



Understanding the adoption of voluntary environmental, social and governance (ESG) standards in the real estate sector

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Abstract

The environmental performance of the real estate sector has been subject to growing scrutiny in recent years, with the United Nations estimating that the sector accounts for a substantial share of global energy consumption and energy-related greenhouse gas emissions. In turn, environmental, social and governance (ESG) factors are becoming increasingly significant investment considerations for real estate investors. In this context, voluntary ESG standards are becoming central in promoting sustainable and responsible practices among real estate players, and in helping them to address global challenges. Thus, this report is of importance in three respects: first, we review the academic literature in relation to the drivers of organizational adoption of voluntary ESG standards; second, we analyse GRESB's Real Estate Benchmark, the de facto industry standard for ESG activities in the real estate industry; and finally, we provide recommendations for industry professionals and future researchers interested in the adoption of voluntary ESG standards in the real estate industry.

Keywords

ESG, sustainability, voluntary standards, real estate

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Contents

1. Introduction	2
2. The significance of adopting ESG practices and standards in the real estate sector	3
3. Drivers of adoption of voluntary ESG standards	4
3.1 Expected returns	4
3.2 Internal organizational characteristics	4–5
3.3 Society and stakeholder pressures	5
3.4 Government and regulatory pressures	5–6
3.5 Ecosystem development	6
3.6 Summary	7
4. Case study: Voluntary sustainability standards in the real estate industry	8
4.1 Case context: The Global Real Estate Sustainability Benchmark, GRESB	8
4.1.1 GRESB's Real Estate Benchmark and Assessment	8
4.1.2 GRESB's Public Disclosure dataset	9
4.2 Overview of GRESB real estate assessment and public disclosure	10
4.2.1 Comparison of GRESB Real Estate Assessment participants and non-participating counterparts	10–12
4.2.2 GRESB Public Disclosure score: Real Estate Assessment participants vs. non-participating counterparts	13–16
5. Discussion and future research	18
5.1 Recommendations for developers of standards and rating agencies	18–19
5.2 Recommendations for researchers	19
Bibliography	20–23
Appendix 1: GRESB's Real Estate ESG Voluntary Standard Scoring Model (GRESB, 2021)	24

1. Introduction

Across all sectors, organizations are increasingly being held accountable for the impact of their activities on the environment and broader society, and they are expected to meet stakeholders' demands for transparency as to their environmental, social and governance (ESG) performance (PRI 2016). Furthermore, investors and finance professionals are showing increasing recognition of the material impact of ESG-related policies and initiatives on the financial performance of organizations (SSF 2018).

The real estate sector has come under particular scrutiny because it is a key sector for environmental and social action and, in 2019, it recorded its highest ever carbon dioxide (CO₂) emissions, thereby exhibiting a negative trend in relation to achievement of the Paris Agreement climate objectives (UNEP 2020). Accordingly, ESG factors are becoming increasingly crucial in this sector, and investors are expected to contribute to the achievement of environmental and social goals by supporting more sustainable real estate via their investment decisions (PRI 2016).

Thus, by focusing on real estate as the context for investigation, this report aims to review the drivers of adoption of voluntary sustainability standards by organizations, including funds, firms and foundations, that are interested in monitoring and improving their environmental and social impact. Understanding these drivers may inform further exploration of organizational strategies with regards to both participation in industry sustainability standards and the disclosure of ESG activities. Although a variety of guidelines for ESG reporting have emerged in recent years, including a number of different reporting frameworks, as well as national legislation, this report focuses on voluntary standards. Such voluntary undertakings may offer a means for different stakeholders and the wider society to deal with fast-changing environmental laws and contexts more effectively than through regulation.

This report is also relevant to the development of industry partnerships that can lead to a positive impact in the world by contributing to the United Nations 2030 agenda and is, therefore, closely aligned with the long-term strategy of University College London of making a positive contribution to addressing the United Nations' Sustainable Development Goals (SDGs).



2. The significance of adopting ESG practices and standards in the real estate sector

The United Nations has recognized the real estate sector as being central to the achievement of its SDGs because of the profound environmental and social implications associated with the sector, making the integration of ESG considerations into the management of the built environment especially significant (PRI 2016, UNEP 2019). In the context of the climate objectives established in the 2015 Paris Agreement, the real estate sector is critical, because buildings and construction account for 35% of global energy use, and 38% of global, energy-related, greenhouse gas emissions (UNEP 2020). Ambitious climate goals, which have been supported by institutional investors, have increased pressure on organizations to report on their carbon emissions and, more broadly, the environmental and social impact of their activities (SSF 2018, EPRA 2018, EPRA 2017).

The importance of adopting ESG considerations in the management of the real estate sector is reinforced by the estimation that the world's building stock is expected to double between now and 2050, providing the opportunity to ensure that new buildings contribute to both SDG 7, the delivery of clean, affordable energy, and SDG 11, the delivery of affordable and adequate housing for all (UNEP 2019).

Investors have a central role in facilitating the achievement of climate objectives and other environmental and social aims because a significant proportion of the building stock is owned by real estate investment trusts, or REITs¹ (PRI 2019). Some of these trusts are publicly traded, allowing investors, through their investment decisions, to influence the incorporation of ESG practices into the management of the built environment (PRI 2016). Moreover, some investors may favour those real estate assets with high sustainability performance because of their premium value (Fuerst & McAllister 2011). Thus, transparency in reporting ESG policies and practices in the real estate sector becomes crucial for enabling informed investment decisions, and voluntary ESG reporting standards provide investors with validated, standardized and comparable ESG data on real estate assets and REITs (GRESB 2021a).

The real estate sector has recently been in the spotlight on account of its trend in increasing carbon emissions, which in 2019 were the highest ever recorded (UNEP 2020). In this sense, government intervention, in the form of policies, regulation and codes, has been recognized as a powerful instrument in reversing this trend and supporting the sector in achieving its environmental and social goals (UNEP 2020). For example, Japan and Canada are developing policies to achieve net-zero standards for buildings by 2030, Sweden is studying the possibility of introducing an environmental certification for new buildings, and Switzerland is considering stringent CO₂ emissions caps for existing buildings (UNEP 2019). Voluntary and self-regulation initiatives have also increased in significance, with movements such as the Montreal Carbon Pledge, which requires investors to publicly disclose the carbon footprint of their portfolios, and the influential UN-backed Principles for Responsible Investment (PRI) network, which requires its members to adopt six principles that aim to incorporate ESG issues in investment decisions (SSF 2018). Within the context of this progress towards transparency, institutional investors are increasingly being required to disclose the exposure of their investments to ESG-related risks.

¹REITs are companies that own or finance income-producing real estate across a range of property sectors. REITs invest in a wide scope of real estate property types, including offices, apartment buildings, hotels, warehouses, retail centres, medical facilities, data centres, cell towers, and infrastructure. Most REITs focus on a particular property type, but some hold multiples types of properties in their portfolios. Most REITs operate a straightforward and easily understandable business model: by leasing space and collecting rent on its real estate, a REIT generates income which is then paid out to shareholders in the form of dividends. The majority of REITs are publicly traded equity REITs (NAREIT 2021).

3. Drivers of adoption of voluntary ESG standards

In this section, we explore some of the main academic debates around why organizations choose to disclose ESG-related information and, in particular, voluntarily adopt ESG standards. We focus on some of the different pressures – internal and external to the organization – that influence these decisions.

3.1 Expected returns

Many of the studies on the adoption of ESG standards focus on centralized and highly regulated industries; for example, scholars have examined ESG practices in green building (York, Vedula & Lenox 2018), electric utilities (Delmas & Montes-Sancho 2011), and chemical production (King & Lenox 2000).

As the ESG debate and its relevance grew, many managers started to think about how different ESG strategies could lead to competitive advantages for their organizations (Sharma & Aragón-Correa 2005, Sharma & Vredenburg 1998). The adoption of environmental performance standards might, in some circumstances, provide financial returns but it requires intense managerial effort and commitment (Berrone & Gomez-Mejia 2009, Russo & Fouts 1997) because market-based initiatives and instruments can be affected by uncertainty and market fluctuations (Keohane et al. 1998), and are often associated with high initial implementation costs. Organizations may still take into consideration the short-term impacts of environmental standards adoption through traditional financial and accounting lenses. From this viewpoint, the adoption of voluntary standards increases costs and creates additional barriers to investment, resulting in managerial resistance when it comes to allocating resources to such activities. This creates short-term disincentives, limiting the immediate and future adoption of voluntary ESG standards. Yet for environmentally sustainable technology to be broadly available in the future at a competitive price, there needs to be a much greater adoption of environmental standards in order to generate ‘economies of scale’ (Khanna & Brouhle 2009).

One way to deal with this market resistance to the voluntary adoption of ESG standards is to create policy incentives that target the economic interests of adopters, helping to shift negative views of such standards by minimizing the risk of generating costs that are certain in exchange for economic benefits that are uncertain. Such a strategy was employed, for example, to increase the adoption of wind-energy technology in the US (York, Vedula & Lenox 2018). Wind-energy technology is one of the more sustainable options among a range of generating technologies that organizations can choose to adopt. However, from a financial perspective, it was expensive at the outset and, therefore, the US government created a policy-based incentive to promote its adoption (Pacheco et al. 2014). For voluntary standards to be successfully adopted by organizations, there needs to be a clear understanding of how such adoption can reduce costs or increase revenue. Thus, the market benefits argument, although not the sole consideration, remains an important driver of the adoption of voluntary standards.

3.2 Internal organizational characteristics

Scholars have been investigating whether certain organizational characteristics make the adoption of ESG standards and reporting more likely, and many organizational features have been explored in this context. Among these, ownership has received particular attention. Public companies (i.e. those listed on the stock exchange) tend to report more actively because of their need to comply with reporting regulations and to satisfy shareholders. Furthermore, reporting of ESG-related performance may affect a firm’s ability to raise capital when seeking finance in the market (Clarkson, Li, Richardson & Vasvari 2008). Some studies have pointed out that concentrations of share ownership (i.e. >20%) can reduce sustainability reporting (e.g. Gamerschlag et al. 2011) in comparison to organizations with dispersed ownership, where, because of information asymmetry, shareholders seek more data and can only access it in reports. Similar considerations may explain why business-to-consumer (B2C) companies are more likely to engage in reporting

activities (Haddock-Fraser & Fraser 2008) than business-to-business (B2B) companies, which display lower levels of disclosure (Groves et al. 2011).

Size might also influence an organization's willingness and ability to disclose environmental and social performance data. Larger organizations tend to report more extensively on their sustainability performance and initiatives, which may be partially explained by greater public pressure and investor scrutiny (Fortanier et al. 2011, Gallo & Christensen 2011). Larger organizations might also be better able to deal with the disclosure of negative information and its associated costs, whereas smaller companies could be faced with relatively higher costs in order to comply with the requirements of voluntary standards. However, the evidence is not conclusive as to whether organizational size is a driver of the adoption of voluntary standards (Hahn & Kühnen 2013).

3.3 Society and stakeholder pressures

For any organization, important stakeholders include employees, customers and suppliers, and they can pressure managers into more responsible environmental behaviours (Buysse & Verbeke 2003), including the adoption of voluntary ESG standards. The greater the influence, the greater the stakeholders' ability to impose their environmental preferences (Kock, Santaló & Diestre 2012). Therefore, if there is a sufficient number of influential managers in an organization who believe that adopting ESG standards is, ethically, the right thing to do, then, adoption is more likely to happen (Marcus & Fremeth 2009).

Seeking legitimacy is also important to organizations (Scott 2013) and can be a strategic cause and driver of the adoption of voluntary standards (Kennedy & Fiss 2009). From this perspective, contagion-like mechanisms (Tolbert & Zucker 1983) and copying phenomena (isomorphism) can play a role such that a company may start adopting standards because others are doing it (Haveman 1993).

Moreover, the success of voluntary standard adoption requires the creation of associated stories and narratives (Lounsbury & Glynn 2001), helping to develop a new collective identity (Kennedy 2008) and meaning (Khair & Wadhvani 2010). On a related note, different regions

may take different views of the same environmental or social issue (York, Vedula & Lenox 2018). Consequently, the particular culture of the country or region in which a voluntary standard is being introduced or encouraged is likely to have a direct effect on the levels of interest of local organizations when it comes to adopting that standard.

3.4 Government and regulatory pressures

The adoption of voluntary environmental regulation by organizations is shaped by different regulatory pressures (Aragón-Correa, Marcus & Vogel 2020). The state has an important impact and significant role when it comes to the adoption of voluntary standards (Delmas & Montes-Sancho 2011). Nevertheless, the view of how governments should regulate environmental and social policies has changed substantially over time. Until the 1970s, most social and environmental policy was directly coordinated by centralized government initiatives. These gave rise to antagonized regulator–industry relationships (Aggeri 1999), and criticism regarding governmental inefficiency in improving environmental standards (Seok, Kim & Park 2021). Thus, in recent decades, alternative models, including voluntary standards and self-regulation, have emerged to handle environmental and social issues without the direct involvement of governments and regulators.

One of the new ways developed to incentivize collaboration between government and organizations was a voluntary agreement signed by both parties. As the collaboration between industry and regulators grew, voluntary agreements and proactive cooperative policies became increasingly common practice (Fiorino 2001, Aggeri 1999). For example, from 1991, many EU based organisations started to implement voluntary energy efficiency standards within their countries (Cornelis 2019). By the late 1990s, such practices had expanded across the world to include countries such as Japan and Korea (Seok, Kim & Park 2021).

It is likely that government and regulated industries would prefer different regulatory approaches (Delmas & Marcus 2004) to standards adoption. Depending on the industry, there are a variety of policy instruments that could have very different impacts on the costs and incentives to companies (Stavins 2004). For example, the drive to adopt

voluntary environmental initiatives may be stronger in more heavily regulated industries (such as investment funds) in anticipation of more stringent regulatory standards in the future. Similarly, there is evidence that when organizations are the main initiators or incentivizers of voluntary schemes (Carlos & Lewis 2018), the participation of other organizations increases in comparison to their participation in initiatives developed by NGOs or governments.

The threat of future regulation can also motivate the creation and development of voluntary standards (Christmann & Taylor 2006, King & Lenox 2000). Yet, the full impact of voluntary adoption programmes on future mandatory regulation by government is still not clear. While some studies indicate that such schemes help to reinforce compliance with ESG standards (Bansal & Roth 2000, Cordano & Frieze 2000), others suggest that they can crowd out government regulation (Esbenshade 2012). Therefore, although government clearly plays a considerable role in the adoption of voluntary standards, its impact still needs to be better understood. In fact, many voluntary standards have been created with little or no government oversight. Organizations do not only adopt standards because of government pressures but also in response to stakeholders that exert pressure over them, their customers and/or their supply chains (Aragón-Correa, Marcus & Vogel 2020).

3.5 Ecosystem development

As voluntary standards become normalized and legitimized, they demand the development of new products and intermediaries (Tolbert, David & Sine 2011). Intermediaries (Spulber 1996) are essential 'entrepreneurs' and promoters of the adoption of new voluntary standards. They do not carry the coercive power of state-imposed regulation, but are often associated with a professional association and can lead to a change of practice and the adoption of standards throughout an entire industry (York, Vedula & Lenox 2018). Further, these environments often give rise to a supporting infrastructure to promote such adoption.

These promoters depend on the legitimacy of professionals in their field to push these voluntary standards and encourage adoption. Thus, promoters can help the diffusion of such standards; for example, through educational efforts and by creating initiatives to spread the understanding

of such standards and knowledge. An example is the Leadership in Energy and Environmental Design (LEED) rating system for 'green' buildings, developed by the non-profit US Green Building Council (USGBC), which confers certification accordingly. There is an associated LEED examination for construction professionals, and LEED consultancy opportunities too, creating an ecosystem in the real estate industry that involves a large range of actors, including real estate agents, project managers, and architects, as well as a large group of intermediaries who promote the adoption of this voluntary standard.

Depending on who is promoting a standard, and where it is being promoted, the emphasis may involve different community values or, alternatively, a more market-based focus (Leiserowitz et al. 2014). Thus, those who promote LEED via an economic efficiency lens will be emphasizing the reduction of costs through employee retention and higher occupancy rates; promoters who focus on social impacts will emphasize the direct environmental impact and health-related impacts of LEED-compliant buildings.

Oversight is also important in the adoption of voluntary standards, ensuring that users actually comply with the requirements. ISO14001, the world's most widely adopted voluntary programme for organizations (Prakash & Potoski 2006), has become so widespread that some of its guidelines have inspired regulators and been made official standards. However, this case also illustrates the importance of intermediaries when it comes to ensuring that organizations that claim the certification are complying with it and, where they are not, that there are appropriate sanctions (King et al. 2012).

Thus, the diffusion of a voluntary standard may benefit from the creation of an ecosystem around it, that is, the creation of a constellation of heterogeneous organizations and/or actors. These actors include promoters and certifiers, who complement each other and jointly support a service, such as the implementation of a sustainability performance standard (Thomas & Autio 2020).

3.6 Summary

Thus, in summary, the key drivers of ESG reporting and the adoption of voluntary sustainability standards by organizations as discussed in the literature are:

1. Expected returns
2. Internal organizational characteristics
3. Society and stakeholder pressures
4. Government and regulatory pressures
5. Ecosystem development.

However, although the literature in relation to the adoption of voluntary sustainability standards by organizations has grown in the last decade, ESG management in the real estate sector has yet to receive adequate attention.



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4. Case study: Voluntary sustainability standards in the real estate industry

4.1 Case context: GRESB

GRESB, overseen by GRESB BV, is a mission-driven and investor-led organization established in 2009 to provide standardized and validated ESG data to the capital markets (GRESB 2021a). GRESB was created by several large pension funds in the Netherlands with the aim of better understanding ESG-related portfolio risks (Fuerst 2015).

4.1.1 GRESB's Real Estate Benchmark and Assessment

GRESB has developed a voluntary standard, GRESB's Real Estate Benchmark, that measures an organization's performance across the three different dimensions of sustainability: environmental, social and governance, thereby providing a multi-dimensional assessment of an organization's integration of sustainability-related considerations into its practices and policies (GRESB 2021a). GRESB's voluntary sustainability standard has become the *de facto* standard for the built environment and, as of 2020, had been adopted by approximately 1,200 property companies, REITs, funds, and developers, and by over 500 infrastructure funds and assets, cumulatively representing USD 5.3 trillion (approximately £3.8 trillion) of real asset value (GRESB 2021a). A significant advantage of the methodology used by GRESB to calculate sustainability ratings is that it enables cross-regional comparisons (GRESB 2021a).

GRESB has established a detailed methodology to evaluate and compare the sustainability-related performance of property companies, private property funds, developers and real estate investors on a global basis. As illustrated in Figure 1, GRESB's Real Estate Benchmark has two components: a *performance* component (70%), which makes use of asset-level operational data such as water consumption and levels of greenhouse gas emissions, and a *management* component (30%), which includes organization-level information about strategy, leadership, risk management and stakeholder engagement processes. Both components of GRESB's voluntary standard are, in turn, measured using a number of indicators that capture the three aspects of sustainability: the *environmental* dimension, which assesses actions taken to reduce the environmental impact of an organization's activities; the *social* dimension, which considers the impact of an organization's activities on its stakeholders and broader social context; and the *governance* dimension, which takes into account an organization's approach to sustainability on the basis of its policies and procedures (GRESB 2021a).

The organizations that participate in GRESB's voluntary sustainability standard self-report the data on their ESG management and practices via the Real Estate Assessment. This data is then validated by GRESB and each organization is provided with a score and a relative positioning among all participating organizations. Finally, GRESB provides each organization with a rating based on its relative sustainability performance, so that an organization positioned in the top quintile will receive a 5-star rating, and one ranked in the bottom quintile will receive a 1-star rating (GRESB 2021a). In addition to this sustainability rating, participating organizations that achieve a score of at least 50% in each of the components of the standard receive a Green Star designation (GRESB 2021a).

“GRESB's voluntary sustainability standard has become the *de facto* standard for the built environment...”

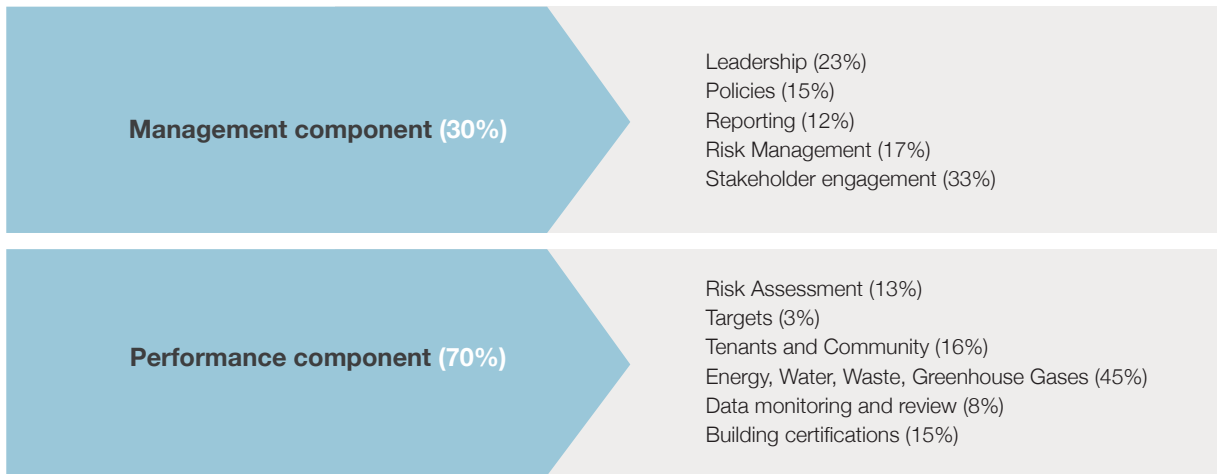


Figure 1: GRESB's Real Estate Benchmark composition (GRESB 2021a)

4.1.2 GRESB's Public Disclosure dataset

In addition to the data provided to GRESB by organizations participating in its sustainability standard, which is confidential and forms the main basis of their ratings, GRESB compiles ESG data from publicly available sources for the entire population of publicly traded real estate funds and assets, and evaluates their public disclosure efforts accordingly. In this Public Disclosure dataset, GRESB does not focus on sustainability performance per se but rather on transparency in relation to ESG issues (GRESB 2021b).

To create this dataset, GRESB collects ESG data from such publicly available sources as annual reports, dedicated sustainability or corporate social responsibility reports, websites, and so on, with the main criterion being simply that of publication. This data is then validated by a third party and scored, assigning each entity a public disclosure rating according to the total number of points amassed in the four dimensions of public disclosure shown in Figure 2, as assessed via 23 indicators.

Finally, the level of public disclosure of ESG issues for each entity is compared with over 450 listed real estate companies and REITs, covering the entire population of the most important listed real estate indices (GRESB 2021b).

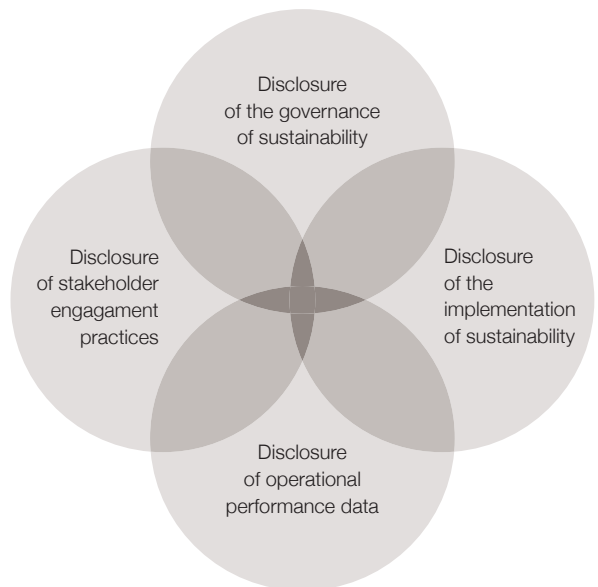


Figure 2: GRESB's evaluation of public disclosure of ESG issues (GRESB 2021b)

4.2 Overview of GRESB's Real Estate Assessment and Public Disclosure dataset

GRESB's results are made publicly available on its website². The research team has worked collaboratively with GRESB to access, understand and analyse recent GRESB data. In this section, we present key aggregate statistics of the data, focusing principally on the issue of adoption, that is, comparing adopting and non-adopting entities in the context of their key characteristics. Our aim is to develop insights into the drivers of adoption of GRESB's voluntary real estate standard.

The datasets we received from GRESB are the Real Estate Assessment dataset and the Public Disclosure dataset for 2020³. Both refer to listed companies, for example, REITs and property companies. Private companies (e.g. non-listed portfolios) participating in the standard are not captured in these datasets. GRESB Infrastructure Assessment is also excluded from the analysis.

While the Real Estate Assessment dataset covers the entities that have participated in the voluntary standard, the Public Disclosure dataset represents the entire 'universe' of entities that could participate. The information we report is aggregated and anonymized, with individual entities not identified.

The two datasets cover different time periods (see Table 1). Thus, in comparing them, we focus on a four-year period from 2017 to 2020, for which both the GRESB Public Disclosure and the GRESB Real Estate Assessment datasets provide data.

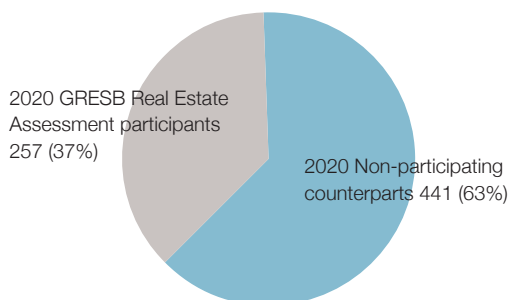
Table 1: Data coverage: GRESB Real Estate Assessment vs. GRESB Public Disclosure

Dataset	Data coverage
GRESB Public Disclosure	2017–20
GRESB Real Estate Assessment	2015–20

4.2.1 Comparison of GRESB Real Estate Assessment participants and non-participating counterparts

Looking at the most recent data (relative to 2020), GRESB's Public Disclosure results were based on publicly available data from 698 constituents, of which 257 (37%) were GRESB participants and 441 (63%) were non-participating counterparts (i.e. listed property companies and REITs that did not participate in the GRESB Real Estate Assessment), as depicted in Figure 3.

Figure 3: GRESB Real Estate Assessment participants 2020 (GRESB 2021a)



As illustrated in Figure 4, during the period 2017–2020, the number of listed property companies and REITs reviewed by the GRESB team for the Public Disclosure dataset increased from 462 to 698, reflecting an overall growth in the number of such entities.

The percentage of entities participating in the Real Estate Assessment has remained fairly stable, constituting 39% in 2017 and 37% in 2020. Interestingly, participation in the assessment rose in 2020, despite the challenges of the global pandemic.

²A detailed breakdown of GRESB's 2020 results can be found at: <https://gresb.com/2020-real-estate-results/>.

³GRESB's data for 2021 has just been realised in October 2021.

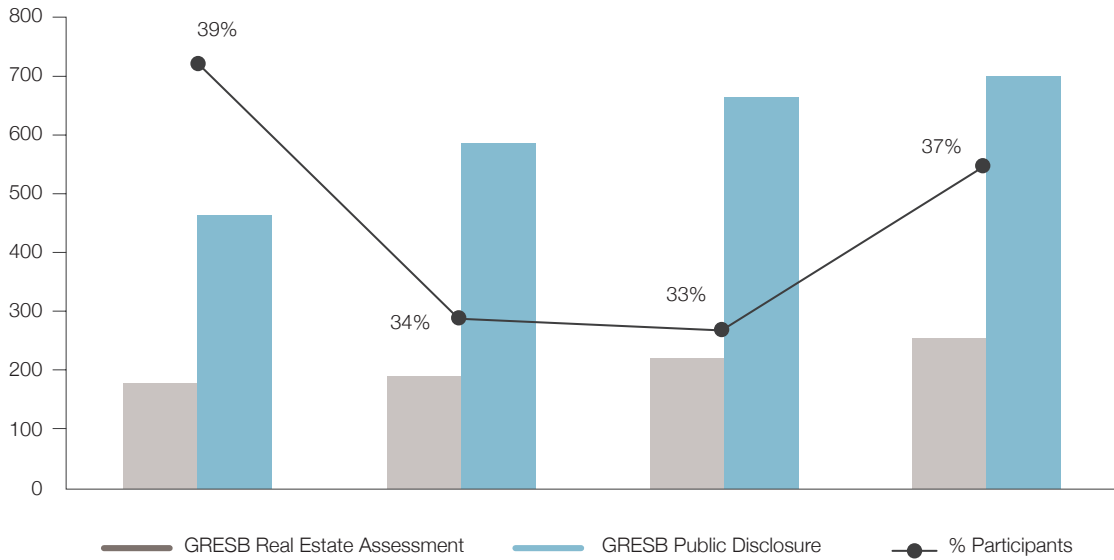


Figure 4: Number of GRESB Real Estate Assessment & Public Disclosure constituents

GRESB classifies the entities on the basis of their predominant property type. This allows us to explore the composition of the pool in more detail. In 2020, the majority of the entities included in the Public Disclosure dataset fell into the ‘Diversified’ property type, followed by the ‘Retail’ and ‘Office’ property types, as shown in Figure 5.

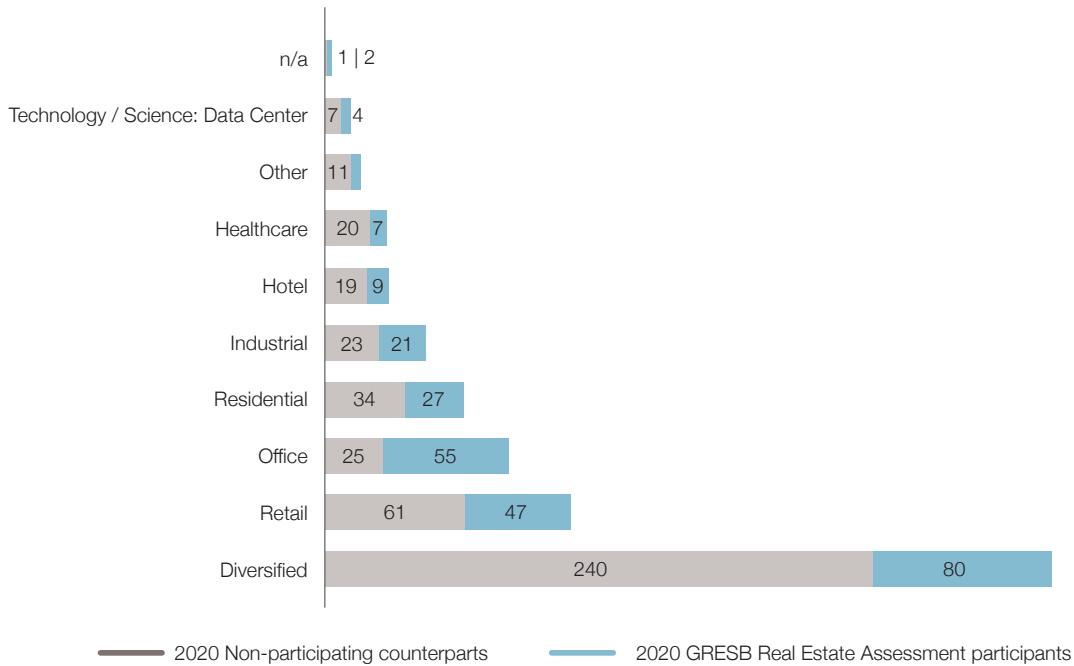


Figure 5: GRESB Public Disclosure 2020 participants by property type (GRESB 2021b)

In terms of participation in the Real Estate Assessment, in 2020, the property type that had the best coverage in the assessment was 'Office', of which 55 out of 80 entities (69%) participated in the Real Estate Assessment (see Table 2). The next best was the 'Industrial' property type, at 48% coverage.

Property type	2018	2019	2020
Diversified	46%	43%	25%
Healthcare	13%	16%	26%
Hotel	23%	31%	32%
Industrial	42%	45%	48%
Office	67%	65%	69%
Other	38%	50%	31%
Residential	32%	31%	44%
Retail	45%	41%	44%
Technology/Science: Data Centre	22%	33%	36%

Table 2: GRESB Real Estate Assessment 2018–2020: % participants by property type.

Notes: % relative to entities covered in the Public Disclosure dataset; property type not available for the 2017 data; in 2018 and 2019, 'Other' includes 'Storage/Parking'.

GRESB also classifies the entities on the basis of the region in which they are predominantly located. As shown in Figure 6, in 2020, the region best represented in the Real Estate Assessment was 'Asia', where 88 entities participated in the assessment.

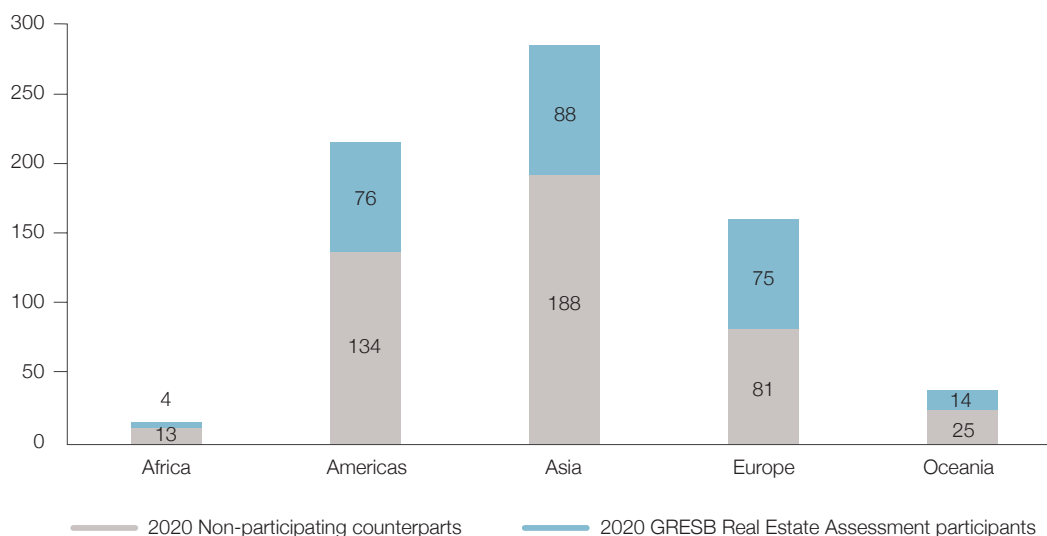


Figure 6: GRESB Public Disclosure 2020 by region; note: 'region' refers to the region in which an entity is predominantly located.

4.2.2 GRESB Public Disclosure score: Real Estate Assessment participants vs non-participating counterparts

In addition to comparing the key features of participants versus non-participants, we can also draw some preliminary insights in relation to the public disclosure performance of the two groups. The Public Disclosure data is scored according to 22 indicators. Each indicator is awarded zero or full points, depending on the available evidence. When combined, these indicators can sum to a maximum of 70 points. The GRESB Public Disclosure Scorecard then maps these scores to a disclosure level, which ranges from A to E (e.g. scores of 57–70 correspond to Level A, scores of 43–56 correspond to Level B, and so forth). For convenience, we consider these GRESB Public Disclosure scores having rescaled them on a 0-to-100 basis.

As might be expected, in terms of Public Disclosure levels, Real Estate Assessment participants consistently score significantly better than their non-participating counterparts on average, as shown in Table 3. Thus, in 2020, assessment participants earned an average rescaled Public Disclosure score of 78.8, compared to an average score of 37.9 for their non-participating counterparts. It should be noted that because of variation in reporting structures across the years (e.g. changes to the weightings assigned to different components), the scores are not always comparable year-to-year.

Table 3: GRESB Public Disclosure scores 2017–2020.
Note: The table reports the GRESB Public Disclosure score rescaled on a 0-to-100 basis.

	Disclosure Methods	Governance of Sustainability	Implementation	Operational Performance	Stakeholder Engagement
2017	48.2	35.5	36.9	48.6	57.0
Non-participating counterparts	30.6	18.1	22.7	32.8	40.2
Real Estate Assessment participants	75.7	62.7	59.0	73.4	83.3
<i>Difference</i>	<i>45.1</i>	<i>44.6</i>	<i>36.3</i>	<i>40.6</i>	<i>43.1</i>
2018	51.2	35.5	42.4	53.2	58.7
Non-participating counterparts	37.0	19.7	28.3	40.6	43.5
Real Estate Assessment participants	79.4	66.6	70.2	78.1	88.8
<i>Difference</i>	<i>42.5</i>	<i>46.8</i>	<i>41.8</i>	<i>37.5</i>	<i>45.2</i>
2019	47.3	38.5	46.9	59.7	62.6
Non-participating counterparts	34.4	23.4	32.4	45.5	47.3
Real Estate Assessment participants	73.1	68.8	76.0	88.1	93.0
<i>Difference</i>	<i>38.7</i>	<i>45.4</i>	<i>43.6</i>	<i>42.6</i>	<i>45.7</i>
2020	49.4	43.6	51.3	60.5	61.8
Non-participating counterparts	35.8	27.1	36.1	46.2	44.8
Real Estate Assessment participants	72.8	71.9	77.3	85.0	91.1
<i>Difference</i>	<i>37.1</i>	<i>44.8</i>	<i>41.1</i>	<i>38.9</i>	<i>46.3</i>

Capabilities and incentives to public disclosure are likely to differ according to the nature of the focal entity. Thus, Public Disclosure scores can appear quite different when comparing the various property types. On average, in 2020, entities falling under the 'Office' type scored best, followed by the 'Retail' property type (see Table 4).

Table 4: GRESB Public Disclosure Score 2020 by property type.

Property type	Non-participating counterparts	Real Estate Assessment participants	Average
Diversified	40.7	82.1	51.1
Healthcare	16.9	64.8	29.3
Hotel	27.3	72.5	41.8
Industrial	39.8	74.5	56.3
Office	40.8	84.9	71.1
Other	37.1	70.6	47.6
Residential	35.4	67.2	49.5
Retail	36.0	80.7	55.4
Technology/Science: Data Centre	40.4	74.2	52.7
n / a	51.1	48.5	49.4
Average	37.9	78.8	53.0

Note: The table reports the GRESB Public Disclosure score rescaled on a 0-to-100 basis. n/a refers to records where the property type is not identified.

Public disclosure incentives, norms, capabilities and regulation are also likely to vary according to the location of the focal entity. Indeed, GRESB Public Disclosure scores show substantial variation between the various regions and sub-regions. The data for 2020 indicate that among the Real Estate Assessment participants, the best-scoring sub-region was 'Australia and New Zealand' (n = 14 participants), with a score of 94.3. The regional breakdown shows the Asian real estate sector coming in second in this context, followed by Europe and then the Americas (see Table 5). Across all the entities in the GRESB Public Disclosure dataset (including assessment participants and their non-participating counterparts), 'Eastern Europe' had the highest score (however, this region included only two entities), followed by Northern Europe (n = 78 entities).

Table 5: GRESB Public Disclosure score 2020 by sub-region.

Sub-region	Non-participating counterparts	Real Estate Assessment participants	Average
Australia and New Zealand	34.9	94.3	56.2
Eastern Asia	47.0	83.7	62.3
Eastern Europe	78.2	73.9	76.0
Latin America and Caribbean	21.9	70.0	35.3
Northern Africa	18.1	0.0	18.1
Northern America	25.8	69.9	42.3
Northern Europe	46.2	83.9	67.0
South-eastern Asia	51.6	78.5	57.3
Southern Asia	37.7	87.7	59.1
Southern Europe	55.7	82.3	65.7
Sub-Saharan Africa	39.1	63.2	46.0
Western Asia	14.6	0.0	14.6
Western Europe	41.5	77.1	56.2
Average	37.9	78.8	53.0

Note: The table reports the GRESB Public Disclosure score rescaled on a 0-to-100 basis.

Looking in more detail at the GRESB Public Disclosure scores, they are derived from five aspects:

1. Disclosure methods
2. Governance of sustainability
3. Implementation
4. Operational performance
5. Stakeholder engagement

We consider the scores for each of these five aspects for the years 2017 to 2020, comparing the scores of Real Estate Assessment participants and their non-participating counterparts. On average, the scores of the assessment participants were consistently higher than those of their non-participating counterparts, as illustrated in Table 6.

Table 6: GRESB Public Disclosure scores by aspect 2017–2020

	Disclosure methods	Governance of sustainability	Implementation	Operational performance	Stakeholder engagement
2017	48.2	35.5	36.9	48.6	57.0
Real Estate Assessment participants	75.7	62.7	59.0	73.4	83.3
Non-participating counterparts	30.6	18.1	22.7	32.8	40.2
<i>Difference</i>	<i>45.1</i>	<i>44.6</i>	<i>36.3</i>	<i>40.6</i>	<i>43.1</i>
2018	51.2	35.5	42.4	53.2	58.7
Real Estate Assessment participants	79.4	66.6	70.2	78.1	88.8
Non-participating counterparts	37.0	19.7	28.3	40.6	43.5
<i>Difference</i>	<i>42.5</i>	<i>46.8</i>	<i>41.8</i>	<i>37.5</i>	<i>45.2</i>
2019	47.3	38.5	46.9	59.7	62.6
Real Estate Assessment participants	73.1	68.8	76.0	88.1	93.0
Non-participating counterparts	34.4	23.4	32.4	45.5	47.3
<i>Difference</i>	<i>38.7</i>	<i>45.4</i>	<i>43.6</i>	<i>42.6</i>	<i>45.7</i>
2020	49.4	43.6	51.3	60.5	61.8
Real Estate Assessment participants	72.8	71.9	77.3	85.0	91.1
Non-participating counterparts	35.8	27.1	36.1	46.2	44.8
<i>Difference</i>	<i>37.1</i>	<i>44.8</i>	<i>41.1</i>	<i>38.9</i>	<i>46.3</i>

Note: The table reports scores expressed as percentages.



5. Discussion and future research

We started this report by reviewing part of the academic literature that has explored the drivers of ESG reporting and the adoption of voluntary ESG standards by organizations. We were able to identify several motivators of such adoption. The studies reviewed covered both internal and external motivators of adoption, considering societal and stakeholder pressures, the development of associated ecosystems, and regulatory demands.

Following this initial exploration of the academic literature, we presented the leading ESG standard in the real estate industry, GRESB's Real Estate Benchmark, and reported key aggregate statistics from the GRESB Real Estate Assessment and Public Disclosure datasets. The comparison of the two datasets allowed us to assess the level of industry participation in the standard, as well as to compare participants and non-participants in terms of key dimensions captured by the data. Our report only presents top-line information, but the analysis still reveals some interesting patterns in the data with regards to participation in GRESB's Real Estate Benchmark.

Thus, we find that real estate sector participation in the voluntary standard varies according to broad features of the reporting entities, such as their region and the type of property involved. These dimensions align well with some of the key drivers of adoption highlighted in our literature review, for example, government and regulatory demands and society/stakeholder pressures. In more detail:

- **Geographical differences.** The regional breakdown of GRESB scores showed that, among Real Estate Assessment participants, the Australia and New Zealand region leads in terms of Public Disclosure scores, that is, transparency. The scores for the European, North and South American, and Asian regions follow relatively closely behind, exhibiting only small differences between them.
- **Time trends.** The increase in the number of participants in the GRESB Real Estate Assessment over time is likely to reflect growing pressure from stakeholders (e.g. investors' demands for ESG-related information) and the improving social, financial and political climate for ESG.

The data demonstrates that the real estate industry is responding accordingly.

- **Property types.** It is notable that the 'Office' property type outperforms all others in every regard, demonstrating the highest rate of participation in the benchmark, and the best scores for Public Disclosure among both Real Estate Assessment participants and non-participants. This is likely to be a consequence of the different opportunities afforded by different property types when it comes to both monitoring and addressing ESG issues, as well as differing regulatory requirements for different types of property (e.g. in the UK, the Energy Performance Certification regime in regard to the leasing of residential and commercial spaces).

In our concluding subsections, we provide some recommendations for industry practitioners and future researchers in relation to the adoption of voluntary ESG standards in the real estate industry.

5.1 Recommendations for developers of standards and rating agencies

In the real estate and infrastructure sector, there appears to already be a reasonable amount of ESG data collection and analysis in terms of organizational characteristics and drivers. In addition, various social scientists and organizations have been collecting and publishing reports about governmental and regulatory impacts on ESG adoption. However, more information at entity level would be required to explore whether heterogeneity in participation is also driven by entity-level features, for example, the number of properties in a REIT portfolio, investor profiles, and so forth. When collecting information on those participating in voluntary standards adoption, agencies should aim to collect more granular information to allow for more detailed and informative analysis of what determines and encourages participation.

Our preliminary analysis of GRESB's data revealed that there are organizations that demonstrate high levels of public disclosure of ESG-related aspects yet do not participate in the standard. This is somewhat counterintuitive, because

we would expect high-performing organizations to seek the certification benefits bestowed by participating in the GRESB Assessment. From the perspective of rating agencies such as GRESB, finding ways to increase participation is a key concern. As such, delving more deeply into an understanding of the drivers of ESG standards adoption (and non-adoption) should be of particular interest to them.

In particular, it seems that the driver of adoption relating to ecosystem development is not being fully considered by organizations developing ESG standards. The acceptance and widespread diffusion of other leading standards such as ISO and LEED has shown how important it is to develop an associated ecosystem that includes promoters of the standards, certification bodies, training programmes, and control mechanisms. This is crucial because it signals to the market that a standard is robust and verified. The important message is that an entire ecosystem is necessary to support the effective diffusion of a standard, which may include outsourcing some activities and/or creating alliances with other organizations or professionals.

Thus, GRESB and other rating agencies should explore different models of ecosystem that could support their specific ESG standard. In this context, it is important to strike an appropriate balance between maintaining control and outsourcing, that is, retaining the quality of the standard while identifying related aspects that can be done in partnership with others, such as training and verification.

5.2 Recommendations for researchers

Our initial review of the literature identified the key drivers of adoption of voluntary ESG standards by organizations as being:

1. Expected returns
2. Internal organizational characteristics
3. Society and stakeholder pressures
4. Government and regulatory pressures
5. Ecosystem development.

In our preliminary assessment of the literature, we identified areas in which theoretical or empirical investigations appeared limited or underdeveloped. In this context, below

we discuss questions arising from the review that offer opportunities for future research. Answering these questions will contribute to the creation of a more comprehensive picture of the antecedents of ESG reporting and voluntary standards adoption.

At the outset, we analysed the publications and research of top management journals over recent decades that focused on ESG/SDG-related practices and voluntary standards adoption and categorized them accordingly. A follow-up piece of work could undertake a more systematic review as we have not found any such review of the literature in relation to the adoption of ESG standards. This review could expand upon the five broad drivers of adoption that we have identified, bringing to light barriers to adoption as well as enablers, and proposing an integrated framework that encompasses and categorizes all of the drivers. This effort could also shed more light on the outcomes of participation in voluntary standards, for example, on the pay-offs of investing in sustainability.

Secondly, given that we found investigations of the adoption of ESG standards in the real estate and infrastructure context to be limited, we would encourage more researchers to conduct empirical research in this area. To be more specific, further research could focus on understanding how organizations balance policy against issues of implementation in the context of ESG practices, and its individual E, S, and G elements. An understanding of whether there are lags between management recognition, policy development, and the implementation of ESG practices, and the associated causes of these lags, would also be valuable. In addition, the literature suggests that investors, in particular, seem to be a significant source of pressure in driving firms and REITs to adopt voluntary ESG standards. The organizational response to these pressures is likely to depend on internal governance structures, and an interesting research avenue would be to understand how such governance structures facilitate or hinder a firm's adoption of ESG standards.

Finally, given their significance in the diffusion of other standards, more research needs to be conducted around the impact of the development of ecosystems in the diffusion and growth of ESG standards.

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Appendix

Appendix 1: GRESB's Real Estate ESG Voluntary Standard Scoring Model (GRESB, 2021)

Component	Aspect	# Points	% Component	% Overall Score
Management	Leadership	7	23%	7%
	Policies	4.5	15%	5%
	Reporting	3.5	12%	4%
	Risk Management	5	17%	5%
	Stakeholder Engagement	10	33%	10%
	Total	30	100%	30%
Performance	Risk Assessment	9	13%	9%
	Targets	2	3%	2%
	Tenants & Community	11	16%	11%
	Energy	14	20%	14%
	GHG	7	10%	7%
	Water	7	9.5%	7%
	Waste	4	5.5%	4%
	Data Monitoring & Review	5.5	8%	6%
	Building Certifications	10.5	15%	11%
	Total	70	100%	70%
Development	ESG Requirements	12	17%	12%
	Materials	6	9%	6%
	Building Certifications	13	19%	13%
	Energy	14	20%	14%
	Water	5	7%	5%
	Waste	5	7%	5%
	Stakeholder Engagement	15	21%	15%
		Total	70	100%

