Environmental, Social and Governance (ESG) Factors as Key Factors in Real Estate Investment Decision: Mixed Use Properties

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Abstract: *There is no doubt that environmental, social and governance factors (ESG) plays a crucial role in real estate investment decisions especially in mixed-use properties, which is what this study reveals. The study which employed a mixed-methods approach also combines literature reviews, surveys, interviews and statistical analysis. The finding shows that Employee wellbeing, biodiversity and green space are the top ranked factors. This was followed by water conservation and energy efficiency. Identified also were other factors which include; community engagement, transportation access, waste management and community health impact. The factor analysis done reveals that these factors contribute in no small measures to overall ESG impact. To test adequacy and shericity, the analysis done in the study shows that Kasier-Meyer-Olkin's measure of sampling adequacy and Barlett's test of sphericity KMO measure showed appropriateness and are in the range of 0.70. The research indicated that for mixed-use development, ESG factors play a significant role in real estate investment. Therefore, it important for investors to set priority right especially on ESG factors as it concerns decision-making process even as this is expected to help in the creation of positive impacts on both the environment as well as the society while also achieving financial success.*
Keywords: environmental, investment decision, governance, mix use and social factors

INTRODUCTION

Real estate investment appears to be an aspect of financial planning for both individuals and institutions alike which is considered critical. Owing to the ever increasing focus on investments that are sustainable and responsible, the consideration of environmental, social and governance (ESG) factors has become a major force to reckon with on real estate investment decision-making, (Worschech & Lützkendorf, 2022). This is pertinent for properties that are

categorized as mixed-use i.e. they combine residential, commercial and in some cases industrial spaces within a single development, (Metzinger, 2021).

The integration of ESG factors in real estate investment is for several reasons being that it is a significant contributor to environmental degradation which accounts for greater portion of carbon emissions globally as well as resource consumption, (Izyumov, 2023). When ESG factors considered in investment decisions, real estate investors will have the opportunity in the form of reduction of their carbon footprint and promotion of sustainable development, (Jinga, 2021).

The social impact of real estate investment cannot be overlooked as mixed-use properties most times have a direct impact on the communities in which they are located, thus it affect factors such as accessibility, affordability and quality of life, (Ionașcu et al., 2020). As social factors in investment decisions are considered, real estate investors can impact on the well-being of the communities in which they operate, (Rymarzak & Siemińska, 2012).

Good governance practices such as transparency, accountability and ethical behavior, to be playing a critical role in the determination of the long-term success of real estate investments, (Pivo, 2008). In other words, it can help real estate investors in the mitigation of risks and enhancement of the value of their investments.

This research paper explored the importance of ESG factors in real estate investment decisions with emphasis on properties that is categorized as mixed-use. The benefits of integrating ESG factors into investment decision-making were not left out. More so, through a comprehensive analysis of the existing literature a valuable insight into how real estate investors can effectively incorporate ESG factors into their investment strategies as well as drive positive social and environmental impact was provided.

It based on the foregoing that this research is designed with the aim; contributing to the growing body of knowledge on sustainable and responsible real estate investment as well as to inspiring real estate investors towards making ESG considerations a priority in their investment decision-making processes.

REVIEW OF LITERATURE

In the recent time, the integration of environmental, social and governance (ESG) factors in real estate investment decisions has gained significant traction and has continued to play a crucial role aimed at shaping landscapes of urban centers and economic development. Due to the growing emphasis on sustainable and attention directed towards responsible investment practices, environmental, social and governance (ESG) factors have become essential considerations for real estate investors, (Izyumov, 2023). For mixed-use developments that combine residential, commercial and most times recreational spaces, the integration of ESG

criteria appears to have huge implications for financial performance and societal impact, (Kempeneer et al., 2021).

Issues pertaining to environmental considerations in real estate investment deals with the assessment of the sustainability and energy efficiency of properties, (Izyumov, 2023). For mixed-use developments the features which includes; green building certification, renewable energy sources and waste management systems are seen as major factors that enhances the environmental performance of properties, (Falkenbach et al., 2010). Also, studies in the past have shown that environmentally sustainable buildings do not only reduce operational costs but also they attract rental yields that are higher in addition to property values, (Boyd, 2006; Rodi et al., 2018; Warren, 2010; Reddy, 2016). It worthy note too that there is increase in the recognition of the long-term benefits of investing in properties with low carbon footprints and high energy efficiency ratings, (Zalejska-Jonsson et al., 2012; Chegut et al., 2019).

The social considerations deal with the impact of real estate developments on the well-being and livability of the host communities, (Falkenbach et al., 2010). For mixed-use properties, factors which include; access to amenities, transportation options and social infrastructure are very crucial for the creation of vibrant and inclusive neighborhoods, (Rabianski et al., 2009). So, Investors whose priority is on social sustainability do not only contribute to the social fabric of communities but they also help mitigate risks that are related to social unrest and demographic changes. More so, it appears that the social impact of real estate investments is fast becoming a key determinant of tenant satisfaction and long-term asset performance, (Chilton et al., 2018).

The aspect of governance considerations focuses on the transparency, accountability and ethical practices of real estate investors and developers, (James, 2009). For mixed-use developments, the issues for instance; engagement of stakeholders, ethical sourcing of materials and compliance with the regulatory standards are very key for the maintenance of trust and credibility, (Shah and Alotaibi, 2018). The incorporation of strong governance practices is believed to help investors in the mitigation of legal and reputational risks, (Uzma, 2018). This in turn helps in the enhancement of the overall sustainability of their investments, (Agyei-Mensah, 2017).

The integration of ESG factors in real estate investment decisions no doubt offers a range of benefits for the investors, the developers and society at large, (Izyumov, 2023). This benefit can be from financial perspective hence; sustainable properties have been shown to perform better than traditional real estate assets in terms of income that comes from rent, property values and occupancy rates, (Pivo & Fisher, 2010). More so, developments that are ESG-focused tend to attract socially responsible tenants and investors; in effect they create a positive feedback loop which enhances the overall reputation and attractiveness of properties, (Izyumov, 2023). Additionally, sustainable real estate investments contribute to the preservation of the environment, social equity and long -term economic stability, (Geiger et al., 2013).

There appears to be several challenges which exist and may hinder widespread adoption ESG factors in real estate investment decisions in spite of the perceived benefits of its integration. For the challenges; they include the lack of standardization in ESG reporting, the perceived

trade-off between financial returns and sustainability objectives as well as the complexity in terms of measurement and quantification of ESG performance, (Cappucci, 2018). Nonetheless, these challenges are seen as opportunities for innovation and collaboration within the industry, (Hughes et al., 2021). Real estate investors can overcome these obstacles as well as unlock the full potentials of sustainable investment through the development of common ESG frameworks, engagement with stakeholders and leveraging technology for data analytics, (Walker & Goubran, 2020).

In mixed-use properties, the integration of ESG factors in real estate investment decisions is essential in the creation of value for investors, tenants and society at large, (Izyumov, 2023). If the priorities are placed on environmental, social and governance considerations, there can be enhancement in the financial performance of investors' assets, promotion of social well-being and positive contribution that is sustainable to the built environment, (Cooper and Jones 2020). It is imperative for investors to embrace ESG principles as the demand for sustainable real estate grows, (Izyumov, 2023). More importantly there is need to leverage them as a strategic advantage in the competitive real estate market.

RESEARCH METHODOLOGY

In this study we employed a mixed-methods approach which combines literature reviews, surveys, interviews and statistical analysis. The design incorporates both quantitative and qualitative alike; this is due to the need to obtain a comprehensive understanding of the topic. Questionnaire which is structured was developed and was used to gather quantitative data from Estate Surveyors and Valuers. The survey features questions that are related to the importance of ESG factors on properties referred to as mix use. The research design also involves survey as well as interview. Questionnaires developed were distributed to Estate Surveyors and Valuers. The use online survey platforms were explored via the aid of google form or email distribution as well as hard copy questionnaires were deployed for data collection. Purposive sample of Estate Surveyors and Valuers was taken and they were interviewed. The methods of analysis were both descriptive and inferential. While descriptive statistics featured the determination of frequency distributions, mean scores and standard deviations; these were for different variables related to ESG factors, inferential statistical test such as mean rank and factor analysis was conducted.

Data Presentation and Analysis

BACKGROUND INFORMATION OF RESPONDENTS

The information shows the background information of the respondents and these 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 qualification	**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 Estate Surveyors and Valuers	**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, 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: Factors considered in valuing identified classes of properties: Mixed Use

Descriptive Statistics

	N	Mean	Std. Deviation	Rank
Employee well being	435	3.26	1.46	1st
Biodiversity	435	3.11	1.45	2nd
Sustainable design and materials	435	3.05	1.50	3rd
indoor air quality	435	3.03	1.53	4th
Employment, health and safety practices	435	2.97	1.45	5th
Community engagement	435	2.95	1.47	6th
Transportation access	435	2.94	1.37	7th
Waste management	435	2.92	1.54	8th
Community health impact	435	2.91	1.46	9th
Water conservation	435	2.89	1.52	10th
Energy efficiency	435	2.89	1.50	10th
Quest for certification	435	2.83	1.37	11th
Green certification	435	2.83	1.46	11th
Resilience climate change	435	2.81	1.45	12th
Sustainable sourcing	435	2.77	1.50	13th
Ethical supply chain	435	2.77	1.42	13th
Customers health and safety practices	435	2.62	1.44	14th
Patient safety	435	2.56	1.41	15th
Green spaces	435	2.47	1.34	16th

Source: Field survey, 2024

According to the information on table 2, employee wellbeing ranked 1st with mean score of 3.26, biodiversity ranked 2nd with mean score of 3.11, sustainable design and materials ranked 3rd with mean score of 3.05, indoor air quality ranked 4th with mean score of 3.03, employment, health and safety practices ranked 5th with mean score of 2.97, community engagement ranked 6th with mean score of 2.95, transportation access ranked 7th with mean score of 2.92, community health impact ranked 8th with mean score of 2.91.

Table 3: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.704
Bartlett's Test of Sphericity	Approx. Chi-Square	1336.070
	Df	171
	Sig.	.000

Source: Field survey, 2024

Kasier-Meyer-Olkin's measure of sampling adequacy and Barlett's Test of sphericity are presented in Table 3 above. KMO measure is performed to check the degree of inter-correlation among the items and the appropriateness of factor analysis. Kim and Mueller (1978) suggested that KMOs in the range of 0.5-0.7 are considered average, those in the range of 0.7-0.8 are considered good while those in 0.8-0.9 are great and values greater than 0.9 are superb. The table 3 above shows that the KMO values obtained are in the range of 0.70 which indicates that the sample is good.

Table 4: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.585	13.604	13.604	2.585	13.604	13.604
2	1.854	9.759	23.363	1.854	9.759	23.363
3	1.647	8.670	32.034	1.647	8.670	32.034
4	1.440	7.581	39.614	1.440	7.581	39.614
5	1.331	7.005	46.620	1.331	7.005	46.620
6	1.294	6.809	53.429	1.294	6.809	53.429
7	1.120	5.893	59.322	1.120	5.893	59.322
8	1.040	5.475	64.797	1.040	5.475	64.797
9	.994	5.232	70.029			
10	.932	4.905	74.935			
11	.834	4.391	79.326			
12	.704	3.707	83.033			
13	.622	3.275	86.308			
14	.559	2.944	89.252			
15	.518	2.727	91.979			
16	.463	2.435	94.414			
17	.420	2.209	96.623			
18	.370	1.948	98.571			
19	.272	1.429	100.000			

Extraction Method: Principal Component Analysis.

Source: Field survey, 2024

Table 4 shows that Principal Component Analysis was conducted and eight components were extracted for the factors identified in valuing mix use property. The factors revealed the presence of eigenvalues exceeding 1.0, explaining 13.604%, 9.759%, 8.670%, 7.581%, 7.005%, 6.809%, 5.893%, 5.475% of the total variance respectively and resulting with a cumulative variance of 64.797%. The principal factors influencing ESG in mix use properties

are: employee wellbeing, biodiversity, sustainable design and materials, indoor air quality, employment health and safety practices, community engagement, transportation access, waste management, community health impact. Although all other factors are related but they contributed in small measures as revealed by factor analysis.

Figure 1: Scree Plot
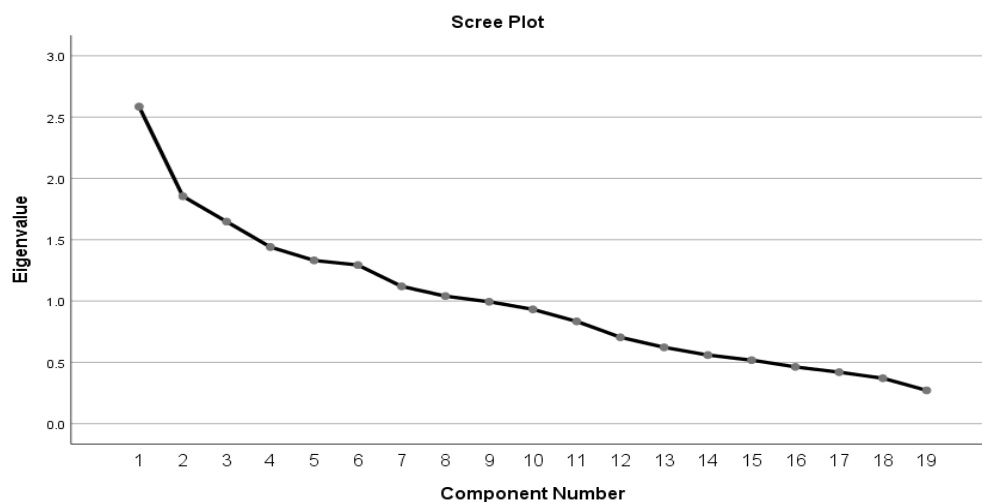
The scree plot shows that after the first three components, the difference between the fourth and fifth eigenvalues increased and then gradually declined. The first component explains 13.604 % of the total variance at 2.585, the second component explains 9.759% of the total variance at 1.854, the third component explains 8.670% of the total variance at 1.647, the fourth component explains 7.581% of the total variance at 1.440, the fifth component explains 7.005% of the total variance at 1.331, The sixth component explains 6.809% of the total variance at 1.294, the seventh component explains 5.893% of the total variance at 1.120, the eight component explains 5.475% of the total variance at 1.040. Thus, the factors influencing ESG in mix use properties are: employee wellbeing, biodiversity, sustainable design and materials, indoor air quality, employment health and safety practices, community engagement, transportation access, waste management, community health impact. Although all other factors are related but they contributed in small measures as revealed by factor analysis.

Table 5: Component Matrix[a]

	Component							
	1	2	3	4	5	6	7	8
Energy efficiency	.346	.049	.198	-.049	-.634	.052	-.229	.003
Water conservation	.470	-.176	-.113	.004	.496	.063	.125	.145
Waste management	.246	-.219	-.111	.413	.457	.211	-.003	.057
Indoor air quality	-.619	.027	.291	-.115	.149	.035	-.122	.163
Green certification	-.045	-.102	.473	.075	-.065	.448	.160	-.280
Community engagement	.528	-.026	-.114	.202	-.240	.304	.394	-.216
Sustainable sourcing	.037	-.567	.107	.135	-.342	-.030	.416	.277
Employment, health and safety practices	-.260	.036	.267	.417	.133	.274	-.017	.482
Ethical supply chain	.576	-.163	.042	-.435	.023	-.235	.157	.203
Customers health and safety practices	-.320	.480	.078	.188	.007	-.084	.418	.281
Quest for certification	.187	-.389	.472	.096	.196	-.036	-.266	-.219
Patient safety	.071	.565	.395	-.307	.263	.043	-.047	-.189
Employee well being	.564	-.035	.445	.009	.160	-.409	.057	.050
Community health impact	.460	.400	.072	.322	-.092	.445	-.221	-.032
Sustainable design and materials	-.072	-.100	.690	-.203	.047	.090	.300	-.003
Transportation access	.421	.565	.132	-.080	-.176	-.016	-.055	.419
Biodiversity	-.332	-.139	.296	.440	-.264	-.397	-.154	-.076
Green spaces	-.063	.441	-.042	.322	.084	-.356	.437	-.404
Resilience climate change	-.387	-.073	-.074	-.490	-.048	.385	.225	-.053

Extraction Method: Principal Component Analysis.

a. 8 components extracted.

The table 5 above shows the component matrix for the factors influencing ESG in mix use properties.

Table 6: Rotated Component Matrixª

	Component							
	1	2	3	4	5	6	7	8
Energy efficiency			.465					
Water Conservation							.613	
Waste management							.708	
Indoor air quality								
Green certification				.692				
Community engagement		.755						
Sustainable sourcing					.797			
Employment, health and safety practices								
Ethical supply chain	.774							
Customers health and safety practices						.758		
Quest for certification								
Patient safety								
Employee well being	.662							.451
Community health impact			.677					
Sustainable design and materials				.718				
Transportation access			.700					
Biodiversity								.646
Green spaces						.645		
Resilience climate change								

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 17 iterations.

The rotated component matrix shows the factor loadings for each variable, eight components were extracted as factors influencing ESG for mix use properties. The first component loaded three (3) factors which are: community engagement, ethical supply chain, employee wellbeing. The second component loaded one (1) factor: community engagement. The third component loaded three (3) factors and they are: energy efficiency, community health impact, transportation access. The fourth component loaded two (2) factors and they are: green certification, sustainable design and materials. The fifth component loaded one (1) component; sustainable sourcing. The sixth component loaded one (1); customers' health and safety practices. The seventh component loaded two (2); water conservation, waste management. The eight component loaded two (2); employee wellbeing, biodiversity.

SUMMARY AND CONCLUSION

The study no doubt has been able to look at the ESG as key factors in real estate investment decision while focusing on properties referred to as mix use. The descriptive analysis done by way of ranking shows employee wellbeing ranked 1st followed by biodiversity which was ranked 2nd. The green space was seen to rank 16th among the 18 identified factors. It could also be noted water conservation and energy efficiency that ranked 10th while quest for certification and green certification 11th respectively.

The principal component analysis done for identified factors influencing ESG in mix use properties are: employee wellbeing, biodiversity, sustainable design and materials, indoor air quality, employment health and safety practices, community engagement, transportation access, waste management, community health impact. Although all other factors are related but they contributed in small measures as revealed by factor analysis.

In case of Kasier-Meyer-Olkin's measure of sampling adequacy and Barlett's Test of sphericity KMO measure was performed to check the degree of inter-correlation among the items and the appropriateness of factor analysis values obtained are in the range of 0.70 which indicates that the sample is good.

Conclusively, environmental, social and governance factors role in real estate investment cannot be overemphasized, especially for properties which are categorized as mixed-use developments. It is imperative to note that for investors there is perceived increase in case of recognition of the importance of sustainable and socially responsible investment practices in driving long-term value and reducing risks. As consideration of ESG factors in the investment decision making continues to gather momentum, investors can now contribute to the well-being of communities, help on the minimization of the negative environmental impacts as well as also potential enhancement of financial performance. The incorporation of ESG considerations no doubt can help in the evaluation of mixed-use properties which in turn can lead to more sustainable and profitable investments in the long run. Therefore, it imperative for investors to set priority on ESG factors in their decision-making process this to help create positive impacts on both the environment as well as the society while also achieving financial success.

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