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UK commercial real estate valuation practice: does it now build in sustainability considerations?

Abstract:

Purpose - This paper investigates the extent to which commercial property valuers in the UK refer to RICS standards and guidance on sustainability. Data collection, analysis and reporting related to sustainability attributes is examined, as well as the perceived importance of these attributes to clients and any value impacts that are associated with them.

Design/methodology/approach - An online survey of UK commercial property valuers was conducted from July to September 2019. The survey included both structured and open-ended questions.

Findings - Reference to RICS standards and guidance on sustainability has improved. However, progress on data collection is still limited. During survey, UK valuers indicated that sustainability attributes were of more importance to owner occupiers than investors and lenders. They also indicated that, only certification was influencing market value and investment value to any great extent.

Research limitations/implications - The online survey had 53 responses, and this limited the ability to draw definitive conclusions. Hence, while the results may be indicative of the perceptions of some valuers, the sample is not large enough to be considered representative of the opinions of property valuers per se in the UK.

Practical implications - Explicit reflection of sustainability in market or investment values is still limited in UK valuation practice, but there are challenges faced by valuers that need further investigation, including difficulties in pricing sustainability attributes.

Originality/value - This is the first empirical investigation of the perception of sustainability by valuers in the UK commercial property market since the 2012 survey reported by Michl et al. (2016).

Key words - sustainability, commercial property, valuation practice, valuers' role, RICS standards

Paper Type - Research paper

1. Introduction

Human activities are most likely (95%-100%) to be responsible for global warming (Bates, Kundzewicz, Wu, & Palutikof, 2008). With a growing global population and the associated increases in resource consumption, humanity has increased its ecological and carbon footprint on the planet (Schandl et al., 2016). The UK government has historically focused on 'nudge' techniques to stimulate demand through the encouragement of voluntary certification schemes such as BREEAM, but the Climate Change Act 2008 has bound the UK government to reduce carbon emission by 80% compared with 1990 levels. The target was amended in 2019 to a net zero carbon target by the year 2050. Thus, the UK government is legally required to reduce UK carbon emissions and, as part of that, a requirement for Minimum Energy Efficiency Standards (MEES) was introduced in the Energy Act 2011, and regulations related to MEES were issued in 2015. After consultations and subsequent clarifications, the MEES came into force in England and Wales from 1 April 2018. These standards require privately rented non-

domestic properties to have an Energy Performance Certificate (EPC) rating of E or higher (on a scale of A to G) or they cannot be legally let (unless an exemption applies). Clearly, the absence of an EPC certificate or having an F or a G rating presents a significant risk for assets that could have a value impact. Additionally, MEES requirements are becoming stricter over time. From April 2023, the MEES will be applicable for existing leases as well as new leases, while the UK government has announced proposals for the minimum EPC rating to be B from 2030 onwards (Department for Business, Energy & Industrial Strategy, 2021). In contrast with the prominence of energy efficiency and decarbonisation, other sustainability criteria such as water and waste, as well as health and well-being factors, have not gained as much importance in UK government policy.

Arguments in favour of sustainable buildings are becoming stronger globally and go beyond regulatory compliance or technical efficiency. Future proofing should allow property investors to mitigate the financial impacts of climate-related change, but it can be challenging to predict future trends that will compromise the resilience of buildings. For example, while the impact of a gradual but serious climate-related change such as sea level rise is arguably predictable, a lack of reliable data means that forecasting more acute risks such as flooding is more difficult (Lamond et al., 2019). Nonetheless, there is increasing interest in the value implications of sustainability and resilience features in buildings, as well as in the effects of certifications that demonstrate sustainability.¹ Evidence for rent or price premiums associated with voluntary certifications or with mandatory (energy related) certifications has been presented for markets around the globe such as the US (Eichholtz, Kok & Quigley, 2010; Wiley, Benefield & Johnson, 2010; Fuerst & McAllister 2011a, 2011b; Das & Wiley, 2014; Fuerst, Gabrieli & McAllister, 2017; Holtermans & Kok, 2019), Australia (Newell, MacFarlane & Kok, 2011), Europe (Kok & Jennen, 2012; Porumb, Maier & Anghel, 2020), Singapore (Deng, Li & Quigley, 2012; Deng & Wu, 2014) and the UK (Chegut, Eichholtz & Kok, 2013; Fuerst & van de Wetering, 2015).

Despite this, it has been contended that valuers are not reflecting price and rental differentials in their individual asset valuations (Sayce, 2018). It is not clear whether empirical studies of rent or price premiums give valuers a sufficiently robust basis to incorporate sustainability features in their valuations. Research in Australia suggests limited incorporation of sustainability by valuers (Le & Warren-Myers, 2018; Warren-Myers, 2022). Research in the UK on this subject is scarce. Michl et al. (2016) investigated the extent to which valuers adapted to the RICS guidance note on sustainability and residential property valuation (RICS, 2011), and found very limited adoption of this guidance in valuation practice. Sayce and Hossain (2020) investigated the introduction of the MEES in the UK on valuation and asset management practices and presented qualitative data in the form of semi-structured interviews, but this research did not consider the role of property valuers.

This paper seeks to address this gap and study the perception of sustainability among UK valuation professionals, their use of contemporary RICS sustainability standards and guidance, the level of data collection related to sustainability in the valuation process, and how such data is analysed and reported for commercial property valuations in the UK. It first provides a background on relevant valuation concepts, the RICS guidance related to sustainability, and how sustainability might impact on value. The research method and data collection techniques are then discussed. The following section presents analysis and discussion of the findings from an online survey by the authors. The final section features concluding remarks.

¹ For a review of pricing and valuation issues regarding climate-related physical risk and resilience, see Sayce et al. (2022).

2. Background

2.1 Market value, Investment value and the role of the valuer

Commercial properties are long term, durable assets that can vary widely in their physical and spatial characteristics. Unlike financial assets such as stocks and bonds, individual properties are not continually traded, and their prices are not available on a centralised exchange. Instead, valuation professionals provide estimates of prices (valuations) to facilitate financial decision-making and reporting. In the UK, these valuations are undertaken by valuers who are guided and governed by a professional body known as the Royal Institution of Chartered Surveyors (RICS). The RICS sets mandatory standards for asset valuation in the Red Book (RICS, 2022), which itself incorporates International Valuation Standards set by the International Valuation Standards Council (IVSC, 2022).

This study is focused on the concepts of market value (MV) and investment value (IV). Market Value is defined by both the RICS and the IVSC as follows:

“The estimated amount for which an asset or liability should exchange on the valuation date between a willing buyer and a willing seller in an arm’s length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion.” (IVS, 2022, Paragraph 20.14)

While Investment Value is defined as:

“The value of an asset to a particular owner or prospective owner for individual investment or operational objectives.” (IVS, 2022, Paragraph 60.1)

MV should reflect what the sale price for an asset would be in a normal transaction situation while IV will reflect what that asset is worth to a specific client given their unique investment criteria, especially in regard to the discount rate and holding period (Baum et al., 2021). MV may be needed by investors to gauge potential proceeds from a sale or for financial reporting purposes. MV may also be required by lenders when underwriting or monitoring loans secured on real estate. By contrast, IV is normally required to assist with strategic decisions regarding the purchase, disposal, or management of property assets (Sayce, 2018, p. 134).

Valuers need sufficient information and knowledge to allow them to most effectively use their judgement and skills to get the best output for their clients. The RICS provides rules and guidelines to develop and maintain professional standards among valuers in the UK and in other jurisdictions (Amidu & Boyd, 2018). Alongside education, training and professional guidelines, valuers also develop heuristics or mental shortcuts over time that enables them to use market information effectively and in a timely manner. Valuer experience, opinions and knowledge of the market and its factors become an important requirement for this approach (Warren-Myers, 2016).

A valuer often practices for several years under the supervision of senior colleagues who assist them to develop their knowledge and heuristics. Yet as the market changes towards something new (for instance, the introduction of sustainability considerations), all valuers need to be able to develop new knowledge, be aware of market changes, and respond and reflect this in their practices (Warren-Myers, 2016). However, valuers have been criticised (Armitage, 2009; Warren-Myers, 2012a) for not reflecting sustainability factors in valuation outcomes even though academic literature provides evidence of rent or price premiums for sustainability attributes in some markets.

In the latest edition of the Red Book (RICS, 2022, p. 47), the RICS recognises the “*growing importance of sustainability factors as a market influence*” and instructs valuers to have “*proper regard to their relevance and significance in relation to individual valuation assignments.*” The RICS also provides several guidance notes, insight papers and information papers on sustainability. While the current Red Book cautions valuers that there is yet no universally recognised definition of “sustainability”, it defines it as follows:

“Sustainability is, for the purpose of these standards, taken to mean the consideration of matters such as (but not restricted to) environment and climate change, health and well-being and personal and corporate responsibility that can or do impact on the valuation of an asset. In broad terms it is a desire to carry out activities without depleting resources or having harmful impacts.” (RICS, 2022, p. 12)

To allow consideration of sustainability in valuation, the RICS has advised the collection of ‘*appropriate and sufficient sustainability data as and when it becomes available*’ since 2013 (RICS, 2013, p. 5), an instruction that is repeated in the current Red Book (RICS, 2022). The 2013 guidance note included a checklist that illustrated types of sustainability-related data that valuers could collect, although this was removed when the guidance note was updated in 2021 (RICS, 2021). What is therefore considered ‘appropriate and sufficient’ is open to subjective interpretation among valuers, as is how such data can be analysed to consider any impacts on value. Valuers generally use historical transaction evidence to justify estimates of Market Value, yet consideration of sustainability-related features implies a forward-looking approach.

The RICS advises that, where sustainability factors are impacting value, they should be embedded into calculations of value, and that factors which do not affect MV but may influence IV should be considered if they are relevant over the proposed holding period. Furthermore, they require that valuers “*continuously seek to enhance their knowledge*” (RICS, 2022, p. 129) so that they are fully aware of recent developments in sustainability and relevant legislative changes. Where valuers lack the necessary skills, they should consult specialists.

2.2 Sustainability and its relation to property value

The issue of sustainability attributes and how they can be incorporated into valuation processes has been addressed by Sayce and Ellison (2003a & 2003b), Sayce et al. (2004), Lorenz & Lutzkendorf (2008, 2011) and Lorenz, Truck & Lutzkendorf (2006), among others. However, the practicability of these studies for the valuation profession has been questioned. For instance, the ability of valuers to conduct such assessments in practice may be limited by the feasibility of collecting large data sets on sustainability features and by a lack of experience in using such methods (Warren-Myers, 2012a).

Another body of literature uses hedonic models to evidence rent or price premiums for properties with sustainability or energy efficiency certifications (for example, Chegut, Eichholtz & Kok, 2013; Fuerst & van de Wetering, 2015). More recent quantitative meta-analysis studies to identify pricing differentials were undertaken by Dalton and Fuerst (2018) and Leskinen et al. (2020) and their findings suggest the presence of premiums for certified properties. However, quantitative studies have been subject to criticism in terms of the data sources, variables and modelling approaches used. A major criticism has been whether the control variables used in these studies are capable of accurately capturing the sustainability attributes of buildings (McAllister, 2012). In addition, properties used in such studies are generally larger, taller, newer and of superior quality compared to non-certified properties

(Leskinen et al., 2020), and although all studies have sought to control for the impacts of such variables, some of the identified premiums may still be explained by them. Moreover, hedonic studies work with aggregated data sets that may have limited applicability for valuing a single asset or portfolio in a specific location (Sayce, 2018). Therefore, valuers may be unable to use this information directly to assess the relationship between sustainability and valuation (Warren-Myers, 2012a; 2013). Additionally, the meta-analyses by Dalton and Fuerst (2018) and Leskinen et al., (2020) aggregated data at a global level, and thus did not provide data at the level of individual markets or buildings which would be useful for professional valuers (Warren-Myers, 2022). Consequently, a perception gap has been created between values as they are calculated by property valuers and price premiums suggested by hedonic pricing studies that requires further investigation.

Figure 1 provides a theoretical view regarding how market pricing of property could be affected by benefits and risks related to sustainability. Sustainable buildings provide certain benefits that include operating cost savings (Aroul & Hansz, 2012; Fuerst, 2009; Fuerst & McAllister, 2011a, 2011b, 2011c; Harrison et al., 2011; Pivo & Fisher, 2009), health benefits (Aroul & Hansz, 2012), waste and water efficiency (UKGBC 2018 ; WGBC, 2018), reputational benefits (van de Wetering, 2018) as well as higher occupancy rates (Wiley et al., 2010; Eichholtz et al., 2010). Hypothetically, such benefits can create an increased willingness to pay (WTP), which then drives demand that, in turn, may impact on market pricing, particularly where there is a lack of supply in the short term. Some evidence of increasing demand (Fuerst et al., 2017; Jackson & Orr, 2018; JLL 2020; WGBC, 2013) and market pricing is apparent in the literature (Fuerst, van de Wetering & Wyatt, 2012; Chegut, Eichholtz & Kok, 2013; Fuerst & van de Wetering, 2015).

INSERT FIGURE 1 HERE

Earlier research suggested that a lack of data inhibited valuers from incorporating sustainability in valuation practices (for example, see Warren-Myers, 2012a) whereas more recent research in Australia suggests that lack of knowledge and an inability to conclusively link sustainability attributes to value was still limiting the explicit consideration of sustainability in valuations (Warren-Myers, 2022). A study undertaken by Michl et al. (2016) in the UK found that lack of data, lack of knowledge of RICS guidance notes and a lack of requirement from clients to be the main reasons for limited inclusion of sustainability within valuation practices.

Knowledge of the concept of sustainability and relevant factors is essential for valuers to understand and reflect value impacts and this is why the RICS suggests that *“In order to respond appropriately as market changes, valuers should continuously seek to enhance their knowledge”* (RICS, 2022, p. 129). To enable regular enhancement of the knowledge of valuers on sustainability, the RICS has published several guidance notes and information papers (RICS 2011, 2013, 2018a, 2018b, 2021). Valuers can also learn about sustainability as part of their education and professional training. Sustainability is one of the mandatory requirements for level 1 competencies where valuers are taught the basics of sustainability. To provide more specialised services to clients, they must also complete level 2 and 3 competencies (See RICS 2018c for details on the competencies). Therefore, although valuers can be said to learn the basics of sustainability as part of their professional training, the question remains whether education and training sufficiently equip them to provide informed advice to clients on its impacts.

Conversely, an absence of sustainable development features may accelerate obsolescence and require significant capital investment by property owners to address this, a phenomenon termed as transition risk. For instance, as the MEES requirements in the UK are increased over time, there is a chance that some properties that are not at the minimum standard for energy efficiency will become stranded, where they are unable to be let and uneconomic to upgrade (Muldoon-Smith & Greenhalgh 2019; Sayce & Hossain, 2020). As such, properties that are subject to high levels of transition risk might experience reduced demand from investors, leading to a brown discount in price as opposed to a green premium.

The expectation of this study is therefore that the combined effect of increasing demand and transition risks should impact on market pricing, either in the form of rent or purchase prices. This pricing will act as evidence for valuers that they can reflect and include in valuation reporting. Furthermore, professional standards provide a strong recommendation for valuers to collect and report data on sustainability (RICS 2013, 2018a, 2018b 2021, 2022) that may impact on valuation reporting separately from any value impacts.

Though the literature on this subject has grown substantially for over a decade, the perception of valuers of sustainability in property markets around the world has seen relatively little research. While a significant body of work exists for the Australian market (Warren-Myers, 2011; 2012a; 2012b; 2016; Le & Warren-Myers, 2018; Warren-Myers & Craddock, 2021; Warren-Myers, 2022), far less work can be found for other markets, as identified by Sayce (2018). The Australian studies generally reported that valuers still have limited knowledge, skills and ability to incorporate sustainability. In the UK, only two relevant studies could be found. Dixon et al. (2008) studied engagement with the sustainability agenda among RICS members. An online survey and some structured telephone interviews were conducted for this research, which revealed that the RICS members were unable to use sustainability tools and other information effectively mostly because of a lack of knowledge and expertise in this area.

Meanwhile, Michl et al. (2016) reported results from an online survey conducted by the RICS. They investigated the impact of the first edition of the RICS's Sustainability and Residential Property Valuation information paper (RICS, 2011) and their results suggested limited impact of this guidance on valuation practices in the UK, Germany, Switzerland and other RICS regions due to a lack of knowledge of the guidance, a lack of client requirements and scarcity of data. Since 2012, much has changed in terms of market demand, government policy and RICS requirements. Therefore, it is imperative to reinvestigate the extent to which valuers consider sustainability in the valuation process.

3. Research Methods

The objective of this study is to investigate the analysis and reporting of sustainability attributes in the valuation of commercial properties in the UK. The following questions were addressed:

1. To what extent are valuers using or referring to the RICS requirements and advice on sustainability in their day-to-day due diligence process?
2. How much data related to sustainability attributes do valuers routinely collect (as advised by the RICS) when valuing assets?
3. To what extent do commercial property valuers see sustainability attributes influencing the market value or investment value of the assets that they value?
4. In the opinion of valuers, to what extent are sustainability attributes important to their commissioning clients (lenders, owner occupiers and investors)?

To investigate these questions, an online survey was designed with sections relating to each of the research questions set out above. Most of the questions were closed form in nature with the aim of encouraging more participation. However, at the end of the survey, respondents could provide further comments about the topic of sustainability and valuation and add anything they thought might be relevant or helpful for this research. All participation was anonymous.

To address research question 1, a list of RICS sustainability guidance notes and information papers was presented to valuers to understand their awareness and use of these publications (see Table I below). To answer research question 2, respondents were asked about a list of 23 sustainability characteristics related to seven sustainability attributes: (1) certification, (2) energy and carbon, (3) waste management, (4) water management, (5) quality of external environment, (6) health and well-being, and (7) adaptability and resilience to climate change. Appendix A provides a list of literature that was consulted when selecting these characteristics. To address research question 3, valuers were asked their views about the effects of the seven sustainability attributes on Market Value and/or Investment Value (see Tables II and III below). Finally, to address research question 4, valuers were asked to what extent these sustainability attributes were important to their commissioning clients (see Figure 3 below).

As part of the questionnaire, additional data was collected from valuers about their age, years of experience, professional and academic qualifications, Continuing Professional Development (CPD) on sustainability, and whether they have completed RenoValue. Respondents were also asked about where they were based, the type and size of organisation they worked for, and typical purposes of the valuations they undertook to determine whether these variables could be significant in their responses to the main questions.

The online survey was sent in July 2019 to a sample of RICS registered commercial property valuers and it was kept active until September 2019. 550 registered valuers were contacted via email and LinkedIn with the aim of achieving a sample that was spread geographically across the UK. An online Qualtrics survey link was sent for response. Participants were also requested to share the online link of the questionnaire with their colleagues to create a snowball effect. In total, 53 responses were received over a period of 3 months.

The survey was part of a PhD thesis. Though it was undertaken in 2019 the authors waited for the full PhD work to be completed before publication to develop a full picture and to ensure that any other relevant issues that were identified in earlier phases could be addressed in the subsequent phases.

While selecting the sample through social media and email addresses available through public websites, every effort was made to ensure the questionnaire would reach valuers from all over the UK. In the end, the sample was representative of all UK regions, including London, the north and the south of England, Scotland and Wales. However, there were no responses from valuers based in Northern Ireland. Additionally, the sampling sought to balance responses from valuers in large valuation practices, typically based in cities such as London, Manchester and Birmingham, with responses from valuers working in smaller regional firms. Experience of valuers was also a consideration and so responses were sought from valuers with only limited experience post-qualification to valuers with more than 40 years of experience. Within the sample, 21% of valuers had an experience of less than 5 years, another 21% had 5-10 years, 13% had 11-20 years of experience and 45% had more than 20 years of experience.

Certain limitations to the online survey must be recognised. First, the number of responses was small, although examination of the responses suggests there was an appropriate spread of ages, experience levels, geographies served, and types of valuation instruction undertaken across the sample. It is also recognised that the sample could be affected by self-selection bias of valuers with a particular interest in sustainability issues. The relatively small sample size meant that correlations did not provide statistically significant results. Hence, cross tabulations of the data were used to reveal patterns between variables. Finally, the survey was conducted prior to the COVID-19 pandemic, and changes in market conditions arising from this and other events that followed might have changed perceptions of how sustainability issues are affecting valuations. Nonetheless, the results here provide a significant update to knowledge on how sustainability is being embedded in UK valuation practice, and the next section discusses findings from the online survey and compares them to results reported by previous studies.

4. Online survey results and discussion

4.1 Valuers' awareness and use of the RICS publications referring sustainability

While the RICS has been encouraging the consideration of sustainability within the valuation process, many of its publications on this topic have taken the form of non-mandatory guidance to promote and encourage 'best practice' (RICS 2013, 2018a, 2018b, 2021). Respondents were asked about their awareness and use of two RICS guidance notes on sustainability (RICS, 2013; RICS, 2018) and one insight paper (RICS, 2018b), as well as mandatory content within the Red Book (RICS, 2017).²

Results are shown in Table I in both percentages as well as response count for each category in brackets. Results suggest that a small minority of the respondents were not aware of either the various guidance notes or the mandatory instructions on sustainability within the Red Book. The responses for 'Do not know about it' ranged from 6% to 13% of the sample (3 to 7 valuers) depending on the publication. Another 15% to 32% (8 to 17 valuers) mentioned 'never' using these publications, although the lowest count (8) was for the mandatory sustainability guidance in the RICS Red Book.

INSERT TABLE I HERE

Among the valuers who were aware of each publication, 38% to 57% stated that they 'seldom' used it compared to 21% to 25% who stated that they referred to the publication 'frequently'. As the Red Book is mandatory to follow, it was expected that this would be the publication to receive the greatest response for 'frequently' used but that was not the case. The highest percentage achieved in the 'frequently' used category was for the RICS insight paper on the MEES (RICS, 2018b). It appears that valuers referred to this insight paper to understand and reflect the implications of the MEES in property valuations.

Comparing these results to those in the Michl et al. (2016) study undertaken in 2012, awareness and use of RICS standards and guidelines on sustainability does appear to have improved.³

² At the time of the survey, the 2017 edition of the Red Book was the latest one, although the 2022 edition is the latest at the time of writing.

³ Michl et al. (2016) found that only 5.1% of valuers in the 'UK and other regions' at the time of their survey "always" used the sustainability and commercial property valuation guidance note (RICS, 2011), while 10.9% used it "occasionally" and 12.30% "seldom" used it. 17.4% never referred to this guidance and 54.3% valuers did not respond.

Further analysis was conducted to check if awareness and use of standards was dependent on other factors such as experience, type of organisation worked for, size of firm, and purpose of valuations undertaken. This revealed some connections between the use of these publications and the experience of the respondent. The responses of “do not know about it” or “never” were mostly selected by less experienced valuers (fewer than 10 years of experience), while valuers with more than 20 years of experience responded either with “seldom” or “frequently” used.⁴ This might suggest that more experienced valuers are better aware of sustainability standards and guidelines. While younger valuers are typically taught about sustainability as part of their education, this is apparently not improving their awareness and use of the RICS sustainability guidelines. However, the better awareness of the senior valuers who responded could also be attributable to self-selection bias, i.e. those senior valuers with a strong interest in sustainability participated within this study.

Respondents were also invited to leave comments at the end of the survey. On this point, valuer from a large valuation firm suggested that,

“While I appreciate RICS want sustainability involved I think they need to understand that it is not a current consideration at the moment and a lot of things being asked are outside the valuers’ expertise and (the) RICS would be very harsh on valuers providing advice on areas (where) they’re not qualified.”

This quote suggests that lack of valuer expertise of sustainability factors and how it may impact on value continues to be perceived as a barrier. The RICS advice is to seek expert advice when valuers are not qualified enough to comment on something (RICS, 2022, p. 128), but additional expert advice is unlikely to be freely available and might not be practical given the fees paid for some types of valuation instruction. One valuer commented that low fees were an obstacle to consideration of sustainability in their view: *“My particular field of valuations - business rates and compulsory purchase - does not pay much, if any attention to sustainability issues at this time”*.

4.2 Data collection on sustainability:

The results relating to data collection for different sustainability attributes are shown in Figure 2. Valuers received a list of total 23 sustainability factors which were categorised into seven sustainability attributes, (1) certification, (2) energy and carbon, (3) waste management, (4) water management, (5) quality of external environment, (6) health and well-being, and (7) adaptability and resilience to climate change. For each of the sustainability factors valuers could respond with ‘never’, ‘seldom’, ‘not normally’ or ‘routinely’ to indicate the extent of their data collection.

INSERT FIGURE 2 HERE

Most respondents indicated that they ‘routinely’ collect data on EPCs, flood risk and proximity to public transport (87%, 87% and 74% respectively). On the other hand, a majority indicated that they ‘never’ collect data on waste- and water management related factors (55%-62% said never for waste and 49%-70% for water management factors). Data on other factors are

⁴ Cross-tabulations can be made available by the corresponding author if requested.

collected ‘routinely’ to varying degrees, such as BREEAM (26%), energy sources (38%), proximity to open and green spaces (40%), any pollution in areas contiguous to the property environment (55%), flexibility of internal layout (53%) and building component design for reuse (40%). Around 80% of valuers indicated that they report all the sustainability related data that they collect in the final valuation report. These results are broadly consistent with those found by Michl et al. (2016) where data on features such as flood, storm risk and flexibility were found to be collected by valuers more than other selected characteristics, though at levels which were significantly below what this study has found. Factors that have gained importance since the study by Michl et al. (2016) are mostly related to traditional building or location attributes such as proximity to open and green space, proximity to public transport, any pollution in area contiguous to the property environment and flexibility of internal layout. However, data on less traditional factors such as health and well-being or waste and water management have not gained much more importance since the survey by Michl et al. (2016).

Cross-tabulation of results revealed that data on EPCs tends to be collected regardless of the purpose of valuation, whereas data on BREEAM is more likely to be collected for specific purposes such as investment advice and company accounts. Moreover, data on EPCs is being collected by valuers with various levels of experience, whereas data on BREEAM is more likely to be collected by more experienced valuers. Likewise, valuers appeared to collect data on EPCs regardless of the size of their organisation, whereas data on BREEAM is typically collected routinely by valuers belonging to bigger organisations. More experienced valuers are more likely to collect data on energy sources used, flexibility and building component design for reuse, and valuers from small organisations are more likely to collect data on energy sources used.

The superior collection of EPC data may reflect a better due diligence process which can be linked to the introduction of the MEES as was reported by Sayce and Hossain (2020). Data on BREEAM will normally be available for new, prime properties only, as one of the respondents commented, “*These factors pertain more significantly to higher value commercial stock*”. The buildings with BREEAM certification are more likely to be valued either by more experienced valuers or valuers belonging to the larger valuation firms. A similar outcome was reported by Warren-Myers (2011) who found that senior valuers in Australia were found to be marginally more experienced in valuing sustainable properties.

4.3 Impact on Market and Investment value:

Valuers were asked whether they are reflecting the seven sustainability attributes stated above in Market Value and Investment Value calculations and, if so, how they are doing this.⁵ For Market Value, options given in terms of specific channels for impact were adjustment of rental evidence, likelihood of voids and capitalisation rate. For Investment Value, the options given were adjustment of rental evidence, rental growth rate, discount rate, rate of obsolescence and exit yield. The different options in each case reflect the methods normally used for assessment of Market Value and Investment Value in the UK. The former is primarily estimated through the capitalisation of current income and current market rental values (a growth-implicit approach), while the latter is usually estimated using explicit discounted cashflow techniques (Baum et al. 2021). Respondents could indicate multiple responses for each of the sustainability attributes as one attribute may impact Market Value or Investment Value through several of these value indicators.

⁵ One valuer indicated in the comment section, “*Investment Value is something very rare for valuers to provide*”. If that is true for the rest of the valuers in the sample, though no one else mentioned it, this paper provides a more extensive look into the impacts of sustainability factors on MV rather than both MV and IV.

INSERT TABLE II HERE

Results for Market Value are presented in Table II. On the left side, results are presented for whether respondents thought each sustainability attribute had an impact on Market Value. On the right side, results are presented for how it has an impact – these options were only selected by valuers who thought that there was an impact to begin with. The respondents indicated that only certification may have some market value impact. The impacts could be seen through the capitalisation (cap) rate (40%), adjustment to rental evidence (30%) and likelihood of voids (30%). Cap rate appeared to be the most important value indicator to reflect the impacts on MV. In the UK, the use of an all-risks yield is dominant for calculating MV. Michl et al. (2016) similarly found that yields were more influential in the UK than Germany and Switzerland because of its influence in calculating market value.

Results for Investment Value are presented in Table III. Again, on the left side, the results are shown for whether respondents thought each sustainability attribute had an impact. On the right side, results are presented for which aspects of the calculation are affected, completed where valuers thought that some impact overall on Investment Value occurred. A majority of respondents indicated that certification may have some impact overall on Investment Value. For certification, exit yield (26%), adjustment of rental evidence (24%) and discount rate (23%) are the most likely value indicators selected by the respondents.

INSERT TABLE III HERE

One valuer commented that *“We often reflect improving the property's [EPC] through expenditure and therefore a direct cap-ex off the top-line, to bring it up to the appropriate level.”* This comment refers to a situation when a property's EPC is not up to the minimum standard and the cost of bringing the property to the minimum standard of E is calculated and deducted from the final value as cap-ex. This was found by Sayce and Hossain (2020) as well. They also reported on variations in the treatment of EPC non-compliance, whereby no value impacts from non-compliance were reported by some of the valuers in that study (Sayce & Hossain, 2020). There are echoes of something similar within this study as well as one valuer mentioned, *“There are also multiple opinions on how to value sustainability and sustainable aspects.”*

There were mixed results for the impact of quality of external environment on value. 40% of respondents indicated that there was no impact on Market Value whereas 60% indicated that it was impacted. Those who perceived an impact indicated that this occurred through the cap rate (37%), adjustment of rental evidence (36%) and likelihood of voids (27%). For Investment Value, 36% indicated none/no impact whereas 64% indicated that there would be an impact. This impact could be reflected either through adjustment of rental evidence (26%), exit yield (22%) or discount rate (22%). Michl et al. (2016) found that traditional building attributes such as flexibility, adaptability, accessibility of the location were deemed more significant than social aspects such as health and well-being. Although this survey has been conducted seven years after that by Michl et al. (2016), the findings are similar. The major change is in the perceived impact of certification, which was found to be not very significant in 2012 (Michl et

al., 2016). It is evident that by 2019 this had changed. The other sustainability attributes did not influence Market Value or Investment Value to a great extent according to the respondents.

Table IV displays an attempt to better understand why valuers may not be collecting data on sustainability.⁶ As seen in the table, most of the valuers who think there are some value impacts of a certain attribute are more likely to collect data on it. For example, 39 valuers think there are market value impacts of certification and 36 of them collect data on EPCs. This is true for the other factors as well, although there are some variations. This finding suggests the lack of data collection on sustainability by valuers may be because valuers are yet to see the impact of these factors on market pricing.⁷

INSERT TABLE IV HERE

In terms of value impacts several valuers commented on difficulties faced to “*assess whether one property is greener than another in valuations*”. The absence of a “*realistic benchmark*” was cited as an obstacle to considering sustainability in valuations. One valuer stated that “*it is hard to answer specially as each case will be different and looked at on merit – in some cases I have suggested no change- but of course there could be if something was unusually poor*”. Similar findings were reported by Warren-Myers (2013) where it was found that Australian valuers had limited knowledge on sustainability and questioned their own capacity to consider the impacts of sustainability in valuations. Warren-Myers (2010) also identified that Australian valuers were not well adept or equipped to identify relationships between sustainability and market value. Additionally, Warren-Myers (2013) reported on the lack of knowledge, skills and ability of Australian valuers to incorporate or consider sustainability. A more recent longitudinal study in Australia found that lack of knowledge was still playing a significant role in limiting explicit sustainability considerations in valuation practices (Warren-Myers, 2022). This brings us back to an earlier point about the education and training of valuers on sustainability and whether this is adequate for meeting changing market requirements. This study and previous studies have found a repeated failure over time to advance the debate on how to address sustainability-related issues in valuations at a pace that reflects the apparent adoption of such issues across different markets. This points towards a need to better address an apparent lack of proper education, training, industry standards and guidance on how to explicitly incorporate sustainability in valuation practices.

Several valuers left comments regarding variation across the UK property stock. According to these respondents, the demand for sustainability is not reflected in older stock and there is a lack of connection between sustainability and the income of the property in these cases. One valuer commented that “*...certainly with existing stock, too little emphasis is placed on how sustainable a building is compared with the quality of income.*” Another valuer stated that, “*Within the region in which I practice there is very little in the way of market evidence, except from assets considered by the Larger Funds or Corporates, that the market has any great consideration of sustainability when considering an asset for purchase, other than perhaps when comparing operating costs of two buildings. Even then, once outside of perhaps the Grade A office market, the market does not seem to apply any real science to this.*”.

⁶ Though respondents were presented with seven sustainability attributes in our study, only 4 attributes are shown in table IV as these are the attributes for which data are collected the most according to the respondents.

⁷ A similar cross-tabulation was produced for impact on Investment Value versus data collection and the results were very similar. This can be made available upon request.

4.4 Importance of sustainability attributes to commissioning clients:

As stated by one respondent, “*sustainability will not be valued until the market demands this.*” Hence, valuers were asked about their views on the importance of sustainability attributes to different types of valuation clients, namely investors, lenders, and owner-occupiers. The results are summarised in Figure 3 in three panels for three client types. According to the respondents, certification and quality of external environment are currently the most important attributes for investors. Responses are similar for lenders, although they attribute less importance to quality of external environment. On the other hand, valuers indicated that all seven attributes appeared to matter to owner occupiers, and quality of external environment is the most important one for them.

INSERT FIGURE 3 HERE

For comparison, Michl et al. (2016) asked valuers in 2012 about client demand for integration of sustainability attributes. Across the geographies surveyed, they found that most respondents had not been asked about sustainability, but the most demand for inclusion of sustainability in the UK came from investors. In this survey, valuers have indicated that sustainability attributes are more important to owner occupiers than either lenders or investors. As owner-occupiers are the ones to use the property first-hand, they are more likely to be affected by the presence or absence of sustainability attributes and so will directly enjoy benefits such as operational cost savings, energy efficiency, health and wellbeing factors, etc. (Aroul & Hansz, 2012).

5. Conclusion

This research has investigated the extent to which valuers of commercial properties in UK are aware of RICS guidance on sustainability and whether they collect, analyse and report data on sustainability attributes during the valuation process. It has also explored the perceived impact of sustainability features on Market Value and Investment Value outcomes, as well as their perceived importance to commissioning clients such as investors, lenders and owner-occupiers of commercial real estate.

One key finding is that valuers appear to be referring to sustainability standards and guidelines provided by the RICS much more than in 2012 when this was researched previously by Michl et al. (2016). Yet, in contrast to expectations, the awareness and use of these publications was found to be higher among the senior valuers that responded than the younger valuers, although the limited number of respondents must be borne in mind. Meanwhile, it does not appear that data collection has improved to any great extent since the survey by Michl et al. (2016). Data collection appears to have gained importance for some factors; for instance, EPCs owing to the introduction of MEES. Yet data collection for other sustainability attributes is weighted towards aspects that reflect traditional building or locational factors rather than contemporary areas of concern such as health and well-being or waste and water management.

A lack of data collection could reflect that valuers working in the UK do not perceive a pricing differential for the sustainability attributes concerned. While many studies have found evidence of rent or price premiums for sustainability certifications (see Dalton & Fuerst, 2018; Leskinen et al., 2020), evidence in relation to other factors is limited. Yet it could also reflect difficulties in securing and analysing data on other factors. While several guidance notes and information papers have been produced by the RICS on sustainability, they have yet to systematically

address this issue. Several valuers noted in additional comments the difficulties that they face in analysing sustainability data. This might be partly due to a lack of training and education on such matters, as suggested by Warren-Myers (2010, 2013, 2022) for Australia. This study also recommends that the RICS works alongside accredited universities, academics and educators to determine how sustainability knowledge and skills can be better developed for the next generation of valuers.

Finally, while this research investigates perceptions of sustainability among valuers in the UK commercial property market, the limited number of respondents prevent us from drawing definitive conclusions. Nonetheless, it does provide an update of the treatment of sustainability factors by valuation professionals. This research has found that the challenges faced by valuers to build sustainability factors into valuation practice include lack of expertise on sustainability, lack of market evidence and lack of education and training. The issues identified here have remained similar to findings in Michl et al. (2016), and a crucial question is therefore how this can change so valuers will be better equipped to consider and reflect sustainability in valuations in future. The RICS and other professional bodies globally have an important role to play to address these challenges and bring forward much needed change within the real estate industry.

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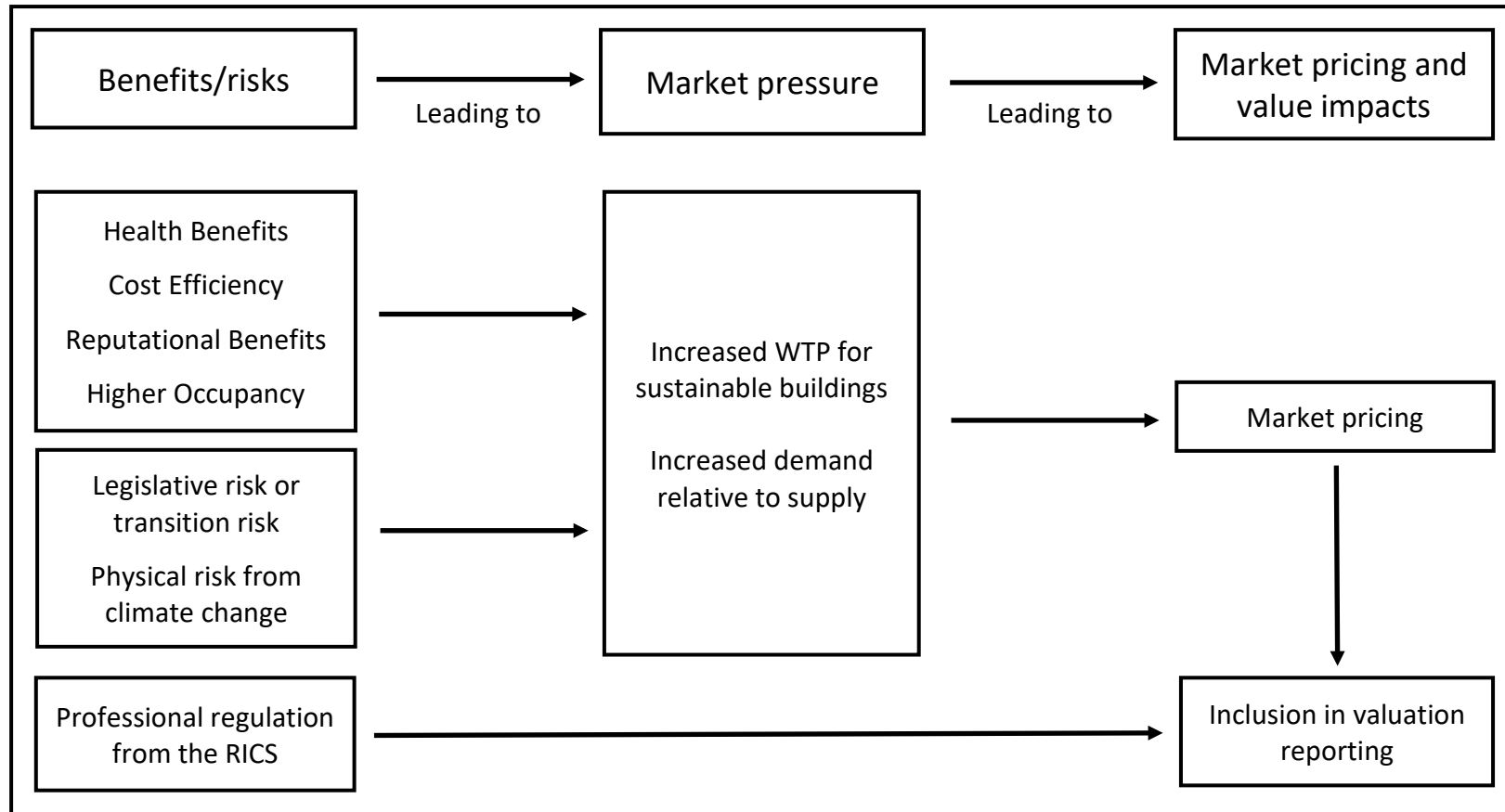
Appendix A

The following table lists the sources and studies used to generate the 7 sustainability attributes and 23 sustainability characteristics included in this survey:

Sustainability Attributes	List of literature
1.Certification	RICS, 2013; Michl et al., 2016; Chegut, Eichholtz & Kok, 2013; Fuerst & van de Wetering, 2015
EPC	
BREEAM	
LEED	
WELL	
2.Energy and Carbon	RICS, 2013; Ellison & Sayce, 2006; Ellison & Sayce, 2007; Lorenz & Lutzkendorf, 2011; Lutzkendorf & Lorenz, 2011; Lorenz & Lutzkendorf, 2008; Michl et al., 2016
Energy consumption data	
Carbon emissions data	
Energy source used	
Renewables for heating and cooling	
3.Waste Management	RICS, 2013; Ellison & Sayce, 2006; Ellison & Sayce, 2007; Lorenz & Lutzkendorf, 2011; Michl et al., 2016
Waste management facilities (e.g. sorting, compaction etc.)	
Waste management data (e.g. records, materials to landfill etc.)	
4.Water Management	RICS, 2013; Ellison & Sayce, 2006; Ellison & Sayce, 2007; Lorenz & Lutzkendorf, 2011; Lorenz & Lutzkendorf, 2008; Michl et al., 2016
Water conservation installation (e.g. sprinkler taps, leakage detection etc.)	
Grey water system	
Water consumption data	
5.Quality of External Environment	RICS, 2013; Ellison & Sayce, 2006; Ellison & Sayce, 2007, Lutzkendorf & Lorenz, 2011; Michl et al., 2016
Proximity to open and green spaces	
Any pollution in areas contiguous to the property environment	
Proximity of public transport	
6.Health and Well-being	RICS, 2013; Ellison & Sayce, 2006; Ellison & Sayce, 2007; Lorenz & Lutzkendorf, 2011; Lutzkendorf & Lorenz, 2011; Lorenz & Lutzkendorf, 2008; Michl et al., 2016
Occupiers' satisfaction data	
Internal environment (e.g. indoor air quality data; levels of natural light)	
7.Adaptability and Resilience to Climate Change	RICS, 2013; Ellison & Sayce, 2006; Ellison & Sayce, 2007; Lorenz & Lutzkendorf, 2011; Lutzkendorf & Lorenz, 2011; Lorenz & Lutzkendorf, 2008; Michl et al., 2016
Flexibility of internal layout	
Building component design for reuse (e.g. readily demountable/reusable partitions)	
Site flood risk	
Resilience to extreme weather (e.g. roof design, good heating/cooling)	
Use of renewable/recyclable construction materials	

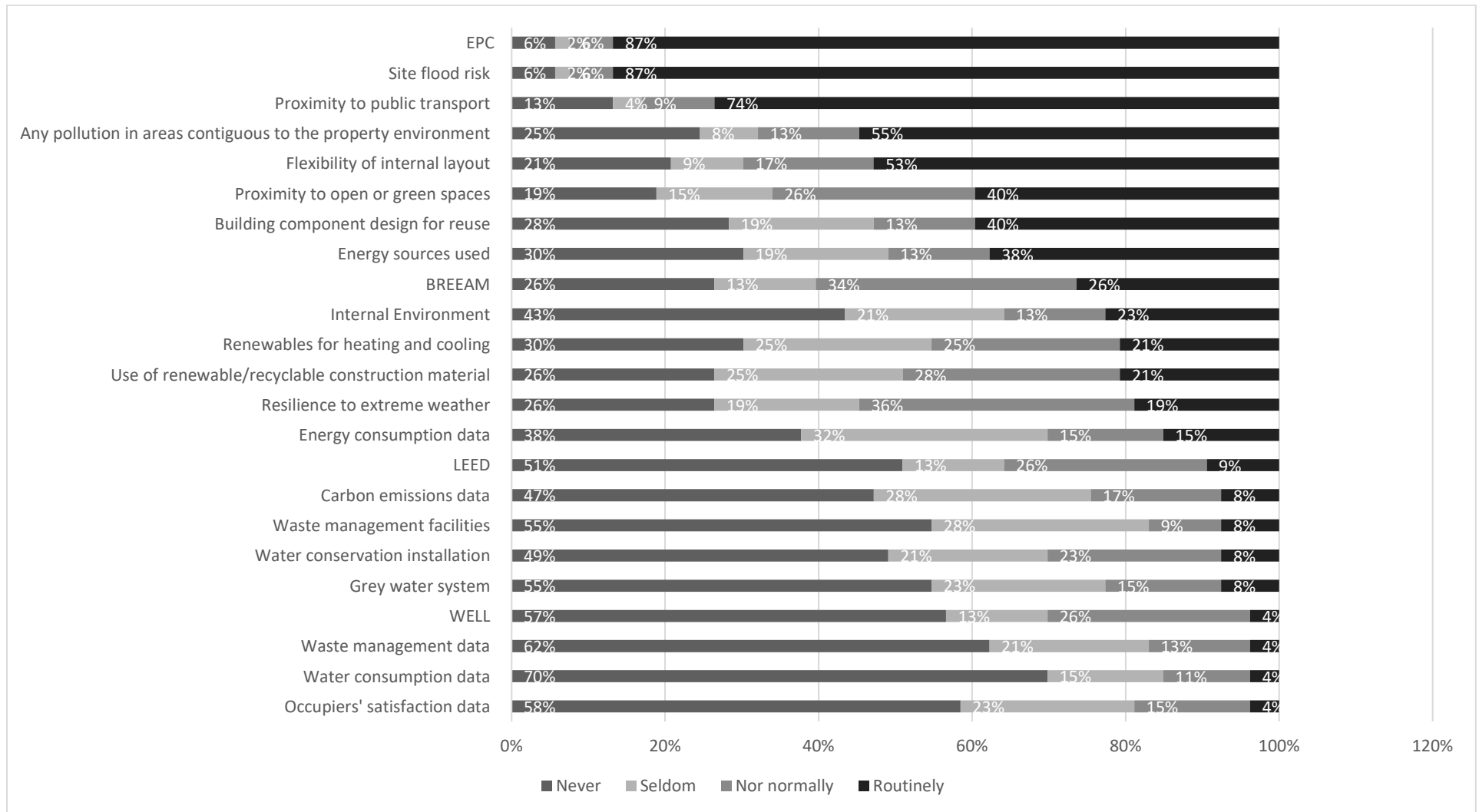
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Figure 1: Effects of demand drivers, climate-related risks, and regulatory pressures on the inclusion of sustainability in valuation reports.



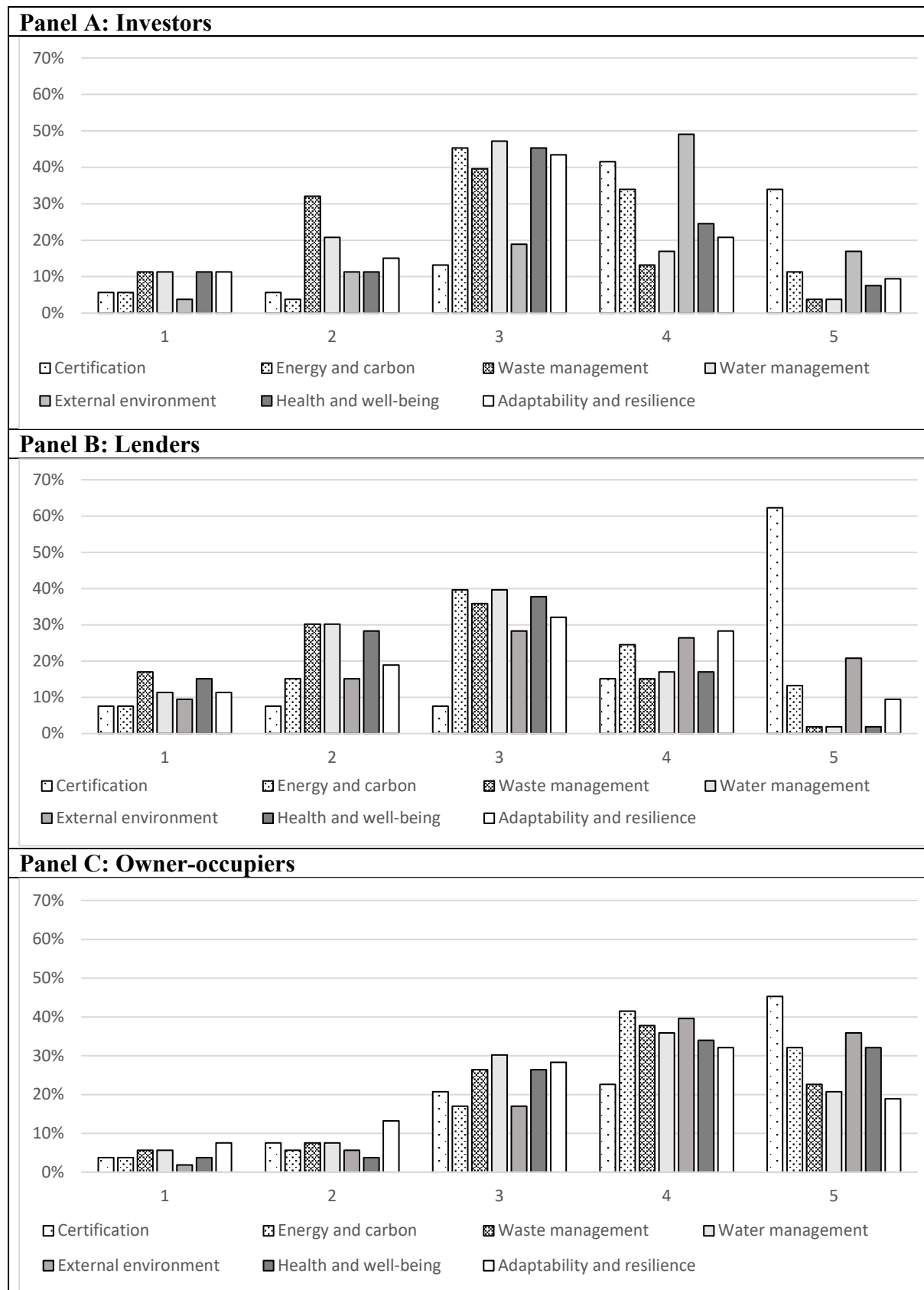
Source: Figure created by authors

Figure 2: Data collection on sustainability attributes



Source: Figure created by authors

Figure 3: Perception of importance of sustainability attributes to different types of clients



Note: Scale of 1 to 5 where 1 is of no importance and 5 is very important to that type of client.

Source: Figure created by authors

Table I: Awareness and use of various RICS standards and guidelines on sustainability

	Do not know about it	Never use	Seldom use	Frequently use
Sustainability and Commercial Property Valuations, (RICS, 2013)	6% (3)	23% (12)	51% (27)	21% (11)
References to Sustainability in the RICS Valuation – Global Standards (RICS, 2017)	8% (4)	15% (8)	57% (30)	21% (11)
Environmental Risks and Global Real Estate: an RICS Guidance Note (RICS, 2018a)	9% (5)	32% (17)	38% (20)	21% (11)
RICS Insight paper: MEES: Impact on UK Property Management and Valuation (RICS, 2018b)	13% (7)	25% (13)	38% (20)	25% (13)

Note: Response count for each category is presented in brackets. Total number of responses in each case is 53.

Source: Table created by authors

Table II: Impact of sustainability attributes on Market Value

	Impact on Market Value		Channel for impact on value		
	Some	None	Adjustment of rental evidence	Likelihood of voids	Capitalisation rate
Certification	74% (39)	26% (14)	30% (23)	30% (23)	40% (31)
Energy and Carbon	47% (25)	53% (28)	37% (16)	30% (13)	33% (14)
Waste Management	19% (10)	81% (43)	41% (7)	29% (5)	29% (5)
Water Management	23% (12)	77% (41)	43% (9)	29% (6)	29% (6)
Quality of External Environment	60% (32)	40% (21)	36% (21)	27% (16)	37% (22)
Health and Well-being	38% (20)	62% (33)	28% (10)	39% (14)	33% (12)
Adaptability and Resilience to Climate Change	36% (19)	64% (34)	21% (6)	34% (10)	45% (13)

Note: Response count for each category is presented in brackets. Total number of respondents in each case is 53, but respondents who indicated that an attribute would have some impact could then choose multiple options for which inputs were affected by the attribute.

Source: Table created by authors

Table III: Impact of sustainability attributes on Investment Value

	Impact on Investment Value		Channel for impact on value				
	Some	None	Adjustment of rental evidence	Estimate of rental growth	Discount rate	Rate of obsolescence	Exit yield
Certification	75% (40)	25% (13)	24% (19)	14% (11)	23% (18)	14% (11)	26% (21)
Energy and Carbon	53% (28)	47% (25)	18% (9)	14% (7)	27% (14)	24% (12)	18% (9)
Waste Management	26% (14)	74% (39)	17% (4)	13% (3)	30% (7)	22% (5)	17% (4)
Water Management	26% (14)	74% (39)	21% (5)	13% (3)	29% (7)	25% (6)	13% (3)
Quality of External Environment	64% (34)	36% (19)	26% (17)	17% (11)	22% (14)	14% (9)	22% (14)
Health and Well-being	40% (21)	60% (32)	22% (9)	22% (9)	22% (9)	17% (7)	17% (7)
Adaptability and Resilience to Climate Change	45% (24)	55% (29)	15% (6)	8% (3)	30% (12)	28% (11)	20% (8)

Note: Response count for each category is presented in brackets. Total number of respondents in each case is 53, but respondents who indicated that an attribute would have some impact could then choose multiple options for which inputs were affected by the attribute.

Source: Table created by authors

Table 4: Cross-tabulation between impact on Market Value and whether data is collected on that sustainability attribute

Data collection on sustainability attributes		Impact on Market Value							
		Certification		Energy and Carbon		Quality of External Environment		Adaptability and Resilience to Climate Change	
		Some 74% (39)	None 26% (14)	Some 47% (25)	None 53% (28)	Some 60% (32)	None 40% (21)	Some 36% (19)	None 64% (34)
EPC	Y	68% (36)	21% (11)						
	N	6% (3)	5% (3)						
BREEAM	Y	32% (17)	7% (4)						
	N	42% (22)	19% (10)						
Energy sources used	Y			38% (20)	19% (10)				
	N			9% (5)	34% (18)				
Proximity to open and green spaces	Y					40% (21)	15% (8)		
	N					20% (11)	25% (13)		
Any pollution in areas contiguous to the property environment	Y					49% (26)	13% (7)		
	N					11% (6)	27% (14)		
Proximity of public transport	Y					53% (28)	25% (13)		
	N					7% (4)	15% (8)		
Flexibility of internal layout	Y							27% (14)	36% (19)
	N							9% (5)	28% (15)
Building component design for reuse (e.g. readily demountable/reusable partitions)	Y							23% (12)	36% (19)
	N							13% (7)	28% (15)
Site flood risk	Y							34% (18)	55% (29)
	N							2% (1)	9% (5)

Resilience to extreme weather (e.g. roof design, good heating/cooling)	Y							19% (10)	19% (10)
	N							17% (9)	45% (24)
Use of renewable/recyclable construction materials	Y							17% (9)	28% (15)
	N							19% (10)	36% (19)

Note: Response counts are presented in brackets. The total number of responses for the combination of possibilities (Yes/No, Some/None) for each characteristic sums to 53, the total number of respondents.

Source: Table created by authors