



ENVIRONMENTAL SOCIAL GOVERNANCE IN PROSPERING THE MALAYSIA LISTED REAL ESTATE COMPANIES' PERFORMANCE

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Abstract

The COVID-19 pandemic and increased demand for improved international supply-chain management, Sustainability Reporting has been made compulsory for all listed companies in Malaysia, including LRECs. This reporting highlights the integration of ESG practices, with a more holistic approach compared to corporate governance and CSR previously practised. ESG is aimed at value creation through responsible environmental and social practices. This paper analyzes how ESG practices factor into the financial performance of Malaysian LRECs, including those involved in construction, plantations, REITs, and properties. Based on MRA analysis, this study found that the ESG criteria are substantially influencing the financial performance within the construction, plantation, and REITs sectors with $R^2 > 0.5$. However, only the dividend yield was found to be significantly related to the ESG criteria for the properties sector. Sectoral differences are highlighted in this study as influencing the impact of ESG practices on financial performance.

Keywords: Environment Social Governance, Listed Real Estate Companies, Financial Performance, Earth Investment

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INTRODUCTION

Sustainability reporting has gained prominence and empowered stakeholders to assess the performance of an organization based on environmental, social, and governance (ESG) parameters. ESG considerations have also taken center stage in investment decisions because investors now prefer companies with responsible and socially relevant operations. The United Nations initiated the Principles for Responsible Investment in 2006, which placed greater emphasis on ESG factors in financial analysis to offer better investment returns in a sustainable manner. In the perspective of real estate, Malaysian LRECs faced several challenges amid disruptions caused by the COVID-19 pandemic, including market misreads and cost overruns that are better addressed through ESG good practices via improved governance and environmental and social considerations. The study determines how ESG factors from the Thomson Refinitiv ESG Database influence the financial performance of LRECs in Malaysia. The research focuses on three main areas that indicate high sensitivity to ESG issues: governance, risk management, and responsible supply chain practice. This study aims to evaluate the influence of ESG sub-criteria on LRECs and provide an analysis of strategies toward resilience development and compliance to mitigate future business challenges.

LITERATURE REVIEW

Introduction of ESG by corporate

Governance standards prioritize transparency, integrity, and accountability. In Malaysia, ESG practices have gained attention, with investors favoring companies with strong ESG strategies (Yan et al., 2020). Environmental criteria in ESG evaluation focus on climate policies, energy use, waste management, and resource conservation, addressing risks like emissions and toxic waste (Chartered Finance Institute, 2019). Companies are assessed on sourcing, supplier compliance, and community welfare (Cajias, 2021). ESG disclosure improves financial performance, reduces capital costs, and attracts investments (Chen & Xie, 2022; Wong et al., 2021). ESG certification can enhance firm value, especially during crises like COVID-19 (Feng & Wu, 2021).

Environmental Materiality Assessment Influence Toward Financial Performance

The Bursa Malaysia Sustainability Reporting Guideline V.3 (2023) outlines eight environmental criteria: (i) energy management, (ii) water management, (iii) waste management, (iv) emission management, (v) biodiversity, (vi) material use impact, (vii) supply chain management effects, and (viii) effluent discharge impact on the environment.

Energy management is done in property to enhance efficiency through the use of technology and design. Smart HVAC systems adjust according to occupancy and external conditions, thereby reducing energy use. In Malaysia, malls have pursued upgrading their lighting to LED lighting for improved efficiency. Powers & Saad, 2022; Belany et al., 2021 Real-time energy monitoring identifies inefficiencies, while renewable sources of energy and energy-efficient appliances reduce reliance on and consumption of fossil fuels. Zou & Mishra, 2020

Effective water management in real estate optimizes usage and reduces waste. Strategies include drought-resistant landscaping, efficient irrigation, and rainwater harvesting as reported by Kurtaslan et al. (2019). Installing low-flow fixtures reduces consumption. In tandem with this observation, Tourigny & Filion (2019) observed that installing low-flow water fixtures resulted in reduced water consumption. Water-efficient HVAC systems, like cooling towers and heat exchangers, minimize water usage. Aligned with Rodrigues et al. (2020) demonstrated how water-efficient HVAC systems could reduce water consumption by large buildings. Rainwater harvesting reduces dependence on municipal supplies, providing water for non-potable uses like irrigation and toilet flushing. De Sá Silva et al. (2022) explained the need for rainwater harvesting based on reduced water scarcity.

Real estate waste management, the focus is on waste reduction, recycling, and proper waste disposal (Kariuki, 2023; Wahlström et al., 2019). Waste auditing facilitates determination of the type and quantity of wastes, enabling monitoring of progress over time (Ayfokru et al., 2023; Yu et al., 2021). The encouragement of tenants to reduce paper usage and avoid single-use plastics leads to a reduction in waste generation. An effective recycling program is facilitated by the provision of appropriate signage and education, increasing the likelihood of participation (Umar et al., 2021). Circular economy practices that support reuse and recycling are increasingly becoming the norm (Wang et al., 2021).

Emission management in construction puts forward a reduction in the GHG emission rate. Energy-efficient designs, like high-performance insulation and passive solar designs that minimize heating, cooling, and lighting needs, obviously reduce emissions. Aligned with Carlander & Thollander (2022), and Wilkinson & Sayce (2020). The carbon footprint is reduced by using low-carbon materials, like recycled alternatives to cement and steel (Chan et al., 2022). Investment in energy-efficient HVAC systems with smart controls decreases operational emissions and energy costs, as stressed by Mostafavi et al. (2021) and Prada et al. (2020).

Construction projects may positively or negatively affect the influence of biodiversity. Sustainable projects that preserve or restore habitats, such as wetlands and forests, contribute to biodiversity. Poorly designed projects that

cause habitat destruction or fragmentation, like deforestation and drainage of wetlands, damage ecosystems and disrupt ecological processes (Reid et al., 2019). Biodiversity conservation during project planning so that ecological balance can be maintained.

Different materials used in construction have huge impacts on the environment. The extraction of raw materials results in habitat destruction and depletion of natural resources (Vasilca et al., 2021). Production of cement and steel leads to the emission of greenhouse gases and other pollutants (Sandanayake, 2022). Recycled steel and low-carbon concrete are among the sustainable materials that lower these effects (Gong & Kong, 2022). Green certification aids in ensuring minimal environmental damage.

Construction supply chain management (SCM) enhances environmental performance through optimized procurement, cost-effective sourcing of quality materials with minimal waste and emissions (Kim & Nguyen, 2022). Logistics ensure timely delivery to sites, while the accuracy in forecasting avoids waste accumulation. Sourcing from sustainable suppliers reduces carbon emissions and ultimately contributes to reducing environmental footprints. Sustainable SCM practices are extremely crucial for meeting the demand for green buildings (Gaurang, 2020).

The effluents from construction and agriculture can extensively destroy the environment. In the process of construction, effluents containing chemicals and pieces of debris deteriorate water quality and cause death to aquatic life (Ngounouno et al., 2023). Agricultural activities involving palm oil plantations have created pollution problems and soil degradation (Akhbari et al., 2020). In such contexts, effluent management should be properly addressed to safeguard health and wildlife (Shah & Ruparelia, 2022). Real estate increasingly uses sustainable approaches such as energy-efficient designs and waste reduction to ensure environmental protection for generations.

Social Materiality Assessment Influence toward financial performance

ESG practices in corporate participation and contribution to communities and societies have been focused on equity regarding economic and educational perspectives (Kucharska, 2019). Ignoring the needs of communities often ruins the image of a corporation and results in increased crime, thus burdens, in the long run (Churchill et al., 2023). Firms are supposed to contribute by investing in community engagement processes to assure commitment to shareholders and society. The social criteria portrayed in the Bursa Malaysia Sustainability Reporting Guideline V.3 (2023) have been primarily set to include four criteria: community contribution, health & safety, supply chain management, and the social assessment of suppliers.

Communities benefit from corporations through the provision of infrastructure, affordable housing, and clean water (Gulakov et al., 2020). They also inspire employee volunteerism to participate in community service with either paid volunteer time or donation matching. Social impact investing uses money for projects that yield both social and financial returns. Further, investing in the welfare of the employees themselves, through fair wages and good health care, leads to economic development and helps to build sustainable and resilient communities.

The contribution of corporate social responsibility (CSR) to health and safety is very important for community well-being. The companies are supposed to train employees for the prevention of accidents, undertake emergency procedures, and maintain a healthy working environment (Obuobisa-Darko, 2022). This also involves active engagement with communities, healthcare initiatives, and the involvement of companies in health promotion programs. The company should take full responsibility to ensure environmental sustainability through reductions in pollution levels and preservation of resources, hence contributing to health and environmental well-being (Rondinelli & Berry, 2000), so there is assurance of a healthy and safe society.

Governance principles ensure that every corporate contribution to SCM is characterized by transparency and equitability (Bui, 2020). The SCM in real estate manages suppliers, materials, and labor; it ensures that suppliers follow legally set standards (Monczka et al., 2021). Clearly drafted contracts define the quality to be expected. In plantations, audits support transparency in SCM to ensure compliance (Chakraborty & Chakraborty, 2023).

Clear contracts spell out the quality expectations (Al Damaloji & Alzubaidy, 2023). Audits in plantations ensure SCM transparency for compliance (Koc & Gurgun, 2021). Corporate contributions in SSA for construction promote sourcing ethically, minimize risks, and ensure compliance (Tushar et al., 2022; Hoseini et al., 2021). SSA upholds labor standards and protects workers from exploitation (Guarnieri & Trojan, 2019). SSA ensures that there is appropriate labour and environmental behaviour, thereby offering sustainable development and company reputation (Marzouk & Sabbah, 2021).

Governance Materiality Assessment Influence toward financial performance

Governance incorporates mechanisms and procedures that guide a company and govern compliance with regulations to avoid associated risks, such as penalties and loss of reputation, stated by Shaikh (2022) and Albitar et al. (2020). In the context of real estate, conformance to legislations on transaction matters, financial reporting, and environmental standards would help sustain stakeholders' confidence in them. Thus, ESG frameworks boost transparency, accountability, and ethics in decision-making, among other parameters leading to long-term

sustainability. Therefore, the Bursa Malaysia Sustainability Reporting Guidelines (2023) have laid emphasis on governance attributes: anticorruption policy, diversity, labor practices, and data privacy compliance-the hallmarks of responsible corporate governance.

Anti-corruption initiatives in the construction and plantation industries are very important in reducing bribery, kickbacks, and collusion that undermine fairness and inflate contract prices. These lead to poor-quality construction and compromised safety. Promotion of integrity and transparency will engender public trust and help ensure quality and safety with sustainable economic development by protecting the interest of stakeholders (Lee & Liang, 2024).

Diversity and inclusion initiatives are internally essential for corporate governance and foster an environment that values demographic and socio-cultural differences (Choi et al., 2022; Hickey & Cui, 2020). A diverse board improves decision-making, innovation, and risk management and offers great benefits to companies and society (Wong, 2022; Purnomo & Rizki, 2020).. Diversity and inclusive practices in construction help in the attraction and retention of key talent, the creation of shareholder value, and the fostering of principles related to equity, equality, and sustainability (Chong & Loh, 2023; Currie et al., 2021).

Compliance with labor practices in the context of corporate governance ensures employees' well-being and productivity by promoting equal treatment, ensuring their safety, and taking into account their well-being in the organization (Manoharan et al., 2023). Compensation based on ESG metrics supports sustainable growth (Flammer et al., 2019). Sound employment policies create inclusivity, adherence to the law, trust, and prosperity (Kim et al., 2021). Protective data practices in running a company guarantee adherence to data regulations, such as GDPR (Saah et al., 2023; Patel & Patel, 2020). Company structures shield data from breach, minimize risks to finances, and even aid in complying with data regulations through practices such as encryption, access, training, and audits.

ESG in Real Estate Sector

Sustainability reporting is fundamental in promoting green policies, and the EU stimulates the adoption of new reporting guidelines (Andersson et al., 2022). The Energy Performance Certificate (EPC), established in the EU in 2002, works to eliminate info asymmetry and increase the energy performance of buildings (Thomas et al., 2021). ESG factors have a significant role in the real estate sector, with sustainability opportunities available throughout the occupier lifecycle (CBRE, 2021). A high ESG performance positively increases stock performance, particularly in the areas of energy and GHG emission performance (Erol et al.,

2023; Brounen et al., 2020), or a method has been advocated by Kempeneer et al. (2021) to increase sustainability in the real estate market using smart real estate.

RESEARCH METHODOLOGY

The ESG criteria are recognized as independent variables influencing financial performance and simplified as the following such are (i) energy management's influence (E_e); (ii) water management's influence (E_w); (iii) waste management's influence (E_s); (iv) emission management's influence (E_m); (v) biodiversity's influence (E_b); (vi) effect of the material used on environment (E_t); (vii) effect of the supply chain management on the environment (E_c); (viii) effect of the effluents discharge on the environmental (E_L); (ix) corporate's contribution effect on society or community (S_{ac}); (x) corporate's contribution effect on health & safety (S_d); (xi) corporate's contribution effect on supply chain management (S_{LP}); (xii) corporate's contribution effect on supply chain (social)/ supplier social assessment (S_{DP}); (xiii) anti-corruption initiatives to promote governance (G_{ac}); (xiv) diversity and inclusion initiatives to promote governance (G_d); (xv) compliance of labor practices and standards in governance (G_{LP}); and (xvi) compliance of data privacy and security in governance (G_{DP}). Data collection dependent variable are from secondary for year 2022 and 2023 from Refinitiv Eikon Online Databases for Malaysian LRECs s and financial performance measurement' calculation are as the following:-

$Y_{1(TRI)}$ = Total Return Index (TRI)

$$Y_{1(TRI)} = \frac{P_t - P_{t-1} + I_t}{P_{t-1}} \dots \dots \dots \text{Formula 1}$$

Where,

$Y_{1(TRI)}$ = total return index in current time period t

P_t = price at the end of current time period t

P_{t-1} = price at the end of previous time period $t-1$

I_t = net income received in current time period t

$Y_{2(TQ)}$ = Tobin's Q

$$\text{Tobin's Q} = \frac{MV_e + MV_d}{RC} \dots \dots \dots \text{Formula 2}$$

Where,

MV_e = Market Value of Equity is the total market capitalization of the company's outstanding equity

MV_d = Market Value of Debt is the total market value of the company's outstanding debt

RC = Replacement Cost of Assets is the estimated cost of replacing all of the company's assets at their current market prices

$Y_{3(P/E)}$ = Price-to-Earnings (P/E)

$$Y_{3(P/E)} = \frac{MPS}{EPS} \dots\dots\dots \text{Formula 3}$$

Where;

$Y_{3(P/E)}$ = the price -to -earnings
 MPS = the market price per share
 EPS = the earnings per share

Y_4 = Dividend Yield (DY)

$$Y_{4(DY)} = \frac{DPS}{MPS} \dots\dots\dots \text{Formula 4}$$

Where;

$Y_{4(DY)}$ = the dividend yield
 DPS = the dividend per share
 MPS = market price per share

Y_5 = Return of Equity (ROE)

$$Y_{5(ROE)} = \frac{\text{Net Income}}{\text{Shareholders' Equity}} \dots\dots\dots \text{Formula 5}$$

Where;

$Y_{5(ROE)}$ = the return of equity
 Net income= the net income generated by the company
 SE = the shareholders' Equity

Data collection on assessment of the implementation of ESG criteria score by Malaysia's LREC are according to the disclosure on the materiality matrix published in LRECs Annual Report, such as following example of the water management's influence (E_w) implementation in the Figure 1, will be score as Important to Business Model = 8, Important to Stakeholders = 6, therefore the score of E_w = 46. The influence of ESG criteria implementation toward financial performance of Malaysia's LRECs is examined through multiple regression analysis (MRA) and the strength of R-squared is analysed.

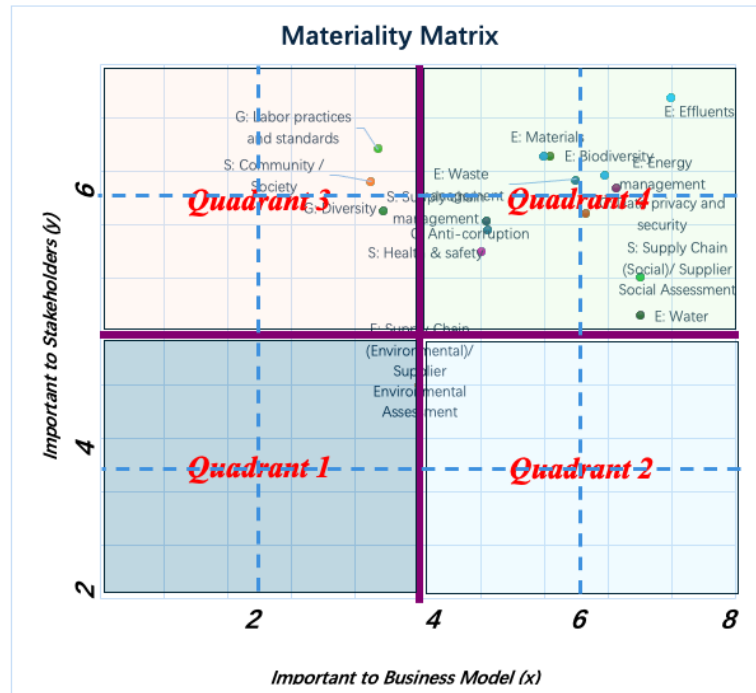


Figure 1: Scoring for ESG criteria element implementation

ANALYSIS AND DISCUSSION

The Table 1, indicates that the data analysis on MRA on the significant influence of the criteria of ESG towards Malaysia LRECs' financial performance. Under the Malaysian properties sector shows that the ESG criteria had significance relationship with the dividend yield $Y4(DY)_{Msia Prop}$ performance ($R^2 = 0.545$) indicates impact of ESG for the long-term investment goal. While Malaysia construction sector highlights that the ESG criteria had significance relationship with all the financial performance such as $Y1(TRI)_{Msia Const}$ ($R^2 = 0.531$); $Y2(Tq)_{Msia Const}$ ($R^2 = 0.817$); $Y3(P/E)_{Msia Const}$ ($R^2 = 0.505$); $Y4(DY)_{Msia Const}$ ($R^2 = 0.875$); and $Y5(ROE)_{Msia Const}$ ($R^2 = 0.548$). This seem explain that the impact of ESG factors on Tobin's q and price to earnings (P/E) can vary depending on industry, company-specific circumstances, and investor preferences.

Thus, the Malaysia plantation sector shows that the ESG criteria had significance relationship with all the financial performance such as $Y1(TRI)_{Msia Plant}$ ($R^2 = 0.751$); $Y2(Tq)_{Msia Plant}$ ($R^2 = 0.814$); $Y3(P/E)_{Msia Plant}$ ($R^2 = 0.663$); $Y4(DY)_{Msia Plant}$ ($R^2 = 0.793$); and $Y5(ROE)_{Msia Plant}$ ($R^2 = 0.793$).

=0.795). Plantation companies that effectively integrate ESG considerations into their strategy and operations may experience competitive advantages that contribute to sustainable profitability and enhanced ROE over the long term (Chong and Loh, 2023; Thomas et al., 2021). Similarly, the Malaysia REITs sector shows that the ESG criteria had significance relationship with all the financial performance such as Y1(TRI) *_Msia REITs* ($R^2 = 0.923$); Y2(Tq) *_Msia REITs* ($R^2 = 0.998$); Y3(P/E) *_Msia REITs* ($R^2 = 0.882$); Y4(DY) *_Msia REITs* ($R^2 = 1.00$); and Y5(ROE) *_Msia REITs* ($R^2 = 0.998$).

Table 1: Data Analysis of Regression Analysis the significant influence of the criteria ESG of Malaysian listed real estate companies' financial performance

Malaysian Properties	Y1(TRI) <i>_Msia Prop</i>	Y2(Tq) <i>_Msia Prop</i>	Y3(P/E) <i>_Msia Prop</i>	Y4(DY) <i>_Msia Prop</i>	Y5(ROE) <i>_Msia Prop</i>
Multiple R	0.4442	0.6542	0.5576	0.7379	0.2768
R Square	0.1973	0.4280	0.3110	0.5446	0.0766
Malaysian Construction	Y1(TRI) <i>_Msia Const</i>	Y2(Tq) <i>_Msia Const</i>	Y3(P/E) <i>_Msia Const</i>	Y4(DY) <i>_Msia Const</i>	Y5(ROE) <i>_Msia Const</i>
Multiple R	0.7289	0.9041	0.7106	0.9353	0.7404
R Square	0.5313	0.8174	0.5050	0.8747	0.5482
Malaysian Plantation	Y1(TRI) <i>_Msia Plantation</i>	Y2(Tq) <i>_Msia Plantation</i>	Y3(P/E) <i>_Msia Plantation</i>	Y4(DY) <i>_Msia Plantation</i>	Y5(ROE) <i>_Msia Plantation</i>
Multiple R	0.8667	0.9024	0.8143	0.8903	0.8916
R Square	0.7511	0.8144	0.6630	0.7926	0.7950
Malaysian REITs	Y1(TRI) <i>_Msia REITs</i>	Y2(Tq) <i>_Msia REITs</i>	Y3(P/E) <i>_Msia REITs</i>	Y4(DY) <i>_Msia REITs</i>	Y5(ROE) <i>_Msia REITs</i>
Multiple R	0.9608	0.9991	0.9389	1.0000	0.9989
R Square	0.9232	0.9982	0.8816	1.0000	0.9978
All Malaysian LREC	Y1(TRI) <i>_Msia LRECs</i>	Y2(Tq) <i>_Msia LRECs</i>	Y3(P/E) <i>_Msia LRECs</i>	Y4(DY) <i>_Msia LRECs</i>	Y5(ROE) <i>_Msia LRECs</i>
Multiple R	0.2498	0.4712	0.3151	0.6503	0.4391
R Square	0.0624	0.2221	0.0993	0.4229	0.1928

The results showed that all ESG criteria impacted the financial performance of construction, plantation, and REITs sectors. ESG factors significantly affect REITs through operational efficiency, tenant satisfaction, regulatory compliance, investor perception, and financial performance (Erol et al., 2023). ESG performance variations among listed real estate companies drive value creation and differentiation (Newell et al., 2023; Lee & Liang, 2024), with varying impacts across sectors like plantation, construction, and real estate services (Brounen et al., 2021; Kempeneer et al., 2021). However, when MRA is

conducted through all Malaysian LRECs (Y) and ESG Criteria (Xs), the results indicate that the ESG criteria had insignificance relationship with all the financial performance such as Y1(TRI) *_Msia LRECs* ($R^2 = 0.062$); Y2(Tq) *_Msia LRECs* ($R^2 = 0.222$); Y3(P/E) *_Msia LRECs* ($R^2 = 0.099$); Y4(DY) *_Msia LRECs* ($R^2 = 0.423$); and Y5(ROE) *_Msia LRECs* ($R^2 = 0.193$). This result indicate each of Malaysia LRECs sector have a difference relationship with each of ESG criteria, such example biodiversity's influence (E_b) and effect of the effluents discharge on the environmental (E_L) for plantation sector and REITs sector are difference, as such plantation sector need to put on more efforts on handle biodiversity issue compare to how REITs were to handle the biodiversity. ESG factors impact Malaysian listed real estate companies (LRECs) differently based on business models, but embracing ESG principles enhances long-term financial performance and contributes to societal well-being and environmental stewardship (Chong & Loh, 2023; Zainon et al., 2020).

CONCLUSION

This study shows that ESG criteria impact the financial performance of Malaysian listed real estate companies (LRECs) differently across sectors. The construction, plantation, and REITs sectors exhibit significant ESG influence, while the property sector affects only dividend yield. MRA reveals varying financial performance effects by sector, with COVID-19 impacting the property sector. ESG plays a key role in resilience and investor confidence ($R^2 > 0.5$).

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