & Technology in Development - Building Material & Finishes - Project Management - Measurement - Architectural Studies & Construction - Construction - Building Materials - Infrastructure & Building Services - Management & Structural Condition Surveys - Built Environment - Free Hand Sketching	- Physical Environment - Environmental Science - Environmental Building Services - Introduction to Land Surveying - Elements of Urban & Regional Planning - Land Administration & Information Systems - Environmental Impact Assessment & Audits - Land Management & Policy Studies - Planning for Property Developers - Urban Land Use & Development - Geographical Information Systems - Land Information Systems	- Communication Skills - Introduction to Computing - Information Computerised technology - Principles of Management - Entrepreneurial Studies - Contracts & Procurement in RE Services - Professional Ethics - Management& Leadership - Evidence Based Management - Marketing - Strategic management - Human Resource Management - Value Management	- Statistics - Mathematics - Quantitative Methods - English Language - Research Methods - Science & Technology in Development - Principles of Agriculture & Forestry - Field Attachment - Globalisation & the Built environment - Industrial Training - Philosophy - HIV/AIDS

Table 2: Percentages of Subject Categorisation per University

	University	Programme	1 Business in RE		2 Finance & Valuation		3 Law & Taxation		4 Economics		5 Construction & Technology		6 Land Surveying & Environment		7 Business & Management		8 Others		Total Number of Courses	
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1	University of Nairobi	Bachelor of Real Estate	4	7%	10	18%	5	9%	9	16%	6	11%	8	14%	6	11%	8	14%	56	100%
2	University of Witwatersrand	BSc in Property Studies	7	23%	7	23%	2	7%	4	13%	3	10%	2	7%	3	10%	2	7%	30	100%
3	University of Cape Town	BSc in Property Studies	1	2%	6	14%	9	21%	9	21%	4	10%	0	0%	6	14%	7	17%	42	100%
4	Makarere University	Bachelor of Real Estate Business Management	6	19%	6	19%	2	6%	2	6%	1	3%	3	10%	6	19%	5	16%	31	100%
5	Ardhi University	BSc in Real Estate Finance and Investment	6	10%	14	22%	5	8%	4	6%	5	8%	7	11%	7	11%	15	24%	63	100%
		BSc in Property and Facilities Management	12	19%	7	11%	6	10%	3	5%	7	11%	6	10%	10	16%	12	19%	63	100%
6	Copper Belt University	BSc in Real Estate Studies	3	10%	7	23%	3	10%	4	13%	4	13%	2	6%	2	6%	6	19%	31	100%
7	Federal University of Technology in Minna	B.Tech in Estate Management	6	8%	13	17%	9	12%	9	12%	14	18%	9	12%	6	8%	11	14%	77	100%
8	Kwame Nkrumah University	BSc in Estate Management	7	14%	10	20%	9	18%	2	4%	6	12%	3	6%	5	10%	8	16%	50	100%

Results from the desktop research (Table 2) reveal that universities in SSA have either taken on the UK approach or the American approach. For instance, the University of Nairobi has the majority of their courses in Land Surveying. Whilst the Federal University of Technology in Minna tends to be focused on construction and technology. Other universities in SSA have adopted the American approach placing a strong emphasis on finance and investment.

The subsequent research objective concerns understanding the direction that real estate programmes could take in an emerging country context. This will be achieved via a survey because this method of data collection is relatively inexpensive, convenient and often easier to find statistically significant results than other data gathering methods. Survey questionnaires were distributed to the attendees of the 2018 African Real Estate Society (AfRES) Conference in Abeokuta; Nigeria. Furthermore, a similar questionnaire has also been applied by the Latin American Real Estate Society. The intention being to provide a comparison between programmes in SSA and in Latin America; regions characterised by emerging real estate markets.

The survey comprised open and closed ended questions. Of the questionnaires administered at the conference, 100 responses were retrieved from AfRES. The questionnaire comprised questions that would help show the direction that real estate programmes can take in an emerging country context. Attendees were asked to rank different topics according to perceived importance in educational programmes. This includes risk and return analysis, discounted cash flow analysis, real estate market modelling-demand and supply analysis, yield calculation and forecasting, real estate market cycles and forecasting, government policy impact on real estate, appraisal methodology and techniques, analysis of site characteristics, financial market cycles and forecasting, urban development and growth analysis, macro-economic cycles and forecasting, commercial location theory, lease analysis, commercial real estate location requirements, and land use regulations. The data collected from the survey conducted in Nigeria is yet to be analysed, and the survey from Latin America has not yet been completed.

Moving forward the survey results will be correlated against the preliminary desktop research (shown in Table Two). Following this, the results from Latin America Real Estate Society's survey will be compared with that of the questionnaires collected at the recent AfRES Conference in Nigeria. Results will be analysed and compared to help define the direction of real estate programmes in the emerging country context.

4. Conclusion

Previous research suggests that apart from core competencies, real estate programmes should incorporate a set of general educational outcomes required for real estate professionals. The important issue is that curricula should attempt to reflect the market context in which they are delivered. While countries that are characterised by mature real estate markets tend to place a strong emphasis on investment and finance, this is not the case for countries characterised by more opaque, emerging markets. This research suggests that there is evidence that real estate programmes in SSA tend to

find an appropriate balance between subjects of a social and financial nature. However, the research also suggests that it is difficult to identify strong similarities between real estate programmes offered in SSA. The outcome of the combined African and Latin American research aims to show whether commonalities exist between programmes across these two continents and whether conclusions can be drawn for programmes delivered in an emerging country context.

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Comparison of Formal and Informal Land Administration Systems in Lagos State: The Case of Epe LGA

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Abstract

The efficient harnessing of land resources remains key to unlocking the potential of economies in Sub-Saharan Africa. Land administration systems provide a veritable platform for coordinating the efforts aimed at maximising the overall value of a country's land resources. Extant studies, however, provide scanty and unorganised insight into the problems and benefits of the formal and informal land administration systems co-existing in Nigeria and how they affect physical development on land. Using a cross-sectional survey, this study investigated the benefits and problems of formal and informal land administration systems in Epe, Lagos, and ascertained the relationship between the level of land development and land occupants' type of occupancy (which may be formal or informal). A major problem of the formal land administration system is that to be allocated land; one needs to know a government official, while its key benefit is that anyone can be allocated land anywhere irrespective of their state of origin. Under the informal land administration system, the main problem is that additional "settlement(s)" are required before one can build on the land, while its key benefit is that one purchases land in the place of one's choice. Using logistic regression analysis, it was observed that the level of development of land is independent of the type of occupancy held by the occupant. The study concludes that formal land administration system does not necessarily lead to higher land development than informal land administration. Future land formalisation policies should seek to optimise the merits and minimise the challenges of the two systems of land administration.

Keywords: Epe LGA; Lagos State; Land Administration; Land Use Act; Modernisation Theory; Personhood Theory

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1. Introduction

Globally, a rise in population creates serious land administration problems in the urban space [United Nations Human Settlements Programme (UN-Habitat), 2014]. The United Nations (UN) (2014) highlighted that 54% of the world's population live in urban areas and that this figure is expected to hit 66% by the year 2050. At that time (2050), 56% of Africans are expected to be living in urban areas. Nigeria is among the three countries (others being India and China) expected to lead the world's urban population growth. In Nigeria, Lagos State is generally acknowledged as having the fastest urban population growth (Aina, 1990; Aluko et al., 2004; Ayeni, 2016; Egunjobi & Adebayo, 2016). Ayeni (2016) estimated that the population of the city increased by 754% in 55 years between 1960 and 2015. This population growth has placed pressure on existing land administration systems due to the increased quest to obtain different forms of interest on land (Agbola, 2006; Ayeni, 2016).

Naturally, as the crises associated with global urban population growth, namely; overcrowding, high crime rates and poor urban living conditions (Ajanlekoko, 2001), began to manifest, Lagos began to annex neighbouring rural communities and to reclaim unused marshy land. Table 1 shows the expansion of Lagos's landmass over the years. Amongst others, the consequence of this expansion is a conflict of rights over land in the rural areas, which were previously held by traditional communities. There remains a dearth of literature juxtaposing the features of the formal system of land administration, which formed the basis of the expansion, and those of the informal (communal) land administration that existed in the rural communities.

Table 1: Landmass of Lagos at Different Dates

Date	Landmass of Lagos
Up to 1901	4km^2
1911	15 km^2
1920	51.8 km^2
1927	62 km^2
1931	63 km^2
1967	70 km^2
2016	3,577 km^2

Source: Adapted from Aina (1990), Njoku (2004) and Oteri and Ayeni (2016)

As noted by UN-Habitat (2015), two main theories underlie land administration – the Modernisation Theory which favours state control, commodification and equitable distribution of land, and the Personhood Theory which emphasises communal ownership of land. The former is regarded as formal land administration system, while the latter is regarded as informal land administration system throughout this work. These two systems of land administration coexist in Nigeria (Bah et al., 2003) and have given rise to formal and informal land occupancy types. Aligning with the Modernisation Theory, informal land administration in the annexed rural communities was criticised for limiting development by denying the

government, and other investors, access to the right environment for creating economic activities. It was argued that under informal land administration, land title documents were either non-existent or unreliable, and lands under the system scarcely attained their economic potentials. In addition, particularly in Lagos State, informal land transactions were reported to be fraught with problems of fraud, especially those created by the "Omo-Oniles" (descendants of the original owners of the land) (Olokoyo et al., 2014; Owoeye & Adedeji, 2015). The "Omo-Oniles" defraud individuals who want to buy land or obstruct the use of land legitimately purchased from a community by violent means (Nubi & Ajoku, 2011). Irrespective of this, it is still believed that the informal land administration system is better suited to addressing land and home ownership by the poor (Omirin, 1999). This study, therefore, ascertains the benefits (if any) of the informal land administration system to aid future policy reviews.

The Land Use Act (LUA) 1978 (Chapter L5 Laws of Federation of Nigeria, 2004) was enacted to correct the perceived anomalies of the informal land administration system and create a harmonised formal system of land administration for Nigeria. Thus, more than any other statute, the LUA is the cornerstone of formal land administration in Nigeria because it ceded control over land to the governors of the states. However, the LUA was not a derivative of the land occupants' opinion, rather, it evolved from the Land Use Decree of 1978 which was first adopted as an act of the National Assembly in the 1979 Constitution of the Federal Republic of Nigeria. Ignoring the land occupants' inputs in the legislation process questioned the practical relevance of the LUA. Feedbacks on the impacts of the LUA on the land users is critical to the improvement of the formal land administration system in Nigeria.

Some authors criticise formal land administration for being too bureaucratic, expensive, un-African and time-consuming (Boudreaux, 2008; Toulmin, 2009). Aware of this, Lagos State introduced measures to mitigate the deficiencies through the establishment of the Electronic Document Management System (EDMS), specifying the workflow for title registration processes, reducing the fees payable, and specifying the amounts required in advance (Department for International Development (DFID), 2010). Nubi and Ajoku (2011) further revealed that in 2005, the Lagos State government introduced a 30-day governor's consent policy which sought to reduce the length of time required to obtain a certificate of occupancy (C of O) or governor's consent. Despite these efforts, it is not generally agreed that formal land administration in Lagos has become satisfactory. For instance, the World Bank (2014) observed the persistence of high transaction costs for obtaining land titles and/or C of O with attendant inefficiency in the use of land in Lagos State. Mogbogunje (2005) noted that besides the delays in obtaining a C of O, landowners were made to repeatedly seek the consent of the governor for every change of land ownership. The above has led to the preference of the informal land market to the formal. This preference, however, was not empirically established, and few recent studies compare the merits and problems of the two (formal and informal) land administration systems in Nigeria. Some authors have given attention to the problems resulting from the implementation of the LUA (Smith, 2008), albeit, without sufficient attempts to carefully identify all the problems associated with the

law from the land user's perspective, a gap which the current study seeks to fill.

Literature is replete with arguments for and against the formal and informal systems of land ownership and administration in Nigeria. Relying on the Modernisation Theory, those in support of formalisation cite security of tenure, access to land for economic development, equity, land use redistribution, and enshrinement of an open market mechanism as reasons why the system should continue (Njoh, 2000). Furthermore, it has been argued that land formalisation enhances physical development of land (Varley, 1987; Ikejiofor, 2006). Ensminger (1997), however, reported that the benefits of land title formalisation had not materialised irrespective of the adoption of formal land administration in Africa. The veracity of this assertion has gone unchallenged in Nigeria's case. Contrastingly, based predominantly on the Personhood Theory, the informal system of land administration has been commended for being pro-poor, simpler in terms of procedure, and embedded in the existing cultural systems of the society (Rakodi & Leduka, 2004). Nubi and Ajoku (2011) found that the informal land administration system aided housing production far more than the formal system. Thus, the applicability of either the Modernisation or the Personhood Theory to land administration in Nigeria remains open to conjecture.

Some studies have called for a system that optimises the benefits of the two land administration systems (Migot-Adholla et al., 1991). These benefits have to be clarified before the two systems can be optimised. Consequently, the objectives of this study are: (1) to investigate the problems and benefits of formal and informal land administration systems in Lagos State, and; (2) to determine the relationship between the type of occupancy and level of physical development of land.

2. Literature Review and Theoretical Framework

2.1 Personhood Theory and Informal Land Market

The Personhood Theory argues that "*to be a person, an individual needs some control over resources in the external environment*" (Radin, 1982, p.957). It asserts that an object can be so personal to the owner that it becomes indispensable to the owner's personhood. Whereas other belongings of the person can be sold without negatively affecting his personhood, it is not so with objects that hold a certain sentimentality that essentially defines the personhood of the owners (Schnably, 1993). In this school of thought, therefore, there are links between the land, the objects on the land and the people that own the land (UN-Habitat, 2015). The personhood thinking arguably underpins communal land ownership in Nigeria since African communities generally attach sentiments, both cultural and religious, to the land in which their forefathers lived and were buried (Aina, 1990).

Until 1978, formal and informal land administration systems operated concurrently in Lagos, with the formal system being based on English laws received during the colonial period (Omirin, 1999). At this time, however, a greater proportion of today's Lagos was under customary land tenure system. The customary land tenure system follows lineage rules of inheritance, and

intergenerational transfer of landed property rights as well as a common pool approach to the management of resources (Soludo, 2000). The broad idea of a customary land tenure system falls into three different categories: communal ownership, family ownership and individual ownership (Ikejiofor, 2009). However, the community is the ultimate owner of the land. The land is said to belong to a group of people that claim common (often mythical) ancestry. When land is parcelled out to individuals (thereby creating individual ownership, which is rare), it is frequently impossible for those individuals to dispose of the property without the consent of the head of their families or the communities (Omirin, 1999). Likewise, lands apportioned to and 'owned' by families cannot be alienated without the consent of the community. Title transfers in this system are often verbal, in the presence of witnesses, and land boundaries are largely imprecise since adjustments could be made to attain social harmony (Cousins et al., 2005). Up till the 1990s, traditional African communities in Ghana, Kenya, and Rwanda considered land as a part of the social system, and legitimate use of land was restricted to those related by birth, affinity, common residence, and social status, or some combination of these (Migot-Adholla et al., 1991), as anticipated in the Personhood Theory. Oloyede et al. (2007) viewed land administration at this time as being fair because people were able to access land for their various purposes. Rakodi and Leduka (2004) described this informal land administration process as user-friendly, effective in delivering land for housing, and socially legitimate. Ikejiofor (2006), however, reported a tendency for the informal land administration system to disfavour community members that are thought to be indolent or indifferent to the family's or community's development. During land allocation, the communities/families show preference to those members that are committed to their (the community's or family's) enlargement. Atwood (1990) posited that this system of land administration increases the outsider's risk and insecurity in land transactions. Contrastingly, Deininger and Binswanger (1999) stated that the efficiency losses associated with communal tenure systems are less significant than generally assumed. In reality, only a study that adequately articulates the merits and inadequacies of the system and observes the physical developments on land can give useful insights into the efficiency or otherwise of the system.

On the urban fringes, formal land administration creates visible contradictions due to the existence of the statutory rights of occupancy alongside the customary rights of occupancy of the indigenous communities (Adam, 2016). Based on the LUA, customary right of occupancy may be claimed by an indigenous community in three instances: (1) areas not yet acquired by the government and officially gazetted, (2) areas given to the community in excision during government land acquisition (usually in lieu of financial compensation), and; (3) areas deemed to have been given to the community by virtue of section 36 of the LUA.

In the first case, the community continues to enjoy control over her land as long as the government has not officially acquired it. When the government eventually acquires the land, the occupants of that land are compensated and evicted or allowed to regularise their titles with the government. In the second scenario, instead of acquiring the whole land belonging to a community, the government may decide to grant the community some portion, say 30% of the

land, for the community's purposes. The community exercises right of occupancy over such a land, and may wish to sell the land, but not without the consent of the local government or the governor as the case may be [sections 21 and 22 of the LUA]. In the third case, by virtue of section 36 of the LUA, customary right of occupancy is deemed to be granted to communities or persons over agricultural and developed land being used by them in the rural areas prior to the coming into effect of the LUA. However, the person on whom the customary right of occupancy was vested by virtue of section 36 of the LUA has no right to transfer such land to another person or to subdivide it as these will constitute criminal offences (subsections 5 and 6 of section 36 of the LUA). Impliedly, such land escheat to the state upon the death of the person to whom the customary right of occupancy was vested (Smith, 2008). Evidently, informal land dealers (the communities) only have the right to transfer lands given to them by the government in the process of excision. Despite this, land buyers continue to patronise informal land dealers who act as de facto owners of rural land, with little, if any, regard to the latter's roots of title. This study will explore the demerits of such patronage to the land occupants.

2.2 Modernisation Theory and Land Formalisation in Lagos State

Modernisation Theory postulates that societies will progress from the traditional 'irrational' arrangements to a stage where they become 'modern' or 'rational' societies and that this progress is inevitable and irrevocable (Dibua, 2006; UN-Habitat, 2015). However, it contentiously defines 'traditional' in the negative, ignoring the positive features of traditional developing societies (Bernstein, 1971). Dibua (2006) noted that Modernisation thinking unduly advantaged Western developmental economists, who proposed the development of African countries along the lines of the Western world, without due regard to the socio-economic systems that existed in Africa. This theory asserts informal land administration system to be inefficient and advocates land commodification and the removal of customary land holdings (UN-Habitat, 2015).

In Nigeria, the single most important statute that underpins the Modernisation thinking is the LUA, which reposed freehold interest on land on the governor of each state, except lands occupied by federal government institutions. Accordingly, transactions in land are to be carried out with the consent of the governor (for land in urban areas) or the local government (for land in rural areas). In addition, several legislations have been enacted in the states of the Federation of Nigeria that have bearings on land transactions. With particular reference to Lagos State, examples include: Registration of Titles Law Cap 4 (Laws of Lagos State, 2003), Registered Land Law, Cap R1 (Laws of Lagos State, 2003), Land Instruments and Registration Laws CAP L58 (Laws of Lagos State, 2003), and the Electronic Document Management System Law 2007 (EDMSL). These laws were later consolidated into a single legislation named Lagos State Land Registration Law 2015 (Onyekwere, 2015). In Lagos State, land acquisition through government allocation requires about fourteen steps to be taken over no less than 21 days (Kolawole, 2014). Feedbacks are needed from land occupants for the government to assess the impact of its land policy improvements. The ultimate goal of land formalisation is to facilitate land development and creation of economic

activities. Whether this has resulted from the Lagos State government's land administration policies highlighted above requires an inquiry.

After purchasing land from informal sources, the beneficiary is expected to formalise the title of the land with the government by following the Lagos State Lands Bureau's requirements. The workflow involves four processes: completion and submission of application form by the applicant; issuance of demand notice for payment by the Bureau; submission of payment receipts by the applicant; and collection of a Certificate of Occupancy (C of O) by the applicant (Lagos State Lands Bureau, 2017). The cost of land regularisation is in addition to the cost of land purchase. Lagos State Lands Bureau (2017) listed the preliminary payments to include: charting, endorsement and form 1C fees. Later, the applicant will be required to make further payments for consent, stamp duty, capital gains tax, registration, business premises charge (if one of the parties to the transaction is a company or if the land is a business premises), direct assessment (personal income tax of the parties to the transaction) and neighbourhood charge (if applicable). This partly explains why only 2–10% of the total land area in Africa is formally recognised, with informal land markets prevailing more in peri-urban areas (Fourie, 2002).

2.3 Issues with the Formal Land Administration System

Cousins et al. (2005) noted that formalisation of communal property rights could undo the nature of the rights and the social relations and identities that underlie them. Boudreaux (2008) and Toulmin (2009) criticised land formalisation processes for being complex, expensive, slow to implement and to disfavour the poor. Both authors further questioned the governments' capacity and local knowledge to implement a just, large-scale national land registration system. Aina (1990) noted that the formalisation of land titles required by the LUA skewed land ownership against the poor who are not used to bureaucracy, could not afford the cost, and lacked the patience to wait for the government's land allocation process to take its course due to their urgent need to have some form of shelter erected on the land. Other researchers, like Yakub (2014), identified corrupt practices, political influence and delays in allocation as among the problems of formal land allocation in Nigeria. Broegaard (2013) noted that land titling was envisaged to protect the tenure security of the poor over their land, but that it has ended up favouring the rich more. Dowall and Clarke (1996) and Njoh (2000) observed that the formal land administration foisted on Africans was adopted from the developed countries' models and ignored the actual economic demands for space as well as the capacities of households and businesses to pay for land. Ensminger (1997) noted that the transaction cost of land formalisation might be constraining land registration processes. Particularly in Nigeria, the delays in the formal land titling processes, and sometimes the issuance of fake C of Os, encourage trespasses on land (Omole, 2009). These criticisms question the applicability of the Modernisation Theory in Nigeria, and this study seeks to establish their veracity based on the opinions of land occupants in Epe Local Government Area of Lagos State. The opinion of land occupants is invaluable in providing feedback on the state government's land administration policies.

Broegaard (2013) identified the benefits of the formal land administration system in Latin America to include: tenure security and increases in the level of investment and land values. In Bogotá, real public investment per capita in the city increased by more than 650% through land formalisation (Blanco, 2011). These observations align with Njoh (2000) who argued that land commodification aids economic development and seem to support the postulations of the Modernisation Theory. However, while it is clear that both formal and informal land administration systems have merits and challenges, it is not yet settled which of them leads to a higher value development of African land. Since land title formalisation leads to land tenure security and the transaction documents are government-backed, formal landowners are better positioned to obtain capital for the physical development of their land. Thus, the government expects a higher standard of physical developments on land under formal land administration (Okafor, 2006). It has equally been argued that increased security of tenure significantly leads to higher investments in land development (Varley, 1987). A comparison of the levels of development in both formally and informally occupied land is required to validate or refute this argument.

In order to reconcile the two land administration systems, Migot-Adholla et al. (1991) recommended an enabling legal system for informal land transactions, where such transactions are recorded and recognised by law without the encumbrances typical of the existing land registration processes. This aligns with Rakodi and Leduka (2004) who suggested that the formal land administration system should be decentralised to provide for local registration of land rights. Such an arrangement should ensure a proper balance or division of labour between the public and private sectors regarding urban land development and management (Dowall & Clarke, 1996). These suggestions sound simple, but their implementation is not. For example, the decentralisation of formal land administration will require further expensive administrative structures that do not exist currently, and for which land buyers will be made to pay indirectly (Wily, 2003).

Similarly, Durand-Lasserve et al. (2007) noted that land titling places heavy burdens on land administration agencies. Deininger and Binswanger (1999) suggested that property rights should be awarded to communities, allowing them to decide on the most suitable tenure arrangements. It can be argued that such an arrangement will precipitate litigations, and possibly lead to violent conflicts if adopted in Nigeria. Already, a good number of communal plots are the subject of litigations in the customary (and other) courts in Nigeria. Reasoning along this line, Jacoby and Minten (2006) maintained that expanding a modern property rights regime alongside an indigenous tenure system is not guaranteed to reduce insecurity and could even have the opposite effect. Deininger (2009) advocated the legal recognition of rights and institutions in the customary systems, subject to minimum conditions, and viewed such an arrangement to be superior to the premature attempts to formalise land titles. This study postulates that it is necessary to obtain and incorporate the views of land users about the merits and demerits of the two systems before any useful hybrid system can emerge.

3. Methodology

3.1 Area of Study

The study area is Epe Local Government Area (LGA), Lagos State (Figure 1). Epe is a riverine area, covering about 965 km$^{2.}$ Its inhabitants are predominantly farmers involved in fishing and the cultivation of crops such as rice, cassava, oil palm, cocoa, plantains/banana, maize, ginger and sundry vegetables. Epe is a major source of supply of food to Lagos State (Mohammed et al., 2015). The rural communities in Epe include: Naforija Odomola, Epe, Ilara, Otta-Ikosi, Ejinrin, Eredo, Odoragunsen, Mojoda, Ibowon, Itoikin, Ketu, Odo-Ayandelu, Orugbo, Igbonla, Ita oko, Yegunda, Molajoyo Oke egun, Erinmope, Iganke, Araga, and Aferan among others (Ashimolowo et al., 2010). It is located about 90 kilometres to the Northeast of Lagos metropolis (Babalola & Aina, 2004). The land scarcity in Lagos Metropolis has created an increase in demand for land in Epe and surrounding areas. Inadvertently, urban characteristics are making in-roads into the previously rural communities, thereby creating a rural-urban transition zone that keeps getting urbanised with time. This transitioning process led to the co-existence of both formal and informal land acquisition and administration processes. Due to its proximity to Lekki, Victoria Island, Ikoyi and environs, medium-income workers in these areas demand the relatively cheap land in Epe and neighbouring peri-urban local government areas for construction of residential buildings. In addition, the presence of Lagos State University (Epe Campus), banks, hospitals, and other institutions (notably, the Lekki Free Zone) attract the presence of non-natives to the area. These prospective land buyers are often exposed to the complexities of land acquisition made worse by the simultaneous existence of formal and informal land markets in the peri-urban area.
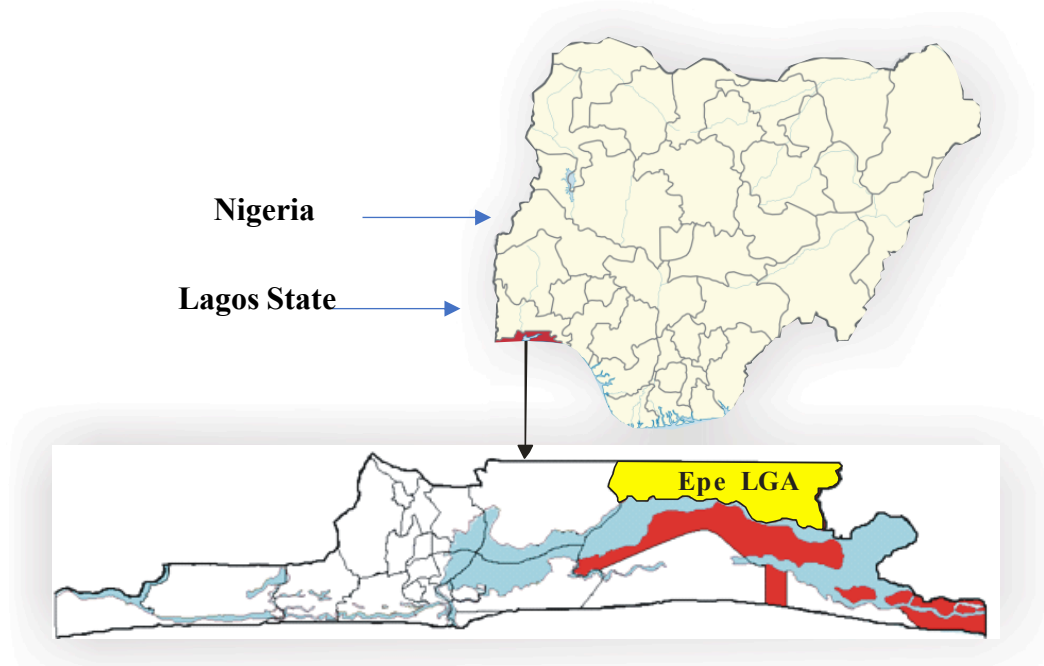

Figure 1. Map of Lagos State Showing the Location of Epe LGA
Source: Adapted from Ojuri and Bankole (2013)

3.2 Research Design

The purpose of this study is to evaluate the citizens' perceptions of the two land administration systems prevalent in peri-urban Epe LGA of Lagos State in order to make recommendations towards the improvement of the current land administration policies of the state. A peri-urban area was chosen for the study due to the prospect of finding a reasonable number of the two types of land occupancy in each ward of the LGA. Peri-urban areas are rural towns located close to cities which experience gradual socio-economic transformation as the town expands due to population growth (Adam, 2016). Allen (2003) noted the general lack of specificity in development planning for peri-urban areas, despite their significance as the interface between the rural and urban areas. A study such as this will help to draw attention to the need to be deliberate in land administration planning for peri-urban Epe LGA.

A cross-sectional survey design was adopted for the study. There are 19 wards in Epe LGA (Independent National Electoral Commission, 2017), out of which nine wards were randomly selected due to the level of resources available for the study. The wards were: Poka, Popo-oba, Ejirin, Lagbade, Ibonwon, Ilara, Abomiti, Ago owu and Ajaganabe. A systematic sampling technique was used to select every other building on each street for the administration of the questionnaire, and the respondents were purposively selected. Purposive sampling was used due to the pertinence of obtaining information from knowledgeable persons. It was not possible to obtain secondary data containing the names of the respondents of this study since informal land acquisitions may not be recorded at the Lagos State Lands Registry. Based on a pilot study, it was discovered that some of the respondents were sceptical about the survey, too illiterate to respond, or claimed to not have time. A similar situation was observed by the UN-Habitat (2015). As a result, the research assistants engaged in the study used the local language in some cases, to explain the intention of the survey and to read out the questions for the respondents to verbally indicate their level of agreement. This strategy, which helped to increase the number of responses to the questionnaire, is also justified because Epe is a peri-urban area which still has some relics of a rural community especially in terms of the number of aged and illiterate citizens. Additionally, it provided an opportunity for the respondents to bare their minds on other important land administration issues in the area. Forty-six (46) questionnaires were returned and used in the analyses. Sigrid et al. (2017) stated the method of questionnaire administration depends on the population under study, and that self-administered questionnaires are subject to low response rates. To minimise social desirability bias, the respondents were first assured of the anonymity of their responses (King & Bruner, 2000; Sigrid et al. 2017).

The study questionnaire contained problems and benefits associated with each type of land use identified through the literature review, which the respondents ranked on a Likert scale of 1= strongly disagree to 5= strongly agree. The problems of formal land administration identified and included in the questionnaire centre around bureaucratic bottlenecks in land administration, and the opacity of the land allocation processes, while the benefits were mostly tenure-security related. Informal land administration problems revolved around poor transaction documentation and insecurity of

tenure. Its benefits identified from literature were related to the ease of transactions in land. The list of items on the questionnaire was previously cross-checked by four senior academics in the University of Benin for relevance to the study. Table 2 shows the characteristics of the respondents of the study in terms of their level of education, sex and type of occupancy.

In order to ascertain whether informal land occupancy type aided higher value land use/development, the six housing types used by the National Population Commission (Table 3) were used as proxies for the level of development of land with slight adjustments. It was considered important that the findings of the study should relate to a system of development categorisation that is already existing in the country. The value/quality of the housing types shows a progression from improvised buildings to detached building types. In accordance with the Modernisation Theory, it is expected that formal land occupants will have higher value/quality developments on their land.

The benefits and problems of the two land administration systems were ranked using mean item score (M.I.S). The M.I.S shows the relative mean weightings of the variables and enables comparisons to be made between variables in a group and across the two land administration systems. The views of land occupants with formal and informal titles were compared to elicit disparities of opinions about the two forms of land administration. It was considered important that the land users/occupants whose views were not sought in the processes leading to the enactment of the LUA 1978 should be sought in the attempt to ascertain the current impact of the policy. Logistic regression was used to investigate the relationship between the type of development on land and the type of land right possessed by the occupant. Logistic regression is useful for predicting a dichotomous outcome. Logistic regression was used due to its robustness for normality, linearity, equal variance and covariance assumptions which are required in other statistical techniques like Ordinary Least Squares (OLS) and linear discriminant analysis (Peng et al., 2002).

The absence of comprehensive data on the number of buildings and separate parcels of land in the study area may have reduced objectivity in the spread of the questionnaire for this study. Likewise, the owners of empty plots in the area were not covered by the study since no one could be found to be issued with the questionnaire. Efforts were, however, made to ameliorate this weakness by issuing the questionnaire to respondents in buildings which were originally omitted during the systematic sampling. In the end, the number of respondents (n=46) was not as large as desired. The findings of the study are, however, valid for the data collected. Similar studies should be conducted in other zones of the country to test the generalisability of the findings of this study for the entire country.

3.3 Hypothesis

H_o: There is no significant relationship between the type of land occupancy and the level of development on the land.

Table 2: Respondent Characteristics

		Formal	Informal	Total
Sex	Male	11	26	37
	Female	6	3	9
	Total	**17**	**29**	**46**
Level of education	Not educated	3	9	12
	Primary/secondary	9	4	13
	ND/NCE	1	7	8
	BSc/HND	3	9	12
	Postgraduate	1	0	1
	Total	**17**	**29**	**46**
Type of Resident	Landlord	8	**21**	29
	Caretaker	9	**8**	17
	Total	**17**	**29**	**46**

Table 3: Building Types

Code	Building Type
BT1.	Storey building house on a separate stand or yard
BT2	Traditional /Hut structure
BT3	Informal/ Improvised dwelling
BT4	Flat in block of flats (storey building)
BT5	Semi-detached house flats)/bungalow
BT6	Rooms / Let in house

Source: National Population Commission (2006)

4. Presentation of Results

4.1 Problems of Formal Land Administration

Table 4 shows that "*one needs to know someone at 'the top' to stand a chance of being allocated land*" ranked first for the two groups of respondents (Table 4). Indicatively, government officials inform their own people when government land is available for allocation to citizens. This jeopardises the chances of those that are not related to the government officials in charge of the land allocation processes. While the informal occupants of land view the requirements of land registration/allocation as being unclear, hence it ranked 2nd during the statistical analysis, the formal land occupants ranked the process as too legalistic (2nd), and ranked, "*the requirements for land registration/allocation are unclear*" as 11th. The informal land occupants have hardly experienced the processes of formalisation themselves. They probably have an unfounded perception of the processes of formal land administration, perhaps due to their low level of literacy. Nevertheless, the formal land occupants identify the legalistic nature of the processes as a problem. This may have been influenced by their perception of the difficult nature of the processes since "*the stages/processes of land allocation are too many/long*" ranked third. Additionally, "*Even with C of O* [Certificate of Occupancy]*, one cannot sell one's land without the governor's consent*"

(L13) ranked 4th for the formal land occupants indicating a feeling of burdensomeness of the requirement. It ranked 10th for the informal land occupants who do not seek any consents to sell their properties. Overall, the respondents considered government land, not as being expensive (L2 ranked 14th and 19th for the formal and informal occupants respectively), but as being tough to acquire due to the process and types of contacts needed to get them.

Table 4: Problems of Formal Land Administration

CODE	PROBLEMS	Informal Land Users			Formal Land Users		
		R	M.I.S	SD	R	M.I.S	SD
L1	One needs to know someone at 'the top' to stand a chance of being allocated a land	1	4.55	0.69	1	4.59	0.62
L7	The requirements for land registration/allocation are not clear	2	4.03	1.5	11	3.18	1.55
L6	The stages/processes of land allocation and registration are too many/long	3	3.93	1.16	3	3.94	1.14
L5	The processes are too legalistic	4	3.9	1.42	2	4.06	0.9
L9	Land is only allocated to the rich	5	3.79	0.98	13	2.94	1.34
L4	Lands Bureau Staff demand for bribes for carrying out official assignments	6	3.72	1.16	5	3.65	1
L8	Formal land allocation does not ensure that there will not be litigations in the future	7	3.55	1.68	15	2.24	1.3
L3	Too many agents and middlemen in the land registration process	8	3.55	1.12	8	3.29	0.99
L10	One is not always allocated land in the place of one's choice	9	3.45	1.4	6	3.65	1.54
L13	Even with C of O, one cannot sell one's land without the governor's consent	10	3.24	1.21	4	3.88	1.11
L11	The cost of complying with formalities is too highly disproportionate to the cost of the land itself	11	3.21	1.57	7	3.59	1
L15	Type of land use is strictly stated	12	3.14	1.48	10	3.24	1.39
L14	Beneficiaries are given timelines within which to develop their land	13	3.07	1.22	14	2.82	0.95
L12	The cost of land is usually too expensive	14	2.93	1.62	9	3.24	1.3
L2	Location of Lagos State Lands Bureau is far	15	2.9	1.29	12	3.18	1.19

M.I.S=Mean Item Score, R=Rank

4.2 Benefits of Formal Land Administration

Table 5 shows the ranking of the benefits of formal land administration variables for the formal and informal land occupants. Overall, the M.I.Ss of the formal land occupants' responses are higher than those of the informal land users. This suggests that the formal land users have a higher perception of the benefits of their type of land occupancy. Possibly, the informal land users do not adequately appreciate the benefits of formal land occupancy. For the two groups of respondents, K9 ranked 1st (informal) and 3rd (formal) respectively. It means that an important benefit of formal land administration system is that anyone can be allocated with land anywhere irrespective of his state of origin. The low ranks of K6 (18th for both groups of respondents) and K3 (19th for both groups of respondents) indicate that the cost of processing

documents is significant, and the registration process is not easy in the formal land administration system.

The two groups of respondents, however, tend to disagree on whether encumbrances on land are settled before an individual purchases land in the area or not. K2, thus, ranked 2ⁿᵈ for the formal land occupants and 11ᵗʰ for the informal land occupants. This shows the cynicism with which the informal land occupants view formal land administration. According to the respondents, whether encumbrances exist or not is a matter of luck rather than a direct benefit of the formal land administration system. This is because generally transactions in land are notorious for having issues, and informal landowners in the study area are peri-urban dwellers who may not be well informed about the formal land administration.

Table 5: Benefits of Formal Land Administration

CODE	BENEFITS	Informal Land Users			Formal Land Users		
		R	M.I.S	SD	R	M.I.S	SD
K9	There is no favouritism or discrimination of persons to own land – anyone can be allocated land anywhere irrespective of his state of origin	1	3.72	1.1	3	4.29	0.85
K8	There are no cases of multiple ownership of land	2	3.55	1.24	1	4.47	0.51
K5	There is security of tenure	3	3.48	1.24	5	4.24	0.97
K15	Reduces boundary conflicts	4	3.45	1.45	9	3.71	1.05
K10	The validity of title documents are guaranteed by the government	5	3.41	1.45	8	3.76	1.15
K17	Leads to increase in land and property values	6	3.38	1.47	6	3.88	1.27
K4	Improves access to credit	7	3.38	1.45	15	3.06	1.78
K7	Land is bought at below the fair market prices	8	3.28	1.39	12	3.29	0.99
K13	Confers higher social status on the holders	9	3.14	1.55	16	3	1.12
K18	Aids proper layout of buildings and urban planning	10	3.14	1.13	10	3.53	1.28
K2	Encumbrances on land are identified and dealt with before purchase	11	3.14	1.48	2	4.35	0.79
K1	The title is reliable	12	3.1	1.59	4	4.29	0.77
K14	Improved access to land by women	13	2.83	1.49	11	3.41	1.54
K12	Increases transferability of land	14	2.76	1.35	14	3.06	1.14
K16	It stimulates investment in real property	15	2.76	1.62	17	2.53	1.62
K19	It leads to the construction of high-quality buildings on the land	16	2.72	1.33	13	3.24	1.15
K11	Ensures higher economic use of land	17	2.66	1.29	7	3.82	1.07
K6	The cost of processing documents is insignificant	18	2.59	1.12	18	2.06	1.3
K3	Title registration is easy and smooth	19	2.14	1.3	19	1.76	0.9

M.I.S=Mean Item Score, R=Rank

4.3 Problems of Informal Land Administration

The two groups of respondents agree that an additional settlement is required before one can build on an informal land (Table 6). This variable (P9) ranked 1ˢᵗ and 3ʳᵈ for the informal and formal respondents respectively. The two

groups of respondents appear to differ on a number of other points. For instance, while the formal land occupants appear to be more concerned about the fact that the authority to sell the land does not lie with one person (ranked 1st), this item (P2) is ranked 9th for the informal land users. The informal land occupants were more concerned about the multiple-sale of land to different persons which could create a conflict (P10 ranked 2nd for the informal land occupants). This signifies the concern of the informal land occupants about the security of tenure of their land. The respondents agree that informal land administration system does not discriminate against women hence this variable ranked 17th (informal) and 15th (formal).

Table 6: Problems of Informal Land Administration

CODE	PROBLEMS	Informal Land Users			Formal Land Users		
		R	M.I.S	SD	R	M.I.S	SD
P9	An additional settlement is required before one can build on the land	1	4.69	0.47	3	4.06	0.9
P10	Different persons may sell the same parcel of land to different individuals thereby creating a conflict	2	4.03	1.09	1	3.53	0.94
P17	There is poor record keeping and documentation	3	3.72	1.39	2	4.24	1.09
P1	Roots of titles are difficult to ascertain	4	3.66	1.34	4	4.06	0.9
P8	The requirement for regularisation with the government after purchase makes it very expensive	5	3.62	1.29	8	3.71	1.4
P4	Boundaries are usually contentious	6	3.59	1.68	7	3.76	1.39
P11	There is a requirement for immediate development of the property to prevent the resell of the property by the community	7	3.52	1.38	14	2.53	1.5
P5	The process of acquisition is not straightforward	8	3.24	1.5	13	2.88	1.41
P2	The authority to sell land does not lie with one person	9	3.14	1.48	1	4.29	0.77
P13	Title documents are not acceptable for mortgage	10	2.9	1.52	16	1.94	0.9
P16	Often results in improper layout of buildings	11	2.83	1.47	6	3.82	1.01
P7	Title documents are not reliable	12	2.79	1.61	10	3.65	1.32
P3	There is serious insecurity of tenure	13	2.72	1.51	5	4	1.17
P14	Boundaries are adjusted after the sale of land	14	2.69	1.69	9	3.65	1.32
P6	Other things like drinks are required besides money to close a deal	15	2.69	1.44	12	3	1.37
P12	The buyer is required to continue to pay ground rent to the original owner of the land	16	2.48	1.27	17	1.82	1.13
P15	The system discriminates against women	17	2.38	1.27	15	2.12	1.45

M.I.S=Mean Item Score, R=Rank

4.4 Benefits of Informal Land Administration

Informal land occupants seem to believe that land acquisition from informal sources offers them the advantage of purchasing land in the place of their choice (S2 ranked 1st for the informal land occupants). On the contrary, S2 ranked 6th for the formal land occupants which indicates that formal land occupants comparatively have lower control over where they are allocated land. Both groups of respondents agree that informal land documentation is relatively cheap (S4 ranked as 1st and 2nd for the formal and informal land occupants respectively). As shown in Table 7, the respondents' opinions seem to differ on the cost of informal land. The formal land users consider it to be expensive (rank=12th), while the informal land users consider it to be relatively inexpensive (rank=3rd).

Table 7: Benefits of Informal Land Administration

CODE	BENEFITS	Informal Land Users			Formal Land Users		
		R	M.I.S	SD	R	M.I.S	SD
S2	Land is purchased in the place of one's choice	1	4.07	1.22	6	3.65	1.41
S4	The cost of documentation for land purchase is relatively cheap	2	3.76	1.15	1	4.24	1.15
S1	Land is relatively cheap	3	3.69	1.47	12	2.59	1.28
S9	Helps early access to land and commencement of building construction by the poor	4	3.66	1.17	7	3.47	1.12
S7	The buyer is free to decide on what to do on the land	5	3.62	1.37	3	3.94	1.14
S6	No timeline is given within which to develop the land	6	3.41	1.38	4	3.88	1.22
S11	Disputes are more easily resolved by the chiefs and stools through alternative dispute resolution mechanisms	7	3.34	1.26	2	3.94	0.9
S5	The process and duration of land purchase is very short and stress-free	8	3	1.39	10	3.24	1.25
S10	The system is decentralised, enabling land matters to be handled separately by different authorities	9	2.93	1.49	9	3.35	0.86
S12	Original owners of land sell land to people known to them and are therefore able to preserve ancient monuments of their societies	10	2.9	1.59	11	3.24	1.39
S8	It preserves social harmony and preservation of existing culture within the society	11	2.83	1.54	8	3.47	1.23
S3	There may be provision for instalment payment		2.66	1.56	5	3.76	1.35
S13	Sometimes land is sold on the condition that the buyer will build a town hall for the community thereby aiding development		2.62	1.47	13	2.53	1.01

M.I.S=Mean Item Score, R=Rank

Perhaps, to formal land occupants, informal land ownership is expensive in the long run when the risks involved are accounted for, but the informal landowners may not perceive this. Additionally, unlike informal land, formal land is sold at below market prices by the government. On whether the buyers

of informal land are requested to carry out other forms of developments for the community, the respondents agreed that this is not the case since S13 ranked 13th for both groups.

4.5 Relationship Between Level of Development and Type of Land Occupancy

It was hypothesised that a significant relationship exists between the type of land occupancy and the level of development of land in the research area. To test this hypothesis, logistic binary regression was carried out to relate the type of building structure on each land to the type of land occupancy. It was intended to examine whether the type of land occupancy (i.e. whether formal or informal) determines the level of development of the site (proxied by the type of structure on the ground). The indices of goodness of fit, Cox and Snell R^2 and Nagelkerke R^2, which represent pseudo R^2 showed that the predictors only predicted 13.7% to 18.7% of the variation in the type of land occupancy (Table 8). This means that the level of physical development on site is poorly related to the type of occupancy of the land user. The inclusion of the variables was, however, unable to improve the correct classification rate beyond the 63% observed in the null model. Table 9 shows that none of the predictors significantly influenced the odds of the type of land occupancy ($p > 0.05$). Equally, the omnibus tests of model coefficients showed p-values of > 0.05. It was, therefore, concluded that the level of land development is not related to the type of land occupancy in the area.

Table 8: Logistic Binary Analysis Results

	Observed		Predicted		
			LANDADMIN		Percentage
			0	1	Correct
Step 0	LANDADMIN	0	29	0	100
		1	17	0	0
	Overall Percentage				63
Step 1	LANDADMIN	0	29	0	100
		1	17	0	0
	Overall Percentage				63

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.	
Step 1	Step	6.758	5	0.239	
	Block	6.758	5	0.239	
	Model	6.758	5	0.239	

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	53.845[a]	0.137	0.187

Table 9: Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1a	bt			0.645	5	0.986	
	bt (1)	-21.069	40192.97	0	1	1	0
	bt (2)	-21.069	17974.84	0	1	0.999	0
	bt (3)	-0.965	1.265	0.582	1	0.446	0.381
	bt (4)	-0.272	0.827	0.108	1	0.742	0.762
	bt (5)	-0.049	0.797	0.004	1	0.951	0.952
	Constant	-0.134	0.518	0.067	1	0.796	0.875

a. Variable(s) entered on step 1: bt.

5. Discussion

A major problem of the formal land administration system in Lagos State identified by the respondents is that one needs to know someone at 'the top' (this refers to government officials in senior positions) to be allotted land. Land allocation is usually shrouded in secrecy such that the general public is mostly unaware when land is available for allocation to the public. Sometimes, land is acquired by the government after applications have been made, thus precluding the beneficiaries' prior knowledge of the location of the land to be allotted to them. The findings of this study, like Yakub's (2014), suggest that the processes are unclear and too legalistic. Yakub found that, in Kaduna State, formal land administration is tedious and complicated. Unlike Lagos State, Kaduna State is yet to implement an Electronic Document Management System (EDMS) in its land administration system. Also, the finding that the stages/processes of land allocation and registration are too many/long aligns with Jones (2010) who noted that similar processes exist in Southeast Asia, where numerous signatories are necessary before formal land occupancies are approved.

Major problems associated with land acquired from informal sources are the requirement for an additional settlement of the community before one can build on the land and poor record keeping. Unfortunately, the LUA, or more appropriately its implementation, has not stopped the continuous extortion of land buyers after informal land transactions. The unwillingness of communities to let go of their land is what leads to this form of behaviour. This supports the thinking of the Personhood Theory (Schnably, 1993; UN-habitat, 2015) that the indigenous communities attach emotional sentiments to their land (Omirin, 1999). Osemwota (1989) found that traditional chiefs neither felt threatened by nor opposed to formal land administration, which is at variance with the Personhood Theory and the result of this study. Osemwota's (1989) finding may be because the government had compensated the chiefs financially or by giving them land over which they could exercise control.

Transaction instruments used in the conveyance of informal land are not government-backed, which creates room for multiple-sale of the same parcel of land. Additionally, the transactions are not properly recorded to enable buyers know which land is free of encumbrances, and which land is not. This study further shows that women are culturally unhindered from negotiating

and acquiring land directly through the informal process in the study area. Understandably, this is because women are allowed to inherit land in the Yoruba custom (from their fathers, husbands, sons, or other family members). The custom also permits them the independence to acquire all forms of property including land (Aluko, 2015), and there are no Nigerian laws refraining them from enjoying this right. However, other social and economic hindrances may limit women's ability to exercise this right in practice (Staveren & Odebode, 2007). In contrast to the result of this study with regards to women's access to informal land, Binswanger-Mkhize and Deininger (2009) and Hanstad et al. (2009), reported that women were previously not allowed to acquire land directly and that the government of India had to establish a special programme for the direct negotiation of land acquisition by women in the country. It is illogical, however, to stretch the interpretation of this result to other culturally, socially and economically diverse contexts.

The respondents in this study believe that one of the benefits of formal land administration is that it eliminates favouritism and discrimination in land allocation. Nigeria is a multi-ethnic and multi-cultural state with historical tensions based on identity markers. Therefore, a system that eliminates favouritism on the grounds of heritage or identity should aid the spread of development in line with the Modernisation Theory (UN-Habitat, 2015). Equitable access to land is part of the vision of the Lagos State Lands Bureau as stated in their website, and forms one of the core objectives in land formalisation processes all over the world (see Machira, 2009; Broegaard, 2013). It is to be noted, however, that this finding does not imply that the Land Use Act's objective (of making every Nigerian an owner of land) has been achieved.

This study supports Omirin's (1999) suggestion that the LUA may have succeeded in removing some of the difficulties associated with title/tenure security as the respective respondents believe that tenure security is enhanced, while the formal land administration eliminates cases of multiple claims to the ownership of land. Overall, the findings of this study imply that while some of the visions of the LUA have been achieved in the study area, a lot needs to be done to make the processes of land formalisation transparent and user-friendly.

The informal land occupants believe that it is an advantage to buy land in the place of one's choice. There is a very slim chance of being allotted land in a place of one's choice under the formal system of land administration. This is because the government acquires land for allotment to the citizens in a place of its choice without any inputs whatsoever from the prospective land users. To further compound this problem, the more desirable locations in government-acquired land are often allocated to the rich and influential. While both types of respondents believe that the cost of documentation for informal land is relatively cheaper, the formal land occupants feel that informal land is more expensive to acquire. This view may be stemming from the fact that government land is sold below the fair market value (Lagos State Government Lands Bureau, 2017) compared with the informal lands that are sold at fair market values.

The findings of this study did not support Modernisation Theory's postulation that land formalisation is associated with higher value property development (UN-Habitat, 2015). It could not be proved that there are better developments on lands held under the formal land administration system. Evidence from this study failed to corroborate the argument that land titling produces bankable title documents with which the owners (necessarily) obtain loans for land development (Jones, 2010). A possible explanation is that collateralised lending has not taken hold in the study area (Jacoby & Minten, 2006), which renders government's policy in this regard ineffective (Dowall & Clark, 1996). Thus, Ensminger's (1997) opinion that the expectation in the formalisation of land titles in Africa has not been met is supported by this study. This finding lends credence to the idea of evolving a hybrid of the two land administration systems in which the benefits of the two are harnessed and optimised, while the weaknesses are eliminated as argued by Ikejiofor (2006). An incentive exists for this. For instance, a relationship already exists between the two systems which has led to the informal system adopting some of the rules of the formal system and thereby overcoming some of its (the informal system's) shortcomings (Ikejiofor, 2006). However, further research is required to understand what such a hybrid system would look like.

6. Conclusions and Policy Implications

An efficient land administration system is at the core of the requirements for economic development in Nigeria. The objectives of this study were (1) to investigate the problems and benefits of formal and informal land administration systems in Lagos State, and; (2) to determine the relationship between the type of occupancy and level of physical development of land. This study elicited the land occupants' perspective on the issues surrounding the predominant land administration approaches in Nigeria. It brought to the fore the desirable and undesirable characteristics of the two land administration systems (formal and informal), exposing similarities and differences in the opinions of the formal and informal land occupants in the study area. As a result, the government of Lagos State can be aware of subsisting issues in the overall administration of land in the state and have a useful basis for formulating future land administration policies.

A key problem with the formal land administration system is that "*one needs to know someone at 'the top' to stand a chance of being allocated a land*". Impliedly, the process of land allocation in the state is still opaque despite government's interventions in the land administration system. The fact that the stages/processes of land allocation and registration are too many/long further attests to this. The Lagos State government should strengthen measures aimed at easing the process of land allocation/formalisation, perhaps by reducing the number of signatories required in the process of obtaining the governor's consent. Most citizens will continue to view land formalisation in Lagos State with disdain unless the government eliminates these problems. The government should take steps to make the process of land allocation transparent. Equitable access to land demands that there will be equal access to land availability information. This being said, the most important benefit of the formal land administration system is that there is no favouritism/discrimination of persons to own land on the basis of ethnicity – anyone can be allocated land anywhere irrespective of their state of origin. It

implies that there are no racial discriminations in the allocation of land and formalisation of land titles in Lagos State. This policy should be maintained and further strengthened by the Lagos State government.

It was found that "*after purchase, an additional settlement is required before one can build on the land*" is a major problem of the informal land administration system in the study area based on the views of the land occupants. Demands for extra payments and different forms of buffeting suffered by informal land occupants will continue to expose investors to fraudsters and create uncertainties in the land market of the research area if not curbed. The government should act to stop informal land dealers from making any form of additional demands on land buyers after purchase, especially, while developing the land. This will raise investor confidence and prevent deviants from making repeated requests for money from land occupants. More concerted efforts should be expended in the implementation of the Lagos State Properties Protection Law 2016, which has the primary purpose of curbing the activities of land grabbing miscreants.

One of the key benefits of the informal land administration system is that buyers choose the location of the land they want to buy, unlike the formal land administration system where the government allots an individual land in the place of government's choice. The adoption of this feature in the formal land administration system is highly recommended. Measures should be put in place to enhance land buyers' ability to choose the location and plot of land to be allotted in the formal land administration system, at least, on a first come, first served basis. A transparent system of land allocation should make it possible for land users' inputs to be accommodated in the land allocation process.

The study hypothesised that there is no significant relationship between the type of land occupancy and the level of development on land. Data obtained for the study supported the acceptance of the hypothesis. Thus, it is concluded that neither of the two theories – the Modernist and the Personhood – is superior to the other in explaining the level of physical development on land in the study area. This means that formally held land is not better developed than the informally held ones. Informal land administration, therefore, does not constrain land development more than formal land administration, at least not in Epe LGA. The benefits of informal land administration revealed in this study (such as accommodating land buyers' choices in the land allocation process, and low cost of transaction in land) should, as a result, be targeted in future land administration reforms in Lagos State.

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Natural Environmental Amenities and House Prices - A Hedonic Analysis for Integrated Planning

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Abstract

Environmental valuation techniques have been used to quantify the influences of environmental amenities on house prices. Although this theme has attracted pedagogical attention internationally, a Nigerian perspective relating to effective demand and value systems of natural environmental amenities is lacking significantly. The gap in local market evidence relating to this topic is apparent in comparison to other real estate attributes such as physical infrastructure. In this study, the hedonic pricing model (HPM) is used to evaluate the contributions of environmental amenities to the rental values of detached houses in a sub-market in Lagos, Nigeria. This paper, therefore, extends existing body of literature on hedonic studies by contextually assessing the broad category of natural environmental amenities in Lagos. Using a sample of 111 properties, the HPM was used to reveal value inferences of various environmental characteristics on house rents. Results show that 'green environment' as a natural amenity in the housing market studied, produces the highest variation in rental values. This study's significance lies in bringing to light the realities of market demand for natural amenities which, in turn, will help decision makers and public authorities in the strategic planning of the preservation and sustenance of natural amenities.

Keywords: Environmental Valuation; Housing Market; Natural Amenities; Physical Infrastructure; Rental Values

1. Introduction

There is a growing awareness of the importance of natural environmental amenities for public health, productivity, social and economic development, among others. For example, Littenberg et al. (2015) found that residing in areas with access to the natural environment is associated with better health, which increases the demand for specific housing attributes, such as proximity to green areas, water bodies, and other natural physical

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attractions. Consequently, such features create price premiums in property values that are often omitted or underestimated (Chrysanthou, 2016). Similarly, authors such as Odudu (2003); Adebayo (2006); Famuyiwa and Otegbulu (2012) note that environmental amenities like physical infrastructure also create price premiums in property values - due to functionality, utility and service advantages. The estimation of the worth of environmental amenities is important in urban planning, where decisions on their creation or removal are made (Liebelt, Bartke & Schwarz, 2017). It is similarly important for policymakers, property valuers, and even real estate investors who engage in large-scale real estate investment decisions. Mahmoudi (2012) explains that such estimates provide support to planners and add quantitative values to public policy debates.

Owens (2014: p.12) defines environmental amenities as "*tangible and intangible elements of the environment that contribute to the quality of life*". Examples of these amenities are green spaces, and community services. More specifically, the term refers to outdoor public goods and services that give invaluable support to human existence and activities; while also providing recreational, health, psychological, and operational benefits within its coverage area. Contextually, they are sub-divided into 'physical infrastructure' and 'natural environmental amenities'. 'Physical infrastructure' refers to the basic facilities, equipment, and installations needed to provide the utility and services crucial for the growth and functioning of an economy, community, or organisation (Otegbulu, 2010). These services can be provided by government or the private sector. Key examples include: roads, water supply, waste disposal services, and transportation systems. 'Natural environmental amenities' on the other hand, include environmental amenities which owe their existence to natural phenomena. Examples include trees, lakes, rivers, air, green and open spaces. They are aesthetic, ecological, and economical whilst contributing to the sustainability of the ecosystem. Furthermore, they possess physical and psychological effects on human health; are generally environmentally positive embodiments and create positive externalities.

The far-reaching benefits of environmental amenities are particularly crucial for cities like Lagos – a city experiencing rapid and uncontrolled urban growth. Mahmoudi (2012) reports that cities are under pressure to preserve nature and limit suburban sprawl, thus requiring public policy decision makers to have reliable information on the economic value of their open spaces. Chrysanthou (2016: p.4) similarly states that, "*by examining the effect of environmental factors on housing prices, the development of urban regions can be promoted through policies and decision-making processes in the markets of residential and urban development*".

According to Chaudhry et al. (2013), studies related to the valuation of urban environmental amenities like water bodies and green spaces are very scarce in developing countries. Therefore, this study specifically attempts to draw an analysis of the contributory influences of various environmental attributes (physical infrastructure and natural amenities) on property prices in a developing city such as Lagos. The idea is to examine how the market under examination, values physical infrastructure and natural amenities when placed in the same context. When consumer demand for

environmental amenities is ascertained and weighed on the same scale with man-made amenities (physical infrastructure), the relative importance of the environmental amenities is brought to light. As such, their individual values and *demand indicators* can be seen in a 'hierarchical' order. The necessity of this study lies in the fact that the influences of natural (environmental) amenities on house prices have not been adequately addressed in empirical studies in Nigeria when compared with the volume of research on house price influences like physical infrastructure and other housing attributes. Therefore, as a means of linking theory and practice, and because both physical and natural features of an environment are part of a holistic process, they should both be taken into consideration in research.

The generally perceived apathy for natural amenities in Nigeria, in comparison with physical infrastructure, will also be better comprehended in this study as it appears that most Nigerian cities show inadequate consideration or even total neglect for natural features and the development of open spaces. Asikogu and Asikogu (2008) submit that in Nigeria, strategies for implementation have not been adequate to ensure the protection, proper development and maintenance of natural amenities. This has led to total dilapidation, and even destruction of open spaces, green belts and reserves. The high demand for urban land has placed pressure on administrators and resulted in ever-encroaching developments on public parks, gardens and open spaces. Consequently, several neighbourhoods in many urban centres are devoid of green areas, greenery, landscapes and natural amenities. According to Asikogu and Asikogu (2008: p.1) *"...in most Nigerian cities, there is a...neglect and even destruction of the open spaces, green belts and reserves..."*. If decision makers and government - as stakeholders particularly - understand how natural amenities are internalised in property values, the contributory effects can be taxed commensurately so that governments can then make strategic efforts to preserve and sustain these natural amenities. This will help defray the costs of urban development.

This paper is structured into five sections. The first section has introduced the subject matter of the paper. The second section discusses the study's key variables using existing literature. In the third part, the method of study is presented. The fourth section includes the findings and results of the study, while the last section presents concluding remarks.

2. Previous Studies on the Valuation of Environmental Amenities

In determining the implicit prices of value inducing attributes in housing markets, several methods have been employed in previous empirical studies, with environmental amenities constituting key variables. Romkaew (2011) reports that researchers have suggested that the characteristics of local neighbourhoods and environmental quality are of great importance in the determination of residential property prices. Wise et al. (2010) observe that the difficulty in house price determination lies in integrating the evaluation of multiple benefits, quantifying benefits that may not be easily monetised, and bringing recognition of these values into infrastructure investment decisions by developers, communities, and agencies. This section reviews how previous studies have addressed the subject matter.

Simons and Saginor (2006) reviewed several articles that addressed the effect of value influencing environmental amenities on property prices. Regression analyses were used to determine the effect of contamination and amenity variables on property prices. The amenities included beach frontage, water view, parks, golf courses and new housing construction. The study included residential land uses with the hypothesis suggesting that markets can internalise proximity to positive factors. The authors found that the geographic distribution of positive amenities is not as broad as for negative amenities, meaning that most of the amenities were concentrated in some regions and lacking in others. Also, proximity to these features was positive, rather than negative.

Jim and Chen (2007) investigated home buyers' preferences in relation to outdoor environmental attributes and also assessed actual monetary values attributed to environmental externalities - using a Hedonic Pricing Model (HPM). The study area included three housing sub-markets in Guangzhou, China. The variable 'green view' (view of green space) had the most significant positive influence on house prices in the study area. 'Buildings view' (view of buildings) had a negative impact on house prices in all three housing submarkets. Though the authors acknowledged and justified the non-specification of air quality related variables in the survey, not subjecting its significance to empirical analyses within the study area remains untested. This, especially in regions characterised by compact neighbourhoods - given the awareness of the need for outdoor health and recreational opportunities - may not be in ideal consonance with the primary objectives of the study, which mentioned assessing the position of outdoor environmental quality.

Kryvobokov (2007) set out to identify the most important location attributes, which work in market conditions within different countries, and the comparative weights of their influences. A total of 81 models described in 39 sources were analysed. The method of "comparative regression", a form of meta-analysis, was applied in order to extract locational attributes and the weights of their importance. The study found that the lists of statistically significant location variables, which influence market value, are different for various real estate types. It was found that Commercial Business District (CBD) accessibility, the income level of population, prestige, demographic characteristics, accessibility to water (ocean, sea, lake) and road accessibility, were the most important attributes respectively. This was based on the frequency of use, irrespective of the regression form and real estate type. Though the author posited that this list of attributes was not universal - due to the extremely complex socio-economic nature of the market, which will never be formalised entirely because of its subjectivity and intangibility - the focus on a well-developed market may not be extendable to a property market like Lagos.

Henderson and Song (2008) assessed the marginal value of several types of open spaces in a single-family residential market. Using the HPM, variables included: access to different types of open spaces, structural features of the properties, public services, disamenity features, neighbourhood socio-economic characteristics, and accessibility measures. The findings revealed

that house prices increase with proximity to certain types of open land uses. It was also discovered that the size of nearby open spaces impacted home prices. Essentially, the value of being adjacent to public open spaces, having more public open spaces within walking distances, and being close to the nearest open space was found to be greater for properties with smaller private yards. Physical infrastructure and other urban facilities were not factored into the model. Additionally, the inclusion of only public spaces and golf courses as environmental attributes might imply model under-specification, as the broad category of such amenities encompasses more than just public spaces and golf courses. Gibbons et al. (2013) also observe that a lot of environmental hedonic studies typically focus on a single or a very limited number of environmental attributes, thereby possibly failing to account for the interplay between multiple environmental amenities and housing preferences.

Gupta, Mythili and Hegde's (2009) study attempted to capture the impact of environmental, structural and location variables on housing prices in Mumbai, India. The revealed preference approach was used to measure the significance of key variables used in a survey covering 578 households. It was found that 'proximity to water body' and 'garden proximity' were the two most significant variables in house price determination. Though the study highlighted proximity to 'railway station' as a variable in the HPM, and was classified as a location attribute, no other public physical infrastructure was considered in the study. Kyrvobokov (2006) suggests that it is the comparative influence of the attributes that is more important than how one or another attribute influences property values.

Chaudhry et al. (2013) used the HPM to study the impact of key environmental attributes like the proximity of an urban lake, having good water quality, parks/gardens, noise attenuation, clean air and traffic, on the market rates of residential plots. The study revealed that air quality showed significant improvement near green spaces. There was, however, no discussion on physical infrastructure valuation and how the market values it in relation to natural environmental amenities.

Khorshiddoust's 2013 study set one major goal. The investigation focused on establishing a correlation between housing choice and environmental characteristics in Tabriz, Iran - where house prices represented the index of payment for the characteristics. The independent variables of this HPM included 'house quality', 'house location', 'proximity to transportation services', 'proximity to business districts', 'green environment' and 'air quality'. The regression results revealed that 'distance from workplace/business districts' possessed the highest coefficient (though negative) among all independent variables. 'Air quality' (natural environmental characteristic) had a coefficient of 0.208, and 'green area' with a coefficient value of 0.014, came in much lower ranked than other variables. These implied that 'good air quality' would contribute 20.8%, and the 'availability of green' would contribute 1.4% to the prices of houses generally. The study concluded that environmental quality in the study area was well capitalised into house prices. While these results are indicative of Iran, they may not be extendable to a city like Lagos given the expected characteristic differences in both markets. Therefore, the independent

variables in the above regression are somewhat limited to their case study. This case highlights the importance of contextualising a study and its variables.

Melichar et al. (2009), developed an HPM to quantify the influence of structural, accessibility and environmental attributes on the price of housing in Prague. Proximity to the nearest urban forest was an environmental variable and a major focus of the study. Other independent variables of the study included the size of flats (structural variable), distance to the city centre (accessibility variable), the proximity to the nearest tube station (accessibility variable), and distance to the nearest urban forest (environmental variable). Results reveal that a 1km increase in the distance from the nearest urban forest reduced house prices by an average of 1.96%. In the light of focusing on the value of an urban forest on house prices, the study also made use of limited independent variables.

Babawale and Johnson (2012) explored the use of an HPM to 'specify' and 'rank' housing attributes that significantly influence the prices of duplexes in a sub-market in Lagos, Nigeria. Independent variables used included: number of bedrooms, number of bathrooms, building size, balcony, construction quality, garage, boys' quarters, swimming pool, plot size, quality of bathroom, distance to work, view of lagoon, availability of schools, availability of shopping centres, availability of recreational facilities, and neighbourhood security. The only natural environmental variable – view of the lagoon, which was included as an independent variable - had a coefficient estimate of 0.0601 (a 6% contributory influence on property prices) and ranked 8th among the variables tested in the model. The study did not robustly comprise of environmental amenities and as the authors mention and was "*limited by the information typically found in the area under reference*" (Babawale & Johnson, 2012: p.4).

Famuyiwa and Babawale (2014) examined the relationship and pricing effects of physical infrastructure on house rentals using the HPM on a housing market in Lagos Nigeria. The results showed the contributory influences of physical infrastructure to house prices in the study area. The study however explicitly concentrated on physical (human-made) infrastructure.

One thing common to all the studies reviewed is the impact that environmental amenities have on property prices. This present study contributes to knowledge by demonstrating effective demand levels for natural amenities and physical infrastructure within a middle-class housing submarket in Lagos, Nigeria.

3. Study Area and Research Methods

This study covered Yaba Local Council Development Area (LCDA) of Lagos State which is one of the two LCDAs of Lagos Mainland Local Government Area of Lagos State, Nigeria. It is one of the 57 LCDAs of 20 Local governments in Lagos State. Lagos itself is one of the 36 states that make up the Federal Republic of Nigeria. Though Lagos ceased to be the administrative and political capital of Nigeria in 1991, it remains the centre

of commerce and economic development with the highest population density in the country (Lagos State Government, 2017). The study area is located within the geographical coordinates 6° 29' 23" North, 3° 23' 1" East and remains one of the few areas in the metropolis that evinces the colonial heritage of Lagos.
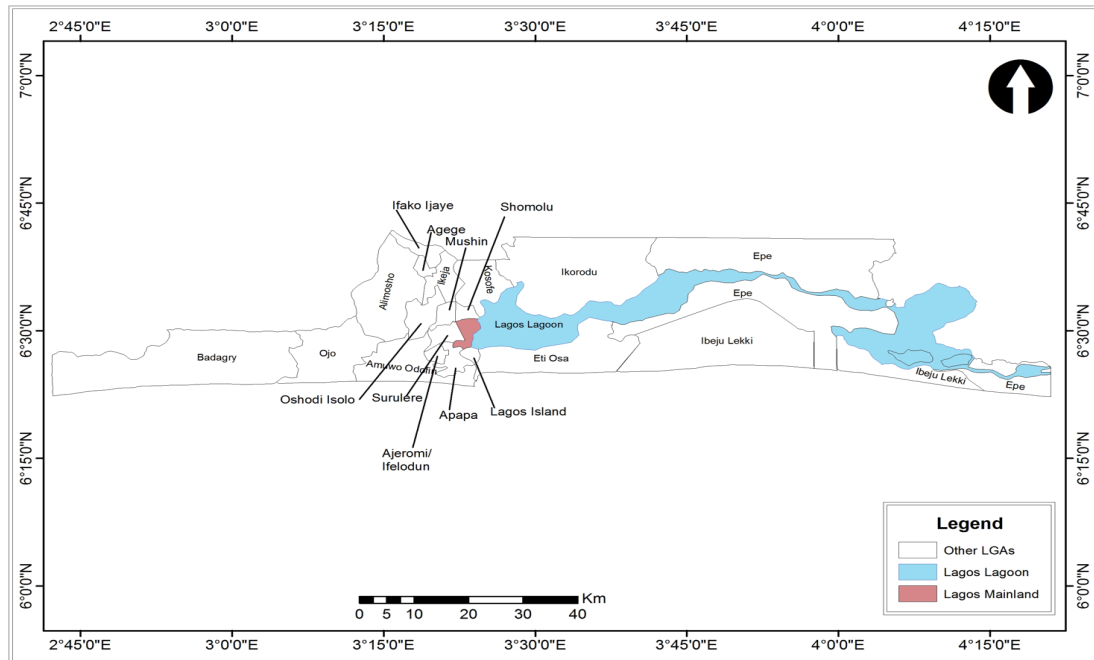
Figure 1: Map of Lagos State, Nigeria Showing the 20 Local Government Areas

Yaba is characterised by mixed land uses and people of mixed socio-economic backgrounds. It is one of the commercial nerve centres of the Lagos metropolis, though some portions of it (Makoko and Iwaya areas) mirror rural features. These areas, due to their slum characteristics, were not covered in this study in order to avoid possible bias in the aggregated results. Such areas characteristically have little or no amenities such that the variables employed would have no significance or relevance in the results. The particular use of Yaba area for study was due to its environmental characteristics. It is one of the few locations in Lagos possessing a fair amount of greenery such as trees - conceivably influenced by its colonial heritage.
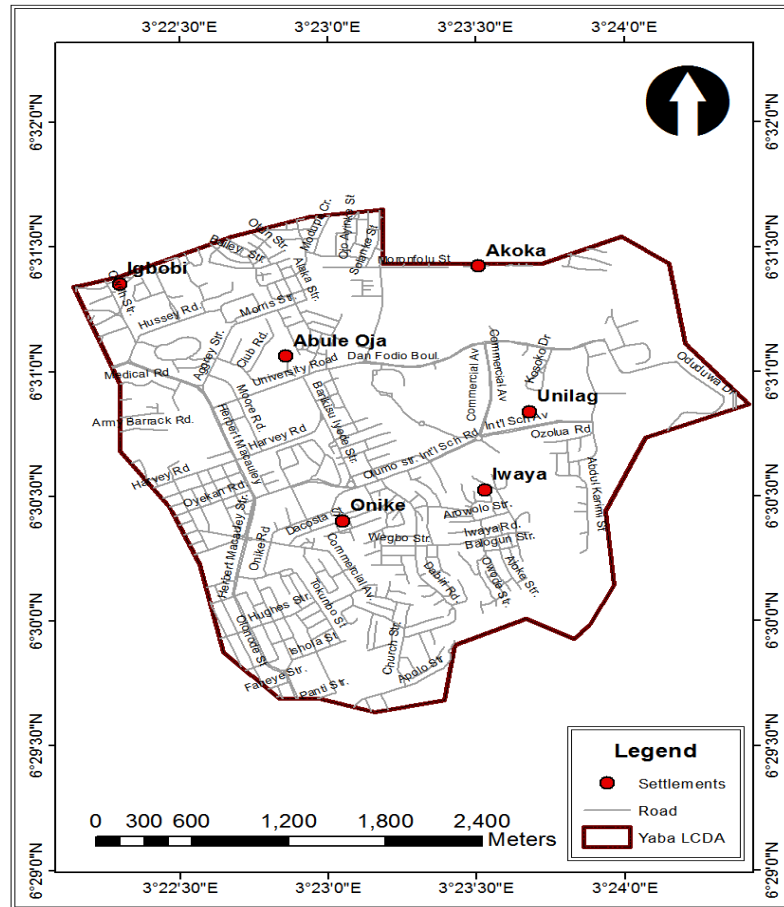
Figure 2: Study Area – Yaba Local Council Development Area, Lagos, Nigeria

In Lagos, official data of housing transactions and characteristics are generally not available. Though the Lands Registry holds information pertaining to various land plots, such information may not be readily available for 'public consumption'. Consequently, the main research instrument used was the structured questionnaire. The sample selection entailed the use of a two-stage sampling technique. In this sampling technique, first, the researcher selects a few groups or clusters (which are usually geographically defined and randomly chosen), and then from each cluster, the researcher selects the individual sampling units by random sampling to obtain a two-stage cluster sample (Valliant et al., 2013). Hence, Yaba LCDA (the study area) was fragmented into smaller non-overlapping areas (streets). In the second stage, four questionnaires were administered on each street by a random selection of four detached buildings on each street. A total number of 45 streets had been identified in the study area. 180 questionnaires were therefore administered. The questionnaires were handed to household heads (or other property occupants deemed capable of responding to the questions, where household heads were unavailable).

The completed questionnaires were cross-checked with physical site assessments upon collection for objectivity in variable measurements – especially 'plot size'. However, this check was not possible in all cases, as not all respondents gave the field assistants such access. This reduced the

usable questionnaires. Therefore, from 135 questionnaires retrieved, only 111 were found suitable for analyses. The dependent variable 'rental value' was not included in the questionnaires. This information was sought from qualified estate valuation practitioners within the operative jurisdiction. The focus on detached buildings was borne out of its neglect in the literature. More importantly, detached properties are among the highest priced class of residential properties in most markets with occupiers who are more likely to be particular about the various features and characteristics of their properties. Hence, developers in the study area would be able to meet buyers' tastes and preferences easily.

The data gathered was analysed using both descriptive and inferential statistics. The HPM was used to reveal value inferences of various environmental characteristics used in the study. This model involves the isolation of the underlying price paid for each individual characteristic of the property using regression techniques (Chau & Ng, 1998). In Famuyiwa and Babawale (2014), the pricing analysis is based on transaction information and related measures of theoretical variables that enable empirical examination of house prices. This is due to its clearly defined objective approach depicted in the analysis of *effective* demand as opposed to perceptions of demand. For these reasons, it has been a preferred environmental valuation technique. Franz (2007), explains that the HPM has become the standard methodology for examining price determinants in real estate research. The use of rental values in hedonic pricing has been demonstrated in existing studies, for example in Hoesli et al. (1997) and Weinberger (2001). Weinberger (2001) submits that rental rates are more abundant and dynamic, thus more sensitive to changes in the market, allowing for more robust models. In the Lagos property market, this is particularly true. The Lagos property market is known to have a more active property rental market than its capital/sales market as evinced in property market transactions.

The variables for the study were drawn from similar studies (Babawale & Johnson, 2012; Famuyiwa & Babawale, 2014) and then modified to suit the specific circumstances. This "modification" was also attained through a pilot study. During this initial trial run, questionnaires were administered to a total of 14 participants (10% of the projected sample size). The pilot study showed that the scales used in the questionnaires were adequate. Grammatical instructions were simplified and made easily understandable in the main study (as lessons learnt from the pilot). Additionally, questions were shortened as respondents were found to get frustrated with long questions. The pilot was also used to identify variables relevant to net rental values of houses in the study area. As a general rule, it is better to over-specify the HPM than to under-specify it, otherwise 'omitted variable bias' could occur (Johnson-Gardner, 2007). This happens when key variables that should be included in the HPM are not included which leads to results that over-express the importance of an included independent variable's explanatory power.

A quintessential estimated equation for an HPM, in a semi-logarithmic (log-linear) form, may be specified in the following form:

$$\mathbf{P_n} = \beta_0 + \beta_s S_{ij} + \beta_l L_{ij} + \beta_n N_{ij} + z_{ij}$$

Where:

$\mathbf{P_n}$ = Annual rental (value) in Naira of properties under study.

$\boldsymbol{\beta_0}$ = The constant.

$\boldsymbol{\beta}$ = Vector of the natural log of explanatory structural, locational and neighbourhood characteristics of the property.

$\mathbf{S_{ij}}$ = The regression coefficient representing structural effects on housing rental value.

$\mathbf{L_{ij}}$ = The regression coefficient representing location effects on housing rental value.

$\mathbf{N_{ij}}$ = The regression coefficient representing neighbourhood effects on housing rental value.

$\mathbf{z_{ij}}$ = The random error and stochastic disturbance term (for unobserved parameters) that is expected to take the form of a normal distribution with a mean of zero and a variance of $\boldsymbol{\alpha^2_e}$.

The 'constant' represents the starting point of any examination of results produced by HPM, and it is the base to which other variables are added (Dunse & Jones, 1998). The random error represents non-observed factors omitted from the analyses. Table 1 below describes the variables used, their acronyms and measurements.

Table 1: Definition of Regression Variables

Variable Definition	Acronym	Measurement
Net Rental Value	RENT	Measurement in Nigerian Currency (N) – Naira
Structural Quality of Property	STRQUAL	Good =1; Poor= 0
State of Repair of Property	REPAIR	Good =1; Poor = 0
Living room	LIVIN	Numerical value
Bedroom	BED	Numerical value
Bathroom	BATH	Numerical value
Store	STORE	Available =1; Not available= 0
Balcony	BCNY	Available =1; Not available= 0
Plot Size	PLOT	In Square metres
Natural Lighting	NTLIGHT	Good =1; Poor = 0
Distance to Closest Central Business District	DISCBD	"1" if within 15 minutes walking distance, "0" if otherwise
Distance to Recreation Centres	DISRECR	"1" if within 15 minutes walking distance, "0" if otherwise
Neighbourhood Security	SECRTY	Good =1; Poor = 0
Neighbourhood Serenity	SERENE	Good =1; Poor = 0
Condition of Road Surface	ROAD	Good = 1; Poor= 0
Government Water Supply	WATER	Good = 1; Poor = 0
Government Waste Disposal Services	WASTE	Good = 1; Poor= 0
Street Lightings	SRTLIGHT	Good = 1; Poor= 0
Nature of Drainage	DRAIN	Good = 1; Poor= 0
Green Environment in Neighbourhood (e.g. trees, flowers)	GREEN	Good = 1; Poor= 0
Private Garden Space	GARDEN	Good = 1; Poor= 0

Wind Quality in Building (Ventilation)	WINDQUA	Good = 1; Poor= 0
Landscape of Neighbourhood	LSCAPE	Good = 1; Poor= 0
View of Navigable water body	VIEWWAT	Good = 1; Poor= 0

4. Findings and Discussion

In Table 2 the descriptive statistics of the sampled residential properties in the study area are displayed. Apart from 'net rental value', 'living room', 'bedroom', 'bathroom', and 'plot size', all other variables were estimated using binary measurements**.** The average net rental value (dependent variable) of detached buildings in the area is N1,604,879 while maximum and minimum values are N3,600,000 and N1,450,000 respectively.

Table 2: Descriptive Statistics of Regression Variables

	MINIMUM	MAXIMUM	STD	MEAN
RENT	1,450,000	3600000	238030	1,604,879
STRQUAL	.00	1.00	.24085	.92333
REPAIR	.00	1.00	.32048	.81775
LIVIN	1.00	2.00	.04822	1.61098
BED	3.00	5.00	.28616	4.00723
BATH	2.00	5.00	.48250	3.59881
STORE	.00	1.00	.49983	.555641
BCNY	.00	1.00	.22081	.880378
PLOT	592.73	1,406.91	193.68204	736.75291
NTLIGHT	.00	1.00	.00985	.68080
DISCBD	.00	1.00	.39225	.61046
DISRECR	.00	1.00	.40391	.42907
SECRTY	.00	1.00	.36119	.64816
SERENE	.00	1.00	.00839	.32832
ROAD	.00	1.00	.40071	.63784
WATER	.00	1.00	.23641	.60120
WASTE	.00	1.00	.21093	.76059
SRTLIGHT	.00	1.00	.38658	.32199
DRAIN	.00	1.00	.47550	.66493
GREEN	.00	1.00	.10993	.78036
GARDEN	.00	1.00	.09001	.29732
WINDQUA	.00	1.00	.33029	.62435
LSCAPE	.00	1.00	.30723	.57446
VIEWWAT	.00	1.00	.00033	.00778

Source: Field Study, 2016.

From Table 2, it can be seen that the number of bedrooms ranges from 3 to 5 with a standard deviation of 0.28616, implying a low dispersion around a mean of 4.00723. The mean for 'natural lighting' is 0.68080. Sixty-five per cent (65%) have 'good neighbourhood security', while the conditions of road surfaces of about 64% of these properties are good. Only about 60% of the properties have access to public pipe-borne water, and about 76% dispose of their domestic waste using government waste disposal services. Only about 32% of the properties have streetlights around their premises. Other variables can be interpreted from the mean values and standard deviations in the table accordingly.

4.1 Model Evaluation

There is little guidance from economic theory about the proper functional relationship between house price and its attributes (Selim, 2008). The estimation and selection of appropriate HPM have therefore been of significant concern. Widely used functional forms include the 'linear' form, the 'semi-logarithmic' form (log-linear) and the 'log-log'. Consequently, this study analysed field data using these three models. The three models utilised, depict the preponderance of these methods in similar studies. All three models used, (only the log-linear model shown) yielded significant coefficients and good model statistics. The log-linear model performed most satisfactorily, in terms of its ability to predict property value influences in the study area as indicated by its R^2 and Adjusted R^2 statistics of 0.790123 and 0.723652 respectively. An R^2 of 0.790123 infers that about 79% of variance in rental values is accounted for by the joint influence of all explanatory variables. The adjusted R^2 explains only the variation accounted for by the significant variables. The individual relationship of each of the attributes to value is shown in the second column of Table 3 (tagged 'coefficients'). Babawale and Johnson (2012), remark that high values of R^2 do not necessarily ensure the accuracy of models. Hence, tests were carried out to check for 'multicollinearity' and 'heteroskedasticity'.

Multicollinearity is a statistical phenomenon when two or more independent variables in a multiple regression model are highly correlated (Xiao, 2017). This is undesirable in statistics as the estimate of one variable's impact on the dependent variable while controlling for the others tends to be less precise. 'Heteroskedasticity' on the other hand refers to a statistical phenomenon where the variance of the dependent variable varies across the data. Babawale and Johnson (2010) imply that the variance of the errors of the data increases or decreases. The White's test and Variance Inflation Factor (VIF) statistics were used to check for heteroskedasticity and multicollinearity respectively. In the White's Test, the F-statistic of 1.682110, the Obs*R-squared (51.481659), and p-values indicate constancy of the random error. *The P-value* of 0.043974 is the probability that random error is not heteroskedastic (not higher than 5 per cent). Table 5 shows a maximum VIF value of 2.99256, which is low, desirable and indicative of the absence of multicollinearity in the model. If the VIF of a variable exceeds 10, that variable is said to be highly collinear and will pose a problem in the analysis (Hair et al., 2006 *cited in* Hill & Throshani, 2009). All these imply that the data fits well into the regression line and the model is adequate in explaining changes in rental values for the category of

property in the study area. Consequently, the model appears adequate for predicting rental values of detached buildings in the study area.

Table 3: Regression Results

	Log-linear Model	
Variables	**Coefficients**	**T- statistics**
STRQUAL	.191025	1.733654
REPAIR	.081544	1.380998
LIVIN	.084432	3.994811
BED	.072237	3.410468
BATH	.061126	4.736524
STORE	.090283	3.028461
BCNY	.152038	3.842652
PLOT	.008826	3.947261
NTLIGHT	.009435	6.884632
DISCBD	.280001	1.920375
SECRTY	.000983	1.677463
ROAD	.120567	1.814028
WATER	.097635	2.376251
WASTE	-.039012	-3.429712
SRTLIGHT	.050754	1.092836
DRAIN	.009127	2.348283
GREEN	.170362	2.736555
WINDQUA	.011275	1.983463
LSCAPE	.093552	5.012254
VIEWWAT	.034900	4.773652
Constant	14.994821	37.839204
R^2	.790123	
Adjusted R^2	.723652	
F-statistic	19.336092	
Prob	.050000	

Source: Field Study, 2016

Table 4: White's Test

F-Statistic	1.682110	Probability	0.043974
Obs*R-squared	51.481659	Probability	0.408321

Table 5: Collinearity Statistics

	VIF
STRQUAL	1.73635
REPAIR	2.00483
LIVIN	1.04877
BED	1.94763
BATH	1.04987
STORE	1.77465
BCNY	2.53684
PLOT	2.99256
NTLIGHT	1.02736

DISCBD	1.99715
SECRTY	1.37541
ROAD	2.55301
WATER	1.37599
WASTE	1.90548
SRTLIGHT	2.40918
DRAIN	1.28285
GREEN	2.48635
WINDQUA	2.34975
LSCAPE	1.11906
VIEWWAT	1.65421

4.2 Interpretation of Independent Variables

The results from the log-linear model as seen in Table 3 indicate real estate attributes (variables) that predict rental values as described in Table 1. Variables with negative coefficients imply an inverse relationship with rental values and vice versa. The coefficients in the log-linear model are interpreted as variations in rental values when there is a change (per measurement unit) in a given variable. Accordingly, 'good structural quality' contributes 19% to rental values. For every additional living room, bedroom and bathroom, rental values increase by 8.4%, 7.2% and 6% respectively. Other independent variables in the table can be interpreted in the same way. For variables categorised as 'natural environmental attributes', the study suggests that 'green environment in neighbourhood' accounts for 17% of variation in rental values, while 'good landscape' contributes up to 9.3% to rental values.

In terms of physical infrastructure; 'government waste disposal services' possesses an adverse effect on rental values implying that houses serviced by government waste management agencies will likely experience a 3.9% decline in rental value, thereby contradicting existing theory of the positive effect which infrastructure has on property values. Further investigation into this suggests that this is because the erratic and unreliable state of government services has given rise to aesthetic issues with waste littering the streets due to delays in waste collection. This thereby constitutes a negative externality and impacts negatively on rental values.

Although the distance to Central Business District (CBD) possesses the highest coefficient value (confirming location as one of the most significant factors to property value), its significance level is low. Natural environmental amenities performed almost at par with human-made amenities from the coefficient values. However, the strongest unique contribution (asides distance to CBD) explaining rental values is 'green environment in neighbourhood' with the highest coefficient value of 0.170362 (17%). This implies that this particular variable is highly valued. Natural environmental amenities like 'view of navigable water body', account for only about 3.4% of variation in rental values in the study area. Some independent variables which are excluded in the regression table are due to their insignificance, e.g. 'distance to recreational centres (DISRECR)'. The variables 'plot size (PLOT)' and 'private garden space (GARDEN)' were found to highly correlate, thus introducing the problem of

multicollinearity. This was surmounted by eliminating the independent variable 'GARDEN'; from the model. The resultant regression equation derived from the (standardised) coefficients is as follows:

Equation 1: Regression Equation of Log-Linear Model

RTVL = 14.994821 + 0.191025STRQUAL + 0.081544STREPAIR + 0.084432LIVIN + 0.072237BED + 0.061126BATH + 0.090283STORE + 0.152038BCNY + 0.008826PLOT + 0.009435NTLIGHT + 0.280001DISCBD + 0.000983SECRTY + 0.120567ROAD + 0.097635WATER - 0.039012GWASTE + 0.050754SRTLIGHT + 0.009127DRAIN + 0.170362GREEN + 0.011275WINDQUA + 0.093552LSCAPE +0.034900VIEWWAT

The results of the study appear to be in consonance with other emerging housing markets, like China. This is in reference to Jim and Chen's (2007) study which found 'green view' to be the most significant influence on the housing market in Guangzhou. In this study, however, 'location' was found to be a more important contributory factor to house rental prices than environmental features. However, among environmental features, the natural environment (green environment) was found more important than any physical infrastructure. Similarities were also observed in results with other studies, highlighting the generic nature of environmental attributes to property values across study areas. For example, Khorshiddoust's (2013) study, found environmental characteristics possessing significant coefficients, where 'Green Area' with a coefficient value of 0.014 was found to be significant. Perhaps this could be due to the fact that Khorshiddoust's study also covered a developing country. The findings of this study also confirm the statement in Melichar et al. (2009: p.2) that "*with few exceptions... Studies find that homes adjacent to nature and open spaces are typically valued at about 8 to 20 per cent more than comparable properties*".

5. Conclusion

As previous hedonic pricing studies have shown, the effects of environmental amenities on the price of housing are measurable and significant. This study aimed to evaluate the implicit prices of both human-made and natural environmental amenities in rental values of detached residential houses within Yaba LCDA in Lagos State, Nigeria. It was carried out using the hedonic regression model on 111 rental observations. The study employed primary data including information on property rentals and attributes of detached houses. The aggregated influence of various housing attributes was analysed using the log-linear model. The model accounted for 79% of variations in rentals of detached houses, which is good as it is greater than the 70% threshold value posited by Pallant (2005).

The findings suggest comparable influences of natural environmental amenities with human-made amenities in terms of coefficient values. This provides evidence and confirmation of the almost equivalent importance of environmental amenities, whether natural or human-made in the sub-market of detached properties in Yaba LCDA. In spite of the generally perceived

apathy for natural amenities in Nigeria as featured in the writings of previous authors such as Asikogu and Asikogu (2008), the effective demand for natural amenities is comparable to that of physical infrastructure in the study area. This implies that housing consumers value, and are willing to pay for, natural amenities as well as physical infrastructure in the study area.

The evaluation of natural environmental amenities and human-made amenities should, therefore, be equally considered in neighbourhood and town planning schemes, especially where cost considerations are decisive factors. The demand for housing necessarily embodies the demand for places, access to public and private services, physical infrastructure and natural environmental amenities. Therefore, to achieve sustainable environments, those involved in regional planning processes must consider the interaction between human-made environmental amenities and the natural environment, as both are very crucial to the well-being of inhabitants, and sustainability of the built environment.

In Lagos today, the rapid pace of 'creating land' for new buildings has left several parts of the city without green spaces, or natural amenities. According to Mensah (2014), in a study of some selected African cities including Lagos, rapid urbanisation is attributed to the conversion of many reserved green spaces for development to meet the soaring urban population. The colonial fabric of the study area; characterised by well-planned, open spaces, green fields, trees, and other natural features, is fast disintegrating as observed in the field study - even though they still possess price premiums as evidenced in rental values. Additionally, the state of physical infrastructure is a major source of concern for both stakeholders and decision-makers. Therefore, the way and manner in which they are deployed are crucial in the development process, due to their externalities and monopolistic features.

The main recommendation arising from this study is hinged on the fact that environmental amenities (both human-made and natural) create price premiums, and therefore should be well developed and commensurately taxed as indicated in their contributory effects to property values/effective demand. This supports a holistic approach to urban planning and development. The benefits on health, productivity and economic development cannot be overemphasised.

In conclusion, the influences of both human-made and natural environmental amenities on property prices should be given increased attention in empirical discourse. This study can be extended to cover consumer preference of environmental amenities, cost-benefit analyses, as well as the willingness-to-pay for environmental amenities - especially in developing markets.

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Housing Affordability, Government Intervention and Housing Informality: An African Dilemma?

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Abstract

The imperfections associated with housing markets have often been the basis for government intervention policies. The purpose of this article is to show the need for governmental responsiveness regarding local realities in structuring policies in specific sectors of the housing market. It shows how government intervention contributes to housing supply and the consequences of this in developed and developing countries. Conversely, it also explores how government intervention in co-operative societies has been utilised in various countries to address housing supply inelasticity, the outcome of this, and lessons that can be learnt. This study takes the form of a literature review and a quantitative survey of co-operative societies in Lagos, Nigeria. Its analysis is based on multivariate techniques. The quantitative survey is utilised to show a specific case of government inactivity in the co-operative housing sector, while the literature review is utilised to showcase government intervention in co-operative housing in four countries. The study argues that while government interventions (by way of planning regulations) often leads to house-price increases and unaffordability in developed countries, it has contributed to the emergence of informal settlements in several African cities. Additionally, while co-operative societies have been historically recognised to reduce inelasticity, improve supply and affordability in developed countries, they have yet to be recognised and supported in African cities like Lagos. It is concluded that while housing affordability is a dilemma that faces both developed and African countries, informality arises as a uniquely developing country response to unaffordability. It is recommended that, learning from history, African governments should recognise and integrate co-operative societies into their housing supply system. Furthermore, governments should implement appropriate policies to guide their activities towards reducing supply inelasticity, increasing affordability and the reduction of ever-expanding informal communities.

Keywords: Co-operative Housing; Co-operative Societies; Government Intervention; Housing Affordability; Housing Informality

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1. Introduction

The global quest for housing affordability accentuates the need to see housing as both a social and economic good. Although housing is highly capital intensive, as a social good decent housing has to be made accessible to all income classes in every society. The economic value of housing, on the other hand, lies in the forward and backwards linkages it provides to several industries, opportunities for massive employment generation and its significance as an asset base for most households. However, its dual nature as both a social and economic good has resulted in governments' intervention in the housing market to implement social policies (such as home-ownership or housing affordability) and economic policies (such as revenue generation and fiscal controls). In some cases, these policies achieve positive outcomes, while in others, negative externalities occur. These negative aspects further exacerbate the risks inherent to housing supply with an impact on affordability and accessibility for economically vulnerable groups.

The primary question that this article presents is '*what lessons can be learnt from developed countries in the utilisation of local structures such as co-operative societies to address the prevalence of housing informality in Africa?*' Therefore, the purpose of the article is to highlight the need for governments to be more responsive to local realities in structuring policies, especially in specific sectors of the housing market. This is because government policies often produce intended and unintended outcomes, some of which are positive, and others negative for housing affordability. An exploration of the consequences of government intervention in the housing market is important because housing suppliers' reactions to government policies influence the state of housing supply in each particular economic and national context. This is because it is their decision on whether to produce, when to produce and how to produce housing that affects the elasticity of supply and house prices, among others.

Interestingly, governments will often respond to housing suppliers' reactions by way of more regulations which could also yield both polarised, intentional and unintentional consequences. The interplay of these market and regulatory forces, arising from the uniqueness of the dual nature of the housing market contribute to its highly imperfect nature. This study seeks to explore aspects of these dynamics, with the aim of offering insights and lessons from both the global North and South to benefit housing policy-makers in African cities. Furthermore, this study also contributes to the literature on housing systems in general.

This paper is laid out in four sections. The first section shows how government intervention (by way of planning regulations) in the housing market of developed countries have produced reactions from housing suppliers that brought about unintended adverse outcomes. The second explores how government policies have led to a different dimension of unintended adverse outcomes in African cities. Conversely, the third section shows how, in developed countries, government intervention in the co-operative housing market has generated positive outcomes for house prices and affordability. These sections are based on extensive literature reviews. Finally, the fourth section presents the findings of a quantitative survey. It

questions the extent to which the co-operative sector in one of Africa's most populous cities (Lagos, Nigeria) could be utilised as a deliberate tool for government intervention to bring about positive changes in housing affordability and a check on informal settlement proliferation in the state. A survey of co-operative leaders and analysis of findings provides an overview of the need for a re-direction of government policy to address local realities, especially in cities where there are abundant opportunities for collaborating with existing networks.

2. Literature Review

2.1 Housing Suppliers and Affordability in Developed Countries

In every country, the urban planning system has the role of mediating land use activities in response to the fixed nature of land supply and the competitive uses to which land is to be put. Furthermore, these systems also determine the level and the rate at which land is released for development. The planning system is said to affect housing supply in three ways; by regulating the amount of land that is made available in a given period of time; two, the length of time it takes for land to be released or approved for construction; and three, the (un)certainty of obtaining planning permission (Mayer & Somerville, 2000; FTI Consulting, 2012; Monkkonen & Ronconi, 2013). The planning system and the regulations that condition it, are both firmly in the control of governments.

Like all profit-seeking producers, housing developers analyse market opportunities and the possibility of maximising their profits, which in turn, influences their decision to construct housing units. Thus, when there is both sufficient demand for new developments, and housing developers expect to earn an adequate return on their investment, they will respond by purchasing land and other resources needed to produce housing and put them on the market. Thus, their actions achieve equilibrium in the short-term. Often, the decision to develop housing stems from the availability of incentives to do so, and the absence of government restrictions and delays in the process.

Researchers such as Glaeser and Ward (2009), Paciorek (2013) and Gyourko and Molloy (2014), suggest that the response rate of suppliers to changes in market conditions are sluggish, arising from both governmental and non-governmental induced factors. Importantly, Worthington (2012) observes that strong housing demand with either limited or slow-to-react housing supply are the most obvious and cited reasons for increases in house prices with an associated negative effect on housing affordability. These factors, in turn, then justify more government intervention in the market for particular groups. Government intervention comes by way of regulations which also influence the quality, quantity, and pricing of housing. This is evidenced in current research that shows housing supply is reduced where there are strict land use regulations which increase the cost of housing production and hence house prices (Mayer & Somerville, 2000; Monkkonnen & Ronconi, 2013). Literature in the US hypothesises that cities with more stringent land-use regulations have lower housing supply elasticity, and hence higher housing and land prices (Monkkonnen & Ronconi, 2013). Higher demand for housing would lead to increased pricing in areas that are constrained by governmental or geographical restrictions to supply more housing. However, in areas that

are not so constrained, construction activities increase. In addition, Glaeser and Gyourko (2017) highlight that when building activities are unrestricted by regulation or geography, housing supply curves seem relatively flat, so that production costs remain low. Hilber and Vermeulen (2010) further note that a lack of house-building activity is coupled with strong demand and increased house prices, which in turn, has a negative impact on access to housing for first-time buyers.

In general, these studies posit that in developed countries, the theoretical implications of government intervention occasioned by regulation are the emergence of financial and time costs that increase supply inelasticity. This trend is due to the unwillingness of suppliers to take such risks. This reduces housing supply, increases house prices, and hence reduces housing affordability for vulnerable households. In the next two sections, similar issues of housing affordability are considered in the African setting, in which housing supply is held in a different context, and the responses of a predominantly informal housing supply network to government's policies have produced different outcomes.

2.2 Affordability, Housing Suppliers and Informality: The African Experience

The formal market supplies only a minor proportion of housing in African cities. In a country like Nigeria, the formal sector's annual supply is about 100,000 housing units compared to 900,000 units supplied by the informal sector (The World Bank, 2016). Housing in informal communities is mainly to be found in the inner cities and the peri-urban communities close to cities.

Over time, these informal settlements take on the characteristics of slums, conceptualised by The World Bank (2008) as the physical manifestation of several overlapping forces such as deep poverty, unrealistic regulatory frameworks, ill-conceived policies, inadequate urban planning, weak institutional capacity, and macroeconomic factors. As shown in Figure 1, the slum penetration ratio in urban Africa is quite high, with 55% of the urban population living in slum settlements in Sub-Saharan Africa. This ratio is as high as 80% in Mauritania, 70% in Niger, 76% in Sierra Leone, and 50% in Nigeria. Similarly, according to UN-Habitat (2014), 61.7% of Sub-Saharan Africa's urban population are slum dwellers. High slum prevalence rates, therefore, signify the response of households to lack of access and affordability of decent housing in the formal sector and dependence on informal suppliers (The World Bank, 2008).
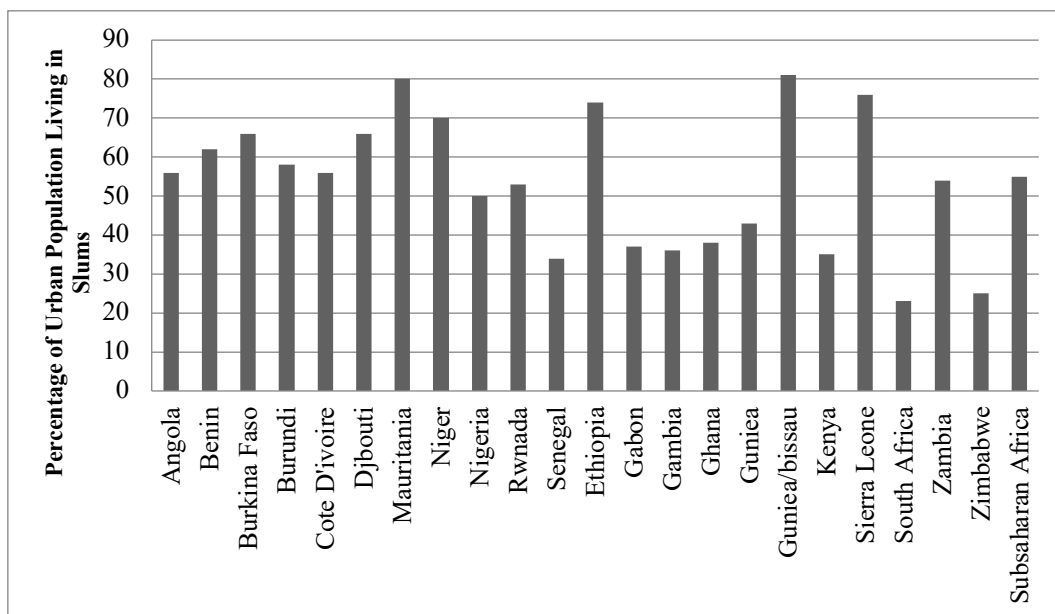
Figure 1: Slum Prevalence in Africa, 2014
Source: The World Bank http://data.worldbank.org/indicator/EN.POP.SLUM.UR.ZS

With a few exceptions, housing markets and housing finance structures in Africa are also still predominantly informal (Centre for Affordable Housing in Africa, 2015). The strategy of divestiture of housing provision to private entities in the formal market (corporate suppliers) has not recorded much success. This is attributable to the lack of development of the financial institutions that make such ventures a feasible and viable one. This is reflected in the lack of access by corporate suppliers to long-term capital market derived funds which are required in financing housing supply. Thus, corporate private-sector housing projects are usually directed towards middle/high-income sales - those who can afford to pay market rates for housing and also qualify for mortgage loans (Eni & Danson, 2014; Centre for Affordable Housing Finance in Africa, 2015). Those who do not fit this category must, therefore, resort to incremental building and construction, on land purchased in the peripheral areas of the city and inner cities, wherever possible.

The 'affordable' housing in informal communities are therefore mainly supplied by individuals and families. These houses have usually been financed with household savings remittances, loans, and gifts. Since they form a significant proportion of housing suppliers in African cities, the resulting slum proliferation is inevitable (Palmer & Berrisford, 2015). Also, where a significant proportion of those exhibiting a housing need are in the 'subprime' category, such that they cannot afford market-priced housing, interest in supply by corporate housing developers may not be significant. The implication of this is that households resort to cheaper shelter in informal settlements.

Like the situation in the developed countries, where planning regulations reduce affordability through increased house prices; corporate housing suppliers in Africa are compelled to shift the increased costs of planning

regulations to house prices and hence cater to the housing demands of the lower proportion of society in the medium to high-income band. However, for the informal suppliers who form the bulk of the market, the reactions are different: they react to costly and lengthy planning processes by merely not adhering to planning regulations, thereby increasing the incidence of substandard housing, and on a larger scale, informal settlements (Centre for Affordable Housing in Africa, 2015; Palmer & Berrisford, 2015; Bah, Faye & Geh, 2018). These settlements then become attractive to other low-income home-seekers. Thus, rapid urbanisation coupled with increased housing needs has led to the rapid expansion and proliferation of slums.

2.3 Outcomes of Government's Policies on Housing Problems

The preponderance of slum communities in cities has not gone unnoticed by African governments. Palmer and Berrisford (2015) recounts that historically, in the 1950-1960s, governments' responses to housing problems had been the direct construction of public housing and slum clearance programs both of which were largely inefficiently handled. Thus, countries such as Nigeria, Malawi, Zambia, Kenya, and Cote D'Ivoire had to give up their national housing programs when set goals could not be met due to high costs (Palmer & Berrisford, 2015). Moreover, many African governments soon embraced neo-liberal approaches which had swept global economies in the previous decade, abandoning direct housing provision, taking on an enabler approach and outsourcing much of their social services provision (including housing) to the private sector. Furthermore, and perhaps in response to several calls to reduce the pressure of demand for land and housing services in key cities (UN-Habitat, 2014), several African governments set up satellite towns on the city's periphery. Some of these became slum communities, as the ubiquitous informal settlements spring up to service isolated, higher-income satellite towns.

Clearance of slums and informal communities, which often generates significant inequities and public outrage, continues to be a popular response of governments. For instance, the Zimbabwean government commenced the demolition and burning of slums in Harare and other cities in an attempt to restore order by ridding the cities of illegal housing (Hove, Ngwerume & Muchemwa, 2013). In Nairobi, Kenya, security reasons were cited in the demolition of the Muoroto and Mwariro slums in the early 1990s (Otiso, 2002). Similarly, in Lagos, Nigeria, recent clearance of Otodo-Gbame informal community and Ijora Badia were as a result of poor living conditions, security concerns and a quest for complementary housing for a 'mega-city' status. However, slum clearance often results in the formation of new slum settlements elsewhere as formal sector housing is not accessible to the populous who reside in these communities. In slum resettlement programmes, demolition takes place and redevelopment/reallocation of new units rarely occurs (Palmer & Berrisford, 2015). Residents generally move to a new location to create new informal communities.

In the final analysis, it is notable that the limited success achieved by African governments' policies as direct housing suppliers has led to equally unsuccessful divestiture to private, corporate housing suppliers. It is also notable that during periods of intense housing need in countries in Europe and

parts of Asia; co-operative societies emerged as alternative housing suppliers, and with favourable government policies, they were able to achieve a significant level of success (Cameron & Wood, 2012). The next section of the paper is devoted to the role of these societies in housing markets across the world.

2.4 Role of Co-operative Societies in Housing Supply

Co-operative societies consist of a group of people who have voluntarily come together to enhance their quality of life through working together for the interest of all. The emergence of co-operative societies is generally credited to the Rochdale Society of Equitable Pioneers which was founded in 1844, with membership consisting of a group of 28 weavers and artisans in Rochdale, England. It is also generally known that co-operative societies are traditional institutions of savings mobilisation operated by people all over the world. They are especially popular in Africa. They operate both as social enterprises and economic entities.

In Nigeria, as in most other countries, co-operative societies have been found to contribute significantly to the improved socio-economic circumstances of their members (as evidenced by Olaleye, 2007; Enhancing Financial Innovation and Access in Africa (EFInA), 2012; Aderounmu, Odeyemi & Adeleke, 2014; Ezekiel, 2014). These expectations have been extended to co-operative activities in the housing sector (Danmole, 2007; Ndubueze, 2009; Nubi, 2015; Lawanson & Oyalowo, 2016).

Regarding governance, Kennedy et al. (1995) compare the characteristics of co-operatives that make them different from other business organisations and extend this notion to co-operative housing. Since co-operatives are owned and controlled by people who make use of their end products or services, it is governed by a board of directors elected democratically from its membership. The board takes care of general operating policies. Furthermore, co-operatives operate at cost or on a not for profit basis. Since the societies exist to provide services to members, they are charged only the actual cost of running the business, while proceeds generated in excess of actual costs are either refunded to members, kept in the co-operative as a resource of reserve funds, or a combination of both.

Structure of Housing Co-operative Societies

The structure of housing co-operatives refers to the institutional arrangement on which the co-operative is based and on which it operates. Two structures of housing co-operatives exist. These are market rate housing co-operatives and limited equity housing co-operatives. Market rate housing co-operatives provide members with an appreciation in the value of the property and enable them to sell their shares at market rates, whereas Limited Equity Co-operatives limit the price of membership and set controls in resale values to keep the housing affordable for low, middle and moderate-income residents. Thus, long-term affordability could be assured through a low equity structure (Kennedy et al., 1995).

The Historical Context of Housing and Co-operative Societies

Since the end of the Second World War policy measures such as favourable legislation, subsidies and tax incentives were put in place to increase home-ownership across Europe. These were strengthened by positive civic attitudes towards home-ownership (Isebaert, 2014). In countries such as Canada, Egypt and Pakistan co-operative societies were expressly utilised by governments to pursue national home-ownership policy in the face of rapid urbanisation (see Bhaiji (2012) for Pakistan, El-Mesiry (2012) for Egypt and Gazzard (2012) for Canada). In others, such as Austria, Ireland and Sweden, co-operative societies started as societies initiated through social reformers and self-help groups, but over time were recognised by the government as an alternative route to housing supply. Therefore, co-operative societies enjoyed favourable government policy to perform this role (see Ludl & Bauer (2012) for Austria; O'Keeffe & Sellars (2012) for Ireland and Lago & Matic (2012) for Sweden). In countries such as Portugal co-operative movements were initially seen as instruments of opposing political structures, but with intense lobbying, followed by a shift to liberalised economic systems, they became recognised and supported by governments.

The general history of co-operative housing reflects the utilisation of a system for addressing a mass housing need as a result of social demand. These conditions are still prevalent in developing countries, where cities are experiencing rapid urbanisation and housing deficits. However, it is also important to recognise how government policy still stands as a significant challenge for co-operative societies' activities in housing supply today. Co-operative societies that had enjoyed a considerable amount of financial support and subsidies from their governments at various times have had to adjust with much strain when governments withdrew support in the face of harsh micro-economic turns. This is especially true for countries like Canada, Turkey, Austria, Poland and Czechoslovakia (now known as the Czech Republic and Slovakia).

The focus of this study, as presented in the next section, is on the period when they enjoyed considerable government support and generated positive outcomes for housing supply. Country case-studies were selected on the basis of relevance of lessons to be drawn for African cities.

2.5 Government Intervention in Co-operative Societies Housing Supply in Four Countries

2.5.1 The United States: A Case of Housing Supply by Both Market and Social Co-operative Societies

Key Characteristics: There are several categories of housing co-operatives in the United States. There are variants such as the Market Rate Housing Co-operatives, which are sponsored by real estate developers and have middle to high-income households as members (Saegert & Benitez, 2004). Secondly, there are over 425,000 limited equity housing co-operatives which are established as a result of the need to preserve the affordability of homes for low and moderate-income families.

Government Intervention: Chicago Mutual Housing Network (CMHN) (2004) notes that historically in the US, housing market constraints have been reduced for co-operative societies through legislation such as the New York Limited Dividend Housing Companies Act of 1927 and the Housing Act of 1949. The University of Wisconsin Centre for Co-operatives (2009) observes that the New York Limited Dividend Housing Companies Act of 1927 was the first significant government program supporting housing co-operative development in the US. Thirteen co-operatives were built under this Act.

New York Housing Act of 1927 promoted affordable housing co-operatives in New York by granting tax exemptions in the increase in value resulting from the construction of new projects for 50 years. The government also supplied low-interest loans (financed by state revenue bonds), state mortgage interest subsidies and special permits for site assemblage at fair prices to developers who agreed to restrict their dividends. Additional favourable intervention occurred in the 1950s, when the Housing Act of 1949 allowed guarantees for market-based loans for new housing co-operative projects, increasing the housing stock. All of these helped to reduce the cost of construction of co-operative housing, thus making it affordable for target households. The case of Limited Equity Co-operatives is particularly important here because they restrict the resale values of co-operative shares to keep them affordable to multiple generations of purchasers by controlling the maximum resale price or by restricting the income of purchasers.

Successes and Shortcomings: According to Sazama (1996), co-operative housing accounts for 17% of the subsidised housing owned by US public housing authorities. As a result of the tax exemptions granted by the New York Housing Act of 1927 for instance, about 600,000 units of affordable homes for moderate-income earners were developed between 1950 and 1960 by limited profit co-operatives (CMHN, 2004). The shift from direct public investment in the creation of affordable housing also helped in increasing the relevance of co-operative societies in affordable housing supply in the country.

2.5.2 Austria: A Case of Tight, but Supportive Regulatory Framework for Co-Operatives

Key Characteristics: The Austrian case-study exemplifies a case of tight government control to achieve a substantive housing policy. The sector represents 8% of the housing stock in Austria and 15% of the total multifamily housing stock. It also contributes 15% (255,000 units) of total rental housing stock and 21% (113,000) of owner-occupier units as of 2010 (Ludl & Bauer, 2012).

Government Intervention: The state provides financial support in meeting the uniquely high costs of housing production in Austria. Austria's housing co-operatives are excluded from corporation tax (i.e. taxation on income). They also benefit from long-term and low-interest rate mortgages that cover 20% to 60% of the construction costs, which facilitates prompt repayment of mortgages. There are annual grants/loans to cover construction costs, which may be awarded in addition to the mortgages. This has also helped to reduce production costs. In recognition of the capital-intensive nature of housing, the

proportion of income that is used to finance home-ownership, and in pursuit of the national policy of home-ownership, government intervention in the sector has been necessary. Ludl and Bauer (2012) note that this has resulted in government supporting Austrian co-operatives to provide housing for all income class categories and not only low-income earners.

Successes and Shortcomings: The success of the Austrian housing co-operative societies has been recognised in both the academic and non-academic literature (Ludl & Bauer, 2012). One of the major reasons for this has been attributed to the state's financial support in meeting the uniquely high costs of housing production in Austria. However, there are stringent regulatory conditions attached to government intervention. Housing co-operatives are required to focus on continuous housing construction and must acquire permission from the government to interrupt their building activities. They are also subjected to strict financial performance, profitability, management and compliance with obligation checks.

5.2.3 Portugal: A Case for Co-Operative Advocacy and Lobbying

Key Characteristics: Housing co-operatives in Portugal provide 3% of the housing stock at 180,000 units out of 5,880,000 dwellings (Cameron & Wood, 2012). However, unlike in most other countries, the development of housing co-operatives has been facilitated by strong advocacy and lobbying on their part.

Government Intervention: The centralised state of Portugal regarded the co-operative as a democratic institution and paid only marginal attention to its potential as a source of housing provision. However, they continually lobbied for government support to reduce transaction and production costs associated with housing supply. By the time a democratic state emerged, they were provided financial assistance by the state to cover 85% to 90% of the total building and infrastructure costs by way of tax exemption, advantageous long-term loans, financing and supplying the co-operatives with available land. The municipalities also provided land agreements or expropriation (Vilaverde & Mateus, 2012).

Successes and Shortcomings: Like other countries, state funding declined with the liberated economy of the 1980s. Only construction costs were financed with short-term loans. Still, co-operatives built quality housing at a rate of 30-40% lower than the market rate due to very low tax rates (Vilaverde & Mateus, 2012). However, a further decline in state support and the high cost of land led co-operatives to change from low-income housing provision to housing provision for middle and middle-upper income earners. This shows that when exposed to market forces, co-operative societies could still be active in the housing market but should not be expected to provide housing for low-income people without some form of cushioning from the government.

5.2.4 Egypt: A Stakeholder Support System for Co-operatives

Key Characteristics: Egypt is a highly urbanised country with a lot of informal housing, squatting and slums (Ede, 2017). Housing co-operatives

emerged as a result of private initiatives with some state support in the 1930s (Barenstein & Sanjinés, 2018). Egyptian co-operatives are strictly controlled by the government, mostly urban-based, and have a membership drawn from individuals with similar occupation status with moderate-incomes (El Mesiry, 2012).

Government Intervention: State support significantly increased from the 1970s onwards, when housing co-operatives also became part of a slum eradication strategy (Barenstein & Sanjinés, 2018). The government actively supported co-operative housing through its legislature. Specific areas of the law stipulate the reduction of taxes on industry and trade profits, interest on deposits in banks and saving funds as well as taxes and fees levied by municipalities. Furthermore, the legislation highlights the national requirements of custom taxes, statistical fees, importing fees and extra fees on imported tools, machines, primary building materials, and means of transportation. Stamp duties paid on contracts are also subject to exemptions and reductions, as are fees on contracts and mortgages, fees for building licenses, land allocation, legal and publishing fees. Furthermore, housing co-operatives receive a 25% discount on all state-owned land which could go up to 50% with ministerial approval (El Mesiry, 2012).

Successes and Shortcomings: Egypt's tiered system of co-operative organisation provides coordinated services that substantially reduce costs at various stages in the development process. First, co-operatives are formed to address housing issues. Second, there are four Joint Associations for Building and Housing to support co-operatives in joint projects. They carry out project financing and project management activities, thus providing services that could reduce information and agency costs. Third, the 13 regional associations of co-operatives carry out direct activities that reduce costs for co-operatives in their jurisdictions by supplying housing market data, setting up factories for the purchase, manufacturing and transportation of building materials at the lowest possible prices. Then the apex body, the Federation of Co-operative Housing, provides strategic support, such as: research, training, advocacy, arbitration, auditing, and investment (El-Mesiry, 2012).

The result of government intervention in Egypt is seen in the 2,320 housing co-operative societies that exist today. It is worth noting that one-third of the 80 million Egyptian population are members of these societies (Ede, 2017; Barenstein & Sanjinés, 2018). In the last 60 years, co-operative societies have supplied over 500,000 dwelling units (Ede, 2017; Barenstein & Sanjinés, 2018).

These case studies show that co-operative societies have been beneficiaries of government intervention policies that have reduced housing supply costs, increased housing affordability and access for low-income groups in particular. It has also shown that withdrawal of government support reduced the ability of the sector to cope with market rate construction costs. Through a case study of the activities of co-operative societies in Lagos, Nigeria, this study proceeds to explore the potential for their adoption as formal housing suppliers in African cities. Additionally, it assesses the constraints that could limit these and the lessons that can be learnt from other countries that had, at one time or the other, adopted them as alternative suppliers for affordable,

low-income housing. This required primary data collection and analysis, which is reported in the findings section.

3. Methods

3.1 Research Design

3.1.1 Study Area

The study is set in Lagos, South Western Nigeria. Lagos is Nigeria's commercial hub, which was until 1991 its capital (Lawanson & Oduwaye, 2014). Due to challenges of poverty, housing deficits and affordability, over 52% of the population live in multi-dimensional poverty (Lagos State Government, 2013; Oxford Poverty and Human Index, 2016). 70% of the urban population resides in substandard housing (Lagos State Government, 2013). Almost 75% of the working population in Lagos rely primarily on the informal economy for income generation (UN-Habitat, 2012; National Bureau of Statistics, 2013).

The overall co-ordination of co-operative societies in Lagos currently lies with the Ministry of Commerce, Industries and Co-operatives. Before this, co-operative affairs had been regulated by the Lagos State Ministry of Agriculture and Co-operatives, which had generated a directory of co-operative societies in the state. The directory forms the basis for the data collected in this study. In expanding the literature on co-operative societies and housing supply in Africa, findings from a survey of co-operative leaders are presented. However, as this paper is an extraction from larger research, only questions relevant to the current discourse are reported.

3.1.2 Study Population, Sample Frame, Size and Units

Co-operative societies recorded in the 2015 directory of co-operative societies are the sample units of the study. The directory consists of 2,516 co-operative societies registered in Lagos State Nigeria. The sample size for respondents (these are presidents of co-operative societies) was determined using the formula available online at http://www.raosoft.com/samplesize.html (see Appendix) and is calculated as 334; using a 95% confidence level and 5% margin of error. This was increased by 80% so that a total of 600 questionnaires were distributed. Of these, 450 were retrieved with 401 being considered fit for analysis. Thus, a response rate of 75% was achieved. From the directory, respondents were selected using the systematic random sampling approach.

In order to determine their potentials as housing suppliers, respondents were asked to fill out a structured questionnaire to ascertain the amount of land they held, and the constraints they have faced in constructing housing on that land.

3.2 Analysis of Findings

The first question was to determine the amount of land held by co-operative societies. Seventy-one (71) co-operative societies provided details on the lands they held for housing purposes. Out of these, 29 (40.9%) reported that

they had up to 10 hectares of land in their possession, 15 (21.1%) had up to 20 hectares of land, 9 (12.7%) had up to 30 hectares. Similarly, 9 (12.7%) had up to 40 hectares, while 6 (8.4%) had up to 50 hectares, and the remaining 3 (4.2%) had over 50 hectares of land. This break-down of co-operative land holdings is presented in Table 1.

Table 1: Co-operative Land Acquisition for Housing Purposes

Land (hectares)	Frequency Held F	Per cent %	Total Land Holding Mid-point (X) Of Land Held	Total(F*X)
1-10	29	40.9	5.5	159.5
11-20	15	21.1	15.5	232.5
21-30	9	12.7	25.5	229.5
31-40	9	12.7	35.5	319.5
41-50	6	8.4	45.5	273
>50	3	4.2	55.5	166.5
Total	71	100		1380.5

These results show that at the minimum, there are at least 1380.5 hectares of land in the possession of the 71 co-operative societies who responded to this question. These are recognised as "landholding co-operatives". The average land holding per co-operative is 19 hectares (1380.5 divided by 71). This can be used to extrapolate first for the 401 respondents in the survey and ultimately, for the entire 2,516 co-operatives in the Lagos database. The 71 land holding co-operatives represent 18% of the sampled 401 co-operatives. Extrapolating to the entire population of 2,516 co-operatives in the directory suggests that approximately 453 co-operative societies (18% of 2,516) may be adjudged to hold approximately 8,605 hectares of land (19 hectares multiplied by 453).

Making further assumptions as shown in Table 2, co-operative societies are capable of releasing up to 637,407 housing units into the Lagos affordable housing market.

Table 2: Housing Units to be Potentially Released from Derived Co-Operative Land Holdings

Parameters	Deductions
Total Amount of land held	8,605 hectares
Amount of land for residential housing development-60% (according to planning standards: Obateru, 2012)	5,163 hectares
Assuming all land is developable and free of litigation; amount of land for residential housing development in m^2 (5163 x 10,000)	$51,630,000m^2$
Standard plots to be obtained: (land size ÷ unit plot size) (standard plot size 18m x 36m = 648 m^2)	79,675 plots
Housing units, at contemporary multifamily units of 8 units on 4 floors per plot. (8 x 76,675 plots)	613,400 units

This analysis, although simplistic and not presented as accurate, indicates the significant potential co-operative societies have for increasing home-

ownership for their members in Lagos State. However, this land remains unused, and the potential for improving housing supply remains untapped due to the lack of housing construction activities by co-operative societies.

As such, the respondents were then asked to indicate the constraints they face in building up the land into housing units. They were required to state the significance of 57 constraint variables that had been identified in the literature and a pilot study measured on a 7 point-Likert scale ranging from 1=Not at all; 2= extremely low constraint; 3= low constraint; 4= partially low constraint; 5= partially high constraint, 6= high constraint 7= extremely high constraint.

In analysing the responses, the factor analysis using principal axial factoring (PAF) with varimax rotation was utilised. PAF allows the reduction of variables in a dataset. Two initial correlation matrices were carried out, both of which showed that several variables had cross-loaded on more than 1 factor during the varimax rotation. These variables were excluded from the analysis so as not to skew the dataset and the procedure re-ran. At the third running, after ascertaining that there were no variables with significantly low and high correlation loadings on other factors, the analysis proceeded with a test of sampling adequacy using Kaiser-Mayer-Olkin (KMO) and Bartlett's Test of Sphericity.

As shown in Table 3, the dataset achieved a score of 0.959, which is a highly satisfactory score according to Field (2009). The extraction of factors generated a four-factor solution that accounted for about 65% of the total variance in the data with eigenvalues threshold at 1 and factor loadings at 0. Factors were rotated using varimax rotation, an orthogonal rotational method that assumes no correlation between the factors, and which enhances the fit of item loadings on the factors. Factor 1 accounted for 22.884% of the variance in the dataset and Factor 2 accounted for 18.853%. While Factor 3 accounted for 11.832% and Factor 4 accounted for 11.582%. This is shown in Table 4.

Table 3: Test of Sampling Adequacy

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.959
Bartlett's Test of Sphericity	Approx. Chi-Square	14998.379
	Df	780
	Sig.	.000

Table 4: Variance Explained by Factors

	Total Variance Explained								
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Factor	Total	% of Variance	Cum. %	Total	% of Variance	Cum. %	Total	% of Variance	Cum. %

1	19.262	48.155	48.155	18.926	47.315	47.315	9.154	22.884	22.884
2	4.405	11.011	59.167	4.094	10.236	57.551	7.541	18.853	41.738
3	1.881	4.701	63.868	1.565	3.913	61.464	4.733	11.832	53.569
4	1.739	4.348	68.217	1.475	3.687	65.151	4.633	11.582	65.151

Table 5 shows the factor loadings of factors, alongside the items that were loaded on each. Factor 1 has 15 items loading on it, factor 2 has 11 items, factor 3 has 7 items, and factor 4 has 6 items loading. The Principal Axial Factoring utilised for the factor analysis produced a four-factor solution that reduced the variables from 57 to 39. Following established practices in Factor Analysis, Factor 1 represents the factor with the highest weight of influence on the entire database, followed by Factor 2, 3 and 4.

Table 5: Rotated Factor Matrix

	Rotated Factor matrix								
	Factor 1		Factor 2		Factor 3		Factor 4		
	Items	Loading	Items	Loading	Items	Loading	Items	Loading	
1.	Default recovery	.779	Cost of paying land agents	.797	Access to political support	.776	Cost of building materials	.862	
2.	Credit risk profiling	.778	Clearance cost	.770	Collaboration with Banks	.752	Cost of actual construction	.806	
3.	Leaders' experience	.773	Land surveying cost	.752	Lack of access to cheaper FMBN loans	.739	Cost of land preparation	.756	
4.	Members' loan diversion	.745	Security cost	.763	Regulatory barriers	.697	Cost of labour	.752	
5.	Quality of members' collateral	.739	Searching cost	.762	Access to technical assistance	.676	Road construction	.749	
6.	Members' defaults	.736	Allocation cost	.720	Activities of landowning families	.621	Cost of land	.503	
7.	Scarcity of land close to workplace	.624	Titling extra-legal	.514					
8.	Agreement on size of land	.616	Hiring surveyors	.508					
9.	Members' participation	.596							
10.	Scarcity of land in Lagos	.595							

It is possible to draw analogies with this ranking to infer that the 15 factor 1 items such as: leaders' housing experience, (0.773), determining credit risk profile (0.778), members' previous defaults (0.736), quality of members' collateral (0.739), tendency of members to divert loans (0.745), ability to recover defaults (0.779), low demand for housing loans (0.719) and others shown in Table 5 constitute an influential group of constraints to housing supply by co-operatives in Lagos State. It is observable that all of these relate to governance issues.

The second group of influential constraints are landowners' extra-legal payments (0.652), titling costs (0.670), titling extra-legal costs (0.514), clearance costs, (0.770), allocation costs (0.720), searching costs (0.762), land surveying costs (0.752), security costs (0.763), cost of paying land agents (0.797). These are transaction cost issues, which are non-direct costs associated with housing construction. The third group of constraints relates to lack of access to cheaper loans from the Federal Mortgage Bank (FMBN) (0.739), collaboration with banks (0.752), lack of access to technical assistance (0.676) and lack of access to political support (0.776), amongst others shown in the table. These indicate the lack of support from external stakeholders as a constraint on housing supply by co-operatives in Lagos. Finally, the table shows that the fourth group of constraints are cost of land (0.503), cost of actual construction (0.806), cost of labour (0.752), and cost of building materials (0.862), amongst others- all of which are related to direct housing production costs. Thus, constraints that have affected the housing supply activities of co-operative societies in Lagos relate to governance issues, production costs issues, lack of external support mechanisms and transaction cost issues.

3.3 Summary of Key Findings

Basic analysis conducted in this study (see Table 2) suggests that as far as Lagos is concerned, co-operative societies have enough land in their possession to supply over 600,000 housing units to the Lagos affordable housing sector. The survey shows that co-operative societies are constrained from actual housing construction by four groups of factors. These are governance issues internal to the co-operative societies themselves, transaction costs, housing production costs and lack of external support from stakeholders.

4. Discussion and Recommendation

The housing need in Lagos, perhaps best exemplifies the shortage of decent homes in Nigeria. The Lagos State Government (2013) estimated a need to supply up to 5 million units with 2 million coming from newly built housing and 3 million to come from upgrading the informal communities in which 70% of its residents are reported to live in. The government recognises that these deficits cannot be met with a single approach (Lagos State Government, 2013).

Land acquisition in urban Lagos is an onerous task given the existence of dual land markets. Given their collective strength, co-operative societies have been able to assemble several thousand hectares of land in Lagos, which under the

stated assumptions, could produce up to 600,000 units into the Lagos affordable housing market. This could, at the very least, produce housing for co-operative members, and by extension, provide an alternative to their pursuit of homes in informal communities. These findings corroborate and substantiate the optimism expressed in previous literature such as Danmole (2007) and Ndubueze (2009). Both authors, like this study, assessed the roles of co-operative societies in housing provision in Nigeria and found that there is a positive potential for them to increase housing access to a specific segment of society. However, this remains only a possibility as their land remains undeveloped. The implication is that co-operative societies have unutilised capacity in the form of idle land, while their potential contribution to affordable housing supply in Lagos remains untapped as land acquisition is only the first step in the housing development process.

This highlights the importance of another finding of the study, which is the identification of the constraints that affect the ability of co-operative societies to act as alternative affordable housing suppliers. The survey showed four critical factors that have so far constrained housing supply by the societies.

The first constraint (governance issues) are internal to co-operative societies such as the inability to agree on salient aspects of the housing development process, issues related to membership management, the tendency of members to divert co-operative housing loans to other purposes, and the attitude of members to co-operative leadership. These signify weaknesses in the internal governance of the societies, constraining collective decision making and building distrust amongst co-operative leaders and members. These are unfavourable conditions for such a long-term and capital-intensive process as housing supply. The inability of co-operative societies to address these effectively limits their progression to higher levels in the housing development process, such as infrastructure provision and housing construction. These factors imply that co-operative lands remain undeveloped until these issues are equitably resolved.

Countries like Austria and Egypt have featured stringent governance guidelines in co-operative regulation as to ameliorate these constraints in such a way that their contribution to housing supply remains significant. The Lagos State Government can provide similar regulatory guidance to address the internal governance constraints identified in this study. This can take the form of mandatory capacity building sessions on conflict management for both co-operative leaders and members, setting up a joint credit bureau solely for co-operative societies and their members to support credit checks and even some measure of control on the uses of loans provided to co-operative members. These regulations should be made in collaboration with co-operative societies themselves for enhanced uptake. In Lagos State, the regulatory authority for co-operative societies is the Lagos State Ministry of Commerce, Industry and Co-operative Societies. It has provided some regulations for co-operative societies in the areas of land acquisition (such as ensuring that there is an evidenced consensus between the co-operative society's members and leaders to buy land). However, the Ministry has not offered any support for enabling co-operative societies that already have land to proceed with actual construction. If this regulatory guidance is provided, strategic linkages with institutions that could support the societies can be achieved. In addition, the

Ministry has inaugurated its co-operative college to help with capacity building for co-operative leaders and members. Improvements in the structure and content of learning programs at the college will improve the relationship between leaders and members of co-operative societies.

The second set of constraints are transaction costs, conceptualised as non-direct costs of production associated with administrative expenses, the acquisition and purchase of inputs, costs of regulatory permits, information seeking, arranging contracts and all such other costs. Transaction costs are important costs to be met once any developer purchases land and co-operative societies are not exempt. They are either market-based (as in the cost of fencing), subject to contractual or professional fees (as in cost of land surveying) and also capable of being negotiated (as in extra-legal payments). The government fixes other categories of transaction costs, such as titling fees, cost of stamp duty and planning permits. In general, the varied nature of transaction costs enables them to constitute an entry barrier into the housing supply market, so that co-operative societies need some support to deal with them effectively. While the context is slightly different, it is also possible, as seen in other countries, for the Lagos State Government to provide this support. This can take the form of enactment of legislation to reduce government taxes and levies as done in Egypt, special permits for co-operative site assemblage like the US and land agreements as enacted in Portugal. Greater enforcement of existing extraneous charges can also be carried out by the government agencies. The government can also develop a system of subsidisation of professional fees for co-operative housing activities by liaising with relevant professional bodies to reduce this. These intervention measures would reduce transaction costs significantly for co-operative societies and ease their entry into housing construction activities.

The third set of constraints relates to a lack of external support by core stakeholders to housing supply activities of co-operative societies. Co-operative societies are constrained by a lack of access to state-provided financial facilities such as those provided by Nigeria's apex national housing finance institution (Federal Mortgage Bank of Nigeria, FMBN). They, therefore, lack special financial facilities from banks, technical support, political support as well as the support to check the excesses of the informal land sellers whom they (as well as the general populace) rely on for land assembly. These support systems are crucial to increasing the capacity of co-operative society to manage external constraints they cannot handle by themselves. Furthermore, obtaining support networks requires that co-operative societies reach out in some way to potential supporters. Inability to attract and sustain external relationships is an indication of weak governance structures. In tandem with theories of co-operative governance, such as stakeholder theory and resource dependency theory, co-operative societies should be empowered to identify stakeholders that would be of benefit to their operations and hence engage them for greater efficiencies (Cornforth, 2004; Odera, 2012; Hannan, 2014). However, external support mechanisms can also be galvanised with institutional collaboration between co-operative societies and a knowledge partner, for instance. The knowledge partner such as an advocacy group, housing NGO or even university advocacy centre working in the housing sector could help advocate for government support and

mobilise for other non-government partners (such as professional bodies) to engage with co-operative housing supply activities.

Variants of this exist in the Egyptian case-study with its four-tiered stakeholder support mechanism, and much of the success of the Portuguese co-operative housing can be attributed to the vigorous lobbying of early co-operatives. This can also be a useful strategy for co-operative societies in Lagos State because there are similar existing structures in place to achieve this. For instance, co-operative societies exist in a three-tiered pyramid structure. At the base of the pyramid are the individual co-operative societies numbering in thousands, also called the primary co-operatives; which form the basis of this study. At the second tier are the 21 co-operative unions, comprising of all primary co-operatives in the same area. The leadership of the unions derive from the leadership of the primary co-operative. In other words, only members of the management committee of the primary co-operative are qualified to stand for elections into the union. At the peak of the pyramid is the Lagos State Co-operative Federation (LASCOFED) which derives its leadership from the union and is referred to as the "mother" of all co-operative societies in Lagos. However, the duties of the co-operative unions and the Federation is limited to only ceremonial functions, while the real work of engaging members is to be found at the base. Despite this, with sheer collective strength, the unions and the Federation can be better aligned to be more active in advocacy activities to bring attention to collection issues facing the sector.

The fourth set of constraints that affects co-operative societies are production costs, which are defined as the costs directly associated with housing construction. Examples are the cost of building materials, cost of labour, and cost of services such as water supply, road construction, electricity, and so on. They are generally market-driven costs and thus experienced by all categories of housing suppliers. As the findings from the survey show, co-operative societies are not exempt from these production costs. This study has identified the cost of land and its preparation, cost of actual construction, cost of labour, cost of building materials and cost of road construction as constraints to housing supply by co-operative societies. The experience in Egypt shows that the co-operative sector had relied on a strong regional co-operative structure to reduce the cost of production. This structure enabled joint purchases, manufacturing and transportation of building materials. In addition, Austria has also been exemplary in its regulations to reduce production costs for co-operative societies, as they are provided with annual grants to cover construction costs (Ludl & Bauer, 2012). If production costs are substantially reduced, or subsidised, co-operative societies in Lagos would be able to release thousands of units into the market.

Generally, it has been found that co-operative societies have the potential to supply affordable housing in Lagos but are encumbered by constraints in critical steps along the path to housing construction. Although they can address some of these constraints with improved internal capabilities, other constraints require some measure of supportive government intervention to ameliorate. These supportive government interventions are found to be lacking yet have been shown to be instrumental to the development,

empowerment and success of the co-operative housing sector in the countries presented in the literature review.

The rationale for promoting increased government intervention in the co-operative sector is to enable co-operative societies to operate in the formal sector without the conditions imposed in such markets for the benefit of lower income people. This will help to release more housing into the formal sector; while optimistically, expanding the choices available to these people to live in a decent environment rather than seeking refuge in informal communities that are prone to demolition. Following the Egyptian example where co-operative societies are recognised as part of a slum eradication strategy and Austria where co-operative societies are empowered to supply housing to all income classes, it is critical that the Nigerian governments, both at federal and state level, recognise the potential role of co-operatives in providing affordable housing for their members and other citizens. This recognition must be coupled with an acknowledgement of the impact of this for improving access to formal housing and reducing the proportion of households who inevitably find themselves outside the margin of market-priced housing and seek solace in informal communities. These notions can be transferred to other African cities.

5. Conclusion

Housing affordability is a challenge for most governments in the world today, and governments will intervene in housing markets as a result of this. To ensure affordability, alternative housing markets such as the co-operative sector have been strategically positioned to benefit from specific exemptions to government regulations while also being recipients of favourable policies enacted solely for their benefit. As a result, the co-operative sector has provided thousands of housing units to the targeted low-income sector in developed countries.

This empirical study was designed to draw attention to the potentials of governments in Africa to adopt co-operative societies as partners in housing supply for their predominantly subprime markets. Through a case-study of Lagos, Nigeria, the potential of the co-operative sector in housing supply is deemed to be positive as co-operatives are actively engaged in land acquisition. However, they are unable to proceed to construction (their objective in land acquisition) due to constraints that the study classifies into four groups: governance constraints, production cost constraints; transaction costs constraints and lack of external support.

These constraints are not unique to the Lagos co-operative sector but were also present for co-operative societies in other countries. These include countries such as Portugal, the US, Austria and Egypt (covered in this study), and others such as India, Norway, Poland, Pakistan, Italy. In the above countries, the respective governments have successfully integrated and supported co-operative societies as crucial housing suppliers. They have been used as avenues for tackling housing shortages, increasing ownership opportunities, promoting resident control, housing regeneration, participatory decision-making, and preserving affordability for target groups. Direct fiscal and regulatory policies are two major interventions that governments have

used to address potential market and non-market constraints, and in many cases, this has produced positive outcomes. Thus, co-operative societies have been supported to enable secure, long-term, and affordable housing to tenants as well as owner-occupiers in these countries.

In addressing housing affordability and in reducing housing informality in African cities, a re-direction of government policies is required. It is essential that each country recognise the structure of its housing market as either predominantly formal or informal and then re-create policies that will support existing networks such as co-operative societies, trade groups and community groups to address these issues in their particular contexts. In the case of co-operative societies, when observed in an era of government regulatory support, they have been veritable sources of affordable housing supply in different climes, thus presenting a case of positive outcomes due to government intervention.

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Appendix

Compensation Theories and Expropriation of Customary Property Rights: A Critical Review

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Abstract

Market value is the most common compensation basis for expropriation of both private and customary property rights. Private property rights are generally exchangeable while customary property rights are conceptually not as exchangeable. It is hence critical to analyse the applicability of current compensation theories, which are founded on private property rights, to different property rights and in different social settings. By using existing literature and empirical evidence from Africa and other countries where customary property rights dominate, this paper undertakes a theoretical analysis of the applicability of existing compensation theories and the methodologies used to achieve the desired compensation goals. The analysis concludes that whilst current compensation theories are broadly applicable to customary property rights as they aim to protect property rights and prevent expropriatees from impoverishment, various ontological and methodological factors limit the realisation of these goals in settings dominated by customary properties. Such factors include ontology and dominance of customary property rights, use of market value as a compensation basis, and capacity of compensation assessors. Broadly, these factors lead to inadequate compensation and impoverishment of affected people.

Keywords: Compensation; Customary Property Rights; Expropriation; Market Value; Private Property Rights.

1. Introduction

Provision of various public infrastructures, services and amenities like roads, railways, electricity, petroleum and gas pipelines, housing, airports, schools, hospitals, and conservation areas (Kakulu, 2008; Du Plessis, 2009; Ambaye, 2013; Denyer-Green, 2014) requires vast pieces of land that governments might not have in required quantities, locations, or spatial configurations

(Evans, 2004). Most frequently, the required land is expropriated from various owners, whether private or customary, in return for compensation based on market value of expropriated properties. Compensation is broadly required to restore expropriatees to their previous status, and generally lessen expropriation burdens as much as possible (Barnes, 2014). Current compensation theories consider property as a well-defined and exchangeable bundle of rights with a value (Denyer-Green, 2014). And for private property rights based on a Western concept, this is true. Contrariwise, customary property rights are less defined and mostly inalienable (conceptually) (Small & Sheehan, 2008). This view of property prevails on the African continent (Cotula & Chauveau, 2007, Kakulu, 2008) and other developing countries (Xanthaki, 2007). With such differing ontological perceptions of property rights between private and customary, how is compensation then assessed for customary properties guided by existing compensation theories? In addressing this question, one needs to explicitly understand two key aspects: market value as the basis for assessing compensation and private property rights as the accepted foundation for current compensation theories. These two aspects are discussed in the following sections. Thus, the paper aims to critically analyse the applicability of current compensation theories and their methodologies for assessing compensation for customary properties, which differ from private properties, and the challenges faced, by using existing literature and empirical works. Further, the study intends to deepen our understanding of the core aims of current compensation theories, their prescribed basis and assessment methods, and hence the challenges faced when applied to customary properties. Additionally, the study demonstrates that existing compensation assessment methodologies contribute to inadequate compensations and impoverishment of expropriated customary land owners. The results are expected to provide a basis for further research on compensation assessment basis and methodologies in relation to the broad compensation goals stated elsewhere.

This paper has five sections. After introduction, section two discusses the two broad compensation theories while section three looks at the nature of customary property in relation to private property, before analysing the applicability of existing compensation theories and assessment methods to customary properties and their challenges. A conclusion closes the analysis.

2. Compensation Theories

This section discusses the main classes of compensation theories, compensation aims, basis and methods for assessing compensation for loss of property during expropriation, with a focus on customary property rights.

2.1 Compensation Theories and Compensation Scope

Indemnity and taker's gain are the two main groups of compensation theories, founded on compensation scopes covered to meet different compensation goals. The indemnity theory desires compensation that considers the whole range of losses to put expropriatees on a similar status as before the expropriation, but not worse-off (Denyer-Green, 2014). Characteristically, this requires compensation covering market value of property taken, plus additional compensation for severance and injurious affection, expropriatory

disturbances, consolatory payments (solatium) and/or special values. Under this principle, compensation is measured by considering an expropriatee's losses, and not purchaser's benefits (Barnes, 2014). Various compensation concepts including adequate compensation, appropriate compensation, commensurate compensation, fair compensation, full compensation, equivalent compensation, and full indemnification, among others, subscribe to the indemnity philosophy.

Market value of acquired property is generally the principal item for compensation. Likewise, severance and injurious affection are based on market or rental values (Baum et al., 2008). Severance is loss in value of any remaining property where only a fraction of the property is expropriated, while injurious affection is depreciation in value of any remaining property caused by proposed uses on acquired land or the actual works (Barnes, 2014). Generally, depreciation in market value of remaining land is the compensation amount for severance and injurious affection.

Disturbance compensation is based on financial calculations and includes profit/income and business losses; costs for relocation and transport, legal and valuation services, among many others (Baum et al., 2008). Solatium, as a consolation payment for expropriation, is given as a lump sum or as a proportion of the agreed compensation sum (Baum et al., 2008) and varies in different jurisdictions. Special value depends on sentimental attachments between owners and the expropriated properties and benefits emanating from the property to owners besides market value (Keon-Cohen, 2002). Special value is based on a percentage of the compensation sum, or it is agreed upon by the parties (Fortes, 2005). Thus, the indemnity theory desires compensation that consists of market value of property taken, severance and injurious affection, disturbance, solatium and/or special value to restore expropriatees.

Alternatively, taker's gain theory focuses on the expropriated property. It argues that compensating the other additional items covered under the indemnity theory like disturbance, drains public resources (Kratovil & Harrison, 1954), while enriching affected people. Since it is property that is taken, then government should compensate for that at its market value and nothing more or less. Taker's gain compensation is measured by the gains of the acquisition to the taker, and not expropriatee's losses (Kratovil & Harrison, 1954). As such, compensation under taker's gain usually consists of market value of acquired property, which also measures adequacy of compensation required to restore affected people. Thus, all compensation principles focusing only on expropriated property belong to takers' gain theory.

2.2 Compensation Aims

Compensation serves several purposes and the following sections discuss some of the major ones. In the first place, many societies require compensation to defend their property rights from idiosyncratic decisions and actions of government (Nosal, 2001). Further, property is believed to be strongly attached to its owners and gives them identity and contextuality, while connecting intricately with individuals, families and communities

(Radin, 1982). As such, many national constitutions knowingly contain compensation principles aimed to protect property from predatory authorities (Food and Agricultural Organisation, 2012) and people. It is thus presumed that expropriation without compensation would not be permissible (Denyer-Green, 2014). Consequently, the sheer need for acquiring authorities to pay compensation provides, and increases, protection for property rights.

Second, where private property rights are allowed and government wants to expropriate such property, then it must pay prevailing prices to prevent arbitrary deprivation and gains (Du Plessis, 2009). Blackstone (1872) contended that in such a setting government is treated as any other private individual dealing with another private individual in a private exchange and at a reasonable price. Principally, government can expropriate any private property, but in exchange for an equivalent price as in an open and objective exchange, and not otherwise (Barnes, 2014). Consequently, ruling prices are believed to dissuade government from getting property by using its advantageous position and essentially deterring arbitrary purchases and gains.

Seemingly, expropriatees replace lost properties from the market by using the compensation money received. Then theoretically, compensation that satisfies and guarantees an anxious and unwilling person of a replacement property compels that individual to surrender his/her property keenly (Denyer-Green, 2014). Thus, according to Denyer-Green (2014), the owner's monetary loss must be ascertained by determining the true pecuniary value of the property taken, and not below market prices, and the affected person must be fully compensated based on that value. However, claims of insufficient government resources, saving agendas or not wanting to appear as paying too much compensation, and property grabbing (Cotula et al., 2009, Chinsinga & Wren-Lewis, 2013), undermine acceptable restoration and impoverish affected persons (Kaufman, 2010). Walker (2008) also blames opportunistic conducts through corruption by officials involved in expropriation, restitution and restoration to contribute to impoverishing affected people and missing intended goals, as evidenced in Limpopo and Mpumalanga in South Africa. This has also been observed in Tanzania (Kombe, 2010), Ethiopia (Alemu, 2013), Nigeria (Famuyiwa, 2011), Ghana (Larbi et al., 2004), and other African countries (Cotula et al., 2009). Beyond Africa, corruption and other opportunistic tendencies also surface in India (Asian Development Bank, 2007), China (Alias et al., 2006), and many other countries (Deininger, 2003). These compensation goals are discussed further in section four in relation to customary property rights. However, to better appreciate compensation aims, we need to first understand the assessment basis and methods for compensation, as discussed below.

2.3 Compensation Assessment Basis and Methods

Market value is the general basis for assessing compensation. According to the International Valuation Standards Council (2017), market value is the estimated amount for which an asset or liability should exchange on the valuation date between a willing buyer and a willing seller in an arm's length transaction after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion.

Market value is believed to clearly describe property value and the valuation process, and is thus considered as the best basis for valuation for various purposes (Baum et al., 2008). It is presumably assessed objectively and authenticated externally through market evidence. It is argued that market value achieves fair and efficient expropriation as expropriatees get compensation that enables them to replace lost properties from the market (Denyer-Green, 2014). Additionally, the market is considered as a neutral measure for property values due to objective interaction of demand and supply. Ironically, Kelly (2006) argues that it is difficult to fix the value that owners attach to their properties using market value as it ignores some real aspects of the property, such as sentimental attachment, (Kaufman, 2010, Mitchell et al., 2015), long occupation, and personal adaptations (Denyer-Green, 2014). Consequently, market value does not always equal owner's real loss and so, insufficiently indemnifies loss of private property.

Practically, market value assessment uses comparison, income and cost approaches that are market-reliant. Comparison methods compare subject properties with similar properties traded recently in the market to estimate value, and the use of direct comparable transactions is trusted to reduce uncertainties, unlike in other methods (Blackledge, 2009), such as income and cost approaches. Income approaches capitalise income into value. Capitalisation translates income into a present amount by using a suitable discount rate (Scarrett, 2008). In principle, value is found through dividing the property's net income by a discount rate. Alternatively, for cost techniques property value is the sum of land value and the depreciated current cost of reproducing or replacing the improvement (Blackledge, 2009). Cost methods are used when the other approaches cannot be reliably applied, or to supplement them. Now, in order to comprehend the relationship of compensation assessment basis and methods with property rights, there is a need to understand the nature of customary and private property rights, as is discussed in the next section.

3. Ontology of Customary Property Rights

Property rights are rights of ownership one has over material and immaterial things, grounded either in statutory or customary laws (Eggertsson, 1990) and are generally classified into customary, private and public. Customary and private lands are owned by various parties other than government and are subject to expropriation, while public land is under government or various communities as communal land or open access resources (Malawi Government, 2016). For the purposes of this analysis, only customary and private property rights are discussed in the following sections as they are expropriatable and compensable.

3.1 Customary Property Rights

Customary property rights are fashioned and guaranteed by customary norms and generally held as individual, communal or common/open access and are rarely registered (Chipeta, 1971). Allodial interest is the highest proprietary bundle under customary tenure (Malawi Government, 2002, Abdulai & Ndekugri, 2008) normally entrusted with the community or chiefs (Adu-Gyamfi, 2012). Individuals are mostly believed to have user rights, while

permanent alienation rights remain with the chiefs (Cotula, 2007). According to Cotula and Vermeulen (2011), various governments consider most customary properties as public property.

Customary land is broadly acquired through traditional allocation by clan or family heads, inheritance (Tschirhart et al., 2016), and outright exchanges (Takane, 2008a, Haruna et al., 2013). Inheritance follows traditional (matrilineal, patrilineal, and mixed) practices while allocation to outsiders requires community consent. As Walker (2008) and Small and Sheehan (2008) contend, various emotional dynamics inform people's relationships to land and place, ascribed by their experiences and contexts, public discourse, social location and time. Consequently, some communities, like the Yoruba in Nigeria, consider land as the basis of creation, stories, religion, spirituality, art, and culture. Land is also considered to relate to living people, dead and future generations (Aluko et al., 2008), with various metaphysical values like inheritance and ritual sites, among others. Abstractly, customary properties characterise a complex social fabric that protects people through cultural membership (Xanthaki, 2003).

Generally, customary tenure prevails in most African countries as land is central to social, political and economic life, with a strong person-property attachment (Toulmin, 2009). However, customary property systems are modernising with increasing direct pecuniary exchanges (Cotula, 2004, Haruna et al., 2013) attributed to increasing land scarcity, among other factors (Takane, 2008a). Despite that, some of these direct purchases are authenticated through written agreements, but broadly customary property transactions are rarely registered. Consequently, information relating to the nature of properties, ownership and other transactions is seldom recorded, rarely available, and thus unsupportive of competitive property markets dependent on transactional evidence (Mooya, 2009a). Toulmin (2009) emphasises this by stating that most land in Sub-Saharan Africa and other parts of the world has no formal documentation of who owns it, or has rights to use it, owned collectively and inalienable. Prior to Toulmin (2009), De Soto (2000) contended that inadequate documentation of property rights means that such properties are technically known within their own settings and invisible to larger markets. De Soto adds that property documentation fixes the economic aspects of assets used to secure commercial and financial transactions. Yet most customary property systems lack this aspect, and thus cannot enjoy these benefits. Nor can the value basis that private and registered properties use be appropriately applied to these properties to quantify and attach a representative value to them.

3.2 Private Property Rights

Private ownership guarantees a known bundle of property rights with individual property title, certified and protected by government (Alston et al., 1999). Freehold is the highest bundle under private ownership from which other lesser interests, such as leasehold, are created (Mooya, 2009b). Unlike customary properties, Besley and Ghatak (2009) contend that individual title supports exchanging and mortgaging for financial facilities and assures property's optimal value. Accordingly, De Soto (2000) argues that this is because private (formal) property systems work like networks as all property

records are continually tracked and protected as they are transacted, unlike customary properties. Because of these aspects private property systems catalyse competitive property markets that provide information on ownership, land details, prices, rentals, and other transactions that support valuation for different aims (Mooya, 2009a). Market data availability in private property settings thus supports objective market dealings (Furubotn & Richter, 1998), expropriation and compensation assessment (Baum et al., 2008), among other benefits. However, this is not the case when dealing with customary properties. As such, the following section examines how the above compensation theories relate to customary property rights.

4. Compensation Theories and Customary Property Rights

This section analyses the application of current compensation aims, assessment basis and methodologies, and the challenges encountered when applied to customary properties.

4.1 Compensation Aims and Customary Property Rights

As discussed earlier, the aims of compensation is meant to protect property, deter arbitrary takings and restore expropriates. This section discusses these aims to see if the intended purposes are achieved when addressing customary property losses during expropriation.

a) Safeguard Customary Property

The presence of statutory title for private property ownership, with explicitly outlined rights and documented in land registries, strengthens its protection and compensation rights (Alston et al., 1999). Contrastingly, title to customary properties is only known to subject communities and enforced using customary norms and is normally undocumented in any government registry (Chipeta, 1971, Malawi Government, 2002). Further, constituent property rights for customary holdings are always complex as some extend beyond the physical assets one holds as discussed under ontology of customary property rights. Non-registration of these properties presumably leads to less statutory recognition, thereby weakening ownership and compensation rights. To confuse the situation further, many African governments controversially consider land under customary tenure as public property, and local users as squatters (Malawi Government, 2002, Cotula et al., 2009, Toulmin, 2009). Further, less tangible attributes of customary properties are barely appreciated by outsiders, including valuers and government officials (Anuar & Daud, 2012). Such attributes include authority for decision-making on use of land one has for owning land under customary norms (Witter & Satterfield, 2014). Further, Kombe (2010) and Witter and Satterfield (2014) contend that these aspects are normally uncompensated during expropriation, thus contributing to weaker protection for customary properties.

Practically, because constituent values of customary property rights are not well known, resulting compensations are rarely appropriate (Sheehan, 2000). Additionally, usurpation of ownership rights over customary land by various governments weakens its protection and compensation rights fundamentally, while actual expropriation and non-compensation catalyses insecurity and

destruction of established livelihoods of affected people as observed in Africa (Cotula et al., 2009, Toulmin, 2009), Malaysia (Anuar & Daud, 2012), Latin America and the Caribbean (Borras et al., 2012) as well as other parts of the world (Schmidt–Soltau, 2003, Asian Development Bank, 2007, Cernea, 2008). Furthermore, despite constitutional demands for appropriate compensation for expropriating customary land, various empirical works in Africa including Ambaye (2013) in Egypt, Chinsinga and Wren-Lewis (2013) in Malawi, Chachage (2010) in Tanzania, Famoriyo (1978) in Nigeria, Hall (2011) in Southern African countries, and Cotula and colleagues (2009) in several African countries, indicate endemic land takings without compensation. Where compensation is paid it is either inadequate, delayed, paid for improvements only and sometimes in instalments (Alemu, 2013). Generally, these tendencies make compensation an inefficient tool in protecting customary properties.

b) Deter Arbitrary Acquisitions

Presumably, in functional property markets, government competes, like other market participants, for resources. In expropriation government is the only buyer and competes with itself, and usually imposes unjustifiable prices for expropriated properties, which are often inadequate to counter losses suffered by expropriatees (Walker, 2008). This has been observed in several African countries including Ghana (Larbi et al., 2004), Mozambique (Witter & Satterfield, 2014), Nigeria (Akujuru & Ruddock, 2014), Tanzania (Kombe, 2010), and many others (Cotula & Vermeulen, 2011). For example, in Malawi, biological asset prices gazetted in 2010 (Malawi Government, 2010), are still in use in 2018 without any provision for appreciation. This challenge is common in several African countries as established by Ambaye (2013), Kakulu (2008) and Msangi (2011). Furthermore, government assesses compensation for its own takings using those outdated rates and information and attain inappropriate values for compensation, which fail to thwart unjustifiable takings (Kasanga & Kotey, 2001, Alemu, 2013). As Sulle & Nelson (2009) and Cotula and Vermeulen (2011), among others, argue compensation procedures for customary properties are almost non-existent in many developing countries, and ambiguous where available. This contributes to wrong computations, lower compensation, and even no compensation at all, and encourages government to arbitrarily take more customary land than required. A case in point is a secondary school project in Accra, Ghana, that needed only 20ha of land but acquired 167ha without any justifiable reasons (Larbi et al., 2004).

Practically, there are times that customary land holders are ambushed by developers as government takes the land and allocates it without appropriately informing the owners. In a case in Ghana, Kasanga and Kotey (2001) established that affected landholders just saw newcomers working on their land without their permission or knowledge and when they went to complain to the Land Commission the land had already been subdivided and sold to the developers, by the very same Land Commission. These takings are arbitrary in nature and they have also been noted in Egypt (Alemu, 2013), Nigeria (Nuhu, 2008) and Tanzania (Kusiluka et al., 2011), among other counties. In many cases, expropriation lacks any strategic development programme, financial standpoints, and proper criteria (Larbi et al., 2004). These aspects expound the fear that some takings of customary land result

from idiosyncratic decisions and actions of government (Nosal, 2001), thus contributing to arbitrary takings and impoverishment of expropriatees (Cernea, 2008).

c) Restore Customary Property Expropriatees

The need to restore expropriatees of customary land to their previous positions requires that constituent values of their property bundles, and hence consequential losses, be explicitly established, quantified, monetised (Sheehan, 2000), and appropriately compensated. For customary properties this is challenging since, apart from the material component, they are also characterised by an immaterial component, and are not defined by lines as private rights are (Simons et al., 2008). As discussed elsewhere, these immaterial aspects are not known by market value, and their losses mostly go uncompensated, at the detriment of the expropriatees. As Simons and Pai (2008) contend, some tribes are deeply attached with their lands spiritually and the right to land is vital for their survival and identities. Any attempt to place a pecuniary value on such lands has failed in many parts of the world as assessing such properties based on market value treats them as private lands, disregarding their various metaphysical aspects (Small & Sheehan, 2008). Hence, it is hard to establish a definite bundle of rights for customary land and fully indemnify its expropriatory losses (Pachai, 1978) and rejuvenate expropriatees appropriately. Empirically, Witter and Satterfield (2014) in Mozambique, Kusiluka and others (2011) in Tanzania, Kakulu (2008) in Nigeria, Ambaye (2013) in Egypt, Anuar and Daud (2012) in Malaysia, Mitchell and colleagues (2015) in Australia, and other parts of the world (Simons & Pai, 2008), established that such aspects as social and cultural linkages to gravesites, social networks, and hierarchies in a particular community, among others, are never compensated and hence permanently lost.

People in customary land settings also enjoy access to communal natural resources such as forests and their products, low-lying marshy areas for winter gardening and grazing animals, firewood picked from forests, medicines, various foods - honey, mushrooms, fruits, and bush meat, and many other benefits which are rarely compensated (Schmidt–Soltau, 2003, Sifuna, 2006, Witter & Satterfield, 2014). As these lands are commonly considered public property, governments also take them idiosyncratically and without any compensation, against their own Constitutions and laws. This land grabbing phenomena has been established in various African countries (Kasanga & Kotey, 2001, Cotula et al., 2009, Ambaye, 2013, Chinsinga & Wren-Lewis, 2013), in Asia, Latin America and the Caribbean (Borras et al., 2012, Fairhead et al., 2012). Arbitrary acquisition or land grabbing and omission of some important losses in compensation defeats the primary goal of restoring affected people; preventing them from becoming poor and losing critical cultural and religious ties to the land they have resided upon since their births. Essentially, affected people have been emotionally harmed and impoverished in the long term as they never re-establish fully, if at all (Cernea, 1998, Xanthaki, 2003, Kaufman, 2010, Kusiluka et al., 2011).

From the preceding discussions, it seems that the theoretical goals of compensation of safeguarding property, deterring arbitrary expropriations, and restoring expropriated property owners may be applicable to customary

properties. This is achievable if governments could respect the rule of law and adhere to stipulated procedures and standards that ensure that affected people are treated fairly with required compensation, where they are available. Additionally, compensation must consider the metaphysical values attached to customary properties if affected people are to be justly restored. However, various methodological challenges related to compensation assessment constrain these aspirations for customary properties as discussed in the following sections.

4.2 Assessing Compensation for Customary Properties

This section discusses market value as a basis for assessing customary properties for compensation purposes, and then covers the methods employed to compute market values, and the challenges encountered.

a) *Assessment Basis – Market Value*

As Mooya (2009a) expounds, market value is supposed to be an autonomous amount realised from objective valuations using quality market evidence obtained in a perfectly competitive market. However, Evans (2004) argues that essential conditions for a competitive market, such as many buyers and sellers, full information about the market and comparable properties in markets, among others, are rarely realised. Mooya (2009a) exemplifies this with a building valuation situation in the central business district of Windhoek, Namibia, where comparable market data to support that valuation was unavailable. Yet, through expertise, experience, and skill, the valuer created a figure that was readily accepted by the client for their purposes, even though it lacked external validation (Mooya, 2009a). Technically, an objective market value is seldom realised due to scarcity and high transaction costs for obtaining needed market data, even in well-established private property markets (Evans, 2004). As an example, Ghyoot (2008) highlights that accurate records of land ownership are available in various South African deeds offices, but their accessibility is hampered by high costs.

Practically, market evidence is even harder to get in customary property settings as documentation of rights and transactions is very minimal (De Soto, 2000), if any. De Soto contends that property systems with inadequate documentation of ownership, and their consequential transactions, generally suppress property markets, as observed in Egypt (Ambaye, 2013), Nigeria (Haruna et al., 2013), Malawi (Takane, 2008a), Tanzania (Msangi, 2011), and many other countries where customary tenure prevails. Obtainable market evidence relates to private property exchanges and is generally unsuitable for customary property valuation as the two property types are ontologically different with different value schema (Small & Sheehan, 2008, Kabanga & Mooya, 2017). Small and Sheehan further explicate that private property owes its value to its optimal material utility, while for customary tenure there is something more valuable to the holders, beyond occupational use rights that is metaphysical and non-commercial. For that reason market value fails as a fair basis and measure for compensation for customary properties as it cannot be autonomously validated because market evidence is lacking, and omission of some losses attached to customary properties that are invaluable to the affected people (Kaufman, 2010, Akujuru & Ruddock, 2014). Where property markets are under-developed, dominated by customary land tenure,

markets are no longer neutral gauges of property values as they do not meet required conditions. Fundamentally, market value cannot represent a fair price for the property and efficiently enable expropriatees to replace lost properties with their compensation. Essentially, resulting compensation sums fail to safeguard customary property, ensure non-arbitrary expropriations, and prevent expropriatees from becoming poor.

Technically, omission of non-market values is unsurprising because of the origins of market value: the Western world, where formal values are normally based on highest and best material utility and expressed in monetary terms (Small & Sheehan, 2008). Furthermore, valuers are not trained to predict prices of metaphysical values and losses in the market (Kakulu, 2008, Mitchell et al., 2015), and thus ignore them. This deprives expropriatees of fair compensation. Principally, and similar to private properties, market value does not equal owner's loss for customary properties, and is hence, less ideal unless it accounts for the less tangible aspects, and a market with the required conditions exists to provide quality market data.

Theoretically, market value considers buyers and sellers as willing when exchanging properties. For expropriation, the parties are unwilling since transactions originate from the existence of public purposes. The buyer (government) is legally mandated to acquire any property for relevant public purposes, while owners may not have had any plans to alienate the properties at that particular juncture. This is vindicated by the need to warn property owners through notices of the intention to acquire property contained in various national laws. In Malawi, subsection 44(3) of the 1994 Constitution demands that property owners be adequately notified about impending expropriations (Malawi Government, 1994). Hence, statutes compel property owners to relinquish their properties unwillingly, and in some cases at gunpoint, as in South Africa during apartheid (Walker, 2008). Thus, both transacting parties are statutorily forced to exchange and so settings for the willing seller principle and expected market value of acquired properties are seldom obtained. For customary properties, the situation is even more difficult as it is not generally a commodified asset, with more sentimental and non-market values, and ownership that is intergenerational (Kasanga & Kotey, 2001, Hall et al., 2015). These intrinsic values are mostly ignored in compensation procedures, and hence the final compensation itself (Small & Sheehan, 2008).

For compensation quantum, market value of expropriated property is the key item. However, most customary land is either entirely omitted from compensation packages, or partially considered. According to Benson (2008), customary land was not compensated in former British colonies because it was abundant and easily replaceable. This is unfeasible nowadays as land is scarce and valuable. In Malawi, the growing scarcity of customary land is emphasised in the 2002 national land policy (Malawi Government, 2002). Other challenges for customary land compensation, as Anuar and Daud (2012), Kakulu (2008) and Walker (2008), among others contend, is to identify the real claimants and the extent of their shares in the property, and how to assess those shares justly for compensation purposes.

For partial takings in which remaining land depreciates in value due to proposed uses of acquired land or actual project works, and such loss is compensable, reconciliation of land taken and remaining with owner for compensation aims is difficult as customary property rights are inexplicitly bound. This challenges computation of severance of land and consequential losses. For common resources where each community member benefits, how are these benefits assessed and compensated? Furthermore, how is loss of immaterial benefits handled using market value, which is indifferent to these immaterial benefits? These issues challenge assessment of compensation appropriate for customary properties and defy market-reliant methodologies.

For disturbance compensation, most aspects are financially computed and present no real challenge. For example, legal fees in cases of litigation can be obtained from legal practitioners while valuation fees can be obtained from valuers and government. Solatium is elusive where land is not compensable, since it is a proportion of total compensation. Sometimes special value compensation is required where special assets, like graves, are concerned. Akujuru and Ruddock (2014) highlight that affected rural people in Nigeria consider compensation adequate when their social and cultural values attached to the property are indemnified. This is also applicable in other parts of the developing world (Keon-Cohen, 2002, Keogh, 2003, Anuar & Daud, 2012). However, estimation of compensation for such aspects is challenged by scarcity of market data, nature of benefits and losses under consideration, and nature of the basis and assessment methods. These drawbacks contribute to compensation that is inappropriate to restore affected people.

b) Assessment Methods

As discussed under compensation assessment basis and methods, comparison, income, and cost methods are commonly used in assessing market values for compensation purposes. Yet, in practice, market evidence for customary properties, or where property markets are under-developed, is scarce (Kakulu, 2008, Larbi, 2008, Msangi, 2011, Alemu, 2013), and valuation using comparative methods is difficult. Exchanges of customary properties are done under traditional practices (Takane, 2008a, Msangi, 2011, Ambaye, 2013, Haruna et al., 2013), and transactional data is scarce and costly to get, where available. For income capitalisation approaches, their application to customary properties is challenged by rarity of necessary data like rental income and discount rates as most customary properties are under own use, and rarely generate any income.

For cost methods, comparable land values and cost estimates for buildings is almost unavailable. Most customary properties are constructed from rudimentary materials that lack known costs, professional fees and labour charges. Depreciation data for such building materials as grass, trees and bamboo, among others, is non-existent. Such data gaps complicate use of cost approaches in valuing customary properties, obtaining compensation amounts without reasonable representation of actual properties or losses. Empirically, Kakulu (2008) established that using cost approaches to value mostly elementary properties for compensation purposes in rural areas in the Niger Delta in Nigeria realised lower values and contributed to inadequate compensation that frustrated affected people. Kakulu's research also highlights the dilemma faced in computing depreciation for highly

rudimentary and non-exchangeable properties. These deficiencies have also been observed in Tanzania (Sulle & Nelson, 2009) and Malaysia (Anuar & Daud, 2012), among others. Such methodological deficiencies epitomise why market-dependent compensation assessments are largely inappropriate for highly non-market properties, and compensation that is mostly unacceptable to the expropriatees.

Broadly, where market data is inaccessible, comparison, income, and cost methods of assessing compensation are handicapped and bear values that do not adequately satisfy expropriatory losses suffered by customary property holders.

4.3 Summary of Key Issues

a) *Compensation Theories and Customary Property Rights*

As Kaufman (2010) explains, compensation is principally meant to prevent impoverishment of any person who losses his or her property for a public benefit. Thus, compensation is expected to equal actual expropriatory losses suffered, and not more or less. Theoretically, this core requirement of compensation is generally applicable to all expropriatable properties, including customary properties. By using market value as the basis for compensation for the various theories the presumption is that it will achieve this goal satisfactorily as expropriatees will be able to replace lost properties from the market and be appropriately re-established.

b) *Ontology of Customary Property Rights*

These properties generally have amorphous boundaries and are characteristically defined by both physical and non-physical aspects such as intergenerational ownership (ancestors, the living, dead and unborn (Abdulai & Ndekugri, 2008)). The non-physical aspects challenge valuers in ably understanding, quantifying, monetising, and calculating representative figures as they do not exchange hands in commercial terms as private properties do. Hence such aspects are disregarded during compensation assessment and bear lower compensation that is unacceptable to the expropriatees. For compensation to reflect the true and actual losses suffered then customary properties must be treated in their entirety, together with their intangibles, and not like private properties during compensation assessment, or public properties during expropriation.

c) *Dominance of Customary Property Rights*

Dominance of customary property rights in Africa and other developing countries means that their transactions, as the subject property themselves, are seldom recorded in any register. Where some records exist, available data lacks in many aspects such as use of property and nature of transactions. Consequently, comparable market evidence to support objective valuation based on market value and market-reliant methods is scarce. This is more challenging when considering the immaterial aspects of the properties, which are rarely documented, quantified, and monetised. In such settings valuers need to use locally sourced data on how exchanges are conducted based on local transactions, as long as it is acceptable to the concerned parties and serves the purposes at hand, without necessarily sticking to market value

dictates, and importing unfitting data from elsewhere, as argued by Mooya (2009a).

d) Use of Market Value as a Compensation Basis

Market value is generally applied as a basis for assessing compensation during expropriation with the belief that it will enable expropriatees to replace lost properties from the market. In the absence of functional property markets in customary property dominated environments in Africa and elsewhere, it is difficult to attain reasonable amounts to represent expropriatory losses and appropriately restore affected people. Market value basis and its techniques are thus a challenge for customary properties. The situation worsens as no alternative valuation bases and methods are provided for by relevant laws in these countries. The failure of market value to fulfil intended purposes of compensation for customary properties thus calls for alternative valuation bases and methods.

e) Use of Market Value as a Compensation Basis

As Denyer-Green (2014) contends, assessing market values for compensation aims is presumably done by ably trained and professional valuers in countries with well-established property markets and dominated by private property rights, like the United Kingdom. However, in most developing countries where customary property rights excel, including Egypt (Ambaye, 2013), Malaysia (Anuar & Daud, 2012), Nigeria (Kakulu, 2008), Tanzania (Sulle & Nelson, 2009), Papua New Guinea (Bannerman & Ogisi, 1994), among others, property assessments for compensation are done by mostly inexperienced people. For example, in Egypt, assessments are normally done by valuation committees, comprising local community leaders, engineering professionals and others without any valuation knowledge and skills (Ambaye, 2013). In Nigeria, some assessments in rural areas are done by claim agents, apart from trained valuers (Kakulu, 2008). Broadly, some of these assessors are academically qualified (Kakulu, 2008) but lack relevant knowledge, skill, and experience for dealing with customary properties. Among other factors, this challenge is blamed on the type of training that valuers get as it is mostly based on Western curricula that rarely cover customary or native rights (Kakulu, 2008, Mitchell et al., 2015). Thus, such valuers wrongly treat customary property rights as private and transactable during compensation assessment. Similarly, use of inexperienced and non-trained assessors is blamed on scarcity of trained valuers (Ambaye, 2013), and mistrust towards government valuers by expropriatees, as in Nigeria (Kakulu, 2008). All these capacity deficiencies undermine use of market value as a reliable compensation basis.

Broadly, the above issues contribute to amounts that are purported to be market values, yet they are created subjectively based on data that does not meet market value requirements, and by less qualified and less experienced people. Additionally, some values are created by valuers using their expertise and experience where data is unavailable (Mooya, 2009a). At best, these figures are market values without a market (Evans, 2004, Mooya, 2009a, Kaufman, 2010, Ambaye, 2013) that do not offer adequate restoration of expropriatees.

5. Conclusions and Recommendations

Fundamentally, the analysis shows that current compensation theories are applicable to customary properties as they mainly aim at protecting property and preventing expropriatees from becoming poor. Whilst this compensation goal is fairly achievable for private property owing to realisation of fair market values where market evidence is accessible, there are various ontological and methodological challenges when it comes to customary properties. Market value is principally challenged by the nature of customary properties, which are conceptually non-exchangeable; scarcity of comparable market evidence to support objective valuations and realise reasonable market values; and use of improperly trained agents and people as compensation assessors. Market value is hence not an ideal basis for assessing compensation for customary property as, in addition to being inadequately compensated, expropriatees may become destitute.

Furthermore, this theoretical analysis shows that the nature of customary property rights leads to difficulties in establishing the actual property rights bundle to assess during expropriation, quantifying, and monetising material and intangible losses. Principally, customary property rights are often misinterpreted and undervalued as they do not conform to common standards of market value, the very basis used to monetise them through market-reliant methods. These deficiencies are common where property markets are under-developed, and where customary properties dominate or are virtually non-existent. As market value basis and market-reliant assessment methods are unsuitable in these settings, it is recommended that further research be conducted to find alternative bases and methods of assessing compensation that recognise customary property rights in their entirety and not treat them as private ones. Further, such bases and methods should be able to use available data in particular settings, and not only data that meets market value criteria for assessing compensation for customary properties. It is argued that this is required to address current shortfalls.

The study further recommends that curricula regarding land administration and property valuation be improved to include customary property rights as part of their syllabi, and not only promulgate statutes that favour privatisation of customary properties. As such, research on the current content of various curricula in areas related to land, expropriation and compensation in Africa, and valuation theory and customary property rights, is necessary to feed into the development of the new or improved curricula, market bases and methods, and policy.

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Between Abuja and Lagos: Insights of Price and Value in Residential Real Estate

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Abstract

Nigeria's most prominent real estate markets are Lagos and Abuja. Between the years 2011 to 2015 saw unusually steep prices and pronounced vacancies in Abuja's high-end residential segment compared to Lagos'. This discrepancy suggests market differences which are deserving of investigation. This paper, therefore, comparatively examines these two markets by exploring the economic concepts of price and value which sustain the market system. The data was sourced by a questionnaire administered to estate surveyors and valuers as well as the asking prices from property archives. The main finding of this paper is that Abuja's prices and rents significantly exceed Lagos' despite it being a less economically productive city. One can conclude that the Lagos market is more resilient while Abuja's buoyancy is more apparent than real.

Keywords: Price; Value; Real Estate Markets; Abuja; Lagos

1. Introduction

The most prominent real estate markets of Nigeria are to be found in the cities of Abuja and Lagos. These urban locations offer investment opportunities mainly in commercial, residential and industrial property. Due to the basic need for shelter and overpopulation, there is a substantial housing shortfall in both locations - Lagos is 2.5 million units short (Lagos Bureau of Statistics, 2015) and 600,000 for Abuja (RIRFHUD, 2017). Thus, residential development is the most favoured investment outlet. The evident demand for housing in Nigeria's expanding economy under conditions of rapid urbanisation in both cities implies that the bulk of production will end up either in the investment or letting sub-sectors of the real estate market, as developers characteristically pursue the profit motive.

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The marketplace, as the forum of interaction for makers and takers, determines and delivers the rewards of real estate production. This outcome is achieved after price is taken into account. The market rewards appropriately through the instrumentality of the price mechanism, the defining feature of the free market economy (Brems, 1991). Being part of a market economy, Nigeria's real estate market is governed by price. Thus, where there is a marketplace challenge in respect of real estate outputs, questions arise regarding the basis of investment decisions. Such situations underscore the necessity for investor-producers to possess market knowledge as well as seek investment advice. For Nigeria's producers of "to-let" and "for sale" real estate, this is especially important since the relatively lengthy production period and the immobility of the finished product accentuates the risk of vacancies and unsold property. This is particularly true if market conditions change or investment expectations are unrealistic from the start, thereby bringing complications of uncertainty and risk to the development process (Darlow, 1982). Since profit and loss are ultimately determined in the marketplace, knowledge of the market (its situation, characteristics, trends and prospects) is essential for successful investing. Regarding real estate production, successful investing can be seen to have taken place if "to let" and "for sale" outputs are disposed of not only within a reasonable time after completion but also, within rent and price expectations. Failure in this regard creates the troubling situation of long-lasting vacancies and unsold development.

In these most prominent real estate markets of Nigeria, significant differences were observed in terms of price, vacancies and unsold development in the high-end residential sector between 2011-2015. It was observed that Abuja prices for development land and completed development were consistently and vastly higher at the same time. Furthermore, its market had a higher level of unlet and unsold development. This research effort intends to resolve whether or not the price differences are unusually high for Abuja relative to Lagos. Furthermore, it assesses if this trend is truly indicative of market buoyancy considering Abuja's high level of vacancies and unsold development.

Since markets and economic activity are the subjects of this study, the economic concepts of price and value are of relevance to the evaluation. There is, therefore, an exploration of these concepts upon which the market system is built and sustained. The aim is to evaluate the extent to which price and value as economic principles help to explain prices in the study areas, especially the vacancy phenomenon. Price plays a vital role in this investigation because it leads to value. Value is important because it emanates from market prices. As such, prices must have a basis in value. And value, in respect to the real estate good, must symbolise potential and actual productivity, affordability, availability and utility. Together these aspects bring value-seeking buyers to the marketplace.

For at least three possible reasons, vacancy, as a phenomenon, is not alien even to thriving property markets. First, it is unusual and virtually impossible for all property to be taken up at any point in time under normal market conditions. Furthermore, production is continuous where demand is strong because potential profitability is always an incentive for developers. Lastly,

the heterogeneous nature of real estate and the reality of human differences in taste means that some property may not always meet buyer or user requirements. However, the existence of pronounced vacancies under a regime of high prices which should ordinarily indicate a resilient market is suggestive of an anomaly. Thus, the study involves comparisons and contrasts which arise from two angles. Firstly, it compares Abuja and Lagos' asking prices for the five-year period. Secondly, it contrasts the economic concepts of price and value and argues that not only do price and value differ, but so do the markets of Abuja and Lagos.

The topic is relevant to existing and prospective investors in the high-end residential segment in the study areas, particularly Abuja. It highlights the necessity of having a better understanding of the market and the importance of professional real estate advice. It is believed that these aspects will make for better decision-making. Similarly, the topic calls the attention of policymakers to the importance of supporting the real estate industry through legislative reform of land administration and other measures of enablement and enhancement for improved performance. This research is a pioneering comparative study of these two leading real estate markets as well as of the Abuja vacancy phenomenon. Comparable upscale residential districts were identified in each city as study areas, and the price range for land and buildings was obtained from records of Nigeria's real estate marketing publication *Castlesweekly*. In addition, field data was gathered from estate surveying and valuation firms. The instrument of data gathering was a questionnaire on market issues and other relevant topics in the two locations. The questionnaire was administered to respondent firms. The questions were designed to allow the respondents to rank the variables according to their order of significance. The results were analysed and presented using the Relative Importance Index method.

The findings suggest that Abuja's prices were consistently higher than Lagos'. This trend was adjudged by respondents to be not only unjustified in terms of comparative economic performance, but also, anomalous since it was accompanied by high vacancies and developments which had remained unsold for periods exceeding one year. There are also characteristic differences between the two locations; exceeding terms of land supply, land accessibility and vacancy levels, which confirms that real estate markets tend to differ according to local conditions.

Following the introduction, the paper defines its scope, undertakes a literature review; rationalises the study by identifying the gap which it aims to fill. It then outlines the methodology and subsequently reports and analyses the survey results. It discusses the findings and identifies practical implications before reaching a conclusion and making recommendations.

2. Scope of The Study

This paper studies high-end residential price differentials between Abuja and Lagos and attempts to explain the pronounced phenomenon of vacancy over the review period with the intention of understanding these markets better. For comparison with asking prices, it would have been useful to have data on completed transactions, but this was not possible in any significant quantity

in the absence of a public data bank. Nonetheless, since this study is more about price than about value - how price leads to value - it is appropriate to make use of asking prices. It was, after all, the high published asking prices of Asokoro and Maitama in Abuja that gave rise to the investigation. Asking prices for this work were collated from property market publications. In the absence of a comprehensive market database, the vacancy phenomenon had to be examined by seeking the market knowledge and perceptions of experienced practitioner firms in these markets. The target population, therefore, constitutes of estate surveying and valuation firms. They are chosen as being the group most relevant to the investigation because, by training and function, they possess knowledge and experience of market characteristics, trends and prospects.

3. Literature Review

Real estate investment is a rational economic activity. The objective of all economic activity is to obtain value. This is achieved by creating usefulness which enables the delivery of value in exchange. The norm is for value to be delivered to the consumer in the form of the satisfaction of his want, and the producer in terms of compensation. This human desire to obtain value leads Harvey (1996) to assert that modern economies are often referred to as 'exchange economies' in which people produce not merely for the satisfaction of their wants, but in order to trade or exchange their extra output. Real estate or property investment (investment in land and improvement of land) is also an economic activity aimed at obtaining value. Real estate development is the outcome of a process of production which requires costly inputs in order to achieve a profitable outcome. It is a process aptly described by Fraser (1984: p.237) as "*the advancement of the usefulness of land*".

Real estate, real estate markets and the real estate industry are vital to the modern economy. The World Bank (1989: p.87) acknowledges the role of real estate, stating that "*in most countries, real estate (including land) accounts for between half and three-quarters of national wealth*". This statement implies that it is impossible for countries to create wealth without real estate, or to be wealthy without possessing it. According to Minguzzi (2014), real estate helps to boost the modern economy in the following four ways. Firstly, it enables economic activity through the production and supply of space for industry and business. Secondly, real estate secures employment provision for professionals, artisans and other workers. Thirdly, it complements and supports the government's infrastructure policy through real estate development. Lastly, real estate provides an investment outlet through which institutional investors can maximise returns on investible funds. These roles also highlight the importance of governments in enabling, protecting and enhancing real estate markets.

The real estate markets of Abuja and Lagos are essential to Nigeria's economic development, especially as these are leading centres for foreign real estate investment. For instance, Nigeria's economy was on a growth trajectory in 2011-2015 with the World Bank (2017) reporting an average growth rate of 5.7% per annum between 2006 and 2016. Specifically, between 2011-2015, GDP grew at the average rate of 4.8% per annum according to Nigeria's Economic Recovery and Growth Plan (2017). The National Bureau of

Statistics (2016) further reports that real estate was part of this growth with a GDP contribution of 7.53% and 7.5% in 2011 and 2015 respectively. According to PwC (2015), investment in the real estate sector was $9.16 billion in 2014 and was projected to increase to $11.36 billion in 2015. The industry is projected to achieve an annual growth rate of 9.49% between 2016 and 2020 (Akande, 2017). Given these prospects, investors, both prospective as well as existing, would benefit from gaining a better understanding of these local economies and real estate markets.

The history of property markets in Nigeria is comparatively more recent than those of western systems for two fundamental reasons. Firstly, the international real estate market is founded upon the concept of private property rights and the transferability of such rights. However, in the space now known as Nigeria, Mabogunje (2009) explains that pre-colonial traditional systems permitted communal land ownership only. Second, as a consequence, land was never alienated. He further reiterates this upon stating that "*To sell land to a stranger or migrant was to render the security of the community concerned a hostage to fortune. Hence, when the colonialist came, everywhere he went he was told that there was no tradition of alienating land*" Mabogunje (2009: p.4). However, with British interventionism, the established customary order was subjected to change as the colonialist sought land for their activities. Real estate markets have since developed in Nigeria with the cities of Lagos, Abuja and Port Harcourt being the most important centres.

The very fact that these Nigerian cities differ as to location and function suggests that differences would exist between them concerning their economies, which in turn, should be reflected in the strengths and characteristics of their real estate markets. Lagos and Abuja, the subjects of this paper, have some similarities and differences. The similarities are that Abuja is federal capital while Lagos once was, and both cities have thriving real estate markets. Furthermore, both locations have a substantial shortfall in residential accommodation, rapid urbanisation and annual per capita incomes which are significantly higher than the $2,450 national average; with Lagos at $4,333 and Abuja's lower at $2,685 (World Bank, 2015). The contrasts are that Lagos is an industrial and business city while Abuja's function is administrative. Lagos is coastal and Abuja inland. Lagos is an old city while Abuja is relatively new meaning that Abuja had the benefit of a master plan from scratch which Lagos did not. Furthermore, Abuja was created in post-independence Nigeria while Lagos came into prominence under colonialism; and finally, Lagos' population is seven times that of Abuja.

The logical reasons why local market differences should exist between both locations are that physical real estate, rights in which are traded in these markets, is fixed in location as well as being a factor input necessary for economic production. Thus, the level of local productivity determines the value which prospective and existing investors ascribe to real estate. Potential and actual productivity, as well as affordability are prime considerations for people in making their value assessments. Fraser (1984) reiterates this point upon stating that people rationalise the payment of rent by confirming through calculations the potential profitability of a location and are thus able to make bids on a competitive basis. The same logic applies to the buying of real

estate. Where local conditions do not result in effective demand for particular types of real estate, the consequences come as a drop in its value and unlet or unsold property.

As with other economic activities, real estate investment is guided by the economic principles of price and value, both of which are rationally founded. While it is acknowledged that sellers may set prices arbitrarily, real estate market trends guide prospective sellers in rationalising their expectations in tune with reality. As such, new investment in real estate development would be rationalised by the prospects offered by the level of returns to existing investors. Price expectations on new investments should have a basis in market trends and prospects, both of which reflect market strength. A situation in which sellers' expectations vary significantly from buyers naturally should raise questions as to whether the figures mentioned are arbitrary price expectations or realistic price expectations founded upon market performance. If such discordantly high figures are described as prices, then they may not necessarily represent value. If, then, they are not values, then they are not reflective of the true strength of the market; if the prices are not reflective of the market, then they give a false notion of the real estate industry which, as has been asserted, reflects the productivity and prospects of the local economy. As clarified by Blackledge (2009: p.27) "*In the end, value comes down to what a prospective purchaser or tenant is ready and able to pay and what the prospective vendor or landlord is financially able and willing to accept. Unless a figure satisfactory to both can be achieved, all valuation theory is pointless. There is no use in deciding that a property is worth a certain value if nobody is prepared and able to purchase or rent it at that price*".

Thus, the two parties to a property transaction are essentially engaged in a search for value. It is a search which is built on expectations. The seller positions himself to receive value by seeking a price which meets his expectation but may yet accept a lower price based on the expectations of the buyer. The buyer approaches his idea of value by agreeing only to a price which makes it possible to attain his investment motive(s). If, then, both price and value have "expectations" as a denominator, can it be claimed that price and value are one and the same? The indications are that they are not. In terms of price, "expectations" relate to recompense while in the case of value they pertain to utility. Furthermore, Olajide et al. (2016: p.4) make the distinction that: "*price is what you pay for goods or services you receive…value is what goods or services pay you*". Price and value are emphasized as there is a need to address the extent to which these concepts should apply to real estate development which have been undesired for lengthy periods of one year and more, yield no income and meet no needs, but bear high price tags and continuously remain in the market, either to let or sold.

The observed high prices of Abuja may not have been indicative of high value as speculations by the general public trailed them, while doubts of their validity were expressed by real estate brokers (Etteng, 2015; Adejokun & Yunusa, 2015). Three reasons may account for this speculation and doubt. First, Abuja prices and rents are consistently and vastly higher than for comparable locations and similar facilities in Lagos; an older market with a proven resilience. Another reason is that the figures appear unrealistic and out

of tune with the basic administrative function of Abuja. Again, it defies rationality for developed property to be left vacant for upwards of eight years when there are people who have a need for it (Kolawole, 2015).

It is important to establish whether or not these prices are indicative of value. If indeed such prices are indicative of value, then being reflective of the productivity of the Abuja economy, they should impact positively upon the volumes of real estate sales and lettings. Fraser (1984) observes property values and macroeconomic trends are inter-reliant. However, the phenomenon of unusual vacancies in Abuja would tend to contradict the view that its higher prices reflect higher values as well as economic productivity, relative to Lagos.

Vacancies exist in both of these markets. But in 2011-2015 they were more pronounced in Abuja at a time when its prices were far higher than Lagos'. Residential or household vacancies exist when completed property available for occupation is either unoccupied or unsold for one reason or another over a length of time which may differ from country to country as the vacancy phenomenon is observable in different parts of the world (Nam et al., 2016). However, if the percentage or extent of vacancies is unusually high, they are considered to be a disadvantage. The factors responsible for vacancy may differ especially between developed and developing economies. Where incomes are low and urban growth rapid, as experienced in developing countries, vacancies are linked with an inadequacy of dwellings and affordability issues. Research on South Korea (Nam et al., 2016) finds that vacancies as symptoms of regional issues consequent upon urban development may also arise from reasons such as rapid and excessive supply, an ageing population, the growth of slums, migration or city shrinkage. These situations may lead to more houses being unoccupied. According to Economistview (2005), there is a natural vacancy rate which is not a constant and may change, either causing price rises or falls. Therefore, knowledge of this natural rate helps in giving an understanding of real estate markets.

Intrinsically, the notion of vacancy is not always a disadvantage as might be supposed, for, without it the migration of people and households from one urban location to another would be hampered. It is natural that accommodation should be available in desired locations if and when people decide, or have to move, to a new house. The existence of vacancies ensures the availability of accommodation for intra-urban and inter-urban migrants. The vacancy characteristic of Abuja is yet to be addressed by researchers. The dearth of studies on this issue suggests that an investigation would be a necessary step towards a better understanding of the factors at play. It is an integral part of this study to resolve whether or not the pronounced Abuja vacancy phenomenon is a disadvantage and to identify the factors responsible for it.

The speculations of the public and the doubts expressed by practitioners as to Abuja prices have not been reflected in published real estate research. This may well be an oversight and not because the topic is not of interest to practitioners, academics and policymakers. Indeed, the role of real estate in the economy coupled with the human need for shelter suggests that there will be economic, social and environmental implications in conditions of long-

lasting vacancies, unsold development and significant housing deficits. In line with this, Onwuanyi et al. (2017: p.401) advance the argument that underperforming real estate investments constitute a loss not only to their owners, but also to the macroeconomy because a nation's wealth consists of "*the totality of the assets of all its citizens and those of the State*".

Nevertheless, published research on Abuja and Lagos' residential property during, and immediately after, the study period reveals an engagement with price and value issues from perspectives which are relevant to this study. For example, Abidoye and Chan (2016) consider the determinants of real estate investment value in the Lagos market. The authors empirically identify, for the benefit of existing and prospective investors, the variables which affect value so that they may better understand the real constituents of value. Their findings that location and neighbourhood characteristics are the two most important variables affecting value serves to confirm the assertion that real estate markets are essentially local. Odubola et al. (2017), in examining the factors which affect residential rental values in Lagos, identify income (and location to a lesser extent) as having the greatest significance. This finding is essential in explaining why a lettable property may remain on the market for lengthy periods if price and location are not right.

Regarding the Abuja market, Wahab et al. (2017) studied the relationship between property returns and macroeconomic factors. Their findings are that property returns are significantly influenced by macroeconomic indicators (the real GDP, exchange rate, inflation, interest rate and employment rate), leading them to recommend that "*policymakers should painstakingly study past and present economic policies before instituting new policies because such policies could adversely affect the property market…this could affect the contribution of the real estate sector to national economic development*" (Wahab et al., 2017: p.81). This finding confirms the interrelationship of real estate markets and the economy and why it may be anomalous for high prices not to connote high values - for if values are high, then so would be the returns.

Oyetunji and Olowofeso (2016) and Oloke et al. (2017) discuss the issue of pricing in the Lagos market. Pricing is distinct from value as it relates to those factors which determine market output, or which define the expectations of producers (sellers and lessors), whereas value arises only after marketplace interactions. The former examined the effect of selected macroeconomic variables on the price of houses and flats. The study revealed a positive correlation of the interest rate and exchange rate and that residential property prices are sensitive to fluctuations in macroeconomic variables. These findings serve to reinforce the importance of the macroeconomy in real estate investment decisions. The latter study seeks to explain the residential vacancy phenomenon in the Lagos market which was trailed by "*speculation as to whether the…price regime is simply a case of price mismatch, an inappropriate pricing strategy, principal-agent exuberances or a case of housing price bubble that will soon burst*" (Oloke et al., 2017: p.29). This is done by a survey of stakeholders, namely property owners, property agents and property developers. The finding is that property owners' insistence on unilateral price fixing disregards the established principles on which professionals are best suited to offer advice. This, in turn, prolongs the time

real estate listings remain on the market. This finding is of great relevance to this present study as it highlights an important characteristic of the Lagos market which needs to be compared with the Abuja situation. The finding also explains the rising rate of vacancy in the Lagos market. Again, it underscores the essentiality of market knowledge (its situation, characteristics, trends and prospects) for successful investing. These authors also elucidate the various ways in which price features in the marketplace by identifying asking (or selling) price; transaction (or traded) price, and lastly, optimal price which is attained when "*the able buyer's valuation equals the least a seller can accept*" (Oloke et al., 2017: p.29). These distinctions reinforce the earlier assertion that price is a factor of the market.

The literature review, therefore, reveals the following salient issues. First, the real estate industry is important to Nigeria because of its growing contribution to GDP and economic development. Second, the economic principles of price and value form the bases of decision-making in real estate investments. Third, real estate values are market-derived and must be realistic in order to have meaning. Fourth, property values and macroeconomic trends are inter-reliant. Fifth, real estate markets are locally-based, and therefore, would tend to vary in characteristics from one location to the other. Sixth, vacancies are not unusual but constitute a disadvantage if they become excessive. Lastly, there is a dearth of comparative studies on the Abuja and Lagos real estate markets and the pronounced vacancies and unsold development in Abuja.

Against the given backdrop, this study espouses the view that the issues identified in the literature review can be elucidated by an investigation of Abuja and Lagos 2011-2015 price trends. It does so with the aim of establishing whether or not Abuja's prices were:

(a) Unusually high;

(b) Indicative of buoyancy;

(c) Suggestive of value, especially in light of the high levels of vacancies and unsold development.

4. Methodology

This study involves primary and secondary research methods. A survey garnered primary data. The survey instrument was a questionnaire designed to allow respondents to give answers which could be ranked on the Likert scale, and enable analysis and interpretation using the Relative Importance Index method. The questions were generated from market-relevant issues and other topics which realtors and the general public raised regarding Abuja's high-end prices in relation to those of Lagos. The survey sample consisted of firms of estate surveyors and valuers who, by professional training and function, are reasonably expected to have in-depth knowledge and experience in these markets. The sample size was determined from the 2017 membership directory of the Nigerian Institution of Estate Surveyors and Valuers which respectively listed 367 and 130 registered firms in Lagos and Abuja. Of these numbers, respectively 184 (50%) and 65 (50%) were selected, making a total sample size of 249 on which the survey instrument was administered. The total number of responses received was 158 (representing 63% of the sample),

and these were all found to be valid. The responses were analysed using the descriptive tool of Relative Importance Index (RII).

4.1 The Study Areas

Two sets of upscale residential districts, each in Abuja and Lagos, were considered to be comparable due to their relative prestige and exclusivity. These districts represent the study area. For Abuja, the districts are Asokoro and Maitama, while for Lagos, Lekki Peninsula (Phase 1) and Oniru were chosen.

Located to the north of the city, Asokoro and Maitama were created in the original master plan of the Federal Capital Territory and designed to be the best residential districts and the abodes of senior government officials. Asokoro harbours the "three arms zone" (the Presidency, the National Assembly and the Judiciary) while Maitama lies next to Asokoro.

Lekki is a naturally formed peninsula which fronts onto the Lekki and Lagos Lagoons. The Lekki (Phase 1) residential estate originated in the 1990s under the Lagos State Government's Housing Development Policy. From inception, it acquired a reputation as the best residential estate in Lagos. Lekki (Phase 1) is an extension to Victoria Island, which in the 1990s had started to lose its purely residential character to commerce as firms and businesses relocated from the deteriorating and neglected Lagos Island. The land area of Lekki (Phase 1) estate (Admiralty or left side) is 100 hectares while the entire peninsula is 755km^2 (Lagos State Development Plan, 2013; Lekki Directory, 2016). The Oniru estate which is contiguous with Lekki (Phase 1) is much smaller in area at 732 acres (Jiboye, 2012).
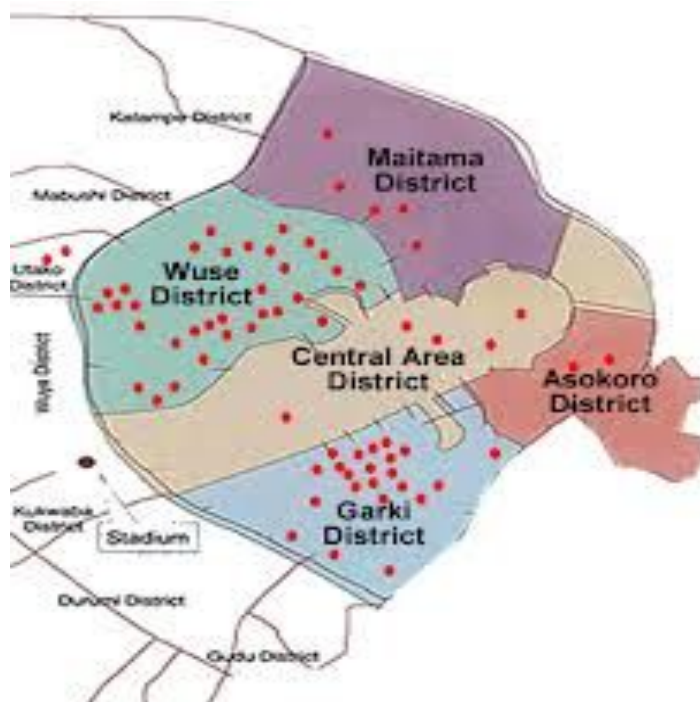

Figure 1: Maitama and Asokoro on Map of Abuja Districts (Phase 1)
Source: Ministry of the Federal Capital Territory

Figure 2: Map Showing Lekki Peninsula
Source: Google Earth

This study is restricted to these high-end residential properties which are defined as detached or semi-detached storey buildings with outhouses and other attachments such as basements, swimming pools and guest chalets, built in a modern constructional style with high-quality materials and finishes. They are located in areas exclusively zoned for low-density residential development. This definition also includes undeveloped residential land within such areas.

5. Results

Table 1 is a compilation of the broad range of asking prices in the years of the study. The figures show that from 2011 to 2015, asking prices for high-end residential land and buildings in Abuja were consistently far higher than for the Lagos. Table 2 shows that over the study period, in terms of land prices, Abuja exceeded Lagos by between 45% and 129%; the former also exceeded that latter by between 80% and 166% in regard to house prices, and in the case of rents by 150%.

Table 1: Range of Asking Prices (Development Land &Houses) and Rents

Location	Year	Abuja (N' millions)		Lagos (N' millions)	
		Asokoro	**Maitama**	**Lekki (Phase 1)**	**Oniru**
		1000m² plot size			
Land (approx. 1000m2 plot size)	2011	120-140	120-170	80-90	100-110
	2012	125-140	120-170	80-90	100-110
	2013	125-150	125-180	90-100	110-120
	2014	140- 220	200-250	100-120	100-120
	2015	180-300	250-300	100-120	100-120
		*500m² plot size			
	2011	150-180	180-280	100-120	100-120
	2012	150-180	220-280	100-120	100-120
Houses (5 bedroom)	2013	150-200	200-600	100-120	100-130
	2014	135-200	200-600	100-120	100-130
	2015	135-200	250-800	125-135	125-135
Annual Rents	2011-2015	Between ₦ 15 million and 35 million		Between ₦5 million and ₦15 million	

Source: Castles weekly publications (2011-2015) * The approx. 1000m² plots are usually split into two and developed into separate structures

Table 2: Average Prices and Rents

Price &Rent (₦ 'millions)

	Abuja Asokoro & Maitama Averages (%)					Lagos Lekki (Phase 1) & Oniru Averages (%)				
	2011	2012	2013	2014	2015	2011	2012	2013	2014	2015
Land	275	277.5	442.5	405	515	190	190	205	225	225
Increase:		2.5	165.00	-37.5	110		-	15	20	-
Houses	395	415	575	567.5	692.5	220	220	225	225	260
Increase:		20	160	-7.5	125		-	5.0	-	35
Rents	₦ 25 million					₦10 million				
% difference	150					-				

Table 3, below, displays the extent of agreement of the respondents on the issues relating to the local economies and markets, comparable high-end residential property prices, comparative land supply and accessibility, pronounced vacancies and investors' predisposition towards professional advice including pre-investment studies.

The questionnaires were administered to firms of estate surveying and valuation, not individual estate surveyors and valuers. This was done in order to improve the chances of receiving responses which would be broadly representative of market experience. It was decided that this method would create a better picture of the issues arising in the two study areas under

comparison. The responses of the firms are the summations of their market experiences. There were thirty questions on which responses were sought. This number of questions allowed adequate coverage of the issues from both the Abuja and Lagos perspective. The analysis of the responses was done using the RII method to ascertain the degree of importance attached to each statement by the respondents. The method allows the respondent to weight their responses according to the extent of their agreement with each statement or issue. This method was adopted because the thirty issues in the questionnaire are all potential explanatory factors in the study. It was decided that having each factor weighted by each respondent should give a guide as to their relative importance, thereby enabling inferences to be drawn. The formula for the RII is as follows:

Where:

$$\textbf{Relative Importance Index} = \frac{\Sigma_w}{AN} = \frac{5n_5 + 4n_4 + 3n_3 + 2n_2 + 1n_1}{5N}$$

In the above equation, w is the weighting given to each factor by the respondent, ranging from 1 to 5. For example, n_1= number of respondents for Strongly Disagree, n_2= number of respondents for Disagree, n_3= number of respondents for Undecided, n_4= number of respondents for Agree and n_5= number of respondents for Strongly Agree. The highest weight in the study is A (i.e. 5) while N is the total number of respondents. The relative importance index ranges from 0 to 1 (Tam & Le, 2006).

In effect, the RII is a mean score for an item, and it is scaled to produce a value between 1/A and 1; where A is the number of response categories in the survey. Out of the thirty factors in the survey for all of which indices were computed and ranked, a selection of the most relevant has been made and can be found displayed in Table 3. They are in two categories: those with the highest indices (i.e. the strongest points of agreement by respondents) and those with the lowest indices (i.e. the strongest points of disagreement) by respondents. The RII sorts out the factors from the "most" to the "least". Each of the two categories has ten factors. To the left of Table 3 are the "most" and to its right are the "least".

Table 3: Field Survey of Estate Surveying and Valuation Firms in Abuja & Lagos

S/N	Strongest Agreements (Highest rankings)	RII	Strongest Disagreements (Lowest rankings)	RII
1.	Land and house prices in Abuja were generally higher than for Lagos	0 .964	There was justification for the high Abuja asking prices/rents	0.389
2.	Asokoro and Maitama land and house prices were highest of all Abuja districts between 2011 and 2015	0.959	Bottlenecks and bureaucracy in land acquisition & documentation are greater in Lagos than in Abuja	0.405
3.	Abuja was associated more than Lagos with the phenomenon of **vacancy** in 2011-2015	0.950	Abuja residential investments are more secure than Lagos'	0.407
4.	Lack of professional advice on development and letting contributed to **unlet** property in Abuja	0.938	Pre-investment studies are carried out on the development projects in Abuja residential development projects	0.441
5.	Residential development land in Lagos is always available from outside government sources	0.927	It is easier to acquire/buy land in the Abuja property market than in Lagos'	0.470
6.	Property being left unoccupied for years has been associated more with Abuja than Lagos	0.915	Your clients agree that **asking-prices** of "for sale" property should be professionally determined beforehand	0.484
7.	Land cost is a major cause of high development costs in Abuja in 2011-2015	0.850	Higher asking prices for Abuja houses than Lagos indicated a greater resilience	0.492
8.	The Lagos real estate market was more resilient than Abuja's between 2011 & 2015	0.834	Abuja investors always seek an opinion of value before putting property on the market for sale/letting purposes	0.497
9.	Abuja investors appear unworried about property being unsold/unlet for years	0.733	Pre-investment studies are done for development projects in Lagos	0.504
10.	Low demand was contributory to **unlet** property in Abuja in the period 2011-2015	0.812	Your clients agree that **asking prices** of "to let" property should be professionally determined beforehand	0.529

Source: Author's Fieldwork (2018).

The highest importance (0.964) was given to the statement that land and house prices in Abuja were higher than in Lagos. The analyses of the asking prices corroborate this. The variable with the lowest scoring factor (0.389) was that the respondents do not agree that the high Abuja prices were justified. The other factors of investigation fall in-between these two limits. Putting together the highest and lowest scoring factors, one can conclude that the Abuja prices which were higher than Lagos between 2011 and 2015 were

not justified in the judgement of the respondents. Other factors with a high level of agreement are in respect of comparative vacancies, land availability, investor expectations and professional advice. The details of the factors are treated in the discussion section.

The findings can be separated into two categories. The first relates to asking prices and the second to the survey. In the first category, the findings suggest that:

(1) Asking prices for land and houses as well as rents in Abuja exceed those of Lagos throughout all the years of the study.

(2) The market knowledge and perceptions of the respondents indicate that there are differences between the study areas. These differences are in the respective strengths of their local markets, comparative land availability and vacancies while there is a similarity in the predisposition of most clients not to use professional advisers on letting, sale and development issues.

6. Discussion of Findings

The discussion explains the findings and whether the Abuja prices are realistic, what relationship they may have with value as well as the significance of the pronounced vacancy phenomenon on the value concept and for the real estate industry.

6.1 Comparative Status of the Local Economies and Markets

The respondents ascribe a greater resilience (0.834) to Lagos' real estate market. By indices of 0.812 and 0.735 respectively, they agree that low demand for what was produced in Abuja contributed to unlet and unsold property. This is not indicative of resilience. Since the strength of property markets lies in the local economy, it can be inferred that the Abuja economy (of which the study areas are a part) was less resilient than Lagos'. In the remainder of this subsection, the two local economies are compared.

Table 4: Economic Characteristics of the Study Areas

	Lagos	**Abuja**
Location	South-West	Centre
Population	21,647,292 (2015) Nigeria's & Africa's largest metropolis	3,100,000 (2015) (Nigeria's 4th largest metropolis)
Economic Base	Manufacturing, commerce, business, services; harbours 40% of Nigeria's industrial capacity; 65% of businesses	Administration, Business, Services
Economic Output	GDP: $131 billion (2015)	$8.7 billion (2015)
Annual Income Per Capita	$4,333 (2014)	*$2,682 (2015)

Nigeria's GDP (2015): $481.1 billion   *National Average: $2,450
Source: Author's compilation; *World Bank (2014); *Kingmakers (2016)

Table 4 shows that Abuja's 2015 GDP and annual per capita income for Abuja's were both considerably lower than Lagos'. The ratio of Lagos' population to Abuja's and its diversified economy clearly show the enormous difference between the two. Their economic bases are also unmatched to the extent that Lagos' 2014 contribution to Nigeria's non-oil GDP was over 25% (Akabueze, 2014). The relatively high per capita income of Abuja is partly attributable to the overhead cost of Nigeria's top-heavy federal government system under which the federal top-tier takes 52.68% of consolidated revenue receipts leaving to the second and third tiers respectively 26.72% and 20.69%. Abuja's buoyancy has been more the result of aggregated public expenditure than of installed, productive activity. Nwosu (2016) alludes to the expenditure implication of top-heavy federalism in stating that considerable resources lie at the disposal of the federal tier of governmental, but that these are not prudently deployed to the execution of the many federal responsibilities, thereby leading to excessive waste.

The respondents (0.771) agree that government expenditure buoys up the Abuja economy. By implication, this also benefits the study areas where senior public officials reside. There are various levels of government in the Federal Capital Territory whose combined expenditures constitute a strong stimulus for economic activity. Present in the city are: The Federal Government (the Presidency, the Legislature and the Judiciary); The Federal Ministries, Departments and Agencies, The Ministry of the Federal Capital Territory; and The Abuja Municipal and Area Councils. Government expenditure is a significant factor in the level of aggregate demand.

On the other hand, Lagos is sustained by the existence of linkages, the creation of agglomeration economies and the multiplier effects of private sector investment and industry. Ambode (2017) attributes Lagos' advantage to its hosting of over 50% of Nigeria's commercial activities, comprising businesses, manufacturers, financial institutions as well as small and medium enterprises which, on the basis of GDP, would rank Lagos amongst the five most productive economies in Africa were it to be regarded as a sovereign state. Its internal revenue profile was ₦7 billion (1999), ₦11 billion (2008), over ₦15 billion (2010) and ₦26 billion (2017). It is expected to attain ₦50 billion by 2020 (Filani, 2012). While the argument can be advanced that Abuja also features representation from these same large business concerns, and therefore, also benefits from their activities, given that the scope of these operations is usually greater in Lagos, and so their presence boosts government revenue.

6.2 The Matter of Vacancies

Matters surrounding vacancies had high response rates from the respondents. There is a high rate of agreement (0.95) on Abuja's Asokoro and Maitama being associated with vacancy more than Lagos. Respondents emphasised the lengthy vacancies (0.915) and also the high visibility of unsold and unlet development (0.905) in Abuja. Additionally, there was a high degree of agreement that vacancy lengths for "to let" property in Lagos were shorter at less than one year (0.739) compared with Abuja's which were longer than one year in duration (0.826). A completed project for which there are no takers is unviable and loss-making. The pervasiveness and length of the Abuja

vacancies suggest that they cannot be readily associated with the natural vacancy rate concept, but instead come across as an abnormality.

6.3 The Matter of Prices

Respondents overwhelmingly agree that Asokoro and Maitama prices were highest in Abuja (0.959) and were also higher than Lagos (0.964). Where pricing keeps developments unoccupied or unsold for as long as eight years. The situation might either be attributed to low demand, oversupply or inappropriate development. However, research by Oyetunji and Olowofeso (2016) on the Lagos residential market found that a fluctuation in macroeconomic variables can produce changes in the price of residential real estate. These authors recommend the recognition of these factors in the assessment of rental value by valuers. In the case of Abuja, research by RIRFHUD (2016) estimates the housing deficit at 600,000 units which, in turn, suggests a need. However, there appears to be an ineffective demand which is traceable to pricing. This situation confirms the conventional wisdom that it is possible to price an item out of the market. It also confirms that price and value differ.

Etteng (2015) ascribes the situation to an overvaluation of asking rents. By inference, if rents can be overvalued, the same can happen to asking prices for land and houses. As to the responsibility for the overvalued rents and prices, the answer can be inferred from respondents' unequivocal agreement that clients/investors do not usually seek an opinion of value before placing their property on the market. In other words, price is arbitrarily fixed despite reality. This, however, is common to both markets. It would appear, however, that it is less of a disadvantage in Lagos due to the size and diversity of its market.

6.4 Land Supply and Accessibility

Responses to the issue of land yielded high agreement (0.850) in respect of the role which high supply cost plays in the cost of development in Abuja. Respondents also believe (0.927) that land is easier to obtain in Lagos. As the most crucial input in property development, land cost significantly influences project viability. Between Lagos and Abuja, there are differences in this regard. In Abuja, where land is primarily available from one source, The Ministry of the Federal Capital Territory, access is fraught with bureaucratic procedure, delays and the taint of malpractice. Original land allottees tend to resell their allocations at a premium, thereby creating a lucrative secondary market. Benson Ezem as reported by Babalola (2017) states that allocations of land, such as in the case of Idu Industrial Estate, do not always go to those who need them, but tend to end up with people whose motive is to resell at a profit. Respondents disagree that land acquisition in Abuja is less of a problem than in Lagos (0.470) while strongly agreeing that land is always available from outside government sources in Lagos (0.927).

6.5 Investment Advice

The respondents highly agree (0.938) that the lack of professional advice on development and letting contributed to unlet properties in Abuja. They also strongly agree that investors overlook professional advice (0.787) and pre-

investment studies (0.778). These indices may be explained by the fact that many investors build with their own funds and normal mortgage facilities (long-term loans) are not commonly available or affordable. It is usually when development funds are to be borrowed that pre-investment studies become an unavoidable demand of lenders.

The perception that many investor-developers tend to operate without the benefit of professional advice of the estate surveyor and valuer is supported by findings on Lagos by Oloke et al. (2017). The authors suggest that "*house prices in the residential property market are largely fixed and reserved by the sellers* [who] *do not consider many of the determinants of housing price*" due to a "*lack of adequate knowledge of the housing market and lack of trust in the competence of professional agents…*" (Oloke et al., 2017: p.31). All said and done, asking prices should have a basis in market reality in order to be considered as having a relationship with value, because value is a factor of the market. This argument is espoused by Oloke et al. (2017: p.31) as they also recommend that: "*sellers undertake the valuation of their property before putting it in the market for sale or to le*t".

6.6 Price, Value or Cost?

In sum, it appears that there were justifications for the doubt long expressed by the public and real estate practitioners about Abuja's 2011-2015 prices. As conjectured in the introduction section, the doubt was probably due to their magnitude; their inconsistency with the city's essentially administrative function; and the abnormal vacancy phenomenon.

In the introduction, it was also argued that if figures described as prices have no basis in the market, then they cannot be associated with value. Similarly, if they do not reflect value, then they give a false notion of the market and the industry. Given the main finding that Abuja's 2011-2015 prices were unjustified when compared with Lagos, the ineluctable inference is that these prices, not being market-derived, are difficult to associate with value and so cannot be regarded as truly reflective of market strength.

Also raised in the introduction, is the appropriateness of deploying the terms "price" and "value" to useful things which are not serving any use and which, therefore, contradict the logic of rational economic activity. Going by Blackledge's (2009: p.27) value postulation, since: "*nobody is prepared and able to purchase or rent it at that price*", it is of no use in deciding about value. If it is conceded that there is no point in deciding about value for these perennially vacant properties, there should be in deciding about cost. The economic concept of cost is best deployed in defining what these long-term vacant edifices constitute: cost to the investor, cost to society and cost to the economy. As has been observed by Onwuanyi et al. (2017: p.401): "*Where property is in profitable and productive use, it helps to drive productivity, which in turn, translates into wealth. However, where land resources are inefficiently deployed as in failed, unproductive or sub-optimal property investments, there is a reducing impact on the economy as a whole*".

7. Practical Implications

Firstly, the highly visible, though officially unrecorded, level of vacant lettable and unsold built-for-sale property in Abuja suggests the existence of an abnormal situation. Policymakers should investigate this given the economic implications - two of which are an implied land resource misallocation by the creation of useful assets which do not deliver value because they are either not in use or are not available for use. Secondly, real estate investors who choose to act without the benefit of professional advice on development, letting and sales, inevitably expose themselves to a higher level of risk, particularly in the Abuja market.

8. Conclusion

This study aimed to resolve whether or not the 2011-2015 asking prices for Abuja real estate were unusually high relative to Lagos'. Furthermore, it aimed to assess if the price trend was indicative of buoyancy given the high levels of unsold and unlet development during the same period. The conclusion suggests that Abuja's 2011-2015 prices were unusually high. Furthermore, they were not indicative of buoyancy and that Abuja's perennially vacant "to let" and "for sale" property, whose prices were not market-derived, are difficult to associate with value and therefore cannot be regarded as truly reflective of market strength. Because the vacancies are unusual and long-lasting, they are considered to be a disadvantage.

The findings are that Abuja prices were consistently higher than Lagos' and that this trend was not only unjustified in terms of comparative economic performance but also, anomalous being accompanied by high vacancies and unsold development lasting for periods longer than one year. There are also characteristic differences between the two locations in terms of land supply, land accessibility and vacancy levels which confirms that real estate markets tend to differ according to local conditions.

These findings offer a better understanding of Nigeria's two leading real estate markets, both for investors (prospective and existing) as well as policymakers. For the former, it disabuses the common notion that the prices which they arbitrarily fix for their properties are tantamount to value. Furthermore, it advises that successful real estate investing is associated more with professional investment advice than with the apparent reliance on "gut feeling". In the case of the latter, attention is drawn to the potentialities of real estate for economic development. Furthermore, emphasis is placed on the need to support the real estate industry through legislative reform of land administration and other measures of enablement and enhancement for improved performance. It is believed that these aspects will make for better decision-making at both policy-making and investing levels.

The insights offered by the study are as follows. Firstly, the impression of buoyancy conveyed by the Abuja market was more apparent than real, meaning that it was not more resilient than Lagos. Secondly, the abnormal 2011-2015 situation of the Abuja market is attributable to its peculiar characteristics. Thirdly, an examination of the Abuja situation using the economic principles of price and value suggest that its 2011-2015 prices, not

being market-derived, are difficult to associate with value. Fourthly, Abuja's perpetually vacant "to let' and "for sale" developments (produced goods which are not being productive) are available but not affordable and thus signify cost more than value. Fifth, this research offers insights from the leading real estate markets of Nigeria. Lastly, this is a pioneering comparative study of Nigeria's most prominent real estate markets as well as of the pronounced Abuja vacancy phenomenon.

The study recommends that Nigeria's real estate investors need to acquire more knowledge of the real estate market just as stock investors must understand stock markets. Furthermore, there is a necessity for Nigeria's real estate investors to be appropriately guided by professional advisers just as stockbrokers guide stock investors. This is especially so given that the risks of real estate investment are accentuated by the immobility of the product. As such, investments which are based on unrealistic expectations may never be redeemed. These two steps will help to reduce investment risks. In addition, it is essential for these markets to develop a system for the collection, storage and retrieval of data. Finally, access to land in Abuja for private development needs improvement through a more transparent process which should come with a review of the land tenure law.

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Towards Examining the Social Implications of Technology Adoption on the Well-Being of Facilities Management Professionals

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Abstract

This study examines the effects of adopting technological innovations on the social well-being of facilities management professionals. The paper takes the form of an in-depth literature review of peer-reviewed publications focused on the primary constructs of the study, namely: technological innovations in facilities management; the role of facilities management professionals; and social sustainability in facilities management. The study found that the adoption of innovative technology has significant positive outcomes in the facilities management profession, but negatively affects the social well-being of the facilities management professionals. This paper provides the basis for the development of a social sustainability framework for the analysis of the impact of technological innovation on facilities management professionals. Further empirical study is needed to verify the findings. This review will sensitise facilities managers as it illustrates the impact of technological innovation beyond improved efficiency and service delivery by considering the facilities management profession as a whole.

Keywords: Facilities Management; Technological Innovation; Social Sustainability; Facilities Management Professional

1. Introduction

Facilities management (FM) is a profession that has many definitions, both by individuals and institutions. This study adopted a variety of institutional definitions to provide a broad overview of the profession. The International Facility Management Association (IFMA) defines FM as "*a profession that encompasses multiple disciplines to ensure functionality of the built environment by integrating people, place, process and technology*" (IFMA,

2017: p.1). The British Institute of Facilities Management (BIFM) defines FM as a discipline that "*encompasses multi-disciplinary activities within the built environment and the management of their impact upon people and the workplace*" (BIFM, 2017: p.1). From the above definitions it can be inferred that FM is a profession that facilitates the conditions for the execution of business in the built environment. FM professionals are the "middlemen/women" between effective service delivery and the achievement of the organisation's core-business objectives. FM practice is currently seeing increased levels of sophistication with the integration of technological innovation into its day-to-day operations. A combination of the internet, Artificial Intelligence (AI), Augmented Reality (AR), Virtual Reality (VR), wearable devices, drone technologies, sensors and general robotics, are responsible for the current sophistication in FM practice (Atkin & Bildsten, 2017).

FM organisations, in response to changing business demands, have adopted these technological innovations. This technology, in meeting these demands, often improve the financial performance of the business but overlook the potential effect on the FM professionals (Grimshaw, 2005). Previous studies show that technology adoption leads to both expected and unexpected outcomes whether the adoption is in developing or developed economies (Ramaswamy, 2018). The 'human element' of FM, against the backdrop of technology-based uncertainties, raises certain questions about the sustainability of the profession and its professionals. Some of the salient questions include: would there be the need for FM services given that technology can perform many of the FM functions? What will be the potential future of FM professionals? How would the potential future of facilities managers affect their well-being? This paper will attempt to answer some of these questions from a theoretical point of view.

The discussion surrounding the future of FM and the FM professional is one that hinges on sustainability. Technological innovation and sustainability in FM are intertwined concepts. Sustainability consist of three pillars, namely: economic, social and environmental (Lehtonen, 2004). Technological innovation supports the concept of sustainability through the enhancement of economic operations and the reduction of environmental harm (Hilty & Aebischer, 2015). However, the effect of technology on the social sustainability pillar is unknown. Jensen et al. (2013) argue that the adoption of technology in FM organisations has left the social aspects of sustainability unexplored. The social pillar of sustainability has a broad perspective which includes, but is not limited to, equity, social justice, social well-being, social inclusion and social capital (Bebbington & Dillard, 2009). The focus of this study is on the social well-being of employees. Employee social well-being (ESWB) is crucial as it has implications for productivity and work relationships (Tov & Chan, 2012). It is important to state that ESWB is a concept that has been studied in a number of different academic fields. This has resulted in several views as to what constitutes as ESWB (Dillard et al., 2009; Magis & Shinn, 2009; Seghezzo, 2009; Boström, 2012; Casula Vifell & Soneryd, 2012). Providing a comprehensive overview of the differing views on what constitutes ESWB is beyond the scope of this paper. Therefore, the study adopts the definition of ESWB as the maintenance and improvement

of employees' current and future needs (Chiu, 2003; Chan & Lee, 2008; Atkinson & Marlier 2010).

The concept of ESWB relates to employee's needs and desires. It includes assessing the present condition of employee lifestyle and determining whether the quality of life at the current stage is acceptable for future generations (Harris, 2000; Giudice, 2015). When dealing with an organisation or profession, ESWB involves a candid assessment of human resource policies and whether they are useful in managing employees. It implies that both the negative and positive impacts of business operations should be evaluated and gauged against the social well-being of all stakeholders. Previous studies suggest that it is crucial to give attention to ESWB issues that arise on account of technology adoption (Grimshaw, 2007; Bebbington & Dillard, 2009; Sveiby et al., 2009; Wienclaw, 2011). Furthermore, Boström (2012) argues that the neglect of the material impact of technology on ESWB compromises the quality of life available to employees.

In assessing the ESWB factors in literature, Grimshaw (2007) highlights social isolation, alienation, the intrusion of work into an employee's home life, overworking, and social networking as related impediments to ESWB. Furthermore, Magis and Shinn (2009) highlighted human well-being as one of the primary factors ESWB. In another study, Bebbington and Dillard (2009) highlight that job security, pay, fairness of employment practices, and freedom of association among the employment terms and conditions that enhance ESWB. Nam (2014) argues that using internet technology has social consequences regarding job satisfaction, job stress and work-life balance. Based on the assessment of the different factors of ESWB, this study classified them for ease of study into: job security, alienation, social network, work/home life balance, overwork, and social isolation. Each of these ESWB indicators will be discussed in more depth later in the paper.

The purpose of this paper is therefore to assess the impact of technological innovations in FM organisations on the social well-being of FM professionals. It does so from a theoretical perspective. The study explored how ESWB in FM organisations is affected by the adoption of technology advancement. The premise of the study is that, when facilities managers understand the implications of technology on the ESWB in FM organisations, it will form the basis for effective management. Hence, the paper will outline the role and function of the FM professional; technological innovation in FM practice; and the benefits and challenges of technological innovations to FM professionals. Lastly, the paper will examine ESWB within the context of the literature and will provide social well-being factors that may be used as the foundation for further research into the impact of technological innovation on FM professionals.

2. Methodology

The research adopted an interdisciplinary search of peer-reviewed publications (Falagas et al., 2008; Wong et al., 2018) for the impact-study on technology and ESWB. The journals were chosen based on their reputation and relevance to the current research topic. The articles were found by conducting a topic search using the keywords "facilities management" AND

"facility management" AND "technological innovation" AND "ICT" AND "automation in FM" AND "impact of technology on ESWB". The search resulted in a total of 215 articles that related to the keywords. A review of the abstract and the findings of the articles was conducted to sort out the irrelevant and/or identical papers. After the process there were 47 papers that focussed specifically on technological innovation in FM. Comparatively, more information on the topic was available in industry publications than peer-reviewed journals. Hence, the researchers considered some reliable industry publications as sources of information. Furthermore, the conceptualisation of the ESWB issues within the study are multidisciplinary. It implies that the factors that make up the ESWB in this study were derived from many disciplines, many outside the realm of FM. Some of the articles on the impact of technology on ESWB were found in sociology, psychology and human development fields of study.

3. Role and Function of Facilities Management Professionals

Traditionally, FM functions were limited to an operational level. The primary aspects of the work include plant maintenance, care-taking, cleaning and general building management (Atkin & Brooks, 2009). Since its inception, the profession has developed in scope to encompass a wide range of skills and knowledge (Lunn & Stephenson, 2000; Tay & Ooi, 2001). Lunn and Stephensen (2000) argue that both the roles and functions of the FM professional are dynamic, complex and multidisciplinary. Goyal (2007) further argues that FM professionals manage multi-disciplinary activities in order to optimise asset value and their impact on people.

To effectively optimise value and impact of technology on employees, a facilities manager must function within an organisation at a strategic, tactical and operational level (Alexander, 1996; Nutt, 2000). At the strategic level, FM professionals are involved in the long-term strategic planning in the organisations. At the tactical level, FM professionals manage the execution of the strategic plans involving routine, specific short-term preventative or managerial operations (Patanapiradej, 2006; Langston & Lauge-Kristensen, 2013). Langston and Lauge-Kristensen (2013) further state that FM professionals engage with the day-to-day routine and support operations of organisations at the operational level. In addition, FM professionals manage the changes that organisations experience in their operations due to technological innovation. In the context of this paper it is necessary to examine the use of technology in FM practice, prior to the development of an appropriate ESWB framework.

4. Technological Innovations in FM Practice

Given the changing nature of business and the demand for effective service delivery, facilities managers adopt different technologies for various operations . The integration of technology into FM practice is also in response to market competition, growth of the practice scope, cost and relative market demands (Teicholz, 2001). While the traditional role of facilities managers centred around maintenance management, facility planning and services (Lunn & Stephenson, 2000), the roles of contemporary facilities managers have expanded and become more dynamic to include personnel and customer

services (Atkin & Brooks, 2009). The development of personal computers and software applications such as computer-aided-design (CAD) has automated some of the traditional FM functions (Lunn & Stephenson, 2000). Facilities managers use automation in maintenance management, facility planning and services to facilitate design and construction, space and asset management as well as layout evaluations, among other services. The use of an automated approach has led to a lower cost of doing business (Grimshaw, 2005; Gebauer & Schober, 2006; Alshamaila et al., 2013), and enhanced efficiency and service delivery (Dauda & Akingbade, 2011; Love et al., 2013).

The advent of the internet has resulted in a rapid transformation of FM practice. The internet enhanced the ability to execute simple queries, locate persons or an asset, submit a work order or request, investigate health and safety data, and display floor plans for easy assessment (Lunn & Stephenson, 2000). Nylén and Holmström (2015) state that in recent times, it has become increasingly difficult to distinctively track the progress of technological innovations due to the reduction in time that it takes for a piece of technology to become obsolete. The current era of FM, in terms of technology, is characterised by higher internet connectivity, AI, AR, and VR (Atkin & Bildsten, 2017). Each of these technological innovations signifies a concise classification of several hand-held and wearable devices that now drive FM practice. For example, the standard forms of AI used in FM practice include robots, drones and sensors (ambient intelligence); and AR and VR are enabled through devices that are powered by internet connectivity and the internet of things (IoT) (Bandyopadhyay & Sen, 2011).

There are several technological innovations in FM practice, however the technological innovations reviewed in this study were chosen relative to their impact on both the employees (human element) and the core-business of the organisation. Hence, this study categorised the different types of technological innovations in FM for ease of discussion into: the internet of things (IoT); cloud-based technology; drone technology; robots; and sensor devices. Although the building information management systems (BIM) qualifies as a relevant innovation, its major components of cloud-based services and sensors are independently studied in this research. An overview of each of these technological innovations is provided below.

i.   *Internet of Things (IoT)*

IoT encompasses machine-to-machine communication (Vermesan & Friess, 2013). IoT has numerous applications in FM, which include but are not limited to building management systems, smart appliances, connected vehicles, and wearable devices. IoT enables the use of email, instant messaging, and mobile devices to promote flexible work schedules through enhanced connectivity (Abomhara & Køien, 2014; Hoeven et al., 2016). Through the power of IoT, FM professionals can operate from any remote location without visiting the site, use video conferencing, multimedia instant messaging, recording and photography with smartphones and social media technologies. The use of the internet enabled technologies enhances FM service delivery (Argenti, 2006; Abomhara & Køien, 2014; Hoeven et al., 2016). The internet also enables cloud-based technologies.

ii.   *Cloud-based Services*

Cloud-based services have been defined in many ways, for instance, Wang et al. (2010: p.3) defines it as "*a set of network enabled services, providing scalable, QoS guaranteed, normally personalised, inexpensive computing platforms on demand, which could be accessed in a simple and pervasive way*". Similarly, Plummer et al. (2008: p.3) define the cloud as "*a style of computing where massively scalable IT-related capabilities are provided as a service using Internet technologies to multiple external customers*". Cloud-based services allow for on-demand information sharing that is readily accessible by resources scattered across virtual locations (Fred, 2010; Buyya et al., 2011; Lau et al., 2013). In the context of FM, cloud computing presents an opportunity for unifying the management of facilities in multiple locations (Lau et al., 2013). FM professionals can centrally monitor, control and manage all portfolios from a single location at an affordable cost (Grimshaw, 2005; Gebauer & Schober, 2006; Alshamaila et al., 2013), all with unlimited access to specialised software and the latest updates (Lau et al., 2013).

iii.   *Drone technology*

Drones or Unmanned Aerial Vehicles (UAVs) operate under remote/autonomous control without any pilot onboard. Drone technology enhances service delivery and various operations. It enables the inspection of areas that are difficult to access or dangerous to inspect (Eschmann et al., 2012; Emelianov et al., 2014; Torok, 2014; Santos de Melo et al., 2017). FM professionals use drone technology for maintenance, security, and logistical operations (Rathinam et al., 2005; Wu & Zhou, 2006). In maintenance operations, drones are used to access problematic areas, check equipment performance and obtain valuable details about critical infrastructure like bridges at no risk to the employee (Metni & Hamel, 2007; Morgenthal & Hallermann, 2014). With the aid of remote-controlled cameras mounted on the drones, they can transmit images of building structures and machinery (Eschmann et al., 2012; Emelianov et al., 2014). Furthermore, they provide evidence to report on the general condition of roofs and identify structural issues in an environment that is potentially unsafe for human access. Drone technology therefore helps to enhance operational health and safety.

iv.   *Robotics*

A robot is a machine which is programmed by computer algorithms to perform both simple and complex tasks (Murashov, 2016). Robots may be categorised as either service robots or industrial robots based on their predetermined operational specification (Lechevalier et al., 2014). Service robots include both personal service robots and professional service robots (Gorle & Clive, 2013). Personal service robots are used for non-commercial tasks, while professional service robots are used for a variety of workplace applications. Robots may be deployed for a variety of FM operations, these include: maintenance of buildings and pieces of machinery; cleaning of floors and building facades; customer care services (e.g. in hotels, malls, hospitals); and waste management operations (Chiemchaisri et al., 2007; Saeed et al., 2009; Gundupalli et al., 2017). According to Murphy (2015), Amazon, as of June 2015 was using some 15,000 robots to move goods around their

facilities, with plans of procuring more. This practice substantially reduces the need to employ humans for the same purpose. Among the benefits of utilising robots in FM include: efficiency, cost effective operations, and enhanced operational safety.

v.   *Sensors*

In FM practice, sensors are categorised into infrastructure sensors and occupant-related sensors. Infrastructure sensors are used to manage strategic infrastructure like bridges, machine tools, and other industrial assets against any form of trespassing, attacks or activities of vandals etc. In contrast, occupant-related sensors are found in residential and commercial properties. They are used to control lighting; heating, ventilation and air conditioning as well as other presence-related space management tools (Vishal & Bansal, 2000; Yavari et al., 2014; Roth, 2017). The use of the sensors reduces the need for human professionals to physically monitor the facilities (Adama & Michell, 2017). FM professionals use occupant sensors to create ambient intelligence for energy management that are sensitive and responsive to the presence of people. For example, lighting can automatically turn on and off in spaces that are not occupied (Husu et al., 2017). In this manner, smart sensor devices help to reduce the operating costs, enhance productivity and improve the occupants' comfort and safety (Grimshaw, 2005; Gebauer & Schober, 2006; Alshamaila et al., 2013; Husu et al., 2017; Roth, 2017).

From the preceding overview, technological innovation and its adoption in FM has a noteworthy influence on FM practice. These outcomes are both intended and unintended in developed and developing economies (Ramaswamy, 2017). The intended outcomes of technology are increased efficiency, flexibility, and cost effectiveness. However, the unintended consequences are the outcomes that were not envisaged before the technology adoption process. For instance, most organisations do not consider the social implications of adopting technology and the potentially negative effects on the overall organisation's success (Grimshaw, 2007). When the overall goal of technology adoption negatively affects the social well-being of the employees, the question of how socially sustainability the technology is comes to the fore. Against this backdrop, the following section assessed the benefits and problems of technology adoption in FM.

5. Benefits of Technological Innovations in Facilities Management

From the foregoing discussions on technological innovations in FM practice, the benefits of adopting technological innovations to the FM profession may be summarised as an increase in productivity (Holmes et al., 2007; Dauda & Akingbade, 2011; Imran, 2014); reduced running cost (Grimshaw, 2005; Gebauer & Schober, 2006; Alshamaila et al., 2013); and enhanced efficiency (Dauda & Akingbade, 2011; Love et al., 2013). Other benefits include: enhanced corporate image through efficient service delivery to FM clients (Argenti, 2006); increased work flexibility in terms of time and mobility (Abomhara & Køien, 2014; Hoeven et al., 2016); increased connectivity (Grimshaw, 2005); and enhanced operational safety (Eschmann et al., 2012; Emelianov et al., 2014; Torok, 2014; Santos de Melo et al., 2017). Despite these benefits, studies note that the adoption of technology in FM is not

without some challenges (Grimshaw, 2005, 2007; Atkin & Bildsten, 2017). One can argue that these problems may have implications for the social well-being of the FM professionals themselves.

6. Problems of Technological Innovations in Facilities Management

The discussion outlined earlier indicates that there are significant drawbacks from the adoption of technological innovation. In undertaking this review, it would appear that the two most prominent challenges are: work-life balance (the intrusion of work into an employee's home life) and job security. However, Grimshaw (2007) affirms that the adoption of technology affects ESWB factors such as: social isolation, alienation, the intrusion of work into an employee's home life, overworking, and social networking. Therefore, the areas of ESWB that are impacted due to technological innovations are illustrated in Figure 1 and discussed below.
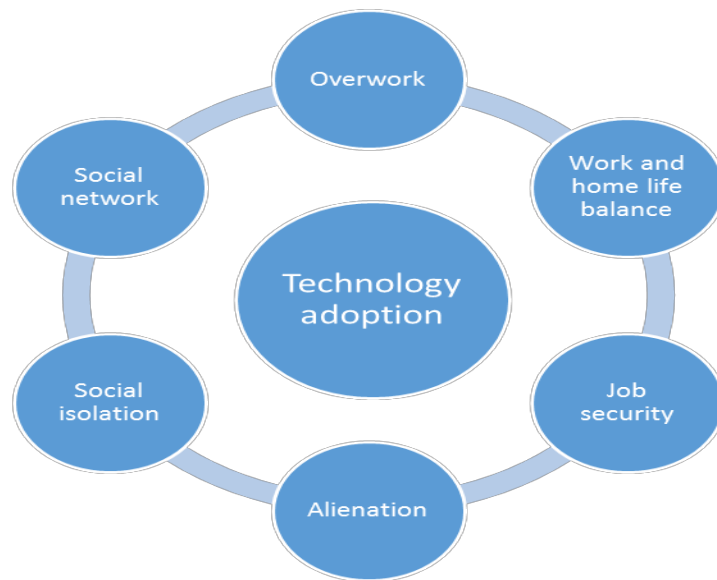
Figure 1: Employee Social Factors that are Impacted by the Adoption of Technological Innovations in FM Organisation

i.   *Job Security*

Although studies of ESWB are not popular in the FM academic field, substantial research has been carried out in other fields of study that shows the implications of technology adoption on ESWB. For instance, a study in the field of health and social behaviour indicated that technology-induced job loss could increase the rate of depression by over 200% (Dooley & Ham-Rowbottom, 2000). Furthermore, Catalano et al. (2002) affirm in an annual review of public health that job loss can trigger psychological disorders and increase the chances of someone engaging in violent behaviour by a factor of six. Also, another study by Sullivan and von Wacther (2007) affirms that job dislocation increases the death rate of those laid off by 17% in the 20 years following their dismissal. This means that someone who is laid off at age 40 would live approximately 1.5 fewer years than someone who was not laid off (Sullivan & von Wacther, 2007; Pfeffer, 2009). Additionally, the anxiety created by the news of job loss as a result of technological innovations

triggers adverse changes amongst professionals in workplaces (Kivimaki et al., 2000). These studies imply that when FM professionals lose their jobs on account of technological innovations, it exposes the FM professional to the negative impacts of job loss highlighted above.

ii. Alienation

Alienation includes estrangement from the broader social world which can stem from a variety of factors including the work pattern of an organisation. It is a subjective feeling of a gap that exists between desired and the actual level of social contact (Perlman & Peplau, 1981; Valtorta, et al., 2016). From the analysis of Marx's early writings, work patterns created by technological innovation can trigger alienation whereby the employees lose control over their labour or the process of their work due to increased technological innovations. The new work pattern that evolves due to technological innovation in FM organisations encourages work alienation because technology takes control of the work processes (Bailey & Kurland, 2002; Kurland & Cooper, 2002; Grimshaw, 2007; Osin, 2009). Work alienation can also occur due to professional stress (Längle, 2003). Osin (2009) further argues that alienation can result in a state of dissatisfaction with oneself, loss of joy, and an inherent inability to cope with stress.

iii. Social Isolation

Social isolation is an objective measure of the number of contacts that people have (Ozcelik & Barsade, 2011). It is more quantitative than a qualitative based measure of people's relationships. The loss of a job due to technology can catalyse a state of social isolation for the employee. The level of social and psychological well-being decreases for an employee that loses their job (Brand, 2014). Furthermore, economic resources are embedded in the social network of individuals and therefore, social isolation reduces the chances of the employee securing another position in a short time (Bennett et al., 2010; Brand, 2014). Previous studies also report that social isolation– as a result of technological innovations– is more likely in virtual office practices (Marshall et al., 2007; Bennett et al., 2010). Virtual office practice is an online work opportunity adopted by organisations to lower operational cost and the mobility of employees. While social isolation can be overcome by increasing the number of people in a place, such short-term measures cannot easily be used to overcome alienation.

iv. Social Network

Employment influences how we identify and define our social networks. A social network involves joint activities and constant exchanges between members of an organisation or a social system. These interactions reflect the relationships that connect the actors in a social system (Zavaleta et al., 2014; Valtorta et al., 2016). Although people work in organisations to satisfy their needs, the opportunities created by the organisation also connects them to a social world. Therefore, when a social network is lost or taken away by evolving work patterns, people become disconnected from their social world. The strength of the social network of people with their friends, families and community influences their social well-being (Samuel et al., 2017).

Previous studies suggest that an array of social networks have a positive impact on health, well-being, job opportunities, financial security and the physical safety of people (Putnam, 2000; Kahneman & Krueger, 2006). Moreover, the absence of a healthy social network of employees can negatively affect the organisation's business. Social networks among employees are fostered through professional activities. A healthy social network among employees plays an essential role in productivity and attainment of core-business objectives (Nardi et al., 2002; Martin & Omrani, 2015). However, professional networking is increasingly being replaced by technology. Most of the complex job processes that will lead to social networking through trainings and seminars have been reduced to software thereby reducing the need for other forms of networking. In the context of FM, the introduction of the internet, which keeps the professional consistently connected and engaged in work, discourages physical contact. Hence, technology negatively impacts the social interactions of the professionals. Furthermore, the adoption of robots as field officers instead of humans reduces the level of social networking possible. Official interactions are more 'machine to machine' and 'machine to human' than 'human to human' in the globalised, technological, world.

v. *Work/home Life Balance*

The increased adoption of technological innovation like the internet and the cloud has blurred the boundaries between work life and home life (Nicholas & Guzman, 2009; Beutell, 2010; Nam, 2014; Fapohunda, 2014; Mokyr et al., 2015; Paul, 2016; Valtorta et al., 2016; Zhang, 2016). This situation is attributed to the fact that work can be performed from any location where internet connectivity is available (Grimshaw, 2007). A poor balance between work and home life is associated with stress, sub-optimal productivity, a decrease in psychological well-being and high absenteeism (Evans & Steptoe 2002; Jansen et al., 2006; Pfeffer, 2009). However, employees with a better work and home life balance have a greater sense of responsibility, ownership and control of their work lives (Pfeffer, 2009). Various studies suggest that employees demonstrate greater commitment and loyalty to organisations that respect and help employees balance their work and home-life (Thompson et al., 1999; Allen, 2001; Clark, 2001; Behson, 2002, 2005).
The work and home life balance of the FM professional is affected by the adoption of the internet, and all the handheld technological devices that are connected to the internet. The facilities managers are on duty on a 24/7 basis with these devices checking one facility or the other. Moreover, the facilities users are also able to access the professional FM irrespective of time and location in respect of the experiences in the facilities.

vi. *Overwork*

Overwork is among the factors responsible for workplace stress (Eikhof et al., 2007; Grimshaw, 2007; Kossek et al., 2009; Nam, 2014; Valtorta et al., 2016). It is considered a job-stressor which reflects the excessive demand that is placed on an employee to deliver on more tasks within a given timeframe (Ilies et al., 2007). Previous studies reveal that internet connectivity through teleworking has resulted in overworked employees (Hartig et al., 2007; Grant et al., 2013). In addition, flexible work patterns can lead to overworked

professionals (Haar, 2008). The resultant stress created by overworking negatively affects employees' physical health, emotional well-being and social relationships, which further impact on the productivity and profits of the organisation (Bickford, 2005; Krantz et al., 2005). It follows, therefore, that more resources are spent on health-care challenges when work induced stresses are not well managed. In the context of FM, the use of the internet and open hours of connectivity can cause overwork especially for virtual workers who must be continuously logged on to justify that they are working (Grimshaw, 2007).

7. The Implication for Theory and Practice

The adoption of technological innovations in FM operations is progressive, given the significant economic benefits that it offers the practise. Moreover, technological innovations are not within the domain of any one profession. All professions adopt technological innovations to enable their operations and to stay relevant in the competitive business environment. Within the domain of FM, it is cost effective to adopt technological innovations because of the flexibility, enhanced operational safety, productivity and efficiency it offers (Tremblay, 2002; Grimshaw, 2007). However, it is important to also consider the ESWB perspective for negative social consequences may arise. These social consequences impact the profession and the lives of its professionals. For instance, employees feel alienated, socially isolated, and their social network broken at the organisation level because there are only few people, all using technology to execute the tasks. Technology has erased the boundaries between work and personal life thus compromising the right to relaxation and the social well-being of the professionals. Therefore, this research examined the social implications of adopting technological innovations on the FM professionals.

From the discussion on the functions of FM professional, the researchers perceive that FM professionals are middlemen/women between efficient service delivery and the business of organisations. Similarly, the adoption of technological innovations stimulates efficient service delivery of the business of the organisation. Therefore, by extension, technological innovations have the potential of displacing FM professionals. Atkin and Bildsten (2017) argue that there would be no need to employ the services of professional FM when there are several types of technological innovations to do their jobs. Furthermore, evaluating sensors capability for diagnostic information to FM professionals and automatically controlling the environment where it is implanted, indicates the possibility that FM professionals can be bypassed. It may result in the development of new service level agreements (SLAs) between manufacturers of building elements, services and the consumer. For example, the manufacturer of a cleaning robot might charge the user of the robot a monthly fee for ensuring the robot is in efficient service condition, or the manufacturer of energy bulbs may opt to charge a monthly fee for ensuring that the lighting points always have serviceable bulbs. If this kind of SLA comes to fruition, it is possible that many of the maintenance activities at the operational level of FM may disappear. This could result in several social well-being challenges and broader societal problems.

Therefore, in summary, the adoption of technological innovations has significant positive influences on the FM profession but negatively affects the social well-being of the professionals and diminishes the demand for the professional facilities managers' role. Although the demand for FM services will not abate, achieving the supply will be through technological innovation rather than human facilities managers. Hence, the need to critically evaluate the professional FM's social well-being in the face of increasing technological innovations that can perform the role of the FM professional. There is a need for policies and frameworks that will guarantee the management of technological innovations in ways that the social well-being of the professionals is assured. In practice, facilities managers should go beyond what a technological innovation can do for service delivery to evaluate what such innovation could mean to the profession and professionals.

8. Conclusion

Technology and FM have become inseparable given the opportunities that are driveable from utilising technologies in FM services. Facilities managers that are interested in surviving the competitive business climate must adopt technologies for their operations. However, previous studies show that the adoption of these technologies could bring both intended and unintended consequences. Reflecting on the initial research question, given this knowledge of unintended technological consequences, it seems as though the routine manual FM operations will be lost to technological advancement. Although the services of facilities managers will continue to be demanded, most of the facilities managers that are dependent on manual operations may not find relevance in the evolving, technologically dominated, FM practice. It implies that the facilities managers must become more innovative with strategic management capabilities to manage data that is generated from the technologies.

With regards to the effect of the potential well-being of the facilities managers, the ESWB factors have proven to be crucial for the health and productive capacity of the employees. For instance, the feelings of insecurity among the employees leads to depression, triggers psychological disorders, violent behaviour, and in some cases, early death. Also, the study showed that technology adoption leads to alienation, because of the gap created between the desired and actual level of social contact. This condition is confirmed to be responsible for the loss of joy, and an inability to cope with job stress, both of which will affect the productivity and well-being of the employee. Furthermore, the study shows that the adoption of the technology could lead to a state of isolation whereby employees have limited physical contact with other employees. The emergence of virtual office practices encourages social isolation because work requires less physical contact. However, the condition of physical isolation leads to a lower level of psychological and social well-being.

Studies also suggest that when employees are in physical contact it enhances the social network between them. Meanwhile, technology leads to a change in job practices that require less physical contact, hence, limiting the extent of social network. Studies illustrate that the more employees are socially

networked, the better their social well-being. Furthermore, technology adoption also leads to more flexibility and the ability for employees to work from locations outside the traditional work environment. The process whereby employees are continuously connected to work through the internet has been associated with job intrusion into employee home life, overwork, stress and sub-optimal performance of employees

Subsequently, it was evident that the social well-being of the employees is affected by the adoption of technological innovations in FM organisations. The effect also impacts the productivity of the employees and thus the core-business objectives of the organisation. Consequently, this paper stimulates debate on the impact of technological innovation, both positive and negative, on the FM profession. Further empirical research is needed on the issues highlighted in this paper for a more comprehensive view of the social impact of technological innovation on both the profession and the FM professional.

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Household and Neighbourhood Responses to House Burglary in Ibadan

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Abstract

House burglary is a prevailing issue in Nigeria owing to the inefficiency of formal security institutions in dealing with incidences of urban household burglary. This study examines households and neighbourhoods' responses to household burglary in Ibadan, Nigeria. In-depth interviews and household questionnaires were the primary data collection tools. A cross-sectional survey design was adopted while a multi-stage sampling technique was used to select 299 respondents. Analysis of Variance confirmed the research hypothesis which suggested that burglary crimes committed differ significantly among residential neighbourhoods (F=3.012). Burglary occurred mostly in houses that were accessed through footpaths. Furthermore, females reported witnessing burglaries more than males. Neighbourhood responses to burglary include the use of gates, private security outfits and local vigilante groups. Individual households relied on burglary proof windows and door; broken bottles and wire fencing for protection. The intensity of crime in suburban areas impacts residential relocation and property values. Neighbourhood planning and good housing design remain other means through which easy accessibility by burglars can be prevented.

Keywords: House Burglary; Household Response; Neighbourhood Response; Ibadan

1. Introduction

The development trends of large urban regions have destructive consequences for societal stability. Changing cities have created havens for international terrorist and criminal networks (Philip, 2002). The resultant effects of urbanisation, poverty and unemployment in developing countries are unsafe neighbourhoods and increased crime rates (Wrigley-Asante, 2016). These issues of inequality pose a significant threat to livelihood and residential property. Burglary crime, which is defined as the breaking into another person's home with the aim of stealing a particular asset at any time (Hale, 1990 cited in Anderson, 2011; Randa, 2015), is a common phenomenon in

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urban areas. It remains one aspect of social crime which is ubiquitous in every neighbourhood globally and one which needs serious attention (Grabosky, 1995). Muggah (2012) reports that property crime in the form of burglaries, along with violent crimes, are on the rise within cities, globally. Studies by Weisheit and Donnermeyer (2000), Lee (2006), National Centre for Victims of Crime (2015) and Ricciardelli (2018) also state that household burglary is also a prevailing issue within rural settings across the globe.

Crime Statistics Report (2016) by Nigeria's National Bureau of Statistics (NBS) highlights a total of 45,554 burglary cases reported in Nigeria in 2016. Of the total, 19,938 (which accounts for 43.76% of the total reported burglary crimes) took place in the South-Western part of Nigeria, which includes Lagos, Oyo, Ogun, Osun and Ondo. The same report states that Oyo state is ranked third in the incidence of burglary crime in South-Western Nigeria after Lagos (Nigeria's commercial hub and former federal capital territory) and Ondo state (the nation's oil-producing region). Oyo state is presently ranked 13th in public order and safety out of the 36 states of the country (National Bureau of Statistics (NBS), 2016) and 6th (Lagos, Abuja, Delta, Kano, Plateau, Ondo, Oyo, Bauchi, Adamawa and Gombe States) in the general crime rate data provided by National Bureau of Statistics (2016) (Oguntunde et al., 2018). In Nigeria, while not all cases of household burglary are reported, time-series evidence shows that household burglaries are increasing. This could be attributed to unplanned urbanisation of urban and peri-urban areas and unresponsive security personnel (Alemika & Chuckwuma, 2005).

Studies by the United Nations Office for West Africa (UNOWA) (2007), Owusu et al. (2015) and Owusu (2016) reveal that a relationship exists between urbanisation, safety and level of security. These studies show that the negative effects of urbanisation, such as: sprawl, an increasing urban population, unchecked settlement, and housing density, have resulted in inadequate service delivery (policing and safety machinery) in certain areas. Determinant factors such as poverty, poor governance, lack of space orderliness, inefficient planning processes, weak service delivery and inadequate basic social amenities create a fear of crime and perceived insecurity among residents. Furthermore, this insecurity is a reflection of poverty and poor governance (Steffensmeier & Allan, 1996; Cossman & Rader, 2011; Wrigley-Asante, 2016).

One of the factors that residents consider when looking to settle is safety (Salleh, 2008; Mohit et al., 2010; Popoola et al., 2015). Household safety remains a conscious and sub-conscious criterion in habitation and resident location choice. Safety entails the absence of crime, an attack against life and property of a resident (Loewen et al., 1993; Bilsky, 2017; Meth & Buthelezi, 2017). In ensuring safety, the literature identifies roles and responsibilities of government institutions, such as: the military, immigration authorities, customs officers and the judiciary, in maintaining public safety (Hopkins, 2007; Owusu et al., 2015; Bagson & Owusu, 2016). However, formal institutions, especially in developing countries, have been considered ineffective and inefficient in these roles (Nganje, 2015; Cohen & Felson, 2016; Elayah, 2016).

The criminal externalities which pose a threat to the peaceful liveability of suburban and rural communities have resulted in *"individualistic-policing"* in the form of a number of unconventional crime fighting and response mechanisms, procedures and processes (Harris, 2001; Oteng-Ababio, 2016). John (2007) and Oteng-Ababio (2016) explain that local youth groups and vigilante groups, which are not legally considered as security agencies, are now championing the fight against crime making use of rules drafted and defined by them. The security of urban and rural areas requires extensive collaboration among various stakeholders in the settlement space at an individual, household and community level (Doyle, 2006; Lippert, 2009). This study aims to examine households and neighbourhoods' responses to household burglary in Ibadan, Oyo state, Nigeria. Furthermore, it strives to achieve security of lives and property which are being threatened in the country.

1.1 The Study Area

Ibadan, the capital city of Oyo State, is located in South-Western region of Nigeria, 128km inland Northeast of Lagos and 530km Southwest of the Federal Capital Territory (FCT), Abuja. During the colonial era, the city was considered the centre of administration for the Western Region of Nigeria (Fourchard, 2003). It is a prominent transit point between the coastal region and the areas to the north. According to the provisional census results of 2006, Ibadan has a population of 1,338,659 (National Population Commission (NPC), 2010) with an estimated population of 6,018,000 in 2018 (Dar-Al-Handasah, 2018). It is the largest metropolitan area (with a land area of 3,123km^2 in Nigeria. Ibadan is made up of eleven local government areas (LGAs). Five of these local governments (Ibadan North, Ibadan South East, Ibadan South West, Ibadan North East and Ibadan North West) make up the city core while the remaining six local governments (Akinyele, Egbeda, Ido, Lagelu, Oluyole and Ona-Ara) are peri-urban and rural. The eleven LGAs now constitute what is now known as Ibadan region (see Figure 1). Ogunleye-Adetona (2013) explains that Ibadan is a renowned and acclaimed city in West Africa and its reputation in terms of the rate of crimes committed by residents is almost of equal measure with its size.

Harries (1974) defines crime as a violation of law involving a victim and an offender which could be categorised as a crime against property and crime against a person. In line with this definition, Tomori (2010) reports that the increase in crime in Ibadan could be attributed to the city's transit routes and commercial activity centres. A significant number of inhabitants engage in on-street trading and hawking, with the city being characterised by poor accessibility, poor infrastructure, poverty and high crime rates (Dar-Al-Handasah, 2018). Adepoju and Okunmadewa (2017) report that residents and households in Ibadan could be classified to be vulnerable to poverty owing to limited access to credit, low-income, poor educational qualification and large family size. To this development, Osowole et al. (2014) explain that poverty in Ibadan is beyond the principle of expenditure or ability to buy, but a combination of social, economic and political factors which limit the access of over 50% of the city's population to basic social amenities.

Afon and Badiora (2018) report that burglaries in Ibadan can no longer be under-emphasised. They suggest that climatic season often dictates the occurrence of crime and that the risk of break-ins is stronger in the low-density neighbourhoods and rural areas. Vanguard (2011) reports that there was an increase in crime such as armed robbery, assassination and burglary in Ibadan. Adigun et al. (2016) similarly predicts that crime is expected to increase in Ibadan from 7,001 incidences of crime in 2008 to 12,512 in 2050. Modelling crime incidence, the same study identifies that between 2008 and 2050 residents of Ibadan between will experience 108–258 crime incidences per 1000 population.
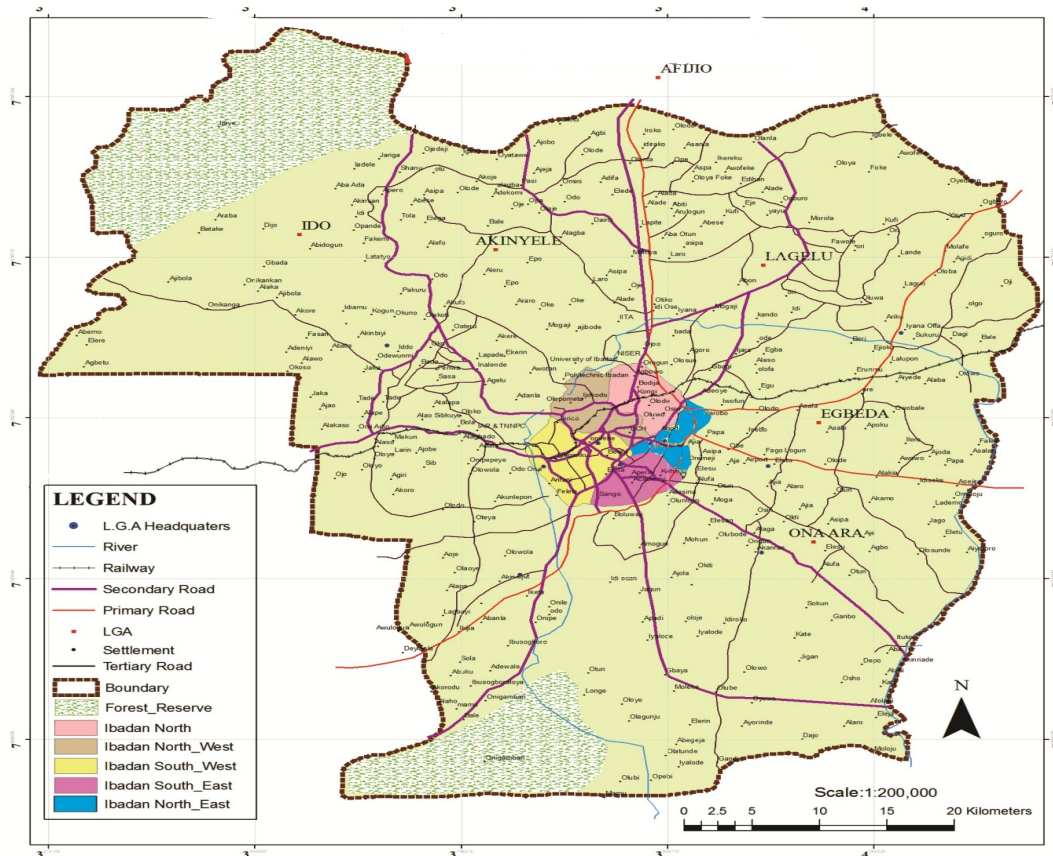

Figure 1: Ibadan Region
Source: Bureau of Physical Planning and Urban Development, Oyo State, 2018

2. Methodology

This study employs both quantitative and qualitative research approaches. The data retrieved through the quantitative approach of a structured questionnaire was used for both the descriptive (frequency tables) and inferential analysis (ANOVA). In-depth interviews conducted across the study area served as the qualitative data capturing instrument. The reason for a mixed approach is derived from the arguments of Ukoji and Okolie-Osemene (2016) in their report on crime in Nigeria. The authors explain that a mixed approach in crime-related studies provides the researcher with a more individual explanation of the effect of the crime on the household. They argue that in the face of limited reliable and quality data on crime in Nigerian cities, researchers depend on qualitative data narratives of crime and victims to understand and complement quantitative data in such crime-related studies.

This study uses a cross-sectional survey design as well as a multi-stage sampling technique. Sedgwick (2014) explains that the cross-sectional survey design is best suited to studies that make use of questionnaire and interview data capturing tools as it is quick, easy and cheap. Furthermore, once respondents are interviewed there is no need for follow-up. Along with this, Hemed (2015) states that this type of survey-design gives room for outcome estimations. Primary data was gathered through field observation, administration of household questionnaires in the selected residential neighbourhoods and unstructured interviews with selected individuals. Secondary sources of information which include records on burglary, crime and population from the Nigerian Bureau of Statistics, National Population Commission, private organisations and published literature, were used to explain the nature and rate of crime in the country. The study's fieldwork was conducted in the native language of the area, being Yoruba. Questions for both the quantitative and qualitative data were asked in the respondents' local dialect should the respondent not be able to respond to the questions in the English language.

2.1 Quantitative Materials and Methods

For this study the structured questionnaire is the quantitative data source and one of the primary data capturing tools. The study, using a household survey and structured questionnaire, was administered to each sampled household. The researchers consider a household as a group of people living under the same roof with a common financial source (which is usually the father or mother of the house). Questionnaires were administered to the household head. The household head in this regard is typically the father of the house and in single-parent households, the mother. In the situation where the head of household was not present, the most mature dweller in the household was sampled.

The structured questionnaire was aimed at capturing household information, such as: socio-economic characteristics (sex, age, income), housing characteristics (type of housing, nature of tenure, security measures), neighbourhood characteristics (type of neighbourhood, infrastructure available, security measures) as well as household and neighbourhood responses to burglary, was administered to the household heads in the selected residential buildings. The quantitative data was analysed using descriptive and inferential statistics (Analysis of Variance (ANOVA) at $p\leq 0.05$). For this study, focus on respondents and household's socio-demographic characteristics was aimed at examining the vulnerability and exposure of households to burglary. The authors are of the view that burglary experiences and victimhood are across gender. Thus, the household characteristics will help to understand the authors' assumptions and views.

For effective representation across the study area, all the LGAs in the city were identified and categorised into urban or peri-urban local governments which are the primary administrative units (see Table 1) for proper representation of both LGA types (urban or peri-urban). The core five local governments are referred to as urban local governments, while the other six local governments are referred to as peri-urban local governments based on

their locations within and outside the metropolitan area (Oluseyi, 2006; Bankole and Bakare, 2011; Adelekan, 2016).

From the identified eleven LGAs in Ibadan, one neighbourhood was randomly selected from each. This was done to promote generalised representation across the LGAs. The residential neighbourhoods are Moniya, Adegbayi, Iwo Road, Agbowo, Onireke and Mapo. Others are Oke Ado, Olorunsogo, Apete, Oyedeji and Oluyole Extension. In selecting streets and communities to sample within these randomly selected neighbourhoods, purposive-sampling was used taking into consideration factors such as easy accessibility, community status and popularity.

To arrive at the sample size for each LGA, the population of each LGA was considered as the target population and was used to arrive at the sample. One of the basic principles guiding the selection of sample size is that the smaller the population, the bigger the sampling ratio has to be for an accurate sample (Yusuf, 2003). Neuman (1991) opines that for a study population of 150,000 a 1% sample ratio is sufficient. Yusuf (2003) goes further and explains that in situations where the sample population is above 10 million, to achieve accuracy, a researcher may make use of 0.0025% sample size. Thus, for this study considering the Ibadan metropolitan population of 1,338,659 (National Population Commission (NPC), 2010) with an estimated population of 6,018,000 estimate in 2018 (Dar-Al-Handasah, 2018) a sampling ratio of 0.0116% was considered suffice and was used to arrive at the sample size of 299. Thus, for this study, 299 household questionnaires were administered across the eleven LGAs in Ibadan. The sampling percentage was calculated to arrive at the sample size for each LGA using the population of LGAs.

Table 1: Sample Size

	LGA	Categorisation	Sampled Neighbourhood	Sample Size (0.0116%)
1	Akinyele	Peri-urban/Rural	Moniya	27
2	Egbeda	Peri-urban/Rural	Adegbayi	10
3	Ibadan North-East	Urban	Iwo Road	42
4	Ibadan North	Urban	Agbowo	39
5	Ibadan North-West	Urban	Onireke	19
6	Ibadan South-East	Urban	Mapo	34
7	Ibadan South-West	Urban	Oke Ado	36
8	Ona Ara	Peri-urban/Rural	Olorunsogo	34
9	Ido	Peri-urban/Rural	Apete	13
10	Lagelu	Peri-urban/Rural	Oyedeji	19
11	Oluyole	Peri-urban/Rural	Oluyole Extension	26
	Total			299

Sources: NPC (2010); Oluseyi (2006); Bankole & Bakare (2011); Adelekan, (2016)

2.2 Qualitative Materials and Methods

For the qualitative data for this study, in-depth interviews were conducted for a total of twenty respondents. Convenience-sampling was used to select and interview household heads, while purposive-sample technique was employed to select and interview neighbourhood heads and neighbourhood security

officers committee stakeholders. The interviewed household heads were different from the household heads administered questionnaires. Instances, where a household head, household dweller or neighbourhood dweller came (possibly to visit or to know what the survey was about) into the household when the questionnaires were being administered, such a respondent was interviewed to eliminate the bias of already having the foreknowledge of the questionnaire questions. The interviews were transcribed and analysed using content analysis. Field observations and open-ended questions were also employed to capture the data.

3. Result Findings and Discussion

3.1 Socio-Economic Characteristics of the Respondents

For this study, sex composition (presented Table 2) revealed that 51.2% of the respondents were male while 48.8% of the respondents were female. Gender has been identified as the main determinant of burglary experience (Steffensmeier & Allan, 2002; Mullin & Cherbonneau, 2011). Female interviewees reported greater instances of witnessing a burglary than men. The investigation revealed that men usually hide when burglars attacked at night. Answering to the reason for this, a female occupant has this to say:

> *"Burglary attacks are usually serious when burglars sight male occupant because their belief is that they may be vehemently resisted, and this may lead to death on both sides"*
> (Research Respondent, January 2018).

A female interviewee stated that some wives even encouraged their husbands to hide under beds, inside toilets or even to flee when they noticed the presence on armed burglars in the house. Another interviewee quickly pointed out that fleeing from the scene of attack may be dangerous. According to the latter, the man may sustain serious injuries when fleeing or may even be killed by burglars. A male interviewee recounts his ordeals when fleeing from a burglary out of a window:

> *"I landed in a drainage channel just besides the wall fence, and I had serious bone fracture and dislocation. I was there till the following morning when I was taken to University Teaching Hospital (UCH), Ibadan where I was admitted and received treatment for not less than six months"*
> (Research Respondent, January 2018).

The age structure of the respondents indicates 41.1% of respondents were less than 30 years, 48.7% were between 31 to 50 years while the remaining 11.1% were above 50 years (see Table 2). Going by the study respondents, 89.8% can be considered young as they are aged below fifty years. This study cannot state that its respondents have a history of engaging in burglary activities, but studies by Adebayo (2013); Chiedu et al. (2015); Nwankwo and Okolie-Osemene (2016) suggest that crime is usually perpetrated among the less aged people who are still physically young. This is so as aged and females are considered more vulnerable to the act of burglary.

While 60.2% of respondents were married, 28.4% were single. Also, 6.0% of the respondents were widowed, 3.7% were divorced, and 1.7% were widowers (see Table 2). Marital status determines the household size and occupancy ratio (Adepoju & Okunmadewa, 2011; Adeniyi et al., 2016). The average household size in Ibadan is large (8 members) and this makes it a densely populated city. Owing to the high population, there is a tendency for burglary and any other social crime to take place (Shichor et al., 1979; John Howard Society of Ontario, 1999; Nolan, 2004; Algahtany et al., 2018; Coccia, 2018).

Table 2: Demographic Characteristics of Respondents

Sex	No. of respondents	Per cent
Male	153	51.2
Female	146	48.8
Total	299	100.0
Age	**No. of respondents**	**Per cent**
Less than 30 years	123	41.1
31 to 50 years	143	48.7
Above 50 years	33	11.1
Total	299	100.0
Marital Status	**No. of respondents**	**Per cent**
Single	85	28.4
Married	180	60.2
Widowed	18	6.0
Divorced	11	3.7
Widower	5	1.7
Total	299	100.0
Educational Status	**No. of respondents**	**Percent**
No Formal Education	16	5.4
Primary Education	13	4.3
Secondary education	57	19.1
Technical college Education	13	4.3
National Certificate Education	66	22.1
Higher National Diploma and Degree Education	97	32.4
Post-graduate Education	21	7
Modern Education	16	5.4
Total	299	100.0

Some of the respondents (5.4%) had no formal education, and these were mainly people between the ages of 50-60 years, above 4% of respondents obtained primary school leaving certificate, 5.4% modern education, secondary school certificates (19.1%), technical college certificate (4.3%), National Certificate of Education (NCE) (22.1%), Higher National Diploma (HND) and first-degree certificate (32.4%) and post-graduate degrees (7%) (see Table 2). Some of the idle youths and unemployed individuals engaged in burglary by intruding into the premises of the educated and working-class

residents (i.e. teachers) when they have gone to work. A lack of education brings about the worst in the behaviour of a young person (Cowell, 2006; Monk, 2014; Osowole et al., 2014; Al-Qahtani, 2016; Kremer et al., 2016; Adepoju & Okunmadewa, 2017). If the majority of Ibadan inhabitants can go to school, then there could be indirect effects on crime which may reduce the tendency of crime occurrence; as education has been reported to reduce social vices among people (Osowole et al., 2014; Adepoju & Okunmadewa, 2017).

Table 3: Nature of Occupation and Income of Respondents

Occupation	No. of respondents	Per cent
Farming	37	12.4
Private sector	108	36.1
Public service	85	28.4
Retiree	10	3.3
Student	37	12.4
Apprentice	15	5.0
Unemployed	7	2.3
Total	299	100.0
Monthly Income (₦) (1USD to ₦340)	**No. of respondents**	**Percent**
Less than ₦10,000 (**$ 29.4**)	81	27.2
₦10,000 (**$29.4**) - ₦30,000 (**$88.23**)	59	19.8
₦31,000 (**$91.17**) - ₦50,000 (**$147.05**)	78	26.2
₦51,000 (**$150**) - ₦70,000 (**$205.88**)	39	13.1
₦71,000 (**$208.82**) - ₦90,000(**$264.7**)	28	9.4
₦91,000(**$267.64**) - ₦120,000 (**$352.94**)	11	3.7
Above ₦120,000 (**$352.94**)	3	1.0
Total	299	100.0

Ibadan and cities in Nigeria are characterised by informal private trading activities and street hawkers, many of whom are secondary school leavers and can be classified as educationally vulnerable (Adeagbo, 1997; Bogoro, 2016). As presented in Table 3, 64.5% of the total sample either engages in the public or private sector of the economy. It was identified that private jobs such as trading, teaching in private schools, barbing and all other sorts of private commercial activities made up the 36.1% of the sample that were employed in the private sector. The remaining 63.9% are government civil servants working in public schools, health officers in government hospitals, state and federal secretariats. From the interview, it was revealed that burglary mainly occurred when private and public-sector workers, students and farmers had left homes and gone to their different places of work. It can, therefore, be deduced that the sample, representing about 65% (64.5%) of the entire respondents sampled were mostly the victims of burglary.

The survey presented in Table 3 indicates that the overwhelming majority of the respondents (95.7%) are earning less 1USD per day. This is not enough to cater for basic needs such as food, clothing and housing, let alone to secure homes with various security measures (Adepoju & Okunmadewa, 2011; Tade & Aderinto, 2012). Therefore, they are always afraid of burglars. However, those residents earning relatively high incomes secure their housing units with some security measures such as private security, dogs and electric fencing which deters burglars (Badiora & Afon, 2013; Badiora et al., 2017). Nevertheless, some burglars have special equipment and skills that allow them to break into secured houses (National Institute of Justice, 2007).

From the study, the evidence suggests that single women and low-income earners are the most vulnerable to burglary crime. Conventional wisdom states that crime perpetrators are opportunistic and cautious. Some studies have attributed the fear among females and the risk-taking nature of males as reasons for the higher number of crimes experienced by women (Fetchenhauer & Buunk, 2005; Hirtenlehner & Farrall, 2014). Likewise, high-income households have a variety of options regarding the best mechanism to prevent burglary crime both at an individual and neighbourhood level - a choice not available to the poor or low-income neighbourhood due to poverty (Pantazis, 2000).

3.2 Housing Characteristics of Sampled Houses

Evidence from Table 4 presents an array of various types of housing in the Ibadan area. The housing types include the Brazilian building which is commonly called face-to-face house or tenement building, flat apartment, traditional compound houses and duplex (7.7%). Brazilian housing consists of between 6-12 rooms with a single entrance. It is a heterogeneous type of housing where all the single room users share a general sanitary facility. In many instances, residents of such rooms are not related but of various cultural backgrounds who reside together because it is the only accommodation they can afford, or it is close to their workplace. Field observations show that a flat can be a one, two, three, four or five-bedroom apartment, while a duplex is a private housing unit or apartment made up of 2-5 rooms which can be a single or double storey, or a building located side by side either detached or not from each other. A duplex is meant to house individual households and can have multiple exits and entrances.

The majority of the interviewees explained that people living in tenement buildings, flats and duplexes were the main targets of burglaries. The various avenues through which the burglars broke into these houses were through the windows, backdoors and rooftops. In a group interview an official of a private security outfit established the relationship between building type and burglary incidence. He said:

> *"Many of these face-to-face houses do not have gates; they* [tenants] *leave the door open due to a large number of individual occupants. Even an outsider can work in anyhow…so what the burglar needs to do is to monitor when they have all gone out and enter freely without any hindrance either through the front door or any of the windows…and many of them do not use traditional*

means [locally made charms] *to secure their assets from theft…unlike the traditional compound buildings where charms can be found at the entrances. Some landlords also buried anti-burglary crime charms under the ground…The charms were prepared to make the house unattractive to burglars"*
(Research Respondent, January 2018).

Residents of the traditional compound housing type are less vulnerable to burglary crime. A traditional compound housing type is typically occupied by extended family and is characterised by a large expanse of land surrounding small huts and a homestead to form a family area around. Most households living in traditional compound houses have a large household size (8-12 members). Most of the households were made up of immediate nuclear family members, members of extended family, friends and colleagues, house helps and apprentices. Thus, there is always someone at home at a particular point in time. Residents observed that people living in traditional compound houses rarely experience burglary due to the presence of people in the house throughout the day.

Most of the traditional compound housing units can be found in the core areas of Ibadan. Adeli (2011) showed that residents in old areas of the city, where social unity is witnessed, felt more secure. Also, the windows of traditional compound housing units normally discouraged burglary crime, as they are usually small at 500x500mm, and hence are not wide enough to accommodate a burglar.

Table 4: Housing Characteristics

Respondents' Tenure Status			
	Nature of Tenure	**No. of Respondents**	**%**
1	House-owner	109	36.5
2	Tenant	183	61.2
3	Others (Sharer, visitor, squatter)	7	2.3
	Total	**299**	**100.0**
Means of Accessibility to the House			
	Means	**No. of Respondents**	**%**
1	Footpath	107	35.7
2	Road (minor, major or connector)	192	64.3
	Total	**299**	**100.0**
Housing Type			
	Type	**No. of Respondents**	**%**
1	Traditional compound house	33	11.1
2	Brazilian (face-to-face) type	130	43.4
3	Flat	113	37.8
4	Duplex	22	7.7
	Total	**299**	**100.0**

Table 4 reveals that 61.2% of the respondents were tenants, 36.5% were house-owners, and 2.3% were either sharers or squatters. Through open-ended individual conversations and field observations, it was found that most

of the wives of house owners, popularly called "landlords", were engaged in home-based informal sector economic activities like home trading, neighbourhood hawking, and homeschooling for children. By engaging in these economic activities, women were able to keep watch on the house. In a group interview conducted with the wives of homeowners, a wife narrated her experience as follow:

> "*My husband built the shop for me in front of the house and encouraged me to be selling there…he thought this will give us an opportunity to look after our home and secure our assets….and I am sure this has helped. Some houses that do not have shops in front of them or anyone at home during the day have been burgled at one time or the other. Some people in these houses have experienced daylight burglary when they were not around this year…*"
>
> (Research Respondent, January 2018).

While many interviewees believed that such houses could not be burgled during the daytime, others felt their occupants could still be robbed. A female tenant narrated her experience as thus:

> "*We were three at home when they* [robbers] *came to rob us in the house. Other people were not around, so the house seemed to be empty…When they* [robbers] *came, they pretended like visitors in order to enter the house, and immediately they entered they showed us weapons* [cutlass and gun] *they collected the little money we have, we couldn't shout or call for help…they left on a motorbike…before we came out, to shout for help they were gone…*"
>
> (Research Respondent, January 2018).

Most burglaries were committed during the day, most especially during the market days and on Sundays when the neighbourhoods are nearly deserted. Some of the wives of house owners have also fallen victim of two criminals another female interviewee noted:

> "*There was a day I wanted to go and buy goods for sale. I put my money on the table, two men came with a motorcycle popularly called 'okada', one of them alighted from the motorcycle and pretended to be a customer. He bought a good that costs only ₦150. He kept on asking for the prices of other goods just to distract my attention from the wallet I put on the table. He also gave me, ₦1,000 note and while I was looking for change, that is, ₦850, he took my wallet. When I gave him the change, they sped off. Immediately, they left, I noticed that they have taken my money, I hired a motorcycle, we pursued them. But we were unable to catch them. The incident constrained me to employ a sales girl*"
>
> (Research Respondent, January 2018).

The theory of crime which was originally formulated by Lawrence Cohen and Marcus Felson, states that predatory crime occurs when a likely offender and

suitable target come together in time and place, without a capable guardian present (Centre for Problem-oriented Policing, 2018).

Burglary occurred mostly in houses that were accessed through footpaths, but some residents that live in houses that were connected by major roads also reported that they had experienced burglary in the past. Table 3 shows that 64.3% and 35.7% respondents accessed their homes through roads and footpaths respectively. The results of interviews conducted on selected residents showed that houses accessed by footpaths and minor roads were hot spots for burglary crimes. According to an interviewee, some of the burglars that were caught reside within the neighbourhoods or had informants who lived in the neighbourhoods. This confirms the observation made by Townsley et al. (2015) that the likelihood of household burglary is influenced by proximity to burglars' home and easy accessibility to elope from the scene.

3.3 Perceived Causes of Burglary Crime, Residential Neighbourhood Security Mechanisms and Household Response to Burglary

According to respondents administered the questionnaire, some of the perceived factors that account for increased burglaries are joblessness (37.5%), poverty (29.1%), laziness (27.8%) and lack of parental care (4.7%). According to an interviewee:

> *"The main cause of burglary in my community is joblessness amongst the youth. Frustrations of joblessness among tertiary institution graduates in the society makes them opt for burglary in order to survive while some graduates engage in armed robbery just to cater for their needs and to meet up with their working-class counterparts."*
> (Research Respondent, January 2018).

McNamara (1968) states that irrespective of the acclaimed nature of security, any nation that sought security in the face of acute unemployment, poverty, low technological development, hunger and poor infrastructure has a false sense of security. The issue of unemployment has enhanced the engagement in social vices such as drug abuse. The use of drugs among the youths also aggravates criminal tendency. According to an interviewee:

> *"The use of drugs such as tramadol and syrups containing codeine make them high and more invasive."*
> (Research Respondent, January 2018).

Most of the youths depend on the use of Tramadol before engaging in criminal activities (Amali et al., 2017). Both drugs have just been banned in Nigeria, but some patent medicine shops are still selling these drugs, another interviewee observed. Farrell and Sullivan (2004) found out that witnessing violence also predicted subsequent increases in drug use. More so, the lack of integration of crime prevention strategies within comprehensive city planning practices is a factor in facilitating opportunities for urban crime (Fester, 2015; Oladosu et al., 2015; Chiodi, 2016; Ghani, 2017). Fester (2015) and Oladosu et al. (2015) highlight that city planners must efficiently manage space,

reduce crime displacement in space, improve urban design, apply development control and improved building planning to curtail crime.

In the residential neighbourhoods surveyed, various security infrastructures were available. Neighbourhood restriction mechanisms aimed at preventing burglary include road bumps, gated streets and neighbourhood security checkpoints. Few gated communities or neighbourhoods exist in the study area, and these include the Government Reservation Areas (GRAs) at Agodi, Jericho and Onireke, private residential estates at Ring Road, Akobo and Iwo road. They are mostly occupied by medium and high-income earners.

The gated communities of the non-poor are characterised by high wall fences and gates that are manned by security personnel 24 hours a day. Motorcycles are not allowed to enter these communities because most of the perpetrators of urban crimes use them. Some neighbourhoods that are inhabited by low-income groups are not fenced but have low gates at their entrances. These gates are not operated by security personnel and are open between 5am and 11pm. It was observed in the course of conducting interviews with the residents that burglary rarely occurred in gated neighbourhoods but often occurs in non-traditional, non-gated neighbourhoods that constitute slums in semi-urban LGAs. Certain studies (Landman, 2000; Landman & Schönteich, 2002; Atkinson et al., 2004; Breetzke et al., 2014) have also noted that that gated neighbourhoods experience less crime when compared to communities without gates.

De Rango (2001) identifies this trend of gating for security as a reflection of the income and status of neighbourhood dwellers. She argues that societal neighbourhood segregation resulting from gated communities are not a deliberate and conscious effort of high-income earners but rather a structural reflection of the society's unconscious arrangements. Liotta and Miskel (2014) suggests that insufficient infrastructure for the growing residential population breeds discontent among urban dwellers, leading to high crime rates, as visibly seen in growing megacities such as Karachi, Rio de Janeiro and Lagos.

Going by the evidence presented in Table 5, it was observed that the rate of burglaries in the peri-urban and rural LGAs (53 homes) is higher than the urban LGAs (40 homes). Ogboi and Eze (2013) asserted that the level of safety differs among urban residential neighbourhoods, especially between inner city and peri-urban areas. This is as a result of unplanned development, in the form of sprawl and high population movement that has marked new areas (NPC, 2010; Lasisi et al., 2016). These aspects make it easier for burglars to invade their premises. Furthermore, some security infrastructure such as police posts or police stations, good roads, street lights and other security programmes that normally present in the urban core neighbourhoods are not present. Examples of these are *"operation burst"* (security arrangement that comprises of officers of The Nigerian army, The Nigerian Police and the Nigeria Security and Civil Defence Corps by Oyo State government to tackle menaces and crime in the state with focus on the city), and the *"seven cities"* programme (a highway security initiative by The Nigerian Police to protect major highways across the state) which are rarely

operated in peri-urban and rural areas, thereby making the residents vulnerable to burglars and other criminal activities.

This aligns with the views of, and confirms the observation made by, Cebulak (2004) and Marshall and Johnson (2005) that peri-urban and rural areas are characterised by increased criminality. Cebulak (2004) states that post 1991 a steady increase in crime in rural areas contrasts the urban crime decline between the years 1966 and 1991. Marshall and Johnson (2005) also report that the limited rural crime literature is the reason why scholars believed that crime is minimal in rural areas. Similarly, Adewale (2015) states that rural areas in Ibadan are now characterised by increased crime. Field observations reveal that many of these rural dwellers are migratory dwellers who migrate from rural LGAs where their houses are located to an urban area where their jobs and offices are located. Many leave their homes for as early as 7am and don't return until 6pm.

Table 5: Burglary Experience Among Respondents According to LGA

Burglary Experience	Residential Location		Total
	Urban LGA	**Suburban/Rural LGA**	
Burgled	40	53	93 (31.1%)
Not burgled	113	93	206 (68.9%)
Total	153	144	299

Most of the houses (113) that have never been burgled can be found in the urban core areas. Impoverished neighbourhoods in the core areas are less vulnerable to burglary than in the peri-urban interface of metropolitan Ibadan. The assertion of Ogboi and Eze (2013) does not tally with this finding. These authors argue that wealthy neighbourhoods rank higher than poor areas in safety, while poor inner city neighbourhoods typically suffer from high crime. A rich neighbourhood house owner commented:

> *"My concern isn't the money spent on these security facilities* [private security, dogs and fencing] *my main interest is the security of my family and my entire assets whether I am at home or not…"*
>
> (Research Respondent, January 2018).

The findings of this study also contradict the observation made by Ross (2000) that residents of poor neighbourhoods in USA had high levels of fear of being victimised and injured yet out of necessity they walked more than residents of wealthy neighbourhoods. In the study area, high levels of fear of being victimised and injured are associated with the "area boys". These "area boys" are a group of locally organised gangs of street boys that mainly live on the road, abandoned properties and bushes and are usually armed with crime instruments such as cutlass, knives, broken bottle and sometimes locally made guns.

The intensity of crime in the peri-urban areas has effects on residential relocation and property value, according to some residents interviewed. There were cases where several tenants have relocated to other places in the core

areas, especially after a burglary. Some landlords have also relocated to their compound houses in the core areas of the city because of burglary. One of the interviewees opined that:

> "*Most of the houses in his area are occupied by owners and where there are tenants, they usually pay low rent. Some house owners even encouraged tenants to live with them without paying rents.*"
> (Research Respondent, January 2018).

Some residents believe that houses occupied by several people are not attractive to burglars. According to Philip (2008), the fluctuation of crime has a considerable effect on residential location and property values.

ANOVA was used to determine variations in burglary crimes committed among high, medium and low residential neighbourhoods. Analysis of data confirmed the research hypothesis which says: burglary crimes committed differ significantly among residential neighbourhoods (F=3.012) (see Table 6). This is so, owing to the status of the house owner, demographic characteristics of households, the neighbourhood security measures and installations put in place. This is also a pointer towards the increased cases of reported crime along the rural LGAs when compared with the urban LGAs. From field observation, sparse distributions of high-income housing across the rural/peri-urban LGAs which are often attractive to the burglar were seen. Some peri-urban LGAs are moving towards high-density populations, and with that the rate of burglary is now also on the increase. Nonetheless, the urban LGAs are reported to have been burgled more than peri-urban areas, as most residential homes with the urban LGAs have been built over the years and might have been burgled over time compared to a rural home that are not a resultant effect of urbanization.

It should be noted this study did not distil the spatial housing density arrangement within rural area. As observed, some rural communities within the rural LGA can be said to be of high density and wealthy house owner as against a rising trend of housing density from low to medium and traces of high density in some neighbourhoods. This argument suggests the need for a future purposive investigation of burglary across high-density neighbourhood within the rural and urban LGAs and burglary incidence in low-density neighbourhoods in rural and urban LGAs.

Table 6: ANOVA of Burglary Crime Committed Among Residential Locations

Type of residential location	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	0.750	1	0.750	3.012	0.084
Within Groups	73.432	295	0.249		
Total	74.182	295			

The relevance of public-private partnership in fighting crime, as against the formal role of the police to fight crime has been reinstated (The Centre International de Formation des Autorités et Leaders/International Training

Centre for Authorities and Leaders (CIFAL) & Boisteau, 2006). Frost and Sullivan (2012) suggest that the approach of private/public partnership and cooperation in tackling the security challenges in residential neighbourhoods promote urban security and safety. Ogboi and Eze (2013) state that national response to the growing threats of crime and the inability of the police to provide adequate protection has led individuals, communities and businesses to use the services of private security and vigilante groups.

The vigilante groups, according to 39.5% of respondents, were the most effective security operatives in Ibadan, followed by the night watchmen (13.4%) and gated community (0.3%). Residents organised themselves into neighbourhood self-protection groups (vigilante groups) in order to ensure neighbourhood security. During an interview with a civil servant residing in one of the private residential estates, it was revealed that decisions on what security mechanisms to adopt in a neighbourhood is arrived at during the community or neighbourhood meetings. The interviewee observed:

> "*We* [estate residents] *agreed at one of our meetings* [landlord meetings] *not to allow okada people to enter into the neighbourhood again…owing to continuous report that the burglars make use of the bike when eloping the scene of robbery.*"
> (Research Respondent, January 2018).

Members of Oodua People's Congress [OPC] (an indigenous security group) were also said to be relatively efficient at apprehending burglars. Security fee payment included in the land-use charge has just been implemented by the Oyo State Government along with awareness programmes for citizens of the state, especially those residing in the capital city-Ibadan. Recognising the role of diverse actors and stakeholders in enhancing community safety and the prevention of crime has led to various agencies advocating for the implementation of national policies that will help reduce and prevent crime. These include cooperation and partnerships with the corporate sector to prevent the act of insubordination of crime and take action to increase the likelihood that offenders will be apprehended.

Excluding neighbourhood security mechanisms, individual households also rely on various security mechanisms and install various security infrastructures depending on their status. The survey results presented in Table 7 indicates that 33.1% of the sampled respondent use dogs as the primary security measure on their premises, 19.7% had burglary iron proof bars fitted homes, 10.4% made use of closed-circuit security systems, security guards (9.4%), security-flood lighting (1.3%), alarm systems (0.3%) and spiritual security (24.7%). A further 1.0% of the sampled respondents refused to answer the question pertaining to security measures adopted at home. This could be inferred that they do not have any of the security measures available in their various residences.

Those who believed in spiritual security considered traditional approaches to curbing burglary and other crimes were more effective than the so-called western security measures. In an interview with a traditional chief in Apete, Ido LGA, it was revealed that:

> "*My house has never and will never be burgled, I employ what my ancestors use in those days (indigenous spiritual power) to protect my house from robber.*"
>
> <div align="right">(Research Respondent, January2018).</div>

He expressed that he had never experience burglary and that he did not have any modern security measures in place. According to him, a traditional power attached to the entrance of his compound deters burglars from entering his premises. He went further to explain that he does not close his main entrance door during the day or at night even when nobody is around. A traditional city like Ibadan mostly adopts traditional ways of preventing burglary because the inhabitants of the city believe in traditions even when they are educated and religious. Some of these inhabitants still hold on to their indigenous identities. Suburban areas also adopt these traditional approaches. They consider this traditional/spiritual security mechanism more effective than the conventional means or even the Nigerian Police.

From the sampled households, 64% of respondents claimed that the Nigerian Police were not effective in curbing crime in their neighbourhoods as residents preferred the intervention of vigilante groups with guns (locally made). Observation revealed that this assertion is owed to the uneven distribution of police stations and inadequate police personnel in the suburban and rural LGAs. A resident summarised the inefficiency of the police officers:

> "*We have less than five police officials at the police station in my community…out of this five, it is not all of them that comes to work every day…even if they come, they don't even have a vehicle to respond to calls by the residents and not all of them can handle a gun.*"
>
> <div align="right">(Research Respondent, January 2018).</div>

Table 7: Household and Residential Neighbourhood Security Measures

Security measure in the Neighbourhood			
	Measure	**No. of Respondents**	**%**
1	Private night watchmen	40	13.4
2	Gates	1	0.3
3	Collective vigilante groups	118	39.5
	Total	**299**	**100.0**
Available Security Measure in Individual House			
	Measure	**No. of Respondents**	**%**
1	Guard/Security Dogs	99	33.1
2	Security guards	28	9.4
3	Security Alarm system	1	0.3
4	Closed Circuit system	31	10.4
5	Burglary proof	59	19.7
6	Spiritual / traditional security	74	24.7
7	Others (No response)	3	1.0
	Total	**299**	**100.0**

4. Discussion and Recommendation

House burglary is one of the most common crimes in Ibadan which is of great concern to the general public. It therefore needs urgent attention. Crime remains unevenly distributed among residential neighbourhoods; spatial studies of burglary crimes show that certain neighbourhoods experience burglary crimes more frequently than others.

Every city has a unique blend of insecurity challenges and need individualised strategies to tackle the issue of burglary. There is a need to further encourage the coverage of security programmes such as "*operation burst"* and *"seven cities"* to reach peri-urban and rural areas. Likewise, the training of police in the handling of weapons and increased responsiveness among the officers should be encouraged.

According to the Security and Defense Agenda in Europe (2011), urban residential neighbourhood security requires a comprehensive strategy that spans the police and judiciary as well as other administrations at local and international levels in addressing internal and external insecurity. Kwaja (2016) states that the privatisation of security in residential neighbourhoods has significant implications for an ineffective and democratically unaccountable public security sector. However, the proliferation of informal security providers such as vigilante groups should be controlled and well-managed so that they do not become a potential security challenge. Thus, there is the need to adopt guided privatisation in the area of security so that the informal security groups are subjected to the control of the Nigerian Police.

As identified in the study by 64% of sampled household respondents that the Nigerian Police is considered ineffective in their discharge of duties, coupled with the assertion of interview respondents that 5 police officials are available with only few able to handle weapons such as guns. This study therefore reinstates that to achieve security of lives and property, there is the need to improve public security investment in the form of the police stations and increased police personnel in the available police stations in the city. Security facilities such as police posts, checkpoints, and gates as well as personnel are to be adequately provided by the Federal (through the Nigerian Police Force headquarter) and State Governments for those people in suburban neighbourhoods. The government should give urban residential neighbourhood security enough attention or allow this to remain a local matter. Within Nigeria, repositioning the Nigerian Police, introduction of state police, establishment of more police stations, capacity building for the Nigerian Police, improved police welfare and the provision of conventional crime-fighting instruments are some of the issues that are raised towards the fighting of crimes such as burglary (Otu, 2004; Adefi & Achor, 2013; Omolola & Olaitan, 2013; Agwanwo, 2014; Mathias, 2016). This study is of the view that duplication of security operative is a reflection of failed or failing public security mechanism.

UNHabitat (2007a) opined that poor urban design and planning have increasingly been cited as playing a role in the shaping of urban environments that put citizens and property at risk. The report further states that the physical

fabric and layout of cities have a bearing on the routine movements of offenders, victims and opportunities for crime. Neighbourhood planning and good house design remain a means through which burglary can be prevented. According to UNHabitat (2007b), physical designs such as gated communities, low-walls or fences, set-backs, cul-de-sacs and management of the built environment play a role in facilitating or diminishing opportunities for crime and violence. The construction of high perimeter walls and fences should be discouraged. Timberlake (2015) states that residential neighbourhood security can be achieved through low perimeter walls and fences and elevation that creates natural, unobtrusive barriers. Likewise, the use of easily accessible materials such as broken bottle and dogs must be maximised in the quest to be secure. The installation and operation of CCTV camera in strategic locations is also important. This is to reduce burglary crime and increase public safety in residential neighbourhoods.

The study researchers identify collective policing as a means of preventing neighbourhood burglaries. Individuals and unfamiliar faces that are regularly seen during odd hours of the day should be approached carefully. Communities should question suspicious characters around their compounds and promptly report any crime to the police. Likewise, the erection of shops with a trader in front of the houses can help curtail the frequency of burglaries as this will serve as a signal that someone is around, and if need be the person can easily call for help from the police if available in such an area. The study also recommends daytime patrol by police and local security groups when the owners may not be around. This will help control the cases of burglary when household residents are not around and clarify the argument that the young unemployed are potential perpetrators of burglary in the area.

The study also identifies the need for improved prevention of over-the-counter sales of drugs without pharmaceutical approval. Data collected from respondents of this study suggests that there is a strong relationship between drug users and burglary crime. The study identifies the need for rigid control of unapproved pharmaceutical stores and local alcohol stores in efforts towards reducing access to these substances. Likewise, agencies such as the Pharmaceutical Society of Nigeria (PSN), Nigerian Drug Law Enforcement Agency (NDLEA) and National Agency for Food and Drug Administration and Control (NAFDAC) must monitor the easy access to illicit drugs. The study advocates for improved investment in social and community works by both government, private agencies and Non-Governmental Organisations (NGOs) for jobless youths and "area boys" that needs rehabilitation. The researchers identify the need to encourage apprenticeships for youths, as this will help limit social vices and generate menial incomes for survival. Communities must realise that limiting the exposure of the youth to drugs and harmful social vices is dependent on them. Communities must limit or prevent the sales of drug (codeine, tramadol, marijuana) within the neighbourhood through the introduction of strict rules that prevents such. Neighbourhood outreaches and awareness of the adverse effect and outcome of illicit drug use should take place in the schools within the communities. As illustrated by Rhew et al. (2011) in their study on drug-use risk among rural adolescent, rural youth exposure to drugs is associated with residential location and school attendance. The study states that rural dwelling youths are more likely to engage in illicit drug use than urban dwelling youths. Soul

City Institute of Drug Abuse South Africa (undated) states that reducing the effect of drug abuse should focus on reducing drug supply, drug demand and harm.

Finally, increased investment in security mechanism calls for public-private, one of which is the newly introduced security charges introduced along with the land-use charge by the Oyo state government.

5. Conclusion

In the face of urbanisation and suburbanisation, social ills arise. There are numerous negative effects of unplanned urbanisation that are beyond the city enclave as dwellers in rural areas are now also experiencing its manifestation-household burglary.

Within the Nigeria state, the reality of suburbanisation can no longer be ignored. Planning specialists and advocates for city security must not propose an all-inclusive settlement which includes the peri-urban and rural areas. The era of continuous investment of security apparatus must now look towards adapting security apparatus that aligns with the spatial arrangement of rural areas too. The issue of spatial arrangement has thus limited the complete representation of the rural areas and its effective classification (high, medium and low density). It has become evident as a result of field observations that the perception of rural household poverty might not be entirely true as migrant households (urban high- and medium-income earners who have homes built in rural or peri-urban areas) are on the increase within the rural areas. Also, the definition of poverty remains a subject that needs to be carefully investigated as the study didn't take into consideration the household expenses or the housing structure of the low-income (less than 1USD per day) earners; as the $1 per day poverty definition is subjected to externalities such as exchange rate, payment of salary and the relationship between individual educational qualification and income.

As against a longitudinal approach, this study employed a cross-sectional survey. The limitation of this is that the rate of incidence of neighbourhood or household burglary crime will not be well-documented, especially for household responders who are not the house owners, but tenants. This study also was limited as it did not take into consideration the years of occupancy of the respondents both within the neighbourhoods and also in the house sampled.

The study did not investigate the origin of drug use as identified by the respondents. The argument that burglars are drug users was not well investigated. Likewise, the study did not establish if any burglars were caught in the act of burglary and if the burglars where dwellers within the neighbourhoods. These aspects are imperative in establishing the association between the neighbourhood sales of drugs and engaging in the act of burglary by dwellers within the neighbourhood; or if the drug dealers are located outside the communities of study.

Households are typically lifeless zones during the working hours (between 7am and 6pm) when occupants are not at home. The study also did not query

if there are youths at home during these hours, and if there are, what the youths do. This is important towards understanding household approaches towards discouraging their adolescents from loneliness, peer-pressure to engage in burglary, and also what households do to prevent their adolescents at home from been exposed to crime. This will proffer a clearer understanding of the proposal for youth empowerment in the study area.

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