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Valuation of Environmental, Social and Governance (ESG) Factors as Key Factors in Real Estate Investment Decision: The Valuers' Perspective

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Abstract: *Environmental, social and governance (ESG) factors appears to be key factors in real estate investment decision and gaining acceptance in the real estate sector in Nigeria. Their impact on real estate valuation and research in Nigeria is one that has been brought to lime light and has called for study. There is need to assess the level of awareness and understanding among Valuers regarding the importance of ESG factors in real estate investment decision making, identify the valuation techniques and methodologies used, identify the challenges faced by Valuers in the integrating ESG factors into their valuation practices and to proffer solutions on how to overcome them. The research is more of mixed-method. In its design it incorporates both quantitative and qualitative methods to obtain a comprehensive understanding of the topic. The method of analysis was descriptive and inferential. It was done using simple percentages, means rank with the use of SPSS, statistical software. The findings from the result collected from 435 Estate Surveyors and Valuers (ESVs) in Nigeria shows some classes of properties where ESG factors can be applied as well as some factors that influence it. Also identified was the impact of ESG factors on long term sustainability and how they align with sustainability goals. This research indicates the dire need to incorporate environmental, social and governance in valuation and real estate investment decision. The ability to shed light on the valuation of environmental, social and governance as key factors in real estate investment decision is what this paper showcases.*

Keywords: environmental, governance, investment, real estate, social and valuation

INTRODUCTION

The growing investor interest in ESG factors reflects the view that environmental, social and corporate governance issues including risks and opportunities can affect the long-term performance of issuers and should therefore be given appropriate consideration in investment

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decisions, Boffo and Patalano (2020). ESG factors appear to have emerged as crucial considerations in investment decision-making processes, particularly in the context of real estate investments. Real Estate Valuers play a vital role in assessing the value of properties and providing guidance to investors. However, the integration of ESG factors into their valuation practices is appears to be relatively new and evolving. This research paper aims to examine the Valuers' perspective on the valuation of ESG factors in real estate investments, including their awareness, understanding, and challenges encountered. By exploring the Valuers' perspective, this research seeks to contribute to the ongoing discussion on the importance and implementation of ESG considerations in the real estate industry.

Environmental, social, and governance (ESG) factors are increasingly being recognized as key considerations in real estate investment decision-making hence, Abhinandan, Abhishek, Sahana and Divyashree (2023) noted that same have become increasingly relevant in investment decisions as investors prioritize companies with sustainable practices adding that it has also become increasingly important considerations for investors in recent years. Traditionally, the primary focus of real estate investment valuation has been on financial performance indicators, such as rental income, capital appreciation, and occupancy rates. However, there is a growing understanding that ESG factors can significantly impact the long-term value, sustainability, and risk profile of real estate assets.

ESG practices are becoming an increasingly significant topic for businesses and a vital investment criterion for real estate capital sources, Menist, (2023). Menist (2023) further stated that ESG initiatives are gaining significant attention among regulators due to a rise in the necessity of and public interest in sustainability. No doubt the significance of considering ESG factors in real estate investment decision-making lies in several key aspects such as risk management, sustainability, stakeholder engagement and investor demand.

According to Aeon Investments (2023), emphasis is placed on ESG and it is becoming speedily visible that the trend does not only stem from environmental factors; social and governance pillars are also proving to be crucial parts of real estate management. No doubt ESG factors can help assess and manage potential risks that may impact real estate assets. Environmental risks, such as climate change and natural disasters can have adverse effects on property value and resilience. Social risks, such as community engagement and tenant satisfaction, play a crucial role in rental income stability. Governance risks, such as legal compliance and ethical conduct, are also essential for minimizing reputational and legal liabilities.

With the increasing global focus on sustainability, integrating ESG factors in real estate investment decision-making is crucial. Inefficient resource use, high carbon emissions, and poor waste management can affect the long-term financial performance and marketability of real estate assets. Investors are recognizing the importance of energy efficiency, renewable energy sources, green building certifications, and sustainable practices to future-proof their investments. Alavidehkordi, Rautio and Stancu (2021) noted that numerous countries are adopting sustainable construction techniques and have in earnest begun using green building materials. They added that it has also become increasingly important to have sustainable

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facility management, sustainable real estate valuation techniques, and a significant movement toward sustainable real estate investments on the investment side.

ESG factors enable real estate investors to engage with and respond to the needs of various stakeholders, including tenants, employees, local communities, and regulatory bodies. Creating a positive social impact through responsible and inclusive business practices can enhance the reputation and desirability of real estate assets, attracting quality tenants and mitigating potential conflicts or issues.

Sustainable investment, including socially responsible, ethical, and ESG (environmental, social and governance) investing, is increasingly gaining a foothold in mainstream financial markets, Inderst and Stewart, (2018). There appears to be also a growing demand from institutional investors, funds, and other market participants for ESG-integrated real estate investment opportunities. Investors increasingly prioritize assets with robust ESG credentials, as it aligns with their sustainability strategies, risk mitigation goals, and regulatory requirements. Incorporating ESG factors in valuation and decision-making processes is believed to attract a wider pool of investors, leading to improved liquidity, access to capital, and potential financial returns. More so, it has been stated that (ESG) issues integration means ESG factors are systematically fed into the valuation models and investment decisions of analysts and portfolio managers, Inderst and Stewart, (2018).

Scholars such as Da Cunha and Coimbra (2021) have argued that the application of ESG standards on real estate (notably by governments and developers in many developed countries) has shown that this asset class is also relevant when these guiding principles are being applied. Da Cunha and Coimbra (2021) further stated that awareness is growing that real estate can have a significant social impact either through the form of rehabilitation of public spaces (indirectly attributing value to existing real estate), affordable housing, social housing, and care centers, or through an environmental focus investment on new buildings such as green buildings. The inclusion of ESG factors in real estate investment decision-making no doubt has become increasingly significant due to their potential impact on risk management, sustainability, stakeholder engagement, and investor demand. Hence, Valuers has a crucial role to play in assessing and quantifying these factors, integrating them into their valuation models, and providing investors with a holistic understanding of the long-term value and performance of real estate assets.

With above in mind, this research was designed with the to evaluate the valuation of Environmental, Social, and Governance (ESG) factors as key considerations in real estate investment decision making, from the perspective of Valuers, with a view to enhancing sustainability and long-term value creation. To achieve the aim the Objectives will be; to assess the level of awareness and understanding among Valuers regarding the importance of ESG factors in real estate investment decision making; analyze the valuation techniques and methodologies used by Valuers to incorporate ESG factors into the assessment of real estate assets; evaluate the impact of ESG factors on the financial performance, risk management, and long-term value creation of real estate investments and to identify the challenges faced by

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Valuers in integrating ESG factors into their valuation practices and provide solutions to overcome them.

2.0 Literature Review:

The valuation of environmental, social, and governance (ESG) factors in recent times, (Gao et al., 2022, Chen, Song, and Gao 2023) and in relation real estate – corporate real estate management, (Izyumov 2023) have gained significant attention in recent year hence. More so from a real estate perspective, Environmental issues are especially important as the built environment contributes approximately 39% of the world's carbon dioxide emissions and 40% of the energy consumption, (Preston, 2022). Environmental, social, and governance (ESG) standards are being utilised more often to evaluate how a company's operations, financial performance, and investor appeal are affected by its social, ethical, and environmental practices, (IVSC, 2021). Mohammad and Wasiuzzaman, (2012) noted that investing has gained considerable traction in recent years, underpinned by growing interest from investors at both the international and domestic levels. Investors no doubt have over the years increasingly recognised the importance of sustainability and responsible business practices, the real estate sector is no exception, Jones Asset Management, (2023). As the world battles with climate change, social inequality, and corporate governance issues, there is an increased recognition that these factors play an important role in the determination of the value and sustainability of real estate assets in the long-term. As a result, practitioners and researchers alike over the years have come up with theoretical frameworks and models that will incorporate ESG factors into the process of valuation or valuation process

Theoretical frameworks provide a conceptual basis for a deeper understanding how ESG factors can impact the value of real estate. These frameworks recognize the interdependence of economic, social, and environmental factors. In addition to the above stated, they highlights the need for a holistic approach to valuation. Examples of such theory is the Triple Bottom Line (TBL) theory, can be seen as an accounting framework, which differs from traditional reporting frameworks as which includes ecological (or environmental) and social measures that can be difficult to assign appropriate means of measurement, Slapper and Hall (2011). In real estate, it appears that TBL theory seems to suggest that real estate value may be assessed based on its financial performance (economic), its impact on the community and stakeholders (social), and its environmental sustainability. The TBL theory emphasizes the importance of considering the broader societal and environmental impacts of real estate investment decisions hence; it refers to economic, environmental, and social value of an investment and is related to the concept of sustainable development, (Hammer, 2016).

The second one is Sustainable Development Theory (SDT). This framework emphasizes the need for real estate to contribute to sustainable development goals. So, a building project (real estate project) can be regarded as sustainable only when all the various dimensions of sustainability (environmental, economic, social, and cultural) are dealt with, (Trinkūnas, 2018). Valuation models under SDT framework aim to quantify the positive and negative impacts of ESG factors on the built environment. According to Ionescu *etal* (2019), it has been found out

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that from the ESG factors, the governance factor seems to have the most important influence on the market value of some selected companies, regardless of the geographic region where they are located. SDT framework considers aspects such as energy efficiency, water conservation, waste management, social inclusivity, and biodiversity preservation. The valuation process takes into account the potential societal benefits and the cost of environmental degradation, thus allowing for a balanced assessment. In a study by Loren and Lutskendorf (2008) it has been found out that the main reasons for integrating sustainability issues into property valuation are as follows: more sustainable patterns of behaviour are urgently necessary to sustain the viability of the Earth's ecosystems; a huge untapped market potential exists for sustainable property investment products and consulting services; sustainable buildings clearly outperform their conventional competitors in all relevant areas (i.e. environmentally, socially and financially); and reflecting sustainability issues in property price estimates.

Conversely, models provide useful instruments and approaches for adding ESG considerations to the valuation procedure. In order to evaluate the non-financial and financial effects of ESG issues on real estate value, these models frequently rely on data analysis and quantitative methodologies. To incorporate ESG issues, for example, the widely used Discounted Cash Flow (DCF) model - Discounted cash flow (DCF) is a cash flow summary that it has to be adjusted to reflect the present value of money and (DCF) analysis can be applied to investment project appraisal and corporate valuation, (Arumugam, 2007). Hence, DCF can be modified by adding variables like energy efficiency, carbon emissions, and social impact indicators into cash flow predictions.

Other Models that can be applied are:

Capital Asset Pricing Model (CAPM): Capital Asset Pricing Model (CAPM) explains existing relationship between risk and return in efficiency markets, Laubscher (2002). With this in mind, this model should be able to incorporate the risk and return associated with ESG factors in real estate valuation. It should in addition, consider the financial performance of a property along with ESG-specific risks that may affect its long-term value. More so, the CAPM can modify the needed rate of return to account for ESG-related risks and rewards by taking into consideration variables including social inequality, corporate governance procedures, and the hazards associated with climate change.

Environmental Performance Index (EPI): This is a global metrics on environmental ranking on high priority environmental issues. It provides a framework for greater analytic rigor in environmental policymaking, (Yale Center for environmental law and policy 2018). Here, the environmental effect of real estate investments is expected to be measured using this model. In this case, it should evaluate things like water use, waste management techniques, energy utilisation, and greenhouse gas emissions. Investors are able to compare and assess the environmental performance of various real estate assets according to the EPI.

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Social Return on Investment (SROI): This is a methodology for quantifying and accounting for this much larger idea of value which takes into consideration social, environmental, and economic costs and benefits in an effort to promote wellbeing and lessen inequality and environmental damage, Nicholls, et al (2009). This model when applied in real estate investment should quantify the social impact of such investment. It incorporates ESG factors such as community engagement, affordable housing initiatives, job creation, and infrastructure development. SROI assigns a monetary value to the social benefits generated by a property, allowing investors to understand its social return on investment. This model helps prioritize investments that deliver positive social outcomes, leading to enhanced value creation.

Corporate Governance Index (CGI): Corporate Governance according to OECD (2004) is the procedures and processes according to which an organization is directed and controlled. The models' focus is on how real estate businesses' governance procedures affect the generation of value. It assesses things like executive pay, composition of board, accountability, and openness. Every corporation receives a score from the CGI that represents the calibre of its governance processes and structure. Better governance is indicated by higher ratings, which may have a beneficial effect on the value of the company's owned and managed real estate assets. According to Alsoboa (2016), Corporate Governance Index is comprehensive quantitative measures of corporate governance index is constructed for "SCL on A SE" which contains five sub-groups, namely: General Assembly Meetings (GAM), The Board of Directors (BDoSC), Shareholder Rights (SR), Disclosure and Transparency (DT), and "Other General Items" (O GI). This index is expressed as follows:

CG1 = BDoSC + GAM + SR + DT + OGI.

In addition, there appears to have been no clear or existing studies/literatures examining the impact of ESG factors on real estate valuations however, some literatures which on properties – commercial buildings and in relations to green concepts and sustainability exists.

Geres, (2022), have found multiple reasons why sustainability could lead to improved financial performance of direct real estate, the bricks and mortar. Investors find it important that sustainable commercial buildings have longer economic lives, lower market risks and a decreased likelihood of becoming obsolete, (Eichholtz, Kok, & Quigley, 2010).

Going green, it has been observed that earlier literatures focused mainly at the asset level (e.g. offices) by examining how energy certificates affect sales prices, occupancy rates, and rents (e.g. Reichart et al., 2012; Miller, Fuerst & McAllister, 2011, Eichholtz et al., 2010; Spivey, & Florance, 2008;). Most discovered that green real estate investments perform better than their non-green counterparts.

In relation to real estate and valuation, The International Standard Committee (2021) has argued that; there are no think tank studies or white papers discussing the impact of ESG on real estate valuation; it is to be measured from the market and is to reflect the actions of market participants, buyers, sellers, tenants and landlords, developers and lenders. The impact of ESG

will change over time as the global market for it develops and as people involved in it have a deeper understanding of it.

According to Royal Institution of Chartered Surveyors, RICS, (2011), some ESG analysis involves a thorough examination and disclosure of non-financial issues, or those that have no monetary value. It went on to say that while sustainability and ESG should be taken into account for all reasons, appraisals for regulated purposes can require special consideration. It might be necessary for the Valuer to clearly state the empirical foundation for their beliefs on sustainability and ESG. Examples include Secured lending and financial reporting. Here all valuation terms of engagement, required extent of inspection and investigation, must be carried out in accordance with Red Book Global Standards VPS 1. In reporting Valuer should demonstrate how they have considered sustainability and ESG in their approach, calculations and commentary.

In case of method to be adopted, If the guidance note does not specify otherwise, the Valuer is ultimately in charge of choosing the approach(es) and method(s) to be employed in each valuation assignment. The guidance note examines commonly used models and how they interact with sustainability and ESG aspects; however, it does not offer best practices for the valuation strategy or process.

The impact of environmental, social, and governance (ESG) factors on real estate valuation cannot be found in think tank studies or white papers; instead, it must be measured from the market and take into account the activities of buyers, sellers, tenants, landlords, developers, and lenders. The effects of ESG will change over time as the global market for it develops and as people involved in it have a deeper understanding of it. When valuing real estate, Valuers might take into account the effects of ESG using one or more of the three recognised methods.

METHODOLOGY

To assess the valuation of Environmental, Social and Governance (ESG) factors in real estate investment decision making from a Valuer's perspective, mixed-methods research design was employed. This design incorporates both quantitative and qualitative methods to obtain a comprehensive understanding of the topic. A structured questionnaire was developed gather quantitative data from Real Estate Valuers. 5 point likert scale e.g. strongly agree (SA), agree (A), neutral (N), disagree (D) and strongly disagree (SD). The survey includes questions related to the importance of ESG factors in investment decision making, current practices, challenges faced and perceived valuation impacts. The research design includes survey as well as interview. Structured questionnaire were distributed to Estate Surveyors and Valuers. The sample selected was a stratified sampling technique to ensure diversity in terms of regions, property types and firms. Online survey platforms (google form) or email distribution including hard copy questionnaires were used for data collection. A purposive sample of Estate Surveyors and Valuers were interviewed especially the ones with expertise in ESG factors and real estate valuation. The methods of analysis were descriptive and inferential. Descriptive statistics were

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used to determine frequency distributions, mean scores and standard deviations for different variables related to ESG factors. An inferential statistical test such as mean rank was used.

Data Presentation

BACKGROUND INFORMATION OF RESPONDENTS

The information shows the background information of the respondents and this include: gender, highest educational qualification, professional cadre, registered estate surveyor and valuers, years of experience.

Table 1

Gender	Frequency	Percentage
Male	255	58.6
Female	180	41.4

Highest educational qua.	Frequency	Percentage
HND/BSC/BTECH	285	65.5
MSC/MTECH	80	18.4
PHD	70	16.1

Professional cadre	Frequency	Percentage
Probationer	300	68.9
Associate	100	22.9
Fellow	35	8.0

Registered ESV	Frequency	Percentage
Yes	320	73.6
No	115	26.4
Years of Experience	**Frequency**	**Percentage**
0-5	240	55.2
6-10	120	27.6
11-15	50	11.5
16 & above	25	5.8
Total	**435**	**100.00**

Source: Field survey, 2024

The information in table 1 revealed the demographic information of respondents in this order; there were more male respondents than female respondents which could be due to high percentage of male in the real estate sector. According to level of educational qualification,

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65.5% of the respondents were HND/BTECH Holders which comprises of the high percentage of respondents; this was followed by MSC/MTECH while PHD Holders ranked as the least. It was also revealed that a high percentage of the respondents were registered estate surveyors and valuers while a high percentage of the respondents had 0-5 years of experience followed by 6-10, 11-15 and 16- above respectively.

Table 2: Class of properties with ESG Factors

Gender	Frequency	Percentage
Residential	106	24.4
Commercial	79	18.2
Industrial	68	15.6
Retail	34	7.8
Mix use	69	15.9
Hospitality	45	10.3
Health care facilities	34	7.8
Total	**435**	**100.00**

Source: Field survey, 2024

The information in table 2 revealed the class of properties with ESG factors, residential properties ranked 1st with a percentage of 24.4%, commercial properties ranked 2nd with percentage of 18.2%, mix use ranked 3rd with a percentage of 15.9%, industrial properties ranked 4th with percentage of 15.6%, Hospitality ranked 5th with a percentage of 10.3%, health care services and retail properties ranked 6th with percentage of 7.8%.

Table 3: Factors influencing ESG in Residential property

S/N	Factors/variable	SA	A	N	D	SD	Mean	Rank
1	Energy Efficiency	241(55.4)	156(35.9)	38(8.7)	-	-	4.47	2nd
2	Water Conservation	217(49.9)	218(50.1)	-	-	-	4.49	1st
3	Indoor Air Quality	179(41.1)	180(41.4)	38(8.7)	38(8.7)	-	4.15	3rd
4	Community Engagement	96(22.1)	173(39.8)	140(32.2)	26(5.9)	-	3.77	4th

Source: Field survey, 2024

The information revealed that water conservation ranked 1st with mean score of 4.49, energy efficiency ranked 2nd with mean score of 4.47, indoor air quality ranked 3rd with mean score of 4.15, community engagement ranked 4th with mean score of 3.77. The identification of the factors appears to be in line with that of Ifediora and Igwenagu (2024) in work; Identifying Environmental, Social and Governance (ESG) Factors as Key Factors in Residential and Commercial Properties/Real Estate Investment Decision.

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Table 4: Factors influencing ESG in commercial property

S/N	Factors/variable	SA	A	N	D	SD	Mean	Rank
1	Energy Efficiency	258(59.3)	177(40.7)	-	-		4.59	1st
2	Water Conservation	179(41.1)	151(34.7)	105(24.1)	-		4.17	3rd
3	Sustainable sourcing	141(32.4)	172(39.5)	95(21.8)	27(6.2)		3.98	4th
4	Waste management	259(59.5)	176(40.5)	-	-	-	4.59	1st
5	Employee safety and health practices	257(59.1)	170(39.1)	8(1.8)	-	-	4.57	2nd

Source: Field survey, 2024

The information in the table above revealed that energy efficiency and waste management ranked 1st with mean score of 4.59, employee safety and health practices ranked 2nd with mean score of 4.57, WC ranked 3rd with mean score of 4.17, sustainable sourcing ranked 4th with mean score of 3.98. The identification of the factors in case of commercial properties appears to be in line with that of Ifediora and Igwenagu (2024) in work; Identifying Environmental, Social and Governance (ESG) Factors as Key Factors in Residential and Commercial Properties/Real Estate Investment Decision.

Table 5: Factors influencing ESG in industrial property

S/N	Factors/variables	SA	A	N	D	SD	Mean	Rank
1	Energy Efficiency	343(78.9)	95(21.8)	-	-	-	4.81	1st
2	Water Conservation	259(59.5)	176(40.5)	-	-	-	4.59	2nd
3	Waste Management	292(67.1)	105(24.1)	-	38(8.7)	-	4.49	3rd
4	Indoor Air Quality	240(55.2)	157(36.1)	38(8.7)	-	-	4.46	4th
5	Green Certification	141(32.4)	181(41.6)	56(12.9)	-	-	3.67	6th
6	Community Engagement	243(55.9)	167(38.3)	-	25(5.7)	-	4.44	5th

Source: Field survey, 2024

The information revealed that energy efficiency ranked 1st with mean score of 4.81, water conservation ranked 2nd with mean score of 4.59, waste management ranked 3rd with mean score of 4.49, indoor air quality ranked 4th with mean score of 4.46, community engagement ranked 5th with mean score of 4.44, green certification ranked 6th with mean score of 3.67. The identification of the factors in case of industrial properties appears to be in line with that of Ifediora and Nwosu (2024) in work; Environmental, Social and Governance (ESG) Factors as Key Factors in Industrial and Retail Properties/Real Estate Investment Decision.

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Table 6: Factors influencing ESG in Hospitality

S/N	Factors/variables	SA	A	N	D	SD	Mean	Rank
1	Energy Efficiency	257(59.1)	88(20.2)	89(20.5)	-	-	4.38	5th
2	Water Conservation	178(40.9)	259(59.5)	-	-	-	4.43	4th
3	Waste Management	218(50.1)	217(49.9)	-	-	-	4.50	3rd
4	Community Engagement	256(58.9)	169(38.9)	10(2.29)	-	-	4.57	2nd
5	Employee Wellbeing	151(34.7)	177(40.7)	107(24.6)	-	-	4.10	6th
6	Ethical Supply chain	291(66.9)	104(23.9)	40(9.2)	-	-	4.58	1st
7	Green Spaces	139(31.9)	179(41.1)	83(19.1)	34(7.8)	-	3.97	7th

Source: Field survey, 2024

The information revealed that ethical supply chain ranked 1st with mean score of 4.58, community engagement ranked 2nd with mean score of 4.57, waste management ranked 3rd with mean score of 4.50, water conservation ranked 4th with mean score of 4.43, energy efficiency ranked 5th with mean score of 4.38, employee wellbeing ranked 6th with mean score of 4.10, green spaces ranked 7th with mean score of 3.97. The identification of the factors appears to be in line with that of Ifediora *et al* (2025) in work; Environmental, Social and Governance (ESG) Factors as Key Factors in Real Estate Investment Decision: Property Categorized as Hospitality.

Table 7: Factors influencing ESG in health care properties

S/N	Factors/variables	SA	A	N	D	SD	Mean	Rank
1	Energy Efficiency	239(54.9)	156(35.9)	40(9.2)	40(9.2)	-	4.46	3rd
2	Water Conservation	253(58.2)	168(38.6)	14(3.2)	14(3.2)	-	4.55	1st
3	Waste Management	289(66.4)	101(23.2)	35(8.0)	-	-	4.49	2nd
4	Indoor Air Quality	253(58.2)	102(23.4)	40(9.2)	40(9.2)	-	4.31	4th
5	Patient Safety	151(34.7)	173(39.8)	111(25.5)	-	-	4.09	6th
6	Employee Wellbeing	127(29.2)	181(41.6)	127(29.2)	-	-	4.00	7th
7	Community Health Impact	150(34.5)	179(41.1)	106(24.4)	-	-	4.10	5th

Source: Field survey, 2024

The information revealed that water conservation ranked 1st with mean score of 4.55, waste management ranked 2nd with mean score of 4.49, energy efficiency ranked 3rd with mean score of 4.46, indoor air quality ranked 4th with mean score of 4.31, community health impact ranked 5th with mean score of 4.10, patient safety ranked 6th with mean score of 4.09, employee wellbeing ranked 7th with mean score of 4.00. The identification of the factors appears to be in line with that of Ifediora *et al* (2025) in work; Health Care Properties/Facilities: Identifying Environmental, Social and Governance (ESG) Factors as Key Factors in Real Estate Investment Decision.

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Table 8: Factors influencing ESG in mix use

S/N	Factors/variables	SA	A	N	D	SD	Mean	Rank
1	Energy Efficiency	180(41.4)	181(41.6)	74(17.0)	-	-	4.24	5th
2	Water Conservation	179(41.1)	183(42.1)	73(16.8)	-	-	4.24	5th
3	Waste Management	290(66.7)	102(23.4)	43(9.9)	-	-	4.57	1st
4	Indoor Air Quality	150(34.5)	106(24.6)	32(7.4)	147(33.8)	-	3.59	9th
5	Green Certification	207(47.6)	173(39.8)	29(6.7)	27(6.2)	-	4.29	4th
6	Sustainable Design and Materials	256(58.9)	150(34.5)	-	29(6.7)	-	4.46	3rd
7	Transportation Access	242(55.6)	168(38.6)	25(5.7)	-	-	4.49	2nd
8	Biodiversity	139(31.9)	170(30.9)	96(22.1)	30(6.9)	-	3.96	6th
9	Resilience Climate Change	149(34.2)	104(23.9)	181(41.6)	-		3.91	7th
10	Community Engagement	109(25.1)	151(34.7)	180(41.4)	-	-	3.88	8th

Source: Field survey, 2024

The information revealed that waste management ranked 1st with mean score of 4.57, transportation access ranked 2nd with mean score of 4.49, sustainable design and management ranked 3rd with mean score of 4.46, energy efficiency and water conservation ranked 5th with mean score of 4.24, ranked 6th with mean score of 3.96, resilience climate change ranked 7th with mean score of 3.91, community engagement ranked 8th with mean score of 3.88, indoor air quality ranked 9th with mean score of 3.59. The identification of the factors appears to be in line with that of Ifediora *et al* (2024) in work; Environmental, Social and Governance (ESG) Factors as Key Factors in Real Estate Investment Decision: Mixed Use Properties.

Table 9: Level of awareness and understanding among Valuers

Variable	Frequency	Percentage
Very confident	-	-
Highly confident	80	18.4
Moderately confident	260	59.8
Low confident	95	21.8
Not confident	-	-

Source: Field survey, 2024

The table shows the level of awareness of ESG factors among valuers and the information shows that a high percentage of the valuers have moderate understanding of ESG at 59.8% while 18.4% are highly confident in level of understanding.

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Table 10: Level of complaints when evaluating properties

Variable	Frequency	Percentage
Very high	165	37.9
High	70	16.1
Moderate	90	20.7
Low	110	25.3
Very low	-	-

Source: Field survey, 2024

The information shows that there is a high level of complaints when evaluating all categories of properties at 37.9% while 25.3% made a low complaints report when evaluating any category of property.

Table 11: Factors containing long term value

Variable	Frequency	Percentage
Energy Efficiency	90	20.7
Waste Management	40	0.9
Indoor Air Quality	50	11.5
Sustainable materials	50	11.5
Climate resilience	25	5.7
Location and transportation	70	16.1
Social impact	40	9.2
Government policies	70	16.1

Source: Field survey, 2024

The information revealed the factors containing long term value, Energy Efficiency with the highest percentage followed by location and transportation, government policies with sustainable materials, climate resilience respectively.

Table 12: How ESG factors impact methodology and decision making

Variable	Frequency	Percentage
Risk assessment	123	28.3
Cost of capital	60	13.8
Market demand	80	18.4
Regulatory	123	28.3
Reputation and land value	49	11.3

Source: Field survey, 2024

The information revealed how ESG factors impact methodology and decision making, some of the factors according to the respondents choice includes; risk assessment, regulatory at 28.3%, market demand at 18.4%, cost of capital at 13.8% while reputation and land value was at 11.3%.

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Table 13: Complaints received

Variable	Frequency	Percentage
Yes	235	54.0
No	200	46.0

Source: Field survey, 2024

The information revealed that a high percentage of the respondents indicated that there were complaints received at 54.0% while small amount at 46.0% indicated that there were no complaints as regard ESG factors.

Table 14: Example of real estate investment where ESG played a significant factor

Variable	Frequency	Percentage
Mortgage	170	39.1
Cost control	50	11.5
Not really	-	-
N/A	-	-
Valuation of Grade A office	-	-
Commercial property	215	49.4

Source: Field survey, 2024

The information revealed the example of real estate investment with ESG as a significant factor, commercial property was indicated as the main example at 49.4% by respondents, followed by mortgage and cost at 39.1% and 11.5% respectively.

Table 15: Staying informed

Variables	Frequency	Percentage
Reading industry publication	80	18.4
Professional association	155	35.6
Networking	60	13.8
Conferences and webinars	100	22.9
Continuing education	40	9.2

Source: Field survey, 2024

When question were posed on how they stay informed, the response shows that a high percentage of the respondents stay informed through professional association and attending of conferences and webinars at 35.6% and 22.9% respectively.

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Table 16: Believe in ESG factors

Variable	Frequency	Percentage
Yes	50	11.5
Not necessary	70	1.6
It depends	215	49.4
Yes especially from the gov.	100	22.9

Source: Field survey, 2024

The information revealed that a high percentage are skeptical about ESG factors which is why they indicated with depending on whether its outcome would be towards the positive side or negative side.

Table 17: Valuation techniques in ESG

Variable	Frequency	Percentage
Risk assessment	135	31.0
Comparative methods	50	11.5
Cost, income methods	50	11.5
Cost benefit approach	50	11.5
Green certification	50	11.5
Commercial property value.	50	11.5

Source: Field survey, 2024

The information showed that the commonly used valuation technique as regards to ESG is indicated by the respondents to be risk assessment method at 31.0% followed by other methods such as comparative, cost, income, cost benefit, commercial property valuation.

Table 18: Determination of financial impact

Variable	Frequency	Percentage
Conducting risk assess	170	39.0.
Quantify cost and benefits	96	22.0
Incorporate ESG factors	76	17.5
Seek expert advise	93	21.4

Source: Field survey, 2024

The information revealed that to determine financial impact of ESG factors on value of real estate, conducting risk assessment was revealed to be the important variable at 39.0% followed by quantifying cost and benefits at 22.0%, seeking expert advice at 21.4%.

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Table 19: Data sources for ESG factors

Variable	Frequency	Percentage
ESG ratings and reports	66	15.2
Sustainability Certification and standard	66	15.2
Corporate disclosures	87	20.0
Industry benchmark and practice	66	15.2
Stakeholders engagement	30	6.0
Environmental Impact Assessment	90	20.7
Financial disclosure	30	6.9

Source: Field survey, 2024

The information revealed the data sources for ESG factors amongst such as revealed by the respondents include Environmental Impact Assessment at 20.7%, corporate disclosure at 20.0%, industry benchmark and practices, ESG ratings and reports, sustainability certifications and standards at 15.2%

Table 20: Monetary quantification

Variable	Frequency	Percentage
Cost benefit analysis	220	50.6
Comp. sales and premiums	215	49.4
DCF analysis	-	-
Scenario analysis	-	-

Source: Field survey, 2024

The information revealed the monetary quantification assigned to ESG and two variables were indicated by the respondents which were cost benefit analysis at 50.6% and comparative sales and premiums at 49.4%.

Table 21: Examples of ESG Factors on real estate valuation

Variable	Frequency	Percentage
Energy efficiency	115	26.4
Location and social impact	115	26.4
Governance practices	50	11.5
Resilience to climate change	40	0.9
Tenant satisfaction	115	26.4

Source: Field survey, 2024

The information revealed some of the examples of ESG factors eminent on real estate valuation; energy efficiency, location and social impact as well as tenant satisfaction at 26.4% respectively were the factors indicated by the respondents.

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Table 22: Communication of the impact of ESG factors on real estate valuation

Variable	Frequency	Percentage
Executive summary	149	34.2
Virtual aid	-	-
Case studies	130	29.9
Stakeholders engagement	78	17.9
Regulatory reporting	78	17.9

Source: Field survey, 2024

The information revealed that to communicate impact of ESG factors on real estate valuation, a high percentage of the respondents do executive summary followed by case studies, stakeholders' engagement and regulatory reporting at 34.2%, 29.9%, 17.9% respectively.

Table 23: Occupancy rates and maintenance

S/N	Factors/variables	SA	A	N	D	SD	Mean score	Rank
1	Energy Efficiency	177(40.7)	258(59.3)	-	-	-	4.41	1st
2	MBM	179(41.1)	177(40.7)	-	79(18.2)	14(11.4)	4.04	4th
3	R.M	217(49.9)	179(43.1)	39(8.9)	-	-	4.40	2nd
4	ESG	130(29.9)	305(70.1)	-	-	-	4.29	3rd

Source: Field survey, 2024

The information revealed that E.E (energy efficiency) ranked 1st with mean score of 4.41, R.M (risk mitigation) ranked 2nd with mean score of 4.40, ESG ranked 3rd with mean score of 4.29 while MBM (maintenance and building materials) ranked 4th with mean score of 4.04.

Table 24: Implementation of energy efficient measures

Variable	Frequency	Percentage
Yes	220	50.6
No	215	49.4

Source: Field survey, 2024

The table revealed that a high percentage of the respondents indicated that implementation of energy efficient measures have led to cost savings at 50.6%.

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Table 25: Perception of ESG factors

Variable	Frequency	Percentage
Value perception	154	35.4
Well-being and health	88	20.2
Long term cost savings	102	23.4
Brand reputation	91	20.9

Source: Field survey, 2024

The information revealed that perception of ESG was purely on a value perception basis at 35.4%, while 23.4% indicated that ESG factors was perceived as long term cost savings.

Table 26: ESG Certification

Variable	Frequency	Percentage
Yes	185	42.5
No	250	57.5

Source: Field survey, 2024

The information revealed that ESG certification increases the attractiveness of the property by majority of the respondents at 42.5%.

Table 27: Factors influencing ESG on risk profile

S/N	Factors/variables	SA	A	N	D	SD	Mean score	Rank
1	Regulating risk	216(49.7)	131(30.1)	44(10.1)	44(10.1)	-	4.19	4th
2	Physical climate change	219(50.3)	174(40.0)	42(9.6)	-	-	4.41	1st
3	Reputational risk	218(50.1)	129(29.6)	88(20.2)	-	-	4.29	3rd
4	ESG factor	128(29.4)	220(50.6)	87(20.0)	-	-	4.09	5th
5	Long term sustainability	263(60.5)	89(20.5)	43(9.9)	40(9.2)	-	4.32	2nd

Source: Field survey, 2024

The information revealed that physical climate change ranked 1st with mean score of 4.41, long term sustainability ranked 2nd with mean score of 4.32, reputational risk ranked 3rd with mean score of 4.29, regulating risk ranked 4th with mean score of 4.19 while ESG factor ranked 5th with mean score of 4.09.

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Table 28: Climate related risk consideration

Variable	Frequency	Percentage
Yes	270	62.1
No	165	37.9

Source: Field survey, 2024

The information revealed that climate related risk has been considered in property risk assessment as indicated by 62.1% of the respondents

Table 29: Potential reputational risk

Variable	Frequency	Percentage
Yes	115	26.4
No	320	73.6

Source: Field survey, 2024

The information revealed that there are no potential reputational risks associated with inadequate ESG practices as indicated by 73.6% of the respondents.

Table 30: Asset resilience to risk

Variable	Frequency	Percentage
Bench marking	67	15.4
Key performance indicators	170	39.1
ESG ratings and reports	198	45.5
Peer collaboration	0	-

Source: Field survey, 2024

The information revealed ESG ratings and reports at 45.5% is indicated by the respondents to be asset resilience to risk followed by key performance indicators and bench marking at 39.1% and 15.4% respectively.

Table 31: Impact of ESG factors on long term sustainability

S/N	Factors/variables	SA	A	N	D	SD	Mean score	Rank
1	Risk mitigation	180(41.4)	181(41.6)	74(17.0)	-	-	4.24	2nd
2	Enhance property value	221(50.8)	90(20.7)	35(8.0)	89(20.5)	-	4.01	4th
3	Resilience to mar. change	131(30.1)	265(60.9)	39(8.9)	-	-	4.21	3rd
4	Engaging stakeholder	262(60.2)	90(20.7)	41(9.4)	42(9.7)	-	4.31	1st

Source: Field survey, 2024

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The information revealed the impact of ESG on long term sustainability, enegaging stakeholders ranked 1st with mean score of 4.31, risk mitigation ranked 2nd with mean score of 4.24, resilience to market change ranked 3rd with mean score of 4.21, enhance property value ranked 4th with mean score of 4.01.

Table 32: ESG factors alignment with sustainability goals

Variable	Frequency	Percentage
Risk mitigation	120	27.6
Enhanced reputation	70	16.1
Cost saving	70	16.1
Market demand	105	24.1
Compliance	70	16.1

Source: Field survey, 2024

The table revealed how ESG factors aligns with sustainability goals, 27.6% and 24.1% indicated with risk mitigation and market demand while 16.1% indicated with enhanced reputation, cost saving and compliance respectively.

Table 33: Opportunities to enhance assets

Variable	Frequency	Percentage
Energy efficiency upgrade	150	34.5
Water conservation	70	16.1
Water reduction pro	70	16.1
Community engagement	70	16.1
Sustainable transport	75	17.2

Source: Field survey, 2024

The information revealed that there are opportunities to enhance asset through energy efficiency upgrades and sustainable transportation by 34.5% and 17.2% of the respondents while 16.1% indicated with water conservation, water reduction programmes and community engagement.

Table 34: ESG factors contribution to performance of real estate

S/N	Factors/variables	SA	A	N	D	SD	Mean score	Rank
1	Enhanced market.	179(41.1)	178(40.9)	38(18.7)	40(9.21)	-	4.14	3rd
2	Risk management	219(50.3)	130(29.9)	86(19.8)	-	-	4.31	1st
3	Financial performance	178(40.9)	179(41.1)	78(17.9)	-	-	4.23	2nd
4	Regulatory compliance	218(50.1)	132(30.3)	85(19.5)	-	-	4.31	1st

Source: Field survey, 2024

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The information revealed how ESG factors contribute to performance of real estate risk management and regulatory compliance ranked 1st with mean score of 4.31, financial performance ranked 2nd with mean score of 4.23 while enhanced market demand ranked 3rd with mean score of 4.14.

Table 35: Challenges faced by Valuers

S/N	Factors/variables	SA	A	N	D	SD	Mean score	Rank
1	Data availability	265(60.9)	69(15.9)	101(23.2)	91(20.9)	-	4.38	1st
2	Subjectivity	219(50.3)	83(19.1)	42(9.7)	91(20.9)	-	3.99	3rd
3	Complexity	125(28.8)	217(49.9)	46(10.6)	45(10.3)	-	3.85	4th
4	Lack of awareness	170(39.1)	170(39.1)	47(10.8)	48(11.0)	-	4.06	2nd

Source: Field survey, 2024

The information revealed the challenges faced by Valuers in integrating ESG into real estate valuation, data availability and consistency ranked 1st with a mean score of 4.38, lack of awareness and expertise ranked 2nd with mean score of 4.06, subjectivity and standardaization ranked 3rd with mean score of 3.99 while complexity ranked 4th with mean score of 3.85.

Table 36: Solutions to challenges

S/N	Factors/variables	SA	A	N	D	SD	Mean score	Rank
1	Data collection	245(56.3)	107(24.6)	83(19.1)	-	-	4.61	1st
2	Standardization	129(29.7)	216(49.7)	90(20.7)	-	-	4.09	4th
3	Training	210(48.3)	136(31.3)	89(20.5)	-	-	4.28	3rd
4	Collaboration	218(50.1)	127(28.5)	90(20.7)	-	-	4.29	2nd

Source: Field survey, 2024

The information revealed the solution to challenges faced by valuers, enhanced data collection and reporting ranked 1st with mean score of 4.61, collaboration and stakeholders engagement ranked 2nd with mean score of 4.29, training ranked 3rd with mean score of 4.28 while standardization and guidelines ranked 4th with mean score of 4.09.

FINDINGS AND CONCLUSION

Based on the analysis and result presented above the following findings were made;

1. The classes of properties were ESG factors can be considered includes: residential, commercial, industrial, retail, mixed use hospitality and health care facilities.

2. For each of the identified classes of properties some factors influencing adoption of ESG factors were identified whereas, energy efficiency, water conservation and waste management were the common factors amongst the identified classes of properties.

3. Also identified were; level of awareness and understanding among Valuers, how ESG factors impact methodology and decision making, example of real estate investment where ESG played a significant factor, how Valuers stay informed about ESG factors, valuation techniques in ESG, determination of financial impact, data sources for ESG factors, how ESVs communicate impact of ESG factors on real estate valuation, ESG Factors on real estate valuation, perception of ESG factors, factors influencing ESG on risk profile, impact of ESG factors on long term sustainability, ESG factors alignment with sustainability goals, opportunities to enhance assets, ESG factors contribution to performance of real estate, challenges faced by Valuers as well as solutions to challenges.

4. Other solutions identified are the need for more training and attendance to international conferences, more affiliation and training. The need to disseminate useful information to practicing Valuers including self-development.

Conclusively, ESG factors are influencing the adoption of properties across various classes, including residential, commercial, industrial, retail, mixed use hospitality, and healthcare facilities. The common factors influencing adoption include energy efficiency, water conservation, and waste management. Factors influencing ESG adoption include Valuer awareness, decision-making, valuation techniques, financial impact determination, data sources, communication, perception, risk profile, long-term sustainability, alignment with sustainability goals, opportunities and challenges faced by Valuers. Valuers do much in data collection, standardisation, training and more importantly in collaboration.

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