

Assessing the Disclosure of Green-Rated Properties in Real Estate Investment Trust Portfolios

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ABSTRACT

The increasing global emphasis on sustainability has brought heightened attention to how Real Estate Investment Trusts (REITs) incorporate environmentally responsible practices into their property portfolios. This study conducts a content analysis on the disclosure of green-rated buildings within REIT portfolios, focusing on how such information reflects sustainability commitments and communicates its value relevance to investors. Employing a qualitative content analysis approach, the research systematically reviews the 2023 audited annual reports of all 19 publicly listed Malaysian REITs. The analysis identifies the presence and levels of certification across four (4) key rating tools: Malaysia's GreenRE and Green Building Index (GBI), along with internationally recognised standards such as Singapore's Green Mark and the U.S.-based Leadership in Energy and Environmental Design (LEED). The findings reveal diverse patterns of adoption and disclosure, reflecting varying degrees of commitment among REIT managers. The study offers meaningful insights for investors by enhancing their understanding of REITs' sustainability commitments, enabling more informed and responsible investment decisions aligned with ESG principles and long-term value creation.

INTRODUCTION

In recent decades, the concept of sustainability has garnered considerable global attention, with urgent calls for measures to mitigate environmental degradation and address climate change. In a world confronted with increasing pressures from climate change and degradation of the biosphere, the need for greener investment opportunities has never been greater. The performance of Green Real Estate Investment Trusts (REITs) is

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[BCE2.1] increasingly important in today's shifting economic landscape, where environmental sustainability and corporate responsibility are growing priorities among stakeholders. In this context, many investors are looking at green REITs or REITs focused on eco-sensitive property development and management. These trusts focus on energy-efficient buildings, sustainable construction, and eco-friendly practices, providing investors an opportunity to align their financial goals with broader environmental and social values.

Previous research highlighted that integrating green properties into REIT portfolios can yield notable monetary benefits. Eichholtz et al. (2012) discussed that a REIT's portfolio "greenness" positively correlates with key performance indicators such as return on assets and return on equity. Specifically, their findings indicate that one (1) percent more properties achieving Leadership in Energy and Environmental Design (LEED) certification could lead to ROA growth of 3.5% or ROE growth of 7% for those assets. These results indicate that Green REITs may furnish not just socially conscientious returns but also deliver tangible financial performance. Green properties also tend to attract higher rental premiums, generate higher net operating income, and incur lower operating and interest costs, which further strengthens their financial appeal (Hsieh et al., 2020). Moreover, integrating green properties into REIT portfolios may help reduce exposure to market fluctuations, making them more attractive to risk-averse investors seeking stability during economic uncertainties. Studies have shown that REITs with a higher proportion of green-certified assets exhibit lower market betas, suggesting reduced sensitivity to changes in energy prices and regulatory shifts (Eichholtz et al., 2012). Similarly, Han and Li (2022) found that REITs with more green-certified properties tend to experience less stock price volatility, indicating lower overall investment risk. Although global studies have demonstrated the increasing integration of green building certifications and sustainability disclosures within REIT portfolios, evidence from the Malaysian context remains limited. This gap highlights the need to examine how Malaysian REITs communicate their sustainability commitments through disclosure of green-certified properties. Employing content analysis of annual reports is therefore appropriate, as it enables a systematic assessment of the extent and nature of such disclosures. This research contributes to advancing the understanding of sustainability reporting practices in emerging REIT markets and provides insights that can inform both industry stakeholders and policy development.

This study investigates REITs' incorporation of green building rating tools into their property portfolios, aiming to provide insights into sustainability practices and promote awareness of environmentally responsible investment strategies in the real estate sector. This study possesses considerable educational merit for the public, especially present and potential investors, by increasing awareness of sustainable investment strategies in the real estate domain. This report analyses the disclosure practices of REITs regarding green building grading systems, providing investors with essential insights into the environmental accountability and transparency of property portfolios. It fosters educated decision-making, promoting investment selections that align with sustainability objectives. The findings endorse public education activities that promote environmental literacy, accountability, and long-term financial planning, thereby enhancing a responsible investing culture within the context of sustainable development.

LITERATURE REVIEW

Green Real Estate

The REIT market has emerged as a critical segment of the global financial ecosystem, enabling investors to invest in real estate without dealing with the complexities and obligations of direct property ownership. A literature review is conducted outlining the benefits of both conventional and green REITs, focusing on financial performance, risk diversification, sustainability measures, and operational efficiency. This review seeks to offer a comprehensive understanding of how these investment vehicles serve different

investor needs and preferences through the results of previous studies. Financially, Green REITs have been shown to deliver competitive returns compared to traditional REITs. Mariani et al. (2018) and Ates et al. (2022) indicate that Green REITs can achieve competitive returns like traditional REITs, with some evidence suggesting they may outperform in certain markets. When employing the Fama-French Five Factor Model to European Green REITs, a positive correlation is found between sustainability practices and strong financial performance. However, this model does not consider that Green REITs focus their building portfolios on sustainable buildings, which has been shown to provide long-term value creation, lower operating expenses, and lower vacancy rates with the active trend of green property demand. It is these factors that drive the competitive returns delivered by Green REITs to their investors.

Besides, risk assessment is also an important factor for Green REITs alongside financial performance. Green REITs also have relatively less amount of risk when compared with traditional REITs. Specifically, Yue et al. (2020) concluded that Green REITs generally have lower standard deviations and higher Sharpe ratios, suggesting better risk-adjusted returns. Additionally, green REITs have lower volatility, which can be appealing to investors who look for stability during market fluctuations. Handayani and Rokhim (2023) mentioned in their study that Green REITs generally have less volatility, meaning that investors can still achieve stable returns even when market conditions are unstable. This lesser volatility is frequently explained by the long-term advantages often associated with sustainable alternatives, including reduced operating costs, increased demand from tenants, and superior asset value appreciation.

However, while sustainable investments are in high demand, there are evolving risks in the market. Yue et al. (2020) argue that the increasing popularity of Green REITs may result in risks related to oversupply of socially responsible assets. More funds attracted, more asset price inflation, risk of mispricing as the market gets competitive. Thus, the market dynamics and corresponding risk involved in Green REITs need to be closely balanced by investors along with their financial returns.

Green Rating Tools

With the growing recognition of environmental sustainability, green building rating tools have been adopted in many countries to lead the design of energy-efficient, resource-conserving, and environmentally responsible buildings. It is a key to promoting the construction of new advances in technologies in a sustainable way around the world. With this designation, advances in sustainable design and construction can also be rewarded through these tools, which evaluate buildings based on environmental, economic, and social criteria. Countries have created their country-specific rating systems based on local parameters and requirements, which can significantly influence their adoption and effectiveness.

Key Challenges for Incorporating Green Building in REIT Property Portfolios

While the previous discussion focused on green building development at a broader level and national perspective, it is equally important to understand how these sustainability efforts apply within Malaysian REITs. Although green rating tools such as GBI and GreenRE provide structured guidance for sustainable practices, their adoption in REIT portfolios remains limited. This indicates that progress at the national level does not always translate into adoption at the portfolio level and that REITs face their own specific issues when deciding whether to include green-certified buildings.

In this context, integrating green buildings into Malaysian REITs portfolio has become increasingly important, particularly as investor expectations and market interest in sustainable real estate continue to rise. However, this transition is shaped by a range of practical constraints. REIT managers must navigate financial implications, operational readiness, regulatory requirements and varying levels of market awareness. These factors together make the adoption of green-certified properties slower and more challenging within REIT holdings. To strengthen the relevance to REITs, it is also crucial to note that

REITs must balance sustainability initiatives with stable returns, regulatory obligations and tenant demand, which further influences their adoption decisions.

Financial Barriers

High Initial Costs: The implementation of sustainable building practices and features frequently necessitates a substantial initial investment. These expenses may encompass energy-efficient systems, sustainable materials, and green certifications, which may be more costly than conventional construction methods (Far, 2023). Similar challenges have been noted in other contexts, such as in South Africa, where higher up-front costs and expenses related to green technologies and certifications pose major challenges (Simpeh et al., 2021). For Malaysian REITs, these high initial expenditures can be particularly restrictive because REITs operate under regulatory caps on development activities and must prioritise stable dividend payouts.

Cost-Benefit Uncertainty: Although green buildings may have the potential to generate higher returns in the long term, the substantial upfront costs and uncertainty of obtaining these returns can discourage investors. Striking a balance between the significant initial investment and the expected financial benefits remains a critical issue (Mangialardo & Micelli, 2024). This uncertainty is especially relevant for REITs, which must demonstrate consistent income performance to unit holders.

Operational Barriers

Maintenance and Upgrades: To ensure green buildings adhere to ever-changing environmental regulations and align with the rising demands of tenants who prioritise sustainability, they need to be maintained continuously and require regular enhancements. According to Guan (2023), these requirements can increase day-to-day operating expenses and cause additional layers of complexity. Such operational demands may discourage REITs from acquiring older buildings that would require costly retrofitting to meet certification standards.

Technological Integration: Introducing advanced technologies to improve energy efficiency, save water, and include other environmentally friendly features can be quite challenging. This is because it requires specialised knowledge and skills, as well as careful planning and management, so that these technologies are properly installed and will be used effectively (Akin & Akin, 2024). The limited availability of technical expertise in Malaysia further compounds this challenge for REITs.

Regulatory Barriers

Compliance and Incentives: Dealing with rules and regulations related to green buildings can be a complicated process. While there are helpful incentives available, like grants or tax credits, the regulations themselves are often strict and can vary greatly from one (1) region to another (Abdulrahim et al., 2024). Not only does this variation add to the difficulty of ensuring compliance, but it also makes it more challenging for developers and building owners to successfully adopt building practices.

Green Building Certification: Obtaining green building certifications, such as the Green Building Index or Green Real Estate, is not an easy process. It requires a detailed and demanding process that can consume a significant amount of time, effort, and financial resources. It involves strict criteria and regular assessments to ensure ongoing compliance with sustainability standards. The absence of a universally accepted global certification system also creates further complications, especially for REITs that operate across multiple countries, because they must adapt to different sets of certification requirements in each region (Mustika et al., 2024). This challenge becomes even harder because there are many different green

building standards and certification schemes that differ across markets and are often not supported by consistent regulatory frameworks (Zhang et al., 2019; Leskinen et al., 2020).

Market-Related Barriers

Tenant Demand and Retention: Even though many people are interested in eco-friendly buildings, the higher rent often charged for these green properties makes it hard to find and keep tenants. The majority of tenants may not want to spend extra money for green features, especially in areas where being environmentally friendly is not yet a big priority and widely valued. Therefore, this can cause difficulties for building owners to ensure their properties are fully rented and achieve long-term tenant retention (Far, 2023).

Market Awareness and Education: A lack of public awareness and understanding about the advantages of green buildings can make it harder to gain acceptance in the market. It is very crucial to acknowledge and educate stakeholders, including tenants and investors, regarding the long-term benefits of green buildings, such as energy savings and improved comfort. However, this can be a challenging task that involves continuous effort and effective outreach strategies (Abdulrahim et al., 2024). Despite the well-recognised benefits of green buildings for sustainable development, limited public acceptance and inadequate information dissemination remain persistent obstacles to their wider adoption (Bungau et al., 2022). The challenge is further complicated by the limited availability of trained professionals and accredited consultants, along with insufficient information outreach and low public acceptance of green building practices (Liu et al., 2022).

The integration of green buildings into Malaysian REIT portfolios is hindered by diverse financial, operational, regulatory, and market-related challenges. Therefore, a collective effort is needed from government bodies, developers, investors, and consumers to address these issues and build a supportive ecosystem that encourages sustainable practices within the Malaysian real estate sector.

RESEARCH METHODOLOGY

This study employs a qualitative research methodology utilising content analysis to examine the incorporation of green building grading methods inside the property portfolios of Malaysian REITs. The objective is to examine the disclosure of sustainability activities, namely the implementation of green certifications such as GreenRE, Green Building Index (GBI), BCA Green Mark, and LEED, in publicly accessible company records. This approach corresponds with the study's social science emphasis, highlighting interpretation, meaning construction, and the educational significance of sustainability reporting. Similar content analysis approaches have been effectively applied in previous research to assess sustainability and SDG-related disclosures in the real estate sector (Lonascu et al., 2020; Squier & Booth, 2023).

Data Collection

The principal data source for this study is the 2023 annual reports of all publicly listed Malaysian REITs, as made available on their websites and the Bursa Malaysia platform. A total of 19 Real Estate Investment Trusts (REITs) were incorporated in the sample. The year 2023 was chosen since, during data collection, the majority of 2024 reports had not been produced or reviewed, rendering them inappropriate for thorough study. The 2023 reports are comprehensive and audited, thereby reflecting the most current and trustworthy data available.

Data Analysis

The content study concentrated on segments pertaining to sustainability reporting, property portfolio disclosures, and environmental, social, and governance (ESG) efforts. Keywords and indicators were employed to pinpoint references to green building certifications and environmental performance initiatives. The coding framework was developed based on prior studies on sustainability disclosure and green building certifications in the real estate sector (Newell & Manaf, 2008; Zahid et al., 2016). Three (3) main categories guided the analysis: (i) type of certification (e.g., GreenRE, GBI, LEED, Green Mark), (ii) level of certification (e.g., Certified, Silver, Gold, Platinum), and (iii) disclosure context, which refers to where and how the certifications were reported within the annual reports, such as in the sustainability section, property listings, chairman's statement, or portfolio highlights. The keyword selection process involved reviewing terminology commonly used in green building rating tools and sustainability reporting, as well as conducting a preliminary scan of REIT annual reports to ensure contextual relevance. The final list of keywords included "GreenRE," "Green Building Index (GBI)," "LEED," "Green Mark," "certified," "achieved," "green-certified," "Silver Certification," "Gold Certification," "energy-efficient building," "sustainable building," "green feature," and "environmental certification." Each keyword occurrence was coded according to the established categories to identify disclosure patterns and the extent of green certification integration across REIT portfolios.

Data were classified and encoded to discern trends, themes, and the prevalence of green certification uptake. This qualitative investigation provides profound insights into the communication of sustainability initiatives by REIT management and the potential of such disclosures as teaching instruments for investors and the public. The approach underpins the study's overarching objective of advancing sustainable real estate education and fostering transparency in environmental governance within the real estate investment domain. To enhance methodological rigour, the coding framework and keyword selection process were clearly defined, and the data classification criteria were systematically applied across all REIT annual reports. An inter-coder review procedure was conducted, in which two (2) independent researchers cross-checked and compared the coded data to ensure consistency and reliability of interpretation. Any discrepancies were discussed and reconciled through consensus to minimise subjective bias. While this study primarily relies on qualitative document analysis, future research could incorporate triangulation methods, such as surveys or interviews with REIT managers, to validate disclosure practices and provide deeper insights into the implementation of sustainability initiatives.

FINDINGS

The strategic utilisation of rating techniques in Malaysia is evident in the subsequent analysis.

Comparing Malaysian REIT Certification Practices with Global Trends

Globally, there is a wide range of green building rating systems, including LEED, BREEAM, Green Star, ITACA, CASBEE, BEAM Plus, ASGB, Green Mark, Green Ship, GBI, and GreenRE. Across international REIT markets, sustainability practices and building certification frameworks have gained increasing prominence. In North America, REIT portfolios are progressively incorporating LEED and ENERGY STAR certified buildings, reflecting the broader institutionalisation of recognised sustainability standards (Eichholtz et al., 2012). Similarly, European REITs have expanded participation in schemes such as BREEAM, supported by stronger regulatory expectations and investor scrutiny. At the global level, institutional investors increasingly rely on standardised ESG indicators for real assets, where verified building certifications contribute materially to investment assessment and benchmarking outcomes.

In this global context, Malaysian REITs' sustainability reporting and green certification uptake show partial alignment with international trends. While Malaysian REITs acknowledge a broad spectrum of global standards, they predominantly adopt GBI, GreenRE, LEED, and Green Mark for sustainability reporting and certification. This selective adoption reflects a strategic focus on certifications that are most relevant to the Malaysian context, balancing international credibility with domestic regulatory requirements, tropical climatic conditions, cost considerations, and data availability.

Malaysian REITs exhibit similarity with global peers by internationally recognised certifications such as LEED and Green Mark, which share common assessment dimensions including energy efficiency, water management, indoor environmental quality, and sustainable site planning (Stahel et al., 2025). At the same time, differences emerge in the prominence of locally developed certification schemes. GBI and GreenRE are more widely adopted, yet variations in criteria weighting, technical thresholds, and documentation requirements limit direct equivalence with global certifications.

Our portfolio level content analysis of 19 listed Malaysian REITs indicates heterogeneous adoption patterns. A small group of leaders pursue multi certification strategies, including internationally recognised tools, while many REITs disclose limited certification presence, with GreenRE and GBI appearing as the dominant locally relevant pathways. This mirrors other emerging markets, where sustainability disclosure quality and assurance often improve more slowly due to uneven regulatory enforcement, data readiness constraints, and thinner market incentives, even as global frameworks diffuse through capital markets.

By contrast, more mature markets face stronger climate-risk disclosure expectations, deeper institutional investor scrutiny, and, in some jurisdictions, building-performance laws or carbon-related compliance pressures that accelerate both certification uptake and the use of decision-relevant metrics. Comparatively, Malaysian REITs are moving in the same strategic direction as global peers by using certifications to signal ESG credibility and support investor communication, but observed dispersion in certification levels and disclosure placement indicates that cross-country comparability remains constrained by regulatory timing, certification cost, asset quality, and investor pressure.

Across ASEAN countries, including Singapore, Thailand, Indonesia, the Philippines, and Malaysia, REITs and property firms show notable variation in ESG integration and green certification practices. Jamaludin and Razali (2024) report that ESG adoption is rising across Southeast Asia, with Singapore and Malaysia leading due to stronger regulatory and governance frameworks. Meta-analysis by Zheng and Lee (2025) further highlights that the environmental and social pillars of ESG significantly influence performance, while governance effects appear weaker or non-significant. These regional insights provide important context for understanding Malaysian REIT practices, as well as the differences in regulatory environments, market maturity, and ESG benchmarking across Southeast Asia.

Green Rating Tools Used in the Malaysian Real Estate Sector

Table 1 presents a comparison of green rating tools commonly used in Malaysian REITs. GreenRE is more economical and pragmatic, aiming for widespread acceptance among REHDA members, which encompasses numerous residential and commercial developers. It is particularly pertinent for REITs seeking to enhance the sustainability of their portfolios without incurring substantial certification expenses. On the other hand, GBI is characterised by technical rigour and robust architectural and engineering underpinnings. It holds greater prestige in Malaysia; however, it may be more expensive and resource-demanding to execute. In addition, the BCA Green Mark is regionally acknowledged and frequently utilised for premium, cross-border, or globally supported initiatives. It is advantageous for REITs aiming at overseas institutional investors or adhering to Singaporean sustainability regulations. Similarly, LEED is the most globally recognised system, favoured by international REITs or developers aiming for broad investor appeal and cross-border compliance.

Table 1. Comparison of Green Rating Tools Used in Malaysian Real Estate Investment Trusts

Feature	GreenRE	GBI	Green Mark	LEED
Origin	Developed by REHDA	Jointly developed by PAM and ACEM	Developed by Singapore's BCA	USGBC
Launch year	2013	2009	2005	1998
Geographical scope	Malaysia	Malaysia	Singapore	Global
Cost	Lower	Moderate to high	Moderate to high	High
Assessment category	Energy, water, carbon emission, indoor environment, materials, other green features	Energy, indoor environment, sustainable site, water, materials and resources, innovation	Energy, health & wellbeing, whole life carbon, maintainability, resilience, intelligence	Energy, water, material, indoor environmental quality, location, sustainable sites, innovation
Rating level	Bronze, Silver, Gold, Platinum	Certified, Silver, Gold, Platinum	Certified, Gold, GoldPLUS, Platinum	Certified, Silver, Gold, Platinum
For REIT	Increasingly adopted by local REITs for ESG and cost-efficiency	Preferred by premium and architecturally driven developments	Used by REITs with regional (ASEAN) portfolios	Popular among REITs targeting international recognition or global investors
Recognition	National	National	Regional	Global

Notes: REHDA (Real Estate and Housing Developers Association, Malaysian Institute of Architects), ACEM (Association of Consulting Engineers Malaysia), BCA (Building and Construction Authority), USGBC (US Green Building Council).

Source: Authors (2025)

Incorporating Sustainability in Malaysian REITs

Most of the REIT companies incorporate green initiatives, such as focusing on energy use & climate change, water management, and waste management in their property portfolio. In addition, the management engaged in portfolio-wide sustainability initiatives, including energy audits and electrical safety training; typical energy efficiency and carbon footprint management were applied. In addition to that, the healthcare REIT participates in overall environmental sustainability efforts. However, based on content analysis, there are four (4) common green building rating tools found in the property portfolio of the Malaysian REITs (see Table 2). The table illustrates a transforming environment in Malaysian REITs, wherein sustainability has become a strategic imperative rather than an optional consideration.

In Malaysia, the two (2) main green rating tools commonly used to evaluate green buildings are the Green Building Index (GBI) and Green Real Estate (GreenRE) Lam et al., (2024). Both tools serve as essential benchmarks for measuring environmental performance and aligning with sustainable development goals in the property sector (Abd. Hamid et al., 2014). A recent study confirms that these green rating tools remain relevant and widely applied. For example, Chuweni et al. (2024) found that GBI-certified properties receive a higher market price, which indicates that the certification continues to have value in the Malaysian property market. In addition, Abdullah and Usman (2022) noted that both GBI and GreenRE are now being used not only for building certification but also part of carbon-footprint assessments and ESG reporting, which reflects their growing strategic importance.

The GBI is a homegrown green rating tool specifically tailored to fit Malaysia's unique environmental conditions, including its tropical climate and local cultural considerations (Usman & Abdullah, 2018). It is also known as the most recognised green building rating tool in Malaysia, facilitating the assessment of sustainable construction practices (Razman et al., 2023). It features a comprehensive

framework with 15 assessment tools that evaluate a wide range of sustainability aspects, such as energy efficiency, water conservation, indoor and outdoor environmental quality, and sustainable site management (Usman & Abdullah, 2018). GBI's integration with financial incentives such as tax rebates and development allowances further encourages adoption among developers, property owners, and REIT managers seeking long-term value through sustainable practices (Abdul-Aziz & Ofori, 2012).

On the other hand, GreenRE is another widely used Malaysian green rating tool, created to highlight the country's growing environmental challenges while being practical and accessible. With four (4) core assessment tools, GreenRE places a stronger focus on specific areas like energy and water efficiency (Usman & Abdullah, 2018). Its relatively straightforward scoring process and the ease of attaining higher certification levels make it a well-known choice for REITs aiming for visible sustainability outcomes with fewer barriers to entry (Usman & Abdullah, 2018).

Green Mark, launched in Singapore, is a prominent initiative designed to promote environmentally sustainable building practices within the construction industry. It was designed to promote more sustainable and energy-efficient buildings and has become an important standard for environmental sustainability in Singapore. The Green Mark certification extends to two (2) key aspects, which are energy-related requirements and other green building criteria. It evaluates buildings based on energy efficiency, water conservation, and indoor environmental quality, among other criteria (Mahmud et al., 2024). The Green Mark scheme was introduced to enhance environmental sustainability in the construction industry, to have 80% of buildings certified by 2030 (Chiu et al., 2017).

Although GreenRE is fundamental, REITs seeking elevated ESG ratings or international investment are progressively incorporating GBI, Green Mark, and LEED certifications. This combination embodies varied portfolio strategies, financial considerations, and stakeholder anticipations. GBI is the most widely adopted among the REITs listed, with 5 out of 9 REITs incorporating it into their portfolios, followed by LEED with 4 out of 9 REITs and GreenRE and Green Mark with 3 out of 9 REITs, respectively. Sunway REIT emerges as the most diversified sustainability leader in the sample, given its multi-system certification coverage and presence of higher-tier ratings. KLCC REIT demonstrates strong sustainability performance, particularly with its LEED Platinum (****) certification, alongside solid GBI ratings. This indicates strong alignment with both international and national green building standards. Similarly, Sentral REIT records high-tier certifications under Green Mark and LEED, reflecting robust building performance and recognition across both regional and global sustainability frameworks.

Malaysian REITs are diligently integrating the GBI into their property portfolios, motivated by the advantages of elevated market prices, governmental incentives, and the prospects for tailored insurance products. This tendency corresponds with the overarching objective of advancing sustainability and environmental stewardship within the real estate industry. KLCC REIT and Sunway REIT demonstrate multi-certification strategies, incorporating GreenRE, GBI, Green Mark, and LEED to various extents. This suggests an advanced commitment to sustainability, likely motivated by ESG positioning, tenant attraction, and global investor engagement.

LEED, known for its international prestige, is adopted primarily by REITs with high-end commercial properties and global investment appeal. Studies have found that REITs with more green-certified buildings, especially those with LEED certification, tend to perform better financially, as they usually have higher returns on assets (ROA) and equity (ROE) (Eichholtz et al., 2012; Ho et al., 2013). This indicates that the greenness of the portfolio positively impacts the financial health of the REITs. GBI is used by Tower REIT, AME REIT, IGB Commercial REIT, KLCC REIT and Sunway REIT but typically at lower certification levels, indicating selective use likely driven by building type or legacy certifications. On the other hand, Green Mark, a Singapore-origin tool, is applied modestly, primarily by CapitaLand Malaysia

Trust, Sentral REIT and Sunway REITs, both of which may have cross-border assets or projects with Singaporean design influences.

Table 2. Integration of Sustainability Rating Tools in REIT Portfolios

REIT	Certified Property Sector	GreenRE	GBI	Green Mark	LEED
Axis REIT	Warehouse	*** ** **			
CapitaLand Malaysia REIT	Retail			**** ***	
Tower REIT	Commercial		*		***
AME REIT	Warehouse		* * * * * * * * * * *		
IGB Commercial REIT	Commercial office building, Retail	***	**		
KLCC REIT	Commercial, Retail		*** ** **		****
Sentral REIT	Commercial			****	****
Sunway REIT	Commercial Office building	**** ***	* *	*** *** ***	
UOA REIT	Commercial office building				***

Notes: * Certified, ** silver, *** gold, **** platinum

Source: Authors (2025)

The analysis revealed that most green-certified properties within Malaysian REIT portfolios comprise commercial office buildings and retail malls, reflecting the sector's focus on energy efficiency, environmental performance, and tenant well-being in high-occupancy assets. A smaller proportion of certified properties includes industrial warehouses, where certification adoption is still emerging but demonstrates growing awareness of sustainability standards across diverse property types. This analysis could provide clearer implications for investors, who may perceive certified assets as indicators of operational efficiency and long-term value, and for policy makers, who can leverage these insights to promote wider adoption across other property sectors.

CONCLUSION

The analysis revealed that most green-certified properties within Malaysian REIT portfolios comprise commercial office buildings and retail malls, reflecting the sector's focus on energy efficiency, environmental performance, and tenant well-being in high-occupancy assets. A smaller proportion of certified properties includes industrial warehouses, where certification adoption is still emerging but demonstrates growing awareness of sustainability standards across diverse property types. This analysis could provide clearer implications for investors, who may perceive certified assets as indicators of operational efficiency and long-term value, and for policy makers, who can leverage these insights to promote wider adoption across other property sectors.

In conclusion, while the incorporation of green buildings into Malaysian REIT portfolios is still developing, there are significant challenges and potential benefits that suggest a growing trend towards sustainability in the real estate market. The positive impacts observed in other regions and expert recommendations indicate that green buildings could play a more prominent role in the future of Malaysian REITs. While there is no direct mention of specific measurement practices by Malaysian REITs, the use of GBI and GreenRE rating systems, along with the focus on IEQ, energy, and water efficiency, provides a framework for assessing the environmental impact of green buildings in their portfolios. The financial benefits and strategic implications further support the adoption of green building practices.

This study presents a novel contribution by empirically analysing the integration of four (4) green building rating tools, namely GreenRE, GBI, Green Mark, and LEED, within Malaysian REITs using 2023 audited annual reports. Unlike prior research that focuses primarily on sustainability theory or financial performance, this study adopts a qualitative content analysis to reveal actual corporate practices and disclosure behaviour. Its originality lies in framing REIT sustainability adoption as a public educational tool, particularly for investors, by bridging real estate, environmental governance, and social science education. The research offers fresh insights into how REITs operationalise sustainability, providing evidence-based implications for responsible investment literacy.

This study strengthens its contribution by demonstrating how the systematic mapping of GreenRE, GBI, Green Mark, and LEED certifications within Malaysian REIT portfolios provides practical and investor relevant insights by identifying clear leaders namely Sunway REIT, KLCC REIT and Sentral REIT with multiple high level certifications and laggards with minimal or no certified assets, thereby revealing tangible gaps in sustainability integration and ESG transparency across the sector. Earlier Malaysian REIT sustainability studies predominantly focused on environmental reporting quality, corporate sustainability narratives, or the financial performance effects of green buildings. Therefore, this research extends the literature by offering the first empirical, portfolio level content analysis using the 2023 audited reports of all 19 listed REITs, enabling a more granular understanding of actual certification adoption rather than general sustainability claims. The findings also carry important policy implications which include the uneven patterns of disclosure which highlight the need for more consistent regulatory requirements such as mandatory, standardised ESG reporting frameworks, clearer guidelines on green certified asset disclosure, and fiscal incentives to encourage certification uptake, particularly among REITs with older or non-compliant assets. The results further align with institutional and legitimacy theory, suggesting that REITs with higher visibility or international exposure adopt globally recognised tools (e.g., LEED, Green Mark) to secure legitimacy among investors and regulators, whereas others adopt only minimal certifications to meet normative expectations. Additionally, the study situates Malaysian REIT practices within an international context, revealing comparatively lower certification penetration than mature markets such as Singapore or Europe, where regulatory pressure and investor activism accelerate green adoption. By synthesising these comparatives, theoretical and policy dimensions, the study delivers clearer value for investors, regulators, and industry stakeholders seeking to evaluate sustainability commitments, benchmark

REIT performance, and understand the structural drivers behind Malaysia's evolving green real estate landscape.

This study offers practical value for real estate investors, fund managers, and sustainability professionals by identifying the extent to which green building certifications are integrated into REIT portfolios. The findings provide a benchmark for assessing the environmental credibility of REITs, allowing stakeholders to make more informed and responsible investment decisions. Additionally, the comparative analysis of rating tools helps REIT managers choose certifications that align with portfolio strategies, budget constraints, and ESG goals. The study also supports property developers and consultants by highlighting the types and levels of certification most pursued, thus guiding sustainable development practices within the Malaysian REIT sector.

In addition, the study carries significant social implications by promoting sustainability awareness among the public, particularly individual investors, through accessible and transparent ESG information. It supports the broader social goal of environmental responsibility by demonstrating how institutional investment decisions contribute to sustainable development. By positioning REIT disclosures as a public learning tool, the research empowers citizens to engage in sustainable finance and understand the impact of green-certified buildings on health, efficiency, and climate action. Furthermore, the study encourages policy dialogue on standardising sustainability reporting in real estate, contributing to more equitable, environmentally conscious investment systems aligned with global and national sustainability goals.

In future research, a quantitative component will be incorporated to complement and validate the qualitative findings. Adopting a mixed-method approach will allow for statistical testing, improve the generalisability of the results, and provide a more holistic understanding of the research phenomenon. Future research can also be expanded by incorporating longitudinal analysis to track trends in green certification adoption over multiple years, offering insights into REITs' evolving sustainability commitments. Additionally, researchers could conduct interviews with REIT managers or sustainability officers to explore the decision-making processes behind certification choices. Comparative studies across different countries or regions could reveal how regulatory environments influence green investment behaviours. Future work may also examine the financial performance impact of certified green buildings within REIT portfolios. Integrating quantitative metrics with content analysis would provide a more comprehensive understanding of how sustainability disclosure correlates with investor trust and market performance.

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CONFLICT OF INTEREST STATEMENT

The authors agree that this research was conducted in the absence of any self-benefits, commercial or financial conflicts and declare the absence of conflicting interests with the funders.

AUTHORS' CONTRIBUTIONS

Nurin Iyazi Raman conducted the literature review, examined the key challenges, and developed the research methodology, which was discussed and refined together with Nor Nazihah Chuweni. Nor Nazihah Chuweni developed the introduction and contributed to the construction of the results and findings section, including the preparation of key tables such as the green rating tools table and the incorporation of the sustainability in REITs table. Andrea Blake reviewed, revised, and approved the final manuscript for submission.

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