

Integrating Sustainability in Property Valuation: A Nigerian Perspective

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Abstract

Sustainability in building valuation is a comprehensive way to evaluate the economic, social, and environmental performance of buildings. The review investigates the extent to which sustainability is incorporated in property valuation. A comprehensive literature review focused on the evolution of sustainable development in the built environment, incorporating sustainability features into property valuation. The review approach was adopted by exploring related works and gaps. It covers studies addressing sustainability's impact on the built environment and advancements in green features. The review identifies the growing recognition of sustainability within the built environment and the ongoing shift towards incorporating sustainability principles into regulatory frameworks and valuation practices. However, challenges such as the lack of standardized methodologies, insufficient guidance for valuers, and difficulties translating sustainability metrics into property values persist. The paper emphasizes the importance of collaboration, research, and innovation in overcoming these challenges. The review recommends enhancing stakeholder education to develop a standard valuation framework and incorporate sustainability into educational curricula. The findings underscore continued investment in research, knowledge sharing, and policy reforms to support the integration of sustainable features into property valuation, ultimately contributing to a more sustainable and resilient built environment.

Keywords: *Energy Efficiency, Green Building, Property Valuation, Sustainability, Sustainable Infrastructure.*

Introduction

In contemporary real estate dynamics, sustainability has become determinant across various facets, including property valuation. While traditional valuation methods predominantly focus on financial returns, there is burgeoning awareness of the evolving prominence of sustainability considerations (Ifeoluwa et al, 2021). Integrating sustainability into property valuation holds promise for fostering a more comprehensive understanding of real estate asset value by incorporating environmental, social, and economic dimensions (Luqman et al., 2021).

However, defining sustainability remains a nuanced challenge due to the diverse functions of buildings and evolving user perspectives. BREEAM (Building Research Establishment Environmental Assessment Methodology): Defines sustainability in building valuation as a comprehensive approach to evaluating the environmental, social, and economic performance of buildings. It assigns ratings to buildings based on their adherence to sustainability criteria, such as energy efficiency, healthiness and well-being, pollution reduction, and sustainable site development. LEED (Leadership in Energy and Environmental Design) defines

sustainability in building valuation as a framework for assessing and recognizing buildings that were designed, constructed, and operated with a focus on environmental responsibility and resource efficiency (Myer et al., 2007).

The European valuation standards (EVS) highlight the importance of "green" or "sustainable buildings" that utilize resources more efficiently while offering superior interior working environments and health benefits (Kucharska-Stasiak and Olbińska 2018). This broader definition considers social, ecological, and environmental impacts on the property's life cycle. Within the European Valuation Standards framework, sustainability is comprehensively defined, encompassing environmental, financial, and social criteria (Gonzalez et al, 2023).

The European Group of Valuers' Associations (TEGoVA) has integrated sustainability as a determinant factor in building ranking, assigning it a weight of 10% and recommending the reflection of energy efficacy in the valuation procedure. TEGoVA standards emphasize the impact of "energy costs and efficiency" on market worth, highlighting them as factors that valuers should carefully consider

(Kucharska-Stasiak and Olbińska 2018). Efforts to incorporate sustainability into the valuation of property theory and practice are crucial for the successful integration of sustainable development features in the property and construction sectors (Isang, 2023). However, actors in the built environment have been slow to respond to this challenge (Asaju & Ajayi, 2011). It is argued that incorporating sustainability matters into property appraisal theory and practice is paramount to sustainable development in the property and construction sectors (Lorenz et al., 2016).

The recent surge in attention toward sustainability integration within property value assessment underscores the evolving landscape of the real estate industry (Babawale et al., 2011). This review embarks on an exploration of how sustainability factors are integrated into property valuation and the pivotal influencers shaping value enhancement and decision-making processes (Myers et al., 2007).

The study finds that energy-efficient attributes such as advanced insulation, energy-efficient windows, and renewable energy systems command higher market prices and heightened property values.

Additionally, properties with energy certifications or green building standards are perceived as more valuable by buyers and investors, further solidifying the affirmative connection between energy efficiency and property value (Myers et al., 2007).

In Nigeria, integrating sustainability principles in property valuation encompasses sustainable management practices, construction methodologies, disclosure practices, and housing delivery mechanisms (Ifeoluwa et al., 2021). While strides have been made, barriers persist, including inadequate sustainability education, a lack of incentives, and resistance to cultural shifts within the industry (Luqman et al., 2021). Integrating sustainability into property valuation faces challenges, including the diverse functions of buildings and changing user perspectives (Aliyu and Chunho, 2020).

Odu and Dugeri (2018) used a content survey to evaluate the estate management curricula of nominated federal universities in Nigeria. The study discovered minimal inclusion and recommended the inclusion of sustainable factors into the curriculum of tertiary institutions.

The global discourse is to integrate sustainable development principles with various aspects of learning. In 2005, the United Nations declared the Decade of Education for Sustainable Development (DESD). The absolute goal was to encourage sustainable behavioral alteration through learning. To surmount these obstacles, there's a pressing need to develop valuation methodologies that accurately reflect the benefits of sustainability, prioritizing factors like security, accessibility, adaptability, and community acceptance (Nurick et al., 2015).

Recent studies have underscored a strong correlation between energy-efficient features and increased property values (Isang, 2023). Sustainability has emerged as a fundamental consideration across all aspects of the built environment, including property valuation (Aliyu and Chunho, 2020). While traditional valuation methods primarily prioritize financial returns, the evolving importance of sustainability aspects in the valuation practice is increasingly evident (Perera, 2019). Integrating sustainability into property valuation offers a more comprehensive understanding of real estate asset value by incorporating environmental, social, and economic dimensions (Isang, 2023).

As global efforts toward sustainable development intensify, the property and construction sector roles become paramount. However, progress remains low and gradual in integrating sustainability into property valuation theory and practice, emphasizing the need for concerted action from actors across the real estate spectrum (Lorenz et al, 2016). The growing emphasis on sustainability within property valuation has garnered considerable attention (Oluleye et al., 2021). Examines how to integrate sustainability factors into property valuation and how it will enhance value and decision-making processes within the built environment .

Literature Review

Sustainable Development in the Built Environment

The growing public attention towards sustainability, driven by factors such as climate change and rising oil prices, has spurred industry-wide transformations. Green issues, including sustainability, have permeated the real estate sector, inspiring intensive scientific research (Dixon et al, 2007). The journey towards incorporating sustainable development in the built environment has global concerns about the exhaustion of resources and climate change

intensifying, the urgency to transform the built infrastructure into more environmentally, socially, and economically sustainable entities became paramount. This evolution has not occurred in isolation but rather as a response to broader societal shifts towards greater environmental consciousness and responsibility due to the surge in oil prices and global climate change.

Sustainable development has gained public consideration. Therefore, the transformation on a broader scale through the whole industry has progressed. Sustainability has impacted the real estate industry and inspired the profession to conduct scientific research intensively.

Concept of Sustainability

Brundtland Commission, (1987) defined "Sustainable development as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Sustainability is about steadying the currently unsettling relationship between Earth's two most intricate systems—human culture and the living world. Sustainability is the simultaneous pursuit of economic prosperity, environmental quality, and social equity." Chester and Woofar (2005).

While sustainable development is development that does not exploit or exhaust resources, and that does not destroy the ecological balance of the environments in which it takes place. Rockström et al (2009): "Sustainability is the capacity of the environment and human development to coexist. These concepts collectively underscore the significance of balancing ecological protection, economic prosperity, and social equity for current and future generations, aligning with contemporary perspectives on sustainability.

Dixon et al (2007) wrote on A Green Profession, Royal Institution of Chartered Surveyors RICS members with their sustainable agenda. They define sustainable development as an evolving process of achieving sustainability. Qualitative research was employed to identify built environment terms such as Corporate Socially Responsible Investment, CSR, Socially Responsible Investment, SRI, Responsible Property Investment, and Sustainable Commercial Property Investment, SCPI, which are all aspects of sustainability.

Bienert et al (2010) report on the Market Impact of Energy Certification Improvement. Delves into integrating

sustainability indicators into property valuation. The team developed solid modified valuation approaches, checked through pilot project valuations, and received holistic reviews by experts' associations in property valuation such as RICS, and TEGOVA. And disseminate the developed standard to the market. (Abidoye et al, 2016). Research on residential property value determinants; through a Professional Perspective.

The study identifies and evaluates the professional perspective of the various determinants of value. The analysis response reveals that the location of the property, characteristics of the neighborhood, size, security architecture of the neighborhood, state of repair, and age of the property are key variables to property value in the Lagos metropolis. Even though they identified most of the determinants of property value, sustainability aspects were left out, hence the need to identify sustainability issues and incorporate them into determinants of property value cannot be over-emphasized.

Sustainability and the Built Environment

Professionals within the built environment recognize the pivotal role of sustainable

development in shaping the relationship between professions and society. In today's world, the built environment is a critical nexus between human civilization and the natural world.

Sustainable development encompasses social, economic, and environmental dimensions, with buildings significantly impacting all three. Initiatives aimed at achieving sustainable development have gained traction globally, with organizations like the Council for the Regulation of Engineering in Nigeria mandating sustainability practices among chartered members by imposing strict regulations that all chartered members should demonstrate their commitment and practice to sustainable development (Kimmet, 2016).

Advancements in Sustainable Construction

Nigeria reflects what is obtainable in other developing countries, sustainable building is no longer regarded as a fringe movement but a dynamic force driving industry evolution. From humble beginnings characterized by low awareness and sporadic implementation, sustainable construction practices have steadily gained ground, propelled by technological advancements and shifting societal norms (Isang, 2023).

Recent years have witnessed significant advancements in sustainable development in Nigeria, with distinctive periods of development identified by Isang (2023). They present a comprehensive sustainable construction (SC) review in Nigeria over a decade, from 2012 to 2022.

Three distinct periods of development were identified; the period of inception (2012–2016), the transition period (2016–2020), and the progression period (2020–2022). During the inception period, there was a low understanding and implementation of SC, attributed to its infancy in Nigeria. However, there was a gradual increase in awareness and subconscious implementation during this time. The period experiences a shift from traditional construction methods to sustainable construction, with energy efficiency requiring education, training, and effective implementation of regulations.

Notably, from 2016 to 2020, there was significant progress in sustainable development, including the application of data mining. The advancement period saw moderate levels of SC implementation, though challenges such as the absence of historical data persisted. Successful green building (GB) projects were identified, showcasing notable achievements in the

field. The paper concluded that SC in Nigeria has evolved positively, with significant achievements by World Green Building Council (WGBC) membership and diverse applications during the COVID-19 pandemic. It highlights practical implications for academia, researchers, and practitioners, emphasizing the importance of understanding SC developments for education, research, and professional practice in the construction industry.

Sustainability Integration in Property Valuation

Efforts to incorporate sustainability into property valuation practices have gained momentum. Studies like that of Lorenz and Lützkendorf (2008), emphasize the role of valuation professionals in advocating for sustainable buildings and educating clients on their benefits. Babawale and Oyalowo (2011) highlight the increasing awareness among Nigerian values regarding the importance of sustainability in valuation, particularly in considering economic, social, and environmental aspects.

One critical front in the battle for sustainability lies in the valuation of properties. Valuation professionals wield immense influence in shaping market perceptions and behaviors, implementing sustainability principles pivotal (Lorenz and

Lützkendorf, 2008). By integrating sustainability considerations into valuation practices, such as highlighting the long-term benefits of sustainable buildings and incorporating sustainability metrics into property assessments, valuers can catalyze the widespread adoption of environmentally responsible practices within the built environment.

Lorenz and Lützkendorf (2008) research the Theory and Practice of Sustainability in Property Valuation. The paper recommends valuers with suggestions on incorporating sustainability issues in valuation reports. They employed a survey approach and noted that, for a broader market penetration of sustainable construction, professionals and the valuation process must play a key role, by advocating and enlightening the benefits of sustainable buildings, educating clients on gradual changes and perception in favour of sustainable properties, reduction of risk by sustainable designs of parameter imputes in valuation reflected in the property price estimate.

The researcher found that the justification of incorporating sustainability issues into property valuation includes; Untapped market potentials of sustainable property investment products, outperformance of

sustainable buildings to conventional ones in environmental, social, and financial aspects, the capability of the valuer to justify property price estimate reflecting sustainability issues in valuation reports and creating a database of sustainability properties that the valuer can underpin his choice to allocate a 'valuation bonus' or a valuation reduction to the unsustainable conventional one.

Deeyah and Akujuru (2020) review the features that guide the selection of valuation techniques for land contaminated by oil spills in the Niger Delta to promote environmental sustainability. It critiques current methods and suggests improvements, emphasizing the considerations estate surveyors and valuers should prioritize. A survey of 60 professionals revealed that the preferred method often leads to inadequate compensation, harming local communities and their relationship with oil companies.

The study of the Bodo Oil Spill case highlights the risks of relying on predetermined compensation rates, which contribute to environmental degradation. The paper recommended adopting valuation methods tailored to specific contaminated properties and considering the duration of impact for sustainable outcomes.

Babawale and Oyalowo (2011) The paper examines the perceptions of real estate valuers and sustainability in real estate valuation in Nigeria. Through a survey of 160 professional surveyors and valuers, respondents assess the significance of various features of sustainability on the market value of a hypothetical property, considering economic, social, and environmental aspects. The study reveals a surge in responsiveness to integrate sustainability into real estate valuation practices.

However, respondents predominantly focus on social aspects instead of economic and environmental factors. They suggest valuers should enhance their understanding of sustainability to account for all three dimensions effectively. Investors, property occupiers, the government, and estate surveyors and valuers were identified as key drivers of sustainability initiatives in the country.

Warren-Myers (2012). Research on, Valuation Perspective on the Value of Sustainability in Real Estate. The study examines previous studies on the relationship between sustainability issues and real estate market value. The review between sustainability and market value in real estate was analyzed. No concrete

evidence has been provided on the establishment of normative theories on sustainability value in the practice of valuation, provision of guidance notes, and information banks incorporating sustainability in real estate valuation is lacking. Sustainability issues are still evolving, hence there is room for improvement in this article by accumulating a database of sustainable value matrices that other valuers can reference.

In Jayanth's (2013) Examine the Effect of Green Labelling on Prices of Residential Property. The researcher investigated the significance of residential buildings with green features to property buyers. Using the hedonic price model to examine the relationship between green features and property price, the study finds that residential property price is impacted by green features. Clients prefer to pay more for properties with green features recognized by HK –BEAM and HK-GBC, the Sales price has a percentage increase of 3% to 6.4%.

While Nurick's (2015) examines Integrating Green Building Features and Initiatives in Commercial Property Valuation. Acceptance of Building with Green Features in the South African Property

industry, though still at its infancy level of awareness by the South African valuers. The researcher conducted semi-structured interviews with diverse levels of experience by Cape Town valuers, and an online survey was conducted by a sample of South African valuers. Simulations were made to define the influence of Green Building Features Initiatives on property values. Findings reveal that though the awareness level of green building is still low among South African valuers, they have recognized the significance of integrating building with green features initiatives into the valuation process.

Halberd (2015). Reviewed commercial real estate property value and sustainability relationship and proffer suggestions for valuers in recognizing sustainability features as part of the property valuation process. The paper studied the relationship between sustainability and property value in commercial real estate and provided some suggestions for valuers to recognize sustainability features as part of the property valuation process.

Factors that impacted commercial property value were identified. A survey of Singapore's stakeholders in the real estate industry was conducted. They found that

stakeholders generally recognize the importance of sustainability as it relates to economic factors such as lower costs and financial improvement of assets.

Though acknowledgments of social benefits were acknowledged, their conversion into financial value is more intricate. Further quantitative and market studies are essential to evidence the link between the sustainable characteristics of buildings and their property value. Guidelines on data collection and storage were provided, and current valuation parameters to incorporate sustainability features, financial benefit as well as the need for continual learning and development in the area of sustainability have been proposed in the study.

Challenges and Opportunities in Sustainable Property Valuation

Despite progress, challenges persist in incorporating sustainability into property valuation. Despite the strides toward sustainability integration, significant challenges remain on the path to mainstream adoption. The absence of standardized methodologies, normative theories, and comprehensive guidance for valuers poses a vital hurdle. Yet, within these challenges lie opportunities for innovation and collaboration. Through concerted efforts to

link research and practice, stakeholders can unlock new avenues for sustainable property valuation that yield both environmental and financial dividends (Halburd, 2015; Warren-Myers, 2012) noted the absence of normative theories and guidance notes for valuers, suggesting the need for improved research and information dissemination. Underscores the importance of measurable and market studies to indicate the link between sustainable building characteristics and property value.

Oluleye (2021). Investigated the barriers hindering the adoption of sustainable housing delivery in Nigeria, focusing on metropolitan Lagos. 91 structured questionnaires were administered to housing developers, the study identified 18 critical barriers, among which deficiencies in motivation by the government, slack enforcement of sustainability, and absence of a database on sustainable building technologies emerge as top challenges.

Factor analysis reveals six related barriers grouped into costs and technology, awareness and knowledge, policy implementation, economic, and client/human barriers. The findings underscore the significant impact of the lack of sustainable technology and its cost

implications on housing delivery in the study area. The study contributes to the ongoing discourse by providing insights into the barriers to sustainable development in Nigeria. And offers proposals for practitioners, developers, and policymakers to address the challenges. Recommendations include mitigating the identified critical barriers and suggesting further research to explore other contributing effects that pose barriers to sustainable housing delivery.

Methodology

This paper reviewed previous works to navigate the complexities of sustainable property valuation, it adopted a rigorous review of existing literature. A systematic search strategy was implemented across academic databases of Google Scholar and Web of Science, utilizing keywords about sustainable development, and integration of sustainability features into property valuation.

Additionally, manual searches of reference lists from retrieved articles were conducted to ensure comprehensive coverage of relevant literature. Inclusion criteria encompassed studies addressing the evolution of sustainability in the built environment, the advocacy of green

features, and the incorporation of sustainability issues into property valuation practices with a focus on challenges, opportunities, advancements, and initiatives. Following the initial screening of titles and abstracts, eligible articles underwent full-text assessment, with selection resolved. Data were extracted from information on sustainable development trends, valuation methodologies, and barriers to integration. Data extracted provided insights into the evolution of sustainability and its implications for property valuation, highlighting patterns, trends, and recommendations across studies.

The methodology systematically gathers literature on the evolution of sustainability in the built environment and its integration into property valuation practices. This review contributes to a comprehensive understanding of the complex interplay between sustainability, the built environment, and property valuation.

Findings

The literature review underscores the growing recognition of sustainability's importance within the built environment professions. From the impact of buildings on social, economic, and environmental

factors to sustainability principles integration into regulatory frameworks, there is a clear acknowledgment of the need for sustainability.

- I. Sustainability evolution within the built environment reflects broader societal shifts towards environmental consciousness. Initiatives such as green professions, sustainable investment frameworks, and the embedding of sustainability indicators into property valuation demonstrate a growing commitment to sustainability principles.
- ii. While progress has been made in integrating sustainability into property valuation practices, significant challenges remain. These include the lack of standardized methodologies, insufficient guidance for valuers, and the complexity of translating sustainability metrics into property values.
- iii. Nigeria has witnessed significant advancements in sustainable construction practices, driven by technological innovation, regulatory reforms, and increasing awareness among industry stakeholders. However, challenges such as the lack of historical data and the need for

further research persist.

- iv. The methodology employed in this literature review – secondary data analysis – provides an overview of related studies on sustainability in the built environment. By synthesizing insights from a diverse range of sources, this study offers a valuable understanding of the current state of knowledge and areas for future research (Adebayo, 2016).

Conclusion and Recommendations

This paper highlights the integral role of sustainability in property value. By considering various dimensions such as energy efficiency, green building certifications, sustainable infrastructure, financial incentives, and market perception, policymakers, real estate professionals, and investors can make informed decisions to incorporate sustainability into property valuation processes.

Understanding the positive impact of sustainability not only benefits the environment but also fosters economic advantages through increased property values and sustainable community development. It also explained the incorporation of sustainability issues in property valuation and the importance of

value in green building valuation. Qualitative surveys reveal the rising discourse of sustainability/green issues within the real estate industry. However, quantifying the impacts of green features is a big challenge. With limited data on green buildings, finding comparable properties with similar features becomes a challenging task. The incorporation of green issues into valuation shall give an added value for green buildings, this is necessary and helpful for sustainability.

Based on previous studies, green features integration into valuation practice is still in its infancy. Yet, valuers and professionals in the construction industry need to share information and discuss with stakeholders within the real estate industry, and government at national and international levels by incorporating green features, such as energy efficiency into valuation reports, through symposiums, conferences, and academic papers.

Furthermore, public awareness of green buildings can be enhanced by workshops, training, and publicizing by various media outlets. Government or regulatory bodies should play their role, by providing training, guidelines, or a platform to promote sustainability and see to its enforcement.

The findings from this literature review highlight the progress, challenges, and opportunities in integrating sustainability into the built environment. By prioritizing sustainability principles, promoting collaboration, and investing in research and innovation, stakeholders can pave the way for a more sustainable and resilient built environment for future generations.

- I. Stakeholders within the built environment should continue to prioritize sustainability in their practices. This includes adherence to sustainability regulations, adoption of green building standards, and promotion of sustainable design and construction techniques.
- ii. To further advance sustainable development, stakeholders must continue to innovate and collaborate. This includes supporting research efforts, investing in sustainable technologies and practices, and advocating for policy reforms that incentivize sustainable development.
- iii. To address these challenges, stakeholders should prioritize capacity-building initiatives for valuers, develop standardized sustainability valuation frameworks, and enhance collaboration between

researchers, policymakers, and industry professionals.

- iv. To capitalize on these advancements, stakeholders should continue to invest in research and development, promote knowledge sharing and capacity building, and incentivize sustainable construction practices through policy reforms and market incentives.
- v. The methodology employed in this literature review – secondary data analysis – provides a comprehensive overview of existing research on sustainability in the built environment. By synthesizing insights from a diverse range of sources, this study offers valuable insights into the current state of knowledge and areas for future research.
- vi. Future research efforts should build upon this foundation by conducting primary research, developing interdisciplinary collaborations, and exploring emerging trends and technologies in sustainable construction and property valuation. Additionally, efforts should be made to disseminate research findings to practitioners and policymakers to inform evidence-based decision-

- making.
- vii. Property professionals should be educated with sustainability issues to improve their understanding of green buildings and their performance in economic and environmental aspects.
- viii. Regulators, policymakers, and professionals should be innovative by improving awareness of the effect of green buildings on value so that valuers can detect the market trends and flow with them.
- ix. The sustainability factor should be included in the tertiary institution's curriculum.

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