

SUSTAINABLE LIVABLE HOUSING ASSESSMENT MODEL
FOR TRADITIONAL URBAN AREAS IN NIGERIA

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DEDICATION

To
my beloved family,
Muslim Ummah, and
the **Poor** across the globe, for I foresee a change not sooner than now.

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To **ALLAH**, *Al-Awwal and Al-Akhir*, be the Glory for transforming this dream into fruition.

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ABSTRACT

Sustainable livable housing entails meeting residents' housing needs and well-being in terms of housing condition, facilities, safety and psychology. Reports and studies revealed that about 863 million people in developing countries live in slum, with 61.7% of this is in Africa. In Nigeria, approximately 75% of people living in urban areas live in poor housing conditions, manifested by overcrowding, poor urban living conditions, low facilities and high crime rates. At present, the absence of sustainable livable housing (SLH) assessment index for traditional urban areas (TUAs) has caused difficulties in determining housing that suits and meets the needs of the TUAs residents. The assessment index is critical in achieving housing-related target of Sustainable Development Goals (SDGs) that concerns with sustainable cities and communities on or before 2030. The main purpose of this study is to establish SLH assessment index toward improving TUAs housing condition in Nigeria. The first objective is to determine attributes and their indicators for assessing SLH according to their importance for TUAs. The second objective is to examine significant relationship between identified attributes and their indicators with SLH to establish structural model. The third objective is to develop SLH assessment index toward improving housing living condition in the TUAs. In achieving the first objective, the researcher carried out literature review, focus group discussions (FGDs), experts' validity survey and TUAs resident field survey in Osun State, Nigeria as well as undertaken quantitative analysis. Seven identified attributes and their 36 indicators were found relevant and important. These findings were then subjected to further analyses such as measurement model, structural model and important performance matrix analysis (IPMA) using partial least square-structural equation modelling (PLS-SEM), to achieve the second objective. Five attributes namely housing units, security and safety, facilities and services, community and neighbourhood, and economic development emerged as significant. These 5 significant attributes and their 27 indicators were utilized to achieve Objective 3 i.e. developing SLH assessment index (SLHAI) that is suitable for TUAs housing assessment, based on resident needs and perspectives in Nigeria. The result of the SLHAI validation and testing in Ile-Ife, Iwo and Osogbo TUAs, Osun State, Nigeria revealed that housing in study areas has been assessed as fair and scarcely suitable for participants' housing need and requires improvements. Conclusively, the assessment index developed has shown aspects from which the improvement activity should commence; as such this study has successfully met its purpose.

ABSTRAK

Kelestarian perumahan boleh huni melibatkan keperluan dan kesejahteraan penghuni perumahan dari aspek keadaan rumah, fasiliti, keselamatan dan psikologi. Laporan dan kajian menunjukkan bahawa kira-kira 863 juta orang yang berada di kawasan negara-negara membangun adalah tinggal di kawasan mundur dengan 61.7% daripadanya berada di Afrika. Di Nigeria, kira-kira 75% penduduk yang tinggal di kawasan bandar tinggal dalam keadaan perumahan yang buruk, dalam keadaan kesesakan, suasana kehidupan bandar yang mundur, perkhidmatan fasiliti yang rendah dan kadar jenayah yang tinggi. Pada masa ini, ketiadaan indeks penilaian kelestarian perumahan boleh huni (SLH) untuk kawasan bandar tradisional (TUA) telah menyebabkan kesukaran dalam menentukan perumahan yang sesuai untuk memenuhi keperluan penduduk TUA. Indeks penilaian adalah kritikal dalam mencapai Matlamat Pembangunan Mampan (SDGs) yang berkaitan dengan bandar dan komuniti lestari pada atau sebelum tahun 2030. Tujuan utama kajian ini adalah untuk menyediakan indeks penilaian SLH ke arah penambahbaikan terhadap perumahan di kawasan TUA di Nigeria. Objektif pertama adalah untuk menentukan atribut dan penunjuk mereka untuk menilai SLH mengikut kepentingannya bagi TUA. Objektif kedua adalah untuk mengenal pasti hubungan yang signifikan antara atribut dan penunjuk SLH ke arah pembentukan model struktur. Objektif ketiga adalah untuk membangunkan indeks penilaian SLH ke arah menaikan tahap kehidupan penghuni di TUA. Untuk mencapai objektif pertama, penyelidik telah menjalankan kajian literatur, perbincangan kumpulan fokus (FGD), tinjauan kesahihan pakar dan penyebaran soal selidik di kalangan penduduk di Osun State, Nigeria serta menjalankan analisis kuantitatif. Tujuh atribut yang dikenal pasti dan 36 penunjuk didapati relevan dan penting. Dapatan ini kemudiannya dikaitkan dengan analisis lanjutan melibatkan model pengukuran, model struktur dan matrik analisis pencapaian utama (IPMA) dengan menggunakan separa ganda dua terdikit berasaskan model persamaan struktur (PLS-SEM) untuk mencapai objektif kedua. Lima atribut iaitu unit perumahan, keselamatan, fasiliti dan perkhidmatan, komuniti dan kejuruan, dan pembangunan ekonomi merupakan atribut yang penting. 5 atribut dan 27 penunjuk digunakan untuk mencapai objektif ketiga iaitu membangunkan model indeks penilaian SLH berasaskan keperluan dan perspektif penghuni TUA di Nigeria. Hasil pengujian dan validasi model SLHAI di Ile-Ife, Iwo dan Osogbo TUAs, Osun State, Nigeria menjelaskan bahawa keadaan perumahan di kawasan kajian telah dinilai pada tahap sederhana dan hampir tidak sesuai untuk keperluan perumahan peserta dan memerlukan penambahbaikan. Secara keseluruhannya, indeks penilaian yang dibangunkan telah menunjukkan aktiviti penambahbaikan harus dilaksanakan; Oleh itu, kajian ini telah berjaya mencapai matlamatnya.

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LIST OF ABBREVIATIONS

ACEM	-	Association of Consulting Engineers Malaysia
AVE	-	Average Variance Explained
BAS	-	Building Assessment System
BREEAM	-	Building Research Establishment Environmental
CAR	-	Cronbach's Alpha Reliability
CB-SEM	-	Covariance-Based Structural Equation Modeling
CEPAS		Comprehensive Environmental Performance Assessment Scheme
CR	-	Composite Reliability
EFA	-	Exploratory Factor Analysis
FCT	-	Federal Capital Territory
FGD	-	Focus Group Discussion
GBCA	-	Green Building Council of Australia
GBI	-	Green Building Index
GPRS	-	Green Pyramid Rating System
GSCA	-	Generalized Structured Component Analysis
GSRS	-	Green Star Rating System
GSRS	-	Green Star Rating System
HQE	-	High Environmental Quality

I-CVI	-	Items Content Validity Index
IFC	-	International Framework Committee
IPMA	-	Important Performance Matrix Analysis
LEED	-	Leadership in Energy and Environmental Design
LCA	-	Life Cycle Assessment
MDGs	-	Millennium Development Goals
NEUSREL	-	Nonlinear Universal Structural Relational Modelling
PLS-SEM	-	Partial Least Square Structural Equation Modeling
RII	-	Relative Important Index
SAGS	-	South African Green Star
S-CVI	-	Scores Content Validity Index
SD	-	Sustainable Development
SDGs	-	Sustainable Development Goals
SLH	-	Sustainable Livable Housing
SLHAI	-	Sustainable Livable Housing Assessment Index
SPSS	-	Statistical Package for Social Sciences
TUAs	-	Traditional Urban Areas
UK	-	United Kingdom
USA	-	United State of America
UTM	-	Universiti Teknologi Malaysia
WHO	-	World Health Organization

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Housing is more than mere roof over residents' head. It a basic component of man settlement that satisfies his essential need and has fundamental influence on his welfare, health, quality of life and productivity. Today, housing plays central role in its residents' wellbeing, security and safety leading to the psychological and physical health on one hand. It is ranked next to food in the hierarchy of human needs. Mainly, housing performs three purposes needed by man, namely; physical (providing security and shelter), psychological (providing sense of personal privacy and space) and social purposes (providing communal area and gathering space for basic unit of family and society). In some societies, it accomplishes economic needs serving as commercial and production center. Housing, however, plays an important role in employment generation, wealth creation, sustainable environmental, natural disaster mitigation, economic and physical development (Erguden, 2001; Boehm and Schlottmann, 2001; UN-Habitat, 2006a) as well security of wealth and lives amongst others (Hirschfield *et al.*, 2014; Mohit and Elsayahli, 2010; Rabe and Taylor, 2010).

Studies and reports affirmed that decent housing is not accessible, to urban residents across the globe particularly developing nations, at reasonable cost or price (Tipple,2004; UN-Habitat, 2006a; Greene and Rojas, 2008) and was recently reported by UN-Habitat (2015) as shown in Figure 1.1. Thus, many urban residents resolved to lives in poor housing conditions and low quality housing that constitute an affront to

human dignity (UN-Habitat, 1989, 2008, 2013a, 2013b, 2015). These housing are characterized with lack of housing facilities, services and infrastructure such as: readily available drinking water, primary health cares, waste disposal facilities, sewage facilities to dispose human wastes hygienically as such waste, its water and human excreta ends up untreated in channels, gullies, canals, streams and rivers (Choguill, 2007; Doling *et al.*, 2013; Franklin, 2012; Jiboye, 2011c; Nour, 2011; Olotuah and Bobadoye, 2011; Olotuah and Taiwo, 2013; Walley, 2010; William, 2013). Hence, these housing have awful environmental, social, health and economic implications (Coker *et al.*, 2008; Cotton and Tayler, 1994; Opara, 2003; Rondinelli, 1990; UN-Habitat, 2006b; UNFPA, 2007).

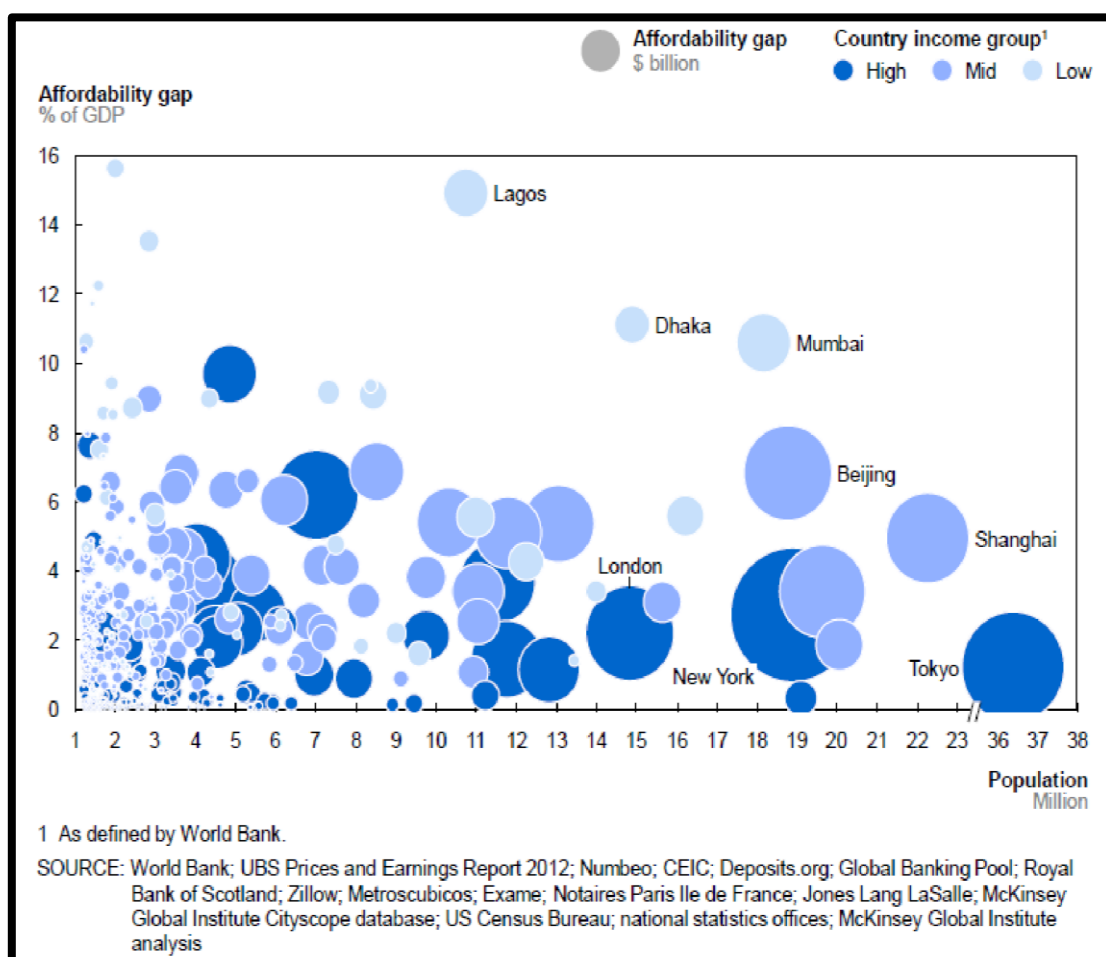


Figure 1.1: Housing gap across major cities of the world
 Source: Adapted from UN-Habitat (2015)

From Figure 1.1, it is instructive note that Lagos, Nigeria, belongs to low income group country with over 11 million population and housing affordability gap approximately 15% of GDP. However, living in housing unit, especially one that meets

its residents needs, is a fundamental human right, thus, livable housing. Then, livable housing is a place or housing to be, one that is attractive, affordable, safe, environmentally sustainable, culturally inclusive, socially cohesive and diverse housing connected to local shops, education, employment, public open space and leisure, health facilities, community services, and cultural opportunities; through walking, cycling infrastructure and convenient public transport (Lowe *et al.*, 2013). Accordingly, housing livability shows the wellbeing of an area and entails characteristics that make an area or a place where individuals want to reside and stay now and possibly in the future (Competition, 2008). Therefore, concept of livable housing needs an understanding to synergistically and effectively deal with pressing issues such as climate change, slums prevention, human and economic development.

As a concept in the literature, livability has been linked, emerged together and associated with sustainability. As such, housing is not truly livable except it is sustainable (Chazal, 2010). Available literature and reports revealed that sustainability or sustainable development was brought into the fore by World Commission on Environment and Development (WCED) to meant development conducted to meets present needs without depleting future generations' ability to meet their own needs (WCED, 1987; Burton, 1987). It was mainstreamed and progressively developed through the United Nations Conference on Environment and Development (1992) in Rio, Rio+20 Conference 20 years after (2012) with outcome document named *the future we want* and to just concluded 70th UN General Assembly in September 2015 that gave birth to Sustainable Development Goals (SDGs), otherwise known as Global Goals, signed by 193 nations, to be operational for 15 years spanning till 2030 towards dignity, justice, people, partnership, prosperity and planet.

Specifically, housing related target of the Global Goals concerns with sustainable cities and community and focuses on ensuring access to safe, adequate and affordable housing linked with basic facilities and services as well as upgrade slums for residents on or before 2030 (SDG 11, Target 11.1). This housing related target has measurable cross-cutting indicators such as percentage of eligible population using; safely managed water services, basic sanitation services, modern cooking solutions, reliable electricity, living in slums or informal settlements, urban solid waste

management amongst others. This implies that solving housing related problems will solve many problems in relation to poverty, hunger, healthy living, sanitation, economic growth, foster innovation, inequality within country, cities and human settlements. Hence, the time for sustainable livable housing is now, especially in the traditional urban areas of developing nations across the globe.

At present, absence of sustainable livable housing (SLH) assessment requirements, particularly, for traditional urban areas (TUAs) has caused difficulties in determining housing that suits and meet the needs of the TUAs residents. Having SLH assessment index is critical in determining housing that suits and meet the needs of the TUAs residents on one hand and achieving target 11.1 of Goal 11 of the Global Goals especially toward TUAs upgrade in developing countries. This is identified as a gap. In line with human practise which seeks to explore and investigate, identify and describe, analyse and establish, develop and validate as well as proffer solutions to ameliorate defects in human housing complexities, this study seeks to fill this identified gap.

This research is constructive in nature and set to develop SLH assessment index based on residents' needs in relation to housing complexities in the TUAs. Also, it examines opinions of TUA residents on interventions required to ensure SLH through improve housing living condition using bottom-up approach, specifically progressing from small and affordable interventions to highest interventions. The study benchmark SLH attributes and its indicators based on their importance to the TUAs residents because of the residents' and TUAs (brown areas) peculiarities. The SLH assessment index shall vary significantly from what is obtainable in other part of urban areas (green areas). Variability shall occur in term of: what is measured, how important are attributes and indicators measured; how it is measured and how the results are presented and interpreted.

In the light of foregoing and the need for sustainability in livable solution, this research focuses on improving the existing housing units to the need and expectation of the residents. For example, solving residents' housing problem without necessarily

demolishing houses in the TUA. It seeks to clarify related issues to definition and operationalization of SLH for TUA with understanding that individuals or households' needs are unlimited, difficulties in enforce limit to their needs and need for them to set limit to their needs. The research is about how to recognize and assess whether housing in TUAs is livable and sustainable in the short and medium term for its residents (urban poor). Also, it is about how to try and balance these aspects and how this contributes to our understanding of SLH for TUA in developing country like Nigeria.

1.2 Background of the Study

In assessing building, there are various building assessment rating tools to ensure that existing and new buildings, most especially housing, are designed, built, functioned and maintained based on sustainable development (SD) principles. For instance, United Kingdom's BREEAM (Building Research Establishment Environmental Assessment Method), Australia's GSRS (Green star rating system), United States of America's LEED (Leadership in Energy and Environmental Design), Green Pyramid Rating System (GPRS) in Egypt, South African Green Star (SAGS) in South Africa, Green Mark in Singapore, High Environmental Quality (HQE) in France, Malaysia's GBI (Green Building Index) and Hong Kong's CEPAS (Comprehensive Environmental Performance Assessment Scheme).

From the literature, most of these building rating tools are concentrating on design aspects, certification procedure and building technology (Poveda and Young, 2015; Ding, 2008). To Cole (2005), building design potential and intentions were evaluated through prediction instead of actual building performance. Majority of these rating tools fail to consider operation, functionality and maintenance of the existing or completed building is operated and maintained. Really, building assessment always concerned majorly with material selection, design, construction and building technology such as systems and equipment to ensure building certification. Thereby disregarding operations, functionality and maintenance aspects despite their significant effect on building operation expenses and life span. Also, majority of building owners request for certification of their buildings only at design phase (Green

Prospects Asia, 2012). Specifically, no preferences thereafter for sustainable livable assessment of existing domiciled housing units.

However, sustainable livable assessment of existing resided housing units or buildings entails determination of interaction between housing units and its residents. To Khalil and Nawawi (2008), this is aimed at making improvement where and when necessary. Moreover, SLH assessment is people behaviour oriented such as; needs, perception, satisfaction and experience. in relation to their housing units or building's physical, environmental and management attributes (Wheeler *et al.*, 2011). However, little consideration was given to housing or building assessment with little or no attentions being given to housing units in TUAs. This could result to avoidable failure in respect of housing units or residential properties in TUAs. Therefore, residents' involvement and consideration for their needs are very important in assessing sustainability in livable housing in the TUAs especially in developing countries.

From the foregoing, there are strong indications for SLH study because actual housing performance mostly differs from early design intension as its ages (Djebarni and Al-Abed, 2000). And, there is need to ensure that responsible factors for variation factors are identified in housing performance due to usage (Kaatz *et al.*, 2005). Then, it could be deduced that majority of existing assessment rating tools focuses on the building at the development stage with little or no preferences for housing or building assessment due to usage and as its ages. Also, all existing building rating tools do not cover assessment of housing in the TUAs in the developing countries. Hence, there is need for SLH assessment index (SLHAI) to provide a guide in assessing housing periodically to identify pitfalls and prospects as well as improving overall housing living condition in the TUAs.

1.3 Statement of the Problem

There are 7.2 billion human beings on the earth, about 9 times of 800 million persons estimated at the beginning of industrial revolt in 1750. It is projected to be 8 billion in 2020, and possibly 9 billion in 2040s (Sachs, 2015a; 2015b). These billions of human beings are searching for their footing in the global economy. Specifically, poor amongst them are struggling for safe water, food, housing, health care and other basic needs needed for mere subsistence and survival (Sachs, 2015b) while the ultra poor face daily critical challenges of unsafe housing, lack of safe drinking water and sanitation, lack of health care, insufficient nutrition (Sachs, 2015a). Accordingly, it is estimated that more than 90% of urbanization is taking place in developing nations. Specifically, UN-Habitat (2010) put this growth at 94% in developing regions.

Of world population figure, it is estimated that 54% live in urban areas or cities in 2014, and it is predicted to be 66% in 2050 (UN-DESA, 2014). Based on predicted urban population growth of 1.43 billion human being, including current slum population, number of persons in critical need of housing is roughly estimated at 2.25 billion. However, if average household size is assumed to be five persons, roughly 450 million housing units must be built worldwide to house the said population increase (UN-Habitat, 2010). Moreover, about 25% of global urban population are residing in slum areas. As at 2010, population of people living in developing nations slum areas was estimated 863 million as against 760 million and 650 million in 2000 and 1990 respectively. In Africa, approximately 61.7% urban population lives in slums or degrading housing (UN-Habitat, 2013c) with 56% slum urban residents in sub-Saharan Africa (UN, 2017) and cities/urban areas in modern-day West African characterized with poor housing, unhygienic water and sanitation, poor public health infrastructures (Owoeye and Omole, 2012).

This indicated that housing problems are global. And poor physical quality of human environment is revealed in urban areas and more pronounce in TUAs because of growing population and rapid urbanization. In Nigeria urban areas, housing problem is at an alarming state with around 75% urban residents living in degrading housing

conditions to human dignity and in slums (Olotuah and Bobadoye, 2011). Nigerian living in slum, TUAs inclusive, was estimated at 26.6 million in 1990, the figure had risen to 37.0 million by 2000, 42.8 million by 2005 and 47.6 million by 2009, then dropped to 42.1 million by 2014 (Pepple, 2012; UN-MDGs, 2014). The reduction might be concerted effort and huge investment made by the country through Millennium Development Goals (MDGs). These statistics are very alarming, reflection of inequality and requires investigation as well as concerted efforts. It is also consequential on the well-being of urban residents thereby unacceptable.

Moreover, it is important to note that above stated statistics are mostly in respect of housing situation in TUAs. whereas most of the researches on livable and sustainable housing often concentrated on housing estates in urban areas and housing development or provision. There is need for understanding of housing as mere accommodation because it has social-cultural and spiritual attachment to the housing residents. For example, many TUAs residents live in unsafe, substandard and poor housing that is security and safety prone as well as characterized with lack of basic facilities such as toilets, water, electricity and cooking facilities, and where such facilities exist, they are poor sewage and sanitary conditions, unhygienic water and cooking. Others live with many inconveniences and infrastructure overloads. This implies that housing problems in TUA include facilities and services, physical nature of the building, security and safety as shown in Figure 1.2.



Figure 1.2: TUAs housing living conditions in Osun State, Nigeria

In addition, residents do not move out of their present housing units. In Nigeria for instance, relocation and redevelopment are not affordable due to high cost and value, and distance to economic activities and place of work respectively. However, earlier measures usually undertaken by Governments, municipalities, CBOs (community based organizations), NGOs (non-governmental organizations) and international organizations such as urban renewal and slum upgrading programmes often focus on only urban environment and rarely considered housing units (Golubchikov and Badyina, 2012). There is need to focus on solving housing problem in the TUAs by improving the existing housing units to the need and expectation of the residents without necessarily demolishing houses. This is sacrosanct because livable space is a right to individuals probably being a place of: residence for many and work for majority be it urban areas or not, under-developed, developing and developed nations. However, housing or residential building is not sufficient to be livable but should be sustainable (Chazal, 2010).

Furthermore, existing researches are either on livability in relation to housing or sustainability in relation to housing. For instance, earlier studies conducted on livable housing focus on housing developed by government (Djebarni and Al-Abed, 2000; Iyanda and Mohit, 2015; Mohit and Iyanda, 2016, 2015; Raji *et al.*, 2012; Raji *et al.*, 2016), neighbourhood (Asiyanbola *et al.*, 2012; Leby and Hashim, 2010; Yanmei, 2012), city/urban environment (Balsas, 2004; Betanzo, 2011; Buys *et al.*, 2013; Chaudhury, 2005; Omuta, 1988; Pandey *et al.*, 2014; Saitluanga, 2014). Also, previous studies on sustainable housing in urban area focus on government developed housing (Ibem *et al.*, 2015; Ibem and Azuh, 2011; Nicholas and Patrick, 2015; Olotuah and Bobadoye, 2011; Tan, 2011), production/provision/development (Jiboye, 2011a, 2011b; Nicholas and Patrick, 2015; Van Wyk and Jimoh, 2015) and consumption (Ibem *et al.*, 2015).

These studies were either on livable housing or sustainable housing with major focus on public planned housing estates in urban areas without recourse to TUAs. There was none of the previous studies that combined livable housing and sustainable housing nor having recourse to focus on TUAs. Also, none of the existing study develop an assessment index in assessing sustainable livable housing status especially

in the traditional urban areas. These are identified as gaps. At present, absence of SLH assessment index for TUAs has caused difficulties in determining housing that suits and meet the needs of the TUAs residents. This is critical in achieving target 11.1 of Goal 11 of the Global Goals or SDGs that involves ensuring access to safe, adequate and affordable housing linked with basic facilities and services as well as upgrade slums especially in TUAs. These identified gaps are vital in solving TUAs housing problems, improve residents' living condition as well as meeting residents' basic housing needs and preference without relocating them compulsorily or demolished their homes.

From the above, firstly, it could be deduced that researches on livability and sustainability are not integrated in relation to housing. This suggests a gap to bridge between livable housing and sustainable housing. There is need to integrate two concepts together in relation to housing. This is in response to the concepts' integration calls, and argument that a housing unit or/and an area is not really and enough to be livable except it is sustainable over long period (Dorst, 2010; Newman, 1999; Van Kamp *et al.*, 2003) and subsequent report that housing should be analyzed using two or more concepts (Lowe *et al.*, 2013). Secondly, there is absence of SLH criteria or attributes explicitly highlighted toward achieving housing related target of the SDGs. Thirdly, focus of previous researches had always being on planned housing estates in urban areas without recourse to TUAs. Therefore, this research tends to bridge these gaps by integrating livability and sustainability concept in relation to housing with special focus on TUAs and conceptualizing SLH assessment index. Understanding, ensuring and developing SLH assessment index is very critical in assessing and solving housing problems of TUAs, especially in Nigeria and other developing nations.

1.4 Research Gap

Based on concluding remarks made on background of the study and statement of the problems discussed in Sections 1.2 and 1.3, the research gaps are as follows:

- i. Livability and sustainability are not integrated in relation to housing. Thus, it is necessary to integrate them together in relation to housing.
- ii. There is absence of SLH criteria or attributes explicitly highlighted toward achieving housing related target of the SDGs. Thus, it is essential in ensuring housing is livable and sustainable as well as achieving United Nation housing related target of the SDGs between 2015 -2030.
- iii. There is absence of assessment indices to assess housing in the TUAs in the developing countries. This is necessary toward improving existing housing based on TUAs residents need and expectations.

1.5 Research Questions

Towards bridging above identified gaps from the foregoing, this study seeks to provide answer to questions specified thus:

- i. What are attributes and their indicators for assessing SLH in TUAs according to their importance?

The answer(s) to this question is needed to clearly identify SLH attributes and their indicators for TUAs to establish level of importance of the identified attributes and their indicators.

- ii. What are significant relationships between these identified attributes and their indicators with SLH in the TUAs in order to establish therefrom SLH model?

Answer(s) to this question is required to examine causal relationship between identified attributes and their indicators with SLH so as to establish SLH measurement model, structural model and important performance matrix analysis (IPMA).

- iii. What assessment index can be utilized to assess SLH in the TUAs toward improving housing living condition?

The answer(s) to this question is essential to evidently develop SLH assessment index toward improving residents' housing living condition in the TUAs.

1.6 Research Aim and Objectives

The research main purpose is to provide SLH assessment indices for improving TUAs housing in Nigeria. Toward achieving the stated aim, the following objectives were set:

- i. To determine attributes and their indicators for assessing SLH according to their importance for TUAs.
- ii. To examine significance relationship between identified attributes and their indicators with SLH in order to establish measurement model, structural model and IPMA.
- iii. To develop SLH assessment index toward improving housing living condition in the TUAs.

1.7 Research Hypotheses

The following are the hypotheses of this study:

- H₁** Housing unit attribute has significant relationship with sustainable livable housing in traditional urban areas.
- H₂** There is a significant relationship between the safety and security attribute and sustainable livable housing in traditional urban areas.
- H₃** Facilities and services attribute has significant relationship with sustainable livable housing in traditional urban areas.
- H₄** Community and neighbourhood attribute has significant relationship with sustainable livable housing in traditional urban areas.
- H₅** Economic development attribute has significant relationship with sustainable livable housing in traditional urban areas.
- H₆** There is a significant relationship between psychology impact attribute and sustainable livable housing in traditional urban areas.
- H₇** Resident well-being attribute has significant relationship with sustainable livable housing in traditional urban areas.

1.8 Research Scope

The research scope focuses on assessment of sustainable livable housing within the traditional urban areas with a view to exploring SLH attributes and their indicators for assessing TUA towards improving housing living condition. The research covers exploration of literature review related to housing, sustainability and livability, and identify SLH attributes and their indicators. The SLH attributes and their indicators identified were further explored using questionnaire survey instrument administered on residents of selected TUAs. These resident's opinion on SLH attributes and their

indicators identified is the backbone of the research objectives achievement of this study.

In addition, the research scope is limited to Nigeria, a developing nation. Considering the geographical scope of the study, Osun State in the South-Western region of Nigeria had been chosen as main focus. Thus, the study focuses on three TUAs, one from each Senatorial Districts in Osun State. They are: Ile-Ife from Osun East, Iwo from Osun West and Osogbo from Osun Central senatorial districts. Moreover, the study sample was limited to residents of a housing units within the three TUAs. Therefore, the respondents of the study are the residents or household heads of housing units in the selected TUAs. As such, the resident or household head represents the sample unit while housing unit represents unit of assessment.

Furthermore, the SLH index assessment index developed in this study serves as an assessment tool for determining the degree to which sustainability in livable housing will impact on the residents towards improving their living conditions. The developed SLH index is specifically applicable to housing units already occupied in the TUAs towards improving residents' housing living condition as well as meeting residents' basic housing needs and preference without relocating them compulsorily or demolished their homes.

1.9 Significance of the Research

Regardless of the fact that living in housing meeting individual's needs is a fundamental human right, Golubchikov and Badyina (2012) stated that safe and decent housing still remain a dream for many urban residents whereas many governments, particularly in developing countries, perceive housing as a social burden. Moreover, housing units provided by these governments do not meet the persisting need of their citizens. Literature revealed around 75% poor housing living condition of urban areas, which accommodate huge population, because of neglect, uncontrolled urbanization

and global industrialisation with its resultant effects found to be worrisome, disturbing and unacceptable.

An investigation of the SLH attributes and their indicators could have positive impact in improving housing living conditions in the developing nations, especially TUAs. These SLH attributes have remained none or less researched, thus significance and justification for this study as well as considered timely as entire world, through United Nation, has set 2030 as the target date to achieve its housing related target of its as Global Goals or SDGs. To this end, this research is significantly important not only to TUAs residents and government but to all housing stakeholders like; donor agencies, developers and researchers in the following ways:

- i. The study enriches empirical studies on SLH, as it serves as feedback to local policy makers and governments namely, Local, States and Federal, on SLH assessment index and strong empirical data basis for SLH assessment. Thus, it helps government in formulating and implementing effective and appropriate residents' oriented and enabling strategies and strategic policies in meeting current and future housing needs of her people.
- ii. Having provides basic empirical evidences, the research would redirect industry-based and academics research interest on SLH attributes and indicators and subsequently SLH assessment. Thus, it serves as reference of future assessment index for further industry-based and academics researches.
- iii. This study establishes rich hypothetical and empirical lessons and knowledge consciousness and transfer on SLH assessment within and among nations. Thus, TUAs, States and nations can learn from each other experiences on SLH assessment and benchmark for themselves.
- iv. SLH assessment index developed showcase aspect of housing where improvement is required. Thus, it provides strategy that residents can be empowered with to improve their housing living conditions and a basis to

attract assistance, support and intervention from NGOs, donor agencies and philanthropies.

- v. It fills in the gap that exist the literature, provide feedback on actual SLH status in the TUAs and helps private developers to realize prospect in alternative housing provision that meet needs of potential residents.

1.10 Research Methodology Overview

This Section entails methodology overview of the study such as: research procedures and planning, data collection methods, data analysis with its statistical tools, analysis and result reporting. It encompasses the methodology and procedure that was taken in accomplishing this research. Specifically, it interpolates objectives of the study which emanated from issues in problem statement and research question, data analysis tools' methods and variables, and findings. The research methodology approach used was majorly quantitative survey-based approach for residents' pilot and final questionnaire survey with partial a qualitative to enrich the research using FGD and subsequent questionnaire, that is quantitative approach, for expert validation. The most appropriate tool used in this study is face to face self-administered questionnaires with field assistants. Of importance, the method is efficient, in expensive and fast to be administered to a large population sample (Sekaran 2000; Zikmund, 2003). Five-point Likert Scaling questionnaire was developed ranging from 1 to 5. Pre-test study was conducted to certify that the questions are clearly understood and free from any unforeseen ambiguity among them.

The research population consisted of the residents, mostly head of household, within the purposively selected three TUAs namely Iwo, Ile-Ife and Osogbo in Osun State, South-Western Nigeria with a view to seeking their opinion regarding the SLH attributes and indicators as a potent strategy to improve housing living condition in the TUAs. Face to face self-administered questionnaires with field assistants was conducted through stratified random sampling from June 2016 to December 2016 in

each of the purposively selected three TUAs specifically Iwo, Ile-Ife and Osogbo in Osun State. Utilizing this procedure, 420 questionnaires were administered. The purpose was to establish empirical results and solutions to research questions, research objectives and test of hypotheses. Therefore, data collected based on resident responses were analysed utilizing descriptive analysis, SMART Partial Least Square Structural Equation Model (PLS-SEM) version 3.0 and Statistical Package for the Social Science (SPSS) version 22.0 as tools for analysis.

The research data analyses were conducted in two Phases. Phase one entails descriptive statistics in term of frequency distributions of background information and housing characteristics of the respondents using SPSS version 22.0. It also includes validation of the identified SLH attributes from literature using content validity index (CVI) and determination of relative importance of the SLH attributes for TUAs assessment using relative importance index (RII). Phase two entails SLH attributes and indicators preliminaries data analysis using SPSS and determination of SLH measurement model SLH structural model and SLH importance-performance matrix analysis using PLS-SEM version 3.0. It also includes development of SLH assessment index and therefrom validation of the assessment index developed using formulae.

Figure 1.3 shows research methodology overview for this study. Summarily, broad research methodological process, selection and justification utilized for this study were discussed in third Chapter of this thesis.

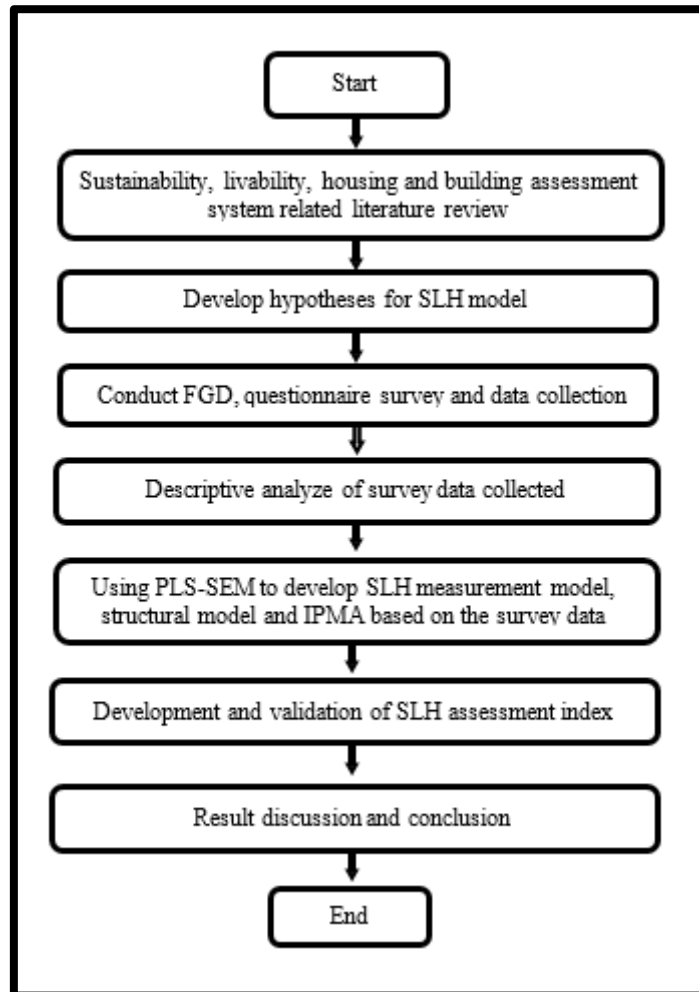


Figure 1.3: Research methodology flowchart

The research topic is re-worked with research objectives, research questions, research instrument and applicable tools for analysis to showcase the relationships and linkages that exist amongst them. This help to set limits of the research and ascertain the methods to be used in data collection and analysis (Corbin and Strauss, 2008). Table 1.1 revealed the relationship and linkages.

Table 1.1: Research overall plan

Research Topic	Research Objectives	Research Questions	Research Instrument	Analysis Tools
SLH Assessment Model for TUAs	One: To determine attributes and their indicators for assessing SLH according to their importance for TUAs	One: What are attributes and their indicators for assessing SLH in TUAs according to their importance?	* Literature Review * FGD * Questionnaire	* Content analysis * Content Validity Index * Descriptive statistics * Relative Important Index
	Two: To examine significance relationship between identified attributes and their indicators with SLH in order to establish measurement model, structural model and IPMA.	Two: What are significant relationship between these identified attributes and their indicators with SLH in the TUAs in order to establish therefrom SLH model?	Questionnaire	PLS-SEM to established SLH measurement and structural models, and IPMA
	Three: To develop SLH assessment index toward improving housing living condition in the TUAs.	Three: What assessment index can be utilized to assess SLH in the TUAs toward improving housing living condition?	Questionnaire	Formulae: to evidently develop SLH assessment index and estimate therefrom assessed rating scores

1.11 Thesis Outline

As a matter of necessity, this thesis has been organized into eight Chapters. Chapter one is Introduction and it presents the fundamental elements of this study which includes; research background, rationale for the research, problem statement, and research aim and objectives based on the research questions outlined. In addition, research scope, significance of the study and research methodology overview. The ideas and information portray by each Section addressed the study in general. However, Chapter two concerns with literature review and conceptual framework and it presents a review of related literature on the key words in the research like housing, TUAs and its housing conditions, livability, sustainability, livable housing, sustainable housing, sustainable-livable linkages and SLH among others as they relate to the SLH attributes. Research gaps are established within the literature as relevant to the current research. Finally, the Chapter contains a review on building assessment systems,

building performance assessment and indexing and determined therefrom SLH attributes and indicators.

Then, Chapter three is research methodology and it discusses the methodology employed as to the choice of research philosophy and research strategy, such as logic of inquiry, to investigate research questions and justifications for these choices. A nested research methodology was presented to support the choice of the methodology used in this study. Consequently, ontological, epistemological and axiological research assumptions were explained in accordance with the research. An examination of the research tools and the rationale for the sampling and adopted questionnaire are justified accordingly. Also, proposed and conceptual SLH model as well as proposed SLH assessment indexing analysis and procedures were justified. Subsequently, this Chapter discusses respondents' selection process, mode of data collection, and methods of analysis employed.

However, Chapter four entails preliminary study and it discusses the study area, specifically selected Osogbo, Iwo and Ile-Ife TUAs in Osun State of Nigeria. It also discussed outcome of focus group discussion (FGD) with panel and result of content validity, using content validity indexing (CVI), of SLH attributes and indicators from experts point of views. In addition, this Chapter discusses the outcome of pilot survey conducted with the respondents. Thus, this Chapter revealed that the research instrument is relevant and appropriate for the study. Chapter five is the phase one of data analysis focused on frequency distribution of respondents' background, housing units' characteristics and SLH attributes and indicators. It also discussed result of SLH attributes and indicators' level of importance, using relative importance index (RII) from residents' perspectives. This Chapter fulfilled the first objective of the study.

Chapter six discusses the second phase of data analysis and it is divided into four paths namely; SLH model hypothesis, SLH measurement model, SLH structural model, and SLH importance-performance matrix analysis. It also discusses the causal relationship between identified attributes and their indicators with SLH as well as path

coefficients values and outer weights of SLH attributes and indicators using SMART PLS-SEM version 3. Thus, the Chapter develops SLH model for TUAs and fulfills the second objective of the study. Chapter seven focuses on the process of developing the SLH assessment index for TUAs traditional urban areas using result from objective two in Chapter six. It also discusses the proposed scoring system and weighting for the developed SLH assessment index and validation therefrom of TUAs as a whole, on TUA basis and on a housing unit selection from each of the TUAs basis. As such, objective three of the study is fulfilled with SLH assessment index development and validation.

The final and eight Chapter presents the conclusion of the research. It also discusses the research findings in respect of the research objectives and research questions of the study, accomplishment of the research objectives, contribution and implication of the research findings, limitation of research, provides agenda and recommendation for future research and conclusion.

REFERENCES

- Abdellatif, M. and Othman, A. (2006). Improving the sustainability of low-income housing projects: The case of residential buildings in Musaffah Commercial City in Abu Dhabi. *Emirates Journal for Engineering Research*, 11(2), 47-58.
- Abdullah, A., Salleh, M. N. M., and Sakip, S. R. M. (2012). Fear of crime in gated and non-gated residential areas. *Procedia-Social and Behavioural Sciences*, 35, 63-69.
- Abiodun, P. B., and Segun, A. O. (2005). An Assessment of Housing Status in a Typical Nigerian Town. *Journal of Applied Sciences*, 5(3), 437-440.
- Adams, K. A., and Lawrence, E. K. (2015). *Research methods, statistics, and applications*. Thousand Oaks, CA: Sage Publications.
- Adegoke, O. J. (2016). Effects of valuation variance and inaccuracy on Nigerian commercial property market: An empirical study. *Journal of Property Investment and Finance*, 34(3), 276-292.
- Adjei, E. A. G. (2009). *Motivational strategies to improve productivity in the construction industry in Ghana*. Unpublish PhD dissertation, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana.
- Afolayan, A. S. (2003). Socio-psychological considerations in housing delivery: A consumer perspective. In Paper presented at *Workshop on Private Sector Driven Housing Delivery*. Lagos, Nigeria: Department of Estate Management, University of Lagos in collaboration with Real Estate Developer's Association of Nigeria. July 30-31.
- Agbola, T. and Olatubara, C. O. (2003): Private sector driven housing delivery in Nigeria: Issues, constraints, challenges and prospects. In Paper presented at *National Housing Delivery Seminar*. Lagos, Nigeria: Department of Estate Management, University of Lagos in collaboration with Real Estate Developers' Association of Nigeria. July 30-31.
- Agbola, T. (1989). "An Introduction to the Types of Housing Units in Nigeria", in Agbola, Tunde (ed.) *Real Estate Investment in Nigeria*. Linnet Paul Publication: London pp. 8 -12.
- Agbola, T. (2005). *The housing debacle*. Inaugural lecture delivered at the University of Ibadan. Ibadan: New World Press.

- Ahianba, J. E., Dimuna, K. O., and Okogun, G. R. A. (2008). Built environment decay and urban health in Nigeria. *Journal of Human Ecology*, 23(3), 259-265.
- Ajanlekoko, J. S. (2001). Sustainable housing development in Nigeria—the financial and infrastructural implication. In *International conference on spatial information for sustainable development*, Nairobi, Kenya. 2-5 October.
- Akeju, A. A. (2007). Challenges to providing affordable housing in Nigeria. In *Proceedings of 2nd Emerging Urban Africa International Conference on Housing Finance in Nigeria*. October 5-7.
- Akinloye, O. A. (2009). Problems of Public Housing Estate in Nigeria. Research Report, Development Policy Centre, Ibadan.
- Akinmoladun, O.I., Oluwoye, J., (2007). An Assessment of Why the Problems of Housing Shortages Persist in Developing Countries: A case of Study of Lagos Metropolis, Nigeria. *Pakistan Journal of Social Science*, 4(4), 589-598.
- Ali, I. (1996). The National Housing Programme-The Way Forward. *Housing Today-The Journal of the Association of Housing Corporations of Nigeria*, 11(2), 16-19
- Allen, T. F. (2010). Making livable sustainable systems unremarkable. *Systems Research and Behavioural Science*, 27(5), 469-479.
- Amao, F. L. (2012). Urbanization, housing quality and environmental degeneration in Nigeria. *Journal of Geography and Regional Planning*, 5(16), 422-429.
- Apparicio, P., and Séguin, A. M. (2006). Measuring the accessibility of services and facilities for residents of public housing in Montreal. *Urban studies*, 43(1), 187-211.
- Aribigbola, A. and Ayeniyo, O. (2012). Site-and-services as a strategy for achieving adequate housing in Nigeria in the 21st century. *International journal of humanities and social science*, 2(2), 126 – 132.
- Asiyanbola, R., Raji, B. and Shaibu, G. (2012). Urban Liveability in Nigeria—A Pilot Study of Ago-Iwoye and Ijebu-Igbo in Ogun State. *Journal of Environmental Science and Engineering. B*, 1(10B), 1203.
- Australia, L.H. (2012). Livable housing design guidelines. *Sydney: Livable Housing Australia*.
- Australian Skills Quality Authority (2015). Guide to developing assessment tools. Retrieved on July 22, 2017 and available on https://www.asqa.gov.au/sites/g/files/net2166/f/Guide_to_developing_assessment_tools.pdf
- Awotona, A. (1990). Nigerian Government Participation in Housing: 1970- 1980. *Habitat International*, 14(10), 17-40.

- Azahan, A., Jamaluddin, M., Lukman, Z., Kadaruddin, A. and Kadir, A. (2009). The Quality of Life in Malaysia's Intermediate City: Urban Dwellers Perspective. *European Journal of Social Sciences*. 9(1), 161-167.
- Bagozzi, R. P., and Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the academy of marketing science*, 16(1), 74-94.
- Bailie, R. S., and Wayte, K. J. (2006). Housing and health in Indigenous communities: Key issues for housing and health improvement in remote Aboriginal and Torres Strait Islander communities. *Australian Journal of Rural Health*, 14(5), 178-183.
- Bailie, R., Stevens, M., McDonald, E., Brewster, D., and Guthridge, S. (2010). Exploring cross-sectional associations between common childhood illness, housing and social conditions in remote Australian Aboriginal communities. *BMC public health*, 10(1), 147, pp 1 – 10.
- Bajunid, A. F. I., and Ghazali, M. (2012). Affordable mosaic housing: rethinking low-cost housing. *Procedia-Social and Behavioral Sciences*, 49, 245-256.
- Balsas, C. J. (2004). Measuring the livability of an urban centre: an exploratory study of key performance indicators. *Planning, Practice and Research*, 19(1), 101-110.
- Bana, P.M. (1991). Housing the Urban Poor in Nigeria. *The Nigerian Institute of Architects Journal*, 6(1), 22-25.
- Baqutayan, S. M., Raji, F., and Ariffin, A. S. (2015). The Impact of Housing Conditions on the Emotion, Behaviour, and Psychological Wellbeing of Middle-Income Groups. *Journal of Sustainable Development*, 8(8), 262.
- Barlett, J. E., Kotrlik, J. W., and Higgins, C. C. (2001). Organizational research: Determining appropriate sample size in survey research. *Information technology, learning, and performance journal*, 19(1), 43-50.
- Barret, J and Beardmore, R. M. (2000). Poverty reduction in India: towards building successful slum upgrading strategies. *Human Settlement Development*, 1, 326 – 333.
- Barry, M. and R  ther, H. (2001). Data collection and management for informal settlement upgrades. In *Proceeding of International Conference on Spatial Information for Sustainable Development*.
- Basorun, J. O. (2003). *Basic Elements of Urban and Regional Planning*. Akure, Nigeria: Shalom Publishers.
- Beiske, B. (2002). Research methods. *Uses and limitations of questionnaires, interviews and case studies*. Manchester: Manchester school of management. Available on <https://www.grin.com/document/15458>
- Belinda, Y. (2010). *Developing living cities: from analysis to action*. Singapore: World Scientific Publishing Co. Pte Ltd.

- Bernardi, E., Carlucci, S., Cornaro, C., and Bohne, R. A. (2017). An Analysis of the Most Adopted Rating Systems for Assessing the Environmental Impact of Buildings. *Sustainability*, 9(7), 1226.
- Betanzo, D. (2011). Exploring Density Liveability Relationships. *The Built and Human Environment Review*, 2(1).
- Bhatti, M., Brooke, J. and Gibson, M. (1994). Housing and the new environmental agenda: an introduction. *Housing and the environment: an Introduction*, M. Bhatti *et al.* (Eds), 1-13.
- Bishop, B. J., and Syme, G. J. (1995). The social costs and benefits of urban consolidation: A time budget/contingent valuation approach. *Journal of economic psychology*, 16(2), 223-245.
- Blaikie, N. (2000). *Designing social research: the logic of anticipation*. Cambridge, UK and Malden, MA: Polity Press Edition.
- Blaikie, N. (2009). *Designing social research: the logic of anticipation*. Cambridge, UK and Malden, USA: Polity Press.
- Boehm, T.P. and Schlottmann, A.M. (2001) Housing and Wealth Accumulation: International Impact *Low-income Home Ownership Working Paper Series*, Harvard: Joint Centre for Housing Studies, Harvard University.
- Bollen, K. A. (1989). *Structural Equations with Latent Variables*. New York: Wiley.
- Bonnefoy, X. (2007). Inadequate housing and health: an overview. *International Journal of Environment and Pollution*, 30(3-4), 411-429.
- Bradburn, N. M., Sudman, S., and Wansink, B. (2004). *Asking questions: the definitive guide to questionnaire design--for market research, political polls, and social and health questionnaires*. San Francisco, USA: John Wiley and Sons, Inc.
- Brancato, G., Carbini, R., Pellegrini, C., Signore, M., and Simeoni, G. (2006). Assessing quality through the collection and analysis of standard quality indicators: the Istat experience. In *European Conference on Quality in Survey Statistics (Q2006)*. United Kingdom: Cardiff. April 24-26.
- Brandon, P. S. and Lombardi, P. (2010). *Evaluating sustainable development in the built environment* (2nd ed.). John Wiley and Sons.
- Bratt, R. G. (2002). Housing and family well-being. *Housing studies*, 17(1), 13-26.
- BRE (2015). Building Research Establishment Environmental Assessment Method (BREEAM). Available on <https://www.breeam.com>. Accessed on August 23, 2017.
- BRE (2017). Building Research Establishment Environmental Assessment Method (BREEAM). Building Research Establishment (BRE). Available on <https://www.breeam.com>. Accessed on August 23, 2017.

- BRE. 2014. Building Research Establishment. Building Research Establishment Environmental Assessment Methodology - BREEAM- UK Technical Manual New Construction - Non-Domestic Buildings SD5076: 0.1 (DRAFT)-2014.
http://www.breeam.org/filelibrary/BREEAM%20UK%20NC%202014%20Resources/SD5076_DRAFT_BREEAM_UK_New_Construction_2014_Technical_Manual_ISS_UE_0.1.pdf
- Breckler, S. J. (1990). Applications of covariance structure modeling in psychology: Cause for concern? *Psychological bulletin*, 107(2), 260-273.
- Bryman, A. (2008). *Social research methods*. (3rd ed.). Oxford: Oxford university press.
- Bryman, A. (2012). *Social research methods*. (4th ed.). Oxford: Oxford university press.
- Bryman, A. (2015). *Social research methods* (5th ed.). Oxford: Oxford university press.
- Bryman, A., and Bell, E. (2011). Ethics in business research (Chapter 5). *Business Research Methods*. Oxford: Oxford University Press.
- Burger, J. (2006). Bioindicators: a review of their use in the environmental literature 1970–2005. *Environmental Bioindicators*, 1(2), 136-144.
- Burke, T., Pinnegar, S., Phibbs, P., Neske, C., Gabriel, M., Ralston, L., and Ruming, K. J. (2007). Experiencing the housing affordability problem: blocked aspirations, trade-offs and financial hardships. Melbourne: Australian Housing Research Institute. Available at: <http://hdl.handle.net/1959.14/1078904>.
- Burnett, J. (2007). City buildings: Eco-labels and shades of green! *Landscape and Urban planning*, 83(1), 29-38.
- Burton, I. (1987). Report on reports: Our common future: The world commission on environment and development. *Environment: Science and Policy for Sustainable Development*, 29(5), 25-29.
- Buys, L., Vine, D. and Miller, E. (2013). What Makes Inner City High Density Liveable? Insight from Residents in Brisbane, Australia. *Environmental Management and Sustainable Development*, 2(1), p14-33.
- Buys, L., Vine, D., and Miller, E. (2013). What makes inner city high density liveable? Insight from residents in Brisbane, Australia. *Environmental Management and Sustainable Development*, 2(1), 14 – 33.
- Byrne, B. M. (2001). *Structural Equation Modelling with Amos: Basic Concepts, Applications, and Programming*. Mahwah, NJ: Erlbaum.

- Chappells, H., Klintman, M., Lindon, A., Shove, E., Spaargaren, G. and Vliet, B. v. (2000). Domestic consumption, utility services and the environment. Final Domus report.
- Chaudhury, A. H. (2005). *Urban liveability, decentralisation and development: A comparative study on Dhaka and Khulna cities*. URP Discipline.
- Chazal, J. D. (2010). A systems approach to livability and sustainability: Defining terms and mapping relationships to link desires with ecological opportunities and constraints. *Systems Research and Behavioural Science*, 27(5), 585-597.
- Chen, J. and Chen, S. (2015), Mental health effects of perceived living environment and neighborhood safety in urbanizing China, *Habitat International*. 46, 101-110.
- Chin, W. W. (1998). The partial least squares approach to structural equation modeling. *Modern methods for business research*, 295(2), 295-336.
- Chin, W. W. (2010). Bootstrap cross-validation indices for PLS path model assessment. *Handbook of partial least squares*, pp. 83-97. Springer.
- Chin, W. W., and Newsted, P. R. (1999). Structural equation modeling analysis with small samples using partial least squares. In R.H. Hoyle (ed.) *Statistical Strategies for Small Sample Research*, pp. 307-341. Newberry Park, California: Sage.
- Chionuma, O. N. (2002): Modalities for a secondary mortgage market in Nigeria. In *National Workshop on Sustainable Housing Finance in Nigeria*. Lagos Airport Hotel, October 9 - 10.
- Chiu, R. L. (2000). Environmental sustainability of Hong Kong's housing system and the housing process model. *International Planning Studies*, 5(1), 45-64.
- Choguill, C. L. (2007). The search for policies to support sustainable housing. *Habitat International*, 31(1), 143-149.
- Cicchetti, D. V., and Sparrow, S. A. (1981). Developing criteria for establishing interrater reliability of specific items: Applications to assessment of adaptive behaviour. *American Journal of Mental Deficiency*, 86(2), 127-137.
- Cohen, J. (1988). *Statistical power analysis for the Behavioural sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum.
- Coker, A. O., Awokola, O. S., Olomolaiye, P., and Booth, C. (2008). Challenges of urban housing quality and its associations with neighbourhood environments: Insights and experiences of Ibadan City, Nigeria. *Journal of Environmental Health Research*, 7(1), 21-30.

- Cole, R. J. (1998). Energy and greenhouse gas emissions associated with the construction of alternative structural systems. *Building and Environment*, 34(3), 335-348.
- Cole, R. J. (2005). Building environmental assessment methods: redefining intentions and roles. *Building Research and Information*, 33(5), 455-467.
- Cole, R. J. (2006). Shared markets: coexisting building environmental assessment methods. *Building Research and Information*, 34(4), 357-371.
- Competition, V. (2008). *A State of Liveability: An Inquiry into Enhancing Victoria's Liveability*. Commission's Final Report. Melbourne, Australia: Victorian Competition and Efficiency Commission. Retrieved March 25, 2016.
- Corbin, J. and Strauss, A. (2008). Basics of qualitative research. London and California: SAGE Publications, Inc.
- Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of applied psychology*, 78(1), 98-104.
- Cotton, A. P. and Tayler, W. K. (1994) Community management of urban infrastructure in Developing Countries Paper 10648. In *Proceedings of the Institute Civil Engineer Municipal Engineering*. 103(4), 215–224.
- Creswell, J. W. (2009a). *Research design: Qualitative, quantitative, and mixed methods approaches*: SAGE Publications, Incorporated.
- Creswell, J. W. (2009b). Editorial: Mapping the field of mixed methods research. *Journal of Mixed Methods Research*, 3(2), 95-108.
- Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Boston, MA: Pearson.
- Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage Publications.
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16(3), 297-334.
- Crookston, M., O'Brien, P., and Purser, E. (2006). State of the English Cities: Liveability in English Cities. *Wetherby, Communities and Local Government Publications*. London: Department for Communities and Local Government.
- Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process*. Thousand Oaks, CA: Sage.
- Cunningham, J. B., and Lischeron, J. (1991). Defining entrepreneurship. *Journal of small business management*, 29(1), 45.
- Dasimah, O., Puziah, O., Muna, S., (2005). Urbanisation and the well-being of female headed households in Malaysia: The case study of lower income single

mothers in urban centres. In 8th International Conference of the Asian Planning Schools Association, September 11–14, 2005, Penang, Malaysia. [http://www.apsa2005.net/FullPapers/PdfFormat/Full20Paper20\(AH\)/Dasi_mah.pdf](http://www.apsa2005.net/FullPapers/PdfFormat/Full20Paper20(AH)/Dasi_mah.pdf)

- David, M., and Sutton, C. D. (2011). *Social research: An introduction*. Sage Publications.
- Davis, L. L. (1992). Instrument review: Getting the most from a panel of experts. *Applied nursing research*, 5(4), 194-197.
- Davis, S. L., and Morrow, A. K. (2013). Creating usable assessment tools: A step-by-step guide to instrument design. *Hamsonburg, Virginia: Centre for Assessment and Research Studies*. Available on: <http://www.docdatabase.net/more-creating-usable-assessment-tools-a-step-by-step-guide-to--1141299.html>
- De Carvalho, J., and Chima, F. O. (2014). Applications of structural equation modeling in social sciences research. *American International Journal of Contemporary Research*, 4(1), 6-11.
- De Vaus, D. (2013). *Surveys in social research* (6th ed.). London and New York: Routledge (Taylor and Francis Group).
- DEEWR (2012). *TAEASS502B design and develop assessment tools*. Australia: Department of Education Employment and Workplace Relations. Retrieved on July 22, 2017 from http://training.gov.au/TrainingComponentFiles/TAE10/TAEASS502B_R1.pdf
- Diamantopoulos, A., and Siguaw, J. A. (2000). *Introducing LISREL: A guide for the uninitiated*. Sage.
- Ding, G. K. (2008). Sustainable construction - The role of environmental assessment tools. *Journal of environmental management*, 86(3), 451-464.
- Dixon, R., Meier, R. L., Brown, D. C., and Custer, R. L. (2005). The critical entrepreneurial competencies required by instructors from institution-based enterprises: A Jamaican study. *Journal of Industrial Teacher Education*, 42(4), 25-51.
- Djebarni, R. and Al-Abed, A. (2000). Satisfaction level with neighbourhoods in low-income public housing in Yemen. *Property management*. 18(4), 230-242.
- Djebarni, R. and Al-Abed, A. (2000). Satisfaction level with neighbourhoods in low-income public housing in Yemen. *Property management*. 18(4), 230-242.
- Dobson, A. (2000). *Green political thought* (3rd ed.). London and New York: Routledge (Taylor and Francis Group).

- Doling, J., Vandenberg, P. and Tolentino, J. C. (2013). Housing and Housing Finance- A Review of the Links to Economic Development and Poverty Reduction. *Asian Development Bank Economics Working Paper Series*(362).
- Dorst, M. V. (2010). Sustainable liveability: Privacy zoning as a physical condition for social sustainability. In A. Abdel-Hadi, M. Tolba, and S. Soliman, (eds.), *Environment, health, and sustainable development*. Cambridge, MA: Hogrefe Publishing, pp. 111-125.
- Dryzek, J. S. (1997). Democracy in capitalist times: Ideals, limits, and struggles. *OUP Catalogue*. Oxford University Press, number 9780195106008.
- Duijvestein, K., Van duurzame ontwikkeling naar duurzaam bouwen en weer terug. *Huisvestingseconomie*, 2002. 21(3): p. 15-21.
- Dunn, J. R. (2002). Housing and inequalities in health: a study of socioeconomic dimensions of housing and self-reported health from a survey of Vancouver residents. *Journal of Epidemiology and Community Health*, 56(9), 671-681.
- Ecologist, M. (1972). A blueprint for survival. Harmondsworth: Penguin.
- Efron, B. (1979). Computers and the theory of statistics: thinking the unthinkable. *SIAM review*, 21(4), 460-480.
- Efron, B., and Tibshirani, R. J. (1993). An Introduction to the Bootstrap: Monographs on Statistics and Applied Probability, Vol. 57. *New York and London: Chapman and Hall/CRC*.
- Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of management review*, 14(4), 532-550.
- Ekop, G. (2012). An assessment of the interrelationships among housing quality variable sets in Calabar metropolis. *Journal of Geography and Regional Planning*. 5(14), 375-380.
- El-Gack, N. (2011). Challenges to Sustainable Development and the Role of Religions and Value-Based Approaches. *OIDA International Journal of Sustainable Development*, 2(8), 29-38.
- Erguden, S. (2001). Low-Cost Housing: Policies and Constraints in Developing Countries. In *International Conference on Spatial Information for Sustainable Development*, Nairobi Kenya, 2-5 October 2001. Available online at <https://www.fig.net/resources/proceedings/2001/nairobi/erguden-CMTS1-1.pdf>
- Evans, G. W., Wells, N. M., and Moch, A. (2003). Housing and mental health: a review of the evidence and a methodological and conceptual critique. *Journal of social issues*, 59(3), 475-500.
- Fatoye, E. O., and Odusami, K. T. (2009, September). Occupants' satisfaction approach to housing performance evaluation: The case of Nigeria. In *RICS*

COBRA research conference. Cape Town, South Africa: *University of Cape Town*. (Vol. 10).

- Ferguson, K. T., Cassells, R. C., MacAllister, J. W., and Evans, G. W. (2013). The physical environment and child development: An international review. *International Journal of Psychology*, 48(4), 437-468.
- Fernandes, I. D., Ferreira, F. A., Bento, P., Jalali, M. S., and António, N. J. (2018). Assessing sustainable development in urban areas using cognitive mapping and MCDA. *International Journal of Sustainable Development and World Ecology*, 25(3), 216-226.
- Ferreira, F. (2016). Are you pleased with your neighborhood? A fuzzy cognitive mapping-based approach for measuring residential neighborhood satisfaction in urban communities, *International Journal of Strategic Property Management*, 20(2), 130-141.
- Ferris, R., and Humphrey, J. W. (1999). A review of potential biodiversity indicators for application in British forests. *Forestry*, 72(4), 313-328.
- Fleiss, J. L. (1981). Balanced incomplete block designs for inter-rater reliability studies. *Applied Psychological Measurement*, 5(1), 105-112.
- Flick, U. (2015). *Introducing research methodology: A beginner's guide to doing a research project*. Sage Publications.
- Fornell, C., and Cha, J. (1994). Partial least squares. *Advanced methods of marketing research*, 407(3), 52-78.
- Fornell, C., and Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research*, 18(1), 39-50.
- Fornell, C., Johnson, M. D., Anderson, E. W., Cha, J., and Bryant, B. E. (1996). The American customer satisfaction index: nature, purpose, and findings. *The Journal of Marketing*, 60(4), pp. 7-18.
- Forsberg, A., and von Malmberg, F. (2004). Tools for environmental assessment of the built environment. *Building and Environment*, 39(2), 223-228.
- Fowler, F. J. (2002). *Survey research methods (Applied social research methods)*: Thousand Oaks, CA: Sage Publication.
- Franklin, S. (2012). Enabled to work? The impact of housing subsidies on slum dwellers in South Africa. *Processed*. Oxford, UK.
- Gefen, D., Straub, D., and Boudreau, M. C. (2000). Structural equation modeling and regression: Guidelines for research practice. *Communications of the association for information systems*, 4(1), 7.
- Geisser, S. (1974). A predictive approach to the random effect model. *Biometrika* 61(1), 101-107.

- Geisser, S. (1975). The predictive sample reuse method with applications. *Journal of the American statistical Association*, 70(350), 320-328.
- Ghani, F. (2012). Issues in Sustainable Architecture and Possible Solutions. *International Journal of Civil and Environmental Engineering IJCEE-IJENS*, 12(1), 21-24.
- Ghioca, S.G. (2011). Exploring the objective and subjective dimensions of urban life quality on Regie Boulevard and surrounding streets. *Cinq Continents*, 1(3), 266-287
- Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The Qualitative Report*, 8(4), 597-606.
- Golubchikov, O. and Badyina, A. (2012). *Sustainable housing for sustainable cities: a policy framework for developing countries*. Nairobi, Kenya: UN-Habitat.
- Gordon, D. R., Parrish, J. D., Salzer, D. W., Tear, T. H., and Pace-Aldana, B. (2005). The Nature Conservancy's approach to measuring biodiversity status and the effectiveness of conservation strategies. *Principles of Conservation Biology*, (3rd ed.). In Groom, M.J., G.K. Meffe, and RC Carroll, (eds.). Sunderland, MA: Sinauer Press.
- Götz, O., Liehr-Gobbers, K., and Krafft, M. (2010). Evaluation of structural equation models using the partial least squares (PLS) approach. In *Handbook of partial least squares* (pp. 691-711). Springer Berlin Heidelberg.
- Gough, M. Z. (2015). Reconciling livability and sustainability: Conceptual and practical implications for planning. *Journal of Planning Education and Research*, 35(2), 145-160.
- GPRS (2011). *Green Pyramid Rating System for Public Review*. Egypt: Housing and Building National Research Center, and Egyptian Green Building Council.
- Grant, J. S., and Davis, L. L. (1997). Selection and use of content experts for instrument development. *Research in nursing and health*, 20(3), 269-274.
- Green Prospects Asia. (2012). Tianjin Eco-City China's Whole Life-cycle Approach to Green Building Ratings. *Green Prospects Asia*.
- Greene, M., and Rojas, E. (2008). Incremental construction: a strategy to facilitate access to housing. *Environment and Urbanization*, 20(1), 89-108.
- Grønholdt, L., Martensen, A., Jørgensen, S., and Jensen, P. (2015). Customer experience management and business performance. *International Journal of Quality and Service Sciences*, 7(1), 90-106.
- Gündüz, M., Nielsen, Y., and Özdemir, M. (2012). Quantification of delay factors using the relative importance index method for construction projects in Turkey. *Journal of Management in Engineering*, 29(2), 133-139.

- Ha, T.; Oh; G. and Park, H. (2015), Comparative analysis of defensible space in CPTED housing and non-CPTED housing, *International Journal of Law, Crime and Justice*, 43(4), 496-511.
- Hair Jr, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2017a). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Second edition. Thousand Oaks; Sage Publications.
- Hair Jr, J. F., Babin, B. J., and Krey, N. (2017b). Covariance-Based Structural Equation Modeling in the Journal of Advertising: Review and Recommendation. *Journal of Advertising*, 46(1), 163-177.
- Hair, J. F., Anderson, R. E., Tatham, R. L., and Black, W. C. (1995). *Multivariate Data Analysis with Readings* (4th ed.). Englewood Cliffs, NJ: Prentice Hall.
- Hair, J. F., Hult, G. T. M., Ringle, C., and Sarstedt, M. (2013). *A primer on partial least squares structural equation modeling (PLS-SEM)*: Thousand Oaks, California: SAGE Publications.
- Hair, J. F., Hult, G. T., Ringle, C. M., and Sarstedt, M. (2014). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Thousand Oaks, California: SAGE Publications.
- Hair, J. F., Ringle, C. M. and Sarstedt, M. (2011a). The Use of Partial Least Squares (PLS) to Address Marketing Management Topics. *Journal of Marketing Theory and Practice*, Volume 19(2), 135-138. Available at SSRN: <https://ssrn.com/abstract=2228902>.
- Hair, J. F., Ringle, C. M. and Sarstedt, M. (2012b). Editorial - Partial Least Squares: The Better Approach to Structural Equation Modeling? *Long Range Planning* 45(5-6). Available at SSRN: <https://ssrn.com/abstract=2227601>.
- Hair, J. F., Ringle, C. M., and Sarstedt, M. (2011b). PLS-SEM: Indeed a silver bullet. *Journal of Marketing theory and Practice*, 19(2), 139-152.
- Hair, J. F., Ringle, C. M., and Sarstedt, M. (2013). Partial least squares structural equation modeling: Rigorous applications, better results and higher acceptance.
- Hair, J. F., Sarstedt, M., Pieper, T. M., and Ringle, C. M. (2012a). The use of partial least squares structural equation modeling in strategic management research: a review of past practices and recommendations for future applications. *Long range planning*, 45(5), 320-340.
- Hammond, B. A. (1991). Housing in Africa, problems, prospects and strategies. *Journal of the Network of African Countries on Local Building Materials and Technologies*, 1(4), 1-6.
- Hanson, G., Lloyd, R., and Lorimer, B. (2004). Evaluation of the Social Housing Programme Yukon: Yukon Housing Corporation.

- Hardi, P. and Zdan, T. J. (1997). *Assessing sustainable development : principles in practice*. Winnipeg, Manitoba Canada: International Institute for Sustainable Development (IISD).
- Hardoy, J. E., and Satterthwaite, D. (1986). Shelter, infrastructure and services in third world cities. *Habitat International*, 10(3), 245-284.
- Hasan, Z. (2006). Sustainable Development from an Islamic Perspective: Meaning, Implications, and Policy Concerns. *Islamic Economics*, 19(1).
- Hashim, A. H. (2003). Residential satisfaction and social integration in public low cost housing in Malaysia. *Pertanika Journal of Social Sciences and Humanities*, 11(1), 1-10.
- Haybatollahi, M., Czepkiewicz, M., Laatikainen, T., and Kyttä, M. (2015). Neighbourhood preferences, active travel behaviour, and built environment: an exploratory study. *Transportation research part F: traffic psychology and behaviour*, 29, 57-69.
- Helliwell, J., Layard, R., & Sachs, J. (2018). *World Happiness Report 2018*, New York: Sustainable Development Solutions Network.
- Hennink, M. M. (2014). *Focus group discussions: understanding qualitative research*. New York, USA: Oxford University Press.
- Hennink, M., Hutter, I., and Bailey, A. (2011). *Qualitative research methods*. London: Sage Publications.
- Henseler, J., Ringle, C. M., and Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. In *New challenges to international marketing* (pp. 277-319). Emerald Group Publishing Limited.
- Hervé, F. (2009). Integrating poor populations in South African cities. *Paris: Agence Française de Développement*.
- Heylen, K. (2006). Liveability in social housing: three case studies in Flanders. In *ENHR Conference Housing in an expanding Europe: Theory, Policy, Implementation and Participation*. Ljubljana, Slovenia: 2 – 5 July.
- Hirschfield, A., Birkin, M., Brunson, C., Malleson, N., and Newton, A. (2014). How places influence crime: The impact of surrounding areas on neighbourhood burglary rates in a British city. *Urban Studies*, 51(5) 1057–1072.
- Hock, C., Ringle, C. M., and Sarstedt, M. (2010). Management of multi-purpose stadiums: Importance and performance measurement of service interfaces. *International Journal of Services Technology and Management*, 14(2-3), 188-207.
- Holden, M. and Scerri, A. (2013). More than this: Liveable Melbourne meets liveable Vancouver. *Cities*, 31, 444 - 453.

- Holmes, J., and Hudson, G. (2000). An evaluation of the objectives of the BREEAM scheme for offices: a local case study. *Proceedings of RICS Cutting Edge Conference*. London: RICS Research Foundation.
- Holt-Jensen, A. (2001, June). Individual relational space in deprived urban neighbourhoods. In *Network for Housing Research (ENHR) International Housing Conference* (Vol. 25, p. 29).
- Hopkins, P. (2017). Focus Groups. In Douglas Richardson, Noel Castree, Michael F. Goodchild, Audrey Kobayashi, Weidong Liu, and Richard A. Marston (eds.). *The International Encyclopedia of Geography: People, The Earth, Environment and Technology*. John Wiley and Sons, Ltd. doi: 10.1002/9781118786352.wbieg0150
- Hopkins, P. E. (2007). Thinking critically and creatively about focus groups. *Area*, 39(4), 528-535.
- Howley, P., Scott, M. and Redmond, D. (2009). Sustainability versus liveability: an investigation of neighbourhood satisfaction. *Journal of environmental planning and management*. 52(6), 847-864.
- Huber, F., Herrmann, A., Meyer, F., Vogel, J., and Vollhardt, K. (2007). *Causal modelling with partial least squares: an application-oriented introduction*. Springer-Verlag.
- Hughes, G., and Madden, L. V. (2003). Evaluating predictive models with application in regulatory policy for invasive weeds. *Agricultural Systems*, 76(2), 755-774.
- Hulland, J. (1999). Use of partial least squares (PLS) in strategic management research: A review of four recent studies. *Strategic management journal*, 195-204.
- Hur, M., and Nasar, J. L. (2014). Physical upkeep, perceived upkeep, fear of crime and neighborhood satisfaction. *Journal of environmental psychology*, 38, 186-194.
- Hwang, F. K. (2005). A hierarchy of importance indices. *IEEE Transactions on Reliability*, 54(1), 169-172.
- Ibem, E. O. (2012). Residents' perception of the quality of public housing in urban areas in Ogun State, Nigeria. *International Journal of Quality and Reliability Management*, 29(9), 1000-1018.
- Ibem, E. O. (2013.). Accessibility of services and facilities for residents in public housing in urban areas of Ogun State, Nigeria. In *Urban Forum*, (September) 24(3), 407-423). Springer Netherlands.
- Ibem, E. O. and Aduwo, E. B. (2013a). Assessment of residential satisfaction in public housing in Ogun State, Nigeria. *Habitat International*, 40, 163-175.

- Ibem, E. O. and Aduwo, E. B. (2013b). Urban Housing and Social Development in Nigeria: Issues and Prospects. In Ramazzotti, A. and Gravina, W. (Eds.), *Developing Countries, Political, Economic and Social Issues* (pp. 69-96). Hauppauge: Nova Publishers.
- Ibem, E. O. and Aduwo, E. B. (2015). *A framework for understanding sustainable housing for policy development and practical actions*. Paper presented at the ARCON Colloquium, Nigeria.
- Ibem, E. O. and Azuh, D. E. (2011). Framework for evaluating the sustainability of public housing programmes in developing countries. *Journal of Sustainable Development and Environmental Protection (JSDEP)*, 1(3), 24-39.
- Ibem, E. O., Opoko, A. P., Adeboye, A. B., and Amole, D. (2013). Performance evaluation of residential buildings in public housing estates in Ogun State, Nigeria: Users' satisfaction perspective. *Frontiers of Architectural Research*, 2(2), 178-190.
- Ibem, E.O., Aduwo, E.B. and Ayo-Vaughan, E.K. (2015). Assessment of the Sustainability of Public Housing Projects in Ogun State, Nigeria: A Post Occupancy Evaluation Approach. *Mediterranean Journal of Social Sciences*. 6(4), 523 - 535.
- Ihuah, P. W., Kakulu, I. I. and Eaton, D. (2014). A review of Critical Project Management Success Factors (CPMSF) for sustainable social housing in Nigeria. *International Journal of Sustainable Built Environment*, 3(1), 62-71.
- Ikejiofor, U. (1999). The God that Failed: A Critique of Public Housing in Nigeria, 1975–1995. *Habitat International*, 23(2), 177-188.
- Ilesanmi, A.O. (2005). An Evaluation of Selected Public Housing Schemes of Lagos State Development and Property Corporation, Lagos Nigeria. Unpublished PhD Thesis, Department of Architecture, Faculty of Environmental Design and Management Obafemi Awolowo University (OAU) Ile-Ife, Nigeria
- Iyanda, S. A. and Mohit, M. A. (2015). Investigating the Application of CFA in the Liveability Assessment of Public Low-income Housing in Nigeria. *Journal of Architecture, Planning and Construction Management*, 5(1).
- Jackson, D. B., Newsome, J., and Lynch, K. R. (2017). Adverse Housing Conditions and Early-Onset Delinquency. *American journal of community psychology*, 60(1-2), 160-174.
- Jagun, A. (1983). Urban housing need estimate in Nigeria: Government capability in its provision. *Journal of Business and Social Studies*, 4(2), 43-51.
- Jiboye, A. D. (2009) Evaluating Tenant's satisfaction with Public Housing in Lagos, Nigeria" *Town Planning and Architecture* 33(4) 239-247.
- Jiboye, A. D. (2010) Correlates of Public Housing in Lagos, Nigeria. *Journal of Geography and Regional Planning*, 3(2), 17 – 28.

- Jiboye, A. D. (2011a). Achieving sustainable housing development in Nigeria: A critical challenge to governance. *International journal of humanities and social science*, 1(9), 121-127.
- Jiboye, A. D. (2011c). Urbanization challenges and housing delivery in Nigeria: The need for an effective Policy framework for Sustainable Development. *International Review of Social Sciences and Humanities*, 2(1), 176-185.
- Jiboye, A. D. (2014). Significance of house-type as a determinant of residential quality in Osogbo, Southwest Nigeria. *Frontiers of Architectural Research*, 3(1), 20-27.
- Jiboye, A.D. (2011b). Ensuring Sustainable Development through Effective Housing Delivery Process in Nigeria. *African Journal of Social Sciences*. 1(2), 36-45.
- Joachim, O. I. (2017). Model of demand and supply factors affecting green commercial properties. Unpublished PhD thesis. Faculty of Geoinformation and Real Estate, Universiti Teknologi Malaysia, Malaysia.
- John, S. (2017). How to develop assessment tools. Retrieved on July 22, 2017 from <https://classroom.synonym.com/develop-assessment-tools-7771843.html>
- Johnson, R. B. and Christensen, L. (2014). *Educational Research: Quantitative, Qualitative and Mixed Approaches*. (5th ed.). Los Angeles: SAGE Publications.
- Jönsson, Å. (2000). Is it feasible to address indoor climate issues in LCA? *Environmental Impact Assessment Review*, 20(2), 241-259.
- Jöreskog, K. G. (1978). Structural analysis of covariance and correlation matrices. *Psychometrika*, 43(4), 443-477.
- Jöreskog, K. G., and Sörbom, D. (1982). Recent developments in structural equation modeling. *Journal of marketing research*, 19(4), 404-416.
- Jöreskog, K. G., and Sörbom, D. (1996). LISREL 8. Structural Equation Modeling with the Position Analysis Questionnaire (PAQ). *Journal of Applied Psychology*, 56, 347-368.
- Justus, M. and Kassouf, A. (2013), Evidence of the effect of wealth observed by criminals on the risk of becoming a victim of property crimes. *Economia*. 14(2), 88-101.
- Kaatz, E., Root, D., and Bowen, P. (2005). Broadening project participation through a modified building sustainability assessment. *Building Research and Information*, 33(5), 441-454.
- Kagioglou, M. (1998). *Generic Guide to the Design and Construction Protocol*. University of Salford, Department of Radiology.

- Kamete, A. Y. (2006). Revisiting the urban housing crisis in Zimbabwe: Some forgotten dimensions? *Habitat International*, 30(4), 981-995.
- Kearns, R. A., and Smith, C. J. (1994). Housing, homelessness, and mental health: Mapping an agenda for geographical inquiry. *The Professional Geographer*, 46(4), 418-424.
- Kelloway, K. E. (1998). *Using Lisrel for Structural Equation Modelling: A Researcher's Guide*. California: Sage Publications, Inc.
- Khalil, N., and Nawawi, A. H. (2009). Performance analysis of government and public buildings via post occupancy evaluation. *Asian Social Science*, 4(9), 103 – 112.
- Komeily, A. and Srinivasan, R. (2016), What is neighbourhood context and why does it matter in sustainability assessment? *Procedia Engineering*, 145, 876-883.
- Krejcie, R. V., and Morgan, D. W. (1970). Determining sample size for research activities. *Educational and psychological measurement*, 30(3), 607-610.
- Kristensen, K., Martensen, A., and Gronholdt, L. (2000). Customer satisfaction measurement at post Denmark: results of application of the European customer satisfaction index methodology. *Total Quality Management*. 11(7), 1007-1015.
- Kulatunga, U., Amaratunga, D., and Haigh, R. (2007). Performance measurement in the construction research and development. *International journal of productivity and performance management*, 56(8), 673-688.
- Kumar, R. (1999). *Research Methodology, a Step by Step Guide for Beginners*. London: SAGE publishing Limited.
- Lavrakas, P. J. (2008). *Encyclopedia of survey research methods*. Sage Publications, Inc., Thousand Oaks.
- Lawanson, T., Salau, T., and Yadua, O. (2013). Conceptualizing the liveable African city. *Journal of Construction Project Management and Innovation*, 3(1), 573-588.
- Leby, J. L. and Hashim, A. H. (2010). Liveability dimensions and attributes: Their relative importance in the eyes of neighbourhood residents. *Journal of Construction in Developing Countries*, 15(1), 67-91.
- Lederer, A. L., and Sethi, V. (1992). Meeting the challenges of information systems planning. *Long Range Planning*, 25(2), 69-80.
- Lee, E. and Park, N.-K. (2010). Housing satisfaction and quality of life among temporary residents in the United States. *Housing and Society*, 37(1), 43-67.

- Lee, L., Petter, S., Fayard, D., and Robinson, S. (2011). On the use of partial least squares path modeling in accounting research. *International Journal of Accounting Information Systems*, 12(4), 305-328.
- Lee, W. L., Chau, C. K., Yik, F. W. H., Burnett, J., and Tse, M. S. (2002). On the study of the credit-weighting scale in a building environmental assessment scheme. *Building and Environment*, 37(12), 1385-1396.
- Leech, N. L., Barrett, K. C., and Morgan, G. A. (2005). *SPSS for intermediate statistics: Use and interpretation*. Psychology Press.
- Li, C., Sun, L., and Jones, P. (2012). Liveability of high-rise housing estates: A resident-centred high-rise residential environment evaluation in Tianjin, China. In *48th ISOCARP Congress*.
- Li, Y. (2012). Neighborhood amenities, satisfaction, and perceived livability of foreign-born and native-born US residents. *Journal of Identity and Migration Studies*, 6(1), 115.
- Lincoln, Y. S. and Denzin, N. K. (2005). Epilogue: The eighth and ninth moments: Qualitative research in/and the fractured future. *Handbook of qualitative research*, 3, 1103-1114.
- Litman, T. (2010). Sustainability and livability: Summary of definitions, goals, objectives and performance indicators. Victoria, British Columbia Canada: Victoria Transport Policy Institute. Available on http://www.vtpi.org/sus_liv.pdf
- Liu, A.M. (2003). There is Quality After all: Residential Post Occupancy Evaluation in Housing Projects in Hong Kong. In *CIBTG International Conference*, October, Hong Kong.
- Loehlin, J. C. (1998). *Latent variable models: An introduction to factor, path, and structural analysis*, (3rd ed.). London: Lawrence Erlbaum Associates Publishers.
- Loehlin, J. C., and Beaujean, A. A. (2017). *Latent variable models: An introduction to factor, path, and structural equation analysis*, (5th ed.). New York: Routledge, Taylor and Francis Group
- Lohmöller, J. B. (1989). Predictive vs. Structural Modeling: PLS vs. ML. In *Latent Variable Path Modeling with Partial Least Squares* (pp. 199-226). Physica-Verlag HD.
- Longhurst, R. (1996). Refocusing groups: pregnant women's geographical experiences of Hamilton, New Zealand/Aotearoa. *Area*, 28(2), pp.143-149. Available on <http://www.jstor.org/stable/pdf/20003651.pdf>
- Lotfi, S., and Koohsari, M. J. (2009). Measuring objective accessibility to neighborhood facilities in the city (A case study: Zone 6 in Tehran, Iran). *Cities*, 26(3), 133-140.

- Lowe, M., Whitzman, C., Badland, H. M., Davern, M., Hes, D., Aye, L., Butterworth, I. and Giles-Corti, B. (2013). *Liveable, Healthy, Sustainable: What are the Key Indicators for Melbourne Neighbourhoods?* Research Paper 1. Melbourne, Australia: University of Melbourne McCaughey VicHealth Centre for Community Wellbeing.
- Lützkendorf, T. and Lorenz, D. (2005). Sustainable property investment: valuing sustainable buildings through property performance assessment. *Building Research and Information*, 33(3), 212-234.
- Lynn, M. R. (1986). Determination and quantification of content validity. *Nursing research*, 35(6), 382– 385.
- Malhotra, N. K. (2002). Integrating technology in marketing education: Perspective for the new millennium. *Marketing Education Review*, 12(3), 1-5.
- Marans, R.W. and Stimson, R. (2011). An overview of quality of urban life. In *Investigating quality of urban life*. Dordrecht, Netherlands: Springer. pp. 1-29.
- Martensen, A., and Grønholdt, L. (2010). Measuring and managing brand equity: A study with focus on product and service quality in banking. *International Journal of Quality and Service Sciences*, 2(3), 300-316.
- Martensen, A., Grønholdt, L., Bendtsen, L., and Jensen, M. J. (2007). Application of a model for the effectiveness of event marketing. *Journal of advertising research*, 47(3), 283-301.
- Marzbali, M.; Abdullah, A.; Ignatius, J.; Tilaki, M. (2016), Examining the effects of crime prevention through environmental design (CPTED) on residential burglary, *International Journal of Law, Crime and Justice*. 46(1), 86-102.
- Marzbali, M.; Abdullah, A.; Razak, N. and Tilaki, M. (2012), The influence of crime prevention through environmental design on victimization and fear of crime, *Journal of Environmental Psychology*. 32(1), 79-88.
- Mashoko, S. (2012). The role of low-income urban housing delivery schemes in curbing the housing problem in the City of Mutare, Zimbabwe. *Journal of Sustainable Development in Africa*, 14(1), 202-216.
- Mba, H.C. (1992) The Dilemmas of Housing Programmes in Nigeria, in H. C. Mba, J.U.Ogbazi and K. O. Efobi (Eds.). *Principles and Practice of Urban and Regional Planning in Nigeria*, Awka: Mekslink Publishers Nigeria, 52-62.
- Mbamali, I. and Okoli, O.G (2002) Affordable Housing for Low Income Group in Nigeria: A Redefinition of the basic Parameters. *Housing Today- A Journal of the Association of Housing Corporations of Nigeria*, 1(5), 15-21.
- McIntyre, L. J. (2005). *Need to know: Social science research methods*. New York: McGraw-Hill Education.

- Menzies, G. and Wherrett, J. (2005). Windows in the workplace: examining issues of environmental sustainability and occupant comfort in the selection of multi-glazed windows. *Energy and Buildings*, 37(6), 623-630.
- Miller, R. G. (1974). The jackknife-a review. *Biometrika*, 61(1), 1-15.
- Mitlin, D. and Satterthwaite, D. (1996). Chapter One Sustainable Development and Cities. *Sustainability: The Environment and Urbanization*, pp. 23 - 62.
- Mitterer, C., Künzle, H. M., Herkel, S. and Holm, A. (2012). Optimizing energy efficiency and occupant comfort with climate specific design of the building. *Frontiers of Architectural Research*, 1(3), 229-235.
- Mohammad, I. S. (2011). *Post occupancy evaluation of building performance in Malaysia*. Unpublished PhD Thesis, Faculty of Geoinformation and Real Estate, Universiti Teknologi Malaysia. Retrieved from <http://eprints.utm.my/28520/>
- Mohit, M. A., and Elsayahli, H. M. H. (2010). Crime and housing in Malaysia: case study of Taman Melati terrace housing in Kuala Lumpur. *Asian Journal of Environment-Behaviour Studies*, 1(3), 25-36.
- Mohit, M. A., and Iyanda, S. A. (2016). Liveability and Low-income Housing in Nigeria. *Procedia-Social and Behavioural Sciences*, 222, 863-871.
- Mohit, M.A. (2013). Quality of Life in Natural and Built Environment—An Introductory Analysis. *Procedia-Social and Behavioural Sciences*. 101, 33-43.
- Mohit, M.A., Ibrahim, M. and Rashid, Y.R. (2010). Assessment of residential satisfaction in newly designed public low-cost housing in Kuala Lumpur, Malaysia. *Habitat International*. 34(1), 18-27.
- Morts, D. (1997). *Sources of Unofficial UK Statistics* (3rd ed.). Aldershot, Hampshire, England; Brookfield, Vt., USA: Gower. Available on <https://trove.nla.gov.au/version/46880153>
- Murad, M. W., and Raquib, M. A. (2007). Factors influencing household income of the urban poor: Squatters and low-cost flat dwellers in Kuala Lumpur. *The Asia Pacific Journal of Economics and Business*, 11(1), 61 – 77.
- Mustapha, I. (2002) Overview of Housing and Urban Development Programme Since Independence. *Housing Today-Journal of the Association of Housing Corporations of Nigeria*, 1(6), 28-30.
- Namazi-Rad, M., Perez, P., Berryman, M. and Lamy, F. (2012). An experimental determination of perceived liveability in Sydney. In *ACSPRI Conferences, RC33 Eighth International Conference on Social Science Methodology* (pp. 1-13).
- Naoum, S. (2007). *Dissertation Research and Writing for Construction Students* (2nd ed.). Oxford: Butterworth-Heinemann.

- Naoum, S. G. (2012). *Dissertation research and writing for construction students* (3rd ed.). New York: Routledge.
- Neuman, W. L. (2010). *Social Research Methods: Qualitative and Quantitative Approaches*. 7th ed. Boston: Pearson Education.
- Newman, I., and Benz, C. R. (1998). *Qualitative-quantitative research methodology: Exploring the interactive continuum*. United State of America: Southern Illinois University Press.
- Newman, P. W. (1999). Sustainability and cities: extending the metabolism model. *Landscape and urban planning*, 44(4), 219-226.
- Nicholas, E.O. and Patrick, D.D. (2015). A Review of Governmental Intervention on Sustainable Housing Provision for Urban Poor in Nigeria. *International Journal of Social Science Studies*. 3(6), 40-48.
- Nigeria, F. R. (1991). *National Housing Policy*. Lagos: Federal Government Press.
- Nigeria, F. R. (2012). *National Housing Policy of Nigeria*. Lagos: Federal Government Press.
- Nkambwe, M. (1984). Recent Route Developments in Traditional Urban Areas of Southwestern Nigeria. The Case of Ile-Ife, 1950 to 1980. *Singapore Journal of Tropical Geography*, 5(2), 154-164.
- Nkambwe, M. (1987). Framework for an Urban Information System (UIS) in Nigeria based on aerial photographs and existing maps. *Photogrammetria*, 41(3), 163-172.
- Nkambwe, M. (1991). URBANIFE: a geographical information system for monitoring internal developments in an African traditional urban area. *ISPRS journal of photogrammetry and remote sensing*, 46(6), 346-358.
- Nour, A. M. (2011). Challenges and advantages of community participation as an approach for sustainable urban development in Egypt. *Journal of Sustainable Development*, 4(1), 79 - 91.
- Nunnally, J. C. (1967). *Psychometric Theory*. New York: McGraw-Hill.
- Nunnally, J. C., and Bernstein, I. H. (1994). *Psychometric Theory* (3rd Ed.). New York, NY: MacGraw-Hill.
- Nurizan, Y., Bukryman, S., Laily, P., and Ahmad, H. H. (2004). The well-being of teenagers in low-cost settlement in Johor Bahru. In Laily, P. and Nurizan Y. (eds.). *The well-being of the household of Johor Darul Takzim*. Pp. 84-95.
- Nwaka, G.I. (2005). The urban Informal sector in Nigeria: Towards Economic Development, Environmental Health and Social Harmony. *Global Urban Development Magazine*, 1(1). Online at <http://www.globalurban.org/Issue1PIMag05/NWAKA%20article.htm>

- Odebiyi, O. S. (2010). Sustainable Housing Development in Africa: Nigerian Perspective. *International Business and Management*, 1(1), 22-30.
- Ogu, V. I. (1999). Housing enablement in a developing world city: the case study of Benin City, Nigeria. *Habitat International*, 23(2), 231-248.
- Olatubara, C. O., and Fatoye, E. O. (2007). Evaluation of the satisfaction of occupants of the Abesan public low-cost housing estate in Lagos State, Nigeria. *The Nigerian Journal of Economic and Social Studies*, 49(1), 5-9.
- Olotuah, A. and Bobadoye, S. (2011). Sustainable housing provision for the urban poor: a review of public sector intervention in Nigeria. *The Built and Human Environment Review*, 2, 51-63.
- Olotuah, A. O. (2005). Urbanization, urban poverty, and housing inadequacy. In *Proceedings of Africa Union of Architects Congress*. 23-28 May. Abuja, Nigeria. pp. 185 – 199.
- Olotuah, A. O. (2010). Housing development and environmental degeneration in Nigeria. *The Built and Human Environment Review*, 3, 42-48.
- Olotuah, A. O., and Taiwo, A. A. (2013). Housing the urban poor in Nigeria through low-cost housing schemes. *International Journal of Physical and Human Geography*, 1(3), 1-8.
- Olukolajo, M. A., Adewusi, A. O., and Ogungbenro, M. T. (2013). Influence of Housing Condition on the Health Status of Residents of Urban Core of Akure, Nigeria. *International Journal of Development and Sustainability*, 2(2), 1567-1579.
- Olusegun, K. (2009). Urbanization and the challenges of infrastructural development. In *1st National Conference on Harnessing infrastructural development and services for vision 2020:20*. Lagos, Nigeria; Department of Building Technology, Yaba College of Technology. November.
- Omole, F.K. (2001) *Basic Issues in Housing Development*. Ondo, Nigeria: FemoBless Publishers
- Omole, K. F. (2010). An assessment of housing condition and socio-economic life styles of slum dwellers in Akure, Nigeria. *Contemporary Management Research*, 6(4).
- Omuta, G. E. (1988). The quality of urban life and the perception of livability: A case study of neighbourhoods in Benin City, Nigeria. *Social Indicators Research*, 20(4), 417-440.
- Onibokun, A. G. (1973). Environmental issues in housing habitability. *Environment and Planning*, 5, 461-476.
- Onibokun, A. G. (1985). *Housing in Nigeria*, Ibadan: Nigerian Institute for Social and Economic Research (NISER).

- Onibokun, A. G. (2003). The State of Implementation Report on Human Settlements in Africa. *Centre for African Settlement Studies and Development, Ibadan.*
- Onokerhoraye, A. G. (1995). *Urbanization and Environment in Nigeria: Implications for Sustainable Development*. The Benin Social Science Series for Africa. Benin City: University of Benin.
- Opara, F.E. (2003) Development of Locally Sourced Building Materials in Nigeria. *Housing Today*. 1(7), 16-23.
- Orlikowski, W. J., and Baroudi, J. J. (1991). Studying information technology in organizations: Research approaches and assumptions. *Information systems research*, 2(1), 1-28.
- Ornstein, S. H. (2005). Post occupancy evaluation in Brazil. *Evaluating Quality in Educational Facilities*, School of Architecture and Urbanism, University of Sao Paulo, Brazil.
- Orts-Cortés, M. I., Moreno-Casbas, T., Squires, A., Fuentelsaz-Gallego, C., Maciá-Soler, L., and González-María, E. (2013). Content validity of the Spanish version of the Practice Environment Scale of the Nursing Work Index. *Applied Nursing Research*, 26(4), e5-e9.
- Oruwari, Y. (2006) Lest We Forget: The Poor People Need Housing in the Urban Areas in Nigeria too-A reflection of Low-income housing provision. in A.I. Okewole *et al.* (eds.) *The Built Environment: Innovation Policy and Sustainable Development*. Ota-Nigeria: Department of Architecture, Covenant University, Pp 2-9.
- Owoeye, J. and Omole, F. (2012). Built Environment Decay and Health Situation of Slum Dwellers in Residential Cores of Akure, Nigeria. *American Journal of Human Ecology*, 1(2), 33-39.
- Owoeye, J. O. (2013). A Study on Environmental Habitability of Core Residential Neighbourhood in Akure, Nigeria. *American Journal of Research Communication*, 1(2), 140-153.
- Oyebanji, A. O., Akintola, A. and Liyanage, C. L. (2011). Public-Private Partnerships Approach: A Panacea to Urban Housing Inequalities in Developing Countries-A Case Study of Nigeria. *Public Private Partnerships*. United Kingdom: School of Built and Natural Environment, University of Central Lancashire. pp. 61 - 75.
- Pacione, M. (2003). Urban environmental quality and human wellbeing: a social geographical perspective. *Landscape and Urban Planning*, 65(1), 19-30.
- Pandey, R. U., Garg, Y. G. and Bharat, A. (2014). Quantitative approach for understanding perspectives on liveability in India context. *International Journal on Emerging Technologies*, 5(1), 1 – 7.
- Papamichael, K. (2000). Green building performance prediction/assessment. *Building Research and Information*, 28(5-6), 394-402.

- Patton, M. Q. (2002). *Qualitative Research and Evaluation Methods* (3rd edition.). Thousand Oaks, California, USA: SAGE Publications, Inc.
- Peple, A. I. (2012). Nigeria: Progress on improving the lives of slum-dwellers over the decade 2000-2010. (Presentation by the Honourable Minister of Lands, Housing and Urban Development of Nigeria). In *International Conference on Making Slums History: a worldwide challenge for 2020*. Rabat, Morocco: UN-Habitat.
- Peterson, R. A. (1994). A meta-analysis of Cronbach's coefficient alpha. *Journal of consumer research*, 21(2), 381-391.
- Polit, D. F., and Beck, C. T. (2004). *Nursing research: Principles and methods* (7th ed.). Lippincott Williams and Wilkins.
- Polit, D. F., and Beck, C. T. (2006). The content validity index: are you sure you know what's being reported? Critique and recommendations. *Research in nursing and health*, 29(5), 489-497.
- Polit, D. F., and Beck, C. T. (2008). *Nursing research: Generating and assessing evidence for nursing practice* (8th ed.). Lippincott Williams and Wilkins.
- Porter and Brown, 1996). *Global Environmental Politics, Second Edition*. Boulder, Colorado: Westview Press.
- Portney, K. E. (2013). *Taking sustainable cities seriously: economic development, the environment, and quality of life in American cities*. Cambridge, MA: MIT Press.
- Poveda, C. A., and Young, R. (2015). Potential benefits of developing and implementing environmental and sustainability rating systems: Making the case for the need of diversification. *International Journal of Sustainable Built Environment*, 4(1), 1-11.
- Rabe, B., and Taylor, M. (2010). Residential mobility, quality of neighbourhood and life course events. *Journal of the Royal Statistical Society: Series A (Statistics in Society)*, 173(3), 531-555.
- Raji, F., Baqutayan, S. M. S., Ariffin, A. S. and Kamarudin, N. (2012). Residents' Perception on Livability in Affordable Housing in Malaysia. *Jurnal Teknologi (Sciences and Engineering)*, 58, 85-88.
- Raji, F., Qutayan, S. M. S. B., Ariffin, A. S., Razali, M. N., and Kamarudin, N. (2016). Resident's Perception on Livability in Affordable Housing in Malaysia. *Journal of Technology Management and Business*, 3(1).
- Raji, F., Sipan, I., Baqutayan, S. M. S, Saimy, I. S. and Jiram, W, R. A. (2017). Developing an Affordable Housing Livability Index. *Final Report of Real Estate Research and Development Grant Scheme (NAPREC)*. Malaysia: National Institute of Valuation (INSPEN)

- Ramachandran, A. (1992). Urbanization and environment, Schermerhorn Lecture. *ITC Journal*, (4), 389 - 393. Nairobi: UNCHS.
- Randall, E. S., and Richard, G. L. (1996). A Beginner's Guide to Structural Equation Modeling. *2010*, 79(2), 286-287.
- Ranson, R. (2002). *Healthy housing: a practical guide*. Taylor and Francis.
- Raw, G. J., Aizlewood, C. E., and Hamilton, R. M. (eds.). (2001). *Building Regulation, Health and Safety: A Report Concerning the Influence on the Health and Safety of Building Users of Fabric and Services Controlled or Controllable by Regulation of Buildings*. Construction Research Communications [for] Building Research Establishment, Watford.
- Research-Advisors (2006). Sample Size Table. Retrieved on March 23, 2016 and available on <http://www.research-advisors.com/tools/SampleSize.htm>
- Rigdon, E. E. (1998). The equal correlation baseline model for comparative fit assessment in structural equation modeling. *Structural Equation Modeling: A Multidisciplinary Journal*, 5(1), 63-77.
- Rigdon, E. E. (2012). Rethinking partial least squares path modeling: In praise of simple methods. *Long Range Planning*, 45(5-6), 341-358.
- Rigdon, E. E., Ringle, C. M., Sarstedt, M., and Gudergan, S. P. (2011). Assessing heterogeneity in customer satisfaction studies: across industry similarities and within industry differences. In *Measurement and Research Methods in International Marketing* (pp. 169-194). Emerald Group Publishing Limited.
- Ringle, C. M. and Sarstedt, M. (2016). Gain more insight from your PLS-SEM results: The importance-performance map analysis. *Industrial Management and Data Systems*, 116(9), 1865-1886.
- Ringle, C. M. and Sarstedt, M. and Straub, D. (2012). A Critical Look at the Use of PLS-SEM in MIS Quarterly. *MIS Quarterly (MISQ)*, 36(1), pp. iii-xiv. Available at SSRN: <https://ssrn.com/abstract=2176426>
- Ringle, CM (2004). *Quality measures for the partial least squares approach for the determination of causal models*. University of Hamburg, Institute for Industrial Management and Organization, Industrial Management.
- Roldán, J. L., and Sánchez-Franco, M. J. (2012). Variance-based structural equation modeling: guidelines for using partial least squares in Information Systems Research. In M. Manuel, G. Ovsei, L. S. Annette, and R. Mahesh (eds.), *Research methodologies, innovations and philosophies in software systems engineering and information systems*, pp. 193-221. Hershey, PA, USA: IGI Global.
- Rondinelli, D. A. (1990). Housing the urban poor in developing countries: Other policy options for national shelter strategies are examined since conventional ones are inadequate. *American Journal of Economics and Sociology*, 257-269. Available online <http://www.jstor.org>

- Ruth, M. and Franklin, R. S. (2014). Livability for all? Conceptual limits and practical implications. *Applied Geography*, 49, 18-23.
- Sachs, J. D. (2015a). *The age of sustainable development*: Columbia University Press.
- Sachs, J. D. (2015b). The Age of Sustainable Development: Sustainable Development as an Analytical and Normative Concept. *The European Policy Review*.
- Saitluanga, B.L. (2014). Spatial pattern of urban livability in Himalayan Region: A case of Aizawl City, India. *Social indicators research*. 117(2), 541-559.
- Sakip, S. R. M., and Abdullah, A. (2012). Measuring crime prevention through environmental design in a gated residential area: A pilot survey. *Procedia-Social and Behavioural Sciences*, 42, 340-349.
- Salant, P., Dillman, I. and Don, A. (1994). *How to conduct your own survey*. New York: Wiley.
- Salleh, A.G. (2008). Neighbourhood factors in private low-cost housing in Malaysia. *Habitat International*. 32(4), 485-493.
- Salleh, N. A., Yusof, N. A., Salleh, A. G., and Johari, N. (2011). Tenant satisfaction in public housing and its relationship with rent arrears: Majlis Bandaraya Ipoh, Perak, Malaysia. *International Journal of Trade, Economics and Finance*, 2(1), 10-18.
- Sam, N., Bayram, N., and Bilgel, N. (2012). The perception of residential environment quality and neighbourhood attachment in a metropolitan city: A study on Bursa, Turkey. *eCanadian Journal of Humanities and Social Sciences*, 1(1), 22-39.
- Samaratunga, T. (2013). High-density high-rise low-income housing: an appropriate city planning solution for Colombo, Sri Lanka? Unpublished PhD thesis, Institute of Sustainable Development and Architecture, Bond University, Queensland, Australia. Available on <http://epublications.bond.edu.au/cgi/viewcontent.cgi?article=1124&context=theses>
- Sandbach, F. (1980). *Environment, ideology, and policy*: Basil Blackwell Oxford.
- Sarstedt, M., and Mooi, E. (2014). A concise guide to market research. *The Process, Data, and Methods using IBM SPSS Statistics*. Berlin, Heidelberg: Springer.
- Sarstedt, M., Becker, J. M., Ringle, C. M., and Schwaiger, M. (2011). Uncovering and treating unobserved heterogeneity with FIMIX-PLS: which model selection criterion provides an appropriate number of segments? *Schmalenbach Business Review*, 63(1), 34-62.
- Sarstedt, M., Wilczynski, P., and Melewar, T. C. (2013). Measuring reputation in global markets—A comparison of reputation measures' convergent and criterion validities. *Journal of World Business*, 48(3), 329-339.

- Satterthwaite, D. (2003). The links between poverty and the environment in urban areas of Africa, Asia, and Latin America. *The Annals of the American Academy of Political and Social Science*, 590(1), 73-92.
- Saunders, M. (1999). *Research Methods for Business Students* (2nd eds.): Pitman.
- Saunders, M. N. K., Lewis, P., and Thornhill, A. (2012). *Research methods for business students* (6th ed.). Harlow, England: Pearson Education
- Saunders, M., Lewis, P., Thornhill, A. (2003). *Research methods for business students*, (3th ed.). Harlow: Pearson Education Limited.
- Saunders, M., Lewis, P., Thornhill, A. (2007). *Research methods for business students*, (4th ed.). Harlow, England: Pearson Education Ltd.
- Saunders, T. (2008). A discussion document comparing international environmental assessment methods for buildings. *BRE, March*.
- Schilderman, T. (2010). Putting people at the centre of reconstruction. *Building Back Better*, 7.
- Schloderer, M. P., Sarstedt, M., and Ringle, C. M. (2014). The relevance of reputation in the non-profit sector: the moderating effect of socio-demographic characteristics. *International Journal of Non-profit and Voluntary Sector Marketing*, 19(2), 110-126.
- Schmeer, K. K., and Yoon, A. J. (2016). Home sweet home? Home physical environment and inflammation in children. *Social science research*, 60, 236-248.
- Sekaran, U. (2000). *Research Methods for Business: A Skill -Building Approach* (3rd ed.). New York: John Wiley and Sons, Inc.
- Setijanti, P., Defiana, I., Setyawan, W., Silas, J., Firmaningtyas, S. and Ernawati, R. (2015). Traditional Settlement Livability in Creating Sustainable Living. *Procedia-Social and Behavioural Sciences*. 179, 204-211.
- Sev, A. (2011). A comparative analysis of building environmental assessment tools and suggestions for regional adaptations. *Civil Engineering and Environmental Systems*. 28(3), 231-245.
- Sexton, M. (2003). Positivism vs Realism. In *Lecture notes presented at Research Institute of Built and Human Environment (BuHu) Postgraduate Workshop, University of Salford*. (November)
- Shika, S. A. (2015). Post occupancy evaluation for sustainability assessment framework of retrofitting commercial office buildings. Unpublished PhD thesis. Faculty of Geoinformation and Real Estate, Universiti Teknologi Malaysia, Malaysia. Retrieved from <http://eprints.utm.my/54803/>

- Slack, N. (1994). The importance-performance matrix as a determinant of improvement priority. *International Journal of Operations and Production Management*, 14(5), 59-75.
- Smith, S. (2013). Determining sample size: How to ensure you get the correct sample size. *E-Book (c) Qualtrics Online Sample*.
- Sohn, D. (2016). Residential crimes and neighbourhood built environment: Assessing the effectiveness of crime prevention through environmental design (CPTED), *Cities*, Vol. 52, 86-93.
- Sosik, J. J., Kahai, S. S., and Piovoso, M. J. (2009). Silver bullet or voodoo statistics? A primer for using the partial least squares data analytic technique in group and organization research. *Group and Organization Management*, 34(1), 5-36.
- Stern, A. M., Casadevall, A., Steen, R. G. and Fang, F. C. (2014). Financial costs and personal consequences of research misconduct resulting in retracted publications. *Elife*, 3.
- Stone, M. (1974). Cross-validatory choice and assessment of statistical prediction. *Journal of the royal statistical society. Series B (Methodological)*, 111-147.
- Straub, D. W. (1989). Validating instruments in MIS research. *MIS quarterly*, 147-169.
- Suglia, S. F., Duarte, C. S., and Sandel, M. T. (2011). Housing quality, housing instability, and maternal mental health. *Journal of Urban Health*, 88(6), 1105-1116.
- Tabachnick, B. G., and Fidell, L. S. (2001). *Using Multivariate Statistics* (4th Ed.). Boston: Allyn and Bacon.
- Tan, T. H. (2011). Sustainability and housing provision in Malaysia. *Journal of Strategic Innovation and Sustainability*. 7(1), 62-71.
- Tenenhaus, M., Vinzi, V. E., Chatelin, Y. M., and Lauro, C. (2005). PLS path modeling. *Computational statistics and data analysis*, 48(1), 159-205.
- Throsby, D. (2005). Cultural heritage as financial asset in strategies for urban development and poverty alleviation. In *International Conference for Integrating Urban Knowledge and Practice* (29 May - 3 June 2005: Gothenburg, Sweden. p.2-14
- Tipple, G. (2004). Settlement upgrading and home-based enterprises: discussions from empirical data. *Cities*, 21(5), 371-379.
- Todd, J. A., Crawley, D., Geissler, S., and Lindsey, G. (2001). Comparative assessment of environmental performance tools and the role of the Green Building Challenge. *Building Research and Information*, 29(5), 324-335.
- Triola, M. F. (2004). *Elementary statistics*. Pearson Addison-Wesley.

- Udoh, U., and Uyanga, J. (2013). Housing Conditions and Health in Rural Nigeria: A Study of Akwa Ibom State. *Research on Humanities and Social Sciences*, 3(18), 34 - 41.
- Ukoha, O.M. and Beamish, J.O (1997) Assessment of Residents Satisfaction with Public Housing in Abuja, Nigeria. *Habitat International*, 21(4), 445-460.
- UN (2017). *The Sustainable Development Goals Report 2017*. New York: United Nations
- UN General Assembly (1948). *Universal declaration of human rights*. United Nation, General Assembly.
- UN General Assembly (2017). *Revised list of global Sustainable Development Goal indicators (Annex III)*. Report of the Inter-Agency and Expert Group on Sustainable Development Goal Indicators (E/CN.3/2017/2). Retrieved on January 5, 2018 and available on <https://unstats.un.org/sdgs/indicators/official%20revised%20list%20of%20global%20sdg%20indicators.pdf>
- UN-DESA (2014). *World Urbanization Prospects: The 2014 Revision, Monitoring Global Population Trends*. New York: United Nations Department of Economic and Social Affairs, Population Division. Retrieved on January 5, 2018 and available on <https://esa.un.org/unpd/wup/CD-ROM/>
- UN-DESA (2017). *World Population Prospect: The 2017 Revision, Key Findings and Advance Tables*. Working Paper No. ESA/P/WP/248. New York: United Nations Department of Economic and Social Affairs, Population Division. Retrieved on January 5, 2018 and available on https://esa.un.org/unpd/wpp/publications/Files/WPP2017_KeyFindings.pdf
- UNFPA (2007). *State of the World Population 2007: Unleashing the Potential of Urban Growth*. New York: United Nations Population Funds, The United Nations. Retrieved September 8, 2017. Available online https://www.unfpa.org/sites/default/files/pub-pdf/695_filename_sowp2007_eng.pdf
- UN-Habitat (2006a) *Shelter for All: The Potential of Housing Policy in the Implementation of the Habitat Agenda*. Nairobi: UN-Habitat Information Services Section. Available Online <http://www.unhabitat.org>
- UN-Habitat (2006b) *National Experiences with Shelter Delivery for the poorest Groups*. Nairobi: UN-Habitat Information Services Section. Available online at <http://www.unhabitat.org>
- UN-Habitat. (1989). Report of the Commission on Human Settlement on the Work of Its Twelfth Session (Forty –Fourth Session Supplement No 8 (A/44/8)). New York: United Nations General Assembly.
- UN-Habitat. (2008). *The State of African Cities, 2008, A Framework for Addressing Urban Challenges in Africa*: Nairobi.

- UN-Habitat. (2010). *Planning sustainable cities: UN-Habitat Practices and Perspectives*. Nairobi: United Nations Human Settlements Programme (UN-Habitat).
- UN-Habitat. (2013a). Global Housing Strategy Framework Document, Housing and Slum Upgrading Branch.
- UN-Habitat. (2013b). *State of the world's cities 2012/2013: Prosperity of cities*. USA and Canada: Routledge.
- UN-Habitat. (2013c). *Strengthening national capacities to formulate and adopt housing and slum upgrading strategies*. Concept Note. UN-Habitat in collaboration with OHCHR, UN-Women, ECA, ECLAC, ESCAP and ESCAWA Nairobi. Retrieved <http://www.un.org/esa/devaccount/projects/2014/T9%20concept%20notes/T9%20-%20Concept%20notes/UN%20Habitat%20-%209th%20Tranche%20-%20CN/1415W%20UNHabitat%20Housing%20strategies%20concept%20note%20as%20per%20advanced%20draft%20June%202013.doc>
- UN-Habitat. (2015). *Issue Papers and Policy Units of the HABITAT III Conference*. Paper presented at the United Nations Conference on Housing and Sustainable Urban Development.
- UN-MDGs (2014). *The Millennium Development Goals Report 2014*. New York: United Nations
- Urbach, N., and Ahlemann, F. (2010). Structural equation modeling in information systems research using partial least squares. *JITTA: Journal of Information Technology Theory and Application*, 11(2), 5-40.
- USGBC (2009a). Reference guide for green building design and construction. *Washington, DC: US Green Building Council*.
- USGBC (2009b). LEED 2009 for new construction and major renovations. *Washington, DC, USA: Green Building Council (USGBC)*.
- USGBC (2014). LEED v4 User Guide. USGBC (U.S. Green Building Council) Washington. Assessed August 25, 2017 and available on <https://kapost-files-prod.s3.amazonaws.com/published/54886ef033efbe406e00012a/ebook-leed-v4-user-guide.pdf>
- USGBC (2017). *US Green Building Council History*. Assessed August 25, 2017 and available on <https://stg.usgbc.org/about/history>
- Van Kamp, I., Leidelmeijer, K., Marsman, G. and De Hollander, A. (2003). Urban environmental quality and human well-being: Towards a conceptual framework and demarcation of concepts; a literature study. *Landscape and Urban Planning*, 65(1), 5-18.

- Van Wyk, K. and Jimoh, R. (2015). Framework for the sustainability of housing co-operatives in South Africa. *Journal of Construction Project Management and Innovation*. 5(1), 1100-1114.
- Veenhoven, R. (2004). *World database of happiness. Challenges for Quality of Life in the Contemporary World*. (pp. 75-89). Springer.
- Veenhoven, R. (2005). What we know about happiness. In León Garduno Estrada, Bertha Salinas Amescua & Mariano Rojas Herera (Eds.). *Calidad de Vida y Bienestar Subjetivo en México*, Plaza y Valdés, S.A.de C.V. Mexico, ISBN 970-722-398-7, 17-55
- Vergunst, P. (2003). *Liveability and ecological land use: The challenge of localisation*. Sweden: Department of Rural Development Studies, Swedish University of Agricultural Sciences. (Vol. 373).
- Victorian, G. (2016). Housing design guidelines (Version 1.0). State of Victoria, Australia; Department of Health and Human Services
- Visser, P., Dam, V. F., and Hooimeijer, P. (2005). The influence of neighbourhood characteristics on geographical differences in house prices in the Netherlands. In *European Network for Housing Research (ENHR) International Housing Conference* (Vol. 29, pp. 149-169).
- Völckner, F., Sattler, H., Hennig-Thurau, T., and Ringle, C. M. (2010). The role of parent brand quality for service brand extension success. *Journal of Service Research*, 13(4), 379-396.
- Walley, S. (2010). Housing finance in Africa: Are we post crisis yet. In *African Union for Housing Finance Annual Conference, Botswana*. September 22. http://www.auhf.co.za/wordpress/assets/AUHF2010_Walley_WB.pdf
- Wallhagen, M., Glaumann, M., Eriksson, O. and Westerberg, U. (2013). Framework for Detailed Comparison of Building Environmental Assessment Tools. *Buildings*. 3(1), 39-60.
- Walliman, N. S. R. 2006. *Social Research Methods*. London, SAGE.
- WCED (1987). *Our Common Future*. A Report of the World Commission on Environment and Development. Oxford: Oxford University Press.
- Weale, A. (1992). *The new politics of pollution*. Oxford, United Kingdom: Manchester University Press.
- Werts, C. E., Rock, D. A., Linn, R. L., and Joreskog, K. G. (1976). Comparison of correlations, variances, covariances, and regression weights with or without measurement error. *Psychological Bulletin*, 83(6), 1007 – 1013.
- Wetzels, M., Odekerken-Schröder, G., and Van Oppen, C. (2009). Using PLS path modeling for assessing hierarchical construct models: Guidelines and empirical illustration. *MIS quarterly*, 177-195.

- Wheeler, A., Boughlameg, D., and Malekzadeh, M. (2011). Developing a child-friendly post-occupancy assessment methodology for sustainable schools. In *Third International Conference on Applied Energy*. Perugia, Italy.
- Wheeler, S. (2001). *Livable Communities: Creating Safe and Livable Neighborhoods, Towns, and Regions in California*. UC Berkeley: Institute of Urban and Regional Development. Retrieved from <https://escholarship.org/uc/item/8xf2d6jg>
- William, A. (2013). Household Access to Safe and Improved Drinking Water and Basic Sanitation in Wa Municipality. *European Journal of Business and Management*, 5(23), 4 – 25.
- Winston, N. (2007). From boom to bust? An assessment of the impact of sustainable development policies on housing in the Republic of Ireland. *Local Environment*, 12(1), 57-71.
- Wisker, G. (2009). *The undergraduate research handbook*. Great Britain, United Kingdom: Palgrave Macmillan.
- Wold, H. (1982). Soft modelling: the basic design and some extensions. In H. Wold, K. G. Jöreskog (Eds.) *Systems under indirect observation, Part II* 36-37. Amsterdam: North-Holland Publishing Company, pp. 1-54
- Wong, W. S. (2011). Legislation and Safety of Tall Residential Buildings. In *High-Rise Living in Asian Cities* (pp. 81-112). London: Springer.
- Wood, G., Davis, P., Wapwera, S., Parsa, A. and Egbu, C. (2011). Financing low income housing in Nigeria. *Journal of Financial Management of Property and Construction*, 16(3), 283-301.
- World Health Organization. (1989). *Health principles of housing*. England: Macmillan. 88/7757-Macmillan/Clays-5000
- World Health Organization. (2007). *Large analysis and review of European housing and health status (LARES): Preliminary Overview*. Copenhagen: WHO Regional Office for Europe.
- Wright, S. (1934). The method of path coefficients. *The annals of mathematical statistics*, 5(3), 161-215.
- Wu, F., & He, S. (2005). Changes in traditional urban areas and impacts of urban redevelopment: A case study of three neighbourhoods in Nanjing, China. *Tijdschrift voor economische en sociale geografie*, 96(1), 75-95.
- Yang, J. T. (2004). Qualitative knowledge capturing and organizational learning: two case studies in Taiwan hotels. *Tourism Management*, 25(4), 421-428.
- Yanmei, L. (2012). Neighbourhood amenities, satisfaction, and perceived livability of foreign-born and native-born US residents. *Journal of Identity and Migration Studies*. 6(1), 115.

- Yin, R. K. (2003). Case study research: design and methods. *Applied social research methods series*. Thousand Oaks, CA: Sage Publications, Inc.
- Yin, R. K. (2014). *Case Study Research: Design and Methods* (5th Ed.). Thousand Oaks, CA: Sage Publications.
- Yoade, A. O. (2015). Physical Characteristics of Core Area of Ile-Ife, Nigeria. *Annals of the University of Oradea, Geography Series/Analele Universitatii din Oradea, Seria Geografie*, 25(2), 137-147.
- Yoade, A. O. and Adeyemi, O. O. (2015). Influence of Inner-City Decay on Residents' Health in Ile-Ife, Nigeria. *Journal of Environment and Earth Science*. 5(18), 137-145.
- Zaid, N. S. M., and Graham, P. (2011). Low-cost housing in Malaysia: A contribution to sustainable development. *Proc., Energy, Environment and Sustainability*. 82-87.
- Zainol, N. N. (2016). A structural model of green cleaning components and requirements for green buildings. Unpublished PhD thesis. Faculty of Geoinformation and Real Estate, Universiti Teknologi Malaysia, Malaysia.
- Zainudin, A. (2012). A Handbook on Structural Equation Modeling. Universiti Teknologi Mara, Kelantan: Center of Graduate Studies.
- Zami, M.S. and Lee, A. (2010) Misunderstanding of Housing and its Influence on the Success of Low-Cost Housing Projects-State of the Art Review. *The Built and Human Environment Review*. 3, 1 - 11.
- Zehlius-Eckert, W. (1998). Species as indicators in nature conservation and landscape planning. *Laufener Seminars*, 8(98), 9-32.
- Zikmund, W. G. (2003). *Business Research Methods* (7th ed.). Orlando, Florida: Thomson-South Western.
- Zikmund, W.G. (2003). *Business Research Methods* (7th ed.). Mason, Ohio: Thomson/South Western.
- Zimmerman, A., and Kibert, C. J. (2007). Informing LEED's next generation with The Natural Step. *Building Research and Information*, 35(6), 681-689.