Institutional Investor Motivation, Processes, and Expectations for Sustainable Building Investment

Pernille H. Christensen (pernille.christensen@uts.edu.au, contact author)
University of Technology Sydney

Spenser Robinson (robin6s@cmich.edu)
Central Michigan University

Robert Simons (r.simons@csuohio.edu)
Cleveland State University

ABSTRACT

This paper examines strategic motivations, processes and expectations for institutional real estate owners around sustainable improvements and eco-labelling in office buildings. A series of 33 industry interviews with senior representatives of institutional real estate owners (e.g. REITs, Pension Funds, Opportunity Funds, and Investment Managers) were conducted to explore three key research questions. First, what motivates firms to invest in and move towards green technologies and certifications? Second, how do firms choose to implement, manage and maintain green investments and eco-labels? Third, what, if any, are the financial expectations of investing in green labelling and efficiencies? Results from the constant comparison analysis of the transcripts reveal that expected financial outcomes dominate environmental, broader sustainability and governance concerns when making decisions related to sustainability. The perceived value in eco-labelling was found to be widespread. Data collection and benchmarking related to energy and water usage were found to be the new norm for institutional managers and investors. In addition, a range of localized and firm-level policies was identified. A rigorous interview protocol was followed to reduce threats to reliability and validity.

Key words: energy, commercial offices, sustainability, qualitative research, corporate strategies, tenants, LEED, Energy Star

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INTRODUCTION

Institutional ownership of commercial buildings is projected to double by 2050 (IEA, 2011; Zuo and Zhao, 2014). The well-established relationship between greenhouse gas emissions and commercial real estate (CRE) underscores the importance of CRE eco-labels and their associated environmental, social and governance (ESG) benefits. As the largest block of real estate owners, institutional owners' habits, preferences and decision-making criteria represent an understudied area (Janda, 2014; Fuerst, Oikarinen and Harjunen, 2016; Read and Sanderford, 2018).

Some evidence on European and Australian institutional property owners' perception of value creation from environmental certification of buildings exists (e.g. Brown, Malmqvist and Wintzell, 2016). Rosenow et al. (2016) show the energy-reducing effect of European energy-related regulatory policies, while Gabe (2016) studies the Australian impact. Sanderford, McKoy and Keefe (2018) reveal the impact of regulatory policy and climate on energy eco-label adoptions. Additionally, they link Energy Star diffusion to the voluntary product adoption theories of Venkatesh et al. (2003) and Rogers (1976, 1995). Energy efficiency and eco-labeling now represent reasonably mature technologies, and institutional adoption patterns fit best with the early majority phase of the adoption curve (Rogers, 1976). The adoption of energy efficiency and eco-labels is a non-mandatory decision (Kok, McGraw and Quigley, 2011). Except where a few localized laws require the adoption of energy efficiency measures, firms voluntarily choose to implement these measures,. The fact that adoption is primarily voluntary is an important factor, as it connects this study to the two dominant meta-theories of voluntary new product adoption: the diffusion of innovation theory (summarized and aggregated in Rogers, 1995) and the unified theory of acceptance and use of technology (UTAUT) (advanced in Venkatesh et al, 2003).

Diffusion theory focuses on the process(es) and the conditions that enable innovations and ideas to be diffused and adopted by users/customers within wider social networks. Rogers

identifies four key elements of innovation diffusion: innovation, communication channels, time, and the social system. Building on the theoretical work of Rogers, Venkatesh et al's (2003) UTAUT framework likewise identifies four core factors for voluntary adoption: product performance expectations, implementation effort, social pressures, and facilitating conditions. Clearly, these factors have evolved since the early days of eco-labeled buildings. Despite this, there are limited studies examining these evolving attitudes and motivations (e.g. Kok, McGraw, & Quigley, 2011), and even fewer studies that focus on U.S. institutional investors (Christensen, 2017).

This research attempts to fill this gap by reporting the findings from 33 in-depth interviews with senior executives in the United States institutional real estate industry. The study investigates **three key research questions**. First, what motivates firms to invest in and move towards green technologies and certifications? Second, what management processes determine how firms choose to implement, manage and maintain green investments and eco-labels? Third, how do sustainability considerations impact purchase, renovation and management decisions?

Motivation begins with the prospect of value creation through potential rental or sales premiums (Costa et al., 2018; Gabe and Rehm, 2014; Holtermans and Kok, 2017; Pommeranz and Steininger, 2020) and mortgage default reduction (An and Pivo, 2018). However, there is some doubt about the realization of these academically-established rental and sales premiums in practice (Deng and Wu, 2014; Mills, 2016; Nurick et al. 2015). Fortunately, the potential value creation extends beyond sales and rental premiums. A recent survey of international green building experts identified value-adding building characteristics such as improved energy-efficiency, reduced environmental impact, improved water-efficiency, and occupants' health and comfort and satisfaction (Darko et al, 2017). Additional research, such as Ruparthna, Hewage and Sadiq (2016),

suggest the need for increased attention to existing, rather than new building stock. In addition, external drivers such as societal awareness of eco-labels, as evidenced through google searches, have also been shown to impact the uptake of eco-labels in organizations (Braun, Cajias and Hohenstatt, 2017).

Initial investment in green building technologies represents only the first step. Efficient and effective implementation, management and maintenance of these technologies are necessary to extract their true benefits (Hirsch, Spanner and Bienert, 2019). Building operations from existing buildings already representing approximately 2.3 billion tons of operating emissions, more than a third of U.S. annual emissions (Strain, 2017). A wide range of energy studies review and analyze the energy-specific effects of sustainable building maintenance practices, finding generally positive relationships for active owners (Allouhi et al., 2015; Harish and Kumar, 2016). Furthermore, increased tenant-landlord transparency can provide behavioral or monetary incentives for owners and tenants to conserve energy when eco-labels are negotiated into a 'green lease' (Janda et al., 2016; Kontokosta, 2015). However, sustainable retrofit decisions often focus on maximizing payback on energy-related investment, potentially overlooking numerous additional energy savings methods, such as engaging building stakeholders in the process (Azar and Menassa, 2012, Schneider and Rode, 2010).

Beyond energy savings, eco-labeled buildings also provide potential health and wellness benefits. Emerging studies into health and productivity are beginning to validate long-held anecdotal beliefs about the positive effect of green buildings (Lee, 2016; MacNaughton et al., 2016; MacNaughton et al, 2017; Newsham, Veitch and Hu, 2017). A study by Gram-Hansen et al. (2018) focuses on occupancy phase life-cycle issues and notes that rebound effects - i.e. how everyday practices change with the introduction of new technologies - may introduce new, and

sometimes higher, norms of comfort. In addition, occupant behavior and understanding of technologies may impact energy use.

The findings from the interviews suggest strong fiduciary responsibility motives influenced sustainable building investment by institutional investors. The expectation of financial performance correlates to the first moderating factor in UTAUT. However, continued uncertainty regarding realized rental premiums and costs savings raise questions around the expectations of owners investing in green technologies and eco-labels. This creates uncertainty around the effort and facilitating conditions moderating factors of UTAUT. While many may expect to capture potential rental premiums, further exploration of other financial expectations, if any, of the ownership groups is merited.

In line with social influences of UTAUT, Onuoha et al (2017) found that corporate social responsibility motives, in addition to green tax incentives, also highly motivated ownership groups to invest in green commercial properties. Olubunmi, Xia and Skitmore (2016) identified government incentives as key drivers for decision making but, contrary to the findings herein, suggested non-financial incentives create greater impact-in part due to their assertion that government is moving in the direction of regulating green building rather than incentivizing it. Menassa and Baer (2014) highlight the need to examine and align multiple stakeholders' requirements for enhanced work environments, profit maximization, and energy savings when making renovation decisions to best achieve the targeted reduction in energy use from the retrofit. This paper provides further insight into the purchase and renovation decisions associated with green buildings.

This research is part of stream of research designed to better incorporate multiple stakeholder views into eco-labels. The Advocacy Coalition Framework (ACF) offers some insight

into the management processes utilized by institutional investors to mobilize, manage, maintain and make decisions related to the adoption and implementation of green investments and eco-labels (Sabatier, 1998; Weible et al, 2011). By applying this lens, we can better understand the extent which people learn from industry partners, and from the innovations of other market providers with whom they compete. In this way, the ACF links back to the social influence component of the UTAUT and demonstrates how opportunities to learn from market competitors may influence adoption. The overarching mixed method process for development of this information is detailed in Christensen, Robinson and Simons (2016) and summarized in Simons, Robinson and Lee (2019).

METHOD

Qualitative data from telephone interviews were used to provide deeper insight into investor motivations and decision strategies, including *what* motivates firms to invest in and move towards green technologies and certifications, *what* management processes determine how firms choose to implement, manage and maintain green investments and eco-labels, and *how* sustainability considerations impact purchase, renovation and management decisions. Interviews with key industry representatives was identified as the best method to obtain rich, in-depth qualitative data to answer the research questions. 34 interviews were conducted, and, except for one participant, all interviewees consented to the digital recording and subsequent transcription of their interview. Interviews were typically completed in about 30 minutes. The 33 anonymized interview transcriptions became the primary data set for the comparative content analysis.

To ensure that the concept 'sustainability' was understood and discussed in the same way, it was defined at the start of the discussion as "…*more than just environmentally sound features. We define it as features that potentially help improve productivity and/or increase profit, and also*

elements that benefit the planet - anything from daylighting to efficient management of HVAC to water conservation." While all respondents agreed with this definition of sustainability, some early participants inquired whether tenant satisfaction and worker productivity should be included in this definition. Hence, the definition was expanded for the remaining interviews. This section first discusses the interview protocol design and implementation, followed by data coding and analysis.

Interview Protocol

A clear protocol was developed to govern the execution of the interviews, ensure their reliability, and increase the quality of data obtained. Content mapping questions were used to identify and understand the research context and issues specifically relevant to each participant, while content mining questions were used to further explore issues and generate a more in-depth understanding of the interviewee's point of view. Additionally, probe questions were used as responsive, follow-up questions designed to elicit more specific information, description, and explanation related to any vague or unclear statements (in accordance with Ritchie & Lewis, 2013).

Three pilot interviews were conducted to lend external validity to the protocol, ensure the clarity and answerability of all questions, and verify that no leading questions or assumptions were embedded within the interview questions (Ritchie & Lewis, 2013; Warren & Karner, 2005). A third-party review of the interview protocol was also used to enhance the reliability (also sometimes referred to as trustworthiness) of the interview as a data collection instrument. Lastly, the interview protocol was reviewed and approved by the Institutional Review Board (IRB) at Cleveland State University.

All interviews were conducted via telephone by a single lead interviewer. To ensure consistency, only the two principal investigators of the research project administered the interviews, thus restricting the variation to no more than two voices. A secondary listener participated on each call to ensure that the script and protocol were followed for all interviews.

Comparative Content Analysis of the Data

Following Sinkovics, Penz and Ghauri (2008), the content analysis was conducted using NVivo software to help substantiate the analysis and interpretation of the textual interview data and enable the simultaneous analysis of all data using a constant comparison analysis method. This increased transparency in the dialogue between research team and the textual data thus improving confirmability of the results. The qualitative analysis was begun after all interviews had been completed, the anonymized audio recordings transcribed, and transcripts imported into NVivo. The constant comparison analysis approach used a five-stage, iterative process outlined: 1) generating themes and concepts; 2) assigning meaning; 3) assigning data to themes/concepts to portray meaning; 4) refining and distilling more abstract concepts; and 5) assigning data to refined concepts to portray meaning (Ritchie and Lewis, 2013, Box 8.1).

The entire data set was first read using an inductive, open-coding approach to identify a preliminary list of codes. These were then used as a data management tool to help manage the data. The dataset was then sorted using a cross-sectional method, deductively labelled using the preliminary code list, and synthesized into large chunks of data around these broad concepts in NVivo (Step 1). The themes identified in the initial coding stage included: instrument design, decision impact, sustainability attribute(s), market characteristics, value-add and benchmarking. At the conclusion of this stage, inter-rater reliability was tested by having multiple coders review and code a sample of transcripts using the preliminary code list.

Next, the synthesized data was analyzed using cross-sectional analysis methods to prepare descriptive accounts of each theme, including identifying key dimensions of, and mapping the range and diversity of, each phenomenon. In-situ, non-cross-sectional analysis methods were then used to explore each key dimension to better understand the distinctiveness of each of the broad data 'chunks', and to understand the unique decision processes or characteristics described within them. NVivo cluster mapping and concept mapping tools were used to understand the relationship between and within key dimensions. Higher-level themes were then created, further reducing the data into smaller, meaningful parts ('chunks') (Step 2).

The smaller data 'chunks' were then re-read, distilled into more abstract concepts, and labeled with refined descriptive codes (e.g. see Figure 1, 'Add Value' sub-nodes). At this stage, the research team began to create linkages between ideas and concepts communicated by the interviewees and the research objectives. Each newly coded 'chunk' of data was compared with previous codes to ensure that all data with similar associated meaning was labeled with the same code (Step 3). At the conclusion of this stage, inter-rater reliability was again tested and verified.

Having ensured inter-rater reliability of the coding process, the research team moved the analysis of the dataset beyond a description of the data (e.g. *what* management processes are utilized), toward understanding and explaining *how* and *why* institutional real estate investors are motivated to invest in and move towards green technologies and eco-certifications. To transition the analysis from descriptive to explanatory, descriptive codes were first grouped by similarity to identify patterns in the data and potential linkages between the themes. Concept mapping and cluster mapping tools were again used in NVivo to better understand the patterns and relationships. Patterns of association were finalized within the dataset and preliminary explanations for why those patterns occurred were developed from the nuance in the data (Step 4). Further analysis of

the patterns and linkages among the themes helped explain the interrelationship between contributory factors and how they influenced the purchase, renovation and management decision-making processes of institutional investors (Step 5).

Finally, descriptive and explanatory validity (Maxwell, 2013) was checked using *member checking* (Janesick, 2000) with the key informants. This was done by including questions in the follow-up focus group discussions to ascertain whether the themes, patterns and interrelationships, arguments, and assertions developed from the coding processes accurately reflected participants' viewpoints.

Participant Profile

In accordance with DiCicco-Bloom and Crabtree (2006), the in-depth interview participants were selected using purposeful sampling. A sample of approximately 50 institutional real estate managers was selected for this project primarily by the research project sponsor, CBRE, supplemented by the research teams' own contact list. Of those, thirty-four industry leaders responded (just over two thirds), with thirty-three of those agreeing to the interview protocol. The sample group primarily held office property in Tier 1 United States markets; , though holdings were somewhat more concentrated on the two coasts. Overall, the sample is considered to be representative of institutional owners and operators.

To participate, interviewees required decision-making knowledge and capabilities related to real estate and sustainability in their role with their organization (see Figure 2). Thus, 26 of the 33 participants can be characterized as primary decision makers in either leadership (CEO, COO, President, EVP, etc.) or in senior executive roles (Executive Director, SVP, etc.) within large organizations, many overseeing large budget responsibilities. The remaining participants can be

characterized as management level (Director, VP, etc.), the majority of whom had significant decision-making responsibilities, including a key role in forming company policies around operations and purchase/renovation decision-making.

Nearly three-quarter of the participants represented investment firms that purchase and hold real estate at least in part for their own account (see Figure 3). These firms own and operate real estate, although some outsource portions of the real estate management to other firms, such as CBRE. Some institutions in this category could be characterized as opportunity funds, which typically have shorter hold periods and therefore seek value-add opportunities, while other organizations managed both their own real estate holdings and real investment funds for others. The capital holdings of the institutions ranged from regional firms with under $2 billion in assets up to large firms affiliated with multi-national lending institutions. REITs and pension funds represented the second largest group, and are grouped together due to their similar tax treatment. The final, and smallest, group of participants represented service and advisory firms who, in turn, represent larger institutional clients. Although this group does not purchase institutional class real estate for their own account, they possess a broad perspective as consultants advising on purchase and upgrade decisions for a wide range of institutions.

DISCUSSION

The textual analysis of interviews are presented as ‘key lessons’ and aligned with each of the three key research questions:. the motivations for firms to invest in and move towards green technologies and certifications; processes used to guide the implementation, management and maintenance of green investments and eco-labels; and the financial and other expectations of investing in green labeling and efficiencies for new and existing buildings.

What motivates institutional investment firms to 'go green'?

Key Decision Drivers

Consistent with the social pressure moderating factors of UTAUT, institutional investors make decisions, as one participant clearly stated, in a manner that "… *becomes much more about just being asset competitive.*" This means that localized priorities and standards related to the 'green' requirement demands of tenants and government vary from one market to another for competitive reasons (De Ruggiero et al, 2017). For example, in Washington D.C. - where there is a heavy concentration of higher-rated LEED buildings - the tenant base (including federal government tenants) demands a high level of sustainability resulting in investment decisions that maintain building competitiveness in that marketplace. In contrast, participants indicated that smaller markets generally exhibited less demand for sustainability features causing corresponding lower levels of sustainability investment in those markets. Whether that standard becomes a LEED- or EnergyStar-rating, specific sustainability features, green lease, or some other attribute associated with building efficiency also varies from one marketplace to another. Ultimately, strong emphasis on market competitiveness emerged as a key decision driver consistent with Christensen (2017).

Some considered not just energy, water and environmental features in the decision process, but drove their decisions with a holistic economic, environmental, social and governance (ESG) strategy. This aligns with the ACF "logic of consequences" system of normative reasoning, in which the right behavior involves maximizing good consequences. Nestled within the above discussion, several key sub-themes emerged, including tenant demand, green certification as a marketing tool to distinguish the property from competition, and regionalization of decision strategies to better address specific market demands.

Another motivational driver focused on strategic asset management activities to improve the efficiency of operations and overall sustainability performance of a property, consistent with Ooi et al., (2017). Aligning effective asset management with value-add opportunities were featured, including performing a gap analysis or energy audit to assess a building's current level of sustainability performance (Xiaoying et al., 2020), reviewing the outlook and business plan for the building to make decisions on a project-to-project or market-by-market basis, and proactively identifying and planning for up-fit opportunities (Liang, Peng and Shen, 2016). At the heart of this discussion was achieving improved operational efficiency (and in some cases, an aim for excellence). Opportunities to better manage electricity and water emerged as significant value-add methods for commercial buildings because of NOI-based valuation and the impact of utilities on NOI; these therefore act as important motivational drivers propelling investment in operational efficiency.

As anticipated, the expected product performance and implementation effort moderating factors of UTAUT revealed in cost-benefit analysis. Participants agreed that sustainability goals do *not* solely drive purchase and renovation decisions ; typically, they stem from positive cost-benefit analysis, payback period assessment and/or return on investment (ROI) for implementation of the sustainability performance-related activity/feature. One interviewee noted that for a "*decision [to] to be made, it needs to generate a return on the bottom line. That's a given.*" Operational efficiency measures and other 'low-hanging fruit' (i.e. smaller, low- or no-cost improvements) were unanimously implemented as a first step to improve sustainability performance, with other improvements requiring significant capital investments only considered thereafter. This aligns with other ACF studies indicating self-interest is more important for organizations motivated by economic self-interest than for organizations motivated by an

ideological position (e.g. Jenkins-Smith and St. Clair, 1993; Nohrstedt, 2005). Projects with a 3-year payback period or less, with a defined investment cap based on a review of project size, cost and impact balance, were most likely to be considered as priority value-add projects.

Value Creation

Two major themes emerged in this discussion. Firstly, all participants identified capitalizing on value-add opportunities as a key strategic objective influencing the decision process for both purchasing and renovating assets, discussed further under that section. Value creation opportunities related to operational efficiency and effective asset management were significant decision drivers prompting investment (Brown, Malmqvist and Wintzell, 2016). One participant noted that their "*focus to date, programmatically as far as the decision-making process, [is] much more about the existing asset management cycle and how to make that as value added as possible.*" This group also discussed the ramifications of *not* doing something and how that decision might impact market competitiveness and the ability to attract tenants. Ultimately, investment decisions are made with a focus on creating value within the local market.

Benchmarking and eco-certification represent another value creation consideration; interestingly, there were two clear - and opposing - positions on this topic. Some preferred eco-certifications for existing buildings and/or new builds *before* they purchased the building; this groups' moderating influences include more defined expectations of product performance along with facilitating conditions in the UTAUT model. Certification served as a benchmark of building excellence and demonstrated prior asset management success. Many in this group considered LEED-certification as one of the best tools for marketing a building (in most markets). When prompted, most participants with this perspective acknowledged they would consider purchasing

a non-eco-certified building; however, acquisition price would include the costs of a gap analysis or energy audit as well as the improvement costs for achieving a LEED certification, or equivalent.

In contrast, the other group considered value creation as the basis of their business model and, therefore, look to purchase buildings with curable defects. After bringing properties up to their highest and best use, this group repositions the asset within the market. This group strategically capitalized on value creation opportunities by acquiring certifications, such as LEED or EnergyStar, driven by local market demand and cost effectiveness of improvements (Kontokosta, 2015). Unsurprisingly, this group generally preferred a lack of sustainability certifications when purchasing existing buildings, as they viewed the potential of achieving a certification as an opportunity to make a significant, positive bottom-line impact.

Regionalization

As discussed previously, sustainability-related decisions principally aim to increase an asset's competitiveness and relevance in the market. Overwhelmingly, participants indicated that sustainability priorities and expectations for asset performance varied between markets. Consistent with diffusion literature (Braun, Caijas and Hohenstatt, 2017; Koebel et al, 2015; Qi, Tiwari and Wang, 2015), larger markets on the East and West coast were frequently discussed as being sustainability competitive, with a high-level LEED achievement as the expectation norm. Most perceived this uptake to be driven by tenant demand (specifically, multiple participants referred to Washington D.C.) and/or climate concern (for example, Minneapolis, New York City and Boston were common examples). Ultimately, for most participants, sustainability decisions focused on ensuring that assets remained competitive in their local markets rather than being motivated by the sustainability achievement and impact of their larger real estate portfolio.

Interestingly, most participants indicated a wider uptake of EnergyStar-certifications across their portfolios, whereas the expectation of a LEED-certification, particularly higher-level ratings, was unanimously driven solely by market norms. Participants suggested EnergyStar ratings helped *internal* organizational guidelines and processes for energy efficiency while other labels, like LEED aided branding, marketing, tenant demand or other external demand drivers. However, despite a high level of uptake of use of the EnergyStar tool, a large number of participants reported that, while they use the tool, they often do not seek the formal certification even when the building qualified. Although all participants indicated the EnergyStar tool's helpfulness in tracking and managing energy, participants indicated mixed perceptions about whether the market signal requires/values the certification. Ultimately this uncertainly was the primary reason given by participants for using the tool but not pursing the certification.

Management Processes

Data Collection Strategy

Launched in 2009, the *Global Real Estate Sustainability Benchmark (GRESB)* is an industry-driven organization which assists real estate investors in assessing the performance of real estate portfolios and infrastructure assets, comparing their performance to a mean benchmark in their category, and optimizing the risk/return profile of their investments. GRESB was the most commonly used sustainability reporting process implemented by participant's organizations and, for those using it, it was the most influential driver in determining what data was gathered and monitored by participants. GRESB reporting requires comprehensive data reporting and subsequently demands significant implementation resources. Despite the arduous nature of GRESB data collection it has become a leading reporting tool in the industry, in part due to its utility for investment management and in developing more effective engagement processes. This

aligns with the ACF literature (e.g. Weible et al, 2011) discussion of how resources, such as the strategic use of information, finance resources and skillful leadership, and that can be used to improve competitiveness. It should be noted, however, that some participants cautioned that the level of data tracking requirements was so time-consuming that debates around time spent relative to organizational value were ongoing.

The overall value of GRESB was clearly indicated across the respondent group. One participant noted that data was used *"to report to GRESB, to participate in that survey on a portfolio and company basis, and then we also use their system to track sustainable purchases and green cleaning and things like that for ongoing LEED certification process.*" As institutional investors become more knowledgeable about the link between sustainability and long-term economic performance of properties, they are beginning to require more reporting from fund managers about their due diligence related to addressing a wider range of sustainability factors. GRESB reporting can assist fund managers with the collecting, managing and reporting of performance impact related to the implementation of a wide array sustainability initiatives.

Several of the firms utilized third-party dashboard systems to track and monitor data. For example, in addition to collecting and managing data for GRESB reporting purposes, most participants used the EnergyStar Portfolio Manager platform to monitor operational efficiency as well as energy (and related greenhouse gas emissions) and water usage for all of their buildings. At the time of the interviews, EnergyStar had announced they would be expanding to include a waste management features and participants anticipated that this new capability would increase the gathering and management of waste management data in the industry. Since EnergyStar Portfolio Manager already has high uptake in most markets, most participants saw significant benefit in the additional opportunity to track and monitor waste management performance.

In addition to these two data collection strategies, a surprising array of data collection processes were developed by organizations in response to the specific needs and demands of internal decision processes. Companies individually developed an array of proprietary, web-based reporting tools enabling the auto-transfer of data (e.g. energy consumption) to portfolio managers. Portfolio managers entered this data into EnergyStar Portfolio Manager, making it accessible at the property level by building managers and engineers. These data collection and sharing tools aim to assist building managers and engineers in identifying inefficiencies in building operations and improving response rates for resolution of such issues. In addition, these tools facilitate energy and performance audits, maintenance planning, maintaining an inventory of operational efficiency actions and creating real-time energy consumption dashboards (Gliedt and Hoicka, 2015). Respondents indicated that dashboards ability to communicate real-time information to tenants helped educate building users about how individual actions impact overall performance of the building, with the ultimate aim of creating behavioral change (Andrews and Johnson, 2016).

Sustainability Data and Decision Criteria

Participants unanimously tracked and reported several sustainability criteria; discussion indicated tracking this data for Class A and B commercial buildings in most markets constitutes the industry norm. Because the data gathering and monitoring for buildings occurs across the portfolio, this data influences management purchase and renovation decisions for these commercial assets. These common criteria relate to key aspects of operational efficiency, including:

- Energy efficiency, conservation & renewables (measured by intensity and usage rates)
- Water conservation (measured by intensity and usage rates)
- Carbon emissions & offsets

- Waste reduction & recycling (measured by diversion rates) – anticipate this to become included in common data metrics with increased uptake of the new EnergyStar Portfolio Manager waste management features.

Another category discussed by participants at length relates to the data gathered and monitored primarily to meet sustainability reporting requirements. Overwhelmingly, participants indicated that developing datasets for reporting purposes (e.g. for GRESB or ULI Greenprint) were very comprehensive and, as a result, could be both time-consuming and, at times, difficult to gather. One participant succinctly summarized this common theme:

> "*GRESB reporting which, if you haven't spent any time with it, is very comprehensive and very, very demanding to implement*".

Another participant offered an example, noting that:

> "*…the numerical data that has to come across [that] we're collecting is very time consuming. Right down to recycling your waste streams, the diversion rates and where it's going – to landfills or being recycled. It all takes a lot of incredible databases to be able to keep track of this.*"

Likely, these sustainability attributes require data beyond easily measurable and trackable environmental attributes, such as social sustainability efforts and corporate governance factors. Data related to such attributes help decisions in markets where it is perceived to increase market competitiveness, for on-going assessments related to eco-certifications, to demonstrate transparency in communication with employees, tenants and the broader community – but for a few participants, such data is collected solely for sustainability reporting requirements. This group, in particular, noted that there were on-going discussions about the organizational value of the data collection, monitoring and reporting relative to the significant time spent on data collection.

However, many participants noted that some of the datasets which were initially collected solely for the purposes of sustainability reporting-related had since become influential in decision making. These include:

- Indoor environmental quality (e.g. air temperature, lighting and noise levels)
- Tenant (and community) engagement & communication
- Corporate governance
- Lifecycle assessment (e.g. age of HVAC/plumbing) – used for proactive asset management
- Access to alternative transportation
- Green cleaning
- Green lease structures & Triple Net vs. Full Service Gross rent clauses
- Green building certifications / benchmarking (EnergyStar, LEED, GRESB, BOMA 360)

The last set of factors which emerged as being important in the decision process pertained to the regulatory environments governing the market and available incentives. Restrictive regulatory requirements were particularly influential in decision making during the acquisition stage where municipalities requirements included e.g. minimum green, or green-like, building criteria. Such requirements inform the minimum level of building enhancement (i.e. investment) required for continued occupancy. On the other hand, consistent with Olubunmi, Xia, and Skitmore (2016), local incentives related to sustainability upgrades, such as financing incentives or utility rebates to offset investment, were more influential in renovation decisions

Strategic Implementation Process

Two disparate management strategies emerged as primary strategic processes impacting the implementation of sustainability action plans. Some institutional investors had developed formalized processes - including internal guidelines, policies, procedures and/or programs - for decision making and benchmarking. Some firms applied these processes across all markets noting

that their "*implementation is consistent across markets and across property sectors*", although many noted that these processes commonly included variations which adjusted that process to local market demand, size and/or geography "*… it's kind of by market, I would say … It [varies] by market and by class of property.*" Finding a middle ground was most common, as most indicated that they "*keep the same factors in mind but we prioritize it differently across the market.*"

In contrast, the second group of institutional investors indicated that no formalized processes were in place in their organization, and that decisions were instead made on a project by project or building by building basis, and that these decisions were heavily influenced solely by the local market demand pressures for each specific project/building. In the context of UTAUT, social pressures influenced decision making for this group.

Purchase and Renovation Considerations

Impact of Sustainability on the Purchase Decision Process

Emphasizing that sustainability goals extend beyond altruism, fund managers frequently considered sustainability features and performance as part of their fiduciary responsibilities in the acquisition decision process. As one participant shared:

> "*We think that it is our fiduciary responsibility to our clients and investors and we have always looked at buildings as - long before the term sustainability was around - have always concentrated on making sure those buildings are operating efficiently and effectively and are operating in the manor that they are supposed to.*"

Supporting this statement was an overwhelming emphasis that sustainability considerations only become influential in decision making if the fund manager believes that characteristic or lack thereof, would significantly impact the economic viability of the property. Primarily, sustainability

considerations were integrated into the acquisition decision only when they demonstrated an impact the bottom line through improved operational efficiency, tenant retention and/or offered other value-add opportunities.

Impact of Sustainability on the Renovation Decision Process

All participants indicated that sustainability considerations factored as part of the annual business planning for on-going investments and, as a result, may be more influential in the renovation decision process than for acquisition decisions. Most investors preferred properties with curable defects when value-add opportunities for the renovation process were identified; the moderating factor of ease of implementation drove this adoption. This strategy enables investors to resolve the defects, reposition the property, acquire eco-certification (LEED - pending local market conditions and demands, EnergyStar for all), and use the up-fits and new certification(s) to market the property. This group of participants viewed such property improvements as an opportunity to improve leasing potential and tenant quality for the asset.

When purchasing an existing building or repositioning an on-going investment, participants indicated an increased likelihood that a comprehensive building study (a full audit as well as the review of a comprehensive suite of retrofit options) would be undertaken as part of the sustainability investment decision. In contrast, new-build acquisitions where environmental rating certifications signaled efficiency performance rarely required such comprehensive study. Low- to no-cost actions to improve operational efficiency served as priority projects, followed by project with payback periods of less than three years or under $100,000 investment caps.

Economic Value-add Considerations for 'Green' Attributes

One of the primary economic value-add considerations relates to LEED certification. Although there was an expectation of LEED certification for A-grade commercial new builds, for existing building acquisitions participants identified clear preference for non-EnergyStar and non-LEED certified properties, with the caveat of economically feasibility for property upgrades to achieve the desired eco-certification rating. Upfitting a property to achieve LEED certification was a common strategy for positively impacting the economic valuation of the building, assuming a market demand for the certification in the area where the building is located. This may be in part because 'greener' buildings are considered by many to have the highest positive impact (in most markets) on the marketing of a property to achieve both higher tenant quality targets and improved tenant retention. One interviewee noted this was part of their overall investment strategy,

> "*I might include the lack of energy star or LEED certification as, and the lack of achievement in getting there, as an opportunity to add value to the building. You know, buying it, making it earn LEED and then marketing it as such.*"

Another strategic economic value-add consideration focusses on the asset management cycle. Through effective asset management, building managers and engineers can identify and take advantage of potential value-add opportunities such as proactive planning, improved efficiency, and waste reduction in the property. Several participants identified gap analysis and/or an energy audits as strategically important in assessing the current level of property performance efficiency, then identifying and aligning retrofit opportunities with the asset business plan to make renovation decisions. As one participant stated,

> "*I would say that it is a strategy [of ours] to be able to improve the cash flow of the building based on improving its operations and maintenance, and much of that is related to energy and water efficiency and waste management."*

CONCLUSION

Through the process of critically analyzing the in-depth interviews using comparative content analysis, the research team has gained a better understanding of *what* motivational drivers are influencing the decisions related to sustainability uptake by institutional investment and are now able explain *how* these factors impact decision processes.

The sample, methods and interpretations present important findings for the institutional investor space, but they are not without limitations. The small sample size, albeit consistent with qualitative work, potentially limits broad applicability. Although pains were taken to find a representative sample, the possibility of self-selection exists; the interviewees who agreed to speak with the research team might exhibit bias towards energy efficiency measures. Additionally, preferences move and change in this space as it evolves, and the opinions captured represent a moment in time. Where do we go from here?

The interview analysis generated numerous key insights regarding firm motivations to 'go green'. Participants noted that, broadly, factors beyond just being asset competitive drive investment in sustainability, noting that more holistic ESG strategies governing sustainability decision-making go beyond the simple asset level. However, even for firms with such ESG polices guiding their decision-making process, virtually all participants communicated that some type of cost-benefit analysis dominates asset-level decision-making. Expectations of improved building operation efficiency determined asset level decisions,– with energy and water the primary areas of expected savings for these firms. The interviews revealed that sustainability considerations have become part of the annual asset planning process as have data tracking measures.

The implementation process varied across the stakeholder group - from those utilizing broad national policies to those implementing more localized strategies focusing primarily on asset-level investment. Most firms had some national policies which they aim to implement across their entire portfolio relative to things like lighting and/or energy usage polices. Many of the participants note that these national policies were often modified based on specific localities and regional preferences and expectations. Almost all participants indicated that regardless of these broader policies, every asset requires a specific sustainability enhancement plan at the asset level.

Some contradiction appeared in how firms handled variation in policy and decision-making related to regionalization. Virtually all participants recognized and identified that green demands and trends varied from market to market. Some markets, like Washington D.C., essentially require green certifications in order to be competitive, whereas other markets are indifferent to green certificate achievement. However, discussions with participants indicated that the processes and polices used to manage green certifications and investment in sustainability features ultimately varied very little from region to region. This indicates that more nuanced approaches could, and perhaps, should, be developed within larger investor organizations to ensure investment decisions are better guided by localized requirements aimed at retaining asset competitiveness, rather than being guided by the more the generalized sustainability approach currently being used to manage multi-region portfolios. An interesting finding was that local regulatory minimum requirements and available incentives are key motivational drivers for investment – both in terms of ensuring assets meet the minimum requirements for green building and for offsetting costs associated with green investments. As more cities begin to understand and work to reduce their environmental impact, better understanding these motivational drivers may be a key strategy for planners to increase investment in sustainability features for both new and existing building projects.

Many discussions naturally ended up focusing on A-grade properties in major markets, and often drifted towards new builds rather than existing buildings. During the discussion of their expectation for LEED-certification this became even more evident, identifying an interesting gap in focus on non-A-grade existing commercial buildings. For municipalities looking to pursue significant environmental impact reductions across their cities, understanding the potentially significant impact of improving the sustainability of this lower-grade market segment - which is significantly larger than the A-grade and premium commercial office market - could be a game changer that enables them meet sustainability targets. To engage this market segment, planning bodies must consider and develop more effective strategies for engaging with owners/investors of this market segment to prompt them to implement sustainability upgrades and, at minimum, improve the operational efficiency and indoor environmental quality of assets.

The financial expectations for *why* a firm was investing in green building enhancements was found to be critical in making the decision to pursue sustainability upgrades as part of the investment process. For firms with fiduciary responsibilities, participants indicated that, while they may be guided by corporate level ESG policies, in practice the only way investment and asset managers could truly justify sustainable investments was by identifying a direct return on those investments. Therefore, when purchasing buildings, most firms first looked towards the direct savings expected from sustainable and energy efficient enhancements, and then considered - with less certainty - any expected building value increases earned over time which could be attributed to those investments. Firms tended to look for any curable defects that could be resolved in a manner that creates additional value, and subsequently consider the potential impact, if any, of acquiring an eco-certification. Low-to-no cost actions, unsurprisingly, dominated the first wave of action.

All firms looked for operating efficiency enhancements to improve overall net income through efficiency. These investments are almost exclusively financially motivated, even when in alignment with ESG policies. Many considered LEED-certification a value-add in the marketplace with several participants noting that even just improving a property to a LEED-certified rating often increased its overall value. Although a few participants commented specifically on how achieving the certification helped improve operational efficiency, others questioned whether the certification process actually helped achieved the promised efficiency benefits. In either case, most firms aimed to perform an energy audit or gap analysis to inform their sustainability plan with a smaller group opting for full building lifecycle assessments. Ultimately, the general strategy focused on improving cash flow through operations and maintenance enhancements.

The majority of participants believed that green certifications add value at both the asset and portfolio level, and for these firms this value-add proposition is a key strategic objective in investment decision making. While a number of firms looked to green certification as a value-add strategy in the purchase market, where they believed buildings with curable defects could be enhanced to create value for their stakeholders, others believed purchasing a building already earning a green certification indicated good property management prior to purchase and, therefore, there was a value in the purchase. Interestingly, eco-certifications are less important for existing buildings than new builds, the data analysis indicated this is due to a perception that the up-fitting of the asset to achieve certification can add more significant value to the asset through improved operational efficiency, increased tenant quality and tenure, and rent premiums.

While the motivation and strategy for pursuing and/or obtaining a green certification varied across the stakeholders, almost all participants believed in the old adage that ‘you can only improve what you measure’, and that any value-add strategy must include benchmarking measures and

regular monitoring. This finding will be of particular interest to property managers who must assess *what* to measure – and *how* it is best measured, and for portfolio managers who must ensure consistency of metrics across their portfolio in order to compare assets and improve portfolio-level investment decision making. While EnergyStar was consistently utilized across all markets for tracking energy and water consumption (with waste anticipated), local market expectations for buildings was the primary factor determining whether LEED-certification was pursued for a building. From this, we can understand that when data measures are strategically selected to monitor the operational efficiency of the asset, sustainability reporting can become an increasingly powerful tool for decision making.

As noted, one unexpected outcome from the research was the finding that, in the majority of large firms, it has become the norm to track sustainability data. This trend was driven equally by the requirements of the various eco-certifications and green reporting structures as by internal ESG policies. Data collection strategies ranged from internally developed systems to full third-party dashboard-type systems. Data tracking ranged from the expected, e.g. energy and water consumption tracking, to more cutting-edge metrics, like indoor environmental air quality (IEQ), carbon emissions and total lifecycle assessments. All firms tracked data on energy and water with many firms also moving towards collecting data related to waste and other metrics. A number of firms in the large investment management space cited GRESB as a key driver for continued data collection. The feelings were primarily positive about GRESB's impact on data collection, in that many believed the organization has driven them to create internal mechanisms to track and manage data or, alternately, to employ third-party developed dashboard systems to do it for them. However, some believed that the level of data collection and reporting requirements for GRESB were excessive, and some questioned whether their organizations could continue to justify the value of

GRESB participation relative to the significant investment in reporting. All participants believed that GRESB has helped to 'move the needle' of the industry with regards to implementation, measuring and monitoring, and transparency and reporting of sustainability, demonstrating that GRESB has acted as a social influencer (UTAUT) advancing the industry towards increased uptake (and competitiveness). Regardless of the different motivations or strategies for pursuing data collection and reporting, it was interesting to discover that virtually all large firms are currently using some type of sophisticated data collection system and engaged with regular sustainability reporting.

Understanding that sustainability decisions are almost exclusively driven by bottom-line considerations, it is important to also understand that the arduous process and costs associated with the eco-certification processes and sustainability reporting may at times act as a barrier to participation. The question needs to be asked whether green certifications and sustainability reporting tools should be driving the type, metric and collection strategies of sustainability data. Should real estate investors and managers not focus first on whether the data helps them to make better, more well-informed, evidence-based decisions … and then determine how the data can best be communicated?

The findings of this study also raise some interesting questions about the type of adopter making the adoption and implementation decisions. A follow-up study applying the adopter typologies distilled in Rogers' work (1976, 1995) may help further refine the findings presented here. Similarly, the application of the CBRE Green Diffusion Index and Moore's chasm crossing discussion may also enable further insights into the diffusion and adoption of sustainability amongst institutional investors to better understand who adopts what, and when - potentially

identifying whether adoption is the result of innovativeness, or simply a pragmatic response to market demand.

More broadly, the key lessons presented here could also be potentially relevant for real estate investors and managers of lower-graded office buildings to understand that the market changes which have become the norm in the top buildings of major US markets are likely to also diffuse over time and space into mid-level markets. When this happens, tenants in second tier markets and B-grade office buildings are likely to begin more adamantly demanding similar features. By taking proactive steps to gather to benchmark and proactively manage assets with sustainability in mind, property investors and managers will be able to distinguish their buildings within their markets and reap the benefits.

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